



EVOS
GC
1552
.P75
S42
1991
v.6

[Shoreline evaluations, 1991].

Kenai PY-11 to RB-03

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REGION: KENAI

SEGMENT: ST/PY-11

SUBDIVISIONS: A (1 OF 3)

SHORELINE EVALUATION

SEGMENT ST/ PY-11 SUBDIVISION A (1 OF 3) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

National Wildlife Refuge (4QQ). No specific constraints identified.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to unoiled biota and substrate.

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 1496m: No Oil 1632 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:

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ PY 11 SUBDIVISION: A DATE 4/4/90

USCG/NOAA

NAME JACQUI MICHEL SIGNATURE Jacqui Michel☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

The very scattered oil on rock walls does not
warrant further treatment.

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

Very scattered splatters on large boulders
does not need cleanup. I have read and
agree with all maps and data on SSAT forms.

LAND MANAGER - USFWS

NAME Mary Portner SIGNATURE Mary Portner☒ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

Very scattered mussels (1 per 10-20m). Sporadic coat and
stain on rock wall.

SHORELINE OILING SUMMARY

REVISION NO. 03/28/90

OG Mann USCG Michel SEGMENT ST/ 11
 BIO Carr LAND REP Partner USFWS SUBDIVISION A
 EXXON Boyer ADEC Reed TIME 15:00 to 15:15
 TEAM NO.: 18 TIDE LEVEL: +2 to +1.5 DATE 4/14/90
 EST. SUBDIVISION LENGTH: 3606 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: N to S
 SURFACE SEDIMENTS: R 70 % B 30 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 10 % Hang 80 % Vert 10 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 1616 m NO 1990 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	10	15	17	18	BR	BL	OW	SL	TL	LR	SU	UI	ME	U		
ASPHALT PAVEMENT																
POOLED																
COVER				✓		✓						✓				
COAT				✓		✓						✓				
STAIN																
MOUSSE																
PATTIES																
TARBALLS																
FILM																
NO OIL											✓		✓	✓		

 PAVEMENT: H F S 0 sq. m by 0 cm

 PATTIES / TARBALLS 0 BAGS

 NEAR SHORE SHEEN? ☒ NO BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

 DEBRIS COLLECTED
☐ YES ☒ NO

 TYPE 0

 #BAGS 0

Photographs:

 Roll No. 18-3

 #
 Frames 25 + 26

 SUBSURFACE OIL *No pits dug due to inaccessibility and lack of sediment cover.*

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CH)	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UD	UC	90L BT	90L IRW	6Y SL	6B TL	6B LR	SU	UR	M	U			
0							.														
							.														
							.														
							.														
							.														
							.														
							.														

COMMENTS

This subdivision encompasses narrow, steep bedrock shores backed by steep, forested slopes. Oiling consists of widely scattered (1 per 10-20m of shoreline) spots of coat and cover as well as long stretches where no oil is visible.

G. MANN
EGMENT ST/ PYU
UBDIVISION A
ATE 4 14 90

SKE MAP

- CHECKLIST
- ☐ N Arrow
 - ☐ Approx. Scale
 - ☐ Seg/Sub Bndry
 - ☐ Oil Dial
 - ☐ Width
 - ☐ Length
 - ☐ % Cover
 - ☐ Substrate Character
 - ☐ Est. HML/LML
 - ☐ SSL
 - ☐ Profile Location(s)
 - ☐ Profile(s)
 - ☐ Pk Location(s)
 - ☐ Photo Location(s)

No sketched map provided (see GIS map)

- LEGEND
- 1 No Subsurface Oil
 - 2 Subsurface Oil
 - Continuous Distribution
 - Patchy Distribution
 - Patchy Distribution
 - Patchy Distribution
 - Road Vegetation
 - Photo location, direction, and number

CV/CT lengths are based on an estimated 3% occurrence within the VL category

Character Length (m): AP 0 PO 0 CV 50 CT 50 ST 0 MS 0 PT 0 TB 0 FL 0 NO 1990

HP-05-1390 15:25 FROM ENSCO Atlas ENSCO TO SPT 2.12

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / PY 11 Subdivision A (of A-C) Date (mo / day / yr) 4 / 4 / 90
 Time (24 hr) 1330 Biologist M. CARR

- (A) Substrate type and % of segments: ^{SUBDIVISION}
 (1) Bedrock 70 (2) Boulder 30 (3) Cobble (4) Pebble (5) Sand (6) Silt
- (B) Overall % cover of biota (% of segment): ^{SUBDIVISION} Dense 60 Moderate 20 Low 20
- (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: 3
 Roll No. 3

Frames 25, 26

BARNACLES

Dense			Moderate			Sparse			Rare			LOW INTERTIDAL INACCESSIBLE
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			LOW INTERTIDAL INACCESSIBLE
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			LOW INTERTIDAL INACCESSIBLE
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	
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6	6	6	6	6	6	6	6	6	6	6	6	

FUCUS

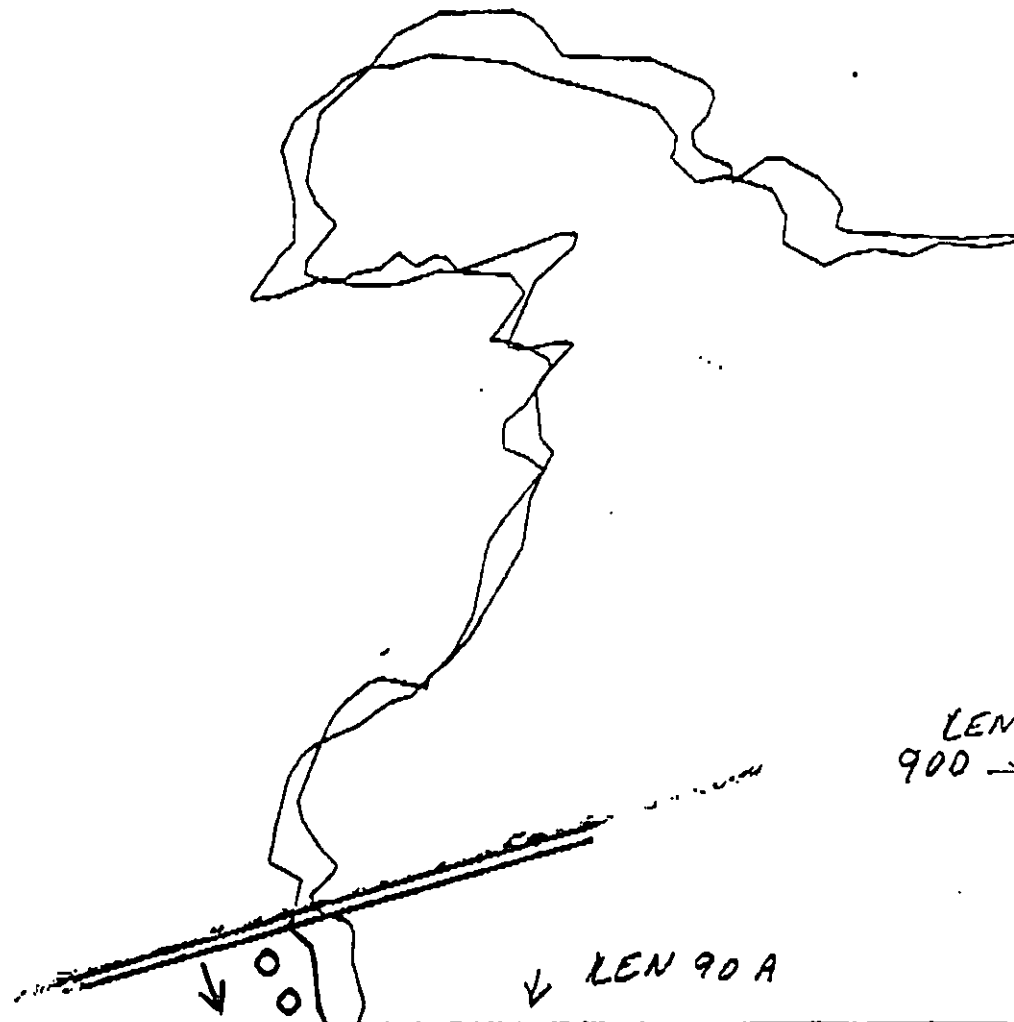
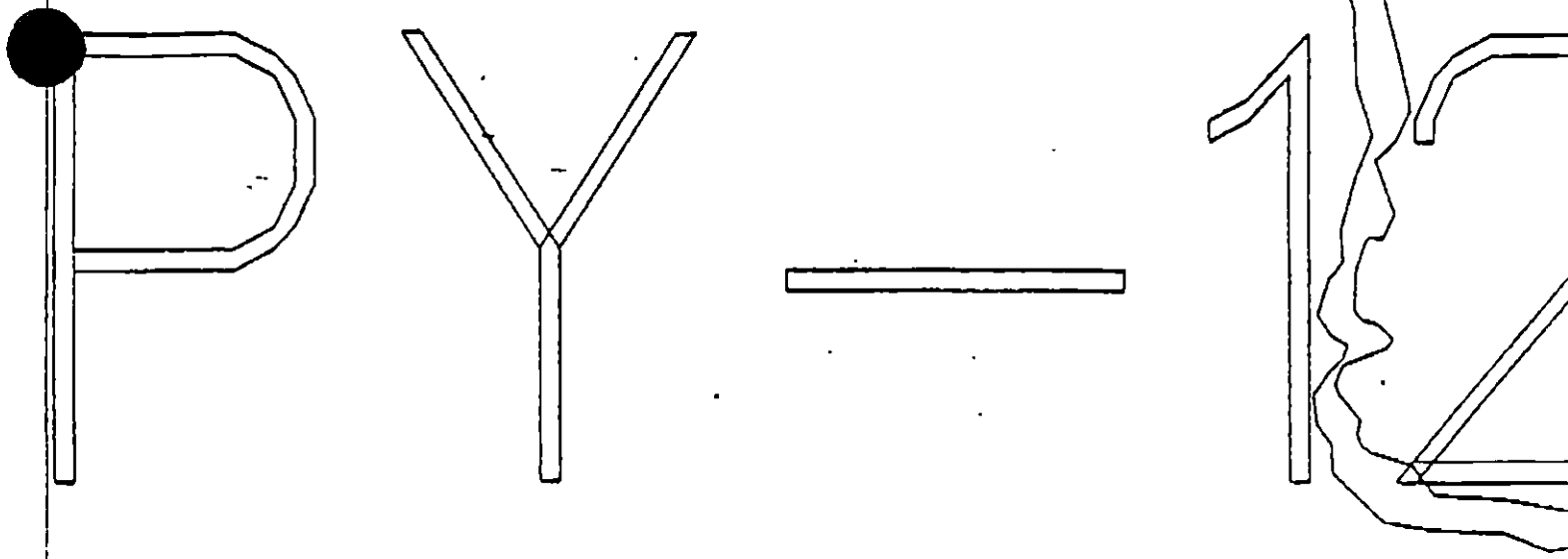
Dense			Moderate			Sparse			Rare			LOW INTERTIDAL INACCESSIBLE
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	NOT PRESENT
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	
6	6	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments:

Steller's jay (1) Harlequin duck (13)
 Bald eagle (1) Cormorant; pelagic (1) red-faced (1)
 Sea otter (2)

Ecological Considerations:

Sensitivity codes: 4-QQ (National Wildlife Refuge)



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

PY-11 subdiv A

ADEC Segment Length: 4719m



Map Key: KEN-90c

Name: Monn

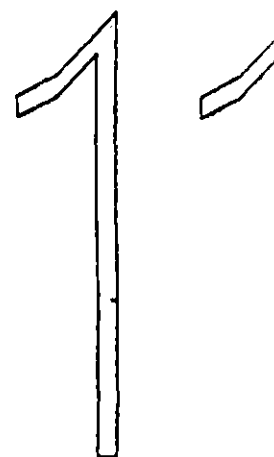
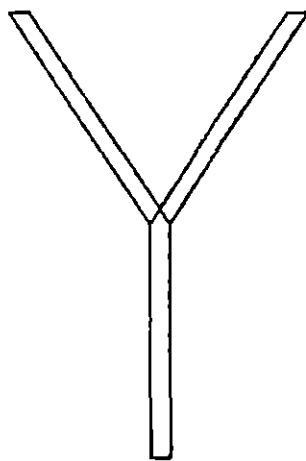
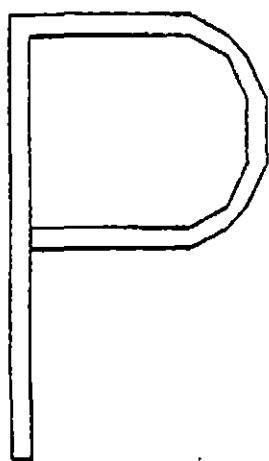
Date: April 4, 90

Data Entered:

↑
KEN 90C

10

PY-11 (Subdiv. A)



Subdivision C

18-3

#30

KEN
90B →

XXXX Wide

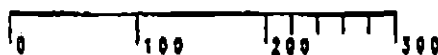
//// Medium

--- Narrow

TTTT Very Light

PY-11

ADEC Segment Length: 4719m

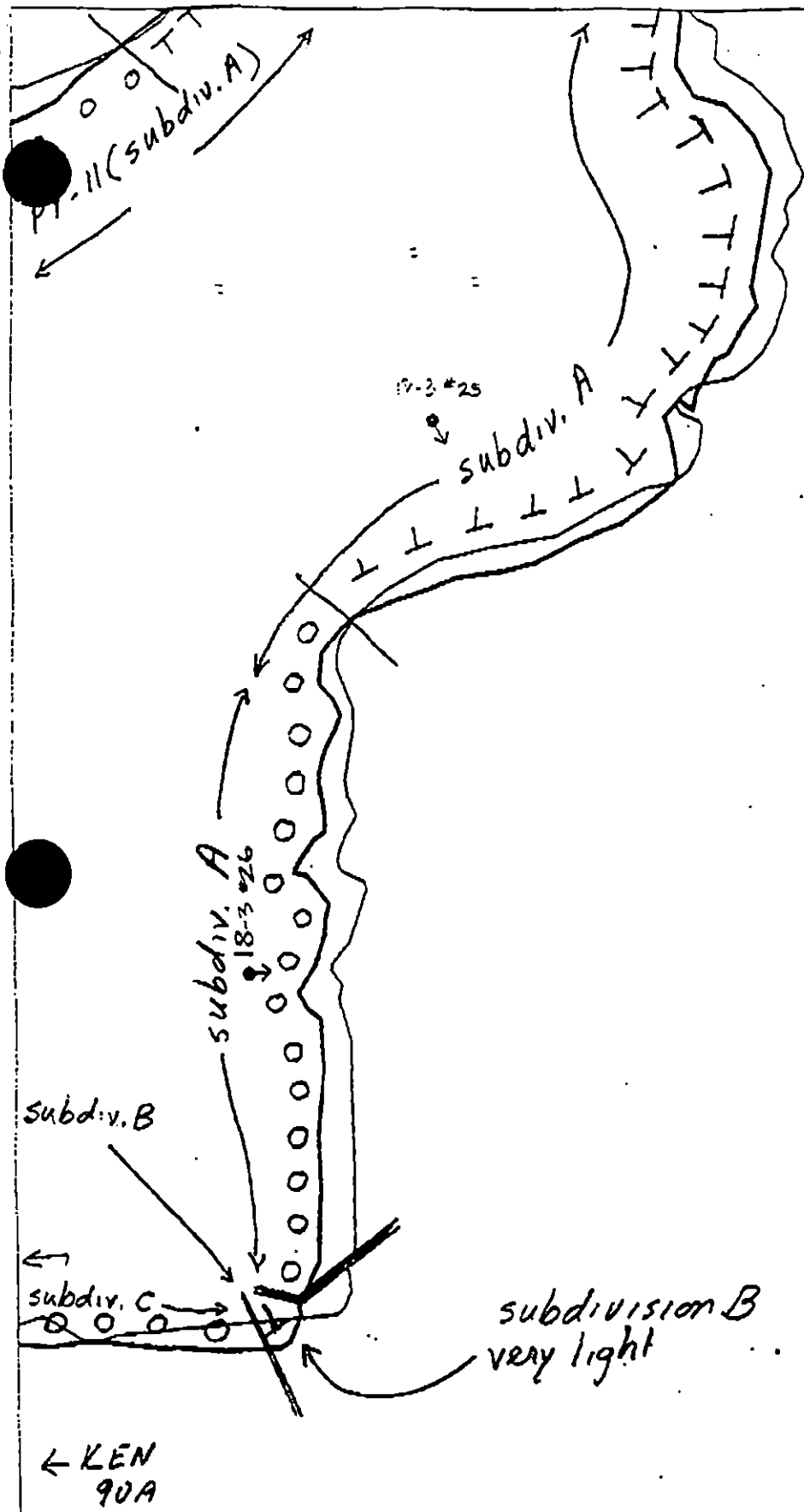


Map Key: KEN-90a

Name: Mann

Date: 4 April 90





↑
KEN
90D

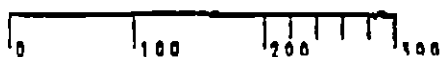
9

← KEN
90A

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

PY-111:6000

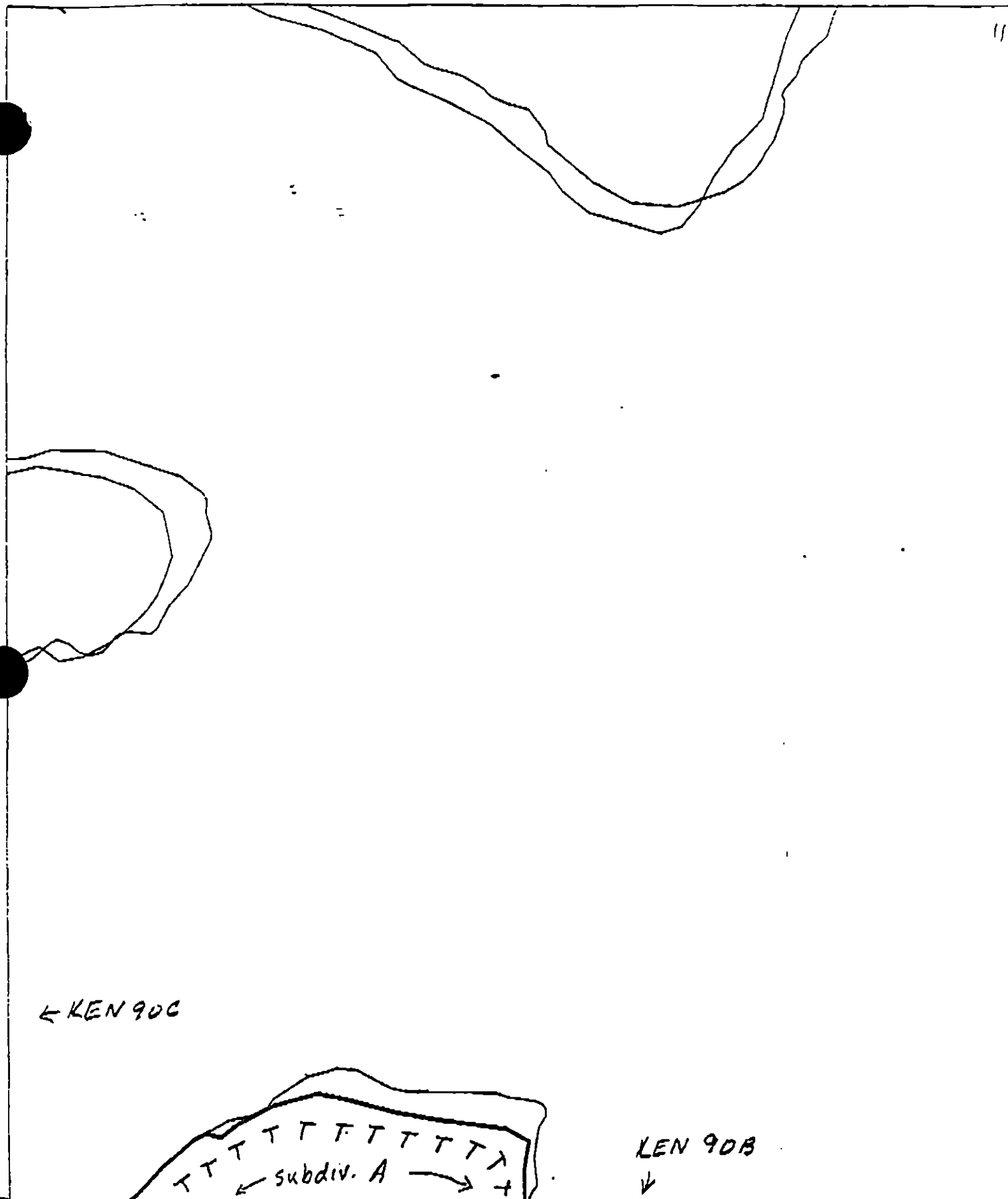
ADEC Segment Length: 4719m



Map Key: KEN-90b

Name: MANN

Date: 4 April 90



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

ADEC Segment Length: 4719m

0 100 200 300

Map Key: KEN-90d

Name: Mann

Date: 4 April 90

Not Released

REGION: KENAI

SEGMENT: ST/PY-11

SUBDIVISIONS: B (2 OF 3)

SHORELINE EVALUATION

SEGMENT ST/ PY-11 SUBDIVISION B (2 OF 3) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

National Wildlife Refuge (4QQ). No specific constraints identified.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/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 0 m: Narrow 0 m: V.Light 62 m: No Oil 0 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 16 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 bioremediation of subsurface oil in area shown on attached sketch map. No time constraints identified.

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

17

SEGMENT ST 1 PY 11 SUBDIVISION: B DATE 4/4/90

CG/NOAA

NAME JACQUI MICHEL SIGNATURE *Michel*☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

The only section requiring consideration for treatment is the area of subsurface oil. However, about 15 cm of ^{clean} cobbles would have to be removed to get to the oiled zone. If a technique is developed for treatment of this type of oil (which includes thick zones of mousse up to several cm's thick), then it should be attempted here. Although there is moderate wave energy, the surface sediments are pretty coarse - limiting the potential for natural removal w/in 1-2 years.

ADEC

NAME JOHN R REED SIGNATURE *John R. Reed*☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

This is a site with subsurface oil. It was warm water washed last summer. The washing seems to have driven the mousse down about 15 cm. There are clean cobbles on top. The oiled layer is approx. 8 cm thick. Manual removal of oiled substrate with shovels or hand trowels. I have read and agree with all data on S.S.A.T. Forms.

LAND MANAGER -USFWS

NAME Mary Portner SIGNATURE *Mary Portner*☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

Despite manual pickup and H/W at this site in 1989 oil remains beneath the surface boulders and cobbles as residual oil over pooled oil in a 10m x 5m area (see map). 15 cm of rd. clean cobbles would need to be removed to reach the oiled zone. The only currently available technique for treatment would be to turn the cobbles and boulders and remove the oil to clean substrate. There is a rich, healthy intertidal in the mid to lower intertidal and any treatment employed must take this into consideration. Inipol would not be effective.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG Mann USCG Michel SEGMENT ST/ P411
 BIO Carr LAND REP Partner SUBDIVISION B
 EXXON Boyer ADEC Reed TIME 15:16 to 15:44
 TEAM NO.: 18 TIDE LEVEL: 1.5 to 1.5 DATE 4/14 190
 EST. SUBDIVISION LENGTH: 75 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: all to over
 SURFACE SEDIMENTS: R 10 % B 85 % C 5 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 100 % Hang 0 % Vert 0 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 10 m VL 65 m NO 0 m

SURFACE OIL NOTE: if est'd from surface oil: W 0, M 0, N 0, VL 75, NO 0 m

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	CG	FG	PG	RG	SB	BR	FW	GY	SL	DR	TL	LR	SU	UI	M	U
ASPHALT PAVEMENT																
POOLED																
COVER				✓		✓								✓		
COAT				✓		✓								✓		
STAIN				✓		✓		✓						✓		
MOUSSE																
PATTIES																
TARBALLS																
FILM																
NO OIL													✓		✓	✓

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

OILED DEBRIS <u>NO</u>	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☐ YES ☒ NOTYPE —#BAGS —

Photographs:

Roll No. 18-3Frames # 27, 28, 29

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	SB	BR	FW	GY	SL	DR	TL	LR	SU	UI	M	U		
1	30					✓	-		✓									✓				NO	B,C throughout
2	25		✓				0-5		✓						✓			✓				NO	" "
3	25					✓	-		✓									✓				NO	" "
4	20		✓				0-5		✓						✓			✓				NO	BC over PGCB
5	25					✓	-		✓									✓				NO	" " "
6	20		✓				0-7		✓						✓			✓				NO	CB over PGCB

COMMENTS

This tiny subdivision was site F during our August 1989 SCAT of PY-11. Oiling has been reduced greatly on the surface of this subdivision since my visit last August. However, fresh-looking (light brown) mousse exists in the subsurface. Dr. Michel suggests it was washed there during washing operation. Abrasion marks on stone surfaces indicate this site.

SHORELINE OILING SUMMARY (PAGE 2 of 2)

REVISION 06/23/90

SEGMENT ST/ PY-11 SUBDIVISION B

SUBSURFACE OIL (CONTINUED)

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CH)	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		VO	UC	SP	BP	WP	BL	BR	TL	TR	SU	U	M		
6	20	✓					7-16		✓					✓		✓				NO	CB over PGCB
7	15		✓				0-10	✓						✓		✓				NO	BC over PGCB
7	15	✓					10-15	✓						✓		✓				NO	BC " "
8	20					✓	.		✓							✓				NO	C throughout
9	15		✓				0-6		✓					✓		✓				NO	BC over PGCB
9	15	✓					6-14		✓					✓		✓				NO	" " "
10	15					✓	.		✓							✓				NO	B over CPGB
							.														
							.														
							.														
							.														
							.														
							.														
							.														
							.														
							.														

COMMENTS

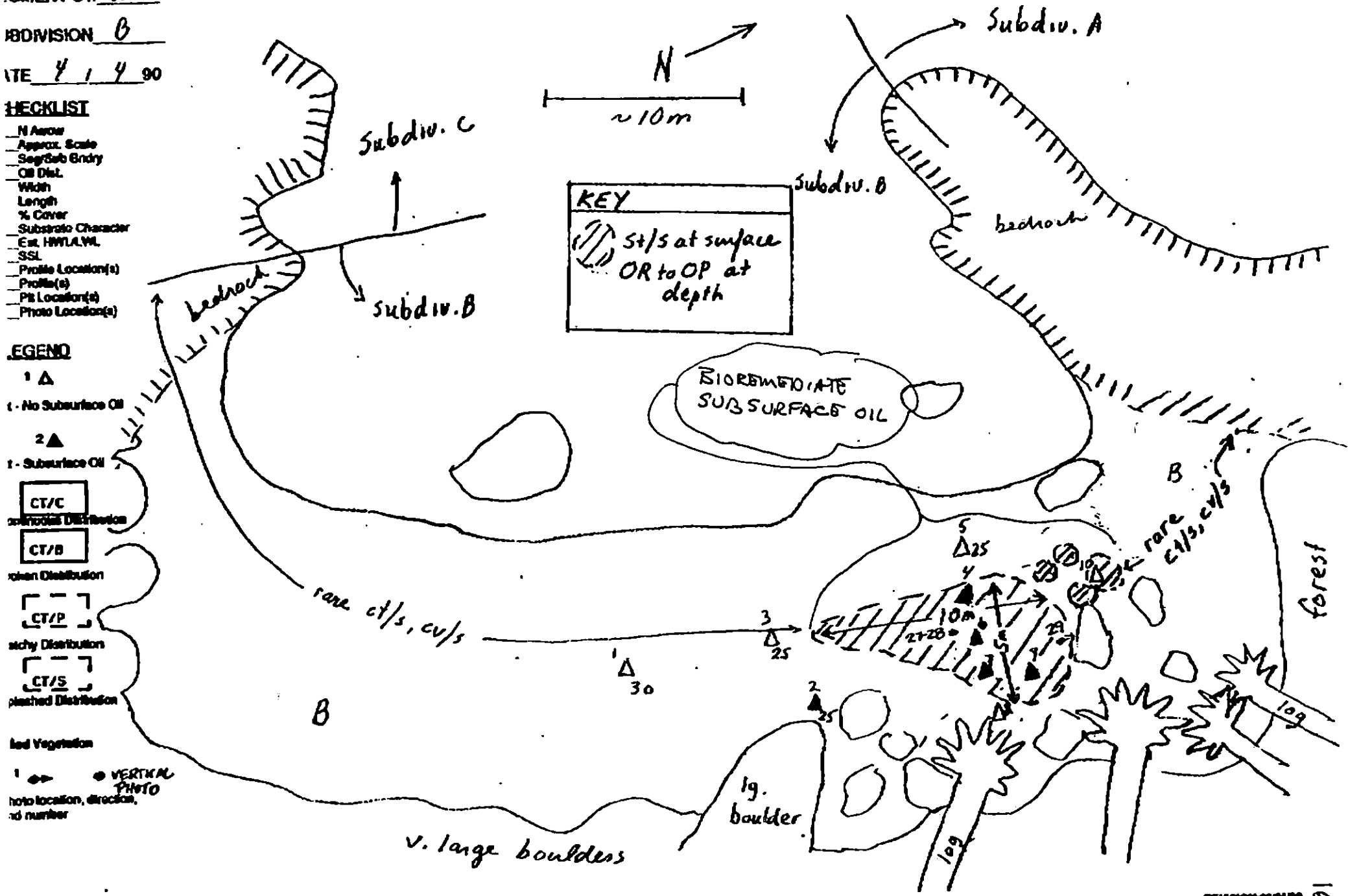
DMP

Mann
 SEGMENT ST/ 11
 DIVISION B
 DATE 4/4/90

- CHECKLIST**
- N Area
 - Approx. Scale
 - Seg/Sub Entry
 - Oil Dist.
 - Width
 - Length
 - % Cover
 - Substrate Character
 - Est. HWT/LWT
 - SSL
 - Profile Location(s)
 - Profile(s)
 - Pt Location(s)
 - Photo Location(s)

- LEGEND**
- 1 Δ
 - 1 - No Subsurface Oil
 - 2 Δ
 - 1 - Subsurface Oil
 - CT/C
 - continuous Distribution
 - CT/B
 - broken Distribution
 - CT/P
 - patchy Distribution
 - CT/S
 - plashed Distribution
 - Red Vegetation
 - 1 ●
 - VERTICAL PHOTO
 - photo location, direction, and number

SKETCH MAP



Character Length (m): AP 0 PO 0 CV 65 CT 65 ST 12 MS 10 PT 0 TB 0 FL 0 NO 0

APR-24-1990 14:27 FROM ENSCO Helas ENSCO TO SSAT P.18

22
REVISION: 03/22/90

SHORELINE ECOLOGICAL SUMMARY

Segment ST / PY 11 Subdivision B (of A-C) Date (mo / day / yr) 4 / 4 / 90
 Time (24 hr) 1500 Biologist M. CARR

- (A) Substrate type and % of segments: ^{SUBDIVISION}
 (1) Bedrock 95 (2) Boulder 5 (3) Cobble 5 (4) Pebble 5 (5) Sand 5 (6) Silt 5
 (B) Overall % cover of biota (% of segment): ^{SUBDIVISION} Dense 40 Moderate 40 Low 20
 (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 (O)

Photographs: 3
 Roll No. 3
 Frames 27-29

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	} LOW INTERTIDAL INACCESSIBLE 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	} LOW INTERTIDAL INACCESSIBLE 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	} LOW INTERTIDAL INACCESSIBLE 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	
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FUCUS

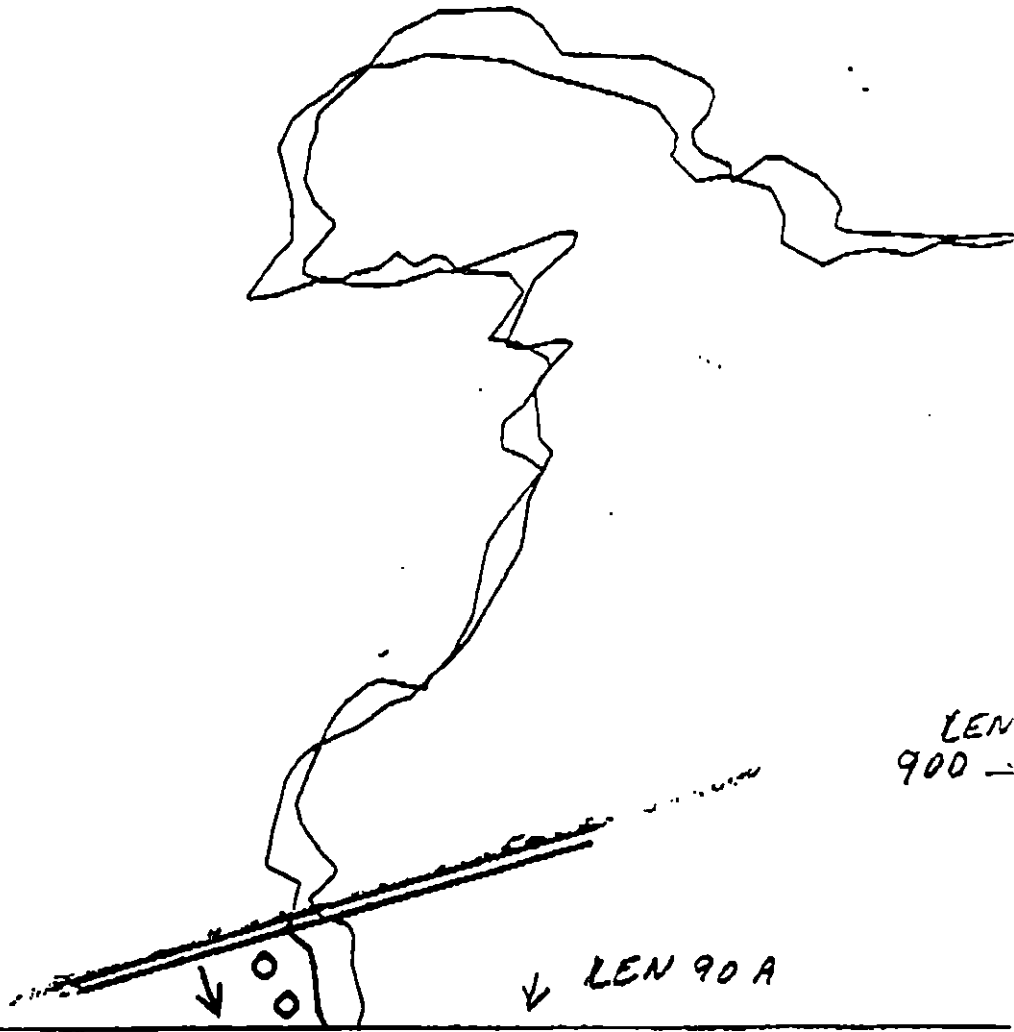
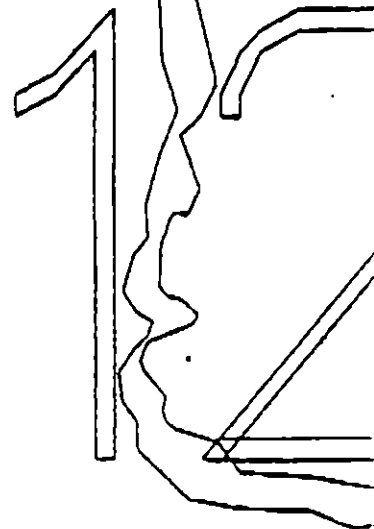
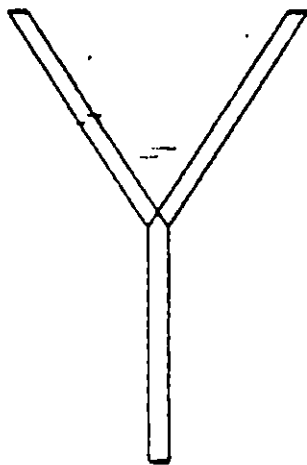
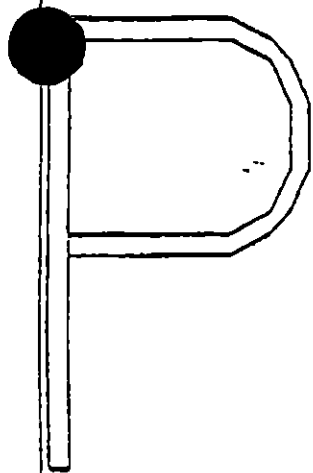
Dense			Moderate			Sparse			Rare			
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	} NOT PRESENT
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	
6	6	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments:

Harbor seal (1)

Ecological Considerations:

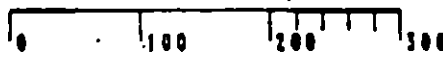
Sensitivity codes: 4-QQ (National Wildlife Refuge)



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

PY-11 subdiv A

ADEC Segment Length: 4719m



Map Key: KEN-90c

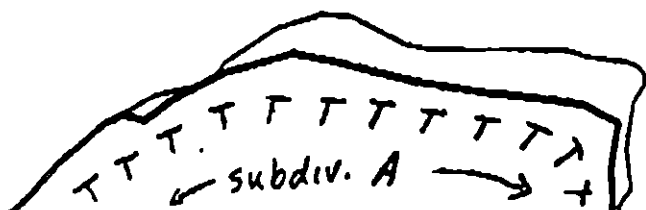
Name: MONA

Date: April 4, 90

Data Entered:

11

← KEN 90C



LEN 90B



XXXX Wide
 //// Medium
 ---- Narrow

PY-11

ADEC Segment Length: 4719m

Map Key: KEN-90d

Name: Mann

↑
LEN 90C

10

PY-11 (Subdiv. A)

P

Y

—

1

not observed

Subdivision C

18-3

#30

LEN
90B →

XXXX Wide

//// Medium

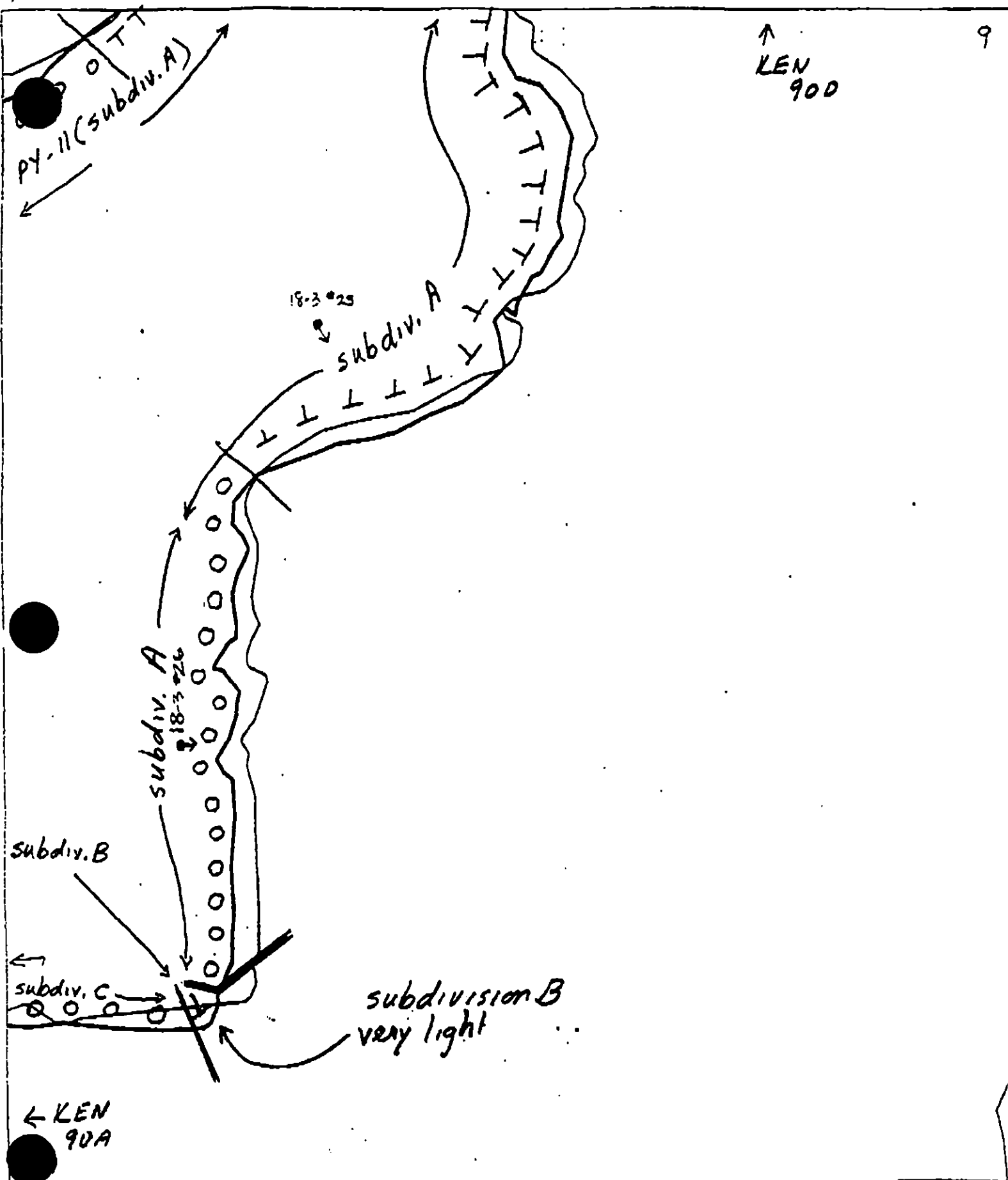
--- Narrow

PY-11

ADEC Segment Length: 4719m

Map Key: KEN-90c

Name: Mann



XXXX Wide

//// Medium

--- Narrow

PY-11

ADEC Segment Length: 4719m

Map Key: KEN-90b

Name: MANN

REGION: KENAI

SEGMENT: ST/PY-11

SUBDIVISIONS: C (3 OF 3)

SHORELINE EVALUATION

SEGMENT ST/ PY-11 SUBDIVISION C (3 OF 3) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

National Wildlife Refuge (4QQ). No specific constraints identified.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to unoiled biota and substrate.

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 174 m: No Oil 1355 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:

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

20

SEGMENT ST / PY 11 SUBDIVISION: CE DATE 4/4/90

USCG/NOAA

NAME JACQUI MICHEL SIGNATURE Michel☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

The very light to no oil does NOT WARRANT
FURTHER TREATMENT.

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

Very light and sporadic splatters. Does not
need clean up. I have read and agree with all
data and maps on SSAT Forms.

LAND MANAGER /USFWS

NAME Mary Foster SIGNATURE Mary Foster☐ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

Very light sporadic oiling in the form of cover coat and stain.

SHORELINE OILING SUMMARY

REVISION NO. 02/23/90

18

OG Mann USCG Michel SEGMENT ST/ # P4011
 Carr LAND REP Portman (USEWS) SUBDIVISION C
 XON Boyer ADEC Reed TIME 15:44 to 16:02
 TEAM NO.: 18 TIDE LEVEL: +1.5 to +1.0 DATE 4/4/90
 EST. SUBDIVISION LENGTH: 1170 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: E to W
 SURFACE SEDIMENTS: R 90 % B 9 % C 1 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Lang 10 % Hang 60 % Vert 30 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 150 m NO 1020 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	10	15	17	18	SW	SE	FW	FT	SL	TL	LR	LR	SU	U	M	U
ASPHALT PAVEMENT																
POOLED																
COVER				✓		✓							✓			
COAT				✓		✓							✓			
STAIN				✓		✓							✓			
MOUSSE																
PATTIES																
TARBALLS																
FILM																
NO OIL													✓		✓	✓

PAVEMENT: H F S 0 sq. m by 0 cmPATTIES / TARBALLS 0 BAGSNEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☐ YES ☒ NOTYPE N/A#BAGS 0

Photographs:

Roll No. 18-3Frames # 30SUBSURFACE OIL No pits dug due to inaccessibility and lack of sediment cores.

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		UD	UC	SW	SE	FW	FT	SL	TL	LR	LR	SU	U	M	U		
<u>C</u>																							

COMMENTS

This subdivision is much like subdivision A. Oiling consists of
1 spot of coat and/or cores per 10m of shoreline.

PAT 10-1-90

OG MAN IV

SEGMENT P/11

SUBDIVISION C

DATE 4/4 90

SKETCH MAP

CHECKLIST

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

LEGEND

1 

Pit - No Subsurface Oil

2 

Pit - 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

No separate sketch map provided (see GIS map)

cu/CT/ST lengths estimated based on 1% occurrence within the VL category

Oil Character Length (m): AP 0 PO 0 CV 2 CT 2 ST 2 MS 0 PT 0 TB 0 FL 0 NO 1168 1020

REVISION 01/2000

SHORELINE ECOLOGICAL SUMMARY

23

REVISION: 02/22/90

Segment ST / PY 11 Subdivision C (of A-C) Date (mo / day / yr) 4 / 4 / 90

(24 hr) 1350 Biologist M. CARR

(A) Substrate type and % of segments:
(1) Bedrock 70 (2) Boulder 10 (3) Cobble (4) Pebble (5) Sand (6) Silt

(B) Overall % cover of biota (% of segment): Dense 70 Moderate 20 Low 20

(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: 3
Roll No.

Frames 30

BARNACLES

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

MYTILUS

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

GASTROPODS

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

FUCUS

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

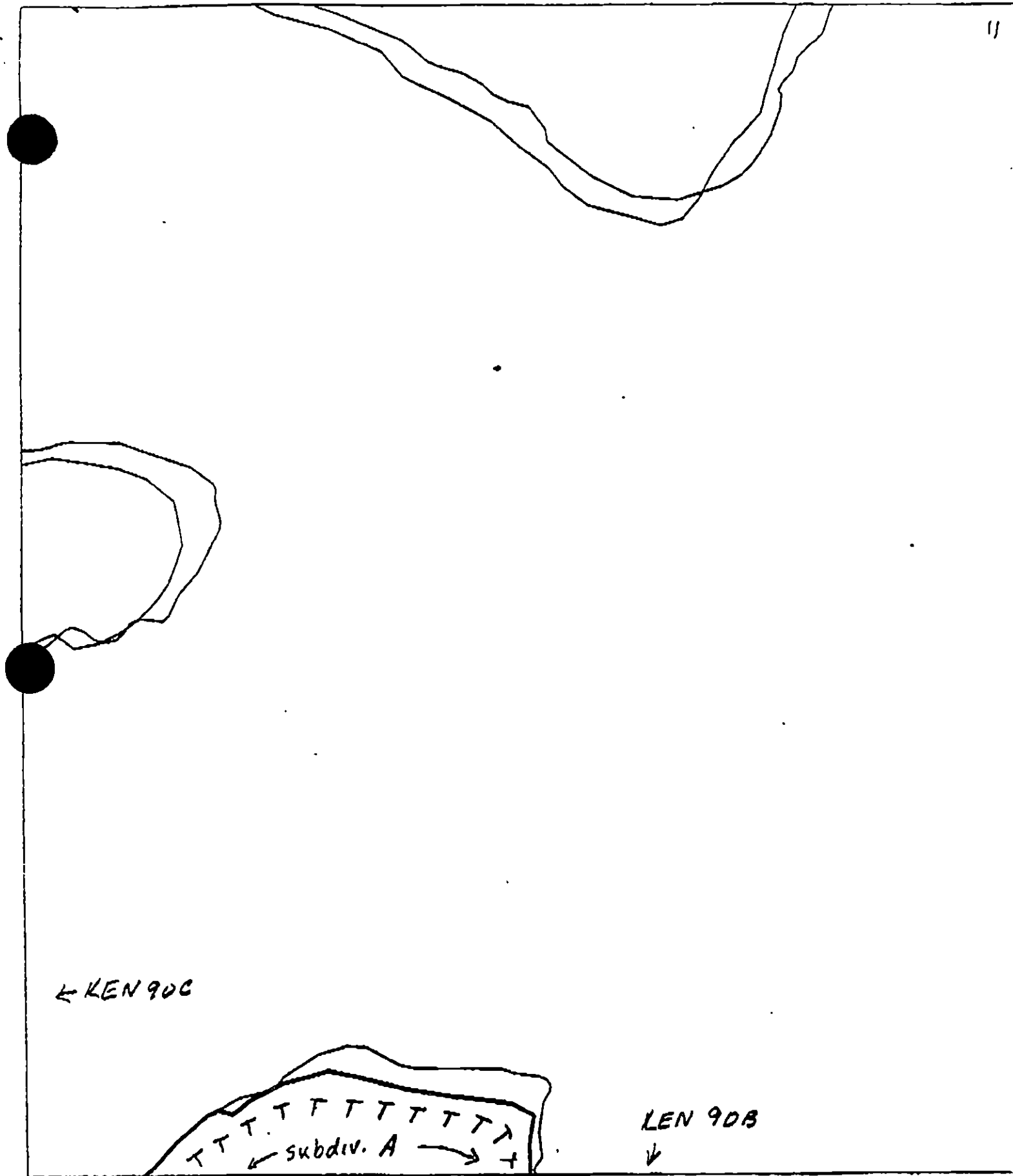
Wildlife Observations/ General Comments:

Pelagic commensal (1)

Bald eagle (1)

Ecological Considerations:

Sensitivity codes: 4-QQ (National Wildlife Refuge)



← KEN 90C

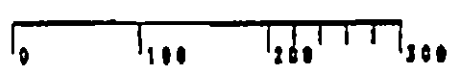
LEN 90B
↓

TTTTT
← subdiv. A →

PY-11

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

ADEC Segment Length: 4719m



Map Key: KEN-90d

Name: Mann

Date: 4 April 90

↑
LEN 90C

10

PY-11 (Subdiv. A)

P

Y

—

11

Not observed

Subdivision C

LEN
90B →

XXX Wide

//// Medium

--- Narrow

TTTT Very Light

PY-11

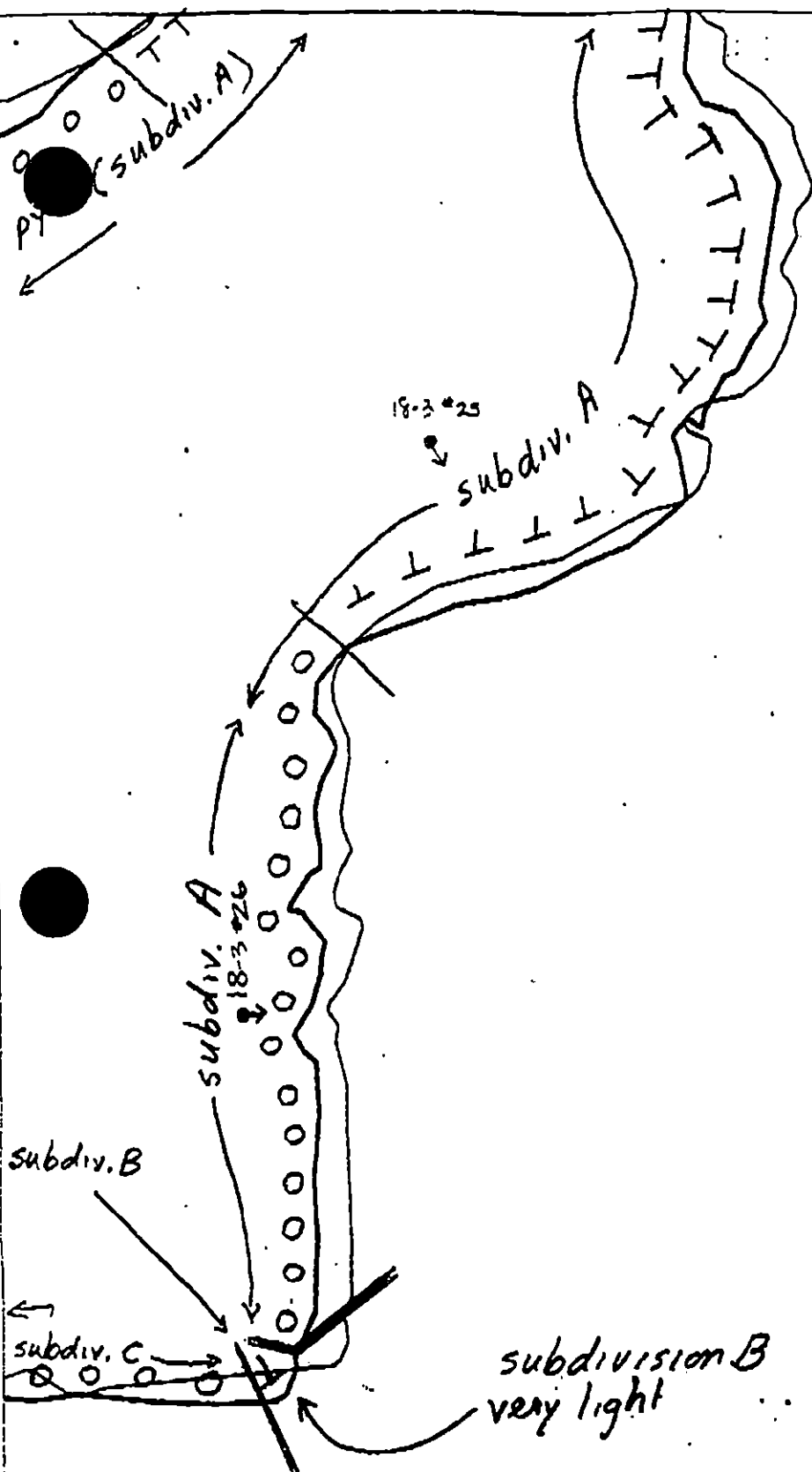
ADEC Segment Length: 4719m

Map Key: KEN-900

Name: Manor

Date: 4 April 90

9



↑
KEN
900

← KEN
90A

PY-11

XXX Wide

/// Medium

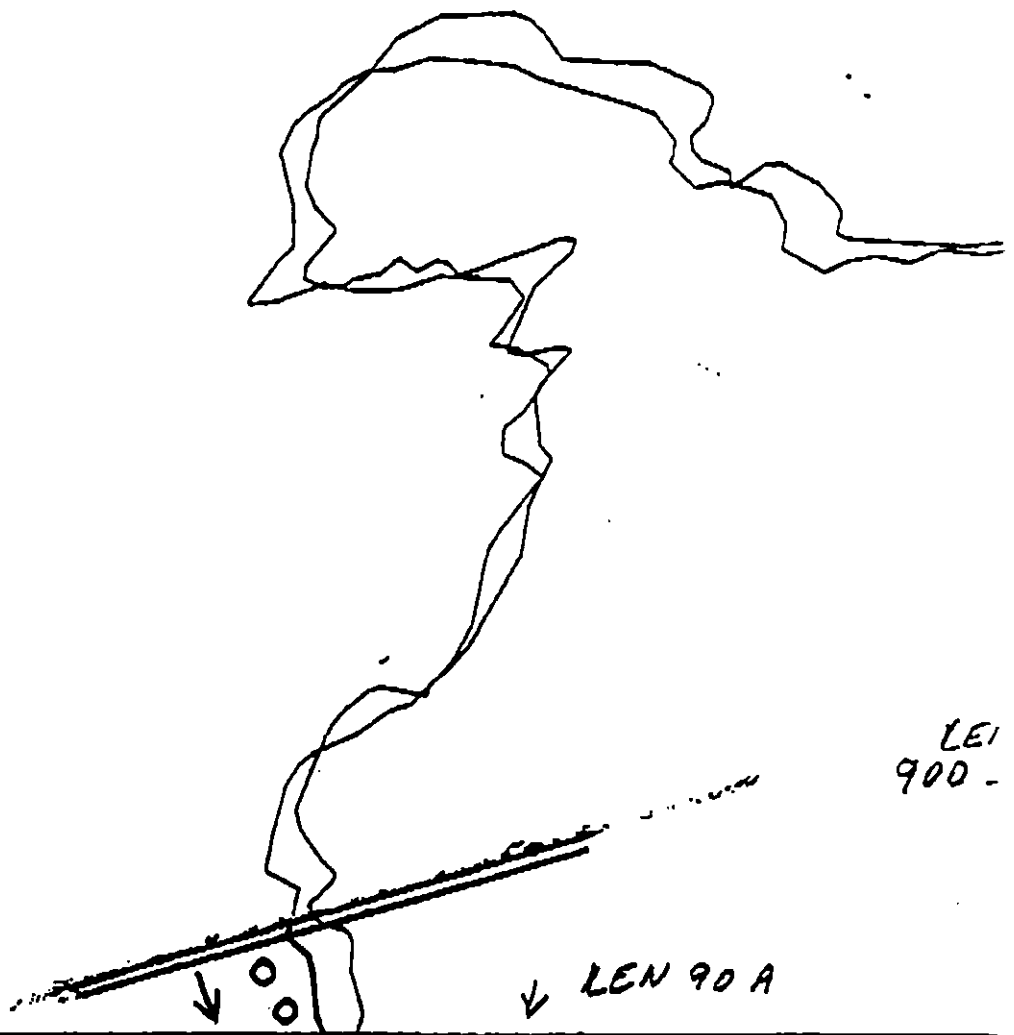
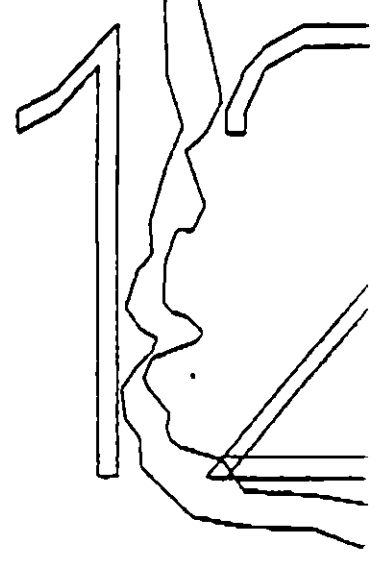
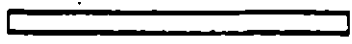
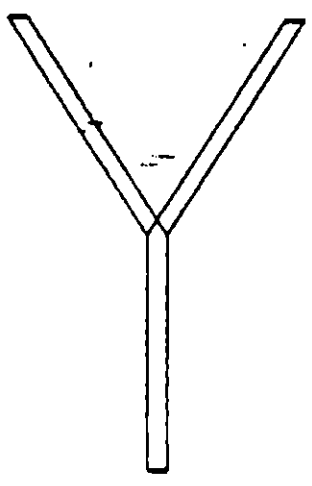
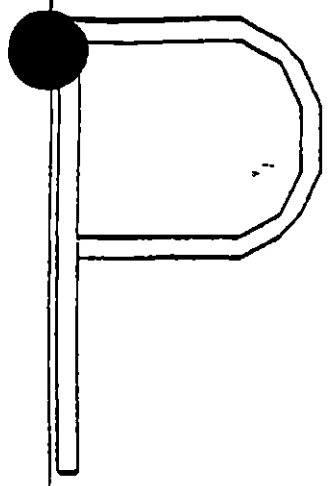
--- Narrow

TTTT Very Light

ADEC Segment Length: 4719m

Map Key: KEN-90b

Name: MANNDate: 4 April 90



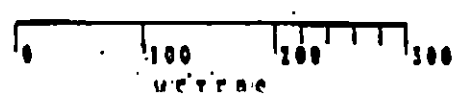
LEI
900-

↓ LEN 90 A

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

PY-11 subdiv A

ADEC Segment Length: 4719m



Map Key: KEN-90c

Name: Monn

Date: April 4, 90

Data Entered:

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT PY-11 SUBDIVISION B (2 of 3)

WORK WINDOW	
Manual Pickup Other Approved Manual Treatment	OPEN
Bioremediation	OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

No ecological time constraints.

OTHER ECOLOGICAL CONSIDERATIONS

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

TAG ADDENDUM DATE

ADEC

EXXON

NOAA

USCG

5/21/90.
Art Weiner
Andy Galt
Joseph Talbot
M. J. Hall

FOSC

DATE 5-21-90

Prepared by:

Date: 5/20/90

PY-12

PY-11

PY-10

TREATMENT
AREA

P



ECOLOGY MAP
SEGMENT PY-11

★ Seabird Colony

A Seabird Nest

SHORELINE EVALUATION

SEGMENT ST/ PY-11 SUBDIVISION B (2 OF 3) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

National Wildlife Refuge (4QQ). No specific constraints identified.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to uncoiled 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 Adams

DATE: 4/12/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 62 m: No Oil 0 m
Subsurface Oil Observed: Yes X No Maximum Depth 16 cm

RECOMMENDATIONS:

 No Treatment Recommended
X Treatment Recommended
 Manual Pickup
X Bioremediation
 Tarmat: Breakup
 Removal

 Snare/Absorbent Booms
 Oil Snares (pom poms)
 Absorbents (pads, rolls, etc)
 Spot Washing: Wands
 Beach Cleaner
 Other (see comments)

COMMENTS: Recommend bioremediation of subsurface oil in area shown on attached sketch map. No time constraints identified.

PRIOR TO BIOREMEDIATION, REMOVE SURFACE COBBLES TO ACCESS SUBSURFACE OIL. MANUALLY REMOVE MOUSSE USING HAND TOOLS AND OIL SWABES.

TAG COMMENTS:

SEE ADDENDUM DATED 5/20/90
REXC.

TAG APPROVAL DATE: 4/17/90

ADEC Art Wierse
EXXON Andy Katz
NOAA Bruce Wescott
USCG Kenneth Keane

FOSC: My

DATE: 4-22-90

SHORELINE EVALUATION

SEGMENT ST/ PY-11 SUBDIVISION A (1 OF 3) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

National Wildlife Refuge (4QQ). No specific constraints identified.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: Charles Adams DATE: 4/17/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 1496m: No Oil 1632 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

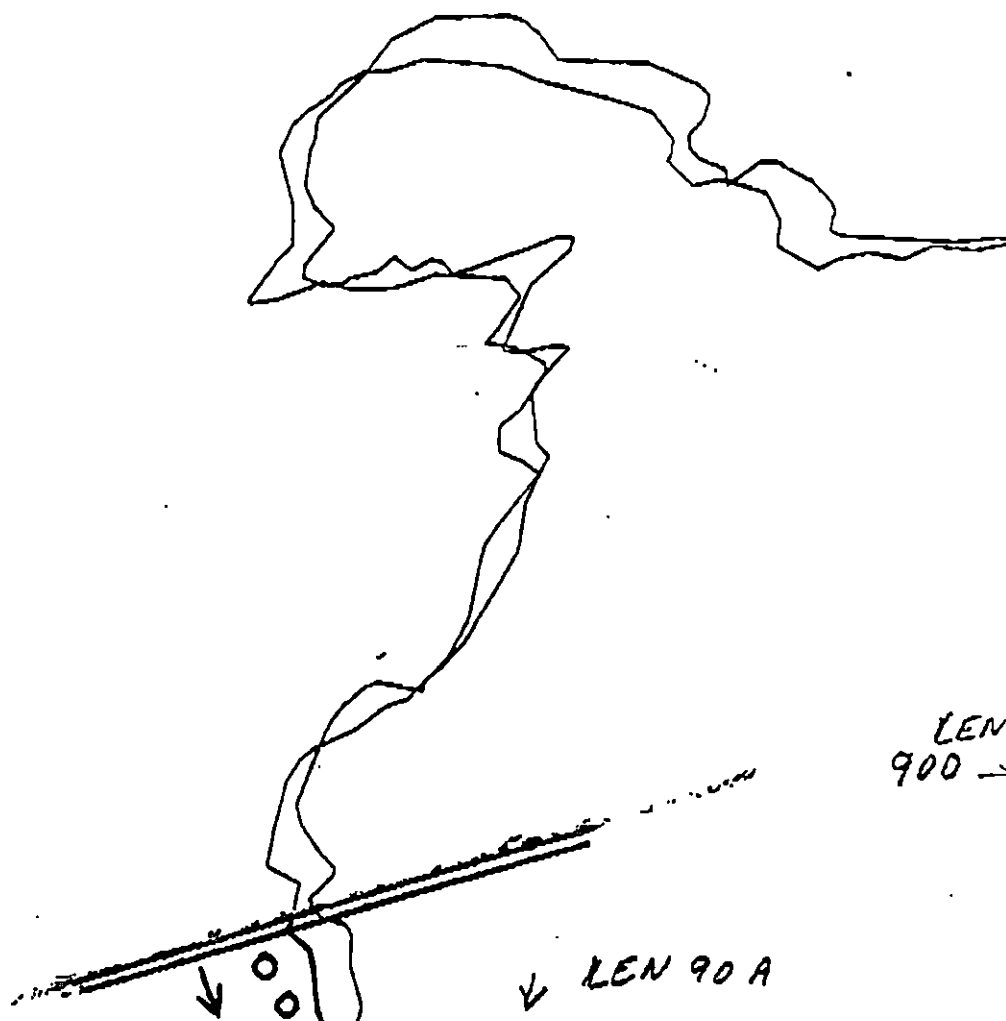
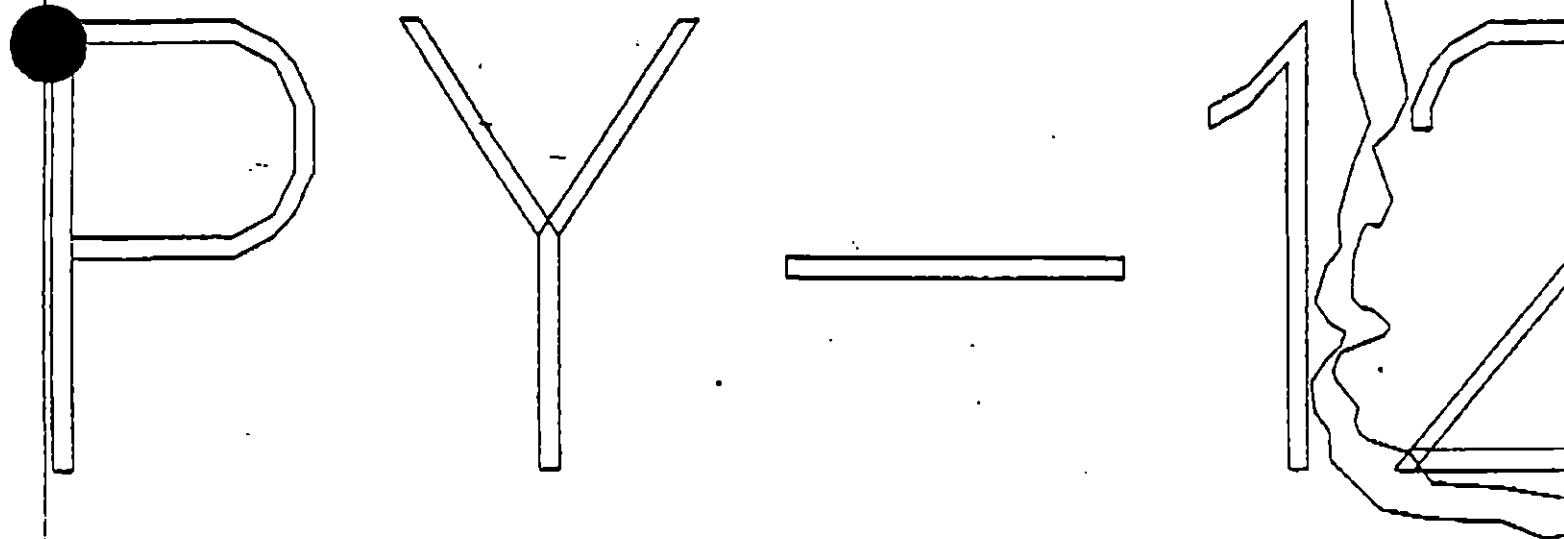
<u>X</u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u> </u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u> </u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u> </u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u> </u> Tarmat: <u> </u> Breakup	<u> </u> Beach Cleaner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

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 4/17/90
ADEC Art Weisner
EXXON ANN TAYLOR
NOAA Buil Wescott
USCG KENNETH KOTAK

FOSC: [Signature] DATE: 4-22-90

LEN
900 -

LEN 90 A

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

PY-11 subdiv A

ADEC Segment Length: 4719m



Map Key: KEN-90c

Name: MonnDate: April 4, 90

Data Entered:

↑
KEN 900

10

PY-11 (Subdiv. A)

PY-11

Subdivision C

18-3

#30

KEN 908 →

XXXX Wide

//// Medium

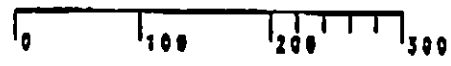
--- Narrow

TTTT Very Light

OOOO A: 1

PY-11

ADEC Segment Length: 4719m

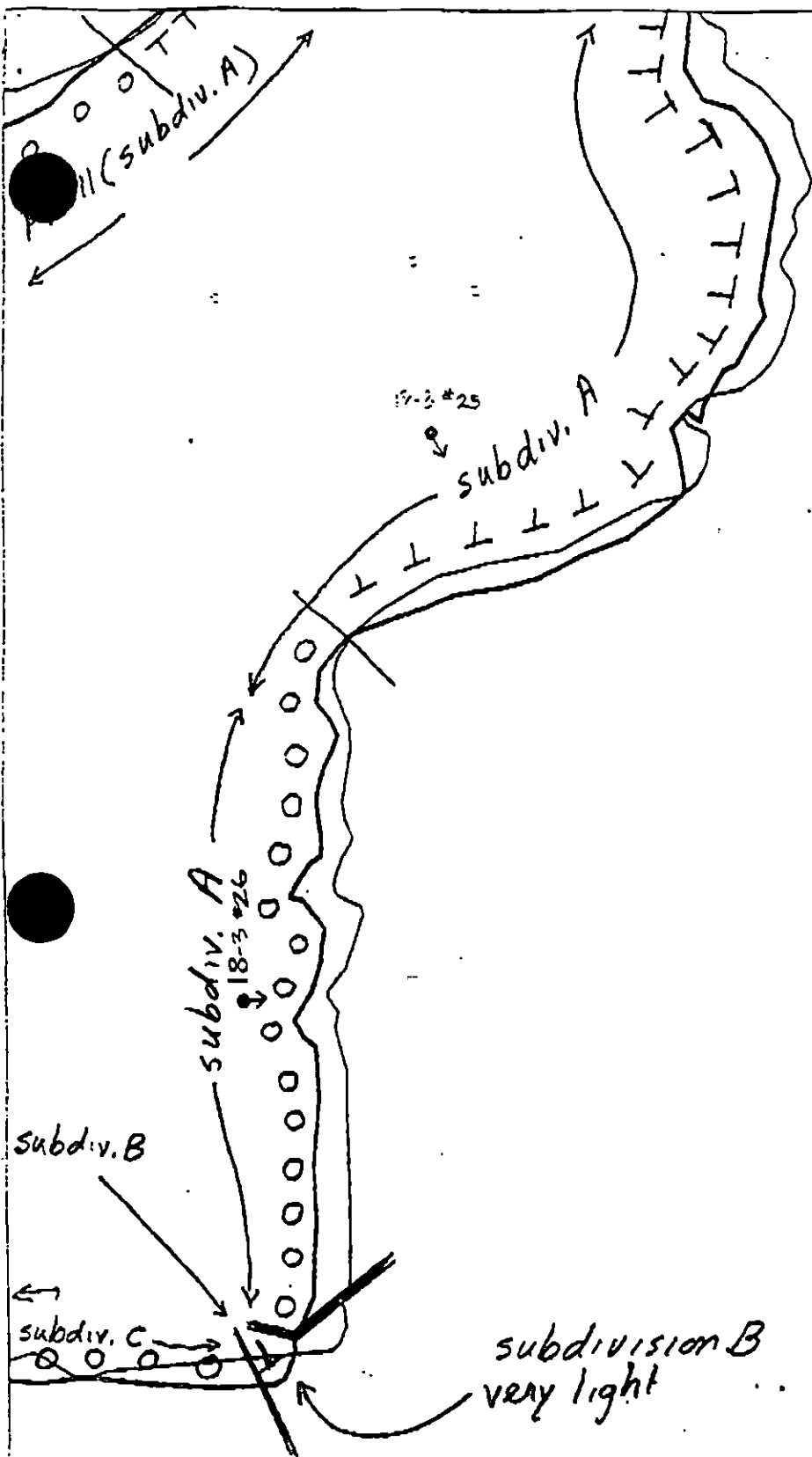


Map Key: KEN-900

Name: Mann

Date: 4 April 90

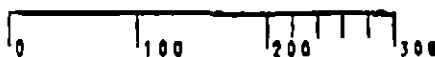
note released.



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

PY-111:6000

ADEC Segment Length: 4719m

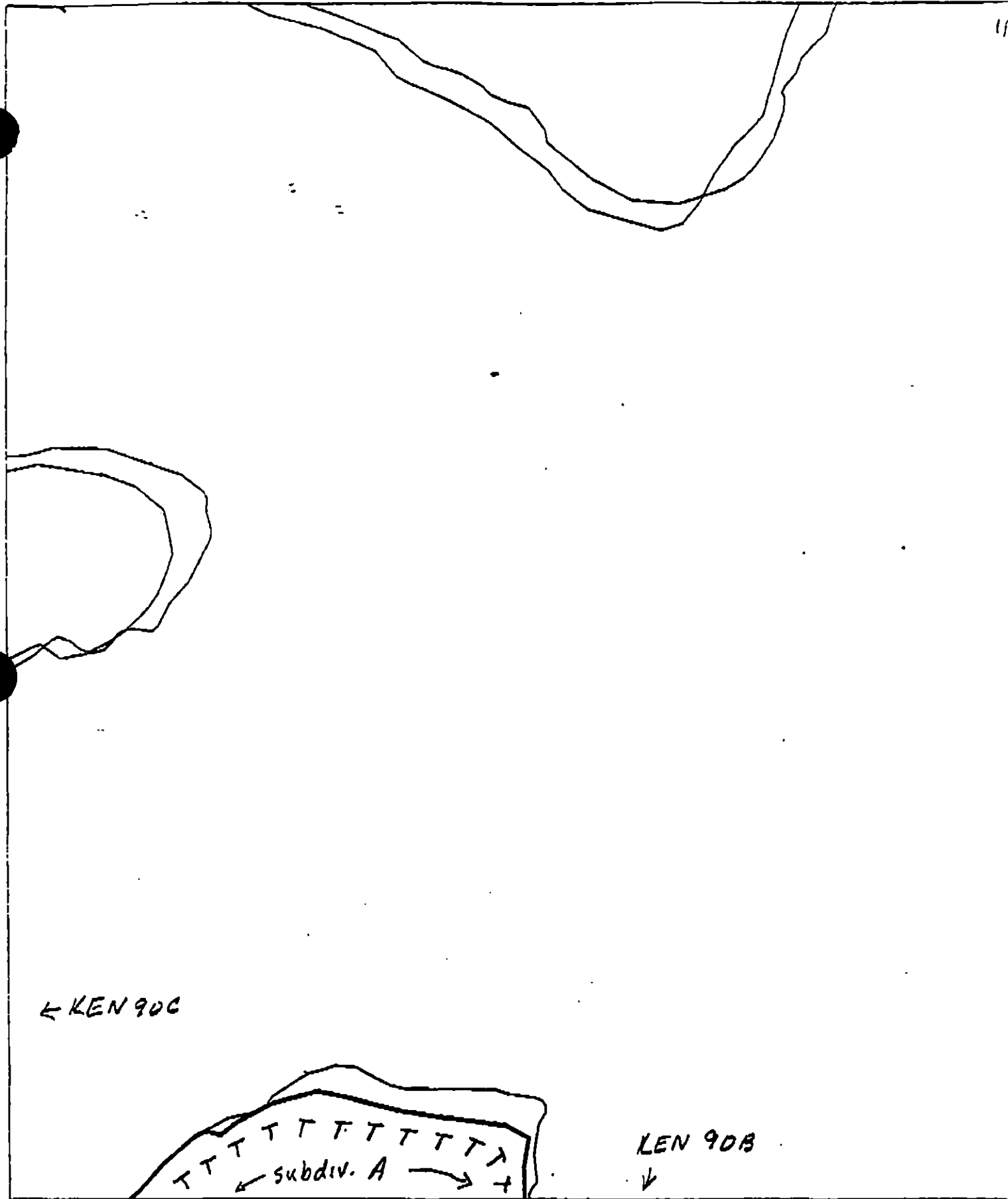


Map Key: KEN-90b

Name: MANN

Date: 4 April 90

11



← KEN 90C

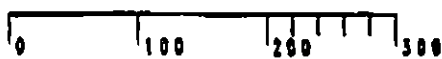
LEN 90B



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

PY-11

ADEC Segment Length: 4719m



Map Key: KEN-90d

Name: Mann

Date: 4 April 90

SHORELINE EVALUATION

SEGMENT ST/ PY-11 SUBDIVISION B (2 OF 3) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

National Wildlife Refuge (4QQ). No specific constraints identified.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/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. Adams

DATE: 4/17/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 62 m: No Oil 0 m
Subsurface Oil Observed: Yes X No Maximum Depth 16 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: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> Removal	<u> </u> Other (see comments)

COMMENTS: Recommend bioremediation of subsurface oil in area shown on attached sketch map. No time constraints identified.

PRIOR TO BIOREMEDIATION, REMOVE SURFACE BOOBS TO ACCESS SUBSURFACE OIL. MANUALLY REMOVE MOUSSE USING HAND TOOLS AND OIL SWABES.

TAG COMMENTS:

TAG APPROVAL DATE: 4/17/90.

ADEC Art Weir Detlefsen

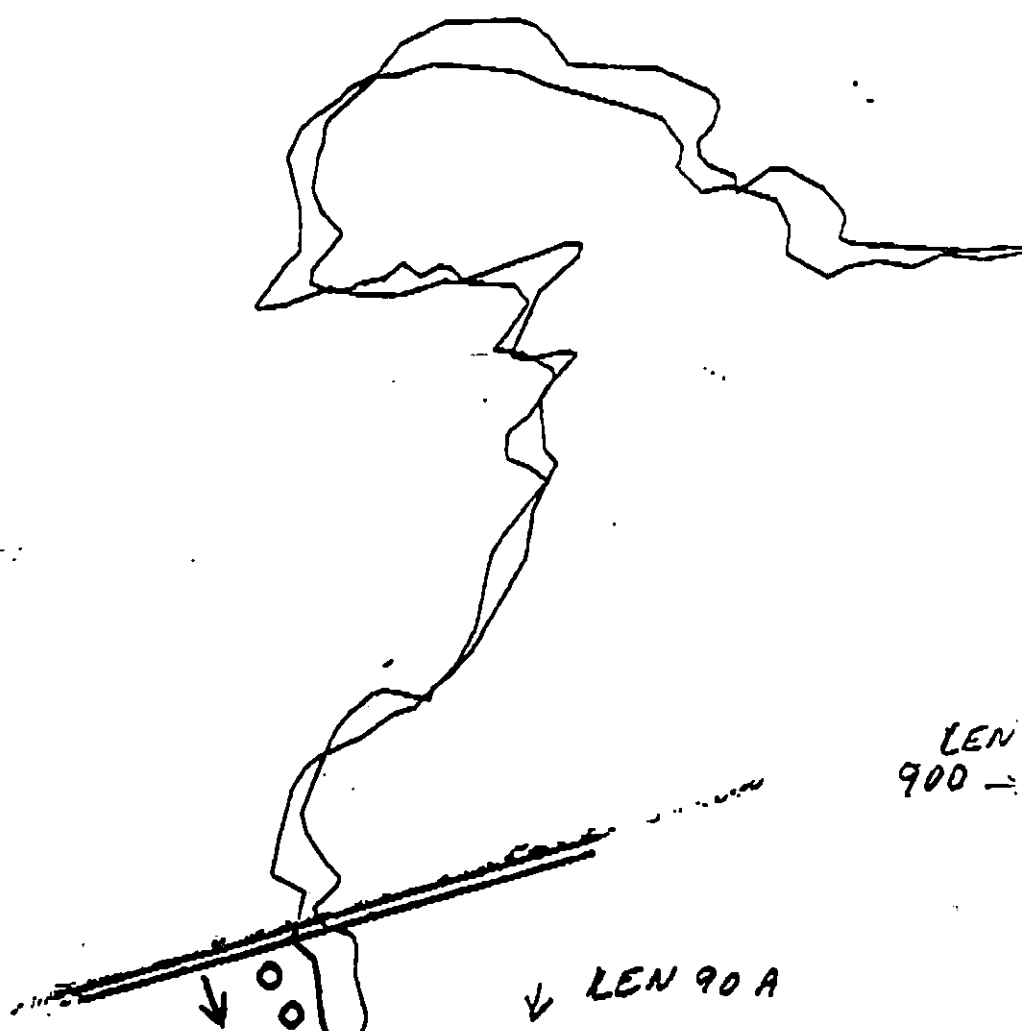
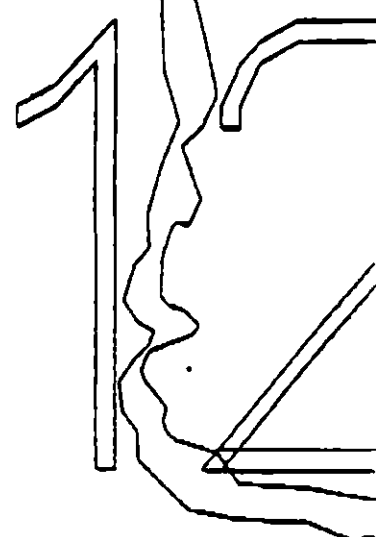
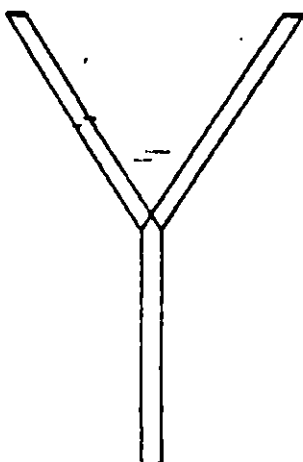
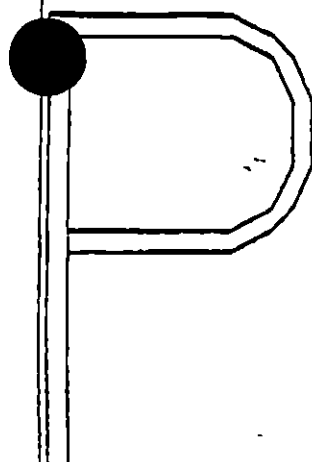
EXXON ANDY TEAZ Rea

NOAA Burt Weir Burkholder

USCG KENNETH KEANE James P. ...

FOSC: My L

DATE: 4-22-90



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

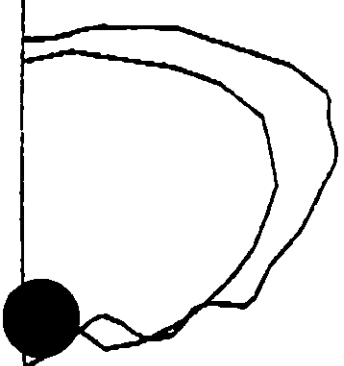
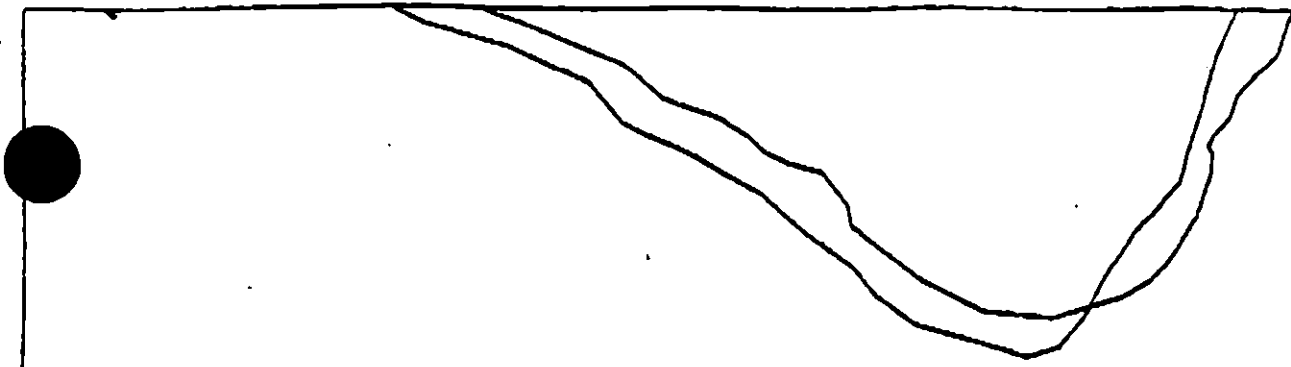
PY-11 subdiv A

ADEC Segment Length: 4719m



Map Key: KEN-90c
 Name: MONA
 Date: April 4, 90
 Data Entered:

11



← KEN 90C



LEN 90B



XXXX Wide

//// Medium

---- Narrow

PY-11

ADEC Segment Length: 4719m

Map Key: KEN-904

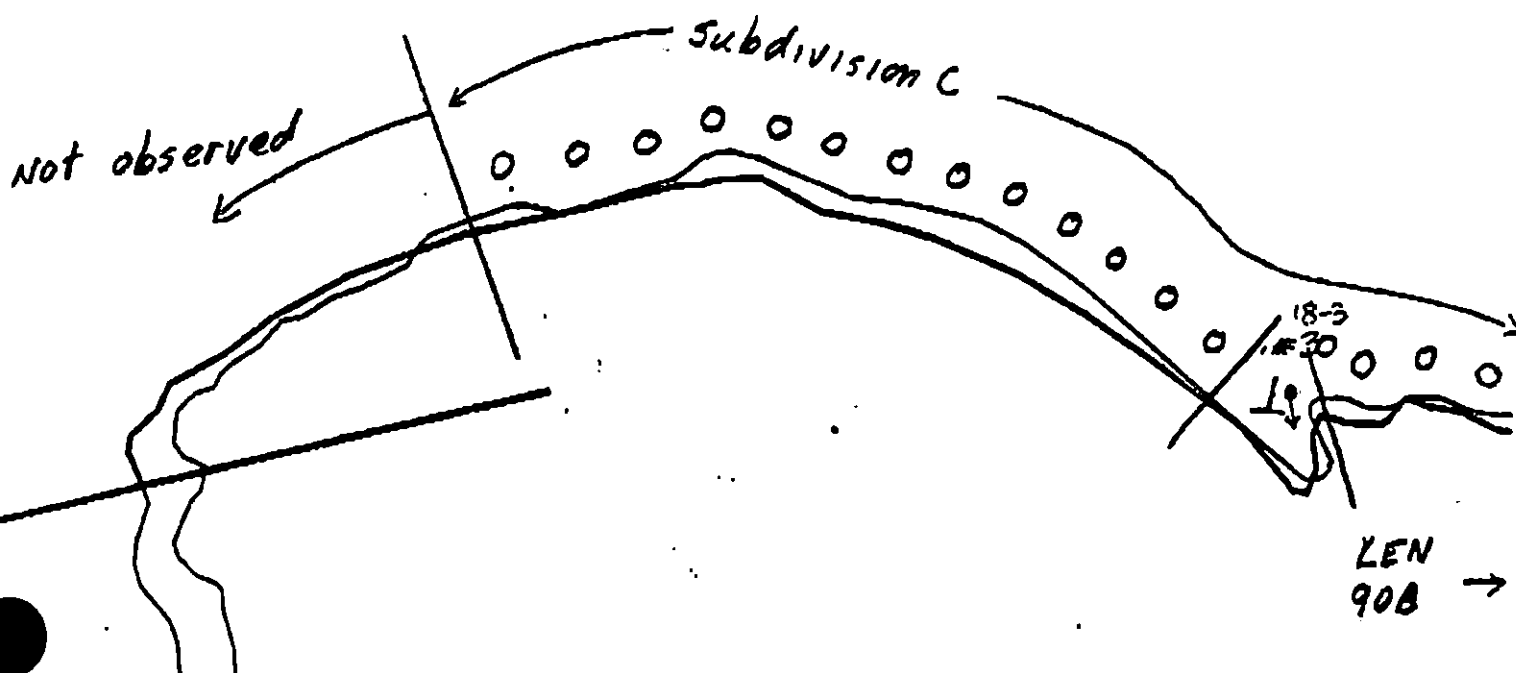
Name: Mann

↑
LEN 90C

10

PY-11 (Subdiv. A)

PY-11



XXXX Wide

//// Medium

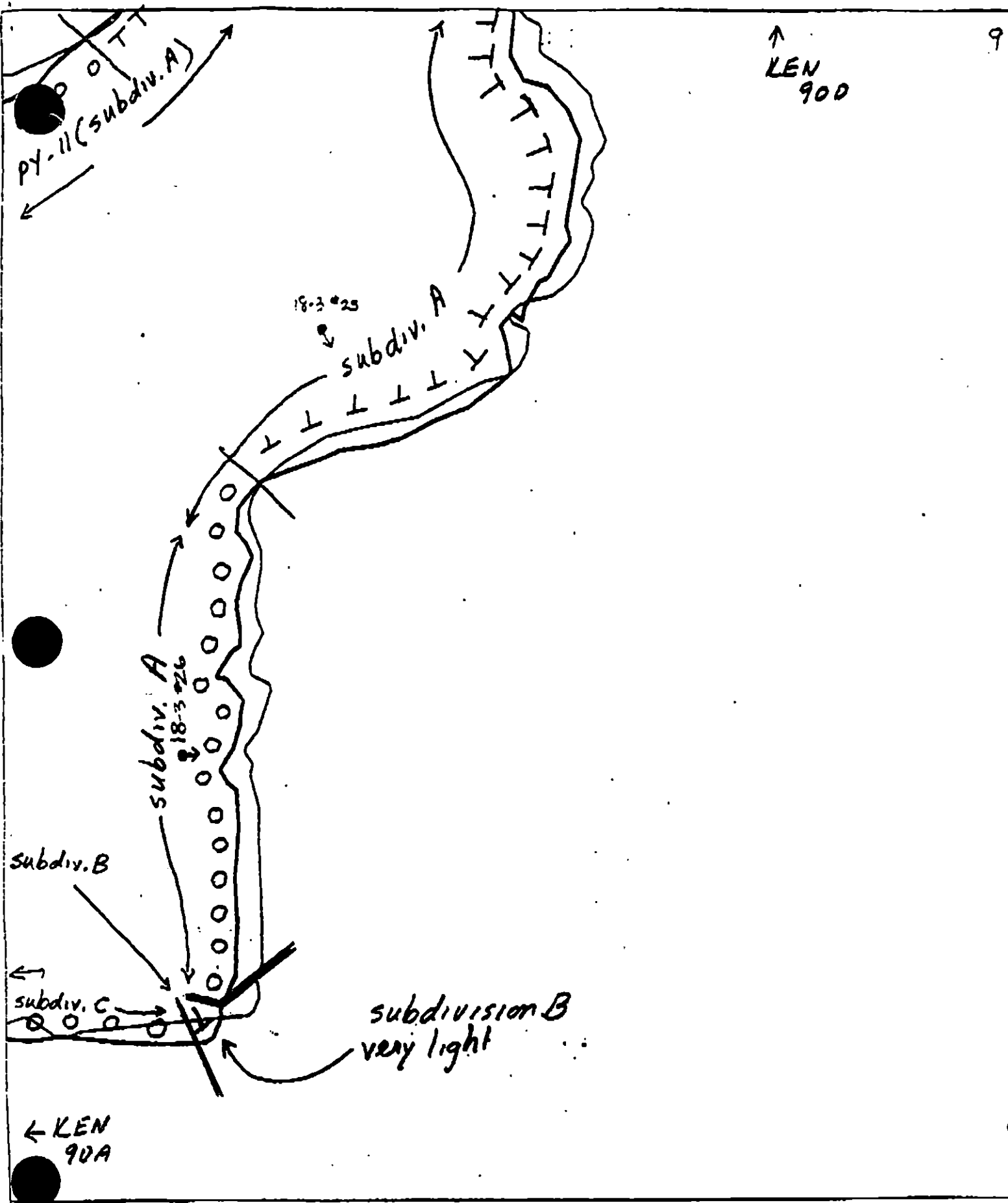
--- Narrow

PY-11

ADEC Segment Length: 4719m

Map Key: KEN-90a

Name: Mann



XXXX Wide
//// Medium
---- Narrow

PY-11

ADEC Segment Length: 4719m

Map Key: KEN-90b

Name: MANN

SHORELINE EVALUATION

SEGMENT ST/ PY-11 SUBDIVISION C (3 OF 3) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

National Wildlife Refuge (4QQ). No specific constraints identified.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: *Mark E. H. [Signature]* DATE: 4/12/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 174 m: No Oil 1355 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: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> Removal	<u> </u> Other (see comments)

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 4/17/90
ADEC *Art Weiler* *Dixie Weiler*
EXXON *ANDY [Signature]* *[Signature]*
NOAA *Burt Wersick* *Burt Wersick*
USCG *KENNETH KEANE* *[Signature]*

FOSC: *[Signature]* DATE: 4-22-90

11

← KEN 90C



LEN 90B



XXXX Wide

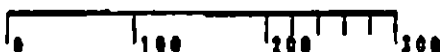
//// Medium

---- Narrow

TTTT Very Light

PY-11.

ADEC Segment Length: 4719m



Map Key: KEN-90d

Name: Mann

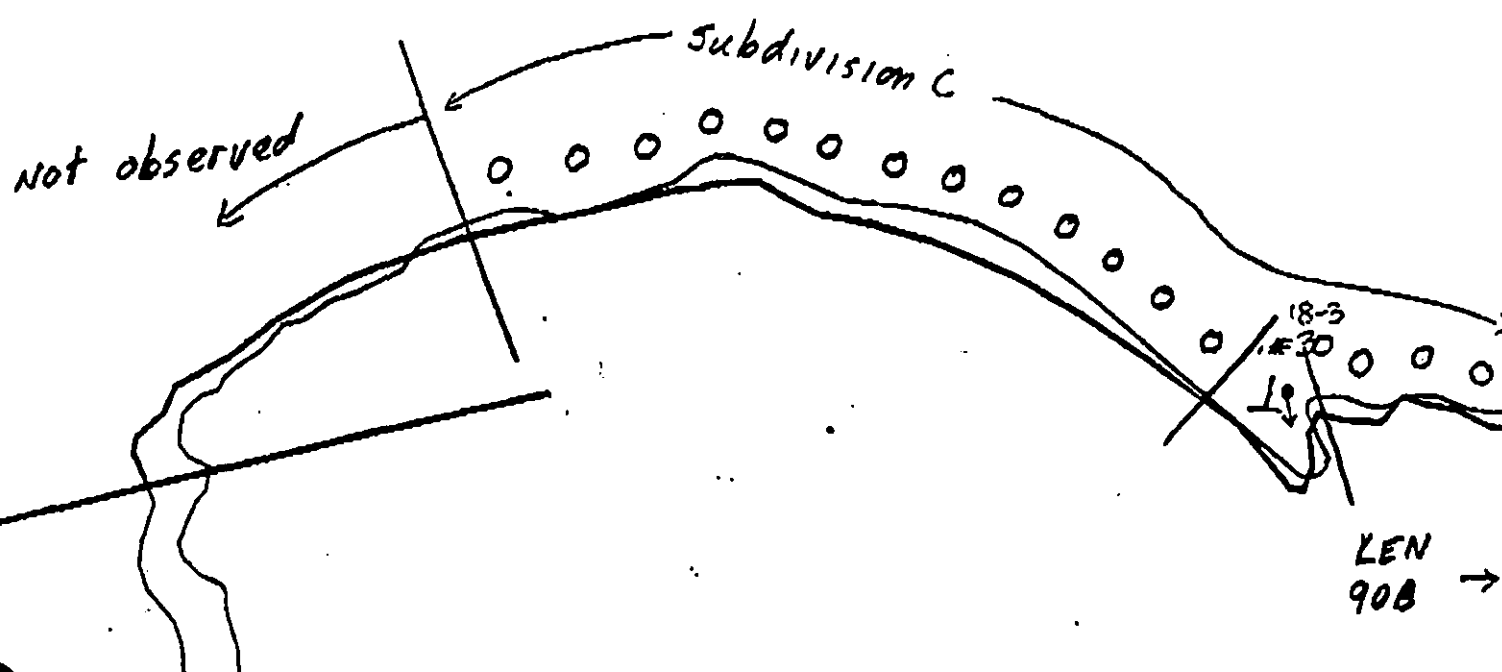
Date: 4 April 90

↑
KEN 90C

10

PY-11 (Subdiv. A)

P Y - 11



XXX Wide

/// Medium

--- Narrow

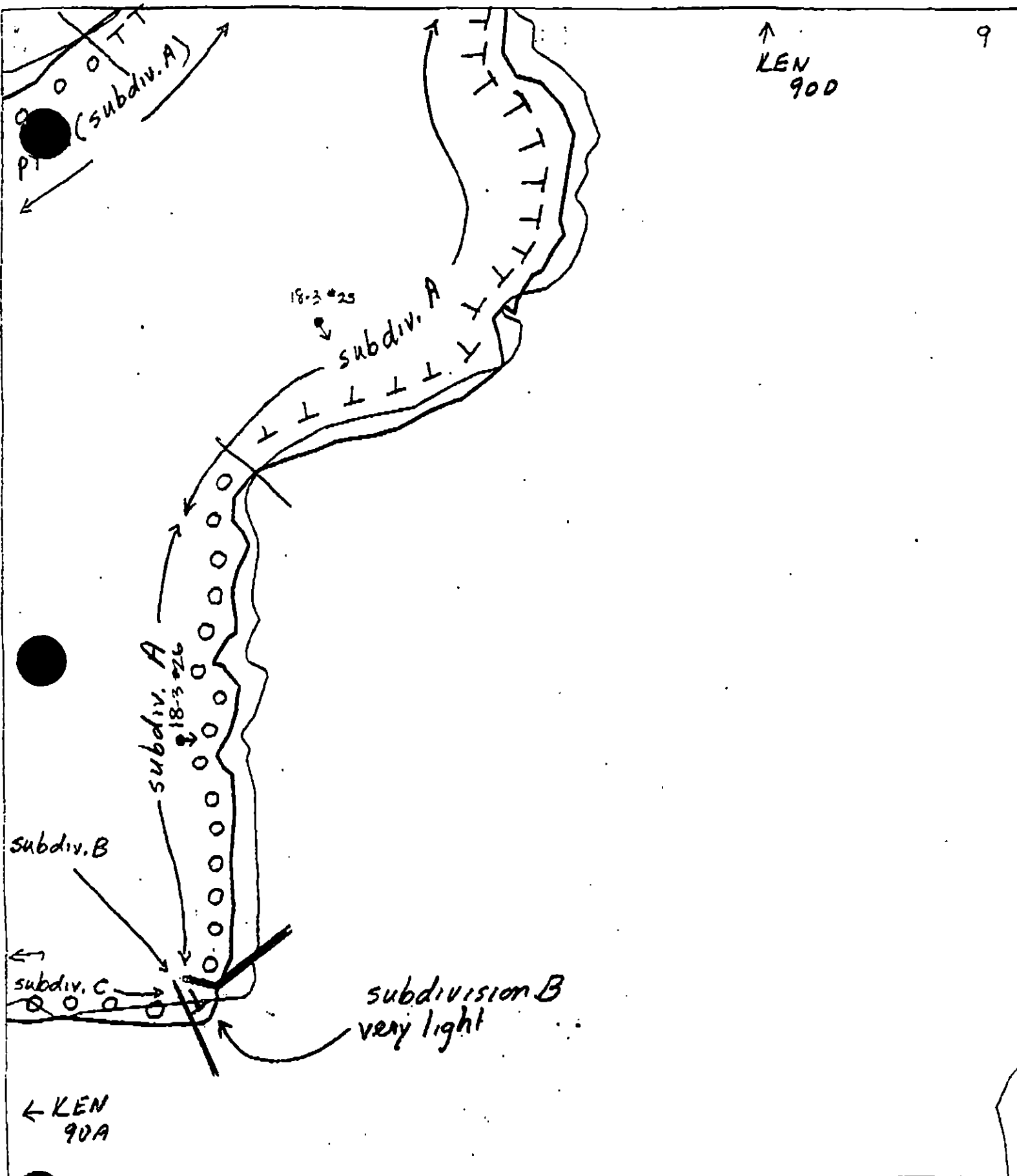
TTTT Very Light

PY-11

ADEC Segment Length: 4719m

Map Key: KEN-90a

Name: MannDate: 4 April 90



XXX Wide
 /// Medium
 --- Narrow
 TTTT Very Light

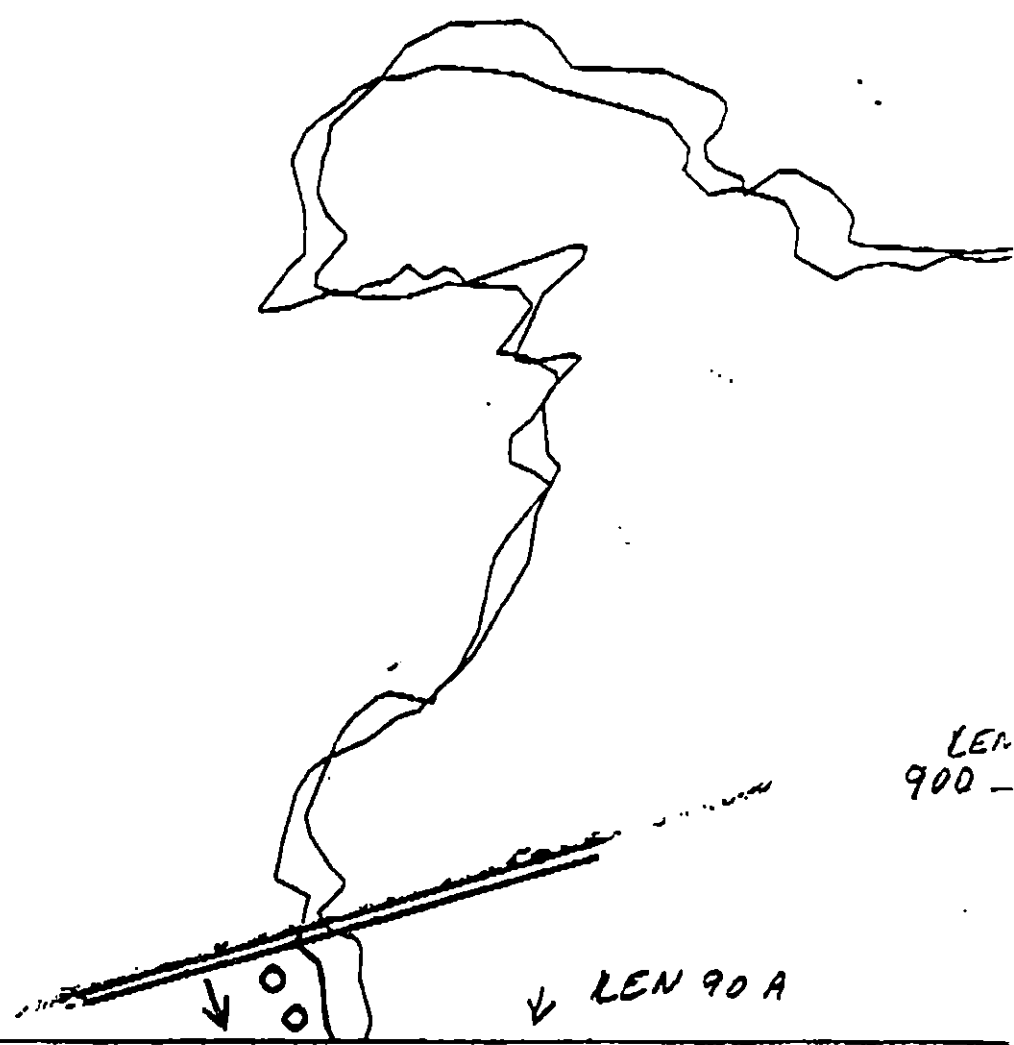
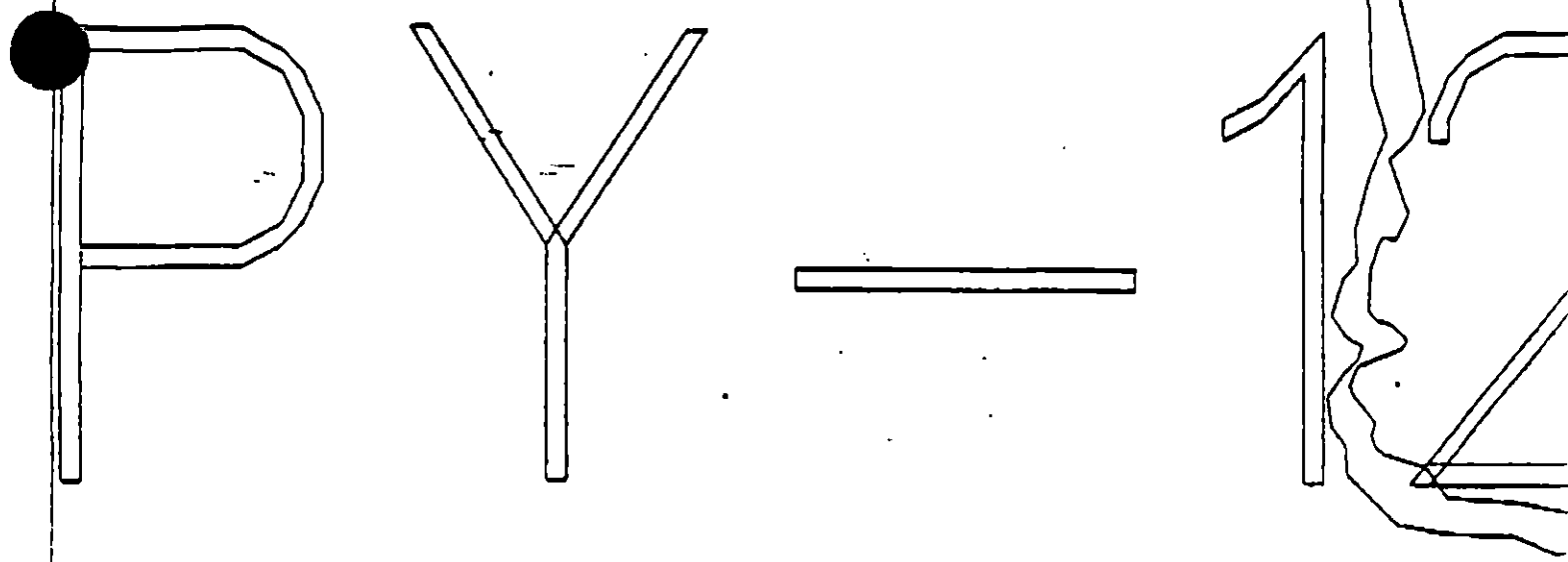
PY-11

ADEC Segment Length: 4719m

Map Key: KEN-90b

Name: MANN

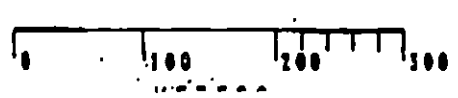
Date: 4 April 90



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

PY-11 subdiv A

ADEC Segment Length: 4719m



Map Key: KEN-90c

Name: MONA

Date: April 4, 90

Data Entered:

WORK PLAN ADDENDUM

Segment PY-011

Subdivision B

Dated 5/16/90

MODIFICATION

1. REASON FOR MODIFICATION

- Admirals' requirement.
- Landowner recommendation.

2. ADJUSTMENT TO WORK PLAN

- Customblen may be used in the ITZ area only.
- A USFWS representative must be onsite for treatment.

SHPO APPROVAL NEEDED YES
NO X

SHPO SIGNATURE _____

TAG APPROVAL DATE 5/18/90.
ADEC Art Weiner D. H. Weiner
EXXON Andi Ten
NOAA Gary Petrac Gary Petrac
SCG G.A. Reiter G.A. Reiter

FOSC DATE 5-18-90

WORK PLAN ADDENDUM

Segment PY-012

Subdivision B

Dated 5/16/90

MODIFICATION

1. REASON FOR MODIFICATION

- FOSC requirement.
- Landowner recommendation.

2. ADJUSTMENT TO WORK PLAN

- Custumblen may be used in the ITZ as indicated on the sketch following manual removal of mousse and patties.
- A USFWS representative must be on site for treatment.

-SHPO APPROVAL NEEDED YES

NO X

SHPO SIGNATURE

TAG APPROVAL DATE

ADEC

EXXON

NOAA

USCG

TAG APPROVAL DATE 5/18/90
 ADEC AET Weimer Dott Weimer
 EXXON Amoy TGH Amoy
 NOAA Gary Petrone Amoy Petrone
 NSCG G.H. ZETTEL G.H. Zetzel

FOSC

DATE _____

5-18-90

1991 MAYSAP EVALUATION

SEGMENT: PY 011 SUB: A REGION: KEN SURVEY DATE: 5/14/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

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 _____

TEAM NO. 4SEGMENT 2, 10, 11SUBDIVISION ADATE 5/14/91

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara S. Crosby☒ NTRSplatters of ms/ct/cv observed - <1% -

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles☒ NTRConcurs with ADEC

LANDMANAGER

NAME

JOHN P. HARDISTEROF USFWS

SIGNATURE

John P. Hardister 5/15/91☒ NTRconcur with ADEC and EXXON

USCG/NOAA

NAME

CWO2 J. McNamee

SIGNATURE

J. McNamee☒ NTRconcur w/ above

NOAA /

DONALD A. MACDONALDDONALD A. MACDONALDDonald A. Macdonald

DATE MAY 14 / 1991

ENERGY LEVEL: ☒ H ☒ M ☐ L

WEATHER: ☐ SUN ☒ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

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

EST. OIL CATEGORY LENGTH: W 1 m M 1 m N 1 m VL 500 m NO 1 m US 2627 m

DISTRIBUTION: C = 91-100%; B = 61-90%; P = 11-50%; S = 1-10%; T = <1%

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE PHOTO ROLL # MAYSAP-_____ - _____ FRAMES

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

See map.

reviewed 5/13/18
re revised 5/18

+

+ walked

300' ac

PY-11

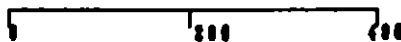
C

B



PY011 A

METERS



AK State Plane Zone 4
applicable

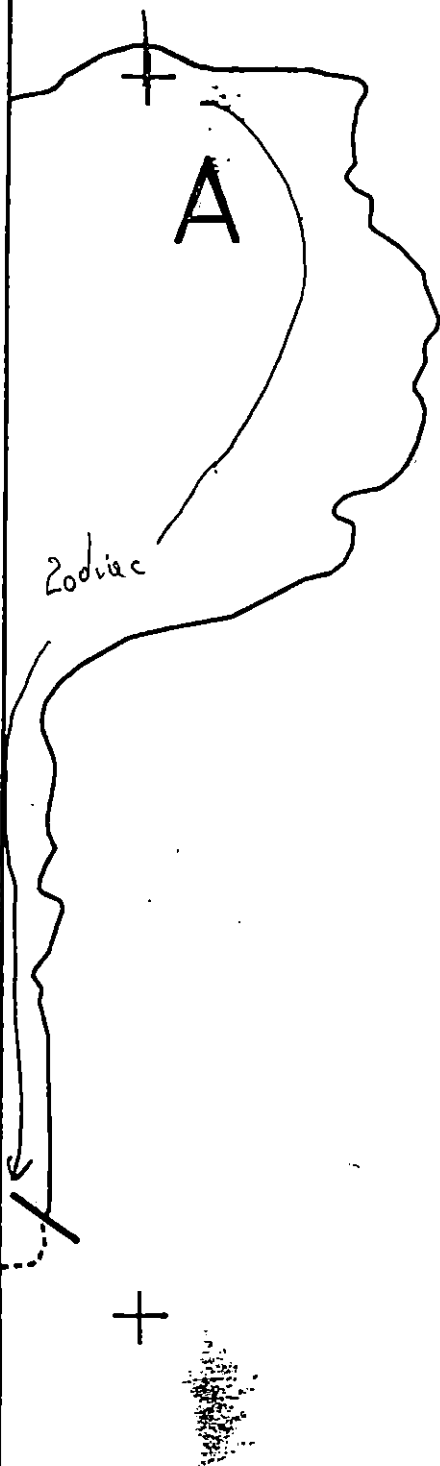
Subdivision Field Map

Map Key: KENPY011Aa

Name: JM Seng

Date: 7/14/02

reviewed 5/18/01 KIR
re reviewed 5/18



PY011 A

METERS

0 200 400

AK State Plane Zone 4
applicable

Subdivision Field Map

Map Key: KENPY011A

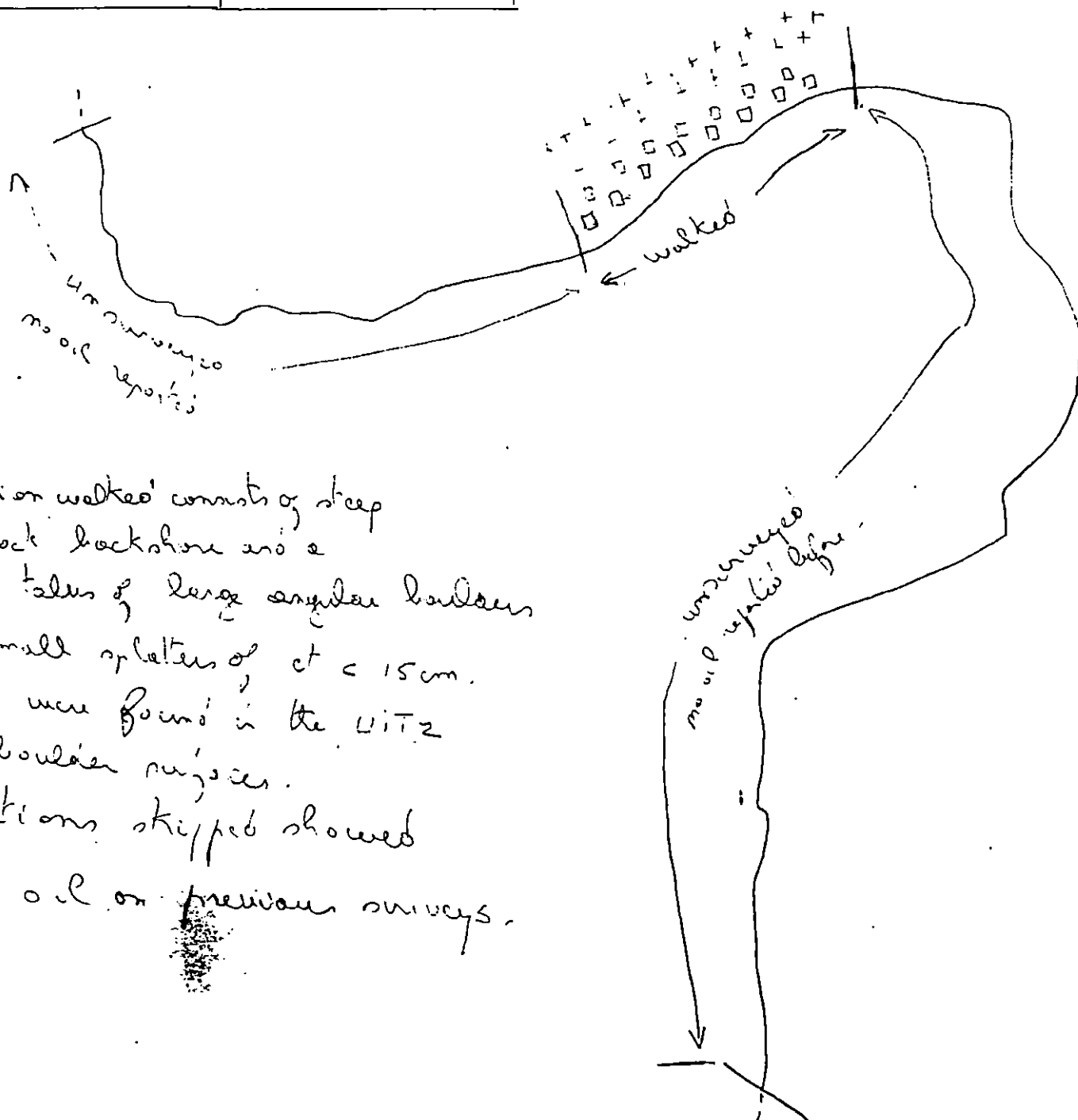
Name: J M Lopez

Date: May 14/9

reviewed 5/18/91

25 removed 5/18

Og. Sketch Map PJ. 011-A 17 Samples MAY 14 / 91 1015h - 1058h	Legend [A] Talus of Angular Boulders [X] Steep vegetated backshore
---	--



- (A) Section walked consists of steep bedrock backshore and a steep talus of large angular boulders. 3 small splatters of oil $< 15\text{ cm}$ dia were found in the LITZ on boulder surfaces. Sections skipped showed no oil on previous surveys.

HAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 14, 1991 1010 - 1101
SEGMENT #	PY011	TIDAL HEIGHT (Range)	-0.2 => +2.5
SUBDIVISION	20	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	NE 5-15 kt., rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Very little oil was found on this moderately exposed boulder and cobble beach. The intertidal biota appear to be healthy and diverse, with no evidence of recent oil-related impacts. The oil splatters found were located in the upper intertidal zone where little other biota normally exist. In this site there were scattered limpets and barnacles, black lichen, and a few individuals of Fucus (rockweed). Zonation of intertidal fauna and flora was generally as follows:

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal
Limpets			- - -+++ + + +-- - - - -			
Barnacles (Balanus)			- ---++++*****+*+---+--- -			
Rockweed (Fucus)			- -- -++++*****+-- - -			
Mussels (Mytilus)				-----+*****+----- - -		
Littorines and others			-- -- -++*-+*+*+*+--- - - - -			
Red Algae			-- -- - -+ +---++++*****+*****			
Green Algae			- - - + -+*+* * * * *++ *			
Brown Algae (not Fucus)					-+-----*****	

Oil Spatters - - -

Legend: - Sparse to rare
+ Moderate
* Abundant

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	1	3	
Waterfowl	2	3	
Gulls/Kittiwakes	2	10	
Shorebirds			
Corvids			
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)			
Sea Lions	3		
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

Rev'd 5/2/91 JMB

PY011-A Biology Report, continued

The subdivision has several species that are typical of moderate and high exposure sites. Bull kelp is scattered along small headlands and outcrops. The subtidal zones are dominated heavily by large brown algae.

Common Species on PY011-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., *Enteromorpha* sp., *Prasiola meridionalis*, *Ulva* sp., *Urospora* sp.
3. Brown Algae - Phaeophyta
Alaria marginata, *Agarum fimbriatum*, *Ectocarpus* spp., *Fucus distichus*, *Hildenbrandia* sp., *Laminaria saccharina*, *Nereocystis leutkeana*, *Ralfsia* sp., *Syctosiphon lomentaria*
4. Red Algae - Rhodophyta
Bossiella sp., *Calliarthron* sp., *Corallina* sp., *Cryptosiphonia woodii*?, *Endocladia muricata*, *Halosaccion glandiforme*, *Lithothamnion* sp., *Membranoptera dimorpha*, *Microcladia* sp., *Odonthalia floccosa*, *Palmaria palmata*, *Petrocelis* sp., *Plocamium* sp., *Porphyra* sp., *Ptilota filicina*, *Rhodomela larix*, *Rhodymenia* sp., *Rhodoglossum affine*
5. Higher Plants - *Leymus mollis* (beach rye grass)

II. Marine Animals

1. Sponges - Porifera - *Halichondria* sp., *Halichondria panicea*,
2. Anemones
Anthopleura artemesia, *Epiactis ritteri*, *Metridium senile*, *Urticina crassicornis*, *Stomphia* sp.
3. Hydroids - Sertularidae - *Sertularella*?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - *Emplectonema gracile*
8. Polychaete Worms
Nereidae - *Nereis* spp.
Serpulidae - *Serpula* sp., *Eudistylia polymorpha*
Spirorbidae - *Spirorbis* sp.
10. Crustaceans
 - a. Amphipods - *Orchestia* sp.?
 - b. Barnacles - *Balanus glandula*, *Semibalanus cariosus*
 - c. Crabs
Hemigrapsus oregonensis, *Paguridae* (hermit crabs), *Oregonia gracilis*
 - d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnoriomorsphaeroma oregonensis*
11. Mollusca
 - a. Scaphopods - *Mopalia* sp., *M. mucosa*, *Tonicella lineata*,
 - b. Snails - Gastropods
Amphissa columbiana, *Littorina sitkana*, *L. keenae*, *Nucella lima*
 - c. Limpets
Lottia digitalis, *L. persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
 - d. Nudibranches - *Lamellidoris fusca*
 - e. Mussels and Clams - *Mytilus edulis*, *Pododesmus cepio*

12. Echinoderms

a. Brittle Stars - *Ophiolus* sp., ?

b. Sea stars

Leptasterias hexactis, *Orthasterias keohleri*, *Pisaster ochraceus*,
Pycnopoda helianthoides, *Solaster* sp.

c. Sea Cucumbers - Holothurians - *Eupentacta* sp.

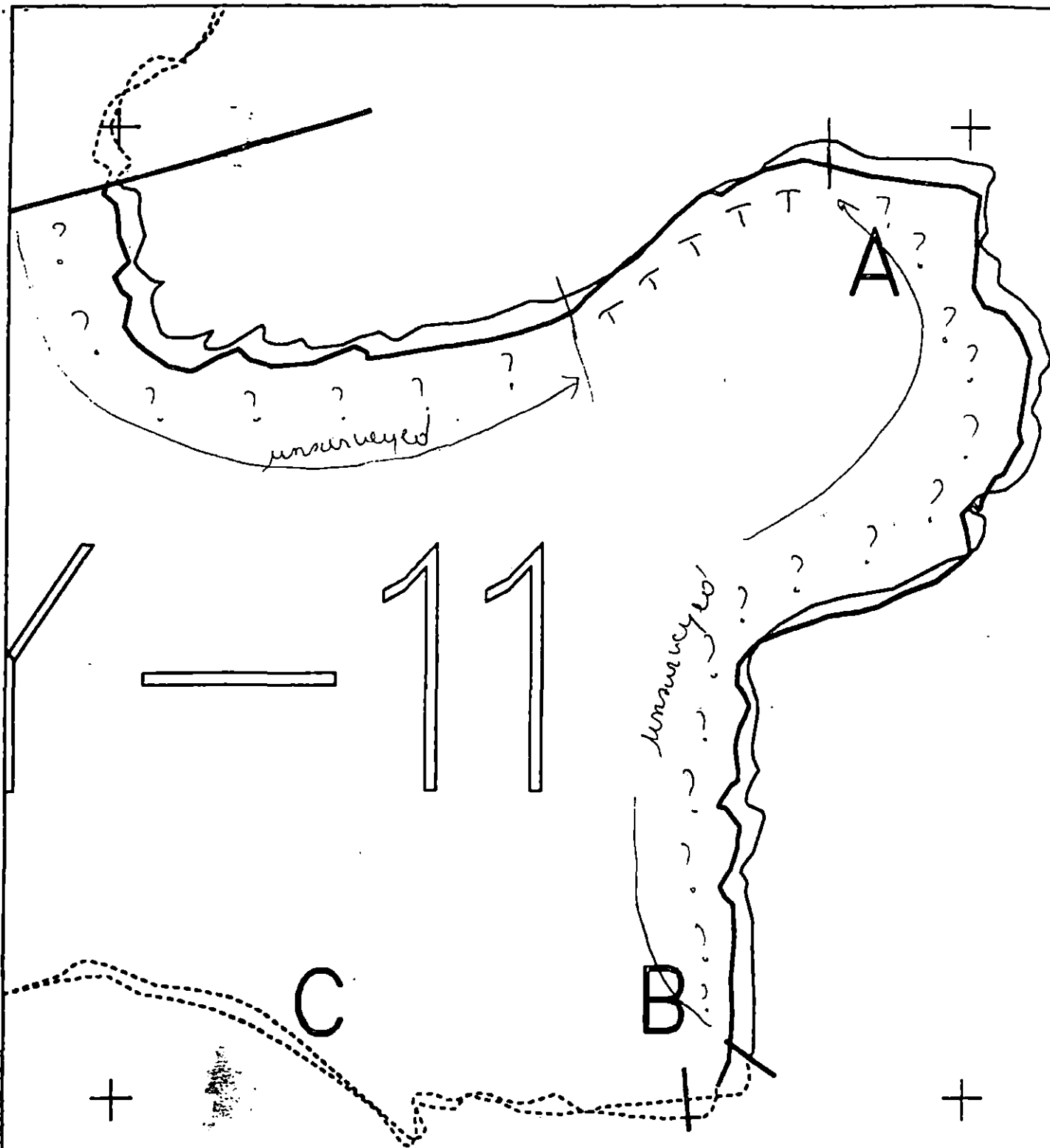
d. Urchins - *Strongylocentrotus droebachiensis*

13. Bryozoans - *Membranipora* sp., *Microporina borealis*, *Phidolopora pacifica*,
Schizoporella sp.

14. Fishes

Cottidae

Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*

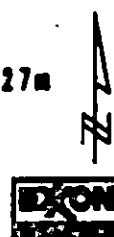


XXXX
////

TTTT
0000

Wide
Medium
Narrow
Very Light
No Oil

PY011 A
ADEC Subsegment Length: 3127m
METERS
AK State Plane Zone 4
up01100



Subdivision Field Map
Map Key: KEHPY011Aa
Name: for Seppine
Date: May 14/8
Date Entered:

reviewed 5/18/88
88 revised 5/18

1991 MAYSAP EVALUATION

SEGMENT: PY 011 SUB: A REGION: KEN SURVEY DATE: 5/14/91ENVIRONMENTAL SENSITIVITIES:Work Window(s) OPENEcological/Constraints (see page two for details) NONEARCHAEOLOGICAL CONSTRAINTS:If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.SHPO Signature: Richard Dean Dele 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: 5/29/91

ADEC

FOSC

EXXON

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

USCG

NOAA

ADEC

NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☒ NTR

Splatters of ms/et/cv observed - <1% -

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles

☒ NTR

Concurs with ADEC

LANDMANAGER

NAME JOHN P. HARDISTER OF USFWS SIGNATURE John P. Hardister 5/15/91

☒ NTR

concur with ADEC and EXXON

USCG/NOAA

NAME CWO2 J. Mc NATION SIGNATURE J. Mc N

☒ NTR

concur w/ above

NOAA / DONALD A. MACDONALD Donald A. Macdonald

PAGE _____ OF _____

SEGMENT PY. 011

SUBDIVISION 1

DATE May 14 / 191

ENERGY LEVEL: ☒ H ☒ M ☐ LWEATHER: ☐ SUN ☒ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

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

EST. OIL CATEGORY LENGTH: W 1 m M 1 m N 1 m VL 500 m NO 1 m US 26.27 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-

FRAMES

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

OG COMMENTS:

See map.

reviewed 5/18/91 KG
 25 revised 5/18

+

+

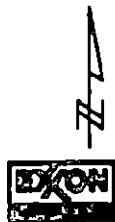
walked

Juliac

PY-11

C

B



PY011 A

METERS

0 200 400

AK State Plane Zone 4
NAD 83

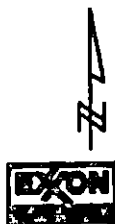
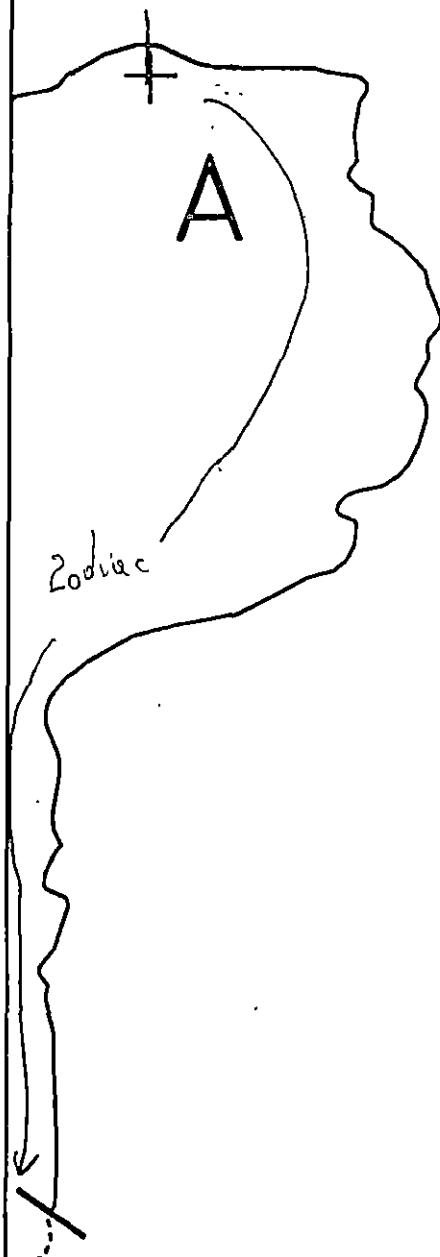
Subdivision Field Map

Map Key: KENPY011Aa

Name: JM Seay

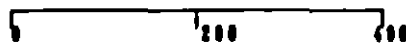
Date: 7/14/91

reviewed 5/18/91 KCR
EC reviewed 5/18



PY011 A

METERS



AK State Plane Zone 4
NAD 83

Subdivision Field Map

Map Key: KENPY011Ab

Name: JM Leary

Date: May 14/91

reviewed 5/18/91 CG

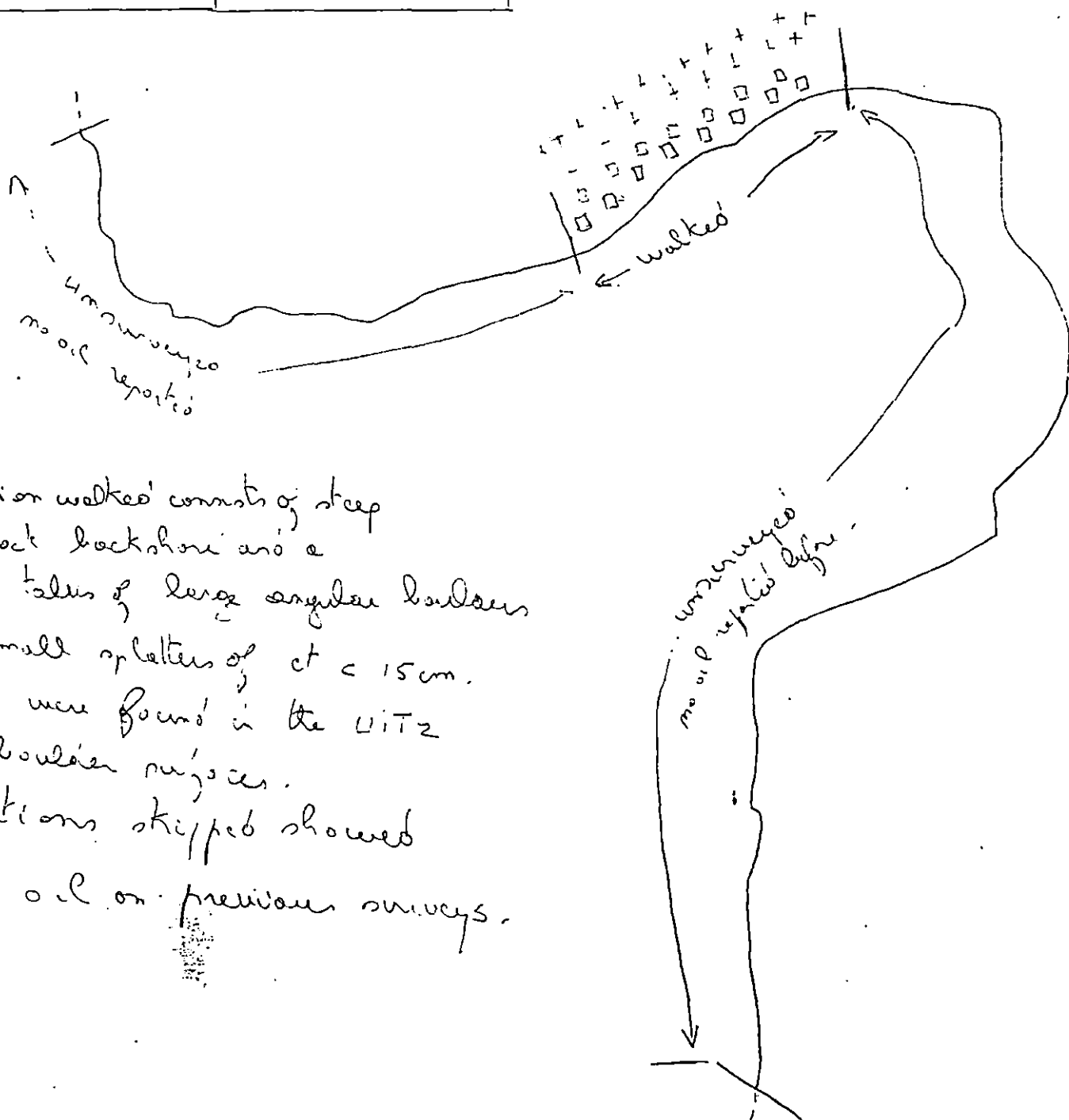
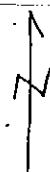
ES reviewed 5/18

Obj. Sketch Map

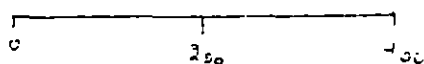
Legend

PY-011-A
 J M Samples
 MAY 14 / 91
 1015h - 1058h

-  Talus of Angular Boulders
-  Steep Vegetation Backshore



- (A) Section walked consists of steep bedrock backshore and a steep talus of large angular boulders. 3 small splatters of oil $< 15\text{cm}$ dia were found in the UITZ on boulder surfaces. Sections skipped showed no oil on previous surveys.



MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 4 DATE/TIME May 14, 1991 1010 - 1101
SEGMENT # PY011 TIDAL HEIGHT (Range) -0.2 => +2.5
SUBDIVISION A BIOLOGIST JIM BARRY
SEA STATE Calm WIND SPEED/DIRECTION NE 5-15 kt., rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Very little oil was found on this moderately exposed boulder and cobble beach. The intertidal biota appear to be healthy and diverse, with no evidence of recent oil-related impacts. The oil splatters found were located in the upper intertidal zone where little other biota normally exist. In this site there were scattered limpets and barnacles, black lichen, and a few individuals of Fucus (rockweed). Zonation of intertidal fauna and flora was generally as follows:

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal
Limpets			- - -+++ + + +--			
Barnacles (Balanus)			- - -+++++*****+*+--			
Rockweed (Fucus)			- - -+++++*****+--			
Mussels (Mytilus)				- - -+++++*****+--		
Littorines and others			- - - -++*-+*+*+*+--			
Red Algae			- - - - + + -+++++*****+*****			
Green Algae			- - - - + -++* * * * *++ *			
Brown Algae (not Fucus)					- - -+++++*****+*****	
Oil Spatters			- - -			

Legend: - Sparse to rare
+ Moderate
* Abundant

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	1	3	
Waterfowl	2	3	
Gulls/Kittiwakes	2	10	
Shorebirds			
Corvids			
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)			
Sea Lions	3		
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

0 11 1.5 2.5

PY011-A Biology Report, continued

The subdivision has several species that are typical of moderate and high exposure sites. Bull kelp is scattered along small headlands and outcrops. The subtidal zones are dominated heavily by large brown algae.

Common Species on PY011-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., *Enteromorpha* sp., *Prasiola meridionalis*, *Ulva* sp., *Urospora* sp.
3. Brown Algae - Phaeophyta
Alaria marginata, *Agarum fimbriatum*, *Ectocarpus* spp., *Fucus distichus*, *Hildenbrandia* sp., *Laminaria saccharina*, *Nereocystis leutkeana*, *Ralfsia* sp., *Syctosiphon lomentaria*
4. Red Algae - Rhodophyta
Bossiella sp., *Calliarthron* sp., *Corallina* sp., *Cryptosiphonia woodii*?, *Endocladia muricata*, *Halosaccion glandiforme*, *Lithothamnion* sp., *Membranoptera dimorpha*, *Microcladia* sp., *Odonthalia floccosa*, *Palmaria palmata*, *Petrocelis* sp., *Plocamium* sp., *Porphyra* sp., *Ptilota filicina*, *Rhodomela larix*, *Rhodymenia* sp., *Rhodoglossum affine*
5. Higher Plants - *Leymus mollis* (beach rye grass)

II. Marine Animals

1. Sponges - Porifera - *Halichondria* sp., *Halichondria panicea*,
2. Anemones
Anthopleura artemesia, *Epiactis ritteri*, *Metridium senile*, *Urticina crassicornis*, *Stomphia* sp.
3. Hydroids - Sertularidae - *Sertularella*?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - *Emplectonema gracile*
8. Polychaete Worms
Nereidae - *Nereis* spp.
Serpulidae - *Serpula* sp., *Eudistylia polymorpha*
Spirorbidae - *Spirorbis* sp.
10. Crustaceans
 - a. Amphipods - *Orchestia* sp.?
 - b. Barnacles - *Balanus glandula*, *Semibalanus cariosus*
 - c. Crabs
Hemigrapsus oregonensis, Paguridae (hermit crabs), *Oregonia gracilis*
 - d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimorsphaeroma oregonensis*
11. Mollusca
 - a. Chitons - *Mopalia* sp., *M. mucosa*, *Tonicella lineata*,
 - b. Snails - Gastropods
Amphissa columbiana, *Littorina sitkana*, *L. keenae*, *Nucella lima*
 - c. Limpets
Lottia digitalis, *L. persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
 - d. Nudibranches - *Lamellidoris fusca*
 - e. Mussels and Clams - *Mytilus edulis*, *Pododesmus cepio*

PY011-A Biology Report, continued

12. Echinoderms

a. Brittle Stars - Ophiolus sp., ?

b. Sea stars

Leptasterias hexactis, Orthasterias keohleri, Pisaster ochraceus,
Pycnopoda helianthoides, Solaster sp.

c. Sea Cucumbers - Holothurians - Eupentacta sp.

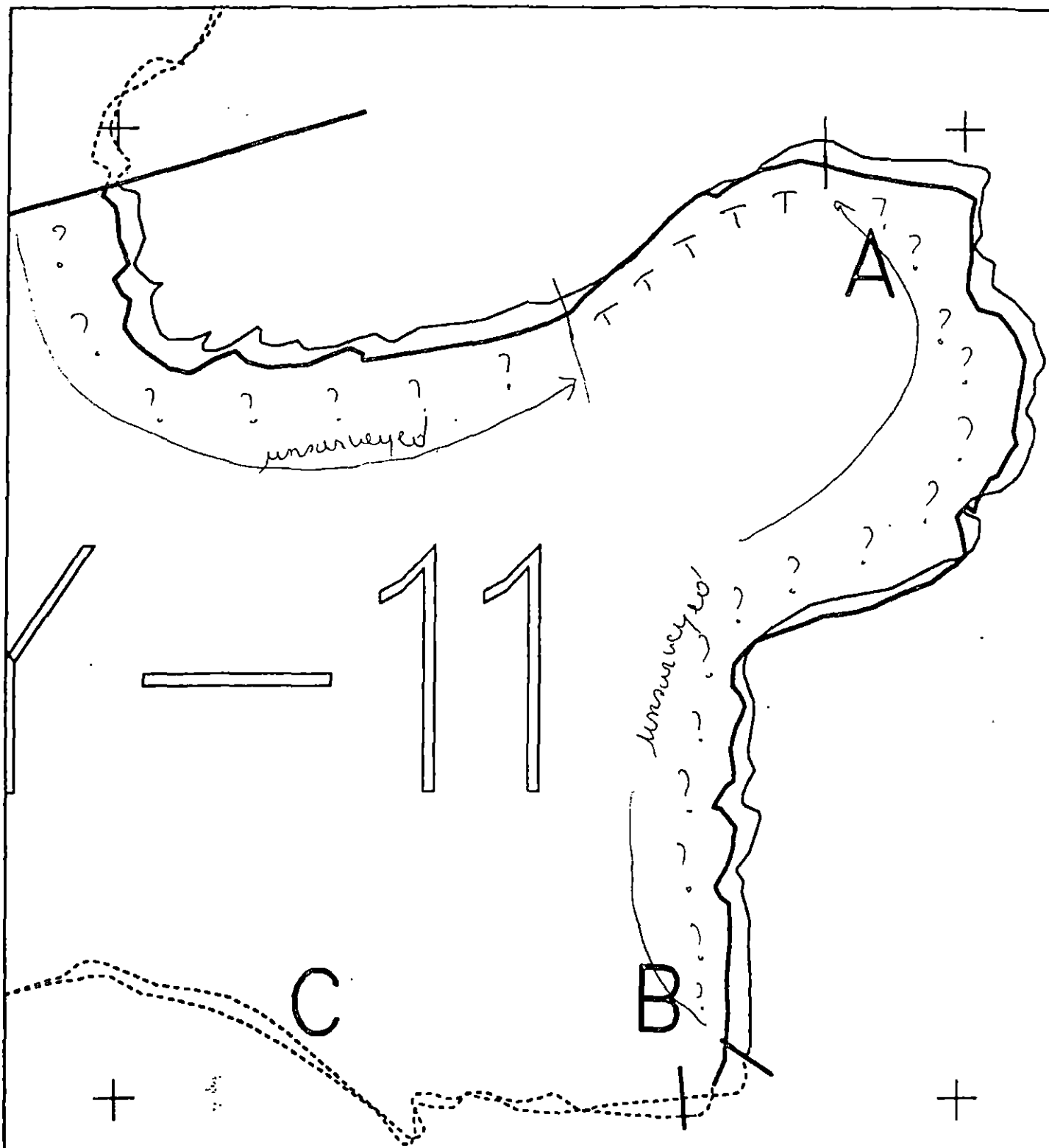
d. Urchins - Strongylocentrotus droebachiensis

13. Bryozoans - Membranipora sp., Microporina borealis, Phidolopora pacifica,
Schizoporella sp.

14. Fishes

Cottidae

Stichaeidae - Xiphister atropurpureus, X. mucosus



XXXX	Wide	PY011 A ADEC Subsegment Length: 3127m METERS 0 200 400 AK State Plane Zone 4 spg011aa	Subdivision Field Map Map Key: KENPY011Aa Name: <i>Jr Sempala</i> Date: <i>May 14/91</i> Date Entered:
////	Medium		
----	Narrow		
TTTT	Very Light		
0000	No Oil		

reviewed 5/18/91 KG
EG reviewed 5/18

SEGMENT: PY 011 SUB: C REGION: KEN SURVEY DATE: 5/14/91

Work Window(s) RESTRICTED 5/15 - 6/30; OPEN 6/30 - 8/15;
RESTRICTED 8/15 - 9/15

Ecological/Constraints (see page two for details) Pinniped
haulout

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

SHPO Signature: Rebel Dan Deen Date: 5/24/97

FOSC

2

INITIAL: _____

TAG:

FOSC: _____

TAG APPROVAL DATE: MAY 24 1991 FOSC APPROVAL DATE: 5/29/91

ADEC

FOSC

EXXON *Real*

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

USCG *[Signature]*

NOAA 

MAYSAP FIELD SHORELINE COMMENT SHEET

P4011C 1/9

TEAM NO. 41 SEGMENT P4.011 SUBDIVISION C DATE MAY 14 1991

ADEC

NAME CLARA S. Crosby SIGNATURE Clara S. Crosby☒ NTR ms was recovered from this site. no other oiling obs.

EXXON

NAME George S. Stiles SIGNATURE George S. Stiles 5/15/91☒ NTR all recoverable oil remaining was picked up.

LANDMANAGER

NAME JOHN P. HARDISTER OF USFWS SIGNATURE John P. Hardister 5/16/91☒ NTR ciled material was removed.

USCG/NOAA

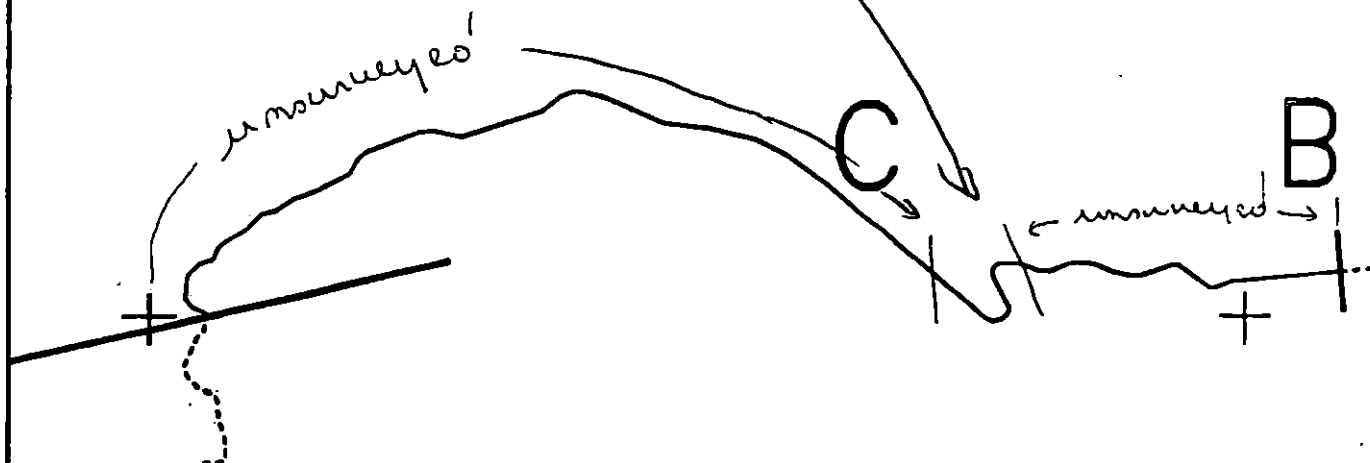
NAME CWO2 J. Mc NATHON SIGNATURE J. Mc Nathon☒ NTR Consent w/ aboveNOAA DONALD A. MacDONALD Donald A. MacDonal

PAGE 2 OF 9

revised 5.18.91 qu

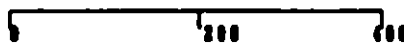
PY-11

Location Map



PY011 C

METERS



AK State Plane Zone 4
applied

Subdivision Field Map

Map Key: KENPY011Ca

Name: J. J. Sempich

Date: May 14/91

reviewed 5.18.91 *gg*
Reviewed 5/18

og Sketch Map.

P4.011.C

dm Samples

May 14/91

1158 - 1210

Legend

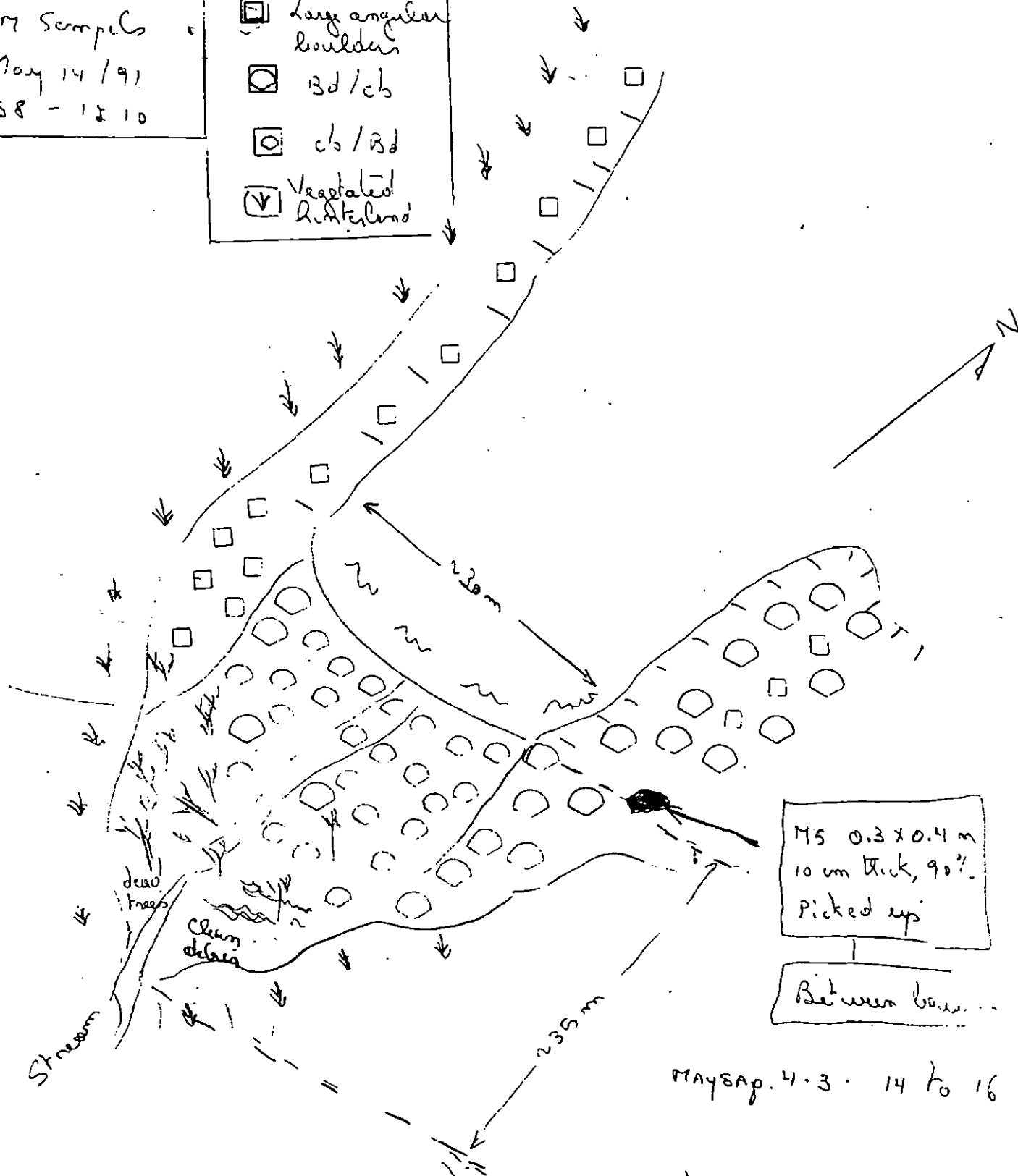
Steep bedrock

Large angular boulders

Bd/cb

cb/Bd

Vegetated hillside



MS 0.3 x 0.4 m
10 cm thick, 90%
Picked up

Between boulders...

May 8 ap. 4.3. 14 to 16

Meters

0 15

reviewed 5.18.91 gy
ES reviewed 5/18

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 14, 1991 1150 - 1210
SEGMENT #	PY011	TIDAL HEIGHT (Range)	4.5 => 6.1
SUBDIVISION	# C	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A1 This oiled site is located along the highest portion of the upper intertidal where the only biota are sparse black lichen (Verrucaria). Biota are richer and more abundant in the middle to low zone below the site, approximately 10 m distant, where the major species is rockweed (Fucus).

Manual cleanup was performed on this site during the survey. Additional treatment, if necessary, will not harm the biota at the site.

General Characteristics of PY011-C (surveyed cove)

This is a low exposure location with a small stream in the center of a cobble/boulder beach. Cobble in the stream are covered nearly completely by filamentous green algae (Urospora?). This green algae is also present in lower abundance along the lower intertidal zone. The general zonation pattern is illustrated below, with black lichen and bare rock in the highest zone, grading to filamentous green algae, rockweed and barnacles in the middle zone, and clean cobble with patches of dense red algae in the lowest zone. Littorine snails and limpets are quite abundant from the high edge of the middle zone to the low intertidal.

The rockweed population varies from moderate to dense coverage in the middle zone and is the most conspicuous feature of this site. Crustose brown algae (Hildenbrandia sp.) also cover substantial portions of the middle intertidal.

Recruitment or reproduction is evident for several groups of biota, including rockweed, barnacles, limpets, littorine snails, many species of red and green algae, and several species of invertebrates. Small mussels are present in crevices along the most seaward boulders, but few adult individuals were found at this protected location.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	2	5	
Waterfowl	3	6	
Gulls/Kittiwakes	2	8	
Shorebirds	1	5	
Corvids			
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

PY011-C Biology Report, continued

No evidence of oil-related impacts were observed at this site, which appears to be quite 'healthy'.

General Zonation Pattern of PY011-C (at surveyed cove)

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal
Oil Spatters		++ +-				
Black Lichen		++*- -				
Algal Drift and Debris		- - -				
Green Algae		dense in stream	** -	---	++- +-	
Littorines and others			-	++**++**++**++**++**++**++**++**++		
Barnacles (Balanus)			-	++**++**++**++**++**++**++**++**++		
Limpets			-	++**++**++**++**++**++**++**++**++		
Rockweed (Fucus)			-	++**++**++**++**++**++**++**++**++		
Mussels (Mytilus)			-	++**++**++**++**++**++**++**++**++		
Whelks (Nucella sp)			-	++**++**++**++**++**++**++**++**++		
Branched Red Algae			-	++**++**++**++**++**++**++**++**++		
Crustose Brown Algae (Hildenbrandia)			-	++**++**++**++**++**++**++**++**++		
Thin Red Algae			-	++**++**++**++**++**++**++**++**++		
Upright Brown Algae (not Fucus)			-	++**++**++**++**++**++**++**++**++		

Legend: - Sparse to rare
+ Moderate
* Abundant

Species Common on PY011-B

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., Prasiola meridionalis, Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Ralfsia sp., Sycetosiphon lomentaria
4. Red Algae - Rhodophyta
Endocladia muricata, Lithothamnion sp., Membranoptera dimorpha, Microcladia sp., Odonthalia floccosa, Petrocelis sp., Plocamium sp., Porphyra sp., Ptilota filicina
5. Higher Plants - Leymus mollis (beach rye grass)

II. Marine Animals

1. Sponges - Porifera - Halichondria sp., Halichondria panicea,
2. Anemones - Anthopleura artemesia, Stomphia sp.
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaete Worms
Nereidae - Nereis spp.
Serpulidae - Serpula sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.

PY011-C Biology Report, continued

10. Crustaceans
 - a. Amphipods - *Orchestia* sp.?
 - b. Barnacles - *Balanus glandula*, *Semibalanus cariosus*
 - c. Crabs - *Hemigrapsus oregonensis*, Paguridae (hermit crabs), *Oregonia gracilis*
 - d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimorsphaeroma oregonensis*
11. Mollusca
 - b. Snails - Gastropods
Amphissa columbiana, *Littorina sitkana*, *L. keenae*, *Nucella lima*, *Searlesia dira*
 - c. Limpets - *Lottia digitalis*, *L. persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
 - d. Nudibranchs - *Lamellidoris fusca*
 - e. Mussels and Clams - *Mytilus edulis*
12. Echinoderms
 - b. Sea stars - *Leptasterias hexactis*, *Orthasterias keohleri*, *Pycnopoda helianthoides*
13. Bryozoans - *Membranipora* sp., *Phidolopora pacifica*, *Schizoporella* sp.
14. Fishes
 - Cottidae
 - Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*

III. Birds

- | | |
|--------------|--|
| Seabirds - | Marbled Murrelet (3), Common? Loon (2) |
| Waterfowl - | Harlequin Duck (3), Greater Scaup (1), ? Duck (2) |
| Gulls/Kit - | Glaucous-winged Gull (2), Black-legged Kittiwake (6) |
| Shorebirds - | Western Sandpiper (5) |

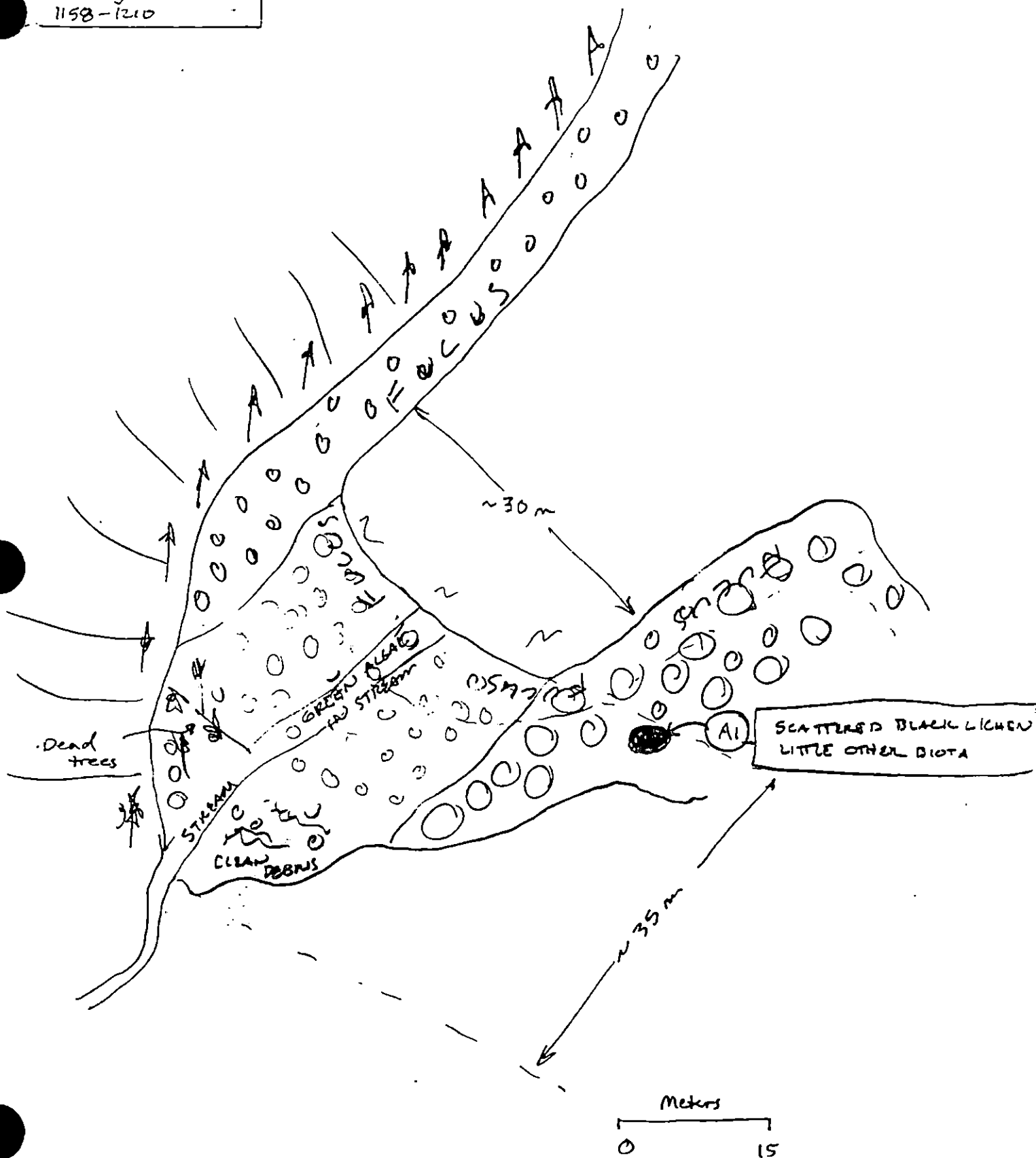
BIO SKETCH MAP

P4011-C

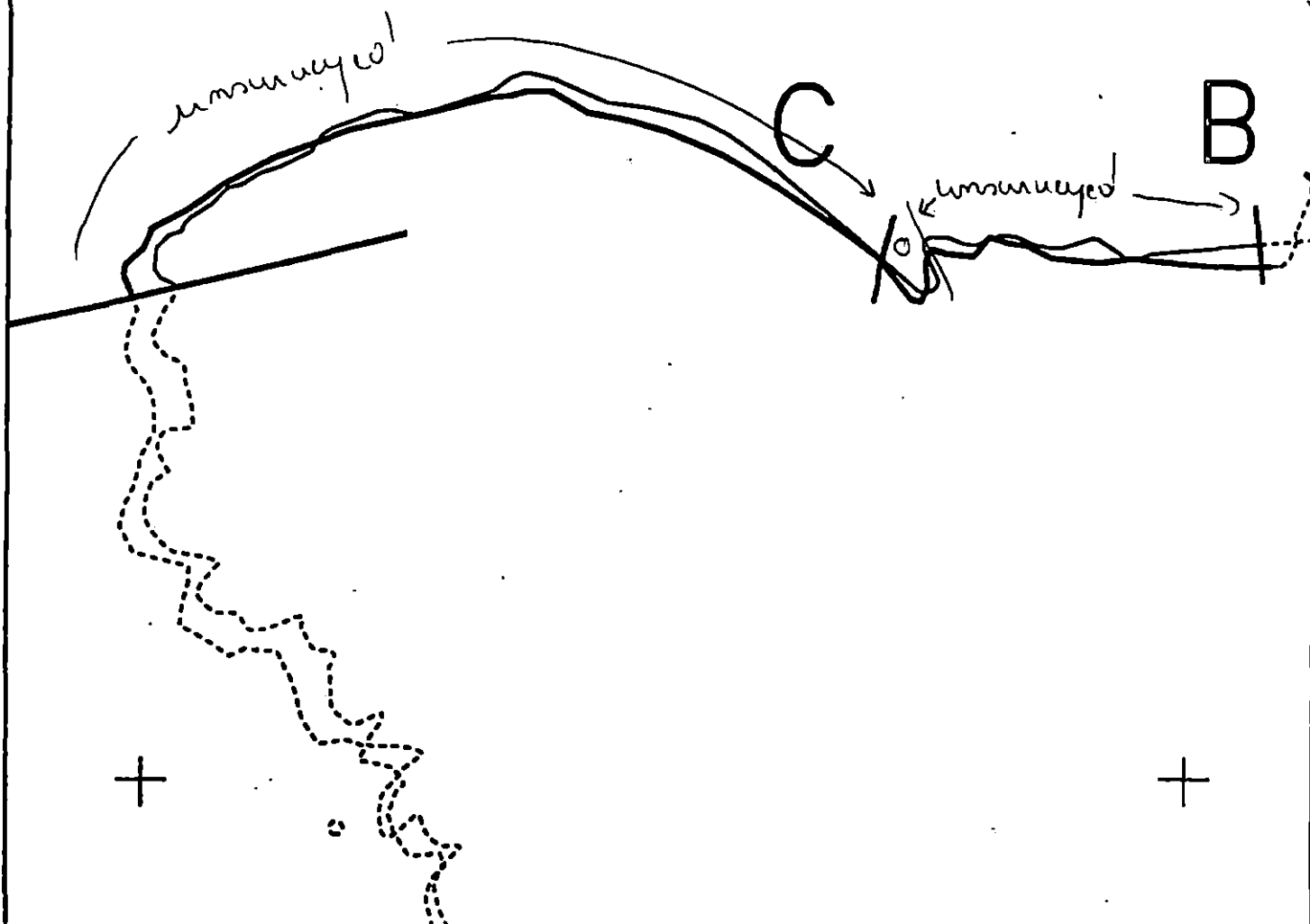
14 MAY 1991

J P BARRY

1158-1210



PY-11+



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

PY011 C
 ADEC Subsegment Length: 1530m
 METERS
 0 200 400
 AK State Plane Zone 4
 UTM



Subdivision Field Map
 Map Key: KENPY011Ca
 Name: for Sample
 Date: MAY 14/91
 Date Entered:

revised 5.18.91 94

1991 MAYBAP EVALUATION

SEGMENT: PY 011 SUB: C REGION: KEN SURVEY DATE: 5/14/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) RESTRICTED 5/15 - 6/30; OPEN 6/30 - 8/15;
RESTRICTED 8/15 - 9/15

Ecological/Constraints (see page two for details) Pinniped
haulout

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 _____

TEAM NO. 41 SEGMENT P4.011 SUBDIVISION C DATE MAY 14 /91

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara S. Crosby

☒ NTR

MS was recovered from this site. no other oiling obs.

EXXON

NAME

George S. Stiles

SIGNATURE

George S. Stiles 5/15/91

☒ NTR

all recoverable oil remaining was picked up.

LANDMANAGER

NAME

JOHN P. HENDERSON OF USFWS

SIGNATURE

John P. Henderson 5/16/91

☒ NTR

oiled material was removed.

USCG/NOAA

NAME

WOZ. J. Mc NATION

SIGNATURE

J. Mc N.

☒ NTR

Cover w/ above

NOAA/ DONALD A. MACDONALD

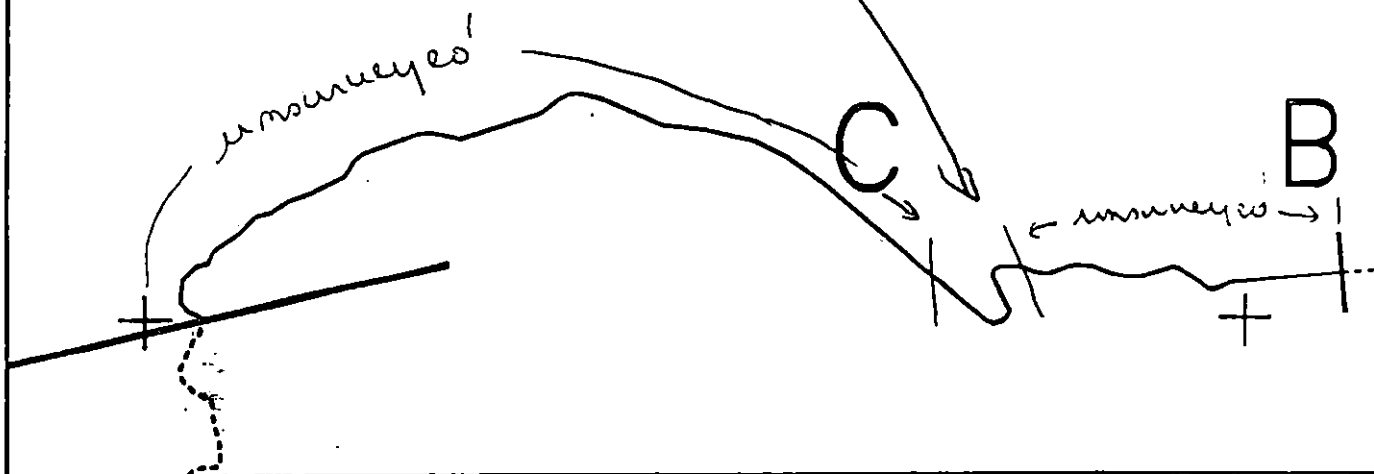
Donald A. MacDonald

PAGE 2 OF 9

revised 5.18.91 2y
 & reviewed 5/18

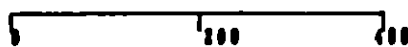
PY-11

Location Map



PY011 C

METERS



All State Plane Zone 4
applies

Subdivision Field Map

Map Key: KBNPY011Ca

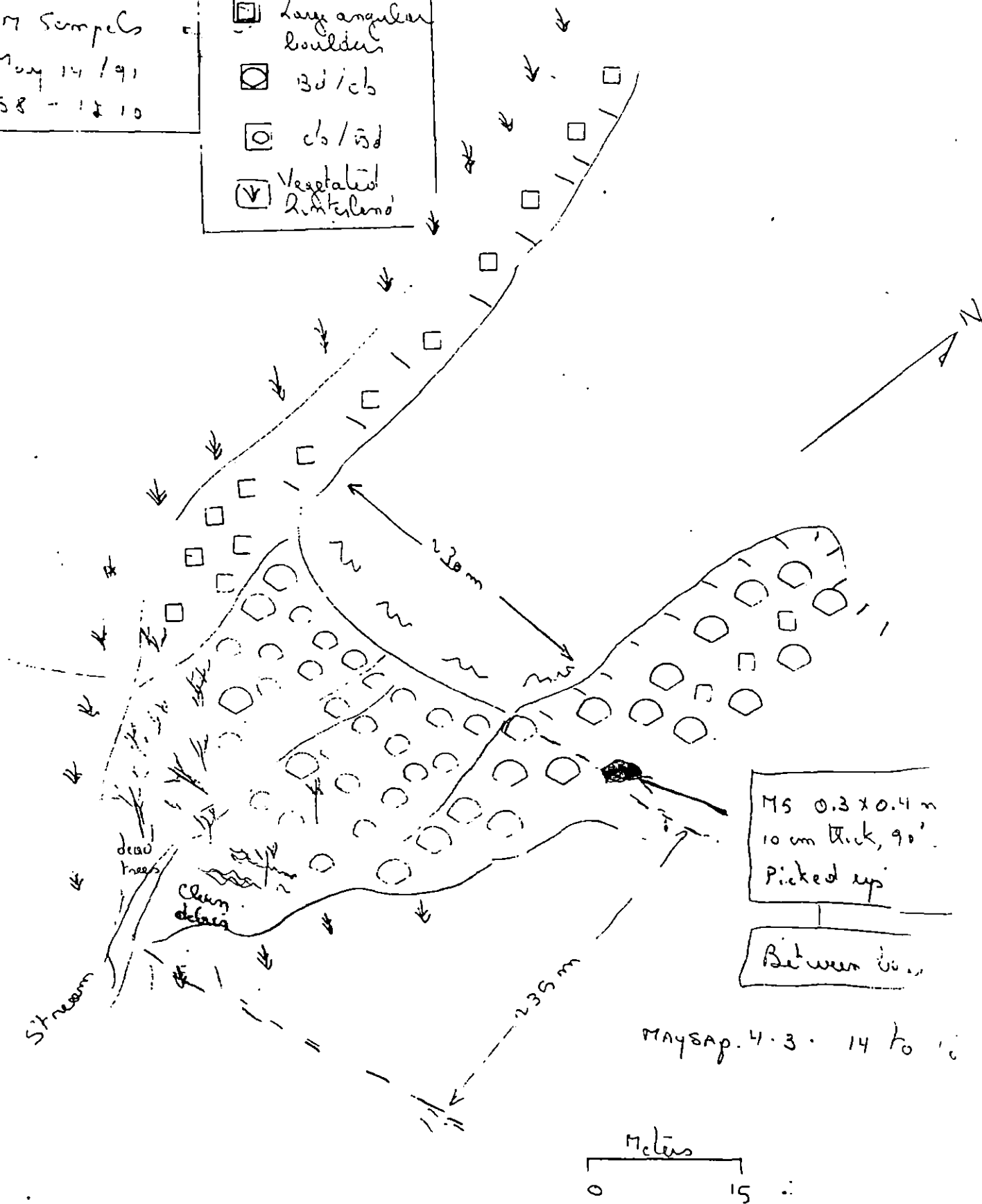
Name: J. Sempin

Date: May 10/15

reviewed 5.18.11 J
Reviewed 5/12

1158 - 1210

Vegetated!
Linterlino!



reviewed 5.18.91 fzf
ES reviewed 5/15

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 14, 1991 1150 - 1210
SEGMENT #	PY011	TIDAL HEIGHT (Range)	4.5 => 6.1
SUBDIVISION	A C	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A1 This oiled site is located along the highest portion of the upper intertidal where the only biota are sparse black lichen (Verrucaria). Biota are richer and more abundant in the middle to low zone below the site, approximately 10 m distant, where the major species is rockweed (Fucus).

Manual cleanup was performed on this site during the survey. Additional treatment, if necessary, will not harm the biota at the site.

General Characteristics of PY011-C (surveyed cove)

This is a low exposure location with a small stream in the center of a cobble/boulder beach. Cobble in the stream are covered nearly completely by filamentous green algae (Urospora?). This green algae is also present in lower abundance along the lower intertidal zone. The general zonation pattern is illustrated below, with black lichen and bare rock in the highest zone, grading to filamentous green algae, rockweed and barnacles in the middle zone, and clean cobble with patches of dense red algae in the lowest zone. Littorine snails and limpets are quite abundant from the high edge of the middle zone to the low intertidal.

The rockweed population varies from moderate to dense coverage in the middle zone and is the most conspicuous feature of this site. Crustose brown algae (Hildenbrandia sp.) also cover substantial portions of the middle intertidal.

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(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	2	5	
Waterfowl	3	6	
Gulls/Kittiwakes	2	8	
Shorebirds	1	5	
Corvids			
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

10. Crustaceans

- a. Amphipods - *Orchestia* sp.?
- b. Barnacles - *Balanus glandula*, *Semibalanus cariosus*
- c. Crabs - *Hemigrapsus oregonensis*, Paguridae (hermit crabs), *Oregonia gracilis*
- d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimorsphaeroma oregonensis*

11. Mollusca

- b. Snails - Gastropods
Amphissa columbiana, *Littorina sitkana*, *L. keenae*, *Nucella lima*, *Searlesia dira*
- c. Limpets - *Lottia digitalis*, *L. persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
- d. Nudibranches - *Lamellidoris fusca*
- e. Mussels and Clams - *Mytilus edulis*

12. Echinoderms

- b. Sea stars - *Leptasterias hexactis*, *Orthasterias keohleri*, *Pycnopoda helianthoides*

13. Bryozoans - *Membranipora* sp., *Phidolopora pacifica*, *Schizoporella* sp.

14. Fishes

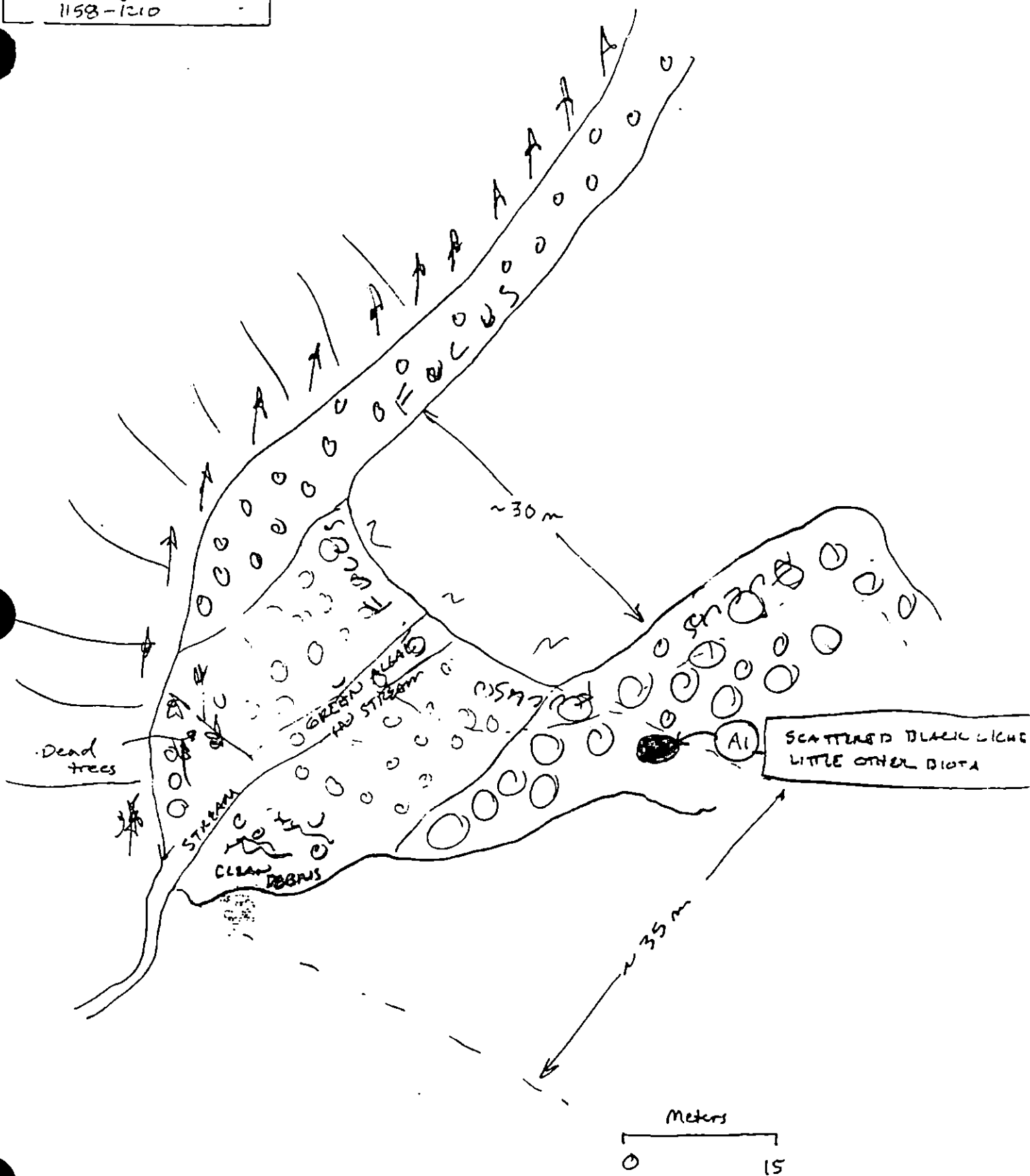
Cottidae

Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*

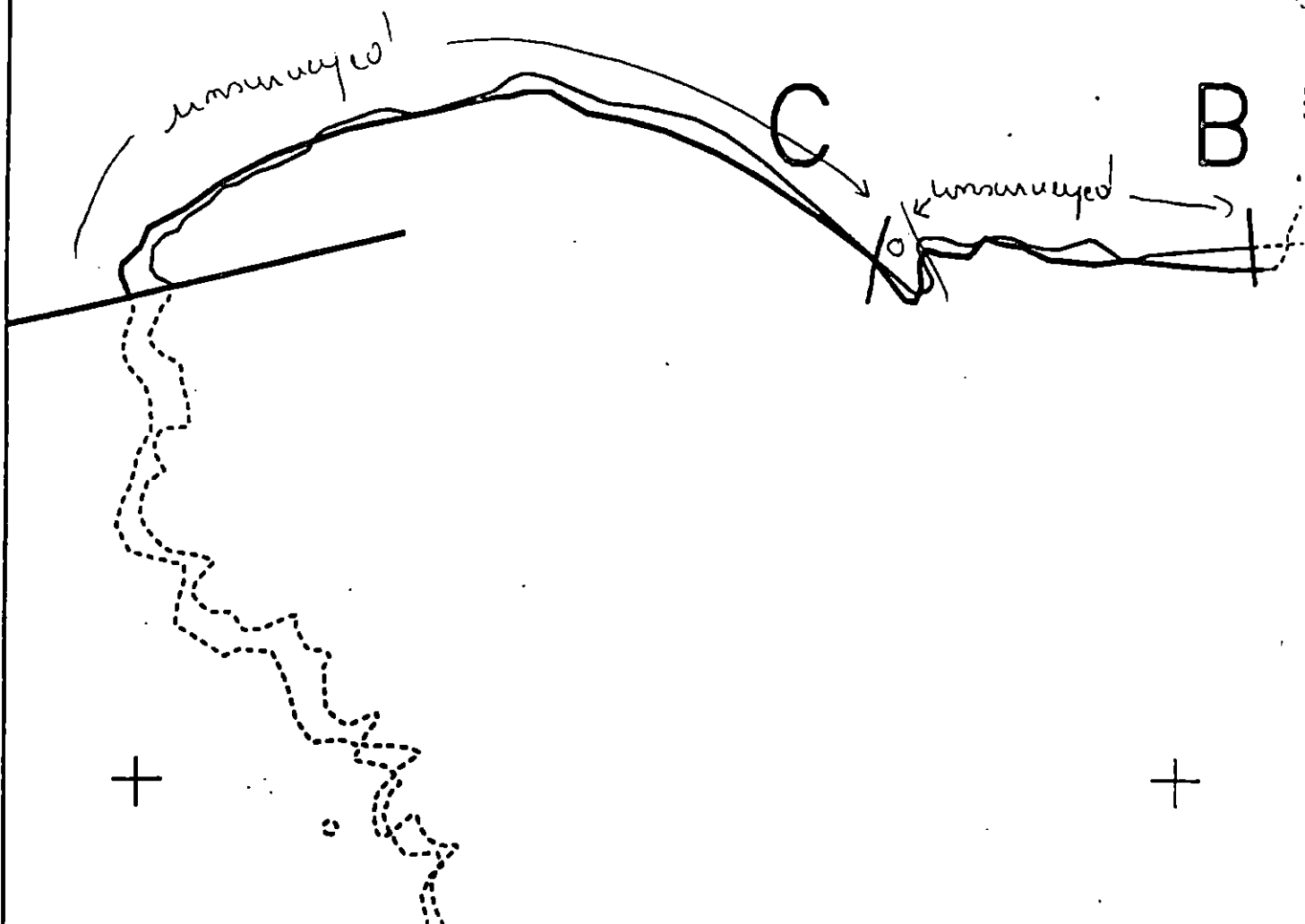
III. Birds

- | | |
|--------------|--|
| Seabirds - | Marbled Murrelet (3), Common? Loon (2) |
| Waterfowl - | Harlequin Duck (3), Greater Scaup (1), ? Duck (2) |
| Gulls/Kit - | Glaucous-winged Gull (2), Black-legged Kittiwake (6) |
| Shorebirds - | Western Sandpiper (5) |

BIO SKETCH MAP
P4011-C
14 MAY 1991
JP BARRY
1158-1210



PY-11+



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

PY011 C

ADEC Subsegment Length: 1530m
 METERS

5 200 400
 AK State Plane Zone 4
 UTM



Subdivision Field Map

Map Key: KENPY011C

Name: J. M. Simpson

Date: MAY 14/90

Date Entered:

revised 5.18.91 g/f
 25 revised 5/18

1991 MAYSAP EVALUATION

SEGMENT: PY 011 SUB: B REGION: KEN SURVEY DATE: 5/14/91ENVIRONMENTAL SENSITIVITIES:Work Window(s) OPENEcological/Constraints (see page two for details) NONEARCHAEOLOGICAL 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

ADEC
NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☐ NTR ☒ Treatment Recommended
Manual Removal of ~~MS~~ MS, HOR, BOR -
Work crew would have to remove C/S or B
armor to access oiling -
REFERENCE PHOTOS.

EXXON
NAME George P. Stiles SIGNATURE George P. Stiles 5/14/91

☒ NTR The mouse remaining in the UI zone has
a patchy distribution around the edge of
the large boulders and would require
trowels to remove the somewhat small
amount remaining.

HANDMANAGER
NAME JOHN P. HARDISTER OF USFWS SIGNATURE John P. Hardister 5/15/91

☒ NTR Amount of mouse remaining is relatively small and patchy
in distribution. Large boulders would prevent removal of
any significant amount of remaining oil.

USCG/NOAA
NAME Carl J. Mc Nathon SIGNATURE Carl J. Mc Nathon

☒ NTR removal of the sporadic distribution among
the lg. boulders highly impractical.

NOAA/ DENNIS H. MACDONALD Dennis H. Macdonald

MAYSAP SHORELINE OILING SUMMARY

PAGE 2 OF 9TEAM NO. 4OG J. J. SamplesBIO J. BarrySEGMENT P4.011ADEC Clara CrosbyLANDMANAGER John Hardistree for LISFWSSUBDIVISION BCOXON George P. StilesUSCG/NOAA John Marmahan/McDonaldDATE MAY 14 1991TIME 10:58 to 11:44TIDE LEVEL +2.5 ft. to +3.8 ft.ENERGY LEVEL: ☒ H ☐ M ☐ LSURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELOWEATHER: ☐ SUN ☒ CLOUDS ☐ FOG ☒ RAIN ☐ SNOWTOTAL LENGTH SHORELINE SURVEYED: 62 mNEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONEEST. OIL CATEGORY LENGTH: W — m M 22 m N — m VL 40 m NO — 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	
A1				S	S	S					Reddish	M	15	15		*			See map
A2				S	S						"	"	5	8		*			
		P									"	"	"	"		*			
A3	S			S	S						"	"	3	40		*			

DISTRIBUTION: C = 91-100%; B = 61-90%; P = 11-80%; S = 1-10%; T = <1%

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE PHOTO ROLL # MAYSAP- _____ FRAMES _____

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				*				0-10	Y	10	R		*	:		pb/sd	surface fine
									-									near end
2	20		*						0-8	Y	-	-		*			"	"
3	30		*						0-5	Y	15	S		*			"	"
4	25						*		0-1	Y	10	S			*		"	surface oil
									-									
									-									
									-									
									-									

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

OG COMMENTS: Small 60 m cove between bedrock headlands. Top of pit 1 low back on composed of very large angular boulders, lots of standing dead trees, some large & medium driftwood. Hinterland steep, vegetated. Mid & low pit 2 composed of angular Bdkk on ch/Bk, locally over mixed fine sed. Oil occurs as indicated on map. Note: presence of large boulders limits accumulation of oil to an approximation of 20 cm on boulder surface. Oil typically behind boulders sometimes on protected surface from sed. to form #504

revised 5/18/91 gq
revised 5/18

00. Skt & Map

P4-011-B

67 samples

MAY 14 / 91

053 - 1144

Legend.

Step bedrock

Large angular boulders

Angular boulders / cobbles

Angular cobbles / boulders

0 15
meters



MAYSAP 4.3.10: location - generic photo.

4.3.11: General view of cave from northern extremity

ct on bedrock on boulder
fragments.

MAYSAP 4.3.12
(example HSOR)

HSOR/Assume 2x2
Note field does not specify
extent.

ct
cv } 15x15 } 10%
HSOR

cus MS behind
boulders < 30cm dia

5 x 8 m

ct } 10% MS } 30%
cv }

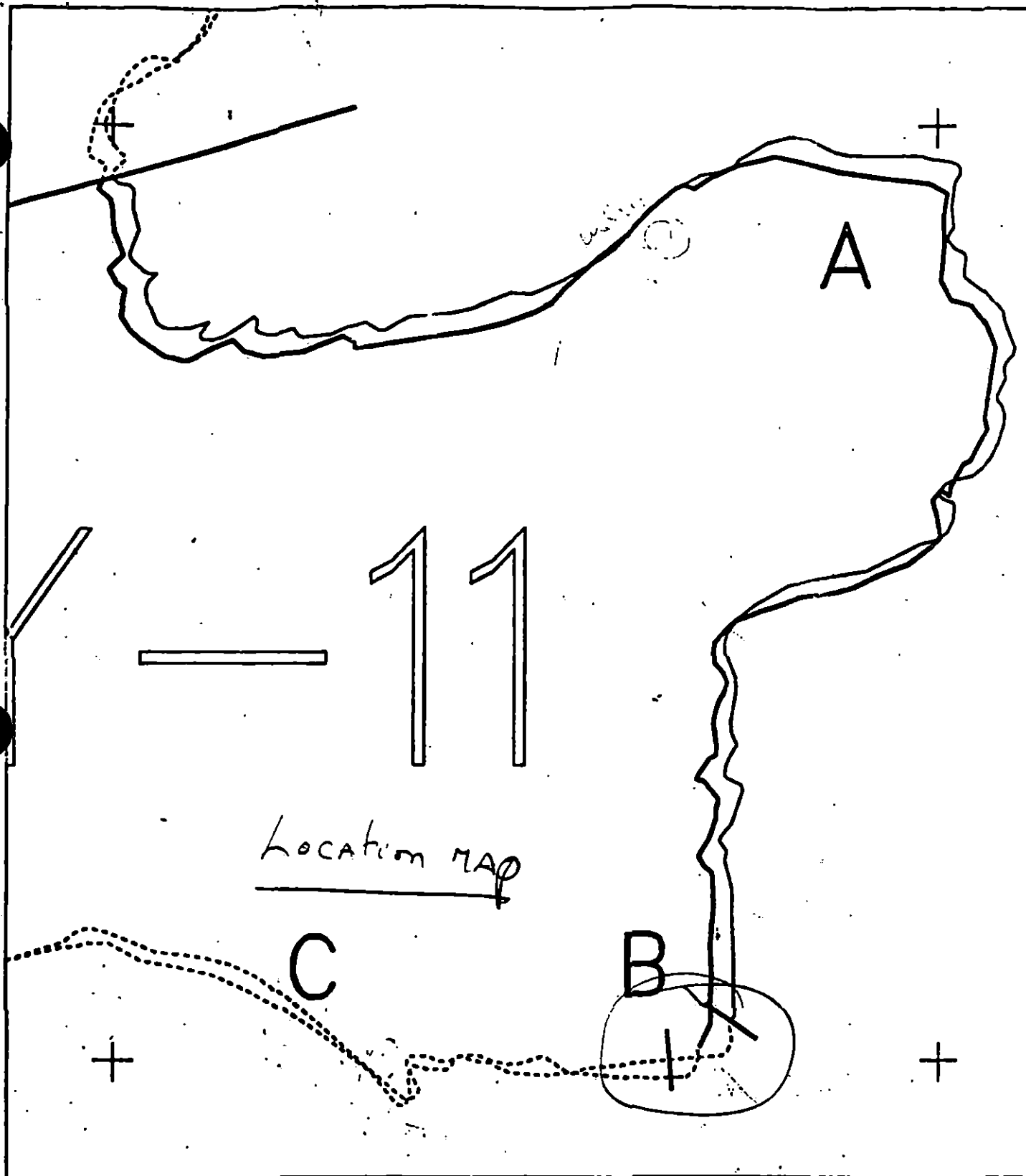
max
10cm dia
on boulders

max 1m² 90% w/ A₂
10cm thickness
max

MAYSAP 4.3.13

ct } < 5% MS } < 5%
cv }

3 x 40 m.



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

PY011 #B
 ADEC Subsegment Length: - 3127m
 METERS
 0 200 400
 AK State Plane Zone 4
 49011.00

Subdivision Field Map
 Map Key: KENPY011Aa
 Name: 17 Samples
 Date: May 14/91
 Data Entered:



MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 14, 1991 1101 - 1125
SEGMENT #	PY011	TIDAL HEIGHT (Range)	+2.5 => +3.8
SUBDIVISION	B	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	NE 5-15 kt., rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

This small pocket beach had a fair amount of oil remaining, primarily in the upper zone. The intertidal here was generally similar in all the oiled locations. Most of the oil was not located near other biota, and no sensitive habitats (e.g. mussel or clam beds) are located nearby. Specific characteristics of the oiled locations will be discussed briefly, followed by a more general discussion of the intertidal biota along the subdivision.

A1 This upper intertidal site has CT/CV/HSOR. Little biota is present at the site. A thin layer of filamentous green algae is present on many cobble at the site, with drift algae nearby. Below the oiled area the intertidal biota are more diverse and abundant, with Fucus as the dominant organism.

Cleanup operations will not adversely affect the intertidal biota at this site.

A2 This oiled area is located at the outlet of a small seep. Many of the cobble and boulders in the vicinity have patchy, but dense cover of filamentous green algae (Enteromorpha and Ulva). Fucus is scattered at the oiled site, as are limpets and barnacles. Littorine snails are abundant in crevices.

A3 Black lichen and green algae (Prasiola meridionalis) were patchy and abundant near the oiled site. Crustose brown algae (Hildenbrandia) is abundant below, as are littorines and limpets. *the oiled area*

The zonation pattern below A1, A2, and A3 was similar at all oiled sites. The beach is composed of large cobble and boulders, and has a medium slope. Biota are generally moderate to sparse in the upper zone, with increasing densities of red algae and Fucus in (continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	2	5	
Waterfowl	2	4	
Gulls/Kittiwakes	2	3	
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.

- 71
10. Crustaceans
 - a. Amphipods - *Orchestia* sp.?
 - b. Barnacles - *Balanus glandula*, *Semibalanus cariosus*
 - c. Crabs
Haemigrapsus oregonensis, Paguridae (hermit crabs), *Oregonia gracilis*
 - d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimospharoma oregonensis*
 11. Mollusca
 - b. Snails - Gastropods
Amphissa columbiana, *Littorina sitkana*, *L. keenae*, *Nucella lima*,
Searlesia dira
 - c. Limpets
Lottia digitalis, *L. persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*,
Siphonaria thersites
 - d. Nudibranchs - *Lamellidoris fusca*
 - e. Mussels and Clams - *Mytilus edulis*, *Pododesmus cepio*
 12. Echinoderms
 - b. Sea stars
Leptasterias hexactis, *Orthasterias keohleri*, *Pisaster ochraceus*,
Pycnopoda helianthoides
 - d. Urchins - *Strongylocentrotus droebachiensis*
 13. Bryozoans - *Membranipora* sp., *Phidolopora pacifica*, *Schizoporella* sp.
 14. Fishes
 - Cottidae
 - Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*

BIO SKETCH MAP

PY 011-B

JP BARRY

14 MAY 1991

1058-1144 pm

Steep bedrock

Large Angular boulder

Angular boulder/Cobble

Angular cobbles/boulder

Meters

0 15

N

(A1) - SPARSE GREENS FILAMENTOUS ALGAE, DRIFT ALGAE
SPARSE BLACK LICHEN, LITTLE ELSE. RICHER
BIOTA BELOW

PATCHY DENSE GREEN ALGAE AROUND
OILED SITE. PATCHES OF DENSE
LITTORINES, SOME DIRECTLY ON OIL.
RICHER BIOTA BELOW

(A3) BLACK LICHEN AND
THIN GREEN ALGAE IN
PATCHES NEAR OILING
SPARSE FOCUS NEAR OIL
RICH INTERTIDAL BELOW

2, A3 - BELOW OILED AREA

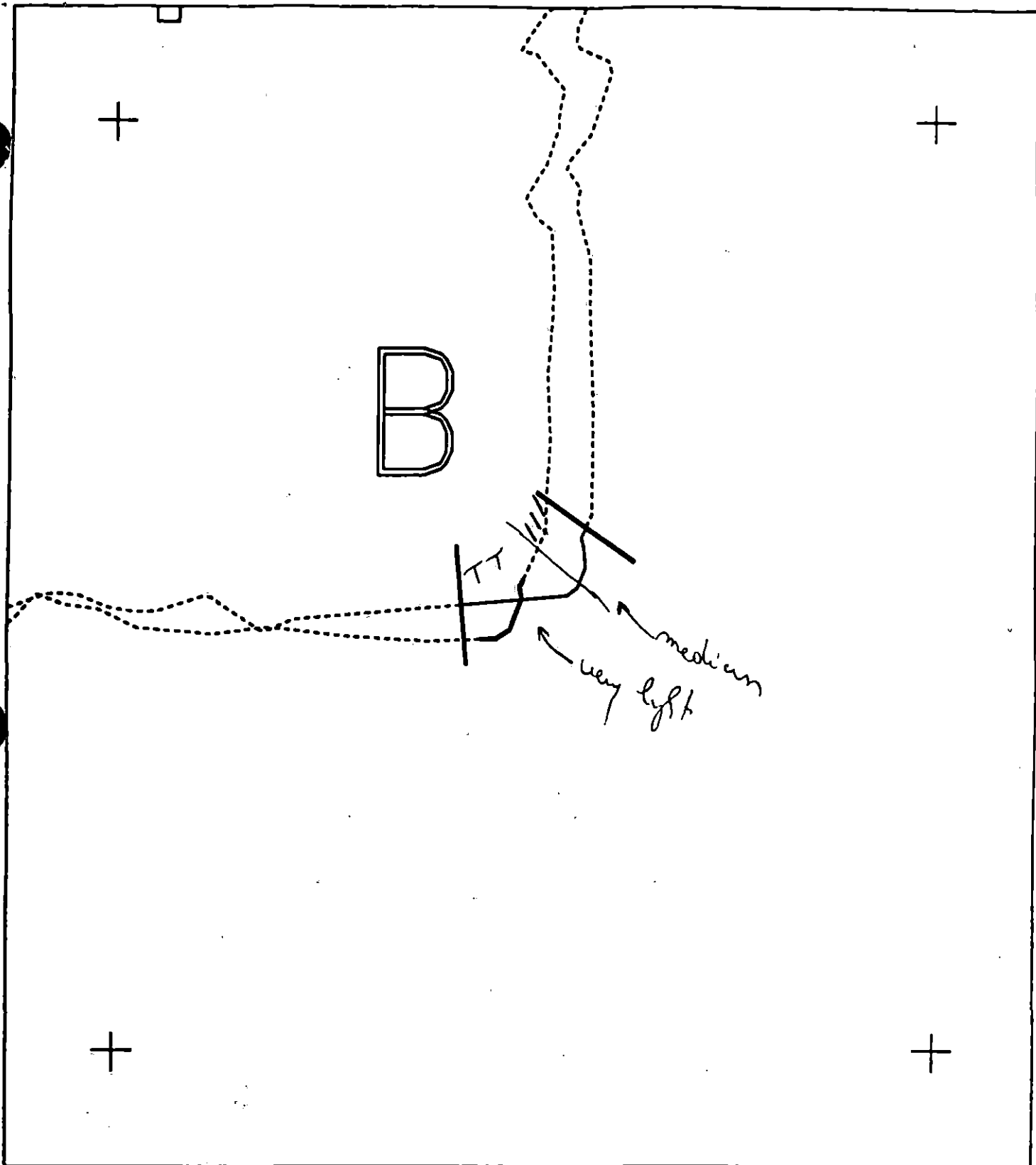
FILAMENTOUS GREEN ALGAE, LITTORINE SNAILS, ARE
PATCHY, BUT OFTEN DENSE FROM THE LOWER EDGE
OF THE UPPER ZONE THROUGH THE MIDDLE ZONE & BEYOND.
FOCUS IS ABUNDANT ON COBBLE, Boulders, AND BEDROCK
OUTCROPS IN THE MIDDLE ZONE. ISAPNALLS MOST ABUNDANT
IN THE MIDDLE ZONE. MUSSEL GENERALLY SPARSE.

Dead trees

A1

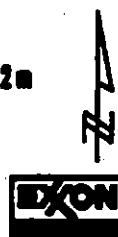
A2

A3



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

PY011 B
 ADEC Subsegment Length: 62m
 METERS
 5 100 200
 AK State Plane Zone 4
 apy011b



Subdivision Field Map
 Map Key: KENPY011B
 Name: for Sempis
 Date: May 14/8
 Date Entered:

revised 5.18.91 97
 cf renewal 5/18

1991 MAYSAP EVALUATION

SEGMENT: PY 011 SUB: B REGION: KEN SURVEY DATE: 5/14/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: Timothy Smith Date: 5/30/91

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: MAY 29 1994

FOSC APPROVAL DATE: 6/8/91

ADEC

FOSC

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

EXXON

USCG

NOAA

TEAM NO. 4 SEGMENT P4.011 SUBDIVISION B DATE May 14/91

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara S. Crosby☐ NTR☒ Treatment Recommended

Manual Removal of ~~MS~~ MS, HOR, SOR -
 Work crew would have to remove C/SR-B
 armor to access oiling -
 REFERENCE PHOTOS.

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles 5/14/91☒ NTR

The mouse remaining in the UI zone has
 a patchy distribution around the edge of
 the large boulders and would require
 trowels to remove the somewhat small
 amount remaining.

LANDMANAGER

NAME

JOHN P. HARDISTER OF USFWS

SIGNATURE

John P. Hardister 5/15/91☒ NTR

Amount of mouse remaining is relatively small and patchy
 in distribution. Large boulders would prevent removal of
 any significant amount of remaining oil.

USCG/NOAA

NAME

Carl J. Mc Nathon

SIGNATURE

Carl J. Mc Nathon☒ NTR

Removal of the sporadic distribution among
 the lg. boulders highly impractical.

NOAA/ DENNIS A. MACDONALD

Dennis A. MacDonald

PAGE 2 OF 9

OG COMMENTS: Small 60 m cove between bedrock headlands. Top of uitz
1 low back on composed of very large angular boulders, lots of standing
but dead trees, some large + medium driftwood. Hinterland steep, vegetated.
Mid + low uitz composed of angular Bdkc or ch/Bk, locally over mixed
red. Oiling occurs as indicated on map. Note: presence of large boulders
limits determination of extent and type of oil to an approximation
ch/cv typically < 20 cm on boulder surface. 75 typically behind boulders
sometimes has fractured surface fine red to brown Hsok
revised 5.18.91 qy

Qg skt & map

Py-011-B

47 Samples

May 14/91

1058 - 1144

Legend.

 Steep bedrock

 Large angular boulders

 Angular boulders/
cobbles

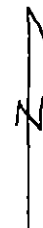
 Angular cobbles/boulders

Py 011-B

4/9

Meters

0 15



MAYSAP 4.3.10: location reference photo.

4.3.11: General view of cave from northern extremity

ct on bed-rock or boulder
surfaces.

MAYSAP 4.3.12
(comp. H50R)

HOR/Assume 2x2

Note field does not specify
extent.

ct
cv } 15x15 } 10%
H50R

cv & ms behind
boulders < 30cm dia

5 x 8 m

ct } 10% ms } 30%
cv }

max
10cm dia
on boulder

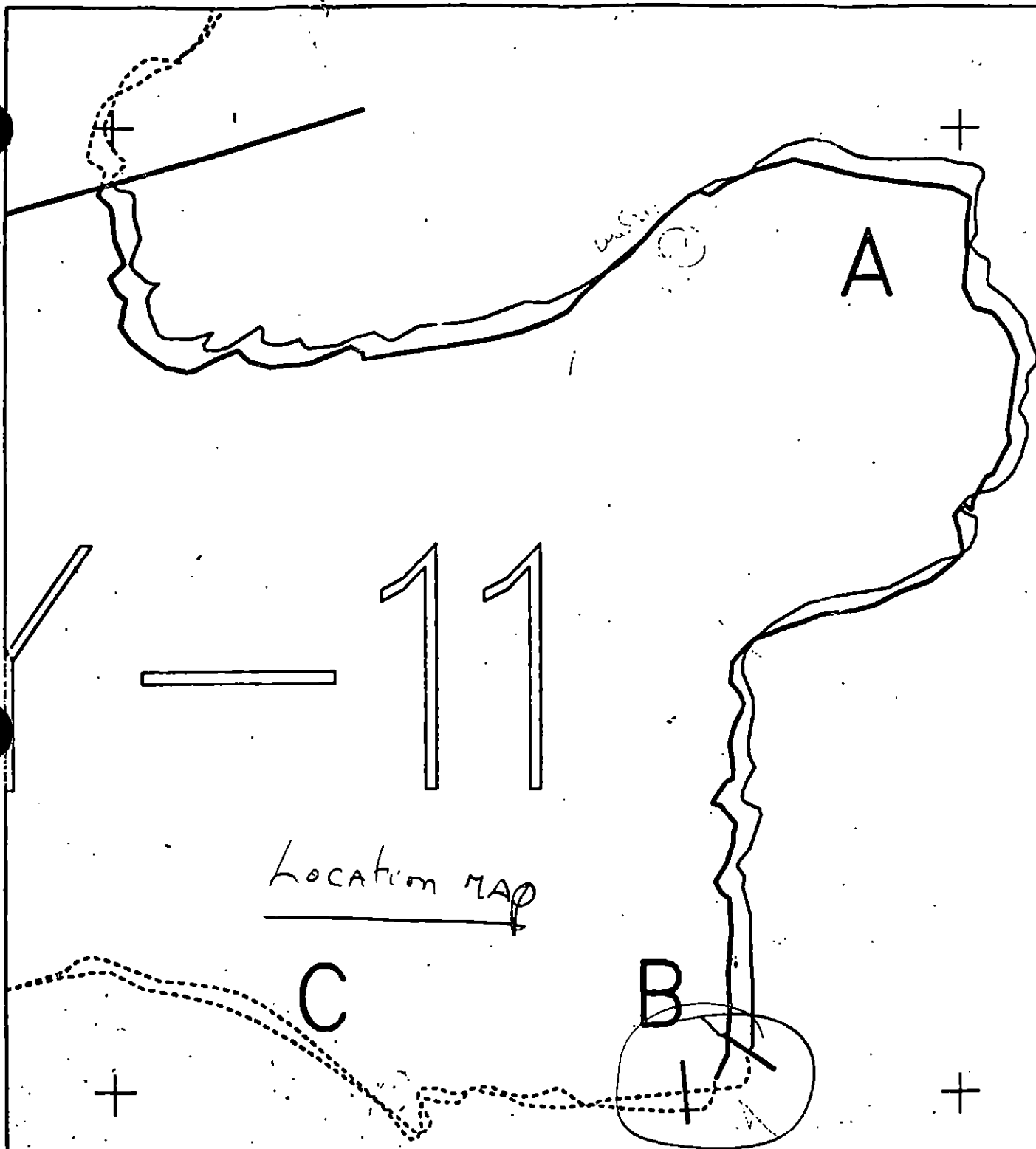
max 1 m² 90% of A2
10cm thickness
max

MAYSAP 4.3.13

ct } < 5% ms } < 5%
cv }

3 x 40 m.

reviewed 5.18.91 gy
revised 5/18



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

PY011 #B
 ADEC Subsegment Length: 3127m
 METERS
 0 200 400
 AZ State Plane Zone 4
 UTM

Subdivision Field Map
 Map Key: KENPY011Ae
 Name: 17 Samples
 Date: May 14/91
 Date Entered:



MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 14, 1991 1101 - 1125
SEGMENT #	PY011	TIDAL HEIGHT (Range)	+2.5 => +3.8
SUBDIVISION	B	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	NE 5-15 kt., rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

This small pocket beach had a fair amount of oil remaining, primarily in the upper zone. The intertidal here was generally similar in all the oiled locations. Most of the oil was not located near other biota, and no sensitive habitats (e.g. mussel or clam beds) are located nearby. Specific characteristics of the oiled locations will be discussed briefly, followed by a more general discussion of the intertidal biota along the subdivision.

- A1 This upper intertidal site has CT/CV/HSOR. Little biota is present at the site. A thin layer of filamentous green algae is present on many cobble at the site, with drift algae nearby. Below the oiled area the intertidal biota are more diverse and abundant, with Fucus as the dominant organism.

Cleanup operations will not adversely affect the intertidal biota at this site.

- A2 This oiled area is located at the outlet of a small seep. Many of the cobble and boulders in the vicinity have patchy, but dense cover of filamentous green algae (Enteromorpha and Ulva). Fucus is scattered at the oiled site, as are limpets and barnacles. Littorine snails are abundant in crevices.

- A3 Black lichen and green algae (Prasiola meridionalis) were patchy and abundant near the oiled site. Crustose brown algae (Hildenbrandia) is abundant below, as are littorines and limpets.

the oiled area

The zonation pattern below A1, A2, and A3 was similar at all oiled sites. The beach is composed of large cobble and boulders, and has a medium slope. Biota are generally moderate to sparse in the upper zone, with increasing densities of red algae and Fucus in (continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	2	5	
Waterfowl	2	4	
Gulls/Kittiwakes	2	3	
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.

PY011-B Biology Report, continued

the middle zone. Littorines, limpets, and whelks (*Nucella lima*) also become quite abundant in the middle zone. Barnacles are abundant from the middle to low zones. Mussels are sparse throughout the middle zone, but are abundant only on the boulders and bedrock at the outer edge of the shore.

A general view of the zonation pattern is:

[illegible]

Species Common on PY011-B

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., *Enteromorpha* sp., *Prasiola meridionalis*, *Ulva* sp., *Urospora* sp.
3. Brown Algae - Phaeophyta
Agarum fimbriatum, *Ectocarpus* spp., *Fucus distichus*, *Hildenbrandia* sp., *Ralfsia* sp., *Syctosiphon lomentaria*
4. Red Algae - Rhodophyta
Cryptosiphonia woodii?, *Endocladia muricata*, *Halosaccion glandiforme*, *Lithothamnion* sp., *Membranoptera dimorpha*, *Microcladia* sp., *Odonthalia floccosa*, *Petrocelis* sp., *Plocamium* sp., *Porphyra* sp., *Ptilota filicina*, *Rhomomela larix*
5. Higher Plants - *Leymus mollis* (beach rye grass)

II. Marine Animals

1. Sponges - Porifera - Halichondria sp., Halichondria panicea,
2. Anemones
Anthopleura artemesia, Stomphia sp.
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaete Worms
Nereidae - Nereis spp.
Serpulidae - Serpula sp., Eudistylia polymorpha
Spriobidae - Spirorbis sp.

- J. L. 11-12 2/8
10. Crustaceans
 - a. Amphipods - *Orchestia* sp.?
 - b. Barnacles - *Balanus glandula*, *Semibalanus cariosus*
 - c. Crabs
Hemigrapsus oregonensis, *Paguridae* (hermit crabs), *Oregonia gracilis*
 - d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimosphera oregonensis*
 11. Mollusca
 - b. Snails - Gastropods
Amphissa columbiana, *Littorina sitkana*, *L. keenae*, *Nucella lima*, *Searlesia dira*
 - c. Limpets
Lottia digitalis, *L. persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
 - d. Nudibranchs - *Lamellidoris fusca*
 - e. Mussels and Clams - *Mytilus edulis*, *Pododesmus cepio*
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 - b. Sea stars
Leptasterias hexactis, *Orthasterias keohleri*, *Pisaster ochraceus*, *Pycnopoda helianthoides*
 - d. Urchins - *Strongylocentrotus droebachiensis*
 13. Bryozoans - *Membranipora* sp., *Phidolopora pacifica*, *Schizoporella* sp.
 14. Fishes
 - Cottidae
 - Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*

BIO SKETCH MAP

P4011-B

JP BARRY

14 MAY 1991

1058-1144 pm

Steep bedrock

Large Angular boulder

Angular boulder/Cobble

Angular cobble/boulder

Meters

0 15

N

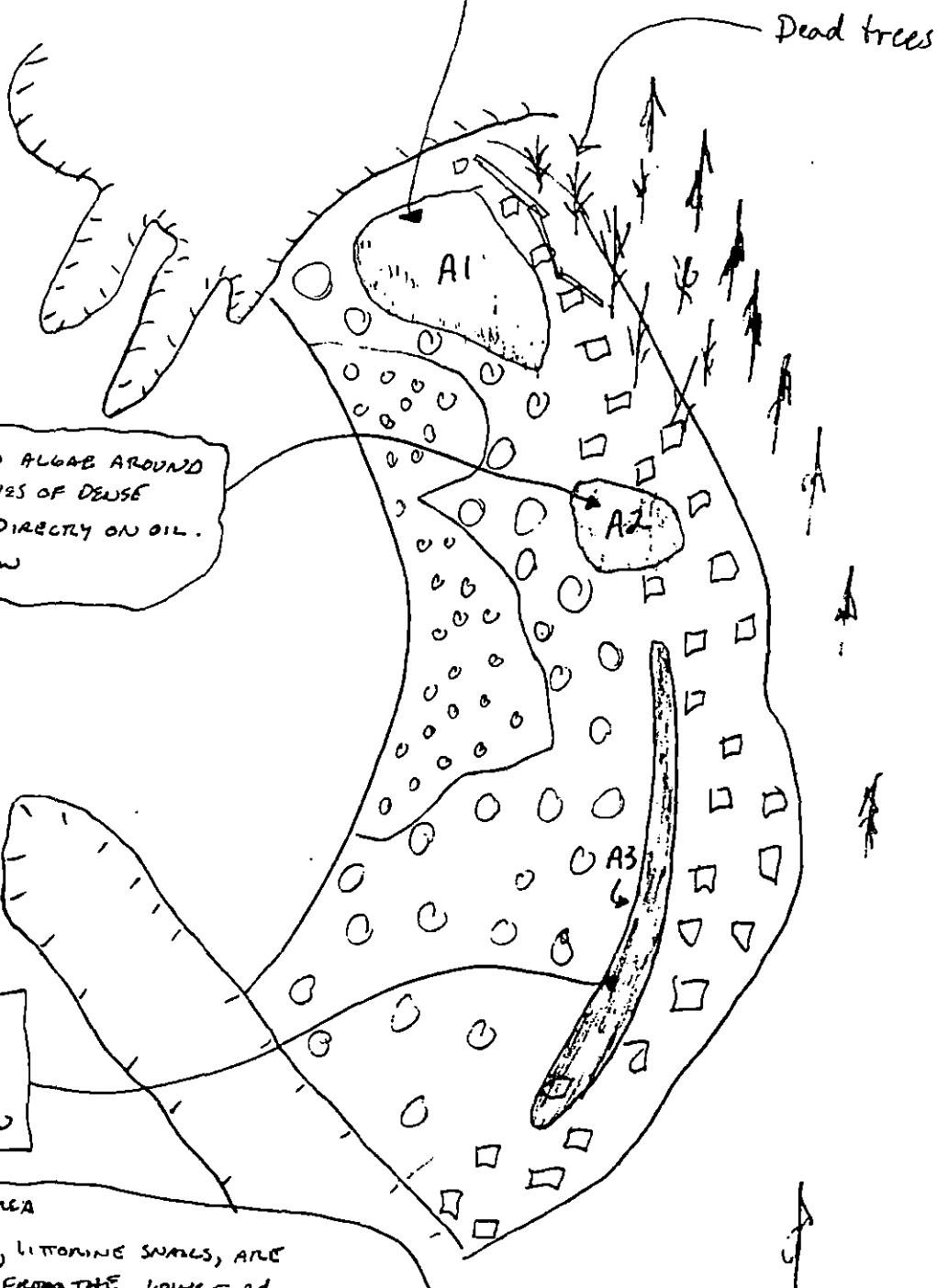
(A1) - SPARSE GREENS FILAMENTOUS ALGAE, DRIFT ALGAE
SPARSE BLACK LICHEN, LITTLE ELSE. RICHER
BIOTA BELOW

PATCHY DENSE GREEN ALGAE AROUND
OILED SITE. PATCHES OF DENSE
LITTORINES, SOME DIRECTLY ON OIL.
RICHER BIOTA BELOW

A3 - BLACK LICHEN AND
THIN GREEN ALGAE IN
PATCHES NEAR DUNE
SPARSE FUCUS NEAR OIL
HIGH INTERIORAL BELOW

A3 - BELOW OILED AREA

FILAMENTOUS GREEN ALGAE, LITTORINE SNAILS, ARE
PATCHY, BUT OFTEN DENSE FROM THE LOWER EDGE
OF THE UPPER ZONE THROUGH THE MIDDLE ZONE & BEYOND.
FUCUS IS ABUNDANT ON COBBLE, Boulders, AND BEDROCK
OUTCROPS IN THE MIDDLE ZONE. ISAPNALLS MOST ABUNDANT
IN THE MIDDLE ZONE. MUSSEL GENERALLY SPARSE.



B

TT
 ← very light
 ← medium

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

PY011 B

ADEC Subsegment Length: 62m

METERS

0 100 200

AK State Plane Zone 4
 npy011b



Subdivision Field Map

Map Key: KENPY011B

Name: for SempinDate: May 14/8

Date Entered:

revised 5.18.91 98

REGION: KENAI

SEGMENT: PY-012

SUBDIVISIONS: A (1 OF 3)

SHORELINE EVALUATION

SEGMENT ST/ PY-012 SUBDIVISION A (1 OF 3) DATE 4/3/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
4QQ National Wildlife Refuge

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid disturbance/damage to unoiled biota and substrate.

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 0 m: No Oil 1639 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:

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ PY 12 SUBDIVISION: A DATE 4/3/90

USCG/NOAA

NAME

JACQUI MICHEL

SIGNATURE

J. Michel☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTEDNO OIL WAS OBSERVED.

ADEC

NAME

JOHN R. REED

SIGNATURE

John R. Reed☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTEDNO OIL WAS SPOTTED.

LAND MANAGER - USFWS

NAME

Mary Portner

SIGNATURE

Mary Portner☐ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTEDNo oil was observed.

SHORELINE OILING SUMMARY

REVISION NO. 02/22/90

OG MANV USCG/NOAA MICHEL SEGMENT STI PY-12
 BIO CARR LAND REP PORTNER - RUS SUBDIVISION A
 EXXON BOVER ADEC REED TIME 13:45 to 13:55
 TEAM NO.: 18 TIDE LEVEL: +2.3 to +2.5 DATE 4/13/90
 EST. SUBDIVISION LENGTH: 1600 m ☐ Sun ☐ Clouds ☐ Fog ☒ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☐ Foot ☒ Boat ☐ Helo WORKING DIRECTION: NORTH to SOUTH
 SURFACE SEDIMENTS: R 95 % B 5 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 25 % Hang 25 % Vert 50 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 0 m NO 1600 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR						IMPACTED ZONES			
	10	18	17	15	SB BR	DB RW	GY	SL	DBL TL	LR	SU	UI	M	U
ASPHALT PAVEMENT														
POOLED														
COVER														
COAT														
STAIN														
MOUSSE														
PATTIES														
TARBALLS														
FILM														
NO OIL											✓	✓	✓	✓

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

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☐ YES ☒ NOTYPE N/A#BAGS N/A

Photographs:

Roll No. N/AFrames N/ASUBSURFACE OIL No pits dug due to inaccessibility and bedrock substrate.

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CH)	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		VO	UC	SB BR	OR RY	OL EL	OB TL	LR	SU	U	M	U			
							.														
							.														
							.														
							.														
							.														
							.														

COMMENTS

Shorelines here are typical of the more protected shores of the Pige Islands. Steep hill-sides forested with spruce and mountain hemlock end in steep bedrock slopes and rubble at the high tide line. Dead, drowned trees are common. Oiling is insignificant but where it occurs, little evidence of wave-erosion since last August exists.

OG MAN

SEGMENT ST/ PY-12

SUBDIVISION A

DATE 4 / 3 90.

CHECKLIST

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

SKETCH MAP

NO SKETCH WAS NEEDED.

LEGEND

1 ▲

Pit - No Subsurface Oil

2 ▲

Pit - 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

if Character Length (m): AP 0 PO 0 CV 0 CT 0 ST 0 MS 0 PT 0 TB 0 FL 0 NO 1600

REVISION: 03/24/90

APR-03-1990 22:47 FROM Enscó Atlas

Enscó TO

SSAT P.02

SHORELINE ECOLOGICAL SUMMARY

REVISION: 02/22/90

Segment ST/ PY-12 Subdivision A (of A-C) Date (mo / day / yr) 4 / 3 / 90Time (24 hr) 1345 Biologist M. LARR(A) Substrate type and % of ^{SUBDIVISION} segments:
(1) Bedrock 95 (2) Boulder 5 (3) Cobble (4) Pebble (5) Sand (6) Silt (B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense 70 Moderate 20 Low 10

(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. Frames NONE

BARNACLES

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

MYTILUS

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

GASTROPODS

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

FUCUS

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

Wildlife Observations/ General Comments:

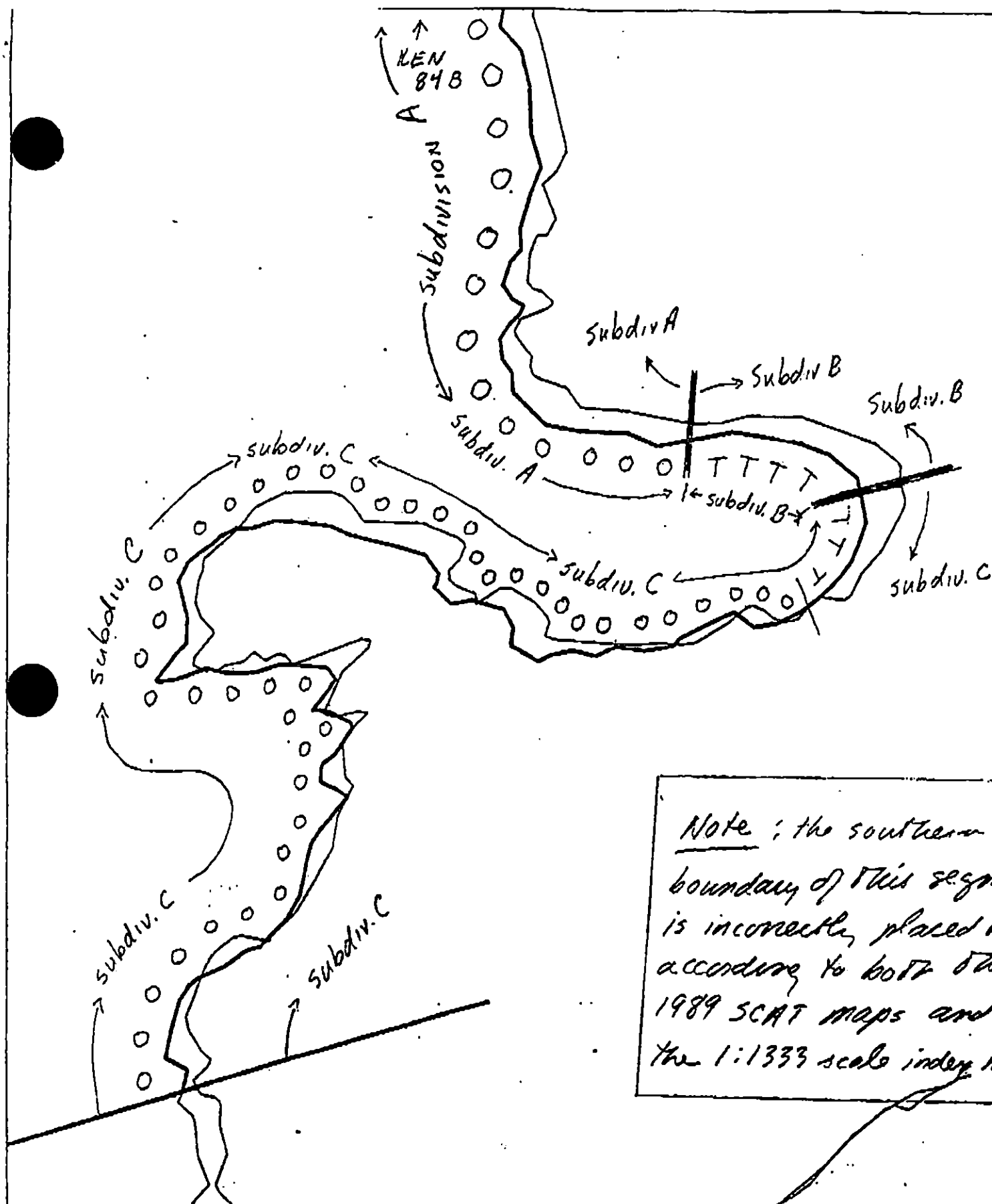
Black Oyster-Catcher (1) Bald eagle (mature) (1)

Cormorant (1)

Harlequin ducks (10)

Ecological Considerations:

Sensitivity codes: 4-QQ (National Wildlife Refuge)



Note : the southern boundary of this segment is incorrectly placed here according to both the 1989 SCAT maps and the 1:1333 scale index map.

XXXX Wide

/// Medium

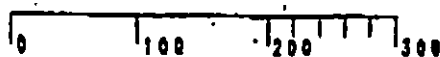
----- Narrow

TTTT Very Light

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1

P Y - 12

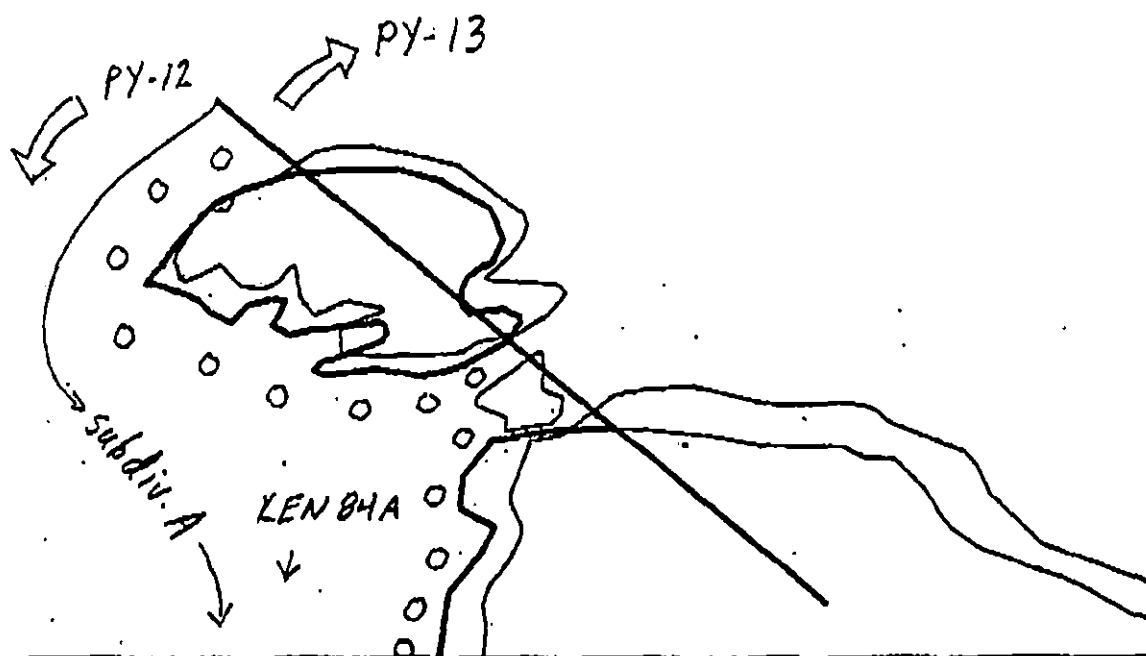
ADEC Segment Length: 4210m



Map Key: KEN-84a

Name: Marr

Date: 3 April 90



PY-12

XXX Wide

//// Medium

---- Narrow

TTTT Very Light

ADEC Segment Length: 4210m

0 1,000 1,500 2,000

Map Key: KEN-84b

Name: MannDate: 4/3/90

REGION: KENAI

SEGMENT: PY-012

SUBDIVISIONS: B (2 OF 3)

SHORELINE EVALUATION

SEGMENT ST/ PY-012 SUBDIVISION B (2 OF 3) DATE 4/3/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

4QQ National Wildlife Refuge

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/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 223 m: No Oil 0 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: Manual removal of pooled oil and mousse patties, followed by bioremediation.

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ PY 12 SUBDIVISION: B DATE 4/3/90

SCG/NOAA

NAME JACQUI MICHEL SIGNATURE Michel

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

Manual removal of pooled oil and mousse patches is highly recommended. These are widely scattered but they are quite large individually.

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

Manual removal of mousse and pooled oil with shovel OR hand trowel. I have read and agree with all information on the S.S.A.T. Forms.

LAND MANAGER - USFWS

NAME Mary Partner SIGNATURE Mary Partner

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

Pooled oil and mousse patches should be manually removed. This could be accomplished using hand trowels and shovels. At this time the oil is soft and relatively easy to recover by rolling and moving cobbles. No significant weathering of the oil has occurred along this shoreline.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG MANN USCG/NOAA MICHEL SEGMENT ST/ PY-12
 BIO CARR LAND REP PORTUEN - PWS SUBDIVISION B
 EXXON BOYER ADEC REED TIME 13:55 to 14:20
 TEAM NO.: 18 TIDE LEVEL: -2.0 to +1.8 DATE 4/3/90
 EST. SUBDIVISION LENGTH: 300 m ☐ Sun ☐ Clouds ☐ Fog ☒ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: NORTH to SOUTH
 SURFACE SEDIMENTS: R 50 % B 45 % C 5 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 75 % Hang 25 % Vert 0 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 300 m NO 0 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	10	15	17	18	SP	BR	FW	GY	SL	OR	TL	LR	SU	U	M	U
ASPHALT PAVEMENT																
POOLED				☒		☒								☒		
COVER				☒		☒								☒		
COAT				☒		☒								☒		
STAIN																
MOUSSE																
PATTIES				☒		☒								☒		
TARBALLS																
FILM																
NO OIL													☒		☒	☒

PAVEMENT: H F S 0 sq. m by 0 cmPATTIES / TARBALLS 20 BAGSNEAR SHORE SHEEN? ☒ NO BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☒ YES ☐ NOTYPE PT, PO#BAGS 1

Photographs:

Roll No. ST 18-3Frames 20-24

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	SP	BR	FW	GY	SL	OR	TL	LR	SU	U	M	U		
1	15					☒	-											☒					B.C
2	20					☒	-											☒					B.C
3	15					☒	-											☒					B.C
4	20					☒	-											☒					B.C
							-																
							-																

COMMENTS

Oiling here is very similar to what we observed last August while Scating this shoreline.

CG: WADAN
SEGMENT STI: PY-12

SUBDIVISION B

DATE 1/13/90

CHECKLIST

☐ Mammal
☐ Reptile: Snake
☐ Reptile: Birdy
☐ Owl Owl
☐ Fish
☐ Length
☐ % Cover
☐ Substrate Character
☐ Ed. HML/WL
☐ SS
☐ Profile Location(s)
☐ Profile(s)
☐ Photo 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

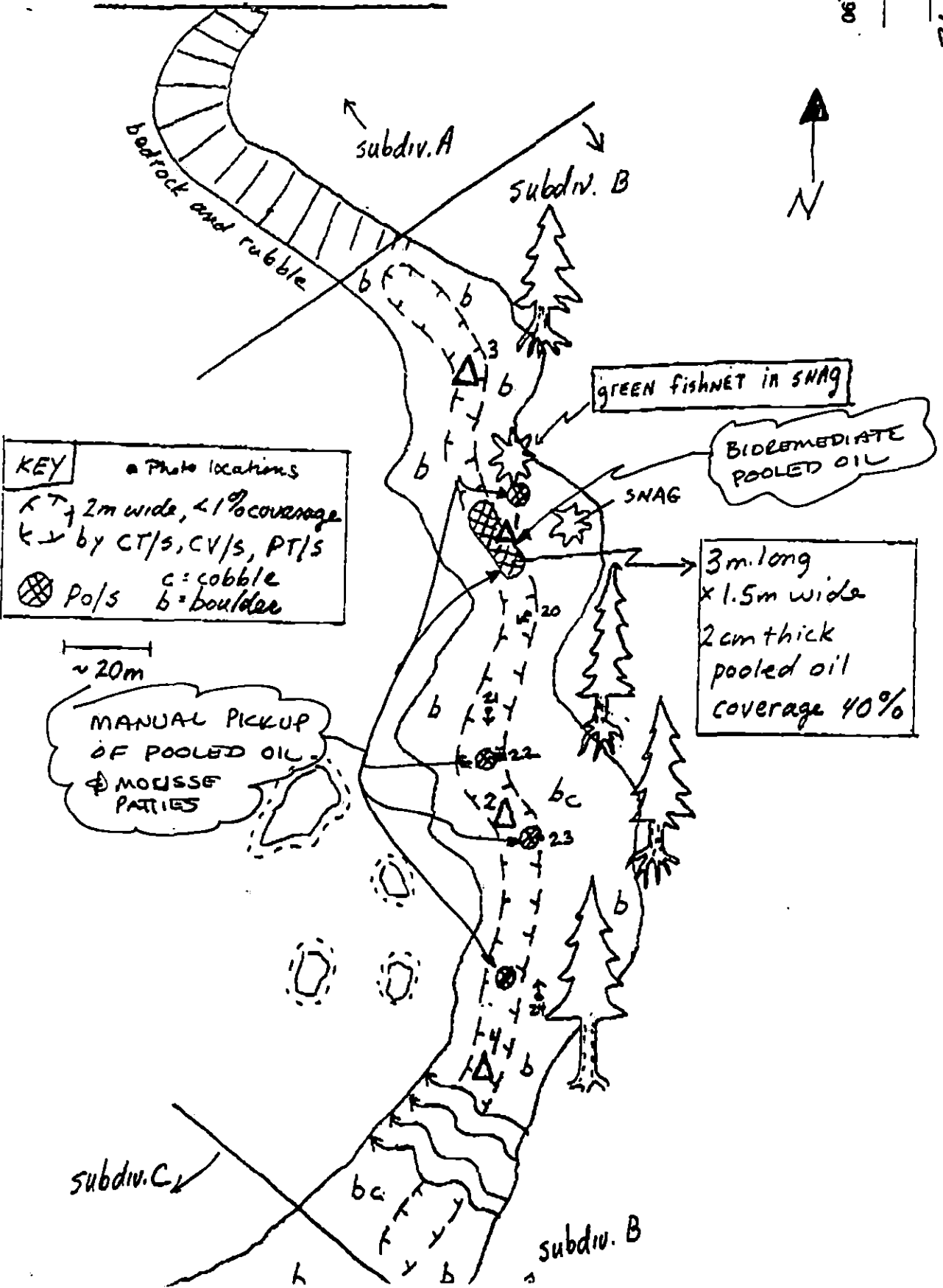
Spotted Distribution

Old Vegetation

1 Δ

Photo location, direction, and number

SKETCH MAP



*The oil is widely but evenly scattered with <1% coverage.

Oil Character: (m): AP O PO G CV150 CT150 ST O MS O PT 75 TB O FL O NO 50

SHORELINE ECOLOGICAL SUMMARY

REVISION: 02/12/90

Segment ST / PY-12 Subdivision B (of A-C) Date (mo / day / yr) 4/3/90
 Time (24 hr) 1440 Biologist M. CARR

- (A) Substrate type and % of ^{SUBDIVISION} segments:
 (1) Bedrock _____ (2) Boulder 90 (3) Cobble 10 (4) Pebble _____ (5) Sand _____ (6) Silt _____
- (B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense 50 Moderate 20 Low 30
- (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: 3
 Roll No. 3

Frames 20-24

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	

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 (EVERYWHERE)
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	

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	

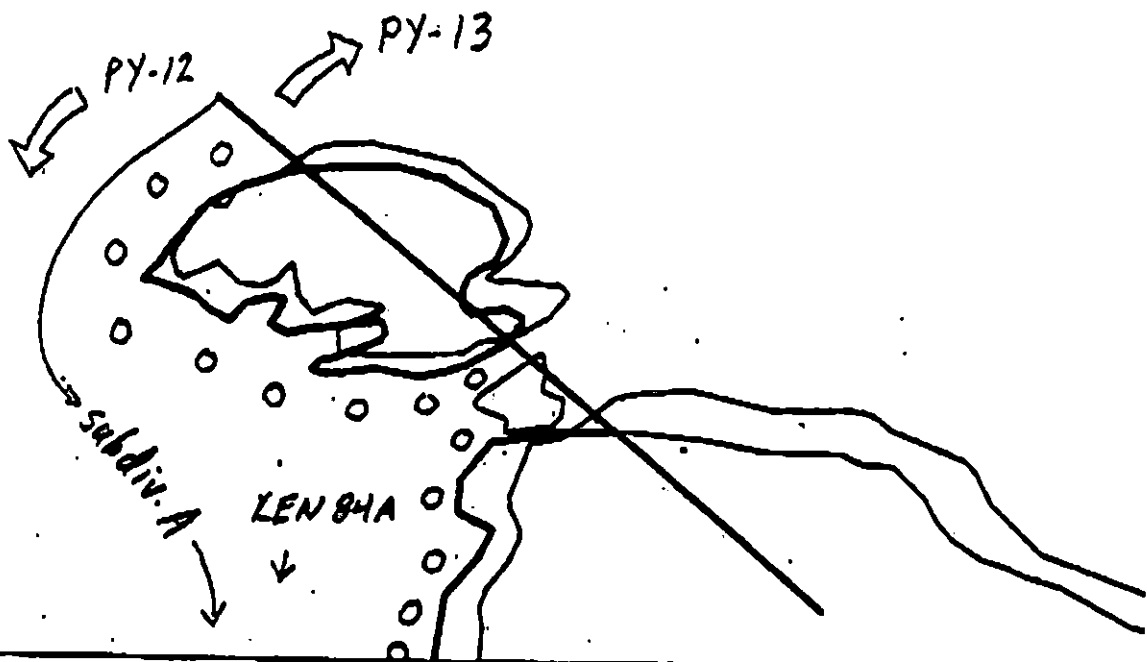
FUCUS

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	

Wildlife Observations/ General Comments:

Ecological Considerations:

Sensitivity codes: 4-QQ (National Wildlife Refuge)



PY-12

XXX Wide
 /// Medium
 --- Narrow
 TTTT Very Light

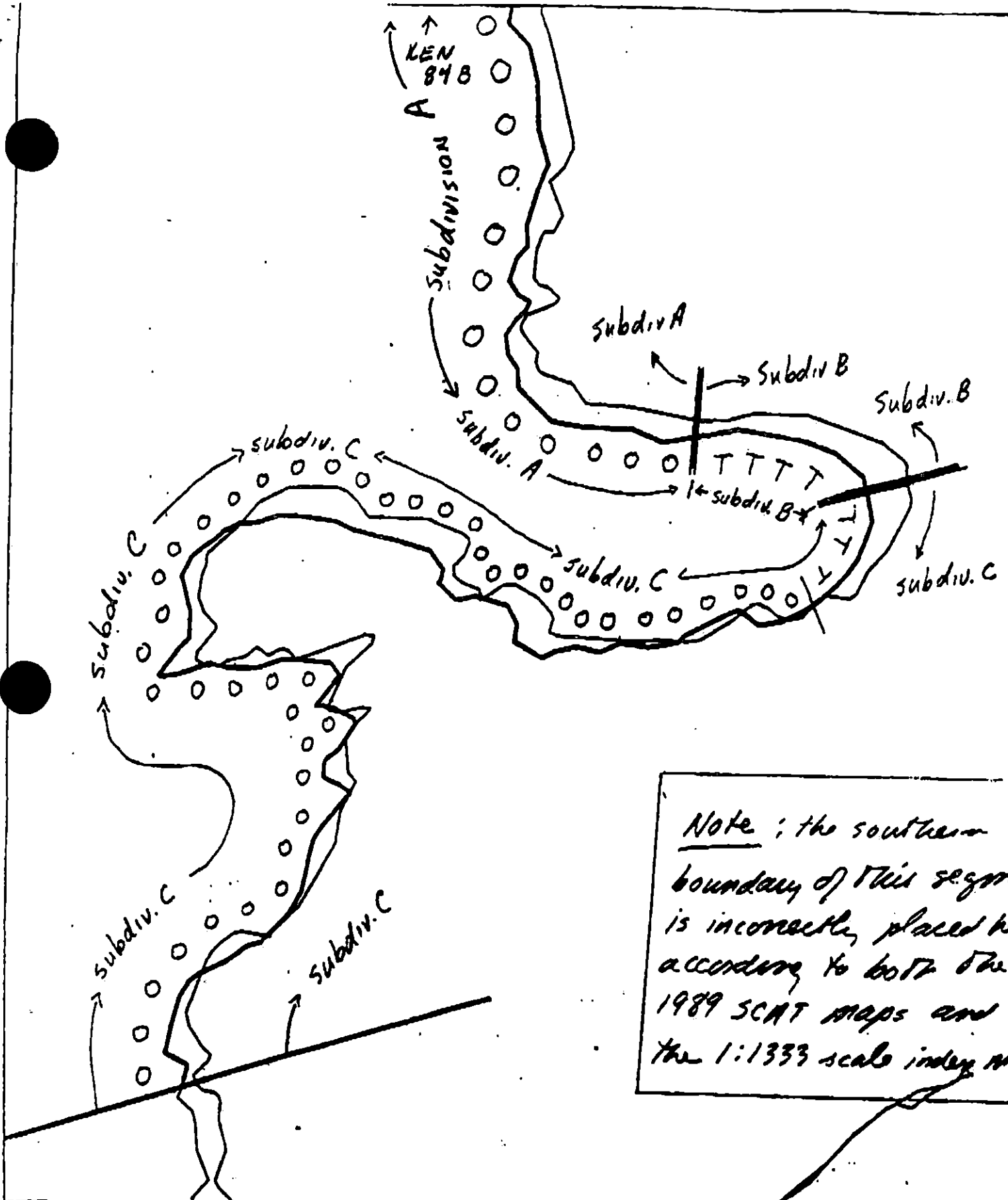
ADEC Segment Length: 4210m



Map Key: KEN-84b

Name: Marr

Date: 4/3/90



XXXX Wide

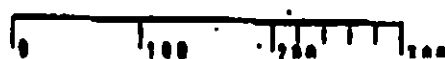
//// Medium

--- Narrow

TTTT Very Light

PY-12

ADEC Segment Length: 4210m



Map Key: KEN-848

Name: Marr

Date: 3 April 90

REGION: KENAI

SEGMENT: PY-012

SUBDIVISIONS: C (3 OF 3)

SHORELINE EVALUATION

SEGMENT ST/ PY-012 SUBDIVISION C (3 OF 3) DATE 4/3/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

4QQ National Wildlife Refuge

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to unoiled biota and substrate.

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 161 m: No Oil 1875 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:

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ PX 12 SUBDIVISION: C DATE 4/3/90

USCG / NOAA

NAME JACQUI MICHEL SIGNATURE J. Michel☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

Widely scattered patches and CT/ST do not
warrant further treatment

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

Very widely scattered. Does not require cleanup.

AND MANAGER - USFWS

NAME Mary Portner SIGNATURE Mary Portner☒ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

oil in the form of coat, stain and patches is widely
scattered along this shoreline.

SHORELINE OILING SUMMARY

REVISION NO. 03/28/90

OG MANN USCG/NOAA MICHEL SEGMENT STI PY-12
 BIO CARR LAND REP PARTNER - FWS SUBDIVISION C
 EXXON BOYER ADEC REED TIME 19:20 to 19:50
 TEAM NO.: 18 TIDE LEVEL: +1.8 to +1.7 DATE 4/3/90
 EST. SUBDIVISION LENGTH: 2130 m ☐ Sun ☐ Clouds ☐ Fog ☒ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: NORTH to SOUTH
 SURFACE SEDIMENTS: R 35 % B 10 % C 5 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 40 % Hang 40 % Vert 20 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 220 m NO 1910 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR						IMPACTED ZONES			
	C	N	P	R	W	Y	OR	GR	BL	TR	SU	U	M	U
ASPHALT PAVEMENT														
POOLED														
COVER														
COAT														
STAIN														
MOUSSE														
PATTIES														
TARBALLS														
FILM														
NO OIL														

PAVEMENT: H F S 0 sq. m by 0 cmPATTIES / TARBALLS 0 BAGS

NEAR SHORE SHEEN? NO BR RW SL TL

OILED DEBRIS <u>NO</u>	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED

☐ YES ☒ NOTYPE N/A#BAGS N/A

Photographs:

Roll No. N/AFrames N/ASUBSURFACE OIL No landings made due to inaccessibility.

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CH)	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OF	OR	OL	OF	NO		UD	UC	W	Y	OR	GR	BL	TR	SU	U	M	U		

COMMENTS

See comments for Subdivision A.

REVIEWER

TW

DATE

4/9/90

MANV

SKETCH MAP

MENT ST/PT

DIVISION C

Y 1 3 90

EGKUST

Arrow
approx. Scale
eg. Sub Entry
is Dist.
is in
length
Cover
Substrate Character
at. NW/SE/NE/SL
Notes Location(s)
Notes(s)
is Location(s)
Notes Location(s)

NO SKETCH. WAS NEEDED.

END

Δ

to Subsurface Oil

2 Δ

Subsurface Oil

CT/C

Notes Distribution

CT/S

n Distribution

CT/P

y Distribution

CT/S

Notes Distribution

Vegetation

>>

location, direction,
number

Assumes 10% coverage of CT/ST/MS in area denoted as very light.

Fracture Length (m): AP 0 PO 0 CV 0 CT 22 ST 22 MS 0 PT 22 TB 0 FL 0 NO 2108

REVISION 000000

SHORELINE ECOLOGICAL SUMMARY

REVISION: 02/22/90

Segment ST / PY-12 Subdivision C (of A-C) Date (mo / day / yr) 4 / 3 / 90e (24 hr) 1550 Biologist M. CARR(A) Substrate type and % of ^{SUBDIVISION} segments:
(1) Bedrock 85 (2) Boulder 10 (3) Cobble 5 (4) Pebble (5) Sand (6) Silt (B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense 70 Moderate 20 Low 10

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

Photographs:
Roll No. Frames NONE

BARNACLES

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

MYTILUS

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

Not present in low. inter
NOT PRESENT IN COBBLE
NOT PRESENT

GASTROPODS

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

NOT PRESENT

FUCUS

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

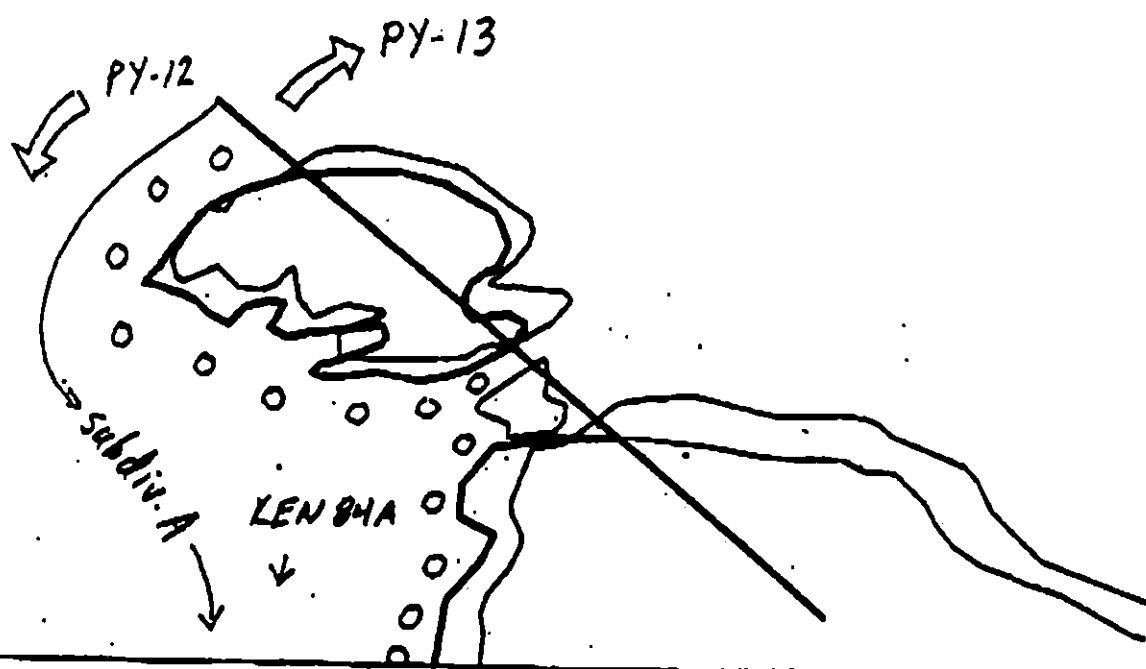
NOT PRESENT

Wildlife Observations/ General Comments:

Commutants (2) Sea otter (1 mature, 1 pup) (2)
Harlequin ducks (8) Glaucous-winged gull (1)

Ecological Considerations:

Sensitivity codes: 4-QQ (National Wildlife Refuge)



XXX Wide
 /// Medium
 --- Narrow
 TTTT Very Light

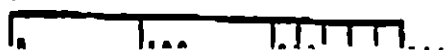
PY-12

ADEC Segment Length: 4210m

Map Key: KEN-846

Name: Marr

Date: 4/3/90



SHORELINE EVALUATION

SEGMENT ST/ PY-012 SUBDIVISION A (1 OF 3) DATE 4/3/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
4QQ National Wildlife Refuge

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid disturbance/damage to unoiled biota and substrate.

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

SHPO SIGNATURE: Charles E. H. Hines DATE: April 14, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V. Light 0 m: No Oil 1639 m
Subsurface Oil Observed: Yes No X Maximum Depth

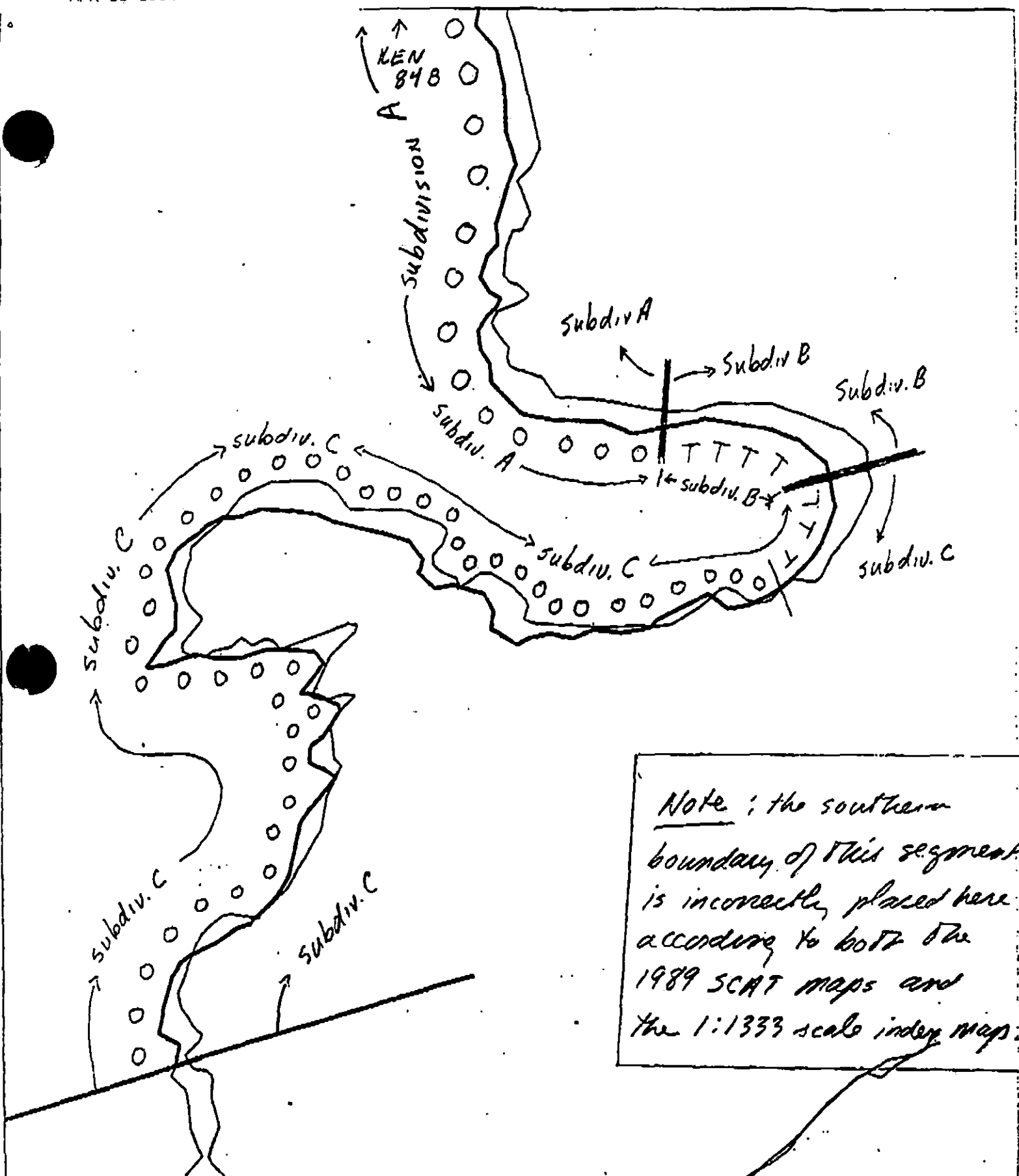
RECOMMENDATIONS:

<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: <u> </u> Breakup	<u> </u> <u> </u> Beach Cleaner
<u> </u> <u> </u> Removal	<u> </u> Other (see comments)

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 4/14/90
ADEC JOHN BAUER John Bauer
EXXON ANDY TBA Andy TBA FOSC: my L DATE: 5-1-90
NOAA Burt Wescott Burt Wescott
USCG G.A. REITER G.A. Reiter



Note: the southern boundary of this segment is incorrectly placed here according to both the 1989 SCAT maps and the 1:1333 scale index maps.

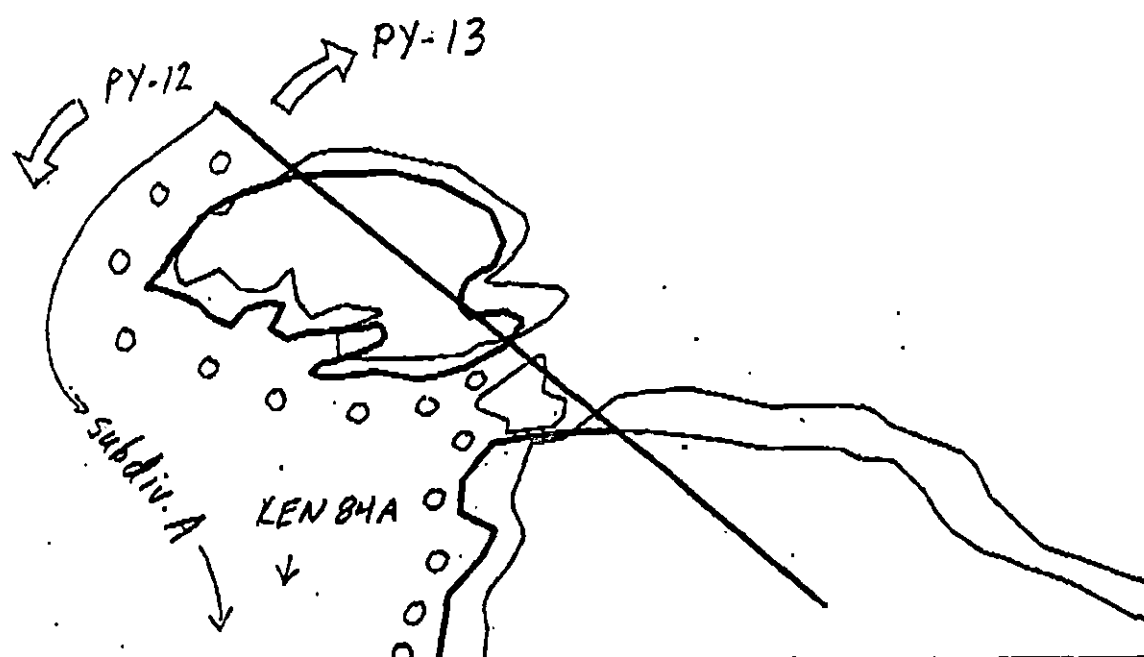

 XXX Wide
 /// Medium
 --- Narrow
 TTTT Very Light

PY-12
 ADEC Segment Length: 4210m

Map Key: KEN-84a

Name: Mann

Date: 3 April 90



PY-12

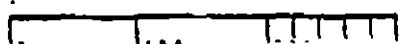
XXX Wide

/// Medium

--- Narrow

TTTT Very Light

ADEC Segment Length: 4210m



Map Key: KEN-84b

Name: MannDate: 4/3/90

SHORELINE EVALUATION

SEGMENT ST/ PY-012 SUBDIVISION C (3 OF 3) DATE 4/3/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
4QQ National Wildlife Refuge

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid disturbance/damage to unoiled biota and substrate.

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

SHPO SIGNATURE

Charles E. Hume

DATE:

April 14, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V. Light 161 m: No Oil 1875 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: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> Removal	<u> </u> Other (see comments)

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 4/14/90.

ADEC

JOHN BAUER

EXXON

ANDY GIB

NOAA

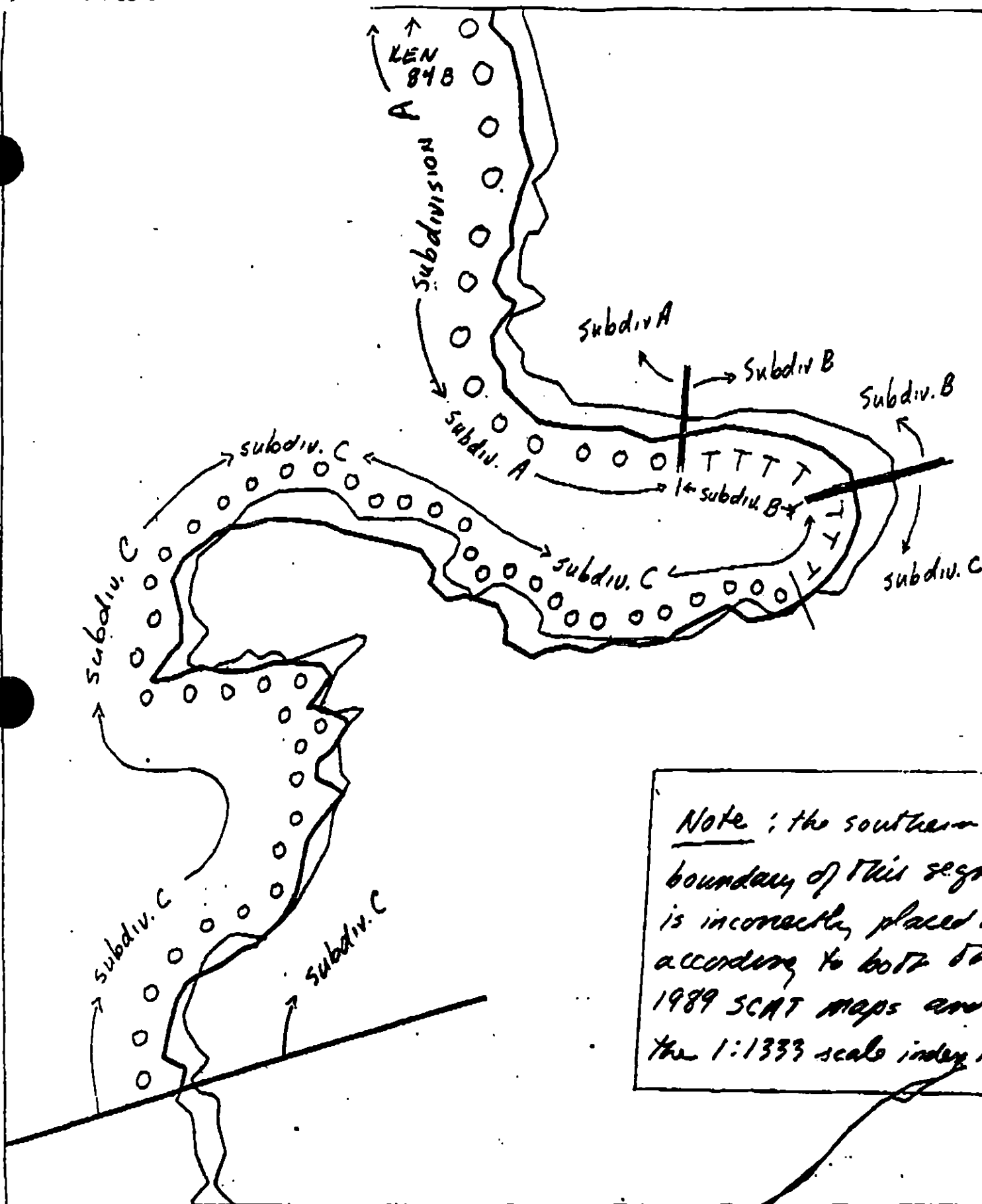
Burt Wescott

USCG

G.A. REITER, G.A. Reite

FOSC:

DATE: 5-1-90



XXXX Wide
 /// Medium
 --- Narrow
 TTTT Very Light
 o o o o

PY-12

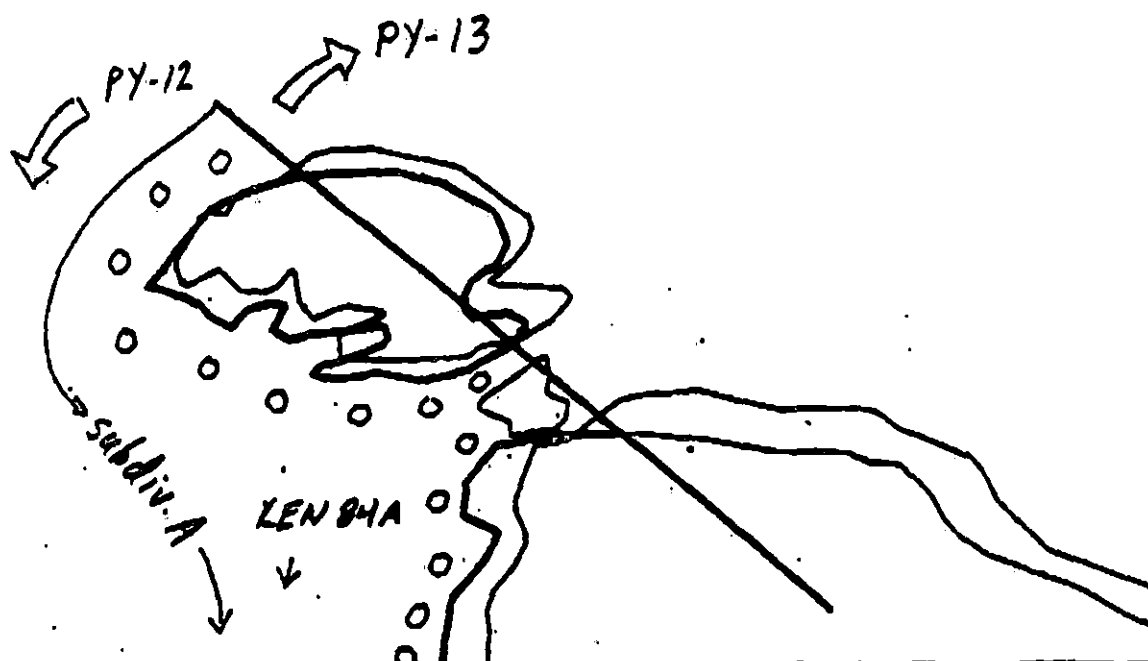
ADEC Segment Length: 4210m

0 100 200 300

Map Key: KEN-840

Name: Marr

Date: 3 April 90



PY-12

XXX Wide

/// Medium

--- Narrow

TTTT Very Light

ADEC Segment Length: 4210m



Map Key: KEN-84b

Name: MarrDate: 4/3/90

SHORELINE EVALUATION

SEGMENT ST/ PY-012 SUBDIVISION B (2 OF 3) DATE 4/3/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

4QQ National Wildlife Refuge

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/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: Charles E. Holmes DATE: April 14, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 223 m: No Oil 0 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> </u> Tarmat: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> Removal	<u> </u> Other (see comments)

COMMENTS: Manual removal of pooled oil and mousse patties, followed by bioremediation.

TAG COMMENTS:

TAG APPROVAL DATE: 4/14/90.

ADEC JOHN BAUER John Bauer

EXXON ANDY GAY Andy Gay

NOAA Burt Wascott Burt Wascott

USCG G.A. REITER G.A. Reiter

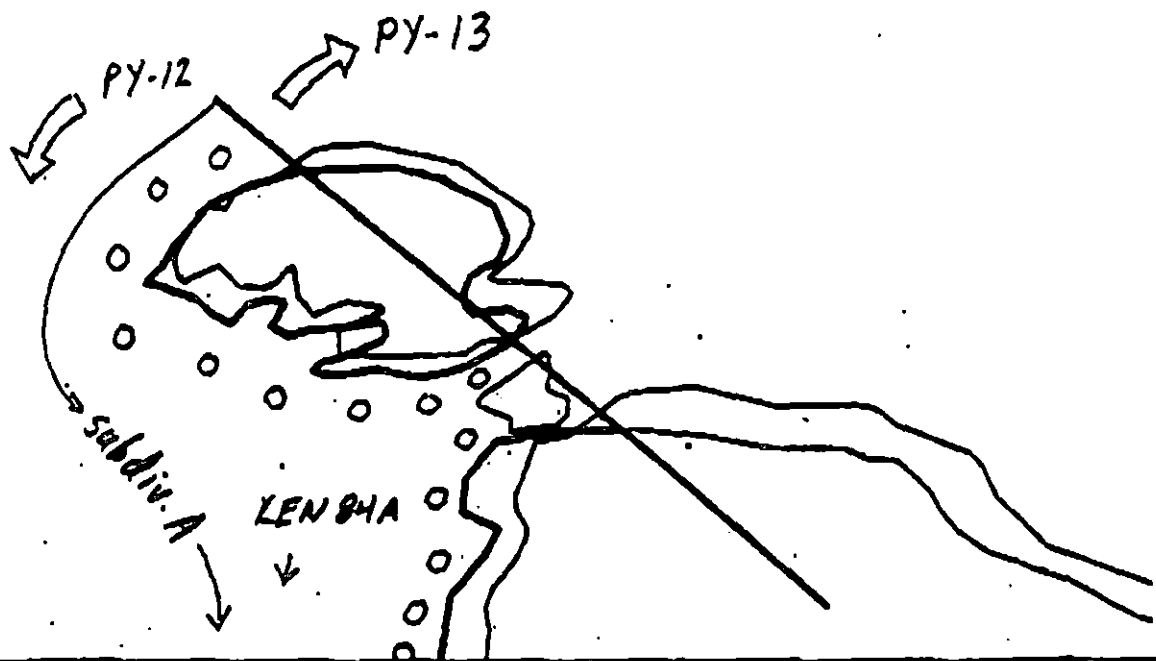
FOSC: W L DATE: 5-1-90

Do not bioremediate IAW Lm's desires.

**Photo location, direction,
and number**

subdiv. B

1-2-1



XXX Wide

//// Medium

--- Narrow

TTTT Very Light

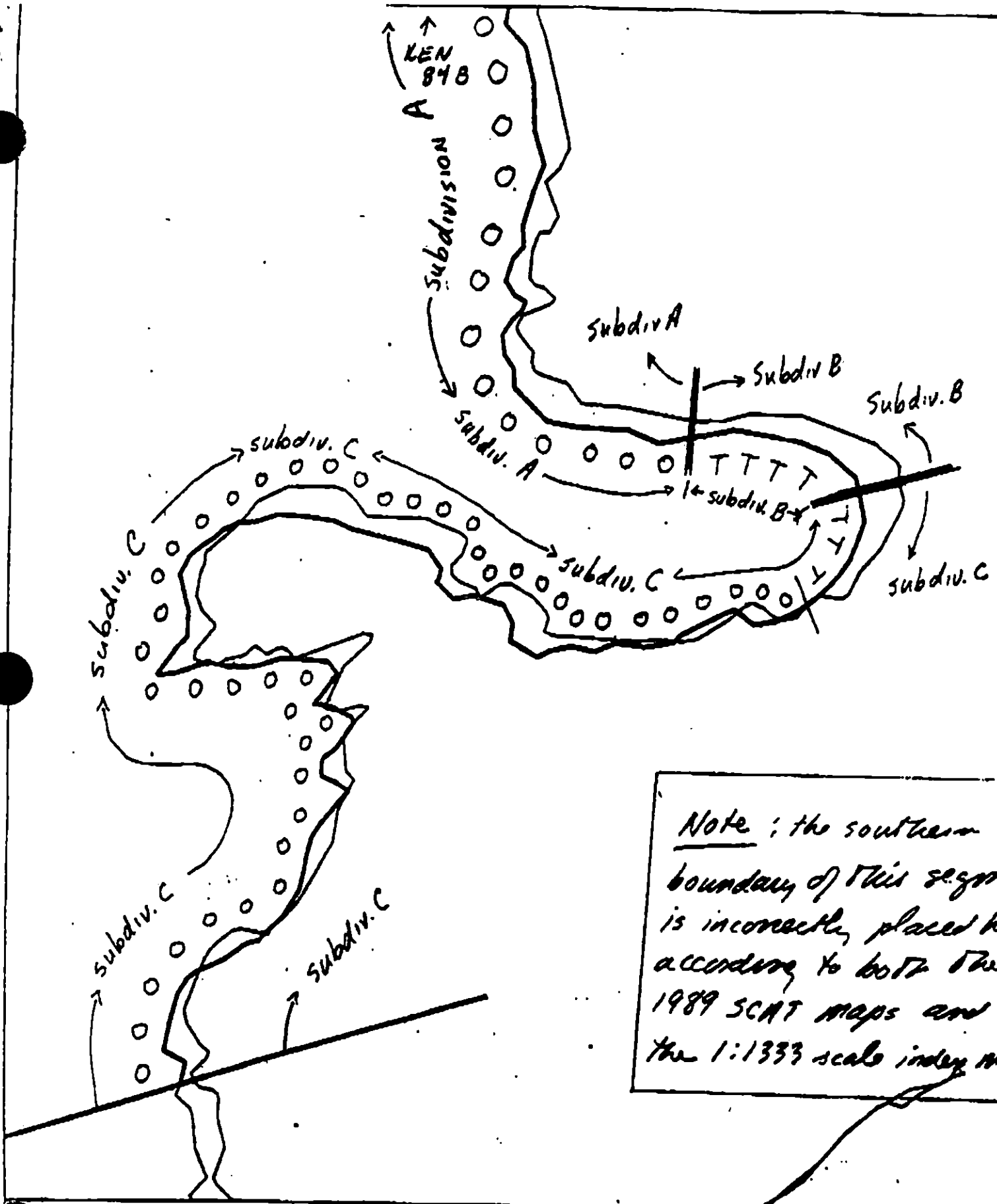
PY-12

ADEC Segment Length: 4210m

Map Key: KEN-84b

Name: Marr

Date: 4/3/90



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

PY-12

ADEC Segment Length: 4210m

Map Key: KEN-840

Name: Marr

Date: 3 April 90

1991 MAYSAP EVALUATION

SEGMENT: PY 012 SUB: B REGION: KEN SURVEY DATE: 5/14/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

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

MAYSAP FIELD SHORELINE COMMENT SHEET

PY012-B

1/

TEAM NO. 4 SEGMENT PY-012 SUBDIVISION B DATE MAY 14 1991

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara S. Crosby☒ NTR

Survey crew recovered what silt was observed.
Please reference photos.

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles 5/16/91☒ NTR

Survey crew picked up 4 bags of MS
while surveying. No appreciable oil
remaining.

LANDMANAGER

NAME

JOHN P. HARDISTER OF USFWS

SIGNATURE

John P. Hardister 5/16/91☒ NTR

Recoverable oil was removed.

USCG/NOAA

NAME

Bill J. McArthur

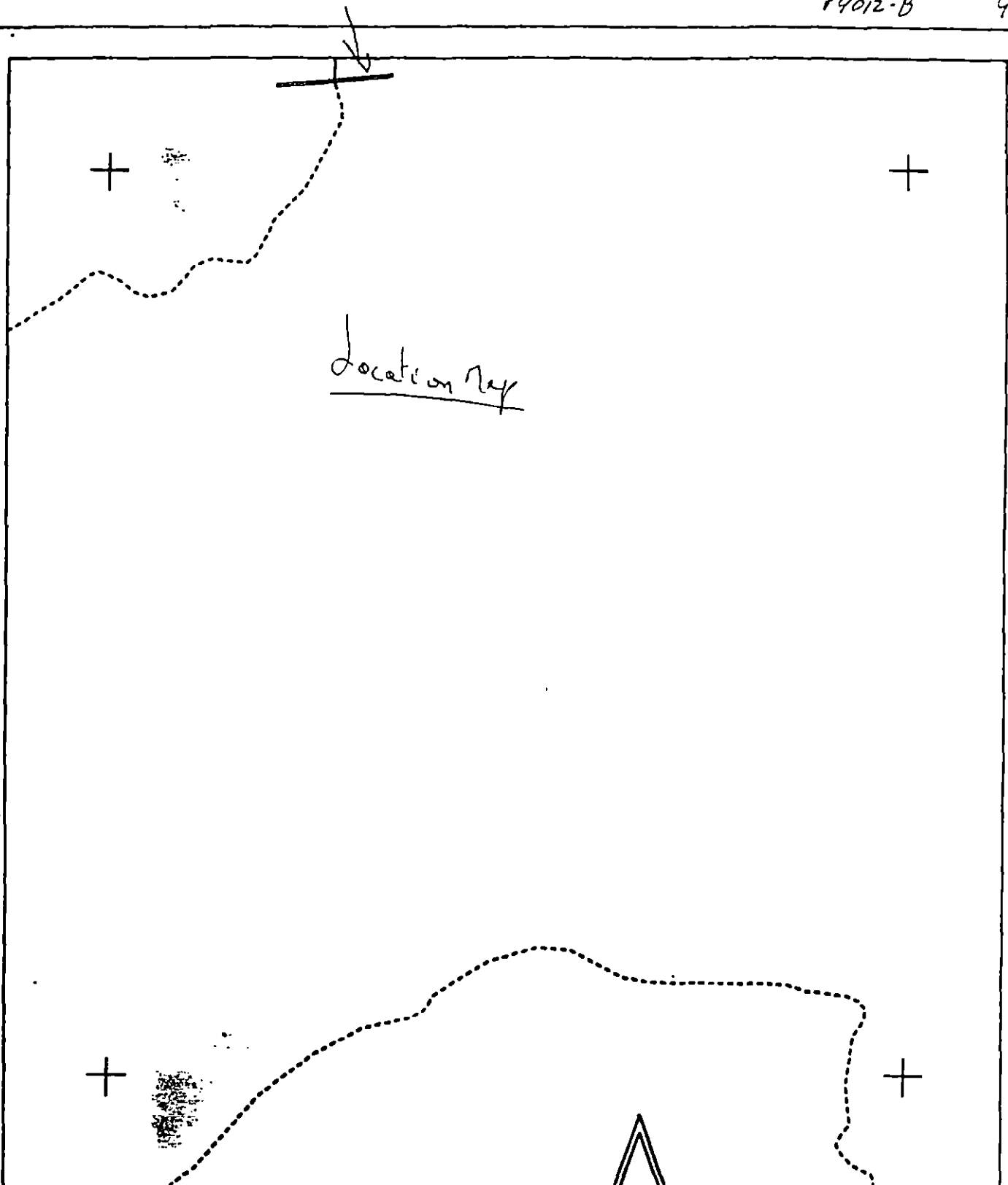
SIGNATURE

Bill J. McArthur☒ NTR

Concur with above

PAGE 2 OF 10

revised 5/18
reviewed 5.18.91 74



P Y 0 1 2 B

REF ID: A66088

AK State Plane Zone 4
sp701255

Subdivision Field Map

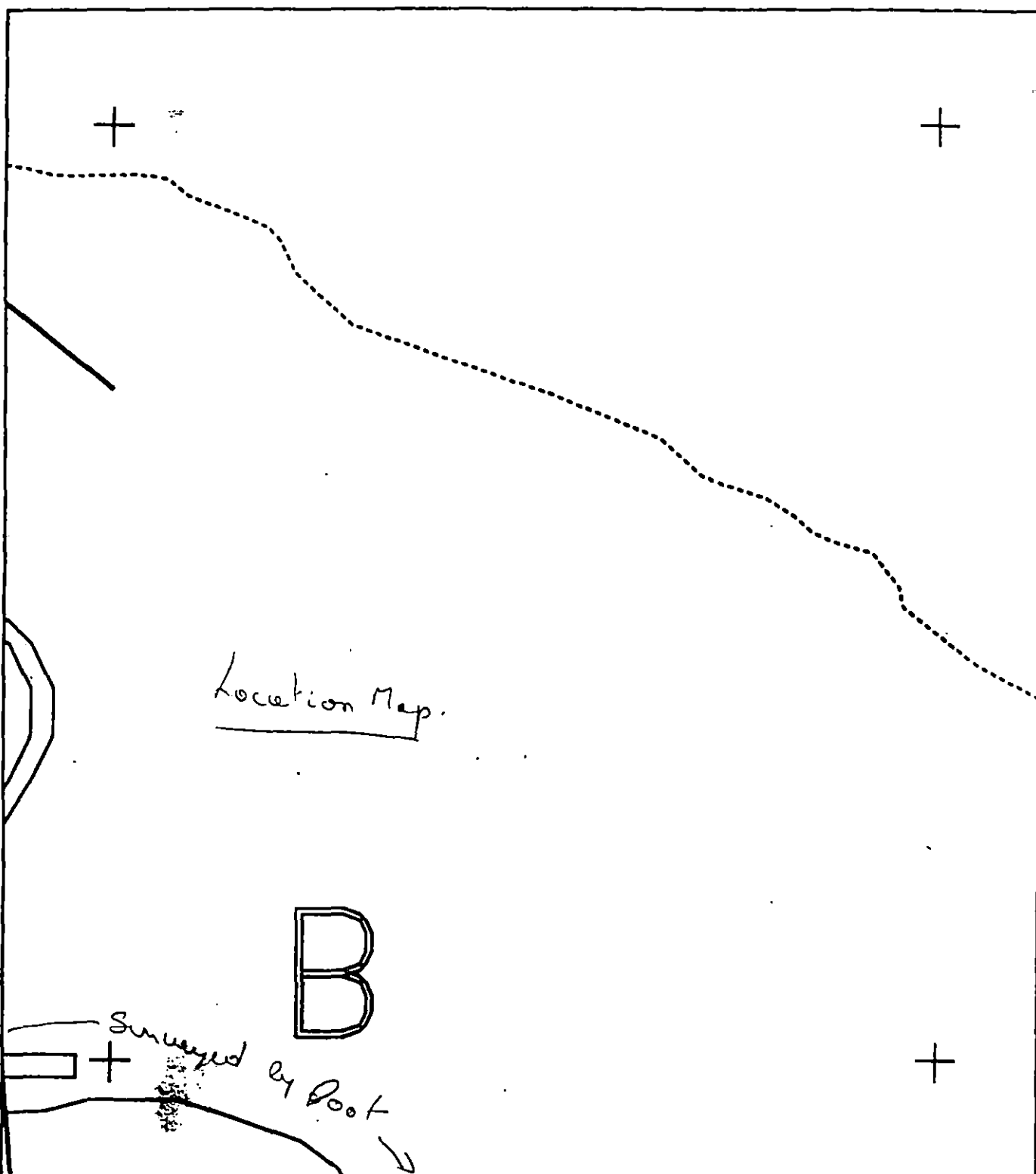
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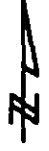
Name: Mr Sembrich

Date: May 14/9.

reviewed 5.18.91
 & reviewed 5/18

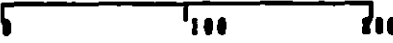
25 reviewed 5/18





PY012 B

METERS



0 100 200

AK State Plane Zone 4
SPR012B4

Subdivision Field Map

Map Key: KENPY012B4

Name: JR Sample

Date: MAY 14/91

reviewed 5.18.91 Q
EC reviewed 5/18

Og sketched Map

P4.012.B

17 Samples

MAY 14/91

1810 - 1935

Legend



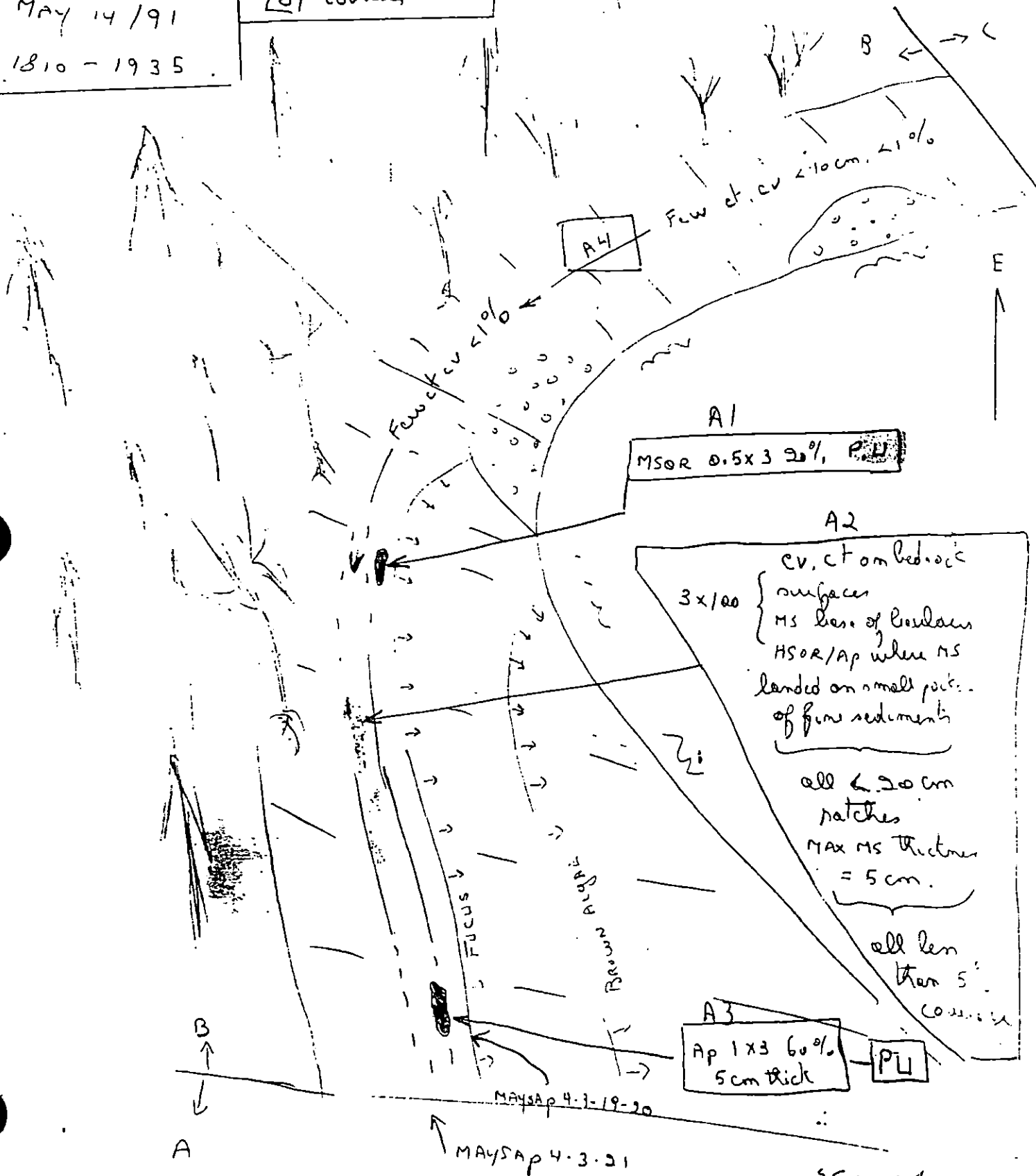
Steep bedrock
with talus

of angular boulders



cobbles

Meters
0 40



ES revised 5/18

reviewed 5.18.1191

RAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 14, 1991 1858 - 1927
SEGMENT #	PY012	TIDAL HEIGHT (Range)	+3.4 => +2.6
SUBDIVISION	B	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Variable 0-10 kt, rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A1-A4 HSOR is present in splatters in the upper intertidal zone and extend into the middle intertidal at this location. Black lichen (Verrucaria) and filamentous green algae are present near or on the oil in the upper intertidal zone. Crustose brown algae (Hildenbrandia), rockweed (Fucus), sparse densities of barnacles and limpets, and numerous littorine snails are present in the vicinity of the oil in the middle intertidal zone. These intertidal species (and most others) are all more abundant slightly below the tidal level of the oil. Recruitment of rockweed is evident from the dense cover of juveniles 1 to 3 feet below the oiled area. Barnacles are abundant through most of the middle and low zones. Barnacle spat are sparse. Red algae (Palmaria, Halosaccion, Microcladia?) and green algae (Ulva, Cladophora) are abundant below the Fucus zone in the low intertidal. Juvenile mussels are present in scattered patches within crevices and on Fucus, but are not particularly abundant inside this bay. A sparse clam bed (Macoma nasuta, Prototheca staminea, Saxidomus sp.) is present along the shallow sloped portion of the beach.

Manual pickup was performed during the survey. Additional manual pickup, if performed, will not have negative impacts on the local biota.

General Features of PY012-B

This subdivision is located within a small cove exposed to low waves. The shore in this subdivision is nearly all high angle boulders, bedrock outcrops, and cobble, with a few very small medium angle beaches. The upper shore has numerous dead trees that may have been killed by subsidence during the 1964 earthquake. The intertidal zone appears healthy

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl	1	2	
Gulls/Kittiwakes	2	6	
Shorebirds	1	5	
Corvids			
Other Birds	2	2	

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

Shoreline subdivision map showing important biological features attached.

PY012-B Biology Report, continued

and typical of similar protected coves throughout the area. Black lichen is patchy, but, quite abundant in the very high shore. Filamentous green algae often forms a zone immediately below the lichen. Fucus, barnacles, littorine snails, and limpets are usually found in the upper through the middle shore. Fucus is generally very dense in the mid-intertidal of this shore. Littorines are somewhat sparse compared to other areas. Limpets are moderately abundant. The lower zones have increasing cover of red algae, with scattered patches of green algae. Mussels are found only in small patches in crevices where mostly small individuals are present, with few adults. Clams (*Macoma* sp., *Saxidomus* sp.) are found in the low zone in low densities. Sea cucumbers (*Eupentacta* sp.) are quite abundant below cobble in the low zone, as are bryozoans, hermit crabs, isopods, and amphipods.

List of Common Species from PY012-B

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., *Enteromorpha* sp., *Prasiola meridionalis*, *Ulva* sp., *Urospora* sp.
3. Brown Algae - Phaeophyta
Costaria costata, *Ectocarpus* spp., *Fucus distichus*, *Hildenbrandia* sp., *Ralfsia* sp., *Syctosiphon lomentaria*
4. Red Algae - Rhodophyta
Corallina sp., *Endocladia muricata*, *Halosaccion glandiforme*, *Iridaea* sp., *Lithothamnion* sp., *Membranoptera dimorpha*, *Odonthalia floccosa*, *Palmaria palmata*, *Petrocelis* sp., *Porphyra* sp., *Ptilota filicina*, *Rhodomela larix*
5. Higher Plants - *Leymus mollis* (beach rye grass)

II. Marine Animals

1. Sponges - Porifera - *Halichondria* sp.
2. Anemones - *Anthopleura artemesia*, *Epiactis ritteri*, *Metridium senile*, *Urticina crassicornis*, *Stomphia* sp.
3. Hydroids - Sertularidae - *Sertularella*?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - *Emplectonema gracile*
8. Polychaete Worms
Glyceridae
Nepthyidae
Nereidae - *Nereis* spp.
Serpulidae - *Serpula* sp., *Crucigera* sp., *Eudistylia polymorpha*
Spirorbidae - *Spirorbis* sp.
9. Peanut Worms - Sipunculids - *Phascolosoma agassizii*
10. Crustaceans
a. Amphipods - *Orchestia* sp.?
b. Barnacles - *Balanus glandula*, *Semibalanus cariosus*
c. Crabs - *Haplogaster* sp., Paguridae (hermit crabs)
d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnoriadorsphaeroma oregonensis*

PY012-B Biology Report, continued

11. Mollusca
 - a. Chitons - Mopalia mucosa, Katharina tunicata, Tonicella lineata
 - b. Snails - Gastropods
Amphissa columbiana, Littorina sitkana, L. keenae, Natica clausa,
Nucella lamellosa, N. lima
 - c. Limpets - Acmaea mitra, Lottia digitalis, L. persona, Tectura
fenestrata, T. persona, T. scutum, Siphonaria thersites
 - d. Nudibranches - Lamellidoris fusca, Melibe leonina
 - e. Bivalves - Chlamys hastata, Macoma nasuta, Modiolus modiolus, Mytilus
edulis, Pododesmus cepio, Prototheca staminea, Saxidomus
giganteus
12. Echinoderms
 - a. Brittle Stars - Ophiolus sp., ?
 - b. Sea stars
Dermasterias imbricata, Evasterias truscheli, Henricia leviuscula,
Leptasterias hexactis, Orthasterias keohleri, Pycnopoda helianthoides,
Solaster sp.
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Microporina borealis, Schizoporella sp.
15. Fishes
 - Cottidae
 - Stichaeidae - Xiphister atropurpureus, X. mucosus

BIO SKETCH MAP

J.P. BARRY

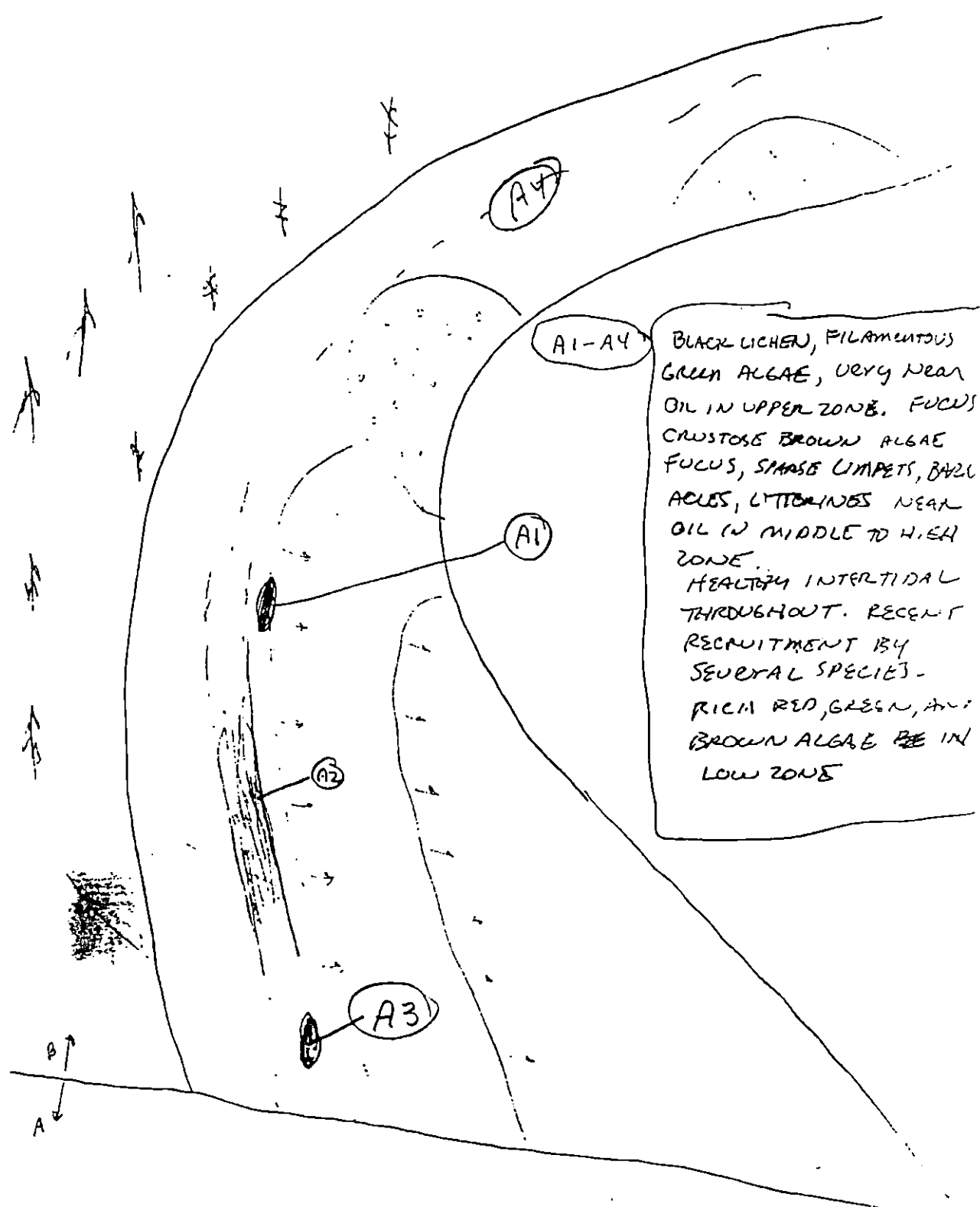
14 MAY 91

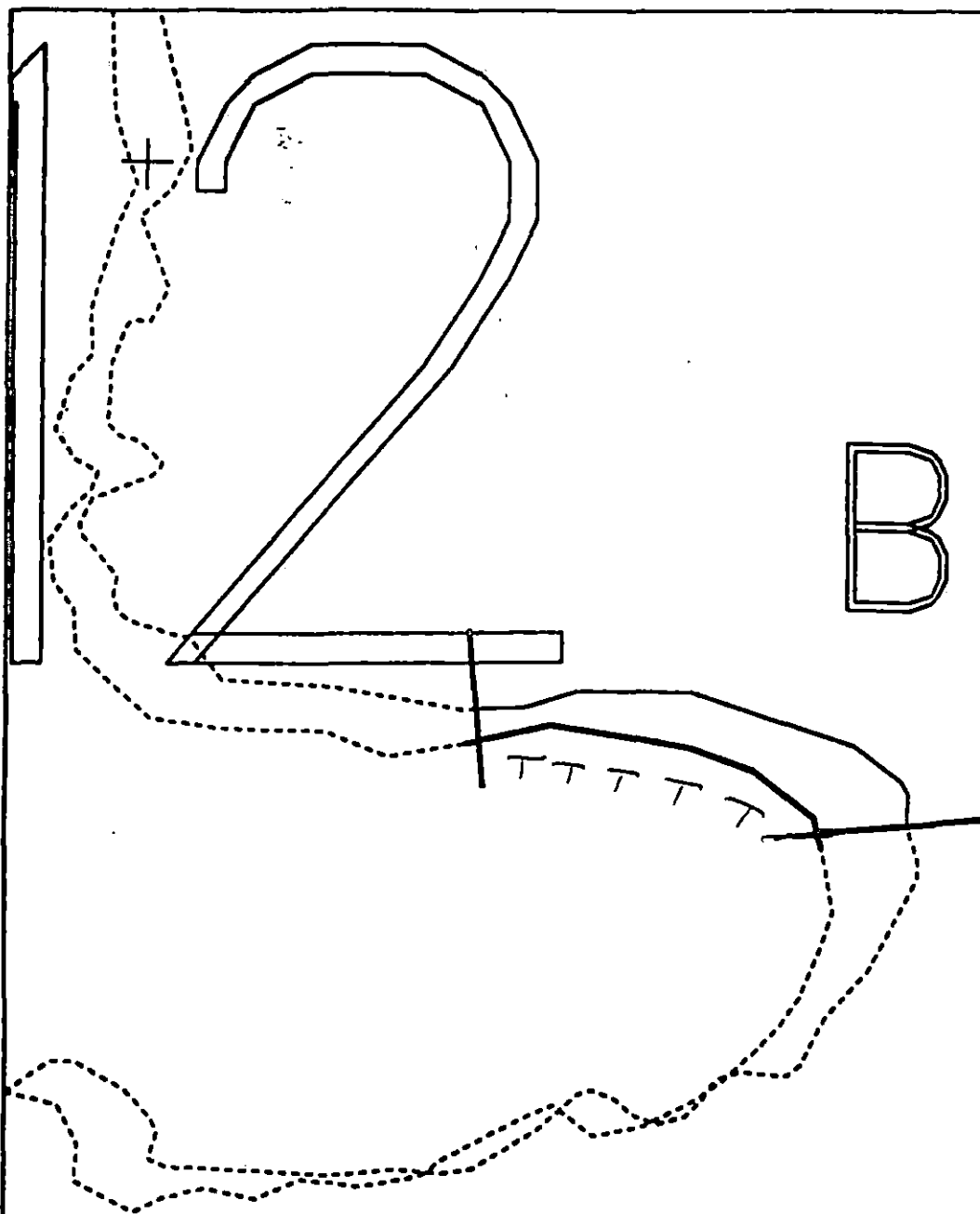
1810-1935

Steep bedrock / talus

Cobble

1-4012-B





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

PY012 B
 ADEC Subsegment Length: 223m
 METERS

5 100 200
 AK State Plane Zone 4
 apy012b



Subdivision Field Map
 Map Key: KENPY0128
 Name: Jim Semp
 Date: May 14, 1991
 Date Entered:

et reviewed 5/18
 reviewed 5.18.91

1991 MAYSAP EVALUATION

SEGMENT: PY 012 SUB: C REGION: KEN SURVEY DATE: 5/14/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

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

ADEC

NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☒ NTR Available past siling data showed no oiling within
subdivision - Spot check revealed very sporadic
OT/CV/MS. coverage $\approx 1\%$ -

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles

☒ NTR MS pattirs were retrieved during the
survey that were recoverable there fore
no additional treatment is recommended.

LANDMANAGER

NAME JOHN P. HARDISTER OF USFWS SIGNATURE John P. Hardister 5/16/91

☒ NTR No additional treatment necessary.

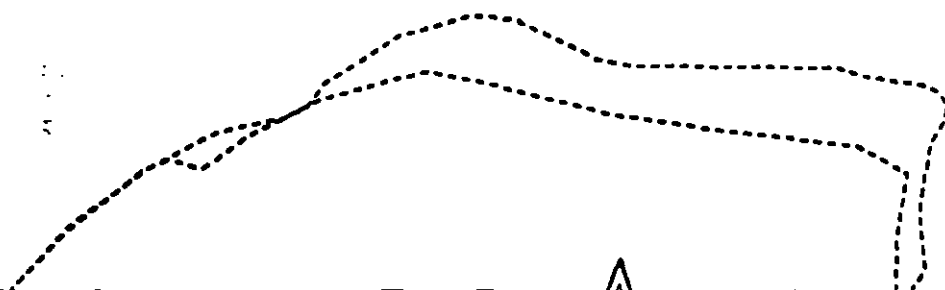
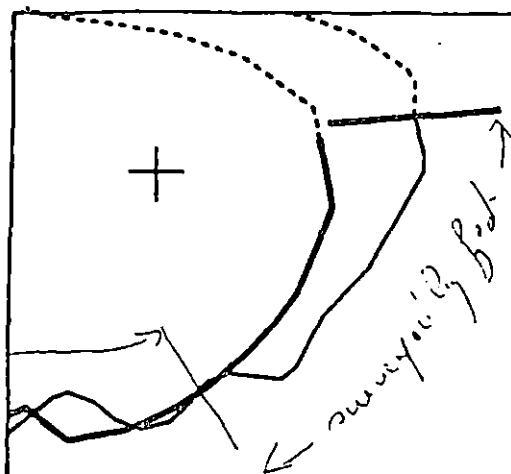
USCG/NOAA

NAME CAROL MC KAY SIGNATURE Carol Mc Kay

☒ NTR Appoximal TP/AP with internet patches
of Oed Mause, picked up at scene.

PAGE 2 OF 11

Reviewed 5.18.91 Qu
REV. SLO CB 18 MAY

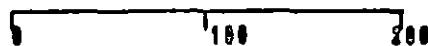


XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

PY012 C

ADEC Subsegment Length: 2035m

METERS



AK State Plane Zone 4
 apy012eb



Subdivision Field Map

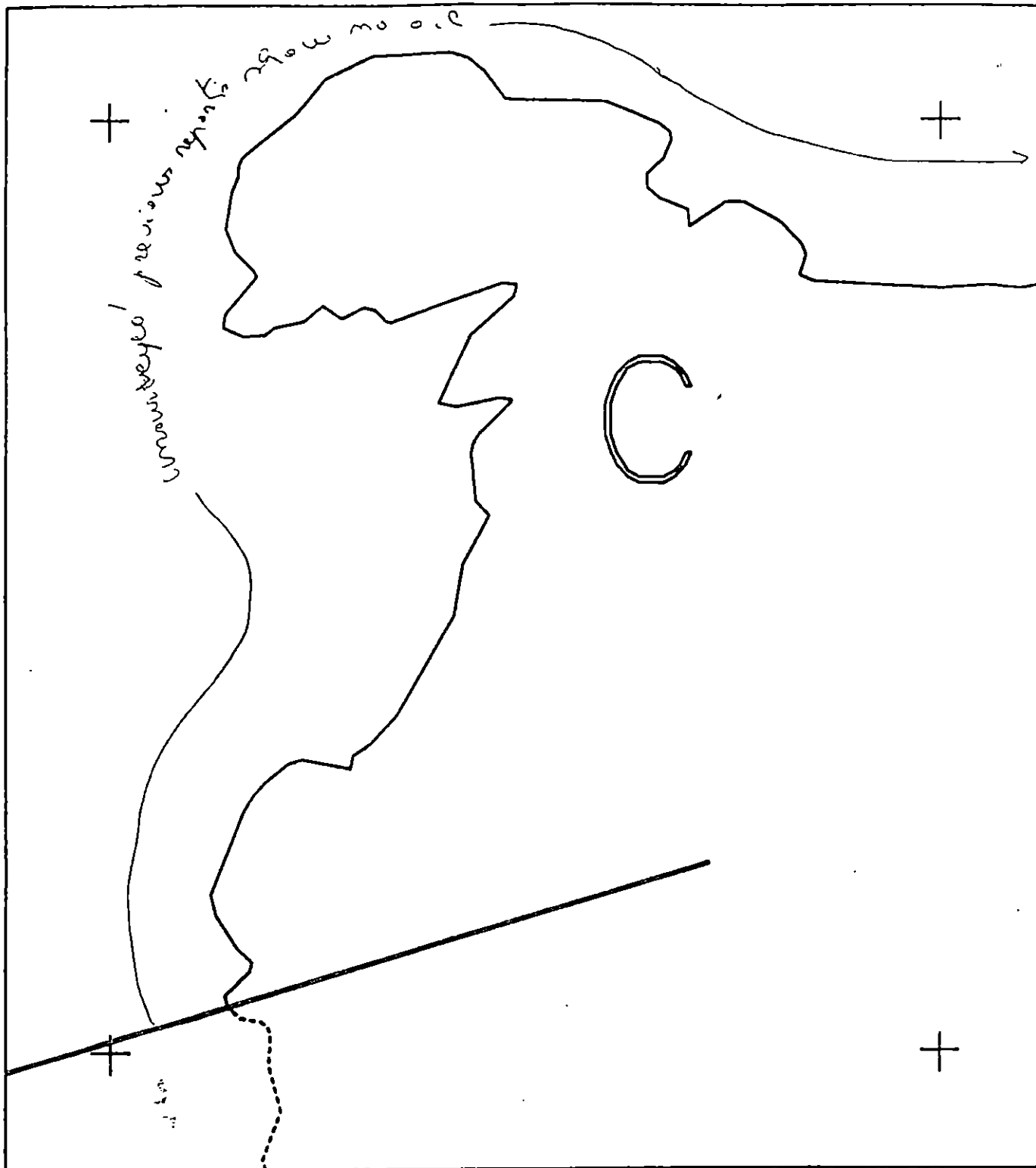
Map Key: KENPY012Cb

Name: for Samples

Date: MAY 14/01

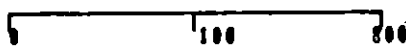
Date Entered:

reviewed 5.18 by



PY012 C

METERS



AK State Plane Zone 4
april 2000

Subdivision Field Map

Map Key: KENPY012C

Name: for Sample

Date: MAY 14/91

reviewed S.B. ay

① Sketch map.

Py. 012 - C

Leun Marie Sempels

MAY 14/91

1750 - 1810

Legend

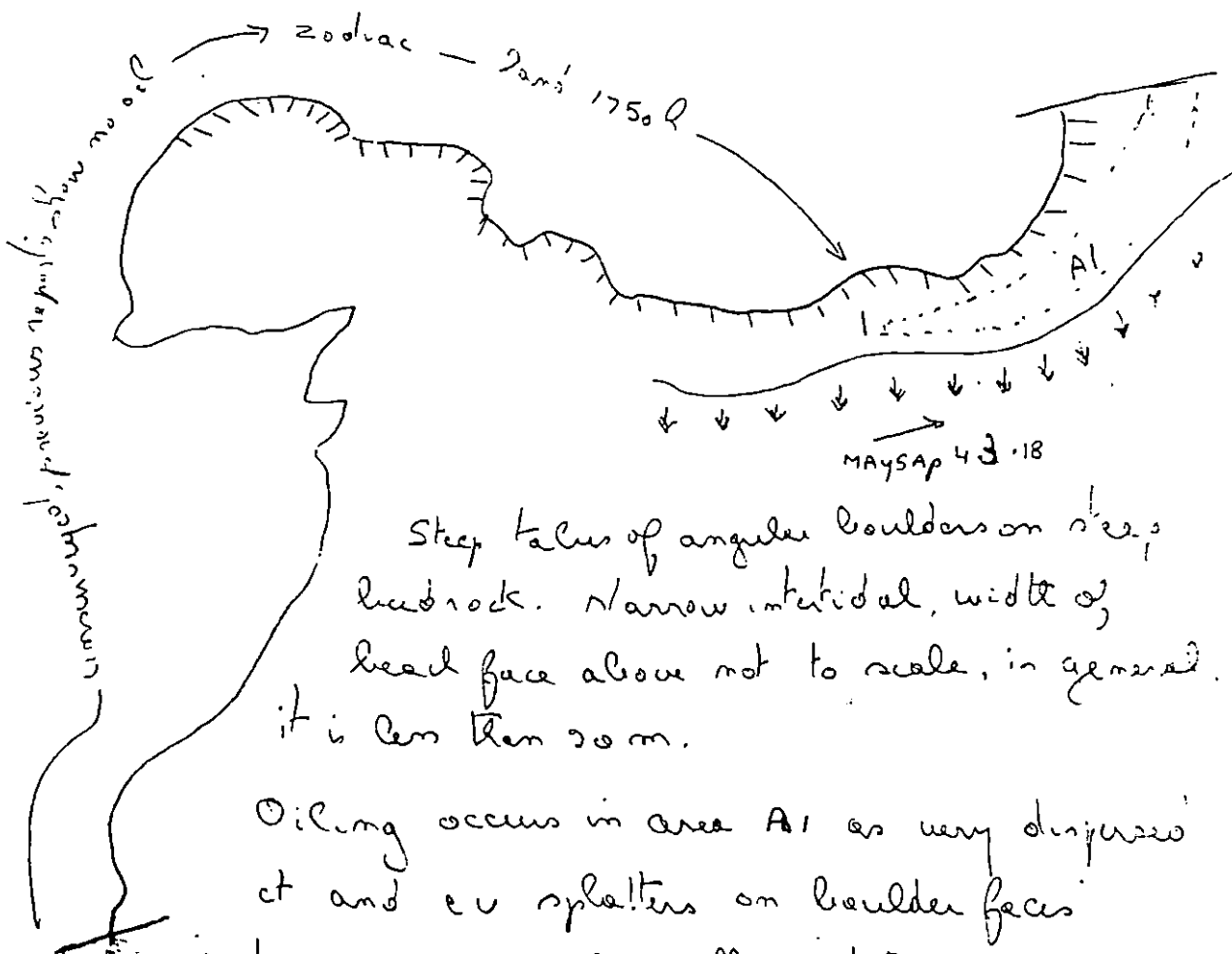
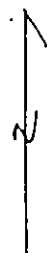
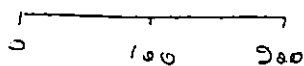


Steps lead rock

shoreline with talus
of angular boulders

↓

Vegetated back'ne
(steep)



Steep talus of angular boulders on steep
hard rock. Narrow intertidal, width of
beach face above not to scale, in general
it is less than 20 m.

Oiling occurs in area A1 as very dispersed
 oil and oil splatters on boulder facies
 and an occasional small pocket of oil on
 sand/ap behind boulders all less than 20 cm diameter
 and 2-3 cm thick. Coverage $\ll 1\%$, frequency
 of occurrence ~ 1 or 2 splatters per 10 m. Size of
 boulder hinders observations. Difficult access.
 (See photos MAYSAF 4.3.18) Picked up all that could be removed
 " 4.3.17 location index photo

reviewed 5.18.91 qy
REVIEWED @ 18 MAY

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 14, 1991 1750 - 1858
SEGMENT #	PY012	TIDAL HEIGHT (Range)	5.9 => 3.4
SUBDIVISION	C	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Variable 0-10 kt, rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A1 Splatters of HSOR occur along the upper intertidal zone at this location. Black lichen (Verrucaria), crustose brown algae (Hildenbrandia), and rockweed (Fucus) are located in the vicinity of the oil. Fucus and Hildenbrandia are much more abundant a few feet below the oiled site. In addition, recruitment of Fucus is evident from the dense cover of juveniles 2 to 3 feet below the oiled area. Barnacles and limpets are also abundant from near the upper zone to the low zone. Red algae (Palmaria, Halosaccion, Microcladia?) and green algae (Ulva, Cladophora) are abundant below the Fucus zone in the low intertidal. Juvenile mussels are present in scattered patches within crevices and on Fucus, but are not particularly abundant inside this bay.

Manual pickup was performed during the survey. Additional manual pickup, if performed, will not have negative impacts on the local biota.

General Features of PY012-C

This subdivision comprises low to high exposure shores. The surveyed portion of the subdivision included only the low exposure shore. This section of the subdivision, located within the cove, is mainly medium to high angle shores of boulders, bedrock outcrops, and cobble. The upper shore has numerous dead trees that may have been killed by subsidence during the 1964 earthquake. Black lichen is patchy, but quite abundant in the very high shore. Filamentous green algae often forms a zone immediately below the lichen. Fucus, barnacles, littorine snails, and limpets are usually found in the upper through the middle shore. Fucus is generally very dense in the mid-intertidal of this shore. Littorines are somewhat sparse compared to other areas. Limpets are moderately abundant. The lower zones have increasing cover of red algae, with scattered patches of

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	2	5	
Waterfowl	1	4	
Gulls/Kittiwakes	2	10	
Shorebirds	1	2	
Corvids			
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)	2		
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

2001 5/18/91 JMB

PY012-C Biology Report, continued

green algae. Mussels are found only in small patches in crevices where mostly small individuals are present, with few adults. Clams (*Macoma* sp., *Saxidomus* sp.) are found in the low zone in low densities. Sea cucumbers (*Eupentacta* sp.) are quite abundant below cobble in the low zone, as are bryozoans, hermit crabs, isopods, and amphipods.

List of Common Species from PY012-C

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., *Enteromorpha* sp., *Prasiola meridionalis*, *Ulva* sp., *Urospora* sp.
3. Brown Algae - Phaeophyta
Costaria costata, *Ectocarpus* spp., *Fucus distichus*, *Hildenbrandia* sp., *Ralfsia* sp., *Syctosiphon lomentaria*
4. Red Algae - Rhodophyta
Corallina sp., *Endocladia muricata*, *Halosaccion glandiforme*, *Iridaea* sp., *Lithothamnion* sp., *Membranoptera dimorpha*, *Odonthalia floccosa*, *Palmaria palmata*, *Petrocelis* sp., *Porphyra* sp., *Ptilota filicina*, *Rhodomela larix*
5. Higher Plants - *Leymus mollis* (beach rye grass)

II. Marine Animals

1. Sponges - Porifera - *Halichondria* sp.
2. Anemones - *Anthopleura artemesia*, *Epiactis ritteri*, *Metridium senile*,
Urticina crassicornis, *Stomphia* sp.
3. Hydroids - Sertularidae - *Sertularella*?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - *Emplectonema gracile*
8. Polychaete Worms
Glyceridae
Nepthyidae
Nereidae - *Nereis* spp.
Serpulidae - *Serpula* sp., *Crucigera* sp., *Eudistylia polymorpha*
Spirorbidae - *Spirorbis* sp.
9. Peanut worms - Sipunculids - *Phascolosoma agassizii*
10. Crustaceans
 - a. Amphipods - *Orchestia* sp.?
 - b. Barnacles - *Balanus glandula*, *Semibalanus cariosus*
 - c. Crabs - *Haplogaster* sp., Paguridae (hermit crabs)
 - d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimorsphaeroma oregonensis*
11. Mollusca
 - a. Chitons - *Mopalia mucosa*, *Katharina tunicata*, *Tonicella lineata*
 - b. Snails - Gastropods
Amphissa columbiana, *Littorina sitkana*, *L. keenae*, *Natica clausa*,
Nucella lamellosa, *N. lima*
 - c. Limpets - *Acmaea mitra*, *Lottia digitalis*, *L. persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
 - d. Nudibranches - *Lamellidoris fusca*, *Melibe leonina*
 - e. Bivalves - *Chlamys hastata*, *Macoma nasuta*, *Modiolus modiolus*, *Mytilus edulis*, *Pododesmus cepio*, *Prototheca staminea*, *Saxidomus giganteus*

12. Echinoderms
 - a. Brittle Stars - Ophiolus sp., ?
 - b. Sea stars
Dermasterias imbricata, Evasterias truscheli, Henricia leviuscula,
Loptasterias hexactis, Orthasterias keohleri, Pycnopoda helianthoides,
Solaster sp.
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Microporina borealis, Schizoporella sp.
15. Fishes
 - Cottidae
 - Stichaeidae - Xiphister atropurpureus, X. mucosus

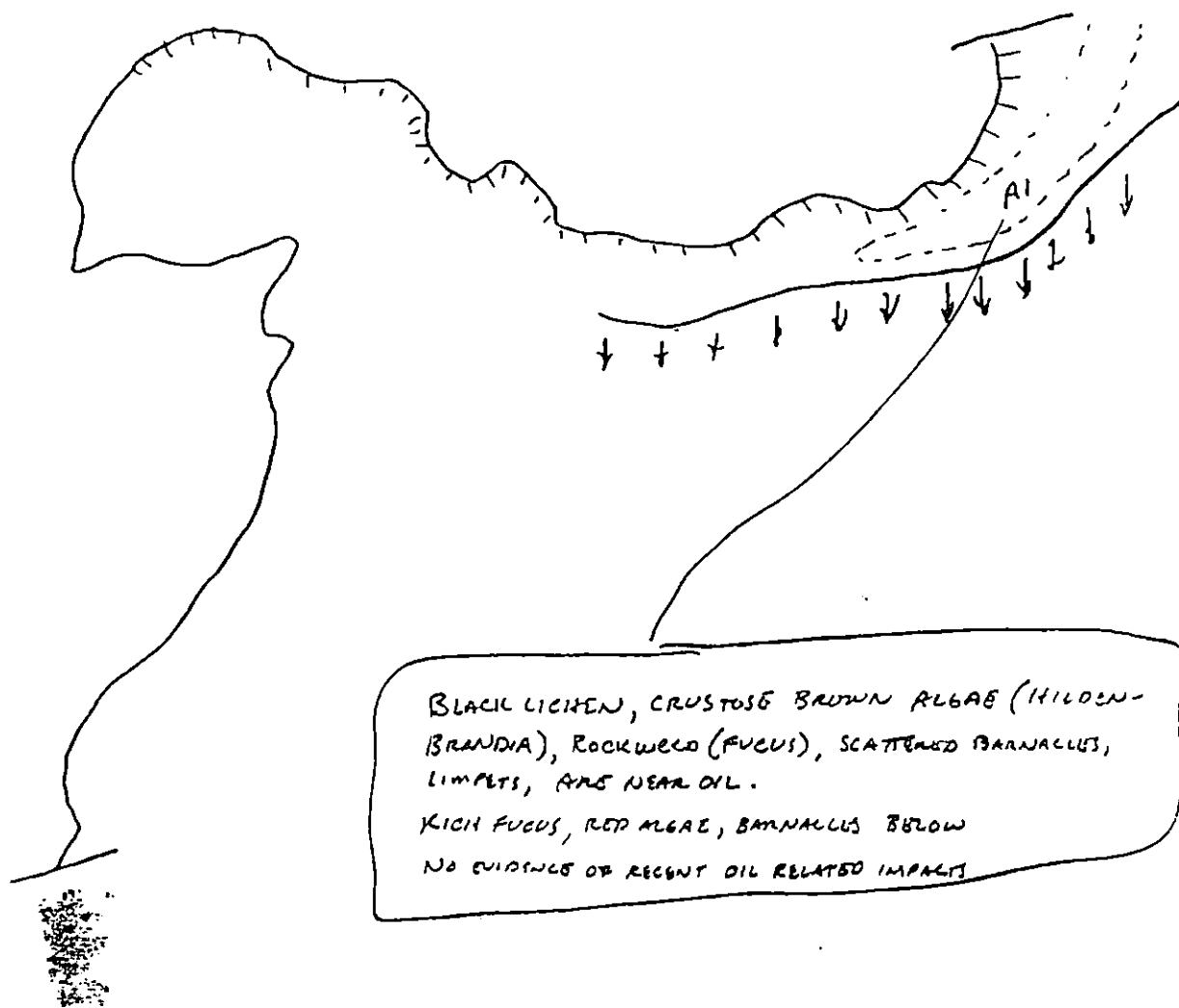
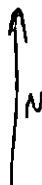
PY012-C

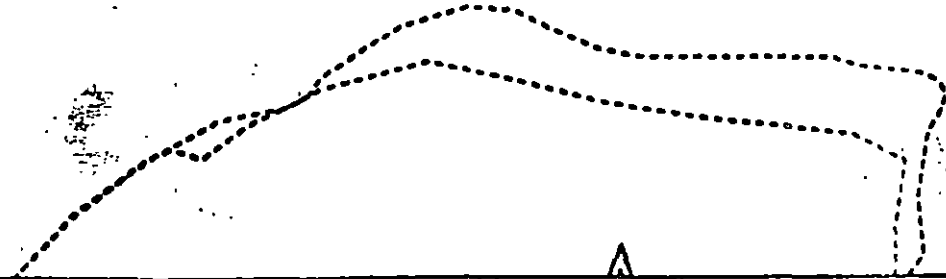
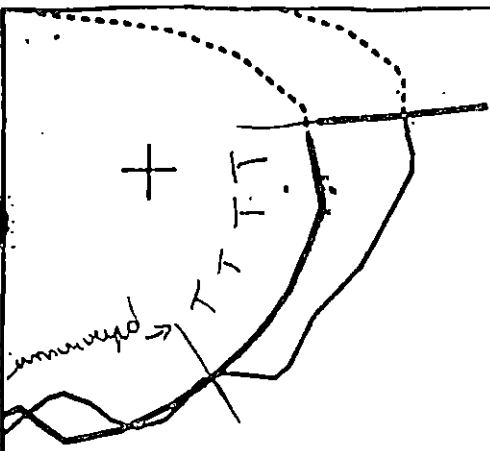
J.P. BARRY

14 MAY 1991

1750-1810

Meters
0 100 200





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

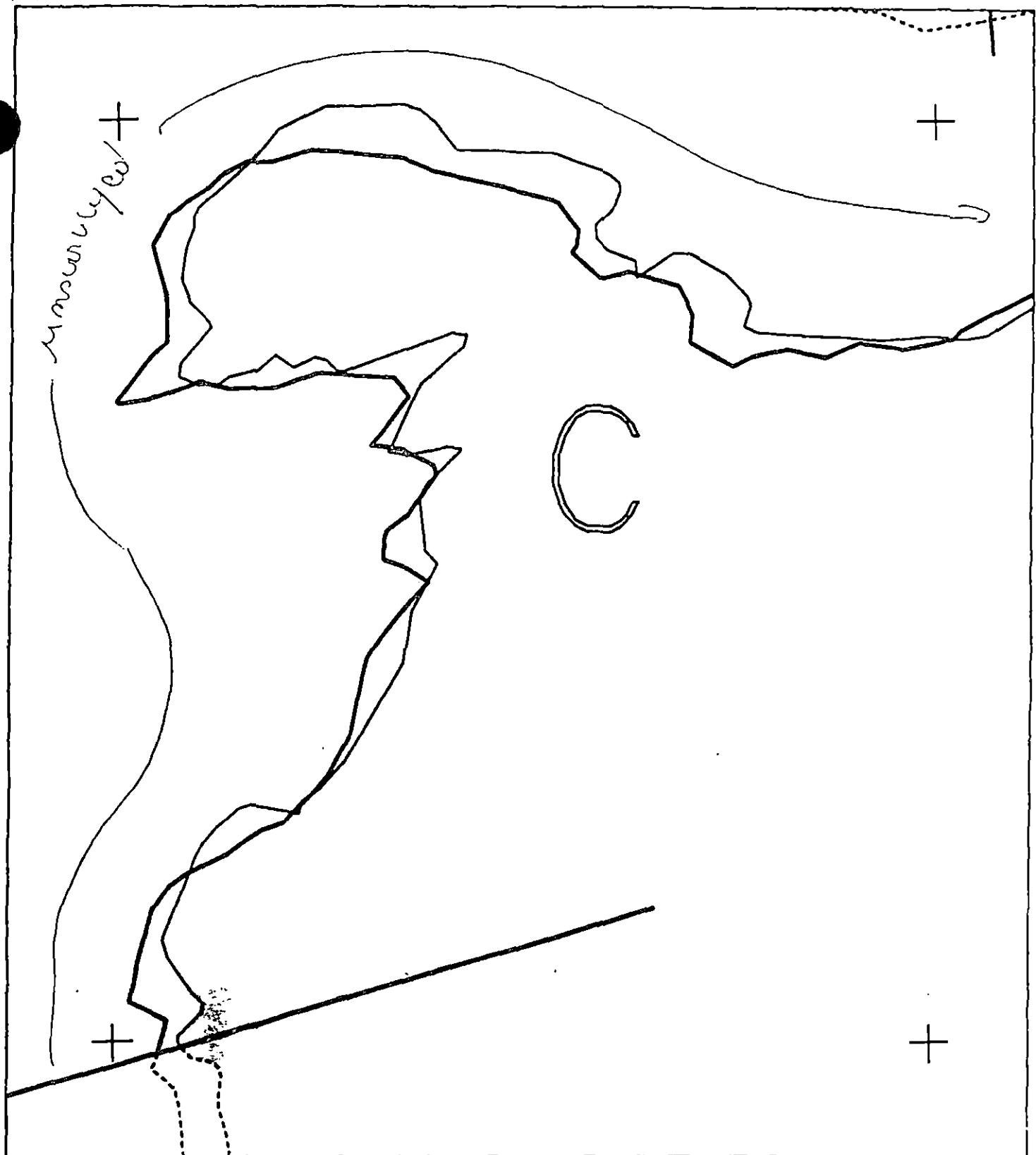
PY012 C
 ADEC Subsegment Length: 2035m
 METERS

AK State Plane Zone 4
 apy012cb



Subdivision Field Map
 Map Key: KENPY012Cb
 Name: J. M. Semple
 Date: May 14/91
 Date Entered:

reviewed 5.18.91 ggy
 REVIEWED CB 18 MAY



XXXX
 ////

 TTTT
 0000

Wide
 Medium
 Narrow
 Very Light
 No Oil

PY012 C

ADEC Subsegment Length: 2035m

METERS

0 100 200

AK State Plane Zone 4
 apy012ca



Subdivision Field Map

Map Key: KENPY012Ca

Name: J. M. Sample

Date: May 14/91

Date Entered:

reviewed 5.18.91 *Ar*

1991 MAYSAP EVALUATION

SEGMENT: PY 012 SUB: B REGION: KEN SURVEY DATE: 5/14/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: Rachel Joan Dean

Date: 5/24/91

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 24 1991

FOSC APPROVAL DATE: 5/29/91

ADEC

FOSC

EXXON

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

USCG

NOAA

MAYSAP FIELD SHORELINE COMMENT SHEET

P4012-B

1/10

TEAM NO. 4 SEGMENT P4-012 SUBDIVISION B DATE MAY 14 1991DEC
ENAME Clara S. Crosby SIGNATURE Clara S. Crosby☒ NTR

Survey crew recovered what oiling was observed.
Please reference photos.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/16/91☒ NTR

Survey crew picked up 4 bags of MS
while surveying. No appreciable oil
remaining.

LANDMANAGER

NAME JOHN P. HARDISTER OF USFWS SIGNATURE John P. Hardister 5/16/91☒ NTR

Recoverable oil was removed.

USCG/NOAA

NAME WILL J. Mc KATTON SIGNATURE Will J. Mc Katton☒ NTR

Concur with above

MAYSAP SHORELINE OILING SUMMARY

PAGE 2 OF 10

TEAM NO. 4

OG 17 Samples

BIO Barry

SEGMENT P4-019-

Crosby

LANDMANAGER Headister for USFWS

SUBDIVISION B

EXXON George P. Stiles

USCG/NOAA McMahon/McDonnell

DATE MAY 14 191

TIME 18 : 10 to 19 : 35

TIDE LEVEL +3.4 ft. to +2.6 ft.

ENERGY LEVEL: ☒ H ☐ M ☐ L

SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO

WEATHER: ☐ SUN ☒ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

TOTAL LENGTH SHORELINE SURVEYED: 223 m

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

EST. OIL CATEGORY LENGTH: W — m M — m N — m VL 223 m NO — m US — 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	
A1		P				up					Pb/C								
A2	S	S		S	S	S					B.R.P	7	3	100					
A3																			
A4						T	T				A	7	20.10	223		X			Very scattered

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- MAYSAP 4.3.19 to 21

FRAMES —

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		

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

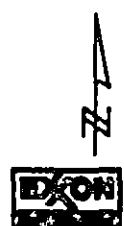
OG COMMENTS:

See map

revised 5/18

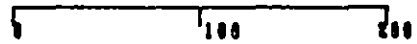
revised 5.18.91

Location Map



PY012 B

METERS



AK State Plane Zone 4
SPY012B

Subdivision Field Map

Map Key: KENPY012Bb

Name: for Samples

Date: MAY 14/91

reviewed 5.18.91 gy
ES reviewed 5/18

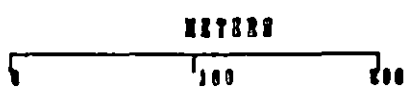
Location Map.

B

Surveyed by Root



PY012 B



AK State Plane Zone 4
NAD83

Subdivision Field Map

Map Key: KENPY012Bd

Name: J. R. Smith

Date: MAY 14/91

reviewed 5.18.91 gy
EC reviewed 5/19

Og sketch Map

P4.012.B

Samples

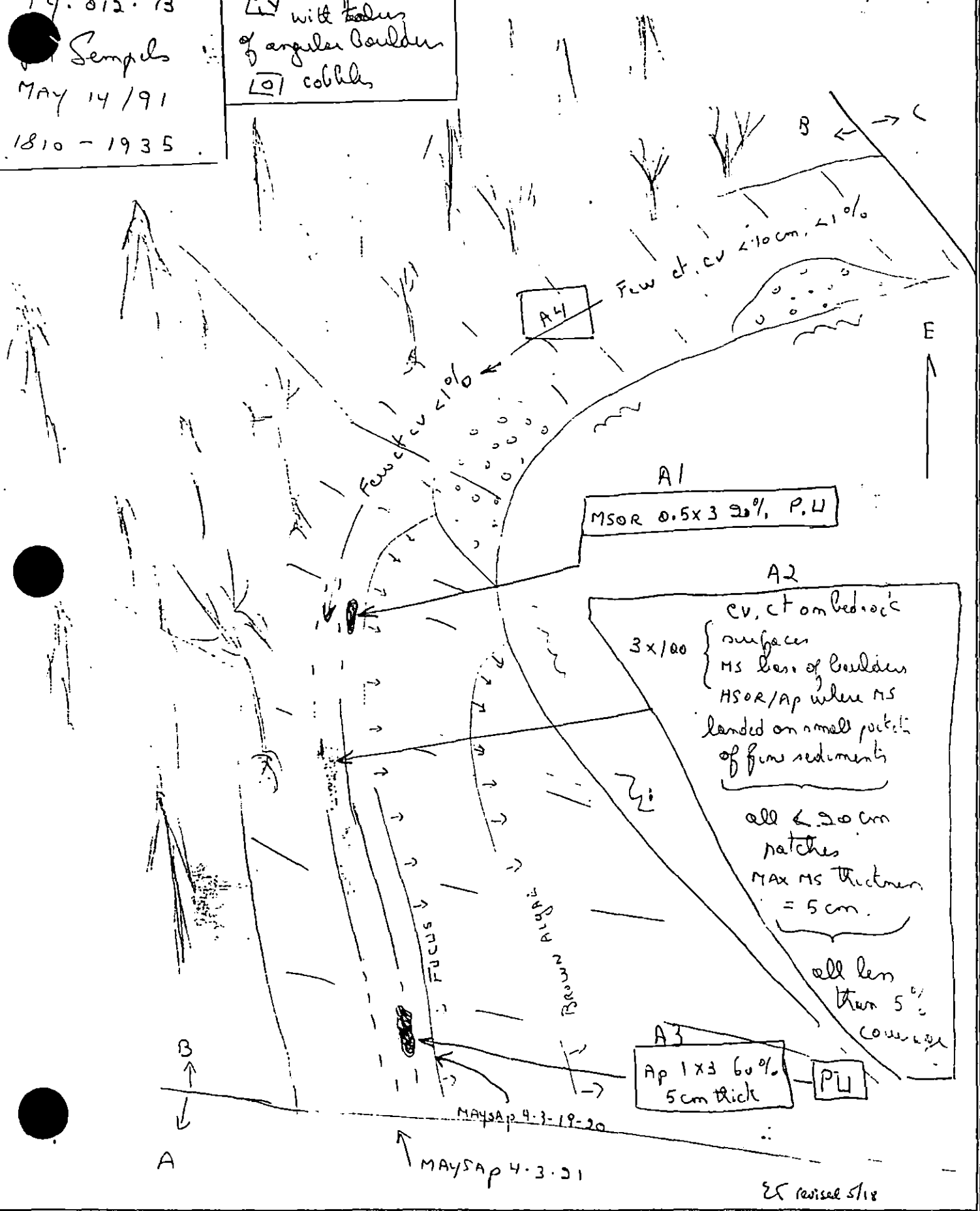
MAY 14/91

1810 - 1935

Legend

-  Steep bedrock with talus of angular boulders
-  cobbles

Meters
0 40



ES revised 5/18
reviewed 5.18.91 gy

MAY3AP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 14, 1991 1858 - 1927
SEGMENT #	PY012	TIDAL HEIGHT (Range)	+3.4 => +2.6
SUBDIVISION	B	BIOLOGIST	JIM BARRY
SEA STATE	Cala	WIND SPEED/DIRECTION	Variable 0-10 kt, rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A1-A4 HSOR is present in splatters in the upper intertidal zone and extend into the middle intertidal at this location. Black lichen (Verrucaria) and filamentous green algae are present near or on the oil in the upper intertidal zone. Crustose brown algae (Hildenbrandia), rockweed (Fucus), sparse densities of barnacles and limpets, and numerous littorine snails are present in the vicinity of the oil in the middle intertidal zone. These intertidal species (and most others) are all more abundant slightly below the tidal level of the oil. Recruitment of rockweed is evident from the dense cover of juveniles 1 to 3 feet below the oiled area. Barnacles are abundant through most of the middle and low zones. Barnacle spat are sparse. Red algae (Palmaria, Halosaccion, Microcladia?) and green algae (Ulva, Cladophora) are abundant below the Fucus zone in the low intertidal. Juvenile mussels are present in scattered patches within crevices and on Fucus, but are not particularly abundant inside this bay. A sparse clam bed (Macoma nasuta, Prototheca staminea, Saxidomus sp.) is present along the shallow sloped portion of the beach.

Manual pickup was performed during the survey. Additional manual pickup, if performed, will not have negative impacts on the local biota.

General Features of PY012-B

This subdivision is located within a small cove exposed to low waves. The shore in this subdivision is nearly all high angle boulders, bedrock outcrops, and cobble, with a few very small medium angle beaches. The upper shore has numerous dead trees that may have been killed by subsidence during the 1964 earthquake. The intertidal zone appears healthy

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl	1	2	
Gulls/Kittiwakes	2	6	
Shorebirds	1	5	
Corvids			
Other Birds	2	2	

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

Shoreline subdivision map showing important biological features attached.

PY012-B Biology Report, continued

and typical of similar protected coves throughout the area. Black lichen is patchy, but, quite abundant in the very high shore. Filamentous green algae often forms a zone immediately below the lichen. Fucus, barnacles, littorine snails, and limpets are usually found in the upper through the middle shore. Fucus is generally very dense in the mid-intertidal of this shore. Littorines are somewhat sparse compared to other areas. Limpets are moderately abundant. The lower zones have increasing cover of red algae, with scattered patches of green algae. Mussels are found only in small patches in crevices where mostly small individuals are present, with few adults. Clams (*Macoma* sp., *Saxidomus* sp.) are found in the low zone in low densities. Sea cucumbers (*Eupentacta* sp.) are quite abundant below cobble in the low zone, as are bryozoans, hermit crabs, isopods, and amphipods.

List of Common Species from PY012-B

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., *Enteromorpha* sp., *Prasiola meridionalis*, *Ulva* sp., *Urospora* sp.
3. Brown Algae - Phaeophyta
Costaria costata, *Ectocarpus* spp., *Fucus distichus*, *Hildenbrandia* sp., *Ralfsia* sp., *Syctosiphon lomentaria*
4. Red Algae - Rhodophyta
Corallina sp., *Endocladia muricata*, *Halosaccion glandiforme*, *Iridaea* sp., *Lithothamnion* sp., *Membranoptera dimorpha*, *Odonthalia floccosa*, *Palmaria palmata*, *Petrocelis* sp., *Porphyra* sp., *Ptilota filicina*, *Rhodomela larix*
5. Higher Plants - *Leymus mollis* (beach rye grass)

II. Marine Animals

1. Sponges - Porifera - *Halichondria* sp.
2. Anemones - *Anthopleura artemesia*, *Epiactis ritteri*, *Metridium senile*, *Urticina crassicornis*, *Stomphia* sp.
3. Hydroids - Sertularidae - *Sertularella*?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - *Emplectonema gracile*
8. Polychaete Worms
Glyceridae
Nepthyidae
Nereidae - *Nereis* spp.
Serpulidae - *Serpula* sp., *Crucigera* sp., *Eudistylia polymorpha*
Spirorbidae - *Spirorbis* sp.
9. Peanut Worms - Sipunculids - *Phascolosoma agassizii*
10. Crustaceans
 - a. Amphipods - *Orchestia* sp.?
 - b. Barnacles - *Balanus glandula*, *Semibalanus cariosus*
 - c. Crabs - *Haplogaster* sp., Paguridae (hermit crabs)
 - d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimorsphaeroma oregonensis*

PY012-B Biology Report, continued

11. Mollusca
 - a. Chitons - Mopalia mucosa, Katharina tunicata, Tonicella lineata
 - b. Snails - Gastropods
 - Amphissa columbiana, Littorina sitkana, L. keenae, Natica clausa, Nucella lamellosa, N. lima
 - c. Limpets - Acmaea mitra, Lottia digitalis, L. persona, Tectura fenestrata, T. persona, T. scutum, Siphonaria thersites
 - d. Nudibranches - Lamellidoris fusca, Melibe leonina
 - e. Bivalves - Chlamys hastata, Macoma nasuta, Modiolus modiolus, Mytilus edulis, Pododesmus cepio, Prototheca staminea, Saxidomus giganteus
12. Echinoderms
 - a. Brittle Stars - Ophiolus sp., ?
 - b. Sea stars
 - Dermasterias imbricata, Evasterias truscheli, Henricia leviuscula, Leptasterias hexactis, Orthasterias keohleri, Pycnopoda helianthoides, Solaster sp.
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Microporina borealis, Schizoporella sp.
15. Fishes
 - Cottidae
 - Stichaeidae - Xiphister atropurpureus, X. mucosus

BIO SKETCH MAP

J.P. BARRY

18 MAY 91

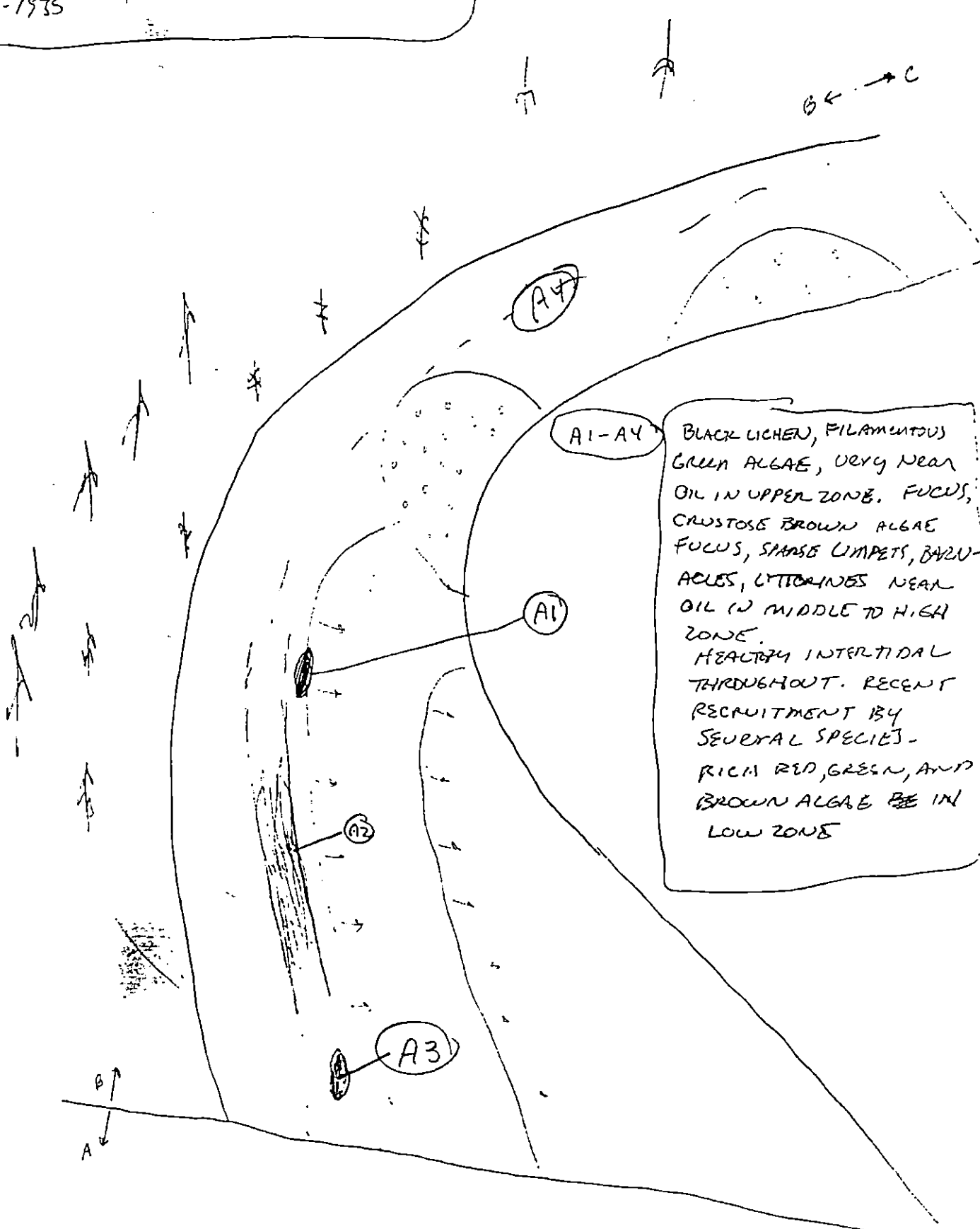
1810-1935

Steep bedrock / talus

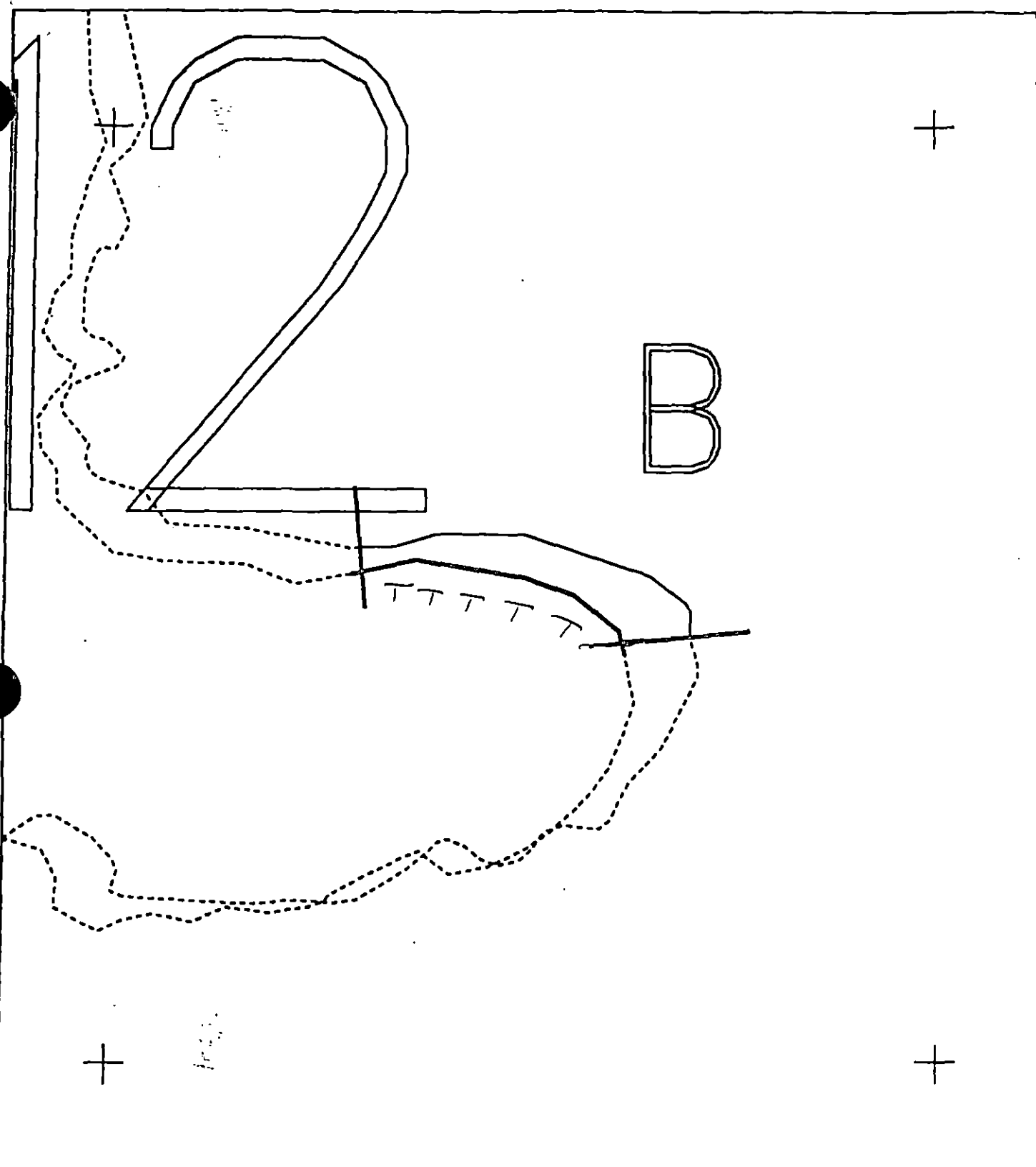
Cobble

7012-D

11



BLACK LICHEN, FILAMENTOUS GREEN ALGAE, VERY NEAR OIL IN UPPER ZONE. FUCUS, CRUSTOSE BROWN ALGAE FUCUS, SPARSE LIMPETS, BARNACLES, LITTORINIDS NEAR OIL IN MIDDLE TO HIGH ZONE. HEALTHY INTERTIDAL THROUGHOUT. RECENT RECRUITMENT BY SEVERAL SPECIES. RICH RED, GREEN, AND BROWN ALGAE BE IN LOW ZONE



XXXX	Wide	PY012 B ADEC Subsegment Length: 223m METERS 0 200  AK State Plane Zone 4 ap012b	Subdivision Field Map
////	Medium		Map Key: KENPY012B
---	Narrow		Name: <u>Jim Simpson</u>
TTTT	Very Light		Date: <u>May 11 1994</u>
0000	No Oil		Data Entered:

ET reviewed 5/18
Reviewed 5.18.94

1991 MAYSAP EVALUATION

SEGMENT: PY 012 SUB: A REGION: KEN SURVEY DATE: 5/14/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: Reckel Jan Dan Date: 5/24/91

RECOMMENDATIONS:

	INITIAL	TAG	FOSC
TREATMENT REQUIRED (Y or N)	<u>N</u>	<u>N</u>	<u>N</u>
Manual Pickup (Check as Req.)	<u> </u>	<u> </u>	<u> </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:

FOSC:

TAG APPROVAL DATE: MAY 24 1991

FOSC APPROVAL DATE: 5/29/91

ADEC [Signature]

FOSC [Signature]

EXXON [Signature]

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

USCG [Signature]

NOAA [Signature]

MAYSAP FIELD SHORELINE COMMENT SHEET P4012-A

TEAM NO. 4) SEGMENT P4.012 SUBDIVISION A DATE MA/14/91

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara S. Crosby☒ NTR

Jean Marie Simples comments are applicable, there was no available data to indicate previous oiling.

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles 5/16/91☒ NTR

No recoverable oil seen.

LANDMANAGER

NAME

JOHN P. HARDISTER

OF

USFWS

SIGNATURE

John P. Hardister 5/16/91☒ NTR

concur with comments of ADEC and EXXON representatives.

USCG/NOAA

NAME

CWO2 J. Mc KHA Hon

SIGNATURE

J. Mc KHA Hon☒ NTR

No oil to recover

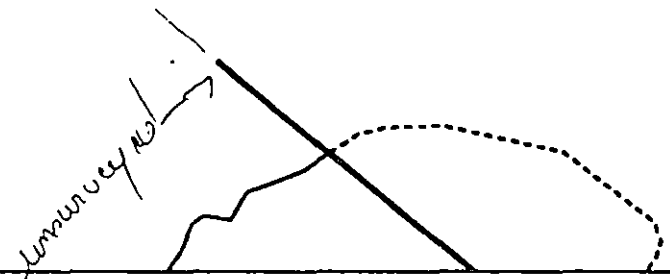
PAGE 2 OF 4

W m M m N m VL m NO 1059 m US 580 m

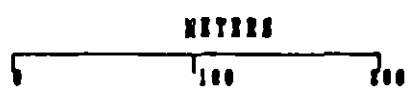
SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS: This subdivision was surveyed by ZODIAC only. No oil has been reported there previously, and the stone consists mainly of steep bedrock.

~~revised 5/18/91 KG~~
Revised 5/18 91



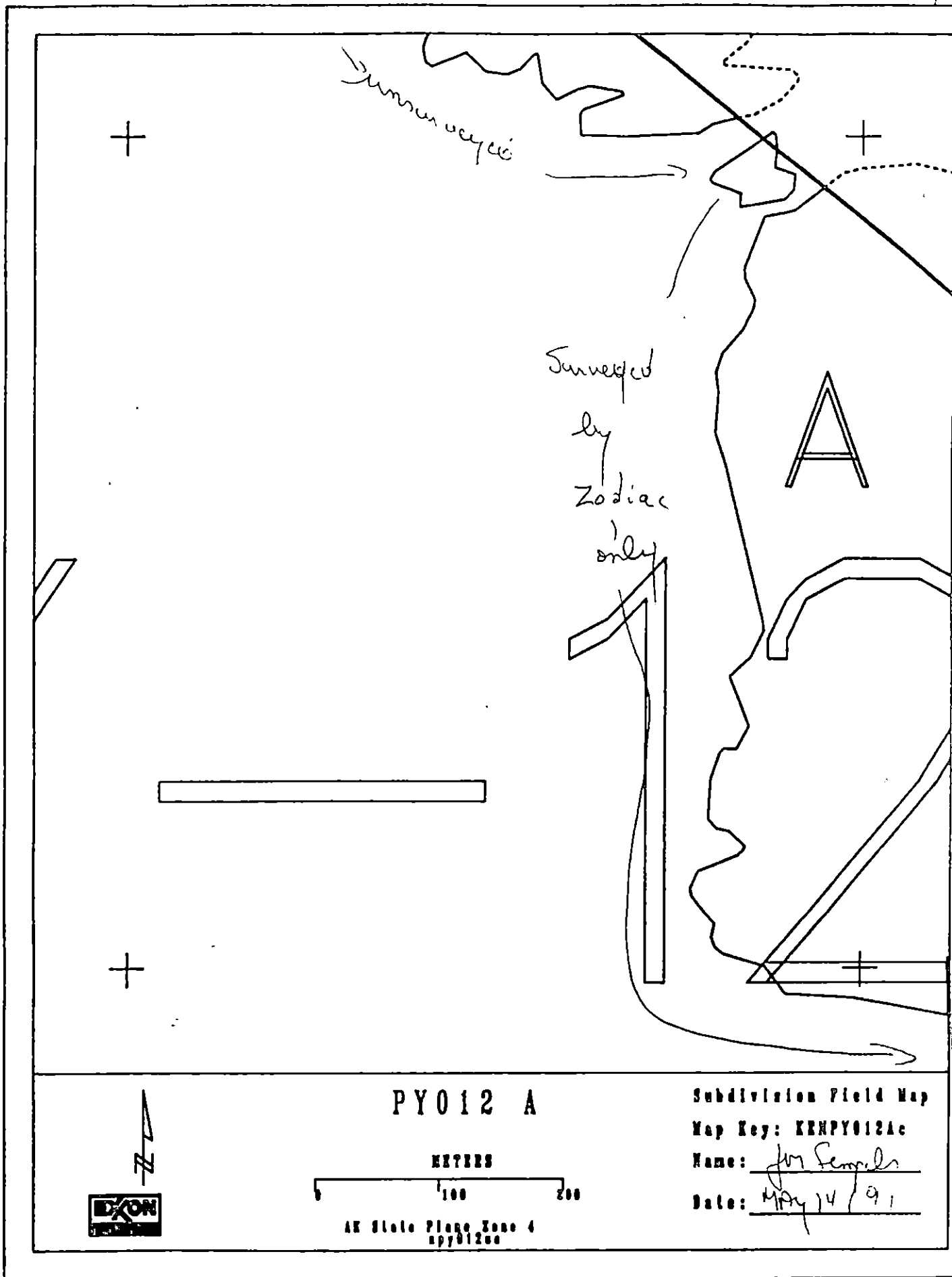
PY012 A



AK State Plane Zone 4
PY01200

Subdivision Field Map
Map Key: KENPY012Ac
Name: JM Sempel
Date: MAY 14/0

reviewed 5/8/91 KG
EC reviewed 5/18



reviewed 5/18/91 KG
L. Truesdell 5/18

Ög Sketch Map

P4-012-A

47 Samples

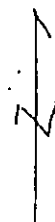
May 14/91

1440 - 3200

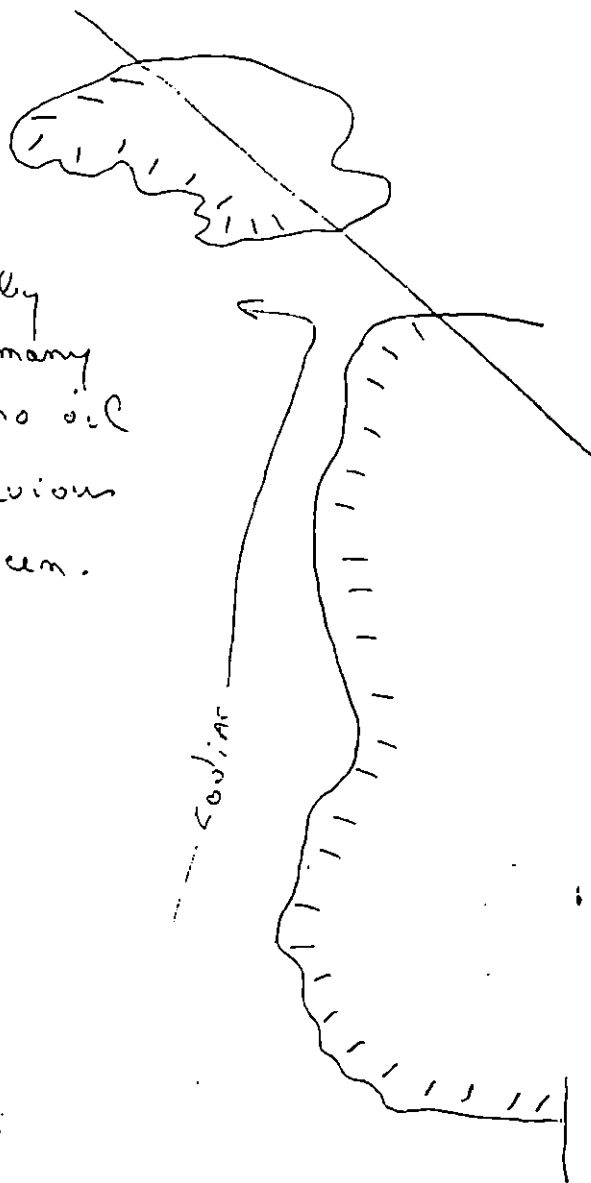
Legend



Steep bedrock
with occasional
talus of angular
boulders/cobbles



Subdivision surveyed by
zodiac only. not many
landing sites and no oil
reported during previous
survey. No oil seen.



Meters
0 100 200

TEAM #	4	DATE/TIME	May 14, 1991	1930 - 2000
SEGMENT #	PY012	TIDAL HEIGHT (Range)	+2.6 => +2.1	
SUBDIVISION	C	BIOLOGIST	JIM BARRY	
SEA STATE	Calm	WIND SPEED/DIRECTION	Variable 0-10 kt, rain	

This is a fairly long subdivision which extends from inside a protected cove where the shore is mostly high angle boulder or bedrock, to a highly exposed coast with sheer cliff and boulder beaches. The biota along this shore change according to exposure. The most conspicuous changes are the increase in species typical of high exposure shores towards the outer coast of the subdivision. Mussels (*Mytilus*), which are sparse inside the cove, form a distinct band in the middle zone along the steep cliffs of the outer coast. *Alarā marginata*, a brown alga found only in the low intertidal of exposed beaches, is densely abundant along the outer coast, but absent within the cove. The general pattern of zonation along the outer shore is illustrated below. We surveyed the entire subdivision by boat, finding no areas with detectable oil.

```
Black Lichen          ---+*---
Green Algae           **-* - - - - - - - - - ++ ++ -
Barnacles (Balanus)   --++++-+-+--+-- - - - +**+-
Rockweed (Fucus)      --+***+*-+- - - 
Mussels (Mytilus)     - - ***- - - - - 
Branched Red Algae    -----+***+-- ***- -
Crustose Brown Algae (Hildenbrandia)  ------+++-+--
Thin Red Algae        -* - - - 
Upright Brown Algae (not Fucus)       -- - -++++*****
```

(continued)

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	3	16	
Waterfowl	2	8	
Gulls/Kittiwakes	2	20	
Shorebirds	1	2	
Corvids	1	2	
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

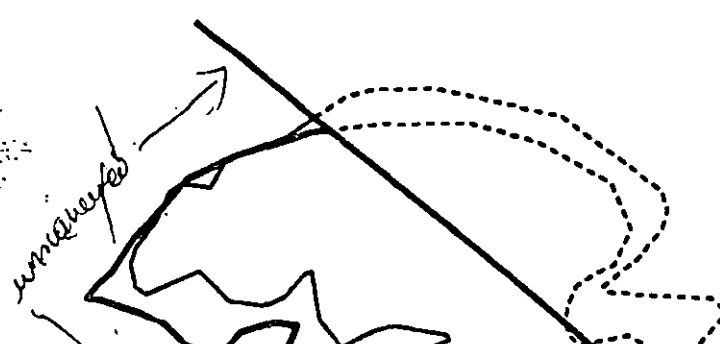
List of Common Species from PY012-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., *Prasiola meridionalis*, *Ulva* sp., *Urospora* sp.
3. Brown Algae - Phaeophyta
Alaria marginata, *Agarum fimbriatum*, *Costaria costata*, *Ectocarpus* spp., *Fucus distichus*, *Hedophyllum sessile*, *Hildenbrandia* sp., *Laminaria saccharina*, *Nereocystis leutkeana*, *Ralfsia* sp., *Syctosiphon lomentaria*
4. Red Algae - Rhodophyta
Bossiella sp., *Calliarthron* sp., *Corallina* sp., *Cryptosiphonia woodii*, *Cumagloia andersonii*, *Endocladia muricata*, *Halosaccion glandiforme*, *Iridaea* sp., *Lithothamnion* sp., *Membranoptera dimorpha*, *Odonthalia floccosa*, *Palmaria palmata*, *Petrocelis* sp., *Porphyra* sp., *Ptilota filicina*, *Rhodomela larix*
5. Higher Plants - *Leymus mollis* (beach rye grass)

II. Marine Animals

1. Sponges - Porifera
Halichondria sp., *Halichondria panicea*, *Tethys* sp.
2. Anemones - *Anthopleura artemesia*, *A. elegantissima*, *A. xanthogrammica*,
Epiactis ritteri, *Metridium senile*, *Urticina crassicornis*,
3. Hydroids - Sertularidae - *Sertularella*?
8. Polychaete Worms
Serpulidae - *Serpula* sp., *Crucigera* sp., *Eudistylia polymorpha*
Spirorbidae - *Spirorbis* sp.
9. Peanut worms - Sipunculids - *Phascolosoma agassizii*
10. Crustaceans
 - a. Amphipods - *Orchestia* sp.?
 - b. Barnacles - *Balanus glandula*, *Chthamalus dalli*, *Semibalanus cariosus*
 - c. Crabs - *Haplogaster* sp., *Hemigrapsus oregonensis*, *Paquridae* (hermit crabs), *Pugettia* sp.,
 - d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimorsphaeroma oregonensis*
11. Mollusca
 - a. Chitons - *Mopalia mucosa*, *Katharina tunicata*, *Tonicella lineata*,
 - b. Snails - Gastropods - *Littorina sitkana*, *L. keenae*, *Nucella lamellosa*,
N. lima
 - c. Limpets - *Acmaea mitra*, *Lottia digitalis*, *L. persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
 - e. Bivalves - *Modiolus modiolus*, *Mytilus edulis*
 - f. Cephalopods - *Octopus dofleini*
12. Echinoderms
 - a. Brittle Stars - *Ophiolus* sp., ?
 - b. Sea stars - *Dermasterias imbricata*, *Evasterias truscheli*, *Henricia leviuscula*, *H. sanguinolenta*, *Leptasterias hexactis*,
Orthasterias keohleri, *Pisaster ochraceus*, *Pycnopoda helianthoides*, *Solaster* sp.
 - c. Sea Cucumbers - Holothurians - *Eupentacta* sp.
 - d. Urchins - *Strongylocentrotus droebachiensis*
13. Bryozoans - *Membranipora* sp., *Microporina borealis*, *Schizoporella* sp.
15. Fishes
Cottidae
Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*

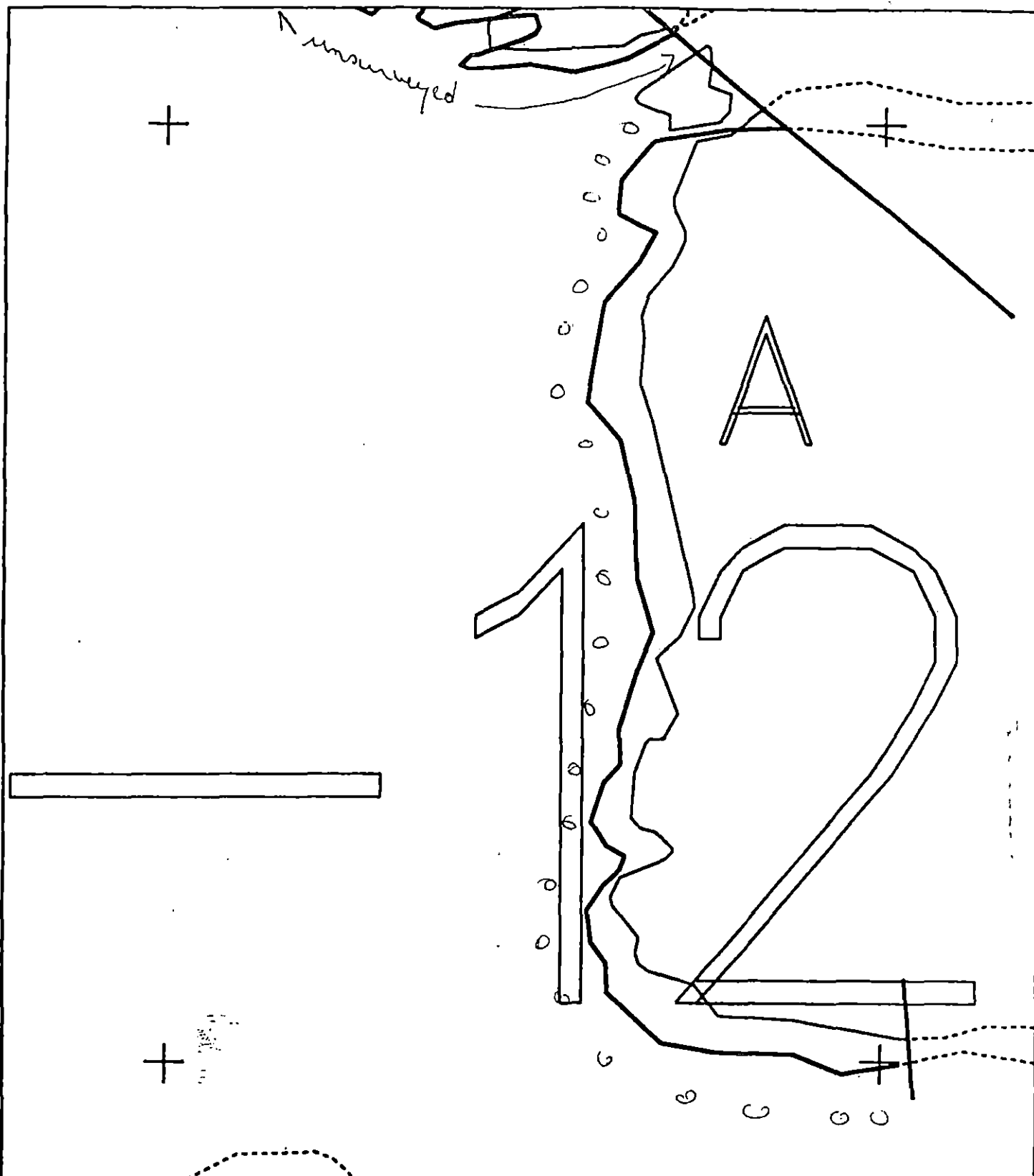


XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

PY012 A
 ADEC Subsegment Length: 1839m
 METERS
 0 100 200
 AK State Plane Zone 4
 apy012ab



Subdivision Field Map
 Map Key: KENPY012Ab
 Name: 17 Samples
 Date: May 14 / 9
 Data Entered:



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

PY012 A
 ADEC Subsegment Length: 1638m
 METERS
 0 100 200
 AK State Plane Zone 4
 apy012aa



Subdivision Field Map
 Map Key: KENPY012Aa
 Name: Jim Semple
 Date: May 14/91
 Date Entered:

1991 MAYSAP EVALUATION

SEGMENT: PY 012 SUB: C REGION: KEN SURVEY DATE: 5/14/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature:

Timothy A. Smith

Date:

5/30/91

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 29 1991

FOSC APPROVAL DATE:

6/5/91

ADEC

FOSC

EXXON

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

USCG

NOAA

MAYSAP FIELD SHORELINE COMMENT SHEET

P4012-C 1/11

TEAM NO. 4 SEGMENT P4.012 SUBDIVISION C DATE MAY 14 1991

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara S. Crosby☒ NTR

Available past piling data showed no piling within
subdivision - Spot check revealed very sporadic
CT/CV/MS coverage ~17% -

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles☒ NTR

MS patties were retrieved during the
survey that were recoverable therefore
no additional treatment is recommended.

LANDMANAGER

NAME

JOHN P. HARDISTER OF USFWS

SIGNATURE

John P. Hardister 5/16/91☒ NTR

No additional treatment necessary.

USCG/NOAA

NAME

Charles W. McElroy

SIGNATURE

Charles W. McElroy☒ NTR

Observed TP/AP with intertidal patches
of Old Manse, picked up at scene.

PAGE 2 OF 11

SEGMENT Py - 012

SUBDIVISION C

DATE May 14 1911

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 — m VL 300 m NO — m US 1735 m

DISTRIBUTION: C = 81-100%; B = 51-80%; P = 11-50%; S = 1-10%; T = <1%

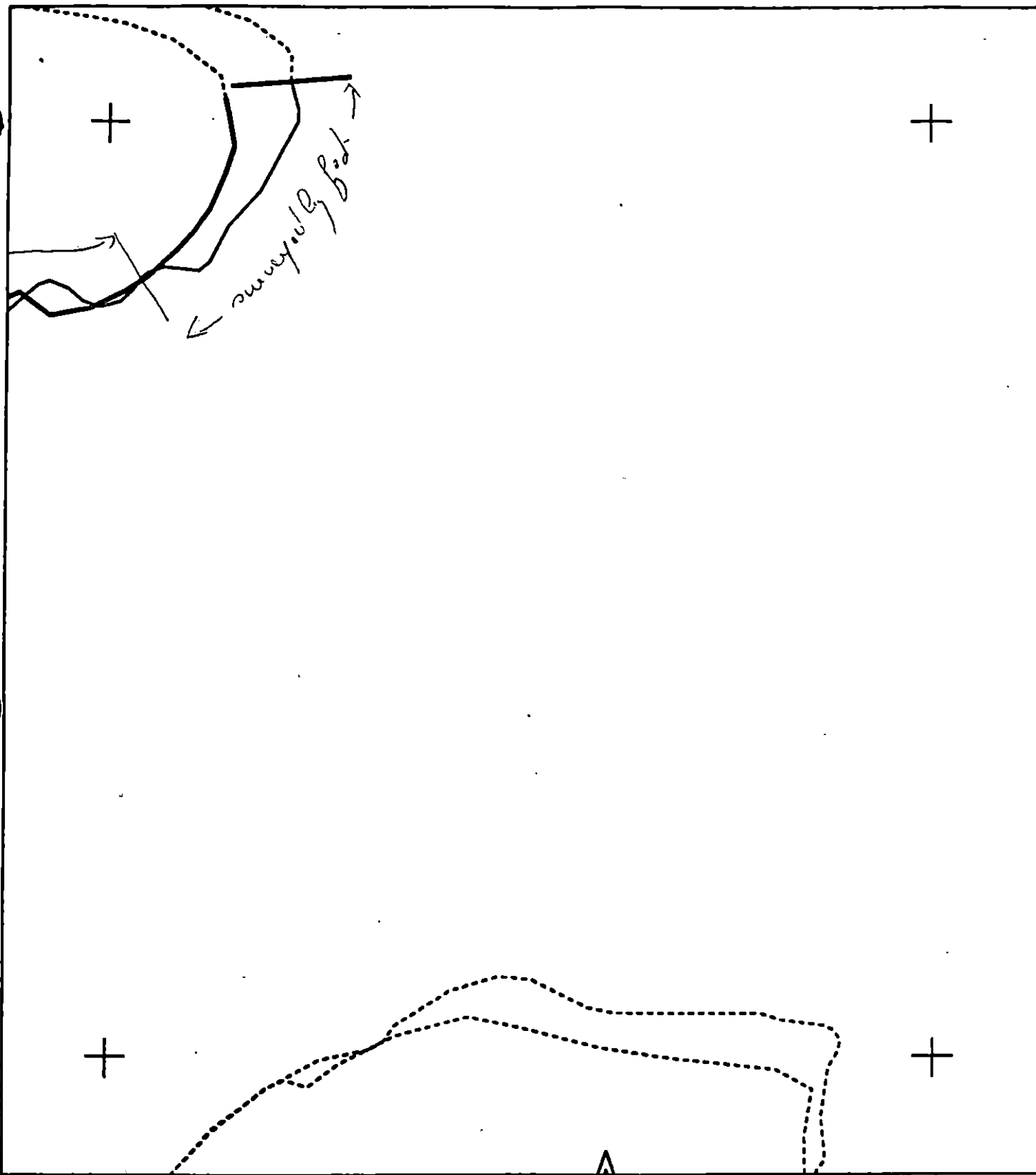
SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE

PHOTO ROLL # MAYSAP-_____ FRAMES

GREEN COLOR: B = BROWN: R = RAINBOW: S = SILVER: N = NONE

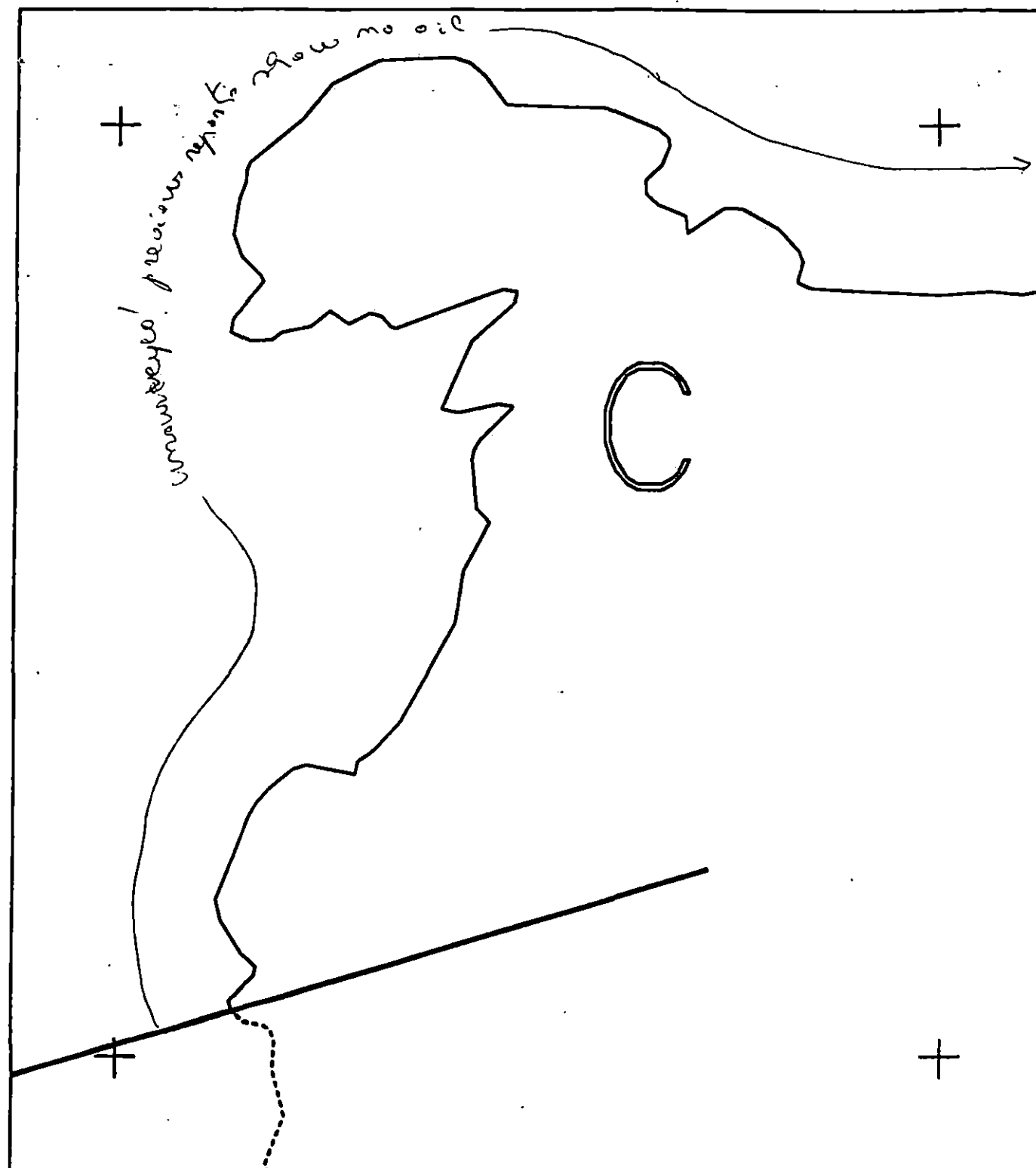
See map.

Reviewed 5.18.91 *QJ*
REVISED @ 18 MAY



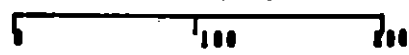
XXXX	Wide	PY012 C ADEC Subsegment Length: 2035m METERS 0 200 EXON AK State Plane Zone 4 py012cb	Subdivision Field Map
////	Medium		Map Key: KENPY012Cb
----	Narrow		Name: <u>for Samples</u>
TTTT	Very Light		Date: <u>May 14/91</u>
0000	No Oil		Date Entered:

reviewed 5.18 by



PY012 C

METERS



AK State Plane Zone 4
NAD 83

Subdivision Field Map

Map Key: KENPY012Ca

Name: Jim Sample

Date: MAY 14/91

reviewed SIB ag

OG SKETCH MAP.

Legend

PY-012-C

Jean-Marie Sempé

MAY 14/91

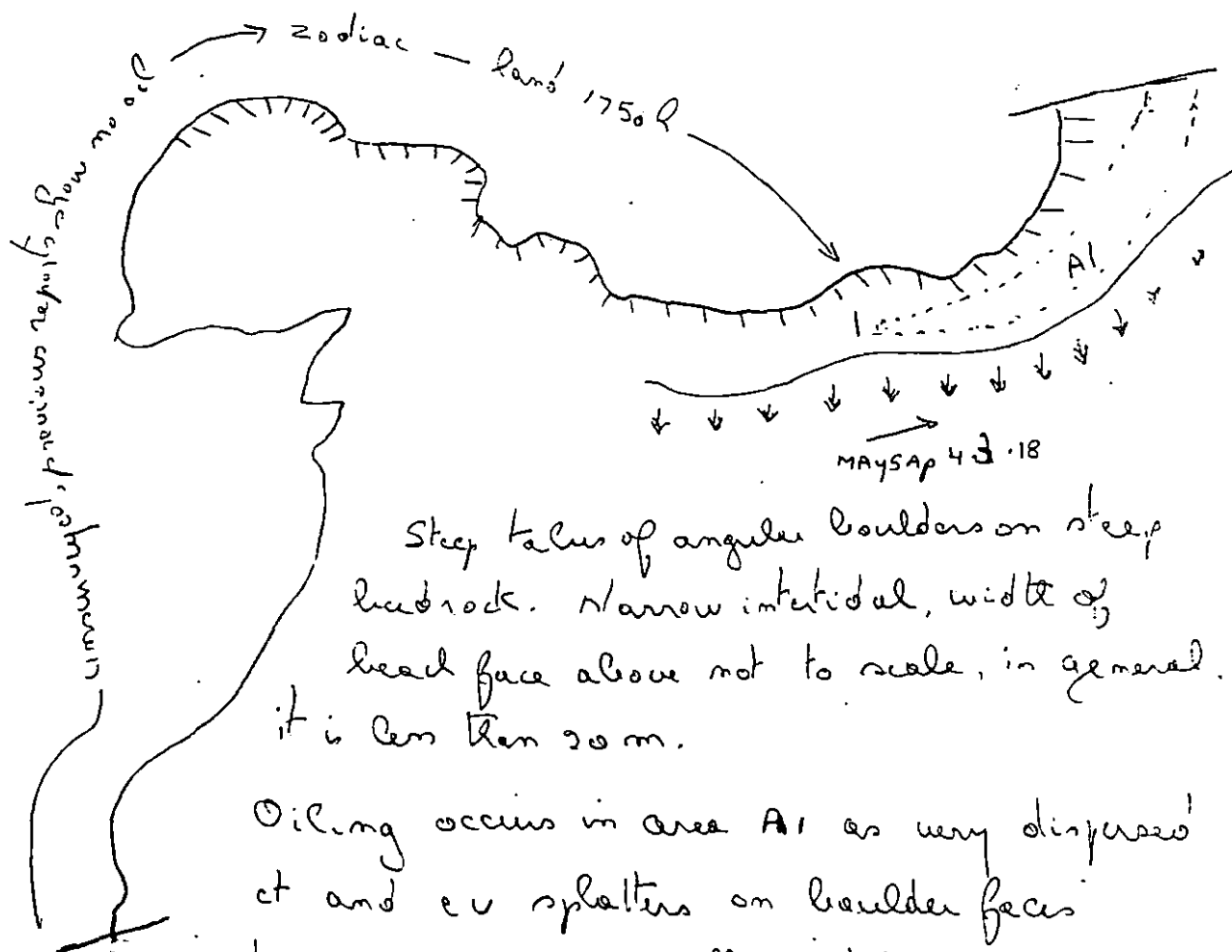
1750-1810



Steep bedrock

shoreline with talus
of angular bouldersvegetated bedrock
(steep)

0 100 200



Steep talus of angular boulders on steep bedrock. Narrow intertidal, width of beach face above not to scale, in general it is less than 20 m.

Oiling occurs in area A1 as very dispersed oil and oil splatters on boulder faces and as occasional small pockets of oil on beach/ap behind boulders all less than 20 cm diameter and 2-3 cm thick. Coverage $< 1\%$, frequency of occurrence ~ 1 or 2 splatters per 10 m. Size of boulder hinders observations. Difficult access. (See photos MAYSA 4.3.18) Picked up all that could be removed
" 4.3.17 location index photo

reviewed 5.18.91 94
REVIEWED 10 18 MAY

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 14, 1991 1750 - 1858
SEGMENT #	PY012	TIDAL HEIGHT (Range)	5.9 => 3.4
SUBDIVISION	C	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Variable 0-10 kt, rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A1 Splatters of HSOR occur along the upper intertidal zone at this location. Black lichen (Verrucaria), crustose brown algae (Hildenbrandia), and rockweed (Fucus) are located in the vicinity of the oil. Fucus and Hildenbrandia are much more abundant a few feet below the oiled site. In addition, recruitment of Fucus is evident from the dense cover of juveniles 2 to 3 feet below the oiled area. Barnacles and limpets are also abundant from near the upper zone to the low zone. Red algae (Palmaria, Halosaccion, Microcladia?) and green algae (Ulva, Cladophora) are abundant below the Fucus zone in the low intertidal. Juvenile mussels are present in scattered patches within crevices and on Fucus, but are not particularly abundant inside this bay.

Manual pickup was performed during the survey. Additional manual pickup, if performed, will not have negative impacts on the local biota.

General Features of PY012-C

This subdivision comprises low to high exposure shores. The surveyed portion of the subdivision included only the low exposure shore. This section of the subdivision, located within the cove, is mainly medium to high angle shores of boulders, bedrock outcrops, and cobble. The upper shore has numerous dead trees that may have been killed by subsidence during the 1964 earthquake. Black lichen is patchy, but quite abundant in the very high shore. Filamentous green algae often forms a zone immediately below the lichen. Fucus, barnacles, littorine snails, and limpets are usually found in the upper through the middle shore. Fucus is generally very dense in the mid-intertidal of this shore. Littorines are somewhat sparse compared to other areas. Limpets are moderately abundant. The lower zones have increasing cover of red algae, with scattered patches of

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	2	5	
Waterfowl	1	4	
Gulls/Kittiwakes	2	10	
Shorebirds	1	2	
Corvids			
Other Birds			
MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)	2		
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

Revised 5/18/91 DM

PY012-C Biology Report, continued

green algae. Mussels are found only in small patches in crevices where mostly small individuals are present, with few adults. Clams (*Macoma* sp., *Saxidomus* sp.) are found in the low zone in low densities. Sea cucumbers (*Eupentacta* sp.) are quite abundant below cobble in the low zone, as are bryozoans, hermit crabs, isopods, and amphipods.

List of Common Species from PY012-C

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., *Enteromorpha* sp., *Prasiola meridionalis*, *Ulva* sp., *Urospora* sp.
3. Brown Algae - Phaeophyta
Costaria costata, *Ectocarpus* spp., *Fucus distichus*, *Hildenbrandia* sp., *Ralfsia* sp., *Syctosiphon lomentaria*
4. Red Algae - Rhodophyta
Corallina sp., *Endocladia muricata*, *Halosaccion glandiforme*, *Iridaea* sp., *Lithothamnion* sp., *Membranoptera dimorpha*, *Odonthalia floccosa*, *Palmaria palmata*, *Petrocelis* sp., *Porphyra* sp., *Ptilota filicina*, *Rhodomela larix*
5. Higher Plants - *Leymus mollis* (beach rye grass)

II. Marine Animals

1. Sponges - Porifera - *Halichondria* sp.
2. Anemones - *Anthopleura artemesia*, *Epiactis ritteri*, *Metridium senile*, *Urticina crassicornis*, *Stomphia* sp.
3. Hydroids - Sertularidae - *Sertularella*?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - *Emplectonema gracile*
8. Polychaete Worms
Glyceridae
Nepthyidae
Nereidae - *Nereis* spp.
Serpulidae - *Serpula* sp., *Crucigera* sp., *Eudistylia polymorpha*
Spirorbidae - *Spirorbis* sp.
9. Peanut worms - Sipunculids - *Phascolosoma agassizii*
10. Crustaceans
 - a. Amphipods - *Orchestia* sp.?
 - b. Barnacles - *Balanus glandula*, *Semibalanus cariosus*
 - c. Crabs - *Haplogaster* sp., Paguridae (hermit crabs)
 - d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimorsphaeroma oregonensis*
11. Mollusca
 - a. Chitons - *Mopalia mucosa*, *Katharina tunicata*, *Tonicella lineata*
 - b. Snails - Gastropods
Amphissa columbiana, *Littorina sitkana*, *L. keenae*, *Natica clausa*, *Nucella lamellosa*, *N. lima*
 - c. Limpets - *Acmaea mitra*, *Lottia digitalis*, *L. persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
 - d. Nudibranches - *Lamellidoris fusca*, *Melibe leonina*
 - e. Bivalves - *Chlamys hastata*, *Macoma nasuta*, *Modiolus modiolus*, *Mytilus edulis*, *Pododesmus cepio*, *Prototheca staminea*, *Saxidomus giganteus*

PY012-C Biology Report, continued

12. Echinoderms
 - a. Brittle Stars - *Ophiolus* sp., ?
 - b. Sea stars
Dermasterias imbricata, *Evasterias truscheli*, *Henricia leviuscula*,
Leptasterias hexactis, *Orthasterias keohleri*, *Pycnopoda helianthoides*,
Solaster sp.
 - c. Sea Cucumbers - Holothurians - *Eupentacta* sp.
 - d. Urchins - *Strongylocentrotus droebachiensis*
13. Bryozoans - *Membranipora* sp., *Microporina borealis*, *Schizoporella* sp.
15. Fishes
 - Cottidae
 - Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*

1510 SKETCH MAP

PY012-C

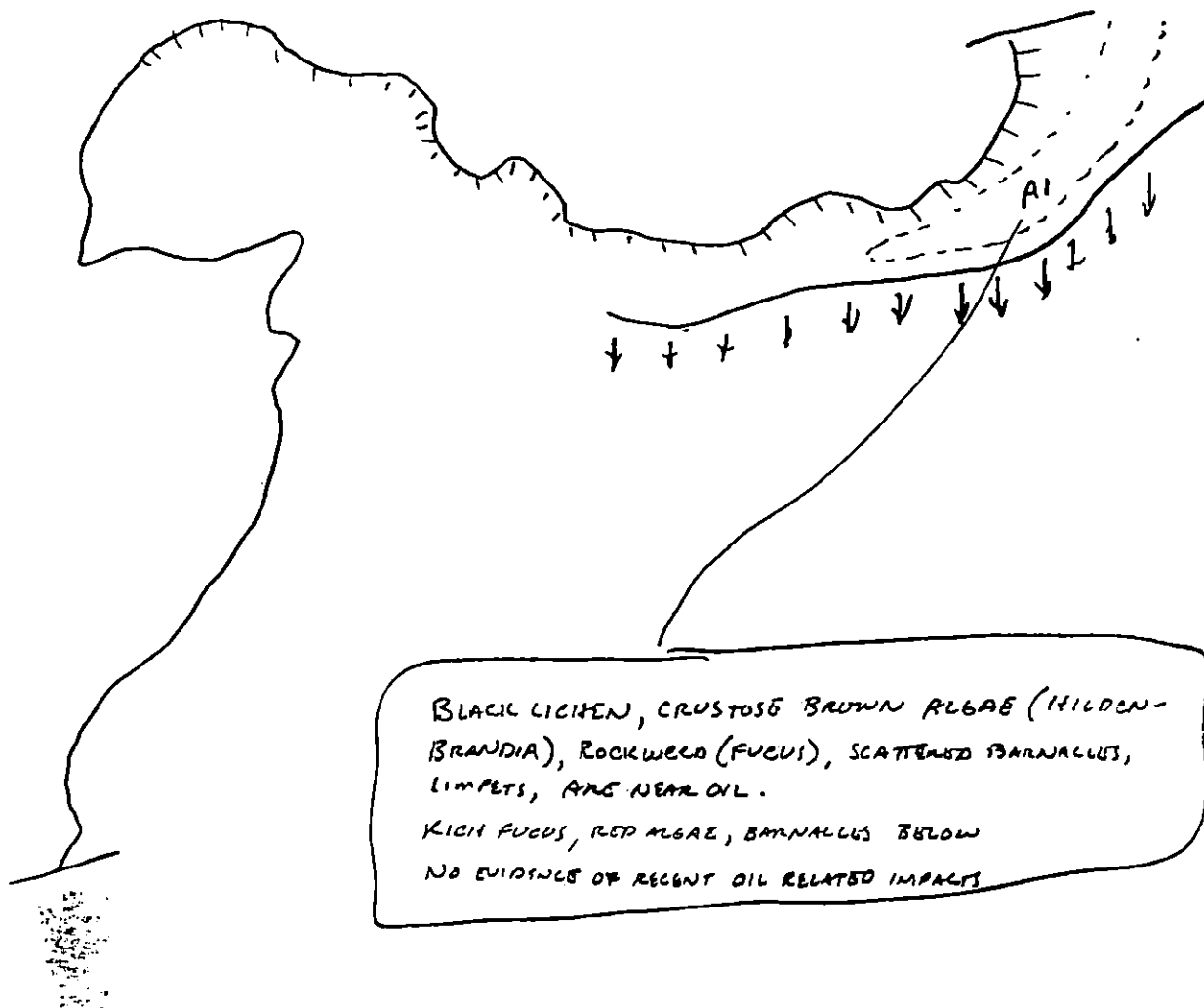
J.P. BARRY

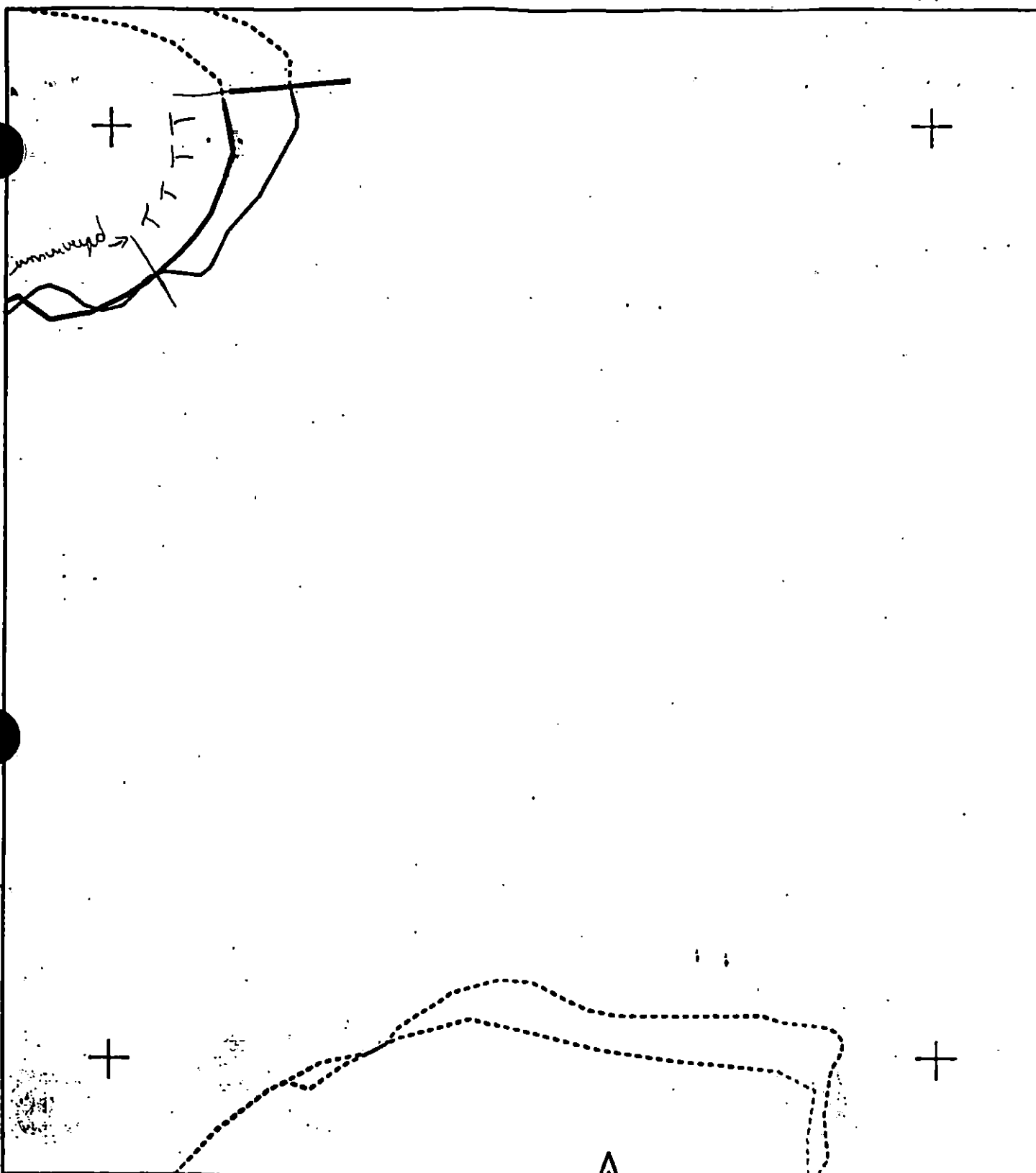
14 MAY 1991

1750-1810

Meters

0 100 200



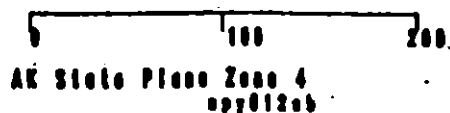


XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

PY012 C

ADEC Subsegment Length: 2035m

METERS



Subdivision Field Map

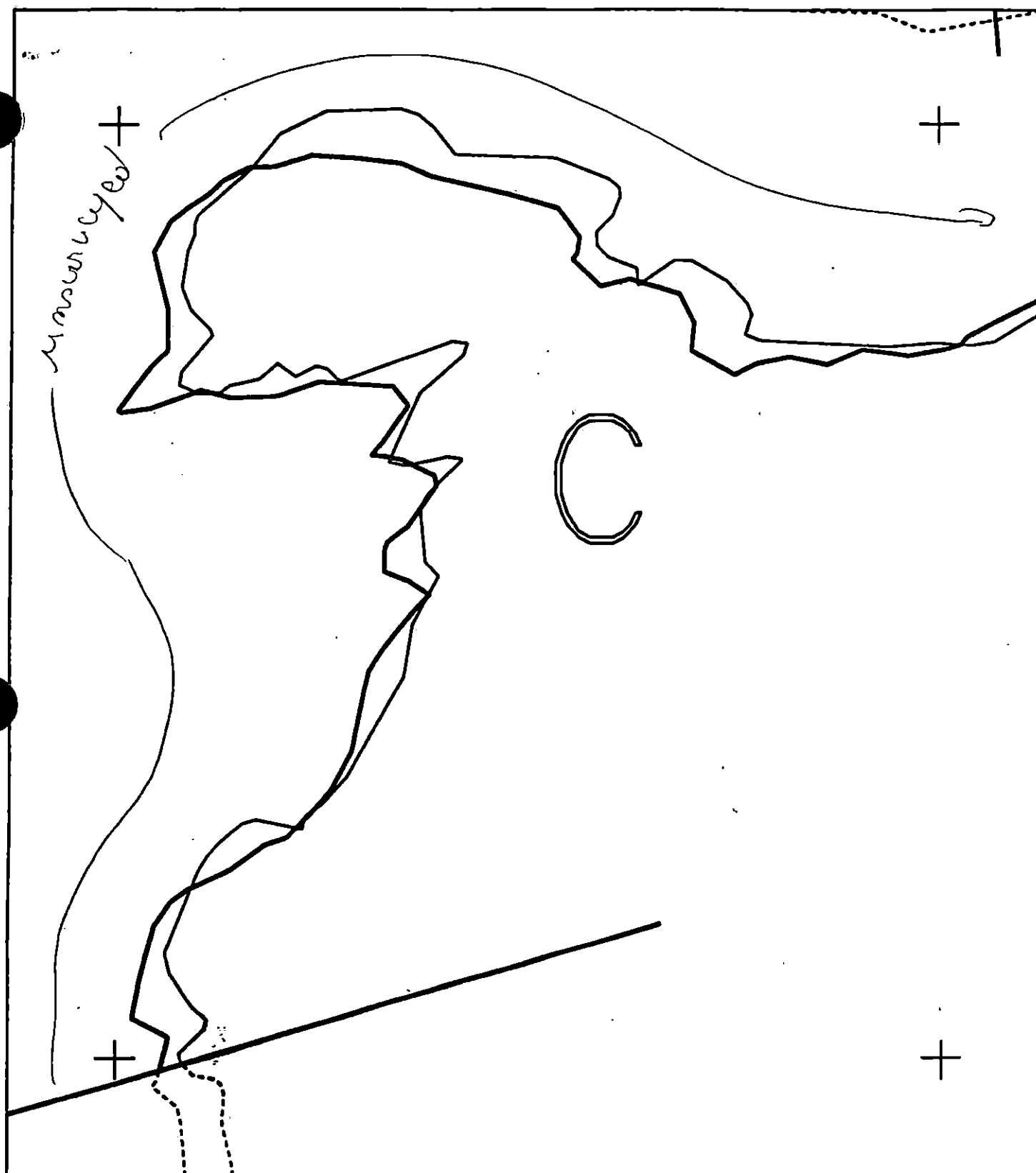
Map Key: KENPY012Cb

Name: J. M. Semple

Date: May 14/91

Date Entered:

reviewed 5.18.91 *gm*
 REVIEWED CB 18 MAY 91



XXXX
 ////

 TTTT
 0000

Wide
 Medium
 Narrow
 Very Light
 No Oil

PY012 C

ADEC Subsegment Length: 2035m

METERS

0 100 200

AK State Plane Zone 4
 apy01200



Subdivision Field Map

Map Key: KENPY012C0

Name: JM Samples

Date: May 14/91

Date Entered:

Reviewed 5.18.91 *ajj*

1991 MAYSAP EVALUATION

SEGMENT: PY 012 SUB: A REGION: KEN SURVEY DATE: 5/14/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

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

TEAM NO 4) SEGMENT P4 012 SUBDIVISION A DATE MAY 14 1991

ADEC

NAME

Clara S Crosby

SIGNATURE

Clara S Crosby☒ NTR

Jean Marie Samples comments are applicable, there was no available data to indicate previous oiling

EXXON

NAME

George P. Styles

SIGNATURE

George P. Styles 5/16/91☒ NTR

No recoverable oil seen.

LANDMANAGER

NAME

JOHN P. HARDISTER

OF

USFWS

SIGNATURE

John P Hardister 5/16/91☒ NTR

concur with comments of ADEC and EXXON representatives

USCG/NOAA

NAME

CWO2 J Mc KA Hon

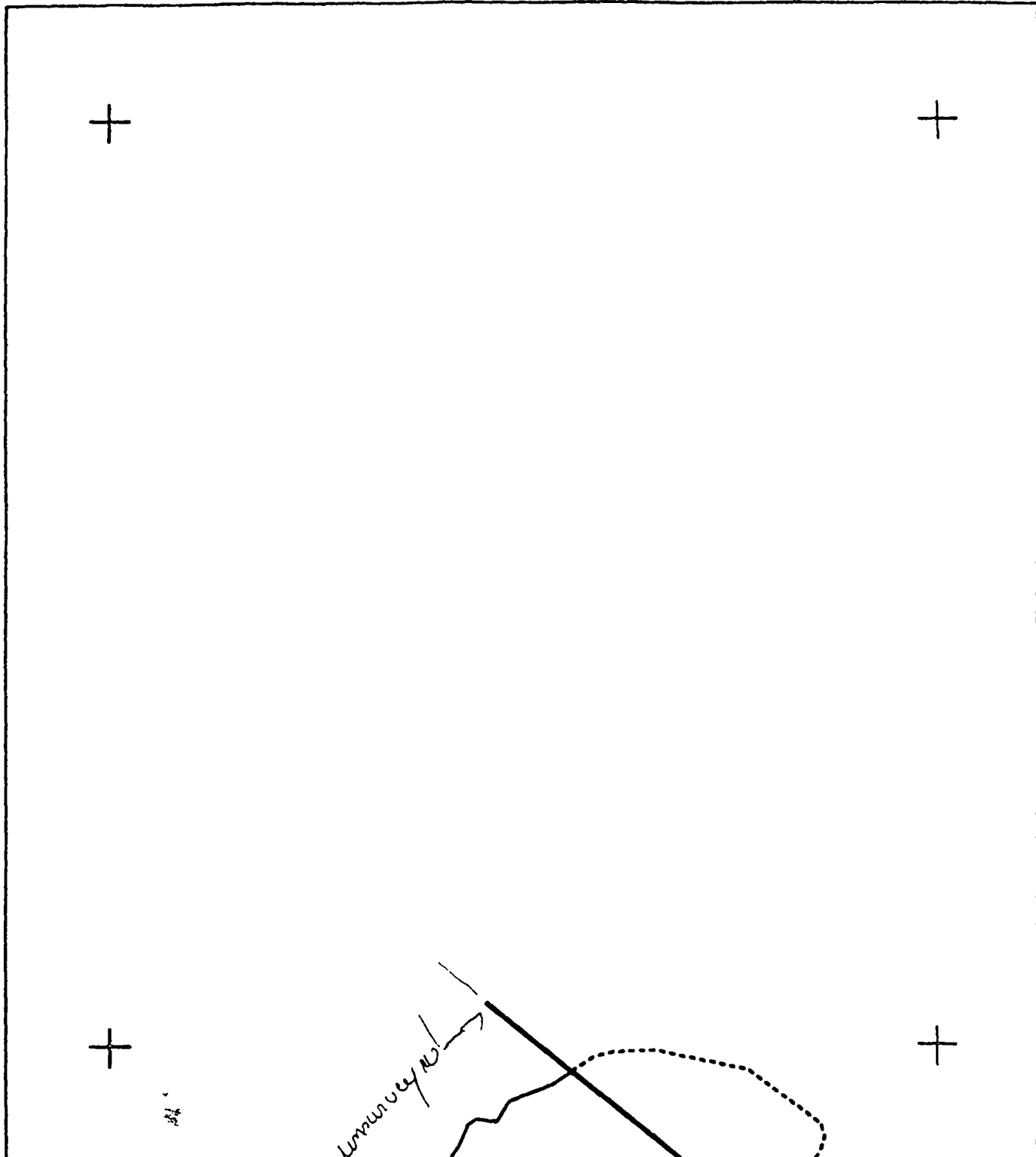
SIGNATURE

J Mc KA Hon☒ NTR

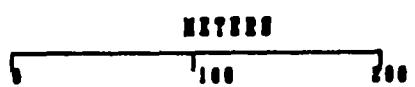
No oil recovered

PAGE 2 OF 9

raised 5/18/91 K
raised 5/18/91



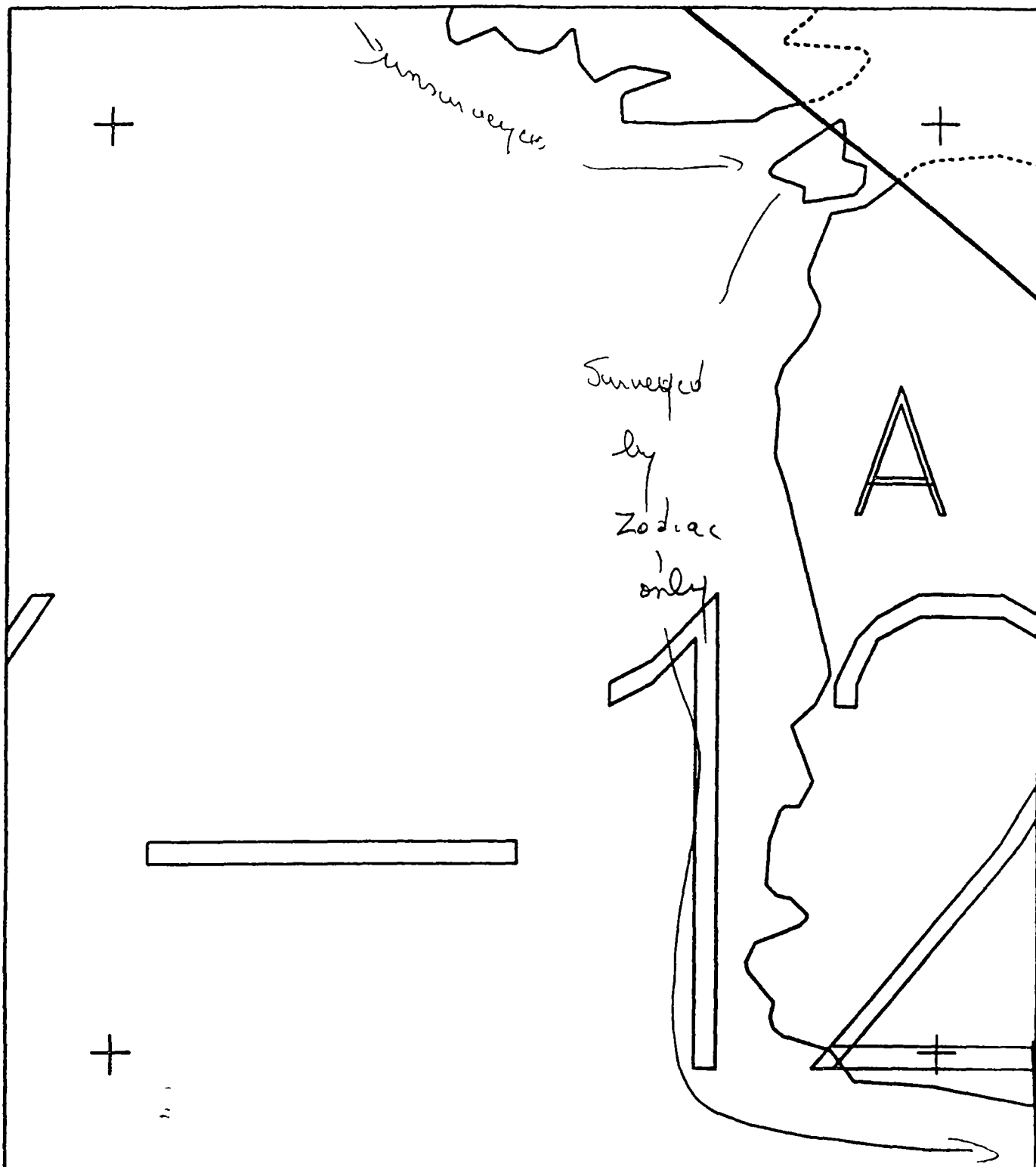
PY012 A



AK State Plane Zone 4
spy01200

Subdivision Field Map
Map Key: KENPY012Ac
Name: J M Sample
Date: MAY 14/10

reviewed 5/14/10
E. reviewed 5/18



PY012 A

METERS



AK State Plane Zone 4
april 2000

Subdivision Field Map

Map Key: KENPY012Ac

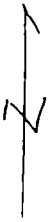
Name: Jim Femp 2

Date: May 14 / 1

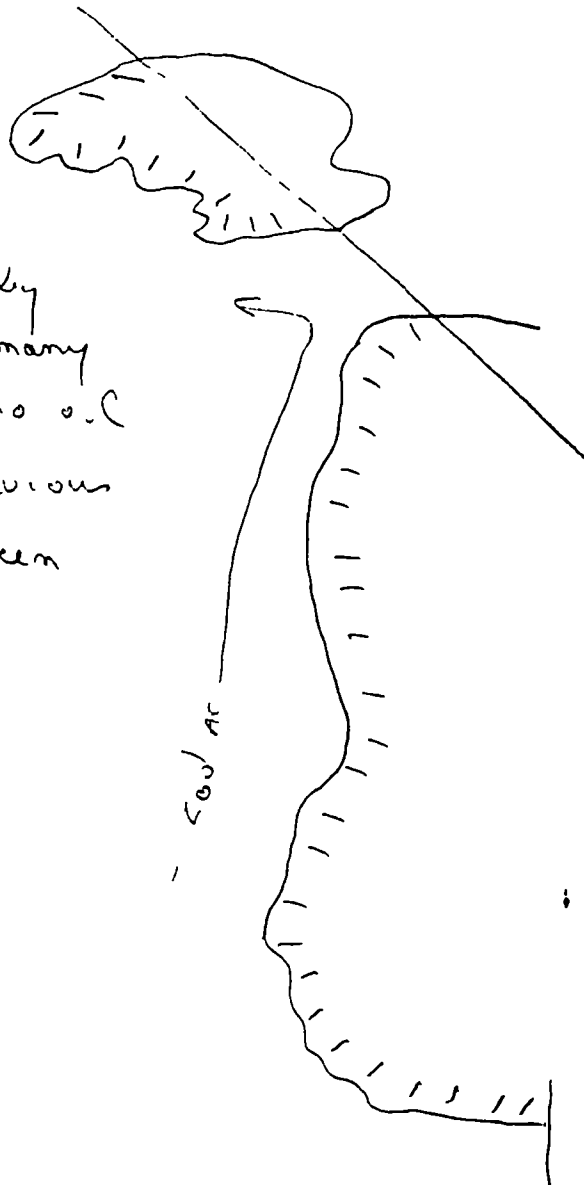
reviewed 5/14/01
L. Trammell 5/18

Og Sketch Map
PY 012 A
17 Samples
May 14/91
1440 - 2000

Legend
[Symbol] Steep bedrock
with occasional
talus of angular
boulders/cobbles



Subdivision surveyed by
Zodiac only not many
landing sites and no oil
reported during previous
survey No oil seen



Meters
0 100 200

TEAM #	4	DATE/TIME	May 14, 1991	1930 - 2000
SEGMENT #	PY012	TIDAL HEIGHT (Range)	+2.6 => +2.1	
SUBDIVISION	C	BIOLOGIST	JIM BARRY	
SEA STATE	Calm	WIND SPEED/DIRECTION	Variable 0-10 kt, rain	

Rec'd 5/13/91 ERM

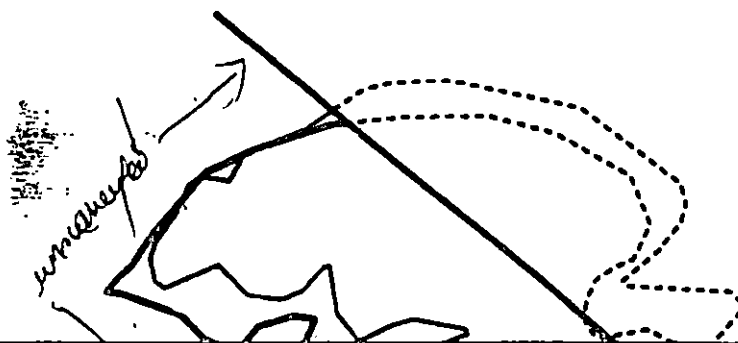
List of Common Species from PY012-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., Prasiola meridionalis, Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Agarum fimbriatum, Costaria costata, Ectocarpus spp., Fucus distichus, Hedophyllum sessile, Hildenbrandia sp., Laminaria saccharina, Nereocystis leutkeana, Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Bossiella sp., Calliarthron sp., Corallina sp., Cryptosiphonia woodii, Cumagloia andersonii, Endocladia muricata, Halosaccion glandiforme, Iridaea sp., Lithothamnion sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria palmata, Petrocelis sp., Porphyra sp., Ptilota filicina, Rhodomela larix
5. Higher Plants - Leymus mollis (beach rye grass)

II. Marine Animals

1. Sponges - Porifera
Halichondria sp., Halichondria panicea, Tethys sp.
2. Anemones - Anthopleura artemesia, A. elegantissima, A. xanthogrammica, Epiactis ritteri, Metridium senile, Urticina crassicornis,
3. Hydroids - Sertularidae - Sertularella?
8. Polychaete Worms
Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs - Haplogaster sp., Hemigrapsus oregonensis, Paguridae (hermit crabs), Pugettia sp.,
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
11. Mollusca
 - a. Chitons - Mopalia mucosa, Katharina tunicata, Tonicella lineata,
 - b. Snails - Gastropods - Littorina sitkana, L. keenae, Nucella lamellosa, N. lima
 - c. Limpets - Acmaea mitra, Lottia digitalis, L. persona, Tectura fenestrata, T. persona, T. scutum, Siphonaria thersites
 - e. Bivalves - Modiolus modiolus, Mytilus edulis
 - f. Cephalopods - Octopus dofleini
12. Echinoderms
 - a. Brittle Stars - Ophiolus sp., ?
 - b. Sea stars - Dermasterias imbricata, Evasterias truscheli, Henricia leviuscula, H. sanguinolenta, Leptasterias hexactis, Orthasterias keohleri, Pisaster ochraceus, Pycnopoda helianthoides, Solaster sp.
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Microporina borealis, Schizoporella sp.
15. Fishes
 - Cottidae
 - Stichaeidae - Xiphister atropurpureus, X. mucosus



XXXX
////

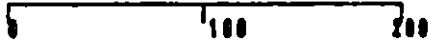
TTTT
0000

Wide
Medium
Narrow
Very Light
No Oil

PY012 A

ADEC Subsegment Length: 1838m

METERS



AK State Plane Zone 4
apy012ab



Subdivision Field Map

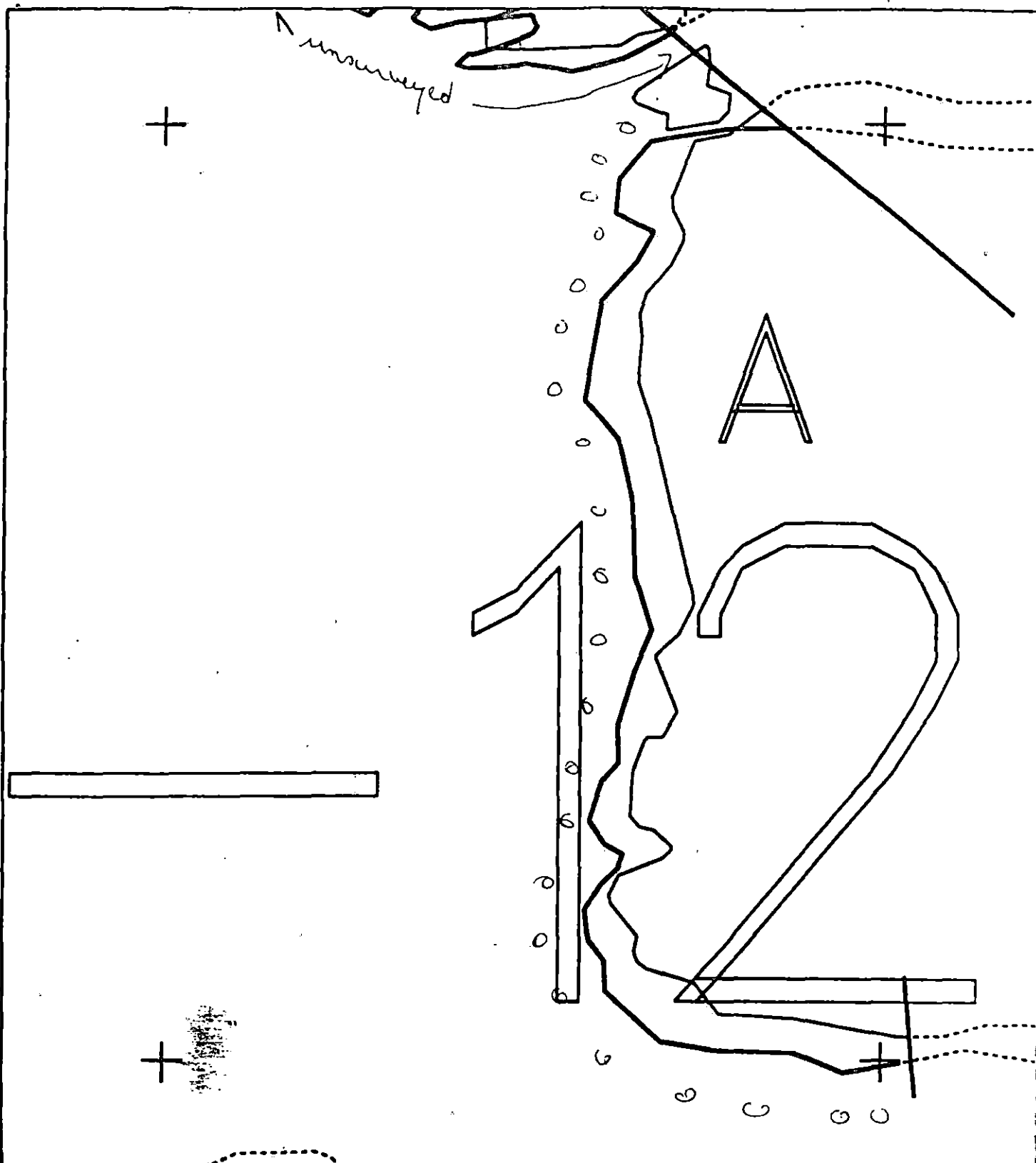
Map Key: KENPY012Ab

Notes: 17 Samples

Date: MAY 14 / 0

Date Entered:

renewed 5/18/01
25 revised 5/18



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

PY012 A
ADEC Subsegment Length: 1639m
METERS
5 100 200
AK State Plane Zone 4
apy012aa

Subdivision Field Map
Map Key: KENPY012Aa
Name: Jim Sempie
Date: May 14 / 9
Date Entered:



reviewed 5/15/96
re reviewed 5/11

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT PY-12 SUBDIVISION B (2 of 3)

WORK WINDOW

Manual Pickup

OPEN
(USFWS MONITOR REQ.)

Bioremediation*

OPEN
(USFWS MONITOR REQ.)

*Customblen may be used in ITZ following manual pickup.

ARCHAEOLOGICAL INSPECTION/CONSULTATION REQUIRED.

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

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

No applicable time constraints.

OTHER ECOLOGICAL CONSIDERATIONS

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

FOSC

A. J. J. J.

Date

7/3/90

Prepared by

Rex R. Coulter

Date

7-3-90

PY-12

WORK
AREAS

PY-11

ECOLOGY MAP SEGMENT PY-12

SUBDIVISION B (2 of 3)

METERS

0 472 944



Seabird Colony



Active Eagle Nest



Inactive Eagle Nest

1 inch = 1549 feet



Exxon Company, USA

Map Key: KEN-PY-12

June 10 1990



WORK PLAN ADDENDUM

Segment PY-012

Subdivision B

Dated 5/16/90

MODIFICATION

1. REASON FOR MODIFICATION

- FOSC requirement.
- Landowner recommendation.

2. ADJUSTMENT TO WORK PLAN

- Custumblen may be used in the ITZ as indicated on the sketch following manual removal of mousse and patties.
- A USFWS representative must be on site for treatment.

SHPO APPROVAL NEEDED YES _____
NO X

SHPO SIGNATURE

TAG APPROVAL DATE 5/18/90

ADEC ART WELDER Art Weins

EXXON Amy TGA *[Signature]*

0AA Gary Petrone *[Signature]*

CG GA REITER GA REITER

FOSC DATE 5-18-90

SHORELINE EVALUATION

SEGMENT ST/ PY-012 SUBDIVISION B (2 OF 3) DATE 4/3/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
4QQ National Wildlife Refuge

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/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: Charles E. Hines

DATE: April 14, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V. Light 223 m: No Oil 0 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

 No Treatment Recommended
X Treatment Recommended
X Manual Pickup
X Bioremediation
 Tarmat: Breakup
 Removal

 Snare/Absorbent Booms
 Oil Snares (pom poms)
 Absorbents (pads, rolls, etc)
 Spot Washing: Wands
 Beach Cleaner
 Other (see comments)

COMMENTS: Manual removal of pooled oil and mousse patties, followed by bioremediation.

SEE CONSTRAINT ADDENDUM DATED
7/3/90 AND WORK ADDENDUM DATED
5/16/90

TAG COMMENTS:

TAG APPROVAL DATE: 4/14/90

ADEC JOHN BAUER

EXXON ANDY GAY

NOAA Burt Warrick

USCG G.A. BEITER

FOSC: W L DATE: 5-1-90

Do not bioremediate IAW LM's desires.

REGION: KENAI

SEGMENT: ST/PY-013

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ PY-013 SUBDIVISION A (1 OF 1) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

4QQ National Wildlife Refuge
5T Bald eagles observed in segment (possible nest area)

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to unoiled biota and substrate.

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 3089 m: No Oil 5149 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:

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ PY 13 SUBDIVISION: A DATE 4/3/90

USCG / NOAA

NAME JACQUI MICHEL SIGNATURE J. Michel☒ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

The very scattered splatters of oil on this moderate energy, rocky shoreline do not warrant further treatment.

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed☒ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

Very scattered. Does not need cleanup. I have read and agree that all information on SSAT Forms are correct.

LAND MANAGER - USFWS

NAME Mary Portner SIGNATURE Mary Portner☒ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

The oil is very scattered along this shoreline. Treatment is not warranted at this time.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/9

OG MANN USCG/NOAA MICHEL SEGMENT STI PY 13
 BIO CARR LAND REP PORTNER - RUS SUBDIVISION A (1/1)
 EXXON BOYER ADEC REED TIME 12:55 to 13:42
 TEAM NO.: 18 TIDE LEVEL: +3.5 to +2.4 DATE 4 / 3 / 1990
 EST. SUBDIVISION LENGTH: 8601 m ☐ Sun ☐ Clouds ☐ Fog ☒ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: NORTH to SOUTH
 SURFACE SEDIMENTS: R 90 % B 10 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0
 SLOPE: Long 40 % Hang 30 % Vert 30 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 3060 m NO 5541 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR						IMPACTED ZONES			
	IC	IS	IP	IS	SAL BR	DR RW	OL	SL	DR TL	LR	SU	UI	MI	LI
ASPHALT PAVEMENT														
POOLED														
COVER				✓		✓					✓			
COAT				✓		✓					✓			
STAIN														
MOUSSE														
PATTIES														
TARBALLS														
FILM														
NO OIL											✓		✓	✓

PAVEMENT: H F S 0 sq. m by 0

PATTIES / TARBALLS 0 BAGS

NEAR SHORE SHEEN? ☒ NO BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED

☐ YES ☒ NO

TYPE N/A

#BAGS N/A

Photographs:

Roll No. ST 18-3

Frames 18-19

SUBSURFACE OIL NO PITS WERE DUG BECAUSE OF BEDROCK and boulder substrate.

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CH)	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		VO	UC	SAL BR	DR RW	OL	SL	DR TL	LR	SU	UI	MI	LI		
C							.														
							.														
							.														
							.														
							.														
							.														

COMMENTS

PY-13 has slightly higher wave energy than PY-12. It is otherwise very similar in geomorphology and oiling.

OG 1000N

SEGMENT ST/PY13

SUBDIVISION A

DATE 4 1 3 90

SKETCH MAP

CHECKLIST

☐ N Arrow
☐ Approx. Scale
☐ Sep/Sub Bndry
☐ Oil Dist.
☐ Width
☐ Length
☐ % Cover
☐ Substrate Character
☐ Est. HWL/LWL
☐ SSL
☐ Profile Location(s)
☐ Profile(s)
☐ Pit Location(s)
☐ Photo Location(s)

No sketch was made

LEGEND

1 ▲

Pit - No Subsurface Oil

2 ▲

Pit - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

Oil Vegetation

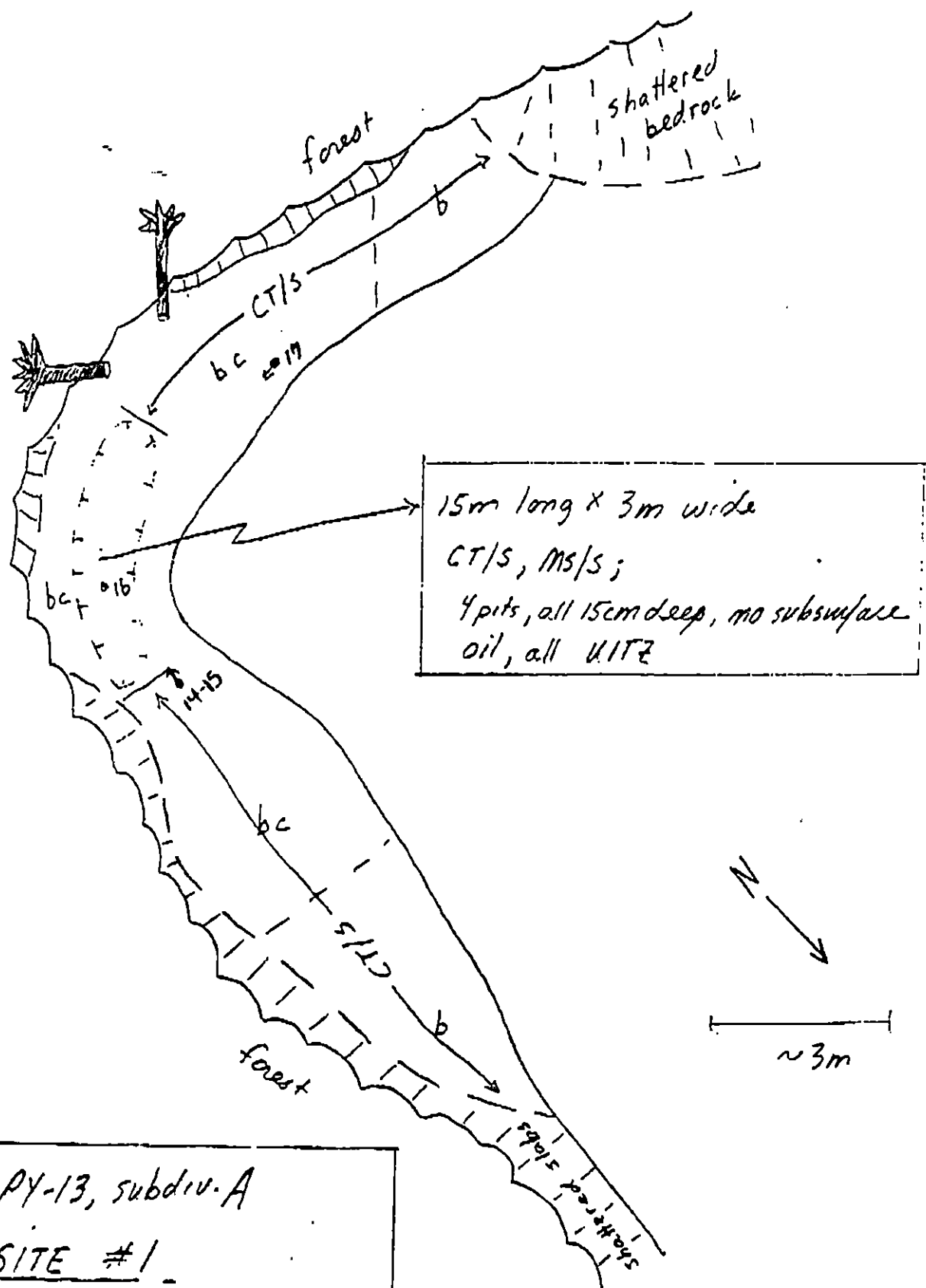
1 ➔

Photo location, direction,
and number

Assumes 5% CV/CT coverage within the VL category.

Oil Character Length (m): AP 0 PO 0 CV 80 CT 80 ST 0 MS 0 PT 0 TB 0 FL 0 NO 8601

REVISION: 03/24/90



Segment PY-13, subdiv. A
SKETCH SITE #1

(This was Site B of the August 1989
 Seat report)

This is Not a subdivision map.

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / PY 13 Subdivision A (of A) Date (mo / day / yr) 4 / 3 / 90

Time (24 hr) 1255 Biologist M. LARK

(A) Substrate type and % of ^{SUBDIVISION} segments:
(1) Bedrock 90 (2) Boulder 10 (3) Cobble _____ (4) Pebble _____ (5) Sand _____ (6) Silt _____

(B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense 60 Moderate 30 Low 10

(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. 3

Frames 18, 19

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 IN LOW Z
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

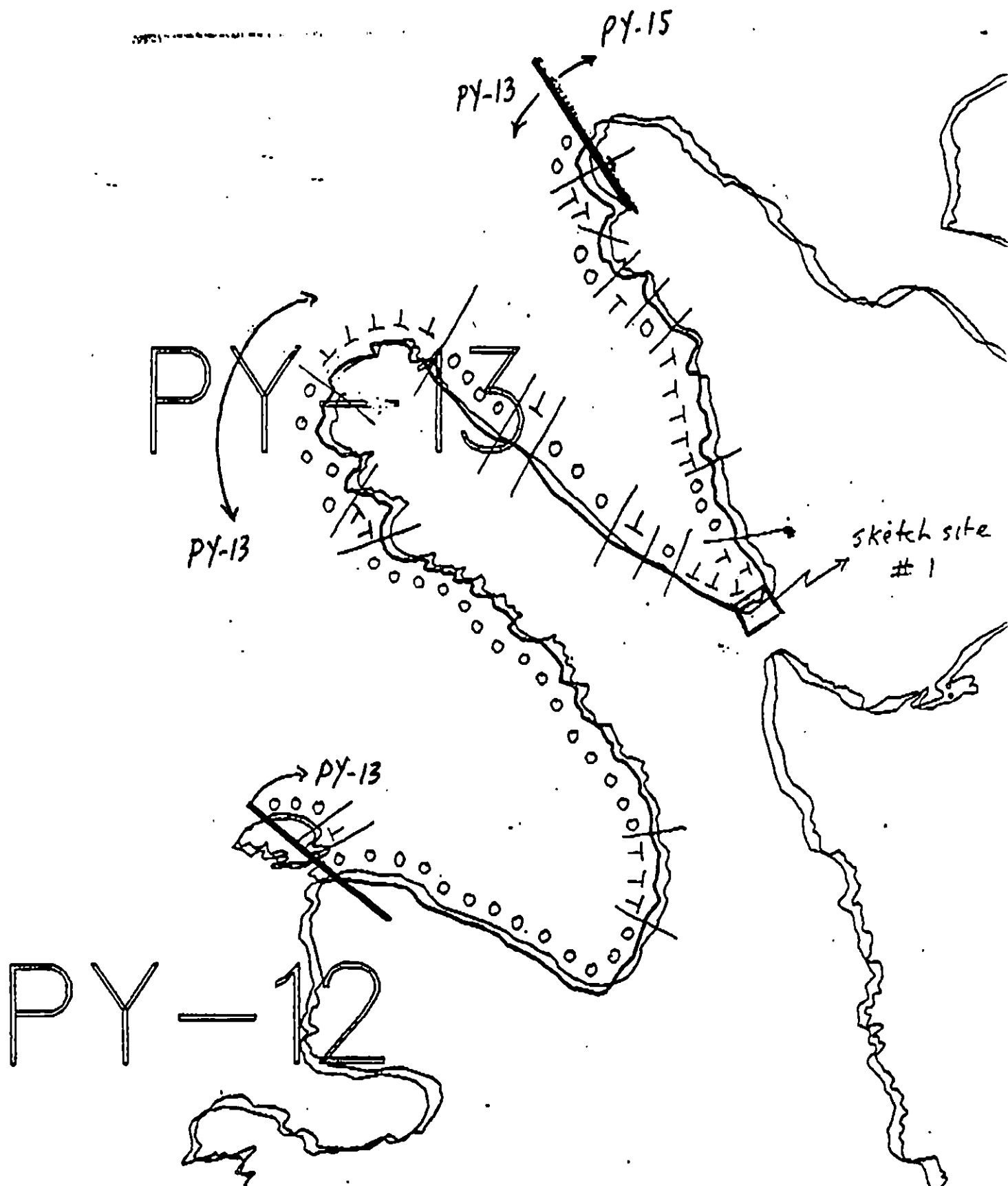
Dense			Moderate			Sparse			Rare			
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	NOT PRESENT
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	
6	6	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments:

Surf scoter (6) Black oyster-catcher (6) Harlequin duck
Raven (1) Sea otter (3) (2 mature + 1 pup)
Red-faced cormorant (1) Bald eagle (3) (2 mature + 1 immature)

Ecological Considerations:

Sensitivity codes: 4-QQ (Natural Wildlife Refuge)



XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

OOOO No. 1

PY-13 1:18000

ADEC Segment Length: 7924m

0 500 1000 1500

Map Key: KEN-85

Name: MarrDate: 4/3/90

Not Related.

SHORELINE EVALUATION

SEGMENT ST/ PY-013 SUBDIVISION A (1 OF 1) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

4QQ National Wildlife Refuge

5T Bald eagles observed in segment (possible nest area)

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: Charles E. Adams DATE: 4/17/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 3089 m: No Oil 5149 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

X No Treatment Recommended

 Treatment Recommended

 Manual Pickup

 Bioremediation

 Tarmat: Breakup

 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: 4/17/90

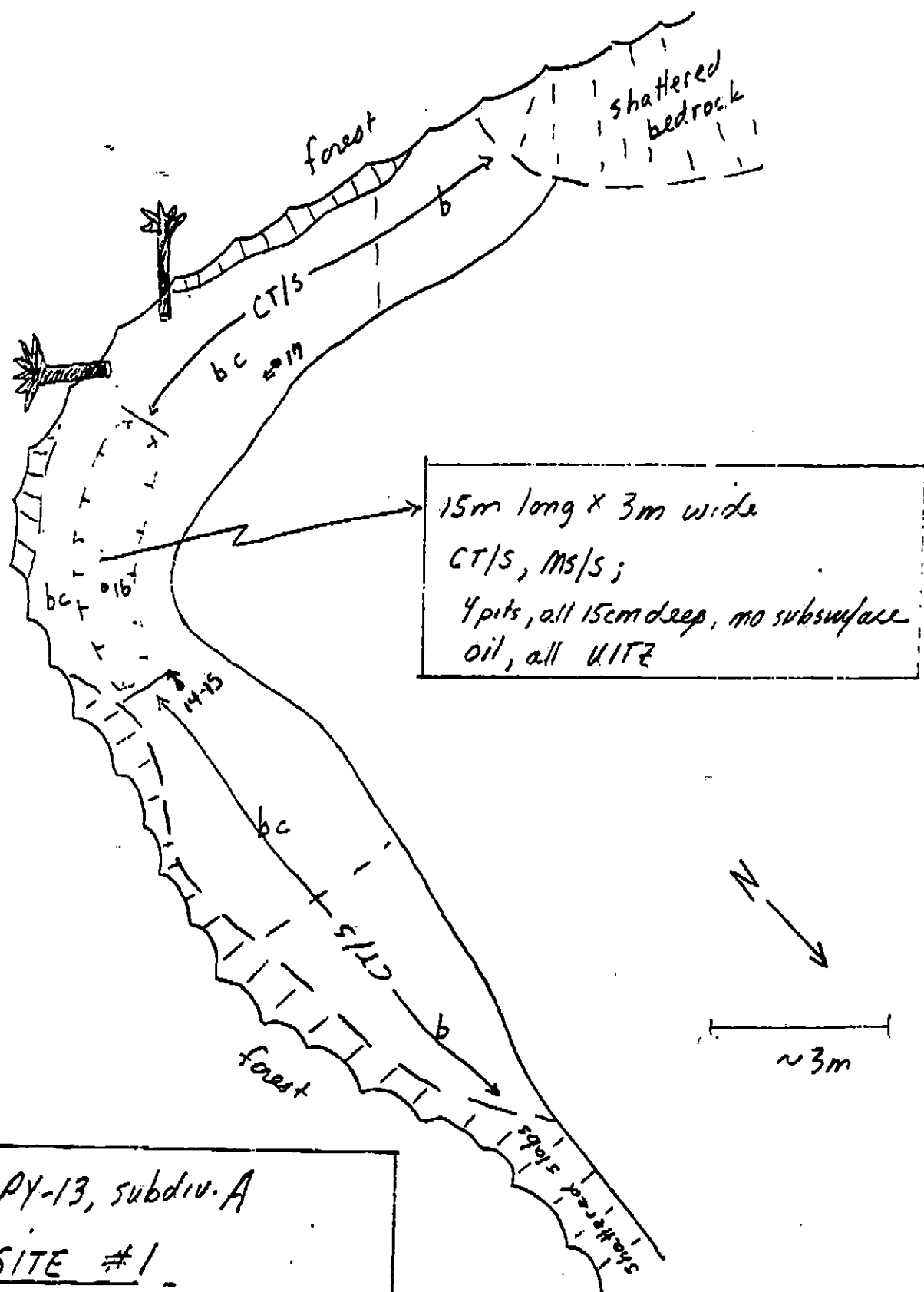
ADEC Art Weimer Art Weimer

EXXON ANDY TEAL ANDY TEAL

NOAA Burt Wescott Burt Wescott

USCG KENNETH KEANE Kenneth Keane

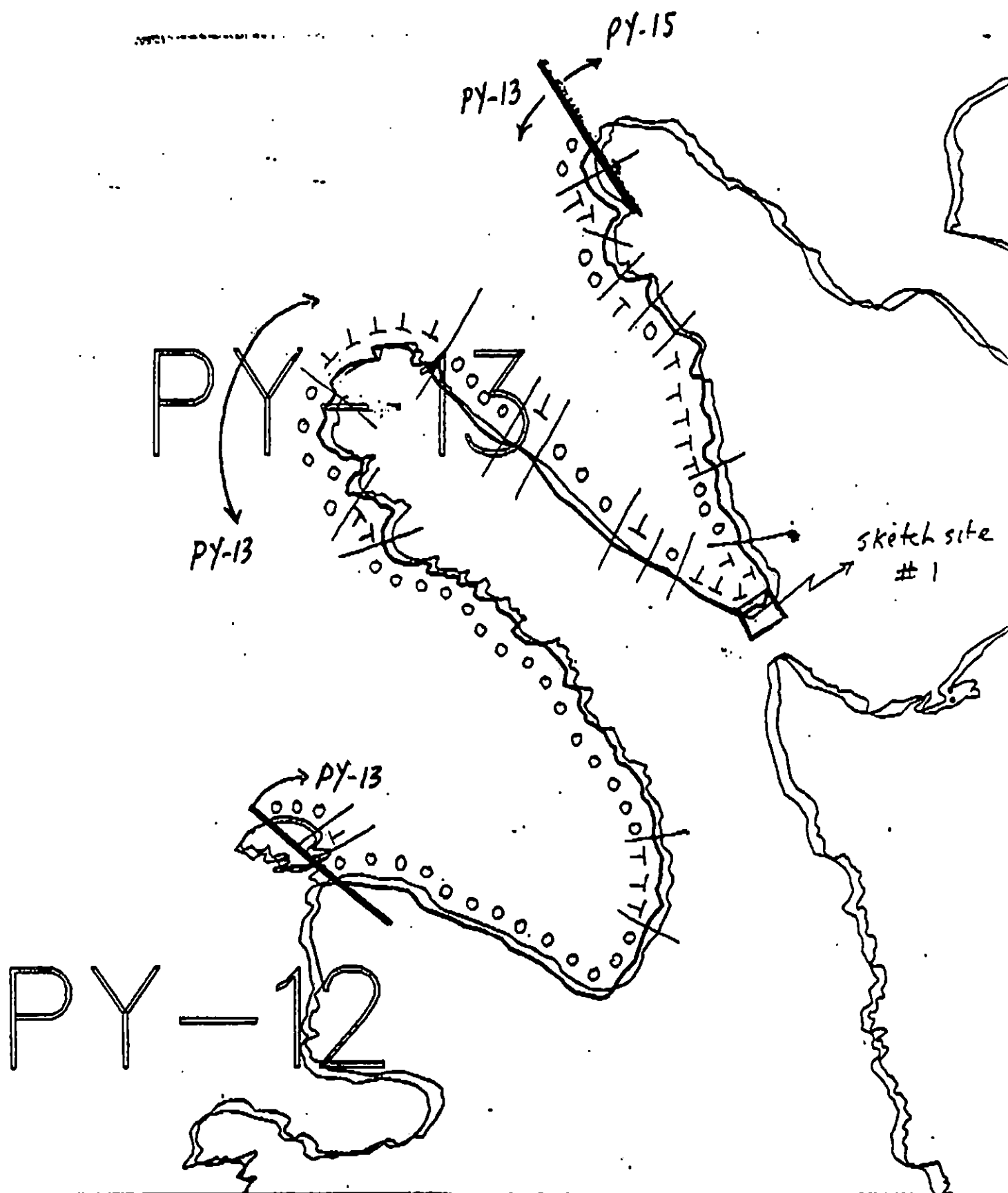
FOSC: [Signature] DATE: 4-22-90



Segment PY-13, subdiv. A
SKETCH SITE #1

(This was Site B of the August 1989
 Scott report)

This is not a subdivision map.



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

^ ^ ^ ^ ^ ^ ^ ^ ^ ^

PY-13 1:18000

ADEC Segment Length: 7924m

0 300 600 900

Map Key: KEN-85

Name: manrDate: 4/3/90

Data collected:

REGION: KENAI

SEGMENT: PY-014

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ PY-014 SUBDIVISION A (1 OF 1) DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

4QQ National Wildlife Refuge

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to unoiled biota and substrate.

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 1844 m: No Oil 1823 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 25 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: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST 1 PY 14 SUBDIVISION: A DATE 4/6/90

USCG/NOAA

NAME JACQU' MICHEL SIGNATURE Michel

☒ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

The very light oil occurs in a large cove and the central part of the northern shore, as scattered splatters on rocks and accumulations at the base of boulders in pocket beaches. No further treatment is warranted. This segment is readily exposed to wave energy.

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed

☒ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

Very light oiling in bedrock and boulder substrate that is mostly in the form of splatters. The small pocket beach (site sketch #1) is where type B cleanup took place last year. This site is mostly stain and does not require cleanup. I have read and agree with all data on S.S.A.T. forms.

LAND MANAGER - USFWS

NAME Mary Portner SIGNATURE Mary Portner

☐ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

No oil remaining in this zone occurs as 3 separate 5m x 2-3m areas of stain, coat and mucus widely scattered in the Eastern portion of the segment and as coat and stain in a 3m x 25m band in the cove to the west. I feel this was a good survey and agree with the SSAT forms.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG Mann NOAA USCG Michel SEGMENT ST/ PY-14
 BIO Carr LAND REP Partner - USFWS SUBDIVISION A
 SYXON BOYER ADEC Reed TIME 15:47 10/16/55
 AM NO.: 18 TIDE LEVEL: 9.0 to 1.5 DATE 4 / 1 / 90
 EST. SUBDIVISION LENGTH: 3125 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: E to W
 SURFACE SEDIMENTS: R 90 % B 10 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 10 % Hang 45 % Vert 45 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 1782 m NO 1843 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR							IMPACTED ZONES			
	IC	IS	IP	IR	SB OR	DBL FW	GY SL	DBL TL	LR	SU	UI	M	U		
ASPHALT PAVEMENT															
POOLED															
COVER															
COAT				✓		✓					✓				
STAIN				✓		✓					✓				
MOUSSE															
PATTIES				✓		✓					✓				
TARBALLS															
FILM															
NO OIL										✓		✓	✓		

PAVEMENT: H F S 0 sq. m by 0 cmPATTIES / TARBALLS 0 BAGSNEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			1
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☐ YES ☒ NOTYPE AAA 0#BAGS 0

Photographs:

Roll No. ST-8-4Frames 1-3

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	SL BR	DBL FW	GY SL	COB TL	LR	SU	U	M	L				
1	30		✓	-			0 - 25		✓					✓			✓			NO	CB Throughout	
2	30		✓				0 - 25		✓					✓			✓			"	" "	
3	30		✓				0 - 25		✓					✓			✓			"	" "	
							.							.								
							.															
							.															

COMMENTS * all pits were dug at the sketch site.

The oil remaining on this steep, bouldery coastline is hard to find.
 At sketch site 2, most of the remnant oil is down between the boulders and cobbles of the shore - probably washed there by the type B cleanup.

G MANN
EGMENT ST/ Py-14
UBDIVISION A
ATE 4 / 6 80

SKE MAP

- CHECKLIST
- ☐ N Arrow
 - ☐ Approx. Scale
 - ☐ Seg/Sub Bndry
 - ☐ Oil Dist.
 - ☐ Width
 - ☐ Length
 - ☐ % Cover
 - ☐ Substrate Character
 - ☐ Est. HW/LA/WL
 - ☐ SSL
 - ☐ Profile Location(s)
 - ☐ Profile(s)
 - ☐ Pit Location(s)
 - ☐ Photo Location(s)

NO sketch required

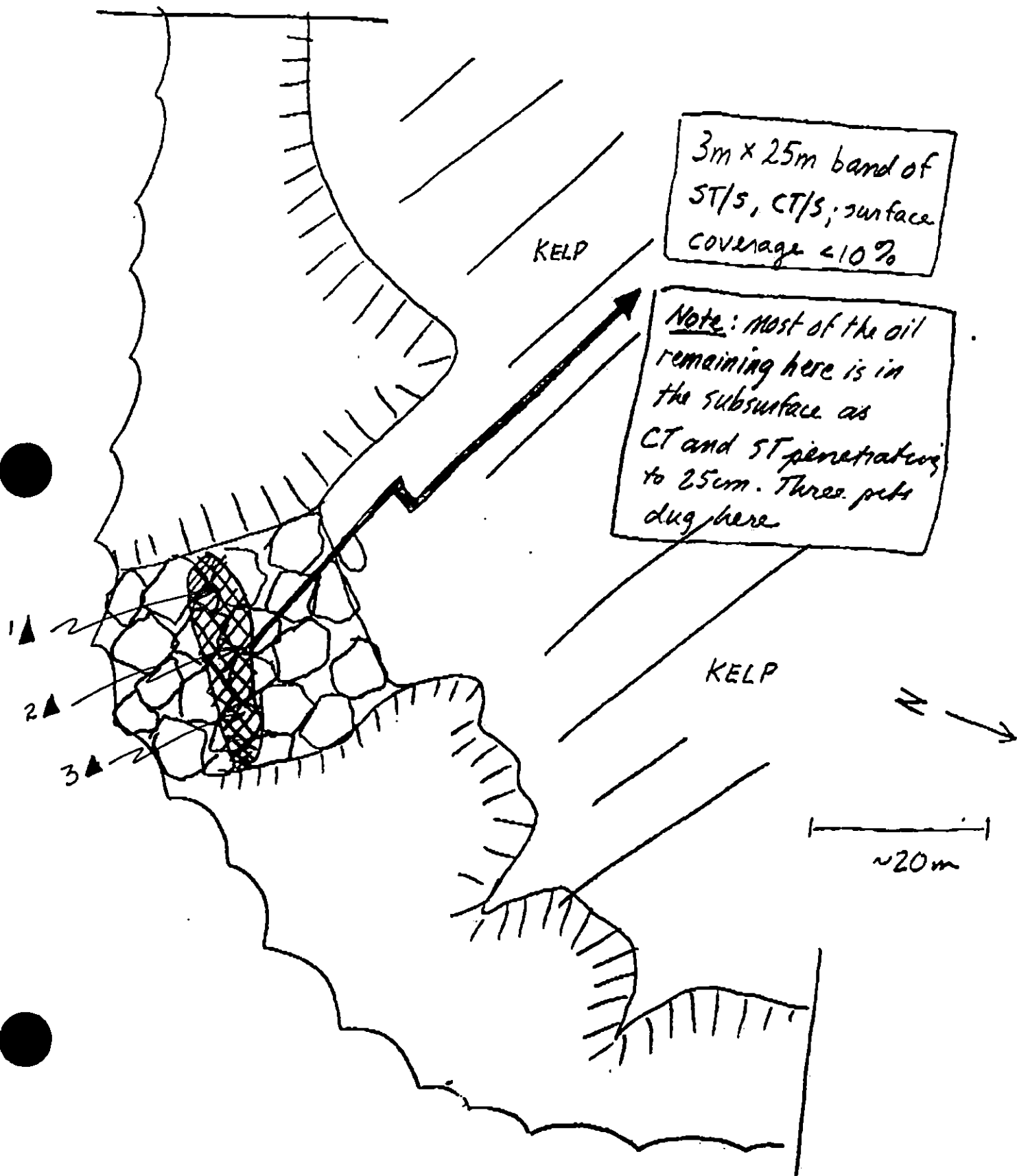
- LEGEND
- 1 No Subsurface Oil
 - 2 Subsurface Oil
 - CT/C continuous Distribution
 - CT/B broken Distribution
 - CT/P patchy Distribution
 - CT/S planned Distribution
 - Mixed Vegetation
 - 1 to location, direction, and number

30% of VL is CT + ST
+ 1% of VL is PT/S

Character Length (m): AP 0 PO 0 CV 0 CT 500 ST 500 MS 0 PT 60 TB 0 FL 0 NO 3125

HPX-00-1590 22:33 FROM ENSCO HT, as ENSCO TO SHIT P. 11

PY-14 6 April 1990 Mann Team 18 Site Sketch Map #1
(Site A in August 1989)



SHORELINE ECOLOGICAL SUMMARY

REVISION: 08/02/90

Segment ST / PY-14 Subdivision A (of A) Date (mo / day / yr) 4 / 12 / 90

Time (24 hr) 1545 Biologist M. CARR

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

(B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense 80 Moderate 10 Low 10

(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: 4
Roll No.

Frames 1-3

BARNACLES

	Dense			Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
→ 1	2	2	2	2	2	2	2	2	2	2	2	2	
→ 2	3	3	3	3	3	3	3	3	3	3	3	3	
→ 3	4	4	4	4	4	4	4	4	4	4	4	4	
→ 4	5	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	6	NOT PRESENT NOT PRESENT ON COBBLE AT ANY TIDAL ZONE

MYTILUS

	Dense			Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
→ 1	2	2	2	2	2	2	2	2	2	2	2	2	
→ 2	3	3	3	3	3	3	3	3	3	3	3	3	
→ 3	4	4	4	4	4	4	4	4	4	4	4	4	
→ 4	5	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	6	NOT PRESENT IN LOW - NOT PRESENT NOT PRESENT ON COBBLE AT ANY TIDAL ZONE

GASTROPODS

	Dense			Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
→ 1	2	2	2	2	2	2	2	2	2	2	2	2	
→ 2	3	3	3	3	3	3	3	3	3	3	3	3	
→ 3	4	4	4	4	4	4	4	4	4	4	4	4	
→ 4	5	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	6	NOT PRESENT NOT PRESENT IN MID AND LOWER ZONES.

FUCUS

	Dense			Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
→ 1	2	2	2	2	2	2	2	2	2	2	2	2	
→ 2	3	3	3	3	3	3	3	3	3	3	3	3	
→ 3	4	4	4	4	4	4	4	4	4	4	4	4	
→ 4	5	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	6	NOT PRESENT NOT PRESENT IN COBBLE AT ANY TIDAL ZONE

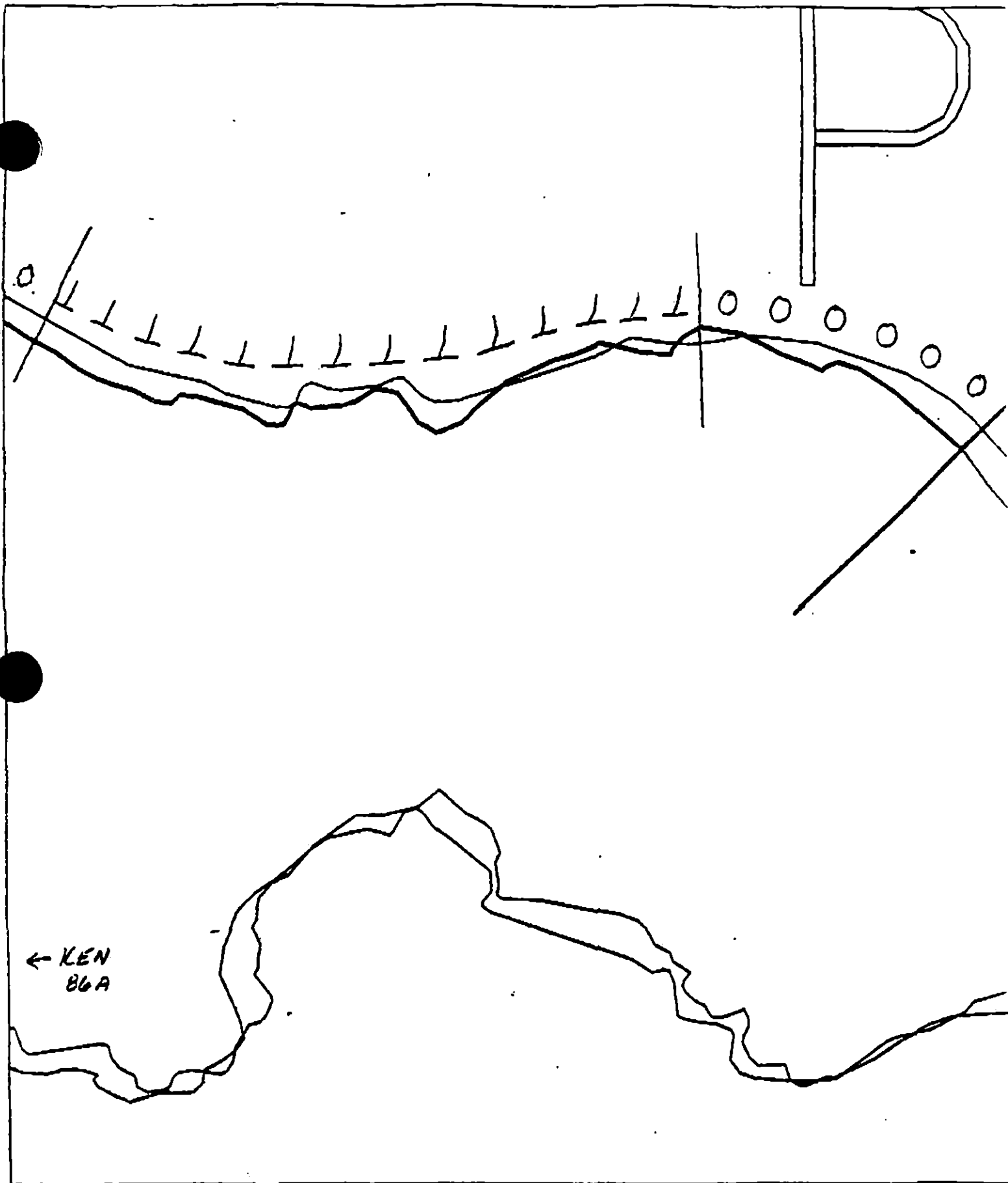
Wildlife Observations/ General Comments:

Commoner (3) unid.
Bald eagle (3) all mature
Sea otter (4) 3 mature w/ one pup.

Surf scoters (13)
Harlequin ducks (8)

Ecological Considerations:

Sensitivity codes: 4-QQ (National Wildlife Refuge)



XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

PY-14

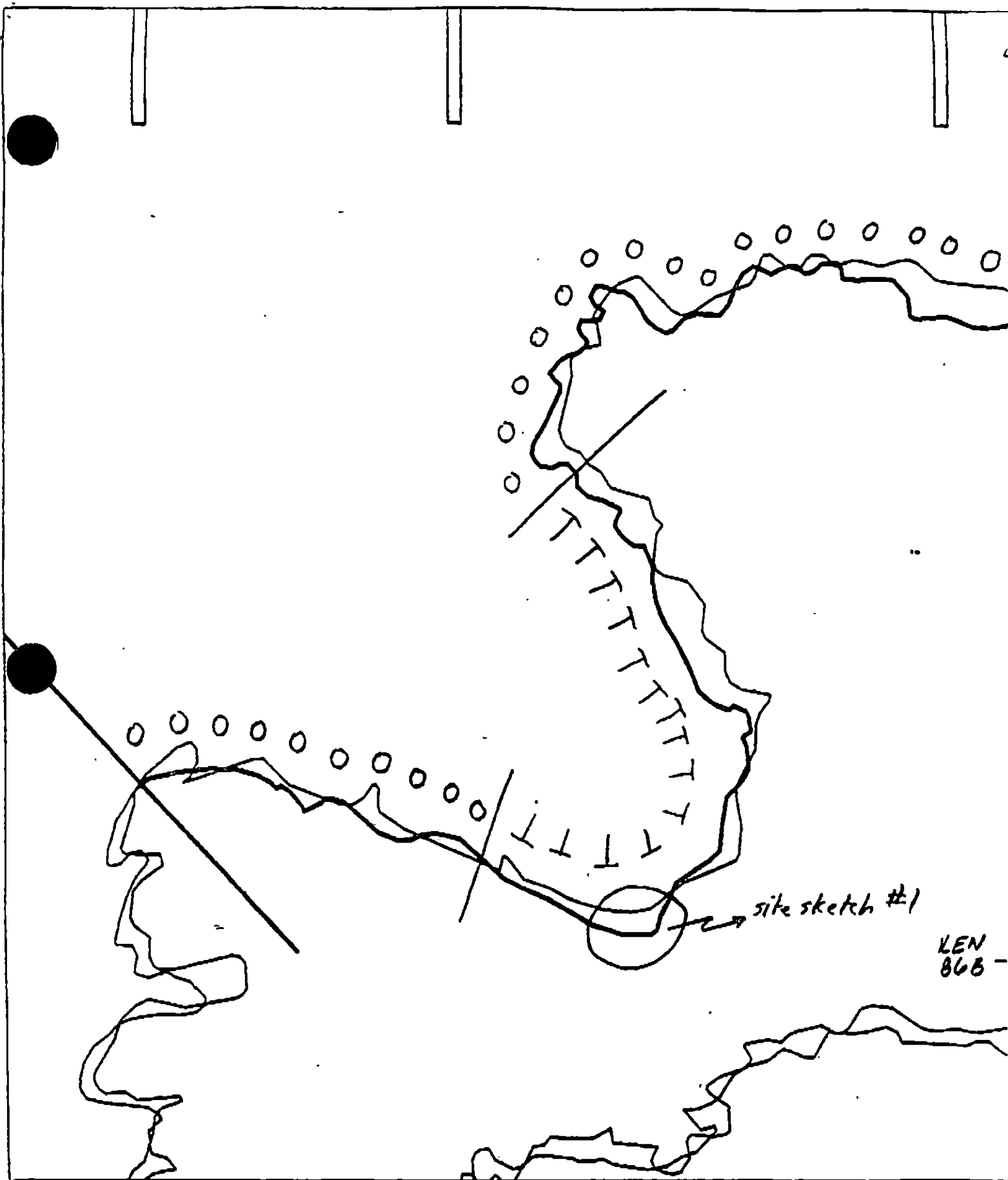
ADEC Segment Length: 3667m

0 100 200 300

Map Key: KEN-86b

Name: Mann/PY-14

Date: 4/6/90



KEN
868-

XXX Wide

//// Medium

--- Narrow

TTTT Very Light

PY-14

ADEC Segment Length: 3687m



Map Key: KEN-868

Name: Mann/PY-14

Date: 4/6/90

SHORELINE EVALUATION

SEGMENT ST/ PY-014 SUBDIVISION A (1 OF 1) DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
4QQ National Wildlife Refuge

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid disturbance/damage to unoiled biota and substrate.

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

SHPO SIGNATURE: Charles E. Dimes DATE: April 14, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V. Light 1844 m: No Oil 1823 m
Subsurface Oil Observed: Yes X No Maximum Depth 25 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: ☐ Breakup	☐ Beach Cleaner
☐ Removal	☐ Other (see comments)

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 4/14/90.

ADEC Art Weiner Det. Weiner

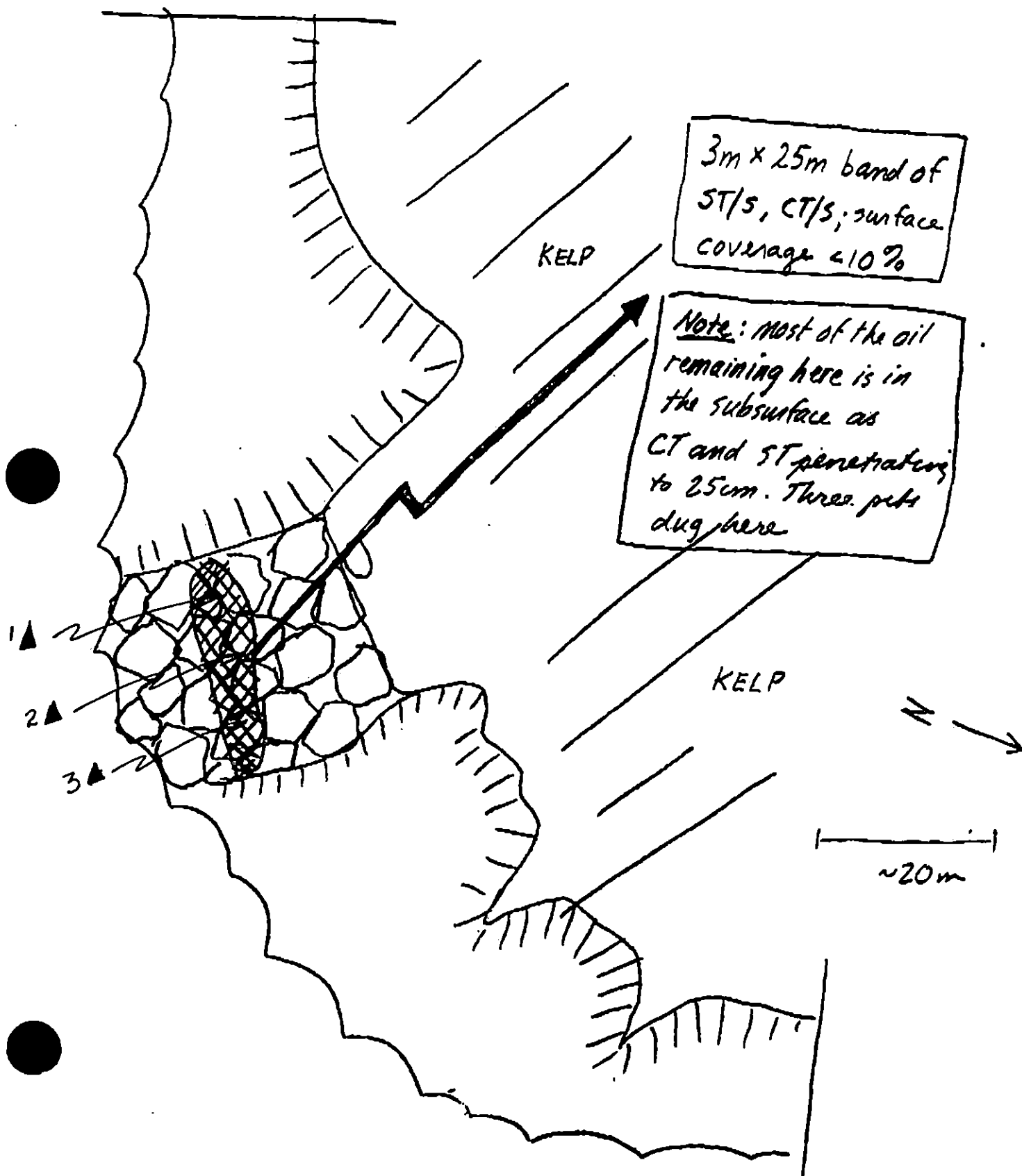
EXXON AWAY TGA

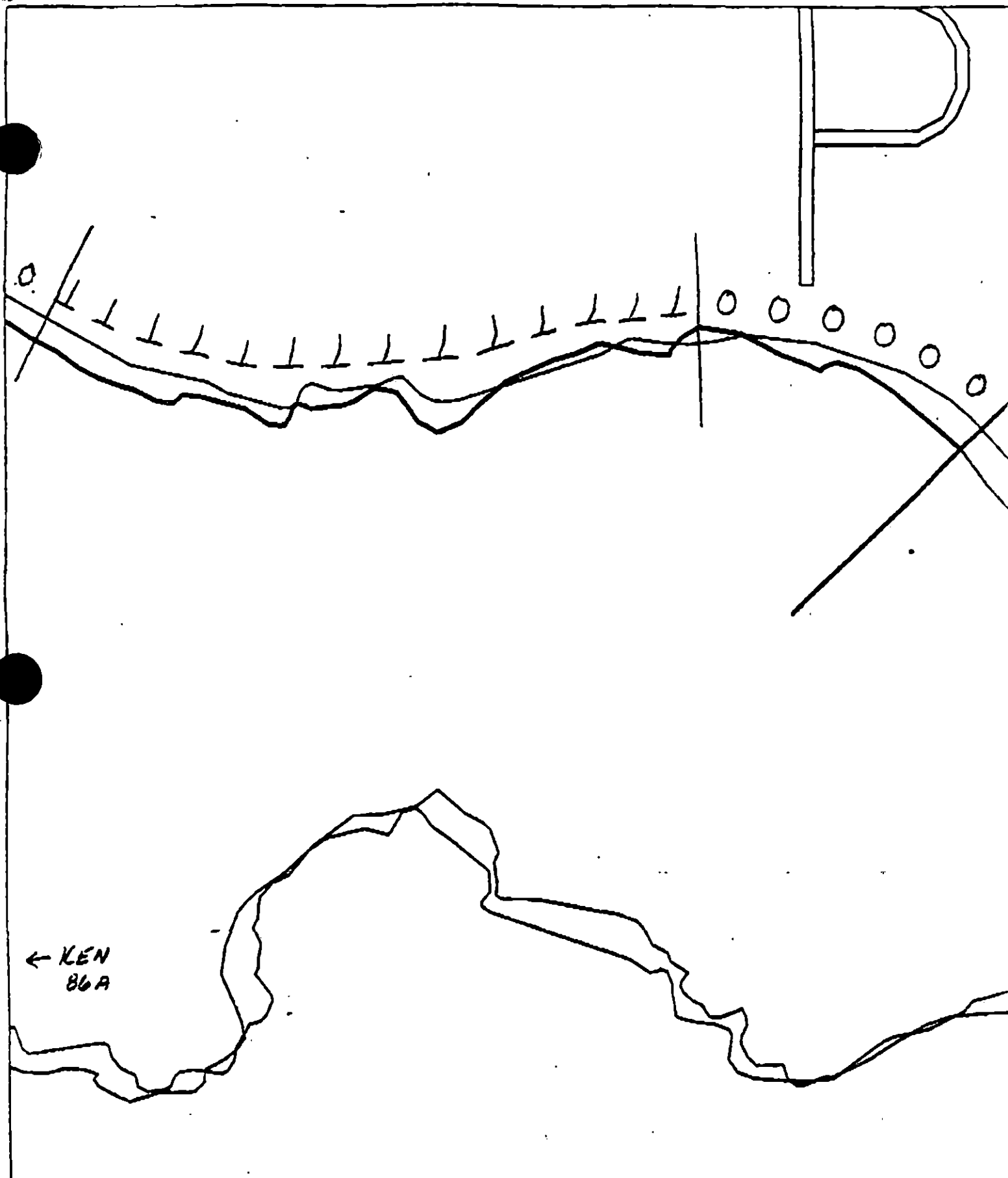
NOAA B. J. Warrick

USCG G.A. REITER G.A. Reiter

FOSC: W L DATE: 5-1-90

PY-14 6 April 1990 Mann Team 18 Site Sketch Map #1
(Site A in August 1989)





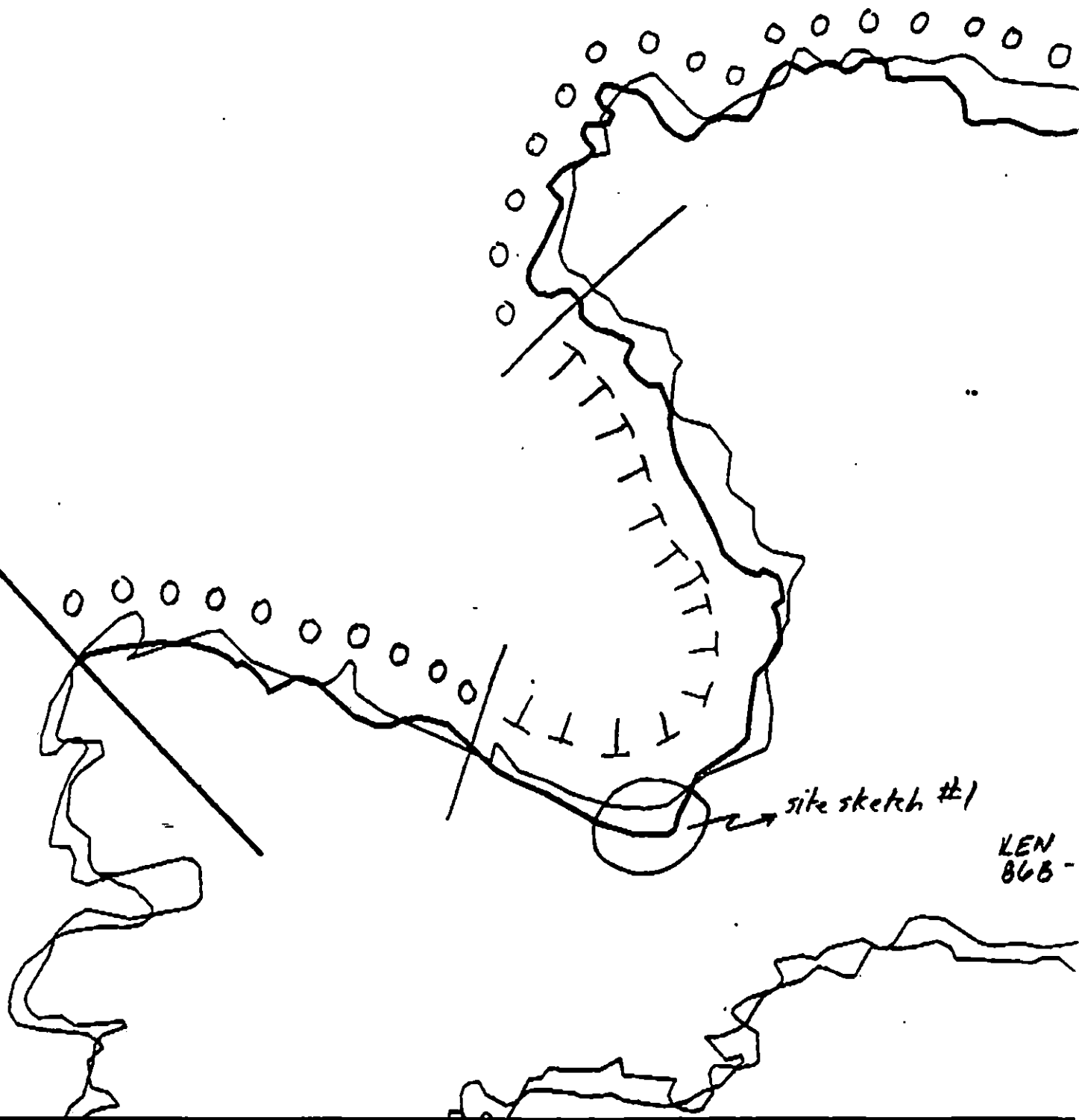
XXXX Wide
//// Medium
--- Narrow
TTTT Very Light

PY-14

ADEC Segment Length: 3667m



Map Key: KEN-86b
Name: Mann/PY-14
Date: 4/6/90



KEN
868-

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

PY-14

ADEC Segment Length: 3667m

Map Key: KEN-868

Name: Mann / PY-14

Date: 4/6/90

REGION: KENAI

SEGMENT: ST/PY-015

SUBDIVISIONS: A (1 OF 4)

SHORELINE EVALUATION

SEGMENT ST/ PY-015 SUBDIVISION A (1 OF 4) DATE 3/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
National Wildlife Refuge (4QQ)

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid disturbance/damage to unoiled biota and substrate.

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 845 m: No Oil 0 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:

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ PY 15 SUBDIVISION: A DATE 3/31/90

USCG / NOAA

NAME JACQUI MICHEL SIGNATURE J. Michel☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

The very light distribution of oil does not warrant any further treatment

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

DUE TO THE LOCATION AND AMOUNT OF OIL I AM SUGGESTING NO TREATMENT.

LAND MANAGER - USFWS

NAME Mary Portner SIGNATURE Mary Portner☒ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

Oiling in this subdivision consists of sporadic crest and stain on mostly vertical rock faces. Due to the distribution and character treatment will be difficult.

SHORELINE OILING SUMMARY

REVISION NO. 03/28/90

OG MAUU USCG/NARA MICHEL SEGMENT ST/ PY 15
 BIO CARR LAND REP PARTNER - FWS SUBDIVISION A
 EXXON BOYER ADEC REED TIME 10:45 to 11:00
 TEAM NO.: 18 TIDE LEVEL: -1.1 to -1.0 DATE 3 / 31 / 90
 EST. SUBDIVISION LENGTH: 950 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☐ Foot ☒ Boat ☐ Helo WORKING DIRECTION: WEST to EAST
 SURFACE SEDIMENTS: R 100 % B 0 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 40 % Hang 40 % Vert 20 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 950 m NO 0 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	IC	IS	IP	IR	OR	OS	OP	OG	OS	OT	OL	OT	SU	U	M	U
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT																
STAIN																
MOUSSE																
PATTIES																
TARBALLS																
FILM																
NO OIL																

PAVEMENT: H F S N/A sq. m by 0 cmPATTIES / TARBALLS N/A BAGSNEAR SHORE SHEEN? NO BR RW SL TL

OILED DEBRIS <u>NU</u>	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED

☐ YES ☒ NOTYPE N/A#BAGS N/A

Photographs:

Roll No. N/AFrames

SUBSURFACE OIL NO PITS DUG. THIS SUBDIVISION IS ALL BEDROCK AND INACCESSIBLE.

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CH)	BELOW		OIL / FILM COLOR								PIT ZONE	A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UD	UC	OR	OS	OP	OG	OS	OT	OL	OT			
<u>0</u>							-													
							-													
							-													
							-													
							-													
							-													

COMMENTS

This granitic rocky shore has only very scattered oil as drips and thin bands along the high tide line.

OG Ma

SEGMENT ST/ PY-15

SUBDIVISION A

DATE 3/13/90

CHECKLIST

☐ N Area
☐ Approx. Scale
☐ Seg/Sub Entry
☐ Oil Dist.
☐ Width
☐ Length
☐ % Cover
☐ Substrate Character
☐ Est. HFWL/LWL
☐ SSL
☐ Profile Location(s)
☐ Profile(s)
☐ Pk Location(s)
☐ Photo Location(s)

LEGEND

1 

Pk - No Subsurface Oil

2 

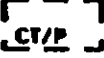
Pk - Subsurface Oil

 CT/C

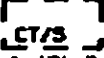
Continuous Distribution

 CT/B

Broken Distribution

 CT/P

Patchy Distribution

 CT/S

Splashed Distribution

Oiled Vegetation

1 

Photo location, direction,
and number

SKETCH MAP

(No sketch map made of
this large subdivision
— see G15 map).

APR-03-1990 23:10 FROM Ensco Atlas

Ensco TD

SSAT

P.02

2.5

Oil Character Length (m): AP 0 PO 0 CV 0 CT 10 ST 25 MS 0 PT 0 TB 0 FL 0 NO 915

REVISION 00.0400

SHORELINE ECOLOGICAL SUMMARY

REVISION: 000000

Segment ST PY15 Subdivision A (of A-D) Date (mo/day/yr) 3-31-90Time (24 hr) 1211 Biologist M. LARR

- (A) Substrate type and % of ^{Subdivision} segments:
 (1) Bedrock 70 (2) Boulder 30 (3) Cobble (4) Pebble (5) Sand (6) Silt
- (B) Overall % cover of biota (% of ^{Subdivision} segment): Dense 70 Moderate 20 Low 10
- (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. Frames NONE

BARNACLES

	Dense		Moderate			Sparse			Rare			
→1U	2	1L	2	1M	1L	2	1M	1L	2	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	NOT PRESENT
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	2U	1M	1L	2	1M	1L	2	1M	1L	
→2	2	2	2	2	2	2	2	2	2	2	2	NOT PRESENT IN LOW ZONE
3	3	3	3	3	3	3	3	3	3	3	3	NOT PRESENT IN BAY
4	4	4	4	4	4	4	4	4	4	4	4	NOT PRESENT
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	2U	1M	1L	2	1M	1L	2	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	NOT PRESENT
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

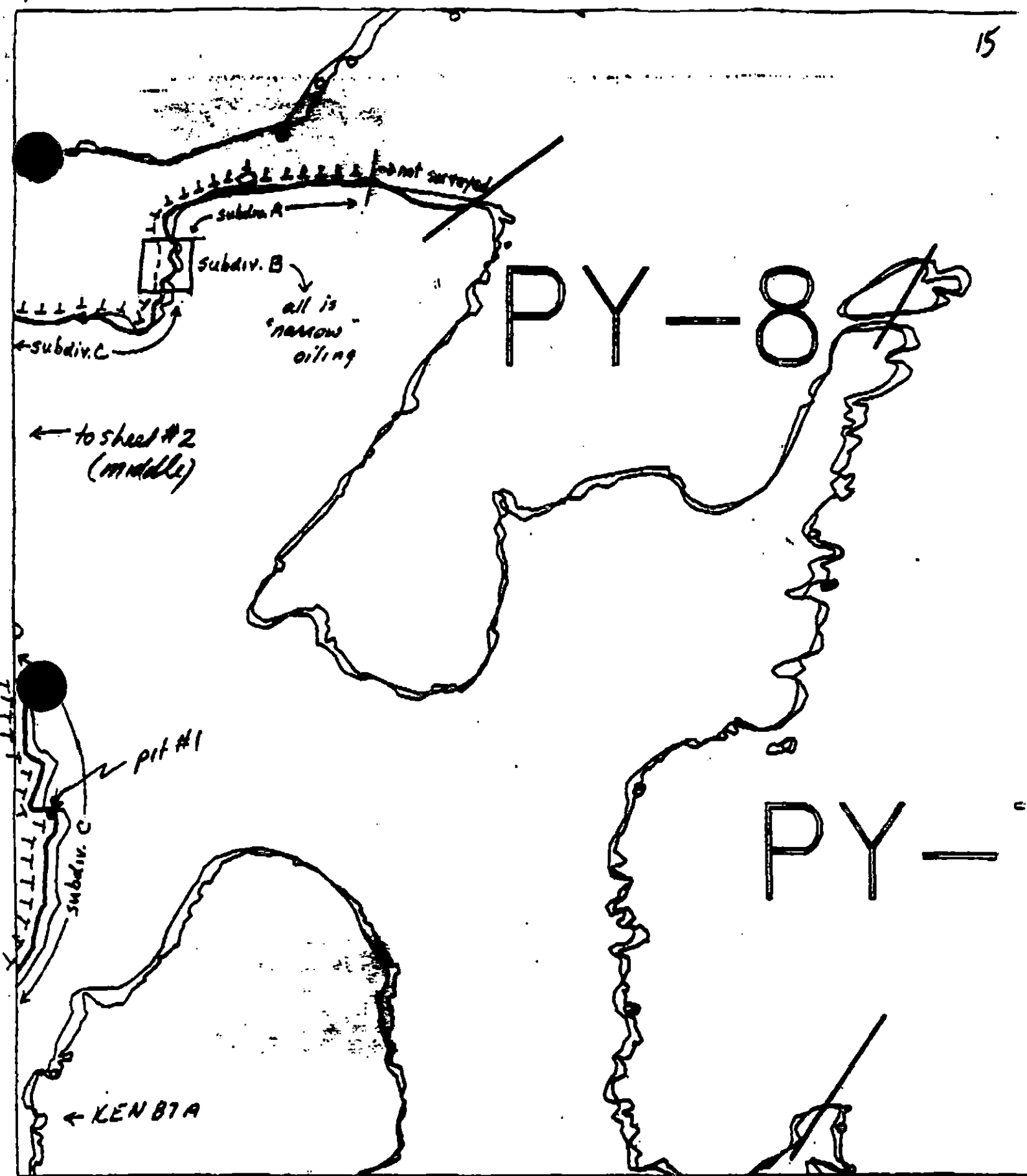
	Dense		Moderate			Sparse			Rare			
→1U	1M	1L	2U	1M	1L	2	1M	1L	2	1M	1L	
→2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	NOT PRESENT
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments:

Common Merganser (2)
 Barrow's golden-eyes (15-20)
 Surf scoter (2)
 See otter (1)
 Harlequin duck (19)
 Mink/martin (1) in upper intertidal.

Ecological Considerations:

Sensitivity codes: 4-QQ (National Wildlife Refuge)



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

PY-15

ADEC Segment Length: 11802m

0 300 600 900
METERS

Sheet 3 of 3 (east)

Map Key: KEN-87b

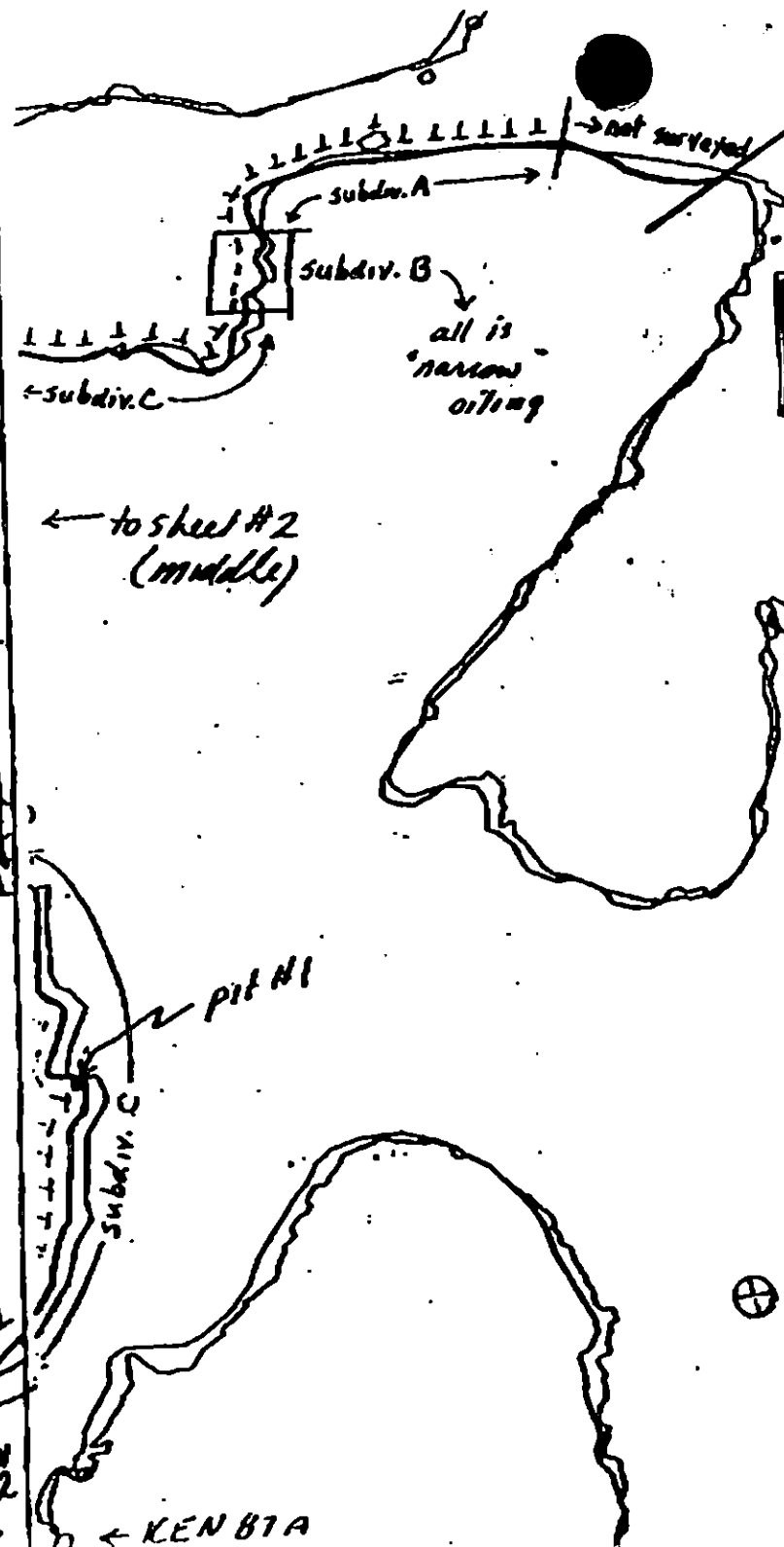
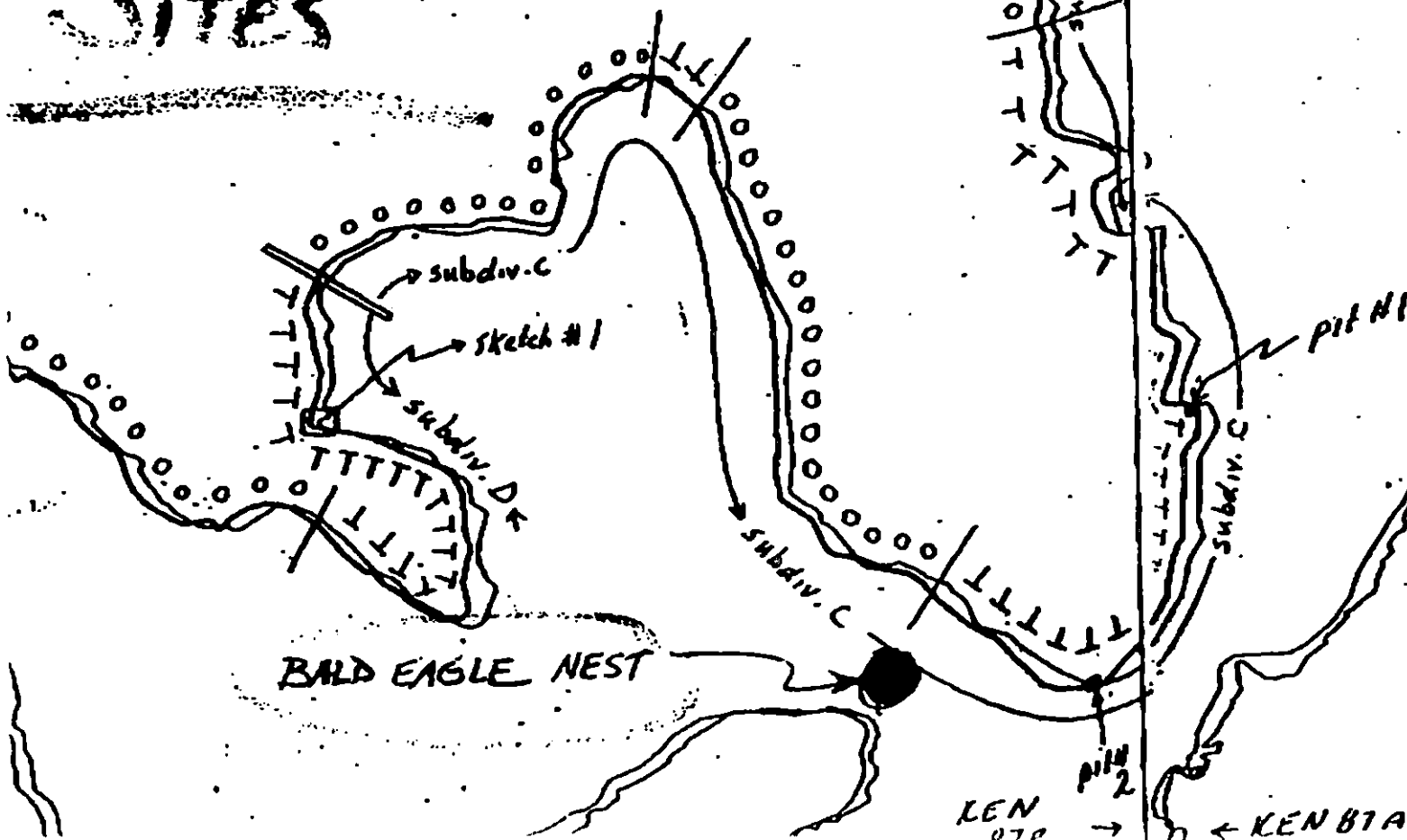
Name: Mann

Date: 31 March 90

Date Entered:

MR-1

Survey Sites
RY-15



REGION: KENAI

SEGMENT: ST/PY-015

SUBDIVISIONS: B (2 OF 4)

SHORELINE EVALUATION

SEGMENT ST/ PY-015 SUBDIVISION B (2 OF 4) DATE 3/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
National Wildlife Refuge (4QQ)

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid disturbance/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 0 m: Narrow 239 m: V.Light 0 m: No Oil 0 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: The treatment recommendations are as follows: 1) Manual pick up of mousse and pooled oil, 2) Tarmat removal and, 3) Bioremediate area of pooled oil and broken cover as shown on attached sketch map. No time constraints identified.

TAG COMMENTS:

TAG APPROVAL DATE: _____
ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

6

SEGMENT ST / PY 15 SUBDIVISION: B DATE 31 Mar 90

USCG/NOAA

NAME JACQUI MICHEL SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS

Manual removal of pavements + mousse patches by shovels;
Manual removal by wiping w/ pom-poms of pooled oil -
especially in crevices in rocks.

ADEC

NAME JOHN R. REED SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS

Manual Removal of asphalt pavements, pooled oil, and
mousse patches could be accomplished with shovels or
hand trowels. Pom Poms may also be used on the
pooled oil. I have read and agree with all information
on the S.S.A. T. Forms.

LAND MANAGER

NAME Mary Portner SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS

Despite treatment in 1989 residual oil remains at this site.
I recommend manual removal of the asphalt pavement
indicated on the map, using shovels and hand trowels,
pooled oil and mousse on and between the boulders and
cobble should be recovered using pom-poms w/ extensions,
hand trowels etc.

SHORELINE OILING SUMMARY

REVISION NO. 00/00/00

OG MANN/Michel NOAA USCG MICHEL SEGMENT ST/ PY 15
 BIO CARR LAND REP PORTNER SUBDIVISION B
 EXXON BOYER ADEC RSED TIME 11:00 to 12:15
 TEAM NO.: 18 TIDE LEVEL: -1 to +1 DATE 9/31/90
 EST. SUBDIVISION LENGTH: 150 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: N to S
 SURFACE SEDIMENTS: R 30 % B 60 % C 10 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 100 % Hang 0 % Vert 0 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 150 m VL 150 m NO 0 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	TC	FB	FP	FS	1	2	3	4	5	SU	U	M	U
ASPHALT PAVEMENT		✓						✓			✓		
POOLED				✓				✓				✓	
COVER		X		✓				✓			✓	X	
COAT				✓				✓			✓	✓	
STAIN				✓				✓			✓	✓	
MOUSSE				✓				✓			✓		
PATTIES				✓				✓			✓	✓	
TARBALLS													
FILM													
NO OIL										✓			✓

PAVEMENT: H F S 20 sq. m by 5 cmPATTIES / TARBALLS 0 BAGSNEAR SHORE SHEEN? NO BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☐ YES ☒ NOTYPE N/A#BAGS MA

Photographs:

Roll No. 18-2Frames 4-15

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			1	2	3	4	5	SU	U	M	U		
1	10					✓	-								✓			N	B.C.G
2	20				✓		0-20	✓			✓				✓			N	G.T
3	20				✓		0-20	✓			✓				✓			N	C.P.G
4	20				✓		0-20	✓			✓					✓		N	C.P.G
5	15					✓	-								✓			N	B.C.P
6	25					✓	-								✓			N	B.C.P.G

COMMENTS PITS # 2,3,4 REACHED PEAT/SOIL HORIZON.

The shore here consists of boulder and cobble accumulations between bedrock joints. Oil spots and splashes on slabs show little evidence of erosion by waves. Asphalt is present as remnants in area of cobble-boulder.

SHORELINE OILING SUMMARY (PAGE 2 of 2)

REVISION 05/25/90

SEGMENT ST/ PV 15 SUBDIVISION B

SUBSURFACE OIL (CONTINUED)

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-ON)	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	1	2	3	4	5	6	SU	U	M	L		
7	20					✓	-										✓				B.G. PG
8*	10	asphalt					0-0		✓			✓	✓			✓					P.C.B
9	20				✓		0-5		✓			✓					✓				C PG
10	5					✓	-										✓				C.P.B
11	10					✓	-										✓				C PG
12	10					✓	-										✓				C.P.G.B
13	10					✓	-												✓		C.P.G.B
							-														
							-														
							-														
							-														
							-														
							-														
							-														
							-														

COMMENTS Pit 9 HAD A SHEEN^(silver) ON WATER SURFACE.

Pit #8 was purposefully dug through a patch of asphalt. The asphalt pavement is 5cm thick.

REVIEWED Barf DATE 10 Apr 90

OG Mann
 SEGMENT ST/ PY-15
 SUBDIVISION B
 DATE 3/31/90

CHECKLIST

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

LEGEND

1 Δ
 Pit - No Subsurface Oil

2 Δ
 Pit - Subsurface Oil

$\square$ CT/C
 Continuous Distribution

$\square$ CT/B
 Broken Distribution

$\square$ CT/P
 Patchy Distribution

$\square$ CT/S
 Splashed Distribution

$\bullet$
 Oiled Vegetation

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

subdiv. A

0.5 to 1m wide
 zone of CT/S
 and CV/S with
 total coverage ~5%

10m x 2m
 45% cover
 by mosses/s

SKETCH MAP

2m wide x 10m long
 55% cover by asphalt/B

discontinuous
 asphalt/s + patchy/s
 reach 10% coverage
 in area 1m x 10m

MANUAL PICK UP MOUSSES
 POOLED OILED AREAS &
 TAR MAT REMOVAL

2m wide x 10m long
 coverage ~ 5% by
 MS/S and CV to ST/S

5% coverage of
 a 1m wide zone
 by CV to ST/S

BIOREMEDIATION
 POOLED OIL &
 BROKEN COVER

KEY

$\left[\begin{array}{cc} \text{---} & \text{---} \\ \text{---} & \text{---} \end{array} \right] = \text{oiling descriptive unit}$

~10m

snag

25m wide x 5m long
 - upper surfaces
 of stones: stain - 20%
 - lower surfaces
 of stones: CT to CV - 80%
 - mosses/pooled/s - <5%

HR-03-1950 23:13 FROM ENSCO HTLAS ENSCO ITU SSAT P.06

Oil Character Length (m): AP 20 PO 5 CV 150 CT 150 ST 150 MS 0 PT 10 TB 0 FL 0 NO 0

REVISION 000000

SHORELINE ECOLOGICAL SUMMARY

REVISION: 02/22/90

Segment ST / PY 15 Subdivision B (of A-D) Date (mo / day / yr) 3 / 31 / 90Time (24 hr) 1050 Biologist M. CARR(A) Substrate type and % of segments:
(1) Bedrock 30 (2) Boulder 60 (3) Cobble 10 (4) Pebble _____ (5) Sand _____ (6) Silt _____(B) Overall % cover of biota (% of segments): Dense 60 Moderate 20 Low 20

(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 (O)

Photographs:
Roll No. 2
Frames 4-15

BARNACLES

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

COBBLE NOT IN LOWER ZONE
NOT PRESENT

MYTILUS

	Dense			Moderate			Sparse			Rare		
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
→ 1	2	2	2	O	2	2	O	2	2	2	2	2
→ 2	3	3	3	3	3	3	O	3	3	3	3	3
→ 3	4	4	4	4	4	4	4	4	4	4	4	4
→ 4	5	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 IN LOWER ZONE
NOT PRESENT IN Boulders
NOT PRESENT
COBBLE NOT IN LOWER ZONE

GASTROPODS

	Dense			Moderate			Sparse			Rare		
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
→ 1	2	2	2	O	O	O	2	2	2	2	2	2
→ 2	3	3	3	X	O	X	3	3	3	3	3	3
→ 3	4	4	4	4	4	4	4	4	4	4	4	4
→ 4	5	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
COBBLE NOT IN LOWER ZONE

FUCUS

	Dense			Moderate			Sparse			Rare		
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
→ 1	O	2	2	O	2	2	X	2	X	2	2	2
→ 2	3	3	3	3	3	3	3	3	3	3	3	3
→ 3	4	4	4	4	4	4	4	4	4	4	4	4
→ 4	5	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 IN LOWER ZONE
NOT PRESENT
COBBLE NOT IN LOWER ZONE

Wildlife Observations/ General Comments:

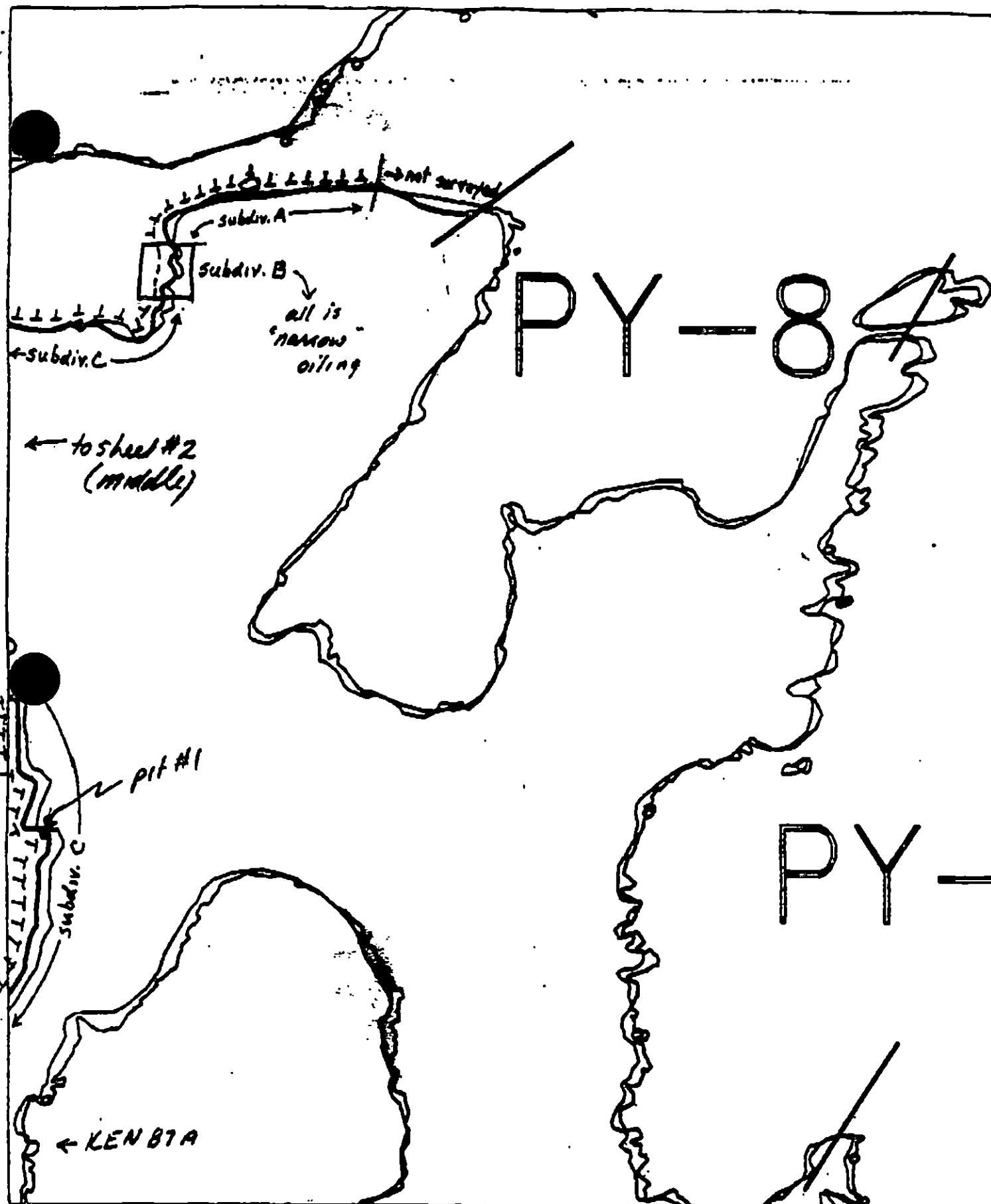
Common (1)

Ecological Considerations:

Cobble/boulder area known to have been hot-water treated, with dense barnacle cover and high littorine & moderate mytilus recruitment.

Sensitivity codes: 4-QQ (National Wildlife Refuge)

15



XXX Wide

/// Medium

--- Narrow

TTTT Very Light

PY-15

ADEC Segment Length: 11862m

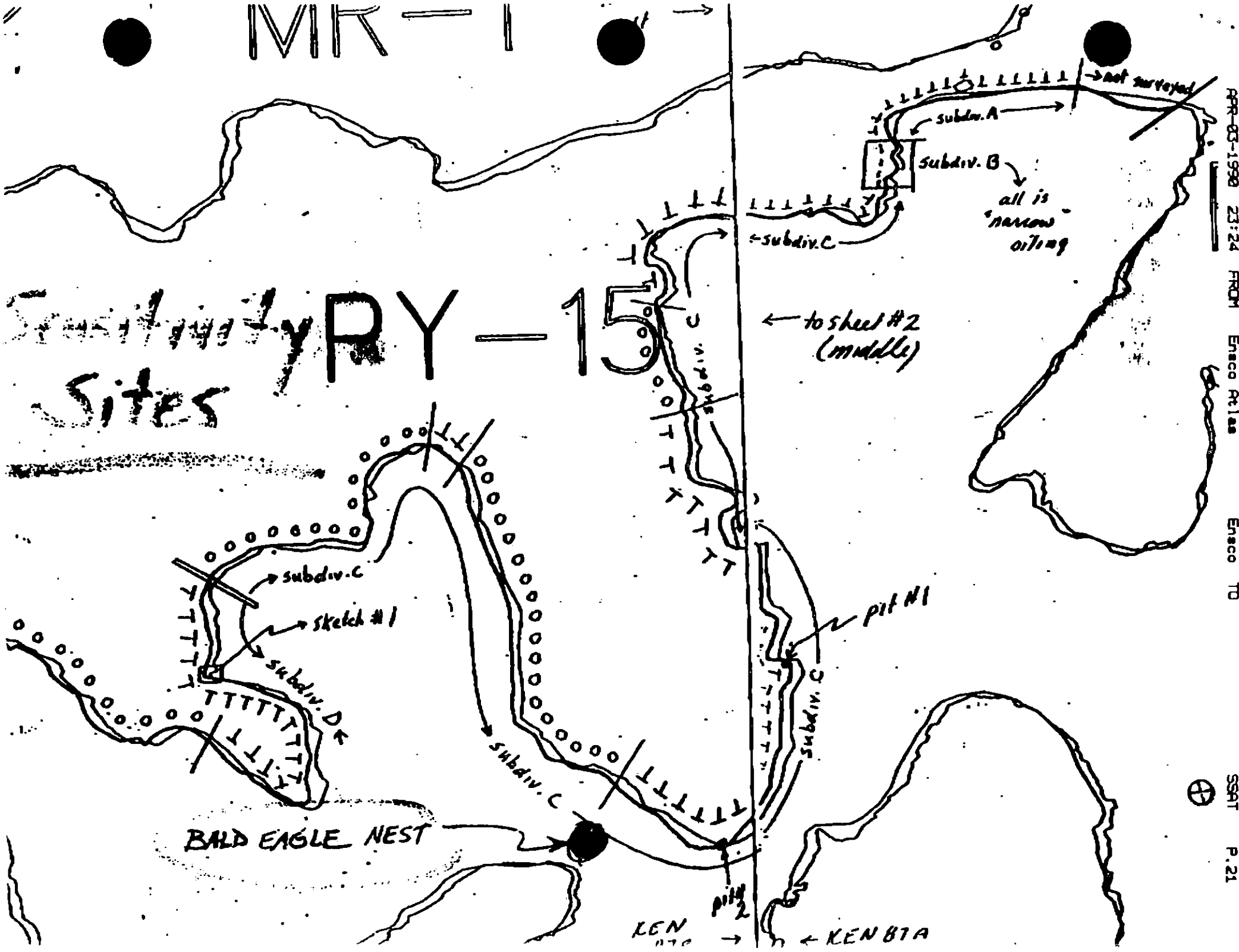
Sheet 3 of 3 (east)

Map Key: KEN-87b

Name: MannDate: 31 March 90

MR-1

Scouting Sites
RY-15



REGION: KENAI

SEGMENT: ST/PY-015

SUBDIVISIONS: C (3 OF 4)

SHORELINE EVALUATION

SEGMENT ST/ PY-015 SUBDIVISION C (3 OF 4) DATE 3/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
National Wildlife Refuge (4QQ)

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid disturbance/damage to unoiled biota and substrate.

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 4083m: No Oil 3110 m
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: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ PY 15 SUBDIVISION: C DATE 31 MAR 90

USCG/NOTA

NAME JACQUI MICHELSIGNATURE *J. Michel*☒ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

The small amount of scattered oil on bedrock does not warrant further treatment.

ADEC

NAME JOHN R. REEDSIGNATURE *John R. Reed*☒ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

Small amount of very light oil does not warrant treatment. I have read and agree with the information on the S.S.A.T. Form.

LAND MANAGER - USFWS

NAME Mary PortnerSIGNATURE *Mary Portner*☒ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

Oiling in this subdivision consists of sporadic coat and stain on mostly vertical rock faces. Due to the distribution and character of the oil treatment will be difficult.

SHORELINE OILING SUMMARY

REVISION NO. 00/03

OG HANN USCG/MMT MICHEL SEGMENT ST/ PV 15
 BIO CARR LAND REP PORTNER - FWS SUBDIVISION C
 EXXON BOYER ADEC REED TIME 12:15 to 12:40
 TEAM NO.: 18 TIDE LEVEL: +0.5 to +2.0 DATE 3 / 31 / 90
 EST. SUBDIVISION LENGTH: 7050 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: EAST to WEST
 SURFACE SEDIMENTS: R 80 % B 20 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 65 % Hang 0 % Vert 35 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 3850 m NO 3200 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	10	15	20	25	30	35	40	45	50	SU	U	M	U
ASPHALT PAVEMENT													
POOLED													
COVER													
COAT				✓		✓					✓		
STAIN				✓		✓					✓		
MOUSSE													
PATTIES													
TARBALLS													
FILM													
NO OIL										✓		✓	✓

PAVEMENT: H F S N/A sq. m by 0PATTIES / TARBALLS N/A BAGS

NEAR SHORE SHEEN? NO BR RW SL TL

OILED DEBRIS <u>N</u>	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED

☐ YES ☒ NOTYPE N/A#BAGS N/A

Photographs:

Roll No. N/AFrames N/A

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	MO		VO	UC	30	35	40	45	50	SU	U	M	U		
1	20					✓	-								✓				N	C.B
2	20					✓	-								✓				N	C.B

COMMENTS

This monotonous granite shoreline is formed of bedrock slabs and faces with associated angular boulders. There is very little finer sediment. Oiling is consistently splashes and short stretches (<3m long) of Coated oil. Geomorphology and oiling is identical to Subdivision A and D. Very little weathering of oil is evident from conditions in 1990.

OG Ma

SEGMENT STI PY-15

SUBDIVISION C

DATE 4 12 90

CHECKLIST

☐ M Area
☐ Approx. Scale
☐ Seg/Sub Entry
☐ Oil Dist.
☐ Width
☐ Length
☐ % Cover
☐ Substrate Character
☐ Est. HWA/LWA
☐ SSI
☐ Profile Location(s)
☐ Profile(s)
☐ Pit Location(s)
☐ Photo Location(s)

LEGEND

1 

Pit - No Subsurface Oil

2 

Pit - Subsurface Oil

 CT/C

Continuous Distribution

 CT/B

Broken Distribution

 CT/P

Patchy Distribution

 CT/S

Spotted Distribution

Other Vegetation

1 

Photo location, direction,
and number

SKETCH MAP

*No sketch map made of this
extensive subdivisions
see 615 map*

Oil Character Length (m): AP 0 PO 0 CV 0 CT 100 ST 100 MS 0 PT 0 TB 0 FL 0 NO 6850

8.5

SHORELINE ECOLOGICAL SUMMARY

REVISION: 02-28-90

Segment ST / PY-15 Subdivision C (of A-D) Date (mo / day / yr) 3/31/90Time (24 hr) 1215 Biologist M. CARR

- (A) Substrate type and % of segments: ^{Subdivision}
 (1) Bedrock 80 (2) Boulder 20 (3) Cobble — (4) Pebble — (5) Sand — (6) Silt —
- (B) Overall % cover of biota (% of segment): ^{Subdivision} Dense 70 Moderate 20 Low 10
- (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. —Frames None

BARNACLES

	Dense		Moderate			Sparse			Rare			
→ 1U	2	1L	2	1M	1L	2	1M	1L	2	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	NOT PRESENT
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	2	1L	2	1M	1L	2	1M	1L	2	1M	1L	
→ 2	2	2	2	2	2	2	2	2	2	2	2	NOT PRESENT IN LOW Z
3	3	3	3	3	3	3	3	3	3	3	3	NOT PRESENT IN BOLL
4	4	4	4	4	4	4	4	4	4	4	4	NOT PRESENT
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	2	1L	2	1M	1L	2	1M	1L	2	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	NOT PRESENT
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

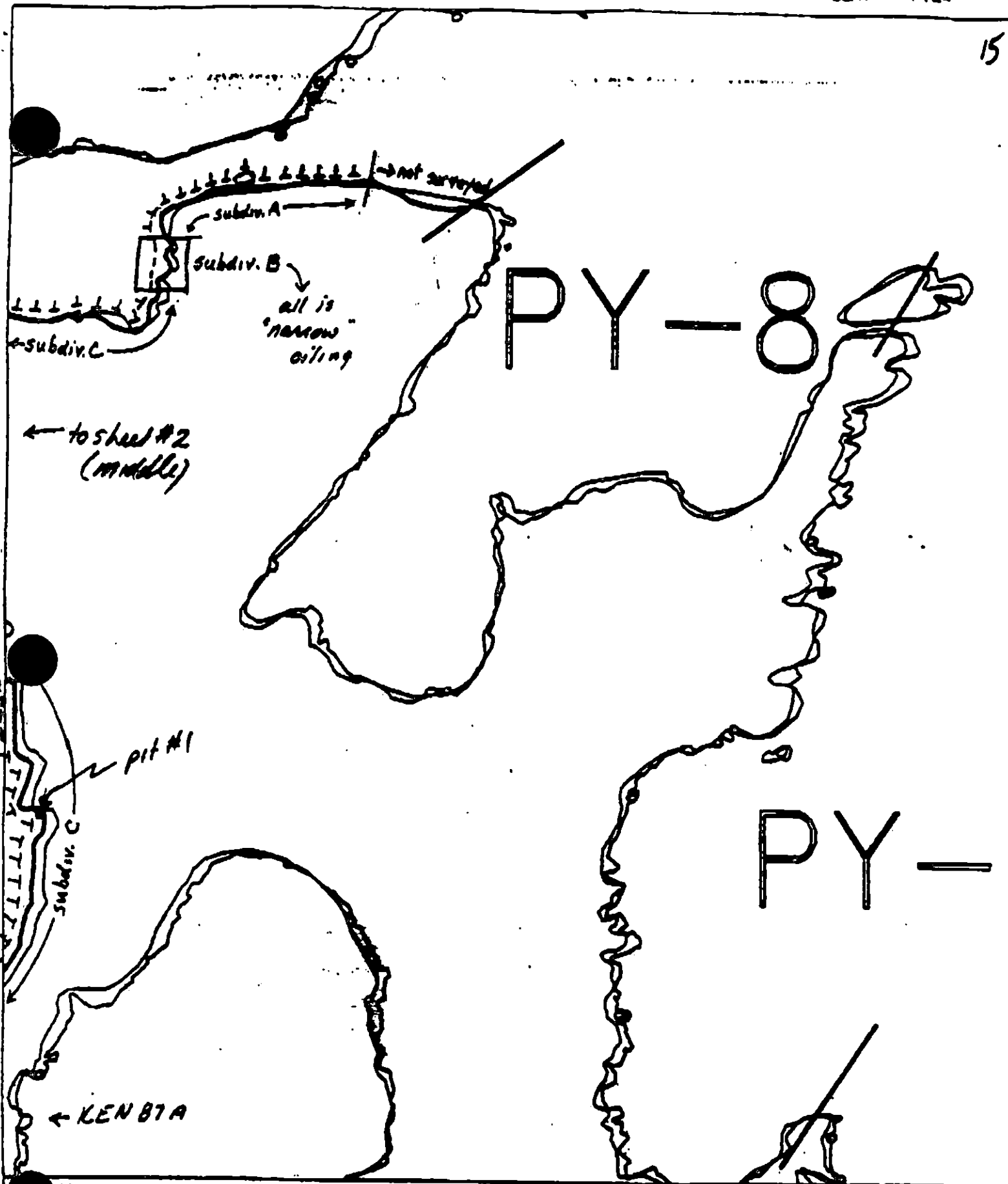
	Dense		Moderate			Sparse			Rare			
→ 1U	2	1L	2	1M	1L	2	1M	1L	2	1M	1L	
→ 2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	NOT PRESENT
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments:

Ecological Considerations:

Sensitivity codes: 4-QQ (National Wildlife Refuge)

15



PY-15

XXX Wide

/// Medium

--- Narrow

TTTT Very Light

ADEC Segment Length: 11802m

Sheet 3 of 3 (east)

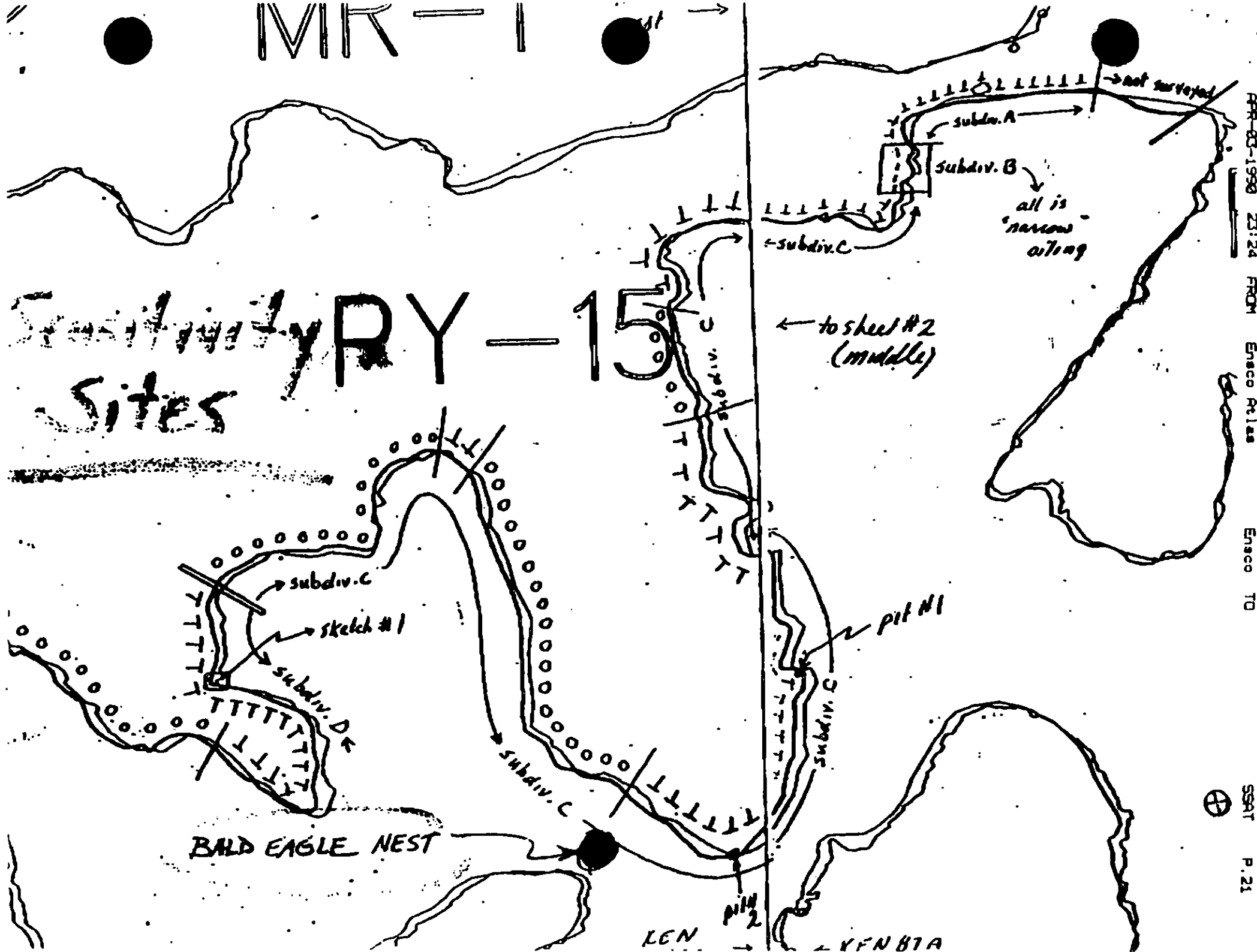
Map Key: KEN-876

Name: Mann

Date: 31 March 90

MR-1

Sensitivity RY-15
Sites



APR-03-1990 23:24

FROM

Enaco Atlas

ENACO TO

SSAT

P.21

MR-1

to sheet #3
past →

PY-15

to sheet
#1
(west)

subdiv. C
sketch #1
subdiv. D

LEN
87B
pith 2
→

XXXX Wide
//// Medium
--- Narrow
TTTT

PY-15

ADEC Segment Length: 11802m

Sheet 2 of 3 (middle)

Map Key: KEN-87a

Name: _____

REGION: KENAI

SEGMENT: ST/PY-015

SUBDIVISIONS: D (4 OF 4)

SHORELINE EVALUATION

SEGMENT ST/ PY-015 SUBDIVISION D (4 OF 4) DATE 3/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

National Wildlife Refuge (4QQ) and bald eagle nest (5T) - 3/1 to 6/1.
See attached Ecological Constraint Sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/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 0 m: Narrow 0 m: V.Light 1638m: No Oil 1569 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 removal and bioremediation of pooled oil as shown on attached sketch map. Conduct work after 6/2 per above eagle constraint.

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST 1 PY 15 SUBDIVISION: 7 DATE 2 APR 90

USCG/NOAA

NAME JACQUI MICHEL SIGNATURE Jacqui Michel

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS

The oiled sediments adjacent to the tidal pools (see sketch for site #1) should be manually removed. No other cleanups is recommended elsewhere on this subdivision.

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS

Manual Removal of oiled sediments with a shovel or hand trowel is suggested. There is a very rich inter-tidal pool at this site that should be monitored during cleanup. I have read and agree with all the information on the S.S.A.T. Forms

LAND MANAGER

NAME Mary Partner SIGNATURE Mary Partner

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS

Oiled sediments adjacent to the tidal pools may be removed with a shovel and trowel. Due to the presence of rich tidal pools on the bedrock any treatment utilized should be done very carefully so that sensitive tidal pools are not contaminated or fragmented. A very small crew should be used and an agency monitor must be on site. (See Sketch 1).

SHORELINE OILING SUMMARY

REVISION NO. 02/22/90

OG MANN USCG / NRAA MICHEL SEGMENT ST/ PY 15
 BIO CARR LAND REP PORTNER - FWS SUBDIVISION D
 EXXON BOYER ADEC REED TIME 13:50 to 15:40
 TEAM NO.: 18 TIDE LEVEL: +1.1 to +2.5 DATE 4 / 2 / 1990
 EST. SUBDIVISION LENGTH: 3240 m ☐ Sun ☐ Clouds ☐ Fog ☐ Rain ☒ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: EAST to WEST
 SURFACE SEDIMENTS: R 80 % B 20 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 65 % Hang 0 % Vert 35 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 1620 m NO 1620 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR						IMPACTED ZONES			
	IC	IS	IP	IS	SP OR	OR PW	OY SL	ORR TL	ORR	SU	UI	ME	LI	
ASPHALT PAVEMENT														
POOLED			✓			✓					✓			
COVER														
COAT			✓	✓		✓					✓			
STAIN				✓		✓					✓			
MOUSSE				✓		✓					✓	✓		
PATTIES														
TARBALLS														
FILM														
NO OIL										✓			✓	

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

OILED DEBRIS NO	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☐ YES ☒ NOTYPE N/A#BAGS N/A

Photographs:

Roll No. ST 18-3Frames (12-17)

SUBSURFACE OIL all pits at site of sketch #1

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CH)	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	SP BR	OR FW	OL BC	OR TL	OR LR	SU	UI	ME	U			
1	15					✓	-									✓			N	B.C.P. <u>transverse</u>	
2	15					✓	-									✓			N	B.C.P. "	
3	15					✓	-									✓			N	B.C.P. "	
							.														
							.														
							.														

COMMENTS

Geomorphology and oiling are identical in character to subdivisions A and C. Very little weathering of oil is evident from August 1989.

REVIEWED BY BATDATE 10/22/90

OG Alger

SEGMENT TI PY-15

SUBDIVISION D

DATE 4 1 2 90

SKETCH MAP

NO sketch map made of this
extensive subdivision.

See GIS and small sketch site.

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Bndry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HW/LVL
- ☐ SSI
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Pli Location(s)
- ☐ Photo Location(s)

LEGEND

1 

Pit - No Subsurface Oil

2 

PH - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

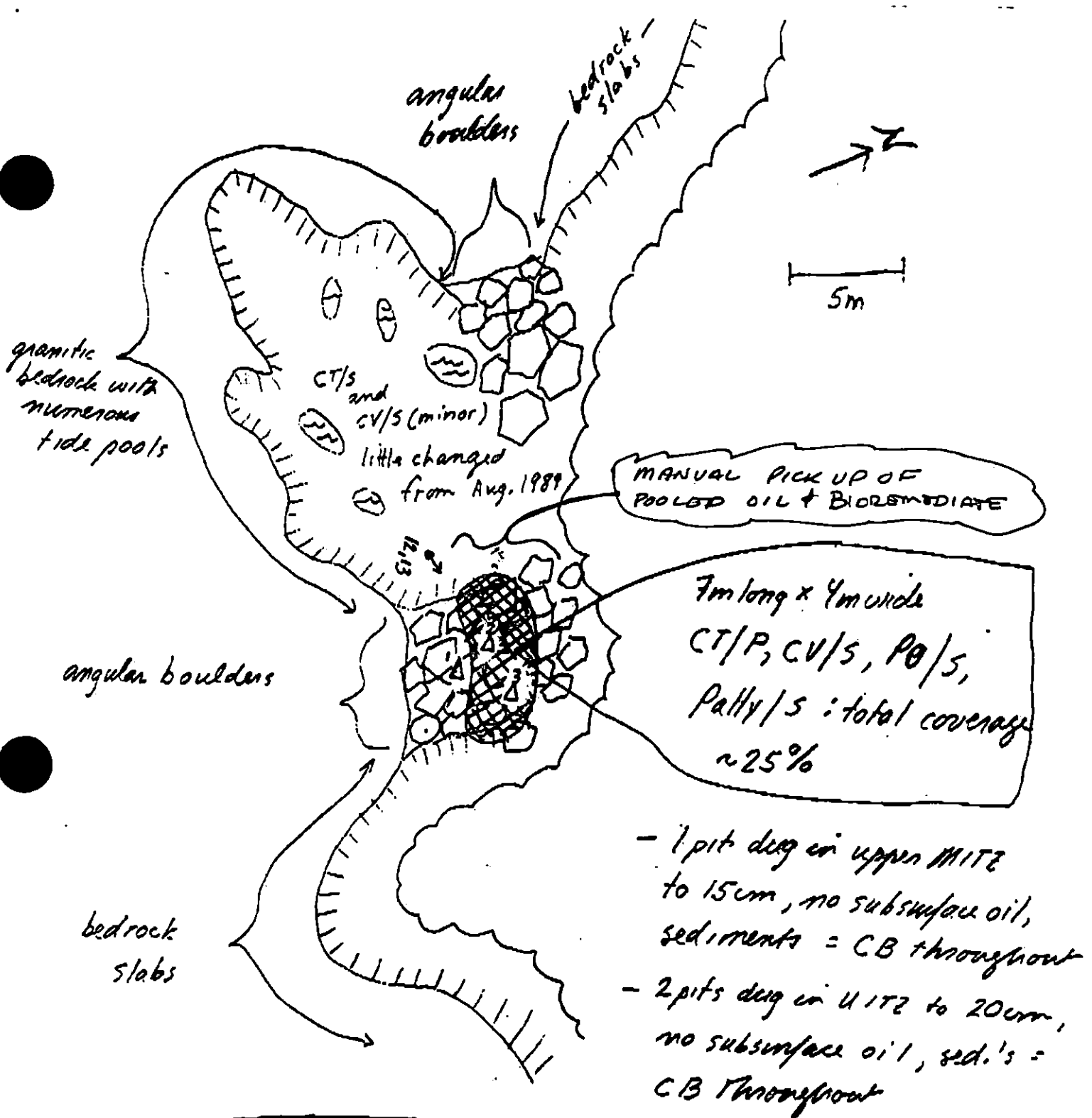
Oil of Vegetation

1 

Photo location, direction,
and number

Oil Character Length (m): AP 0 PO 0 CV 0 CT 10 ST 20 MS 0 PT 0 TB 0 FL 0 NO 1620

REVISION: 03/24/89



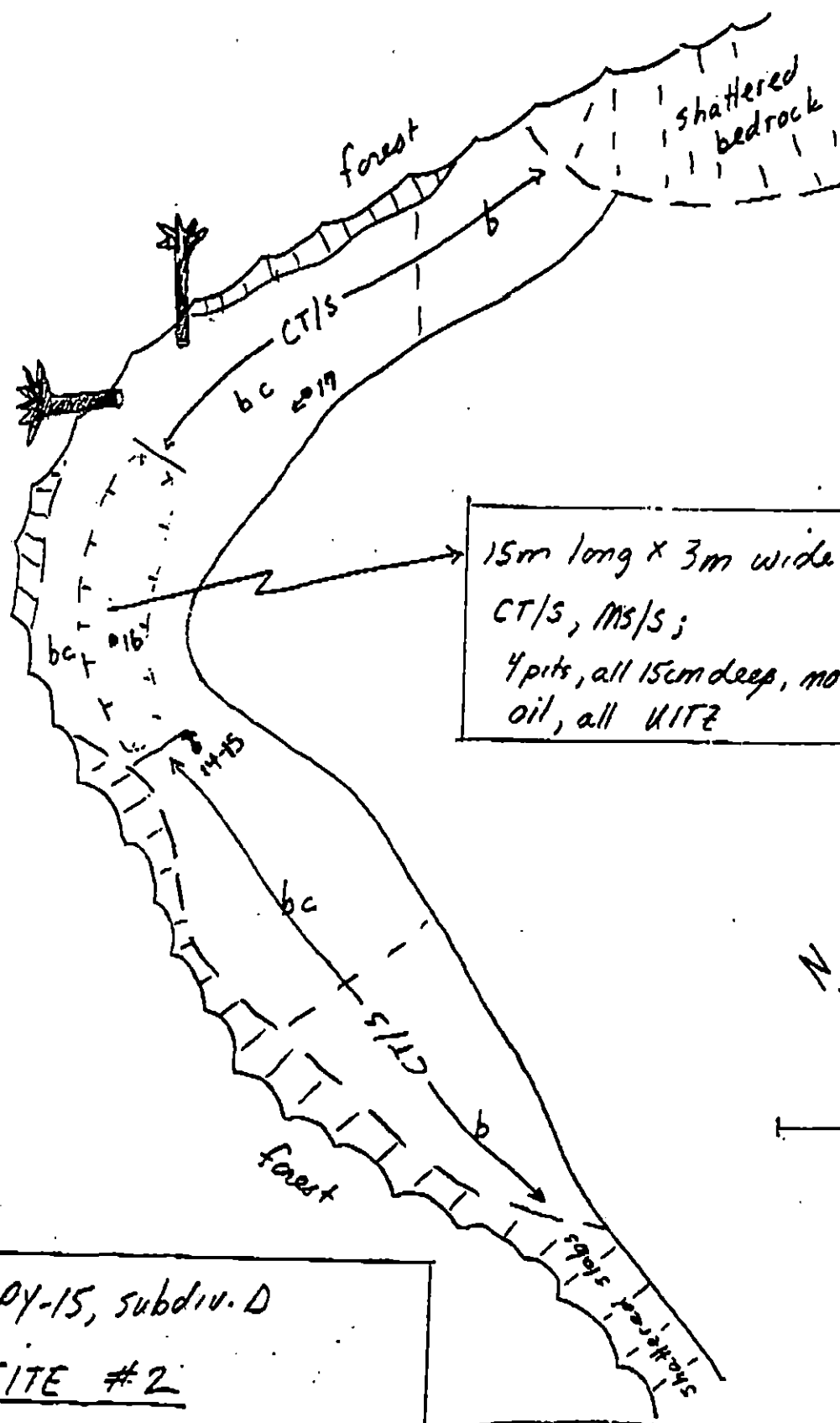
Sketch Site #1, Subdiv. D

Sketch of oiling in PY-15, subdiv. D
(this was "PY-15, Site D" during 1989, August SCAT Report)

This is NOT a Subdivision map

NB: a sketch site is a place where oil occurs but the affected area is either too small (< 25m) or not different enough from oiling along the rest of subdivision to warrant classification as a separate subdivision.

Mann,



Segment PY-15, subdiv. D
SKETCH SITE #2

(This was Site B of the August 1989
Scot report)

This is Not a subdivision map.

SHORELINE ECOLOGICAL SUMMARY

REVISION: 08/22/90

Segment ST / PY-15 Subdivision D (of A-D) Date (mo / day / yr) 4 / 2 / 90Time (24 hr) 1350 Biologist M. Carr(A) Substrate type and % of ^{subdivision} segments:
(1) Bedrock 80 (2) Boulder 20 (3) Cobble — (4) Pebble — (5) Sand — (6) Silt —(B) Overall % cover of biota (% of ^{subdivision} segment): Dense 70 Moderate 20 Low 10

(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. 3Frames 12-17

BARNACLES

	Dense		Moderate		Sparse		Rare	
→ 1U	2		2		1U		1U	
→ 2	2		2		2		2	
3	3		3		3		3	
4	4		4		4		4	
5	5		5		5		5	
6	6		6		6		6	

NOT PRESENT

MYTILUS

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

NOT PRESENT

GASTROPODS

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

NOT PRESENT

FUCUS

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

NOT PRESENT

Wildlife Observations/ General Comments:

Common merganser, ♀ - (1)

Commons: aud. (3), double crested (1)

white-winged scoter (2)

Harlequin ducks (15)

Surf scoter (4)

Bald eagle (mature) (2)

Sea Otter (0)

Land Otter (1)

Ecological Considerations:

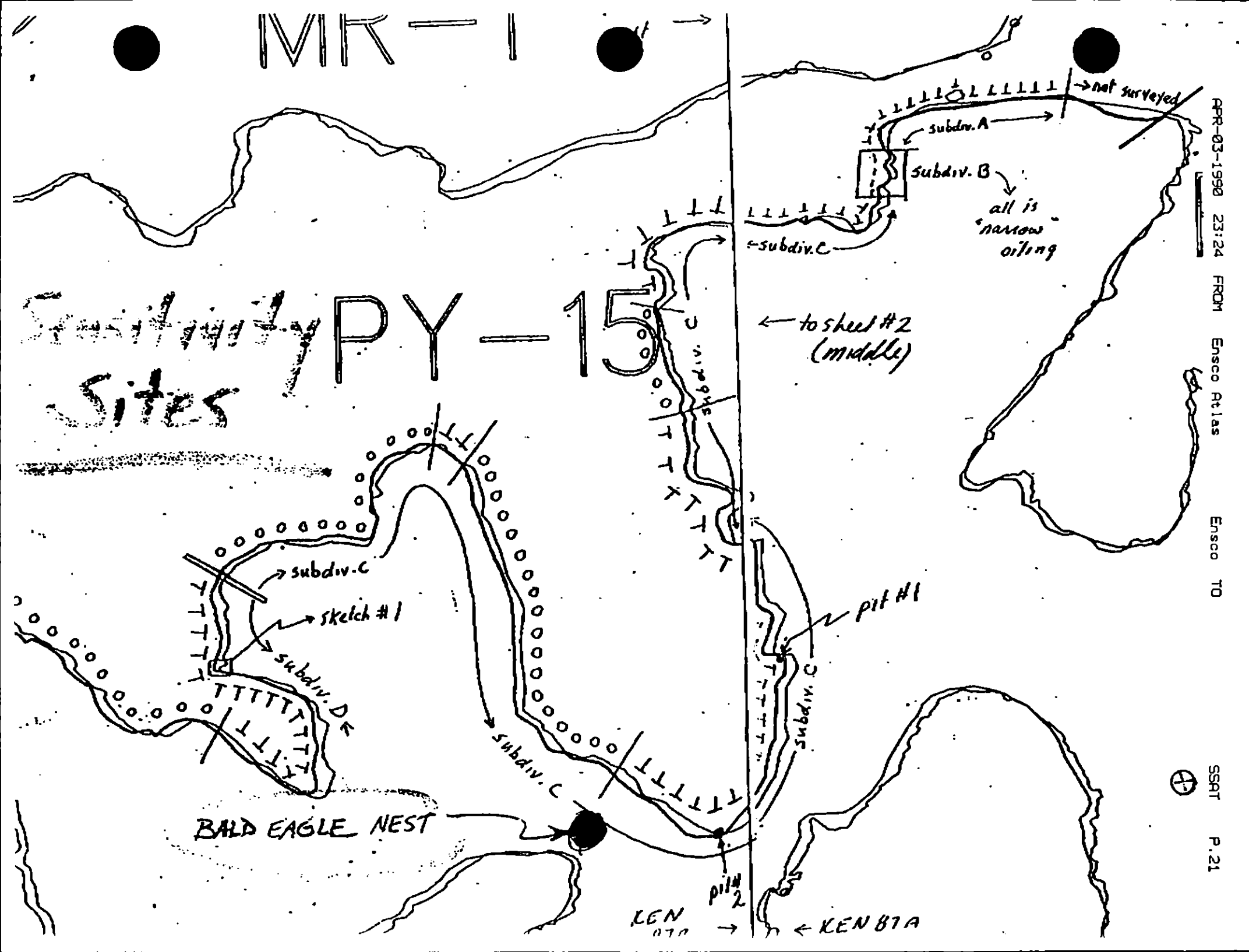
Sensitivity codes: ST (Bald eagle nest), 4-QQ (National Wildlife Refuge)

PWS 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 (4/20 to 5/10)
- 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 (7/21 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 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.

MR-1

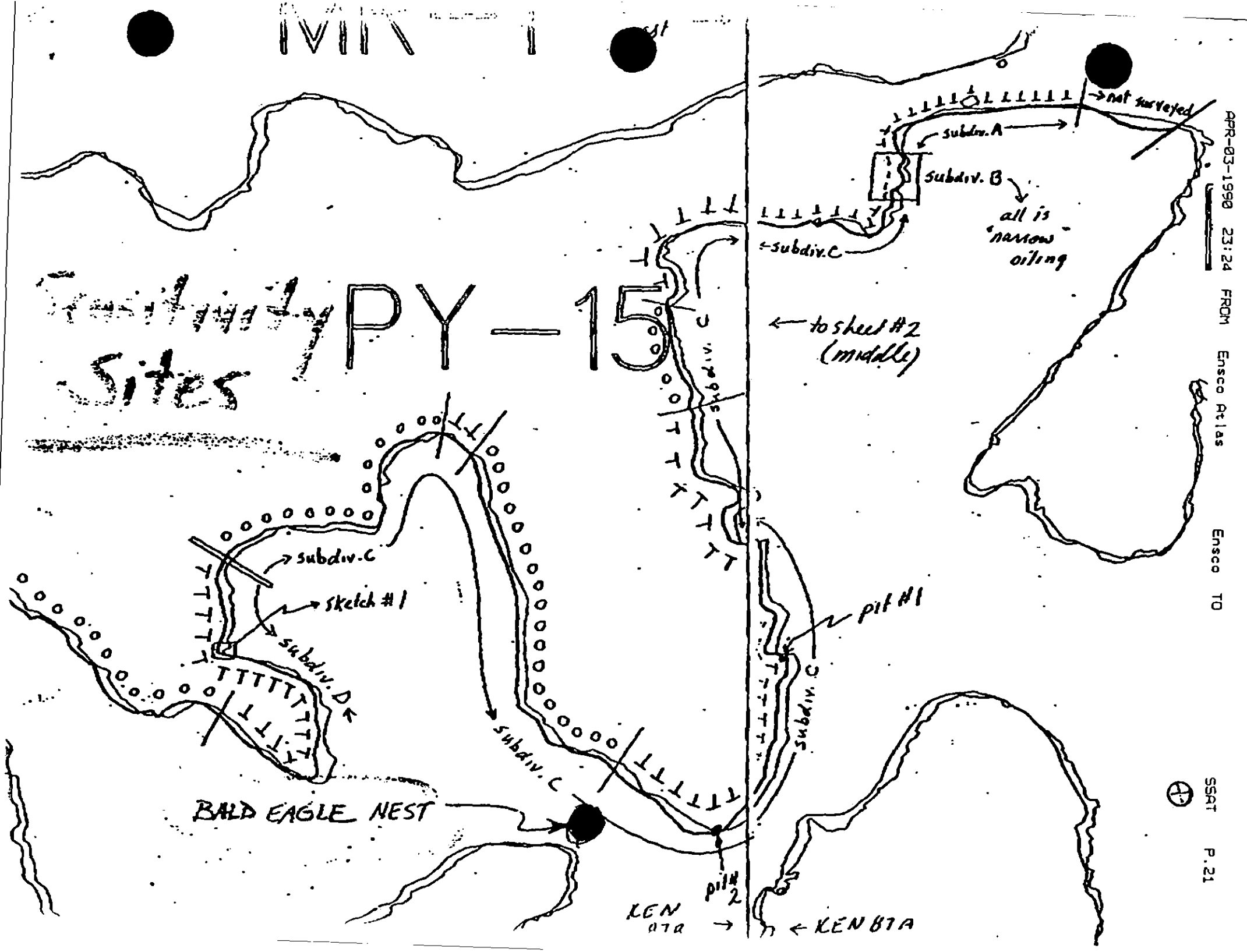
Sensitivity PY-15 Sites



IVIR

Facility Sites

PY-15



APR-03-1990 23:24 FROM

Ensco Atlas

Ensco TO



SSAT

P.21

MR-1

to sheet #3
east →

PY-15

PY-15

PY-13

subdiv. D

subdiv. C

sketch #1

subdiv. D

subdiv. C

KEN
878

pit #2

XXXX Wide D=1260m
 /// Medium 1350m
 --- Narrow 1260m
 TTTT Very light

ADEC Segment Length: 11862m

PY-15 1:18,000

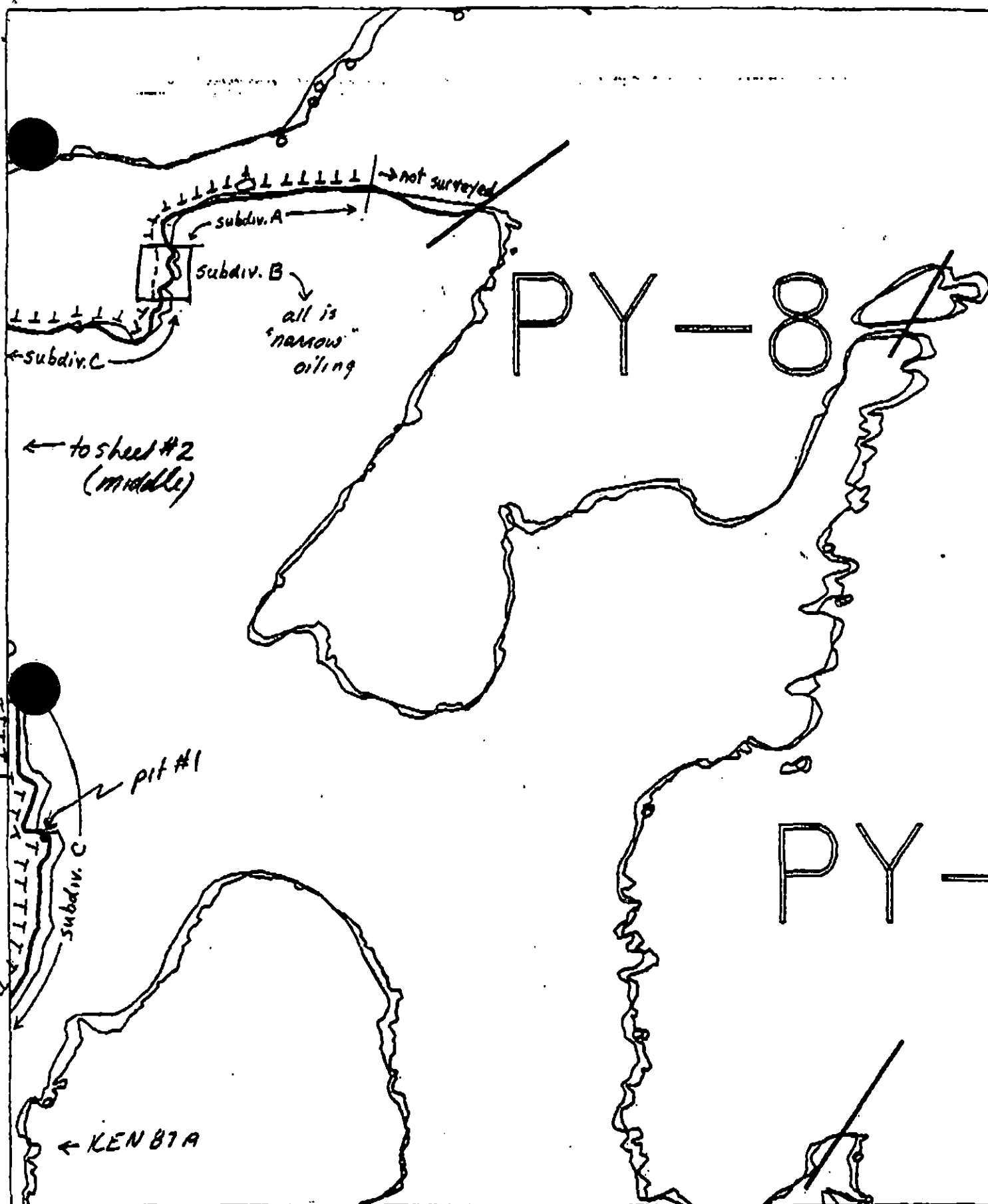
Sheet 2 of 2

Map Key: KEN-870

Name: Mann

Date: 3/31/90

15



XXX Wide

/// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

PY-15

ADEC Segment Length: 11862m

0 300 600 900

Sheet 3 of 3 (east)

Map Key: KEN-87b

Name: MannDate: 31 March 90

Data File:

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT PY-15 SUBDIVISION B (2 of 4)

WORK WINDOW	
Manual Pickup Tarmat Removal	OPEN
Bioremediation	OPEN

*SUBJECT TO LANDOWNER APPROVAL

ARCHAEOLOGICAL INSPECTION/CONSULTATION REQUIRED.

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

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

No ecological time constraints.

OTHER ECOLOGICAL CONSIDERATIONS

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

TAG ADDENDUM DATE

ADEC Arctic Wildlife Delemer

EXXON Arctic TGA Beal

NOAA Joseph Talbot Star

USCG W. J. Hall W. J. Hall

FOSC

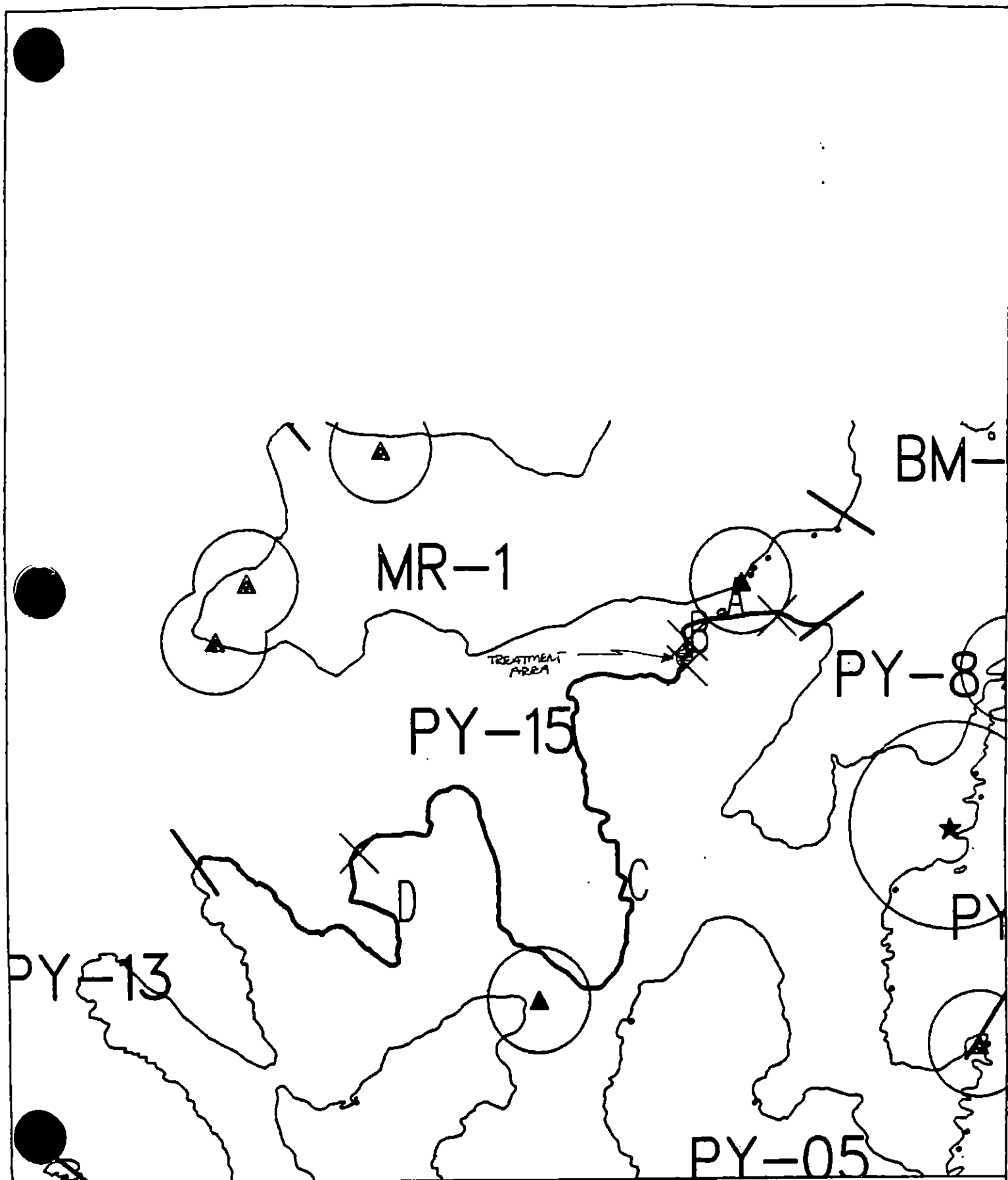
DATE 5-21-90

Prepared by:

Anda May

Date:

5/20/90



ECOLOGY MAP
SEGMENT PY-15

SUBDIVISION B (2 of 4)

- ★ Seabird Colony
- ▲ Eagle Nest

SHORELINE EVALUATION

SEGMENT ST/ PY-015 SUBDIVISION B (2 OF 4) DATE 3/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
National Wildlife Refuge (4QQ)

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid disturbance/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. *GA* nt stop work a member of -3658 or 364-

SHPO SIGNATURE: Charles H. Jones DATE: 4/17/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 239 m: V.Light 0 m: No Oil 0 m
Subsurface Oil Observed: Yes X No Maximum Depth 20 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> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> <u>X</u> Removal	<u> </u> Other (see comments)

COMMENTS: The treatment recommendations are as follows: 1) Manual pick up of mousse and pooled oil, 2) Tarmat removal and, 3) Bioremediate area of pooled oil and broken cover as shown on attached sketch map. No time constraints identified.

SEE ADDENDUM DATED 5/1/90
Rex C.

TAG COMMENTS:

TAG APPROVAL DATE: 4/17/90
ADEC Art Warner
EXXON ANDY TAYLOR
NOAA Burt Wessett
USCG KENNETH KEANE

FOSC: [Signature] DATE: 4-22-90

Bioremediation subject to Land Owner approval - if not obtained, do not bioremediate.

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT PY-15 SUBDIVISION D (4 of 4)

WORK WINDOW	
Manual Pickup	OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

5T 2 Eagle Nests

NO CONSTRAINT. Bald Eagle nests located in adjacent segments PY-2 and MR-1 are more than 400m from work area.

OTHER ECOLOGICAL CONSIDERATIONS

No access permitted in the tide pool area. Avoid any unnecessary disturbance or damage to unloiled biota and substrate.

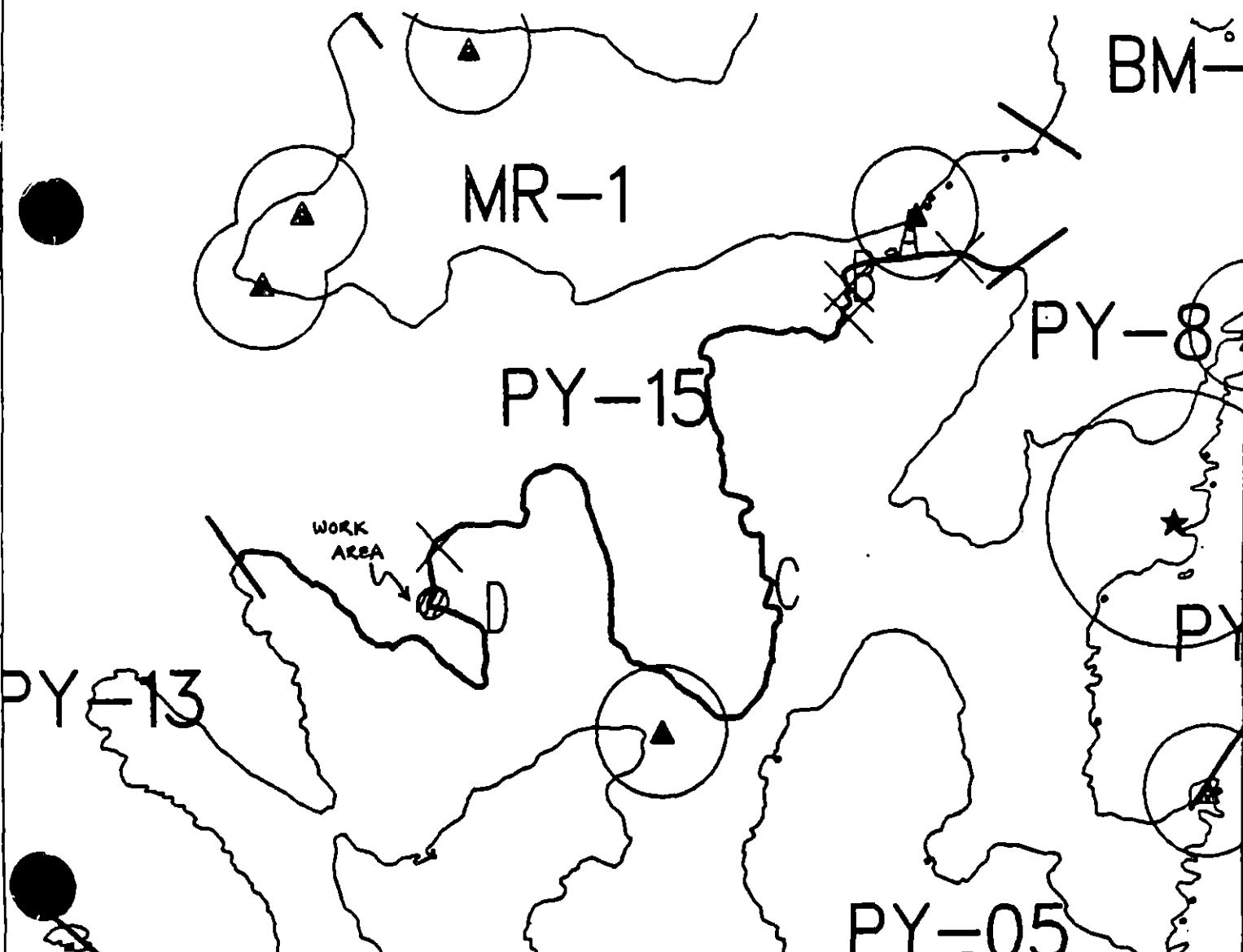
TAG ADDENDUM DATE 5/21/90
ADEC Art Weiner
EXXON AMY TEAL
NOAA Joseph Tallott
USCG M. J. HALL

FOSC my L

DATE 5-21-90

Prepared by: Andrew Meyer

Date: 5/19/90



ECOLOGY MAP
SEGMENT PY-15

SUBDIVISION D (1 of 4)

- ★ Seabird Colony
- ▲ Eagle Nest

SHORELINE EVALUATION

SEGMENT ST/ PY-015 SUBDIVISION D (4 OF 4) DATE 3/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

National Wildlife Refuge (4QQ) and bald eagle nest (5T) - 3/1 to 6/1.
See attached Ecological Constraint Sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/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. Jones DATE: 4/12/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V. Light 1638 m: No Oil 1569 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> </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: Recommend manual removal and bioremediation of pooled oil as shown on attached sketch map. Conduct work after 6/2 per above eagle constraint.

SEE ADDENDUM DATED 5/19/90
RAY C.

TAG COMMENTS:

DUE TO PROXIMITY OF TIDE POOLS AND LOW ENERGY ENVIRONMENT BIOREMEDIATION SHOULD NOT BE USED. NO ACCESS SHOULD BE ALLOWED TO THE TIDE POOL AREA. USF+W REPRESENTATIVE TO BE ONSITE.

TAG APPROVAL DATE: 4/17/90
ADEC ART WEINER
EXXON ANDY TATE
NOAA BILL WESCOTT
USCG KENNETH HEANE

FOSC: My L DATE: 4-22-90

SHORELINE EVALUATION

SEGMENT ST/ PY-015 SUBDIVISION D (4 OF 4) DATE 3/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

National Wildlife Refuge (4QQ) and bald eagle nest (5T) - 3/1 to 6/1. See attached Ecological Constraint Sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/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. Jones DATE: 4/12/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V. Light 1638 m: No Oil 1569 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> </u> Tarmat: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> Removal	<u> </u> Other (see comments)

COMMENTS: Recommend manual removal and bioremediation of pooled oil as shown on attached sketch map. Conduct work after 6/2 per above eagle constraint.

TAG COMMENTS:

DUE TO PROXIMITY OF TIDE POOLS AND LOW ENERGY ENVIRONMENT BIOREMEDIATION SHOULD NOT BE USED. NO ACCESS SHOULD BE ALLOWED TO THE TIDE POOL AREA. USF+W REPRESENTATIVE TO BE ONSITE.

TAG APPROVAL DATE: 4/17/90

ADEC ART WEINER Art Weiner

EXXON ANDY TATE Andy Tate

NOAA Burt Weisbrott Burt Weisbrott

USCG KENNETH KEANE Kenneth Keane

FOSC: My L DATE: 4-22-90

Sanitary Sites

PY-15

BALD EAGLE NEST

LEN
R7A

← KEN 87A

pid 2

pit #1

to sheet #2
(middle)

all is
'narrow'
oilings

→ not surveyed

Subdiv. B

- subdr. A

← subdiv. C

→ subdiv-C

Sketch #1

54 bdiv. D

Subdiv. C

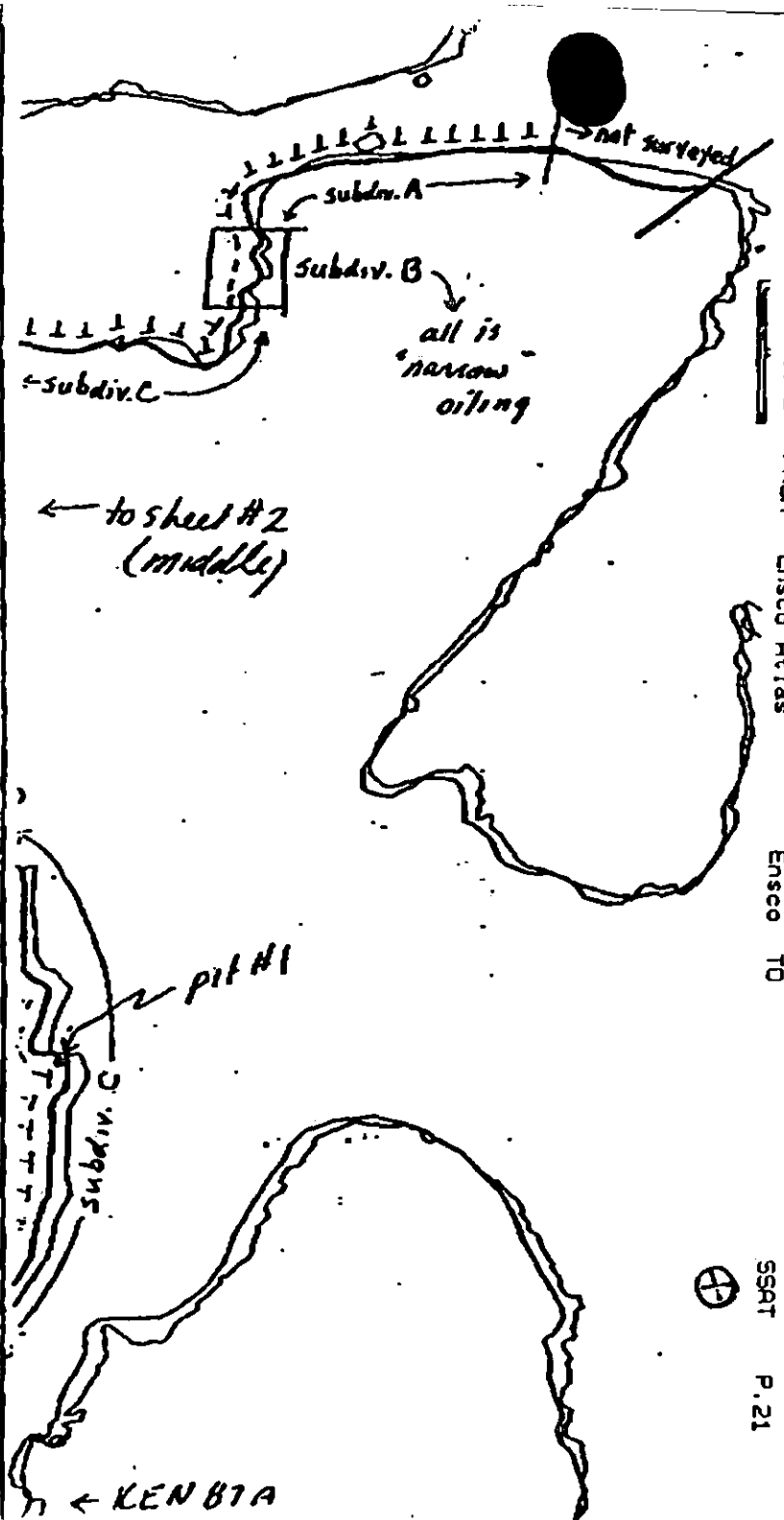
— 319 —

MM-1

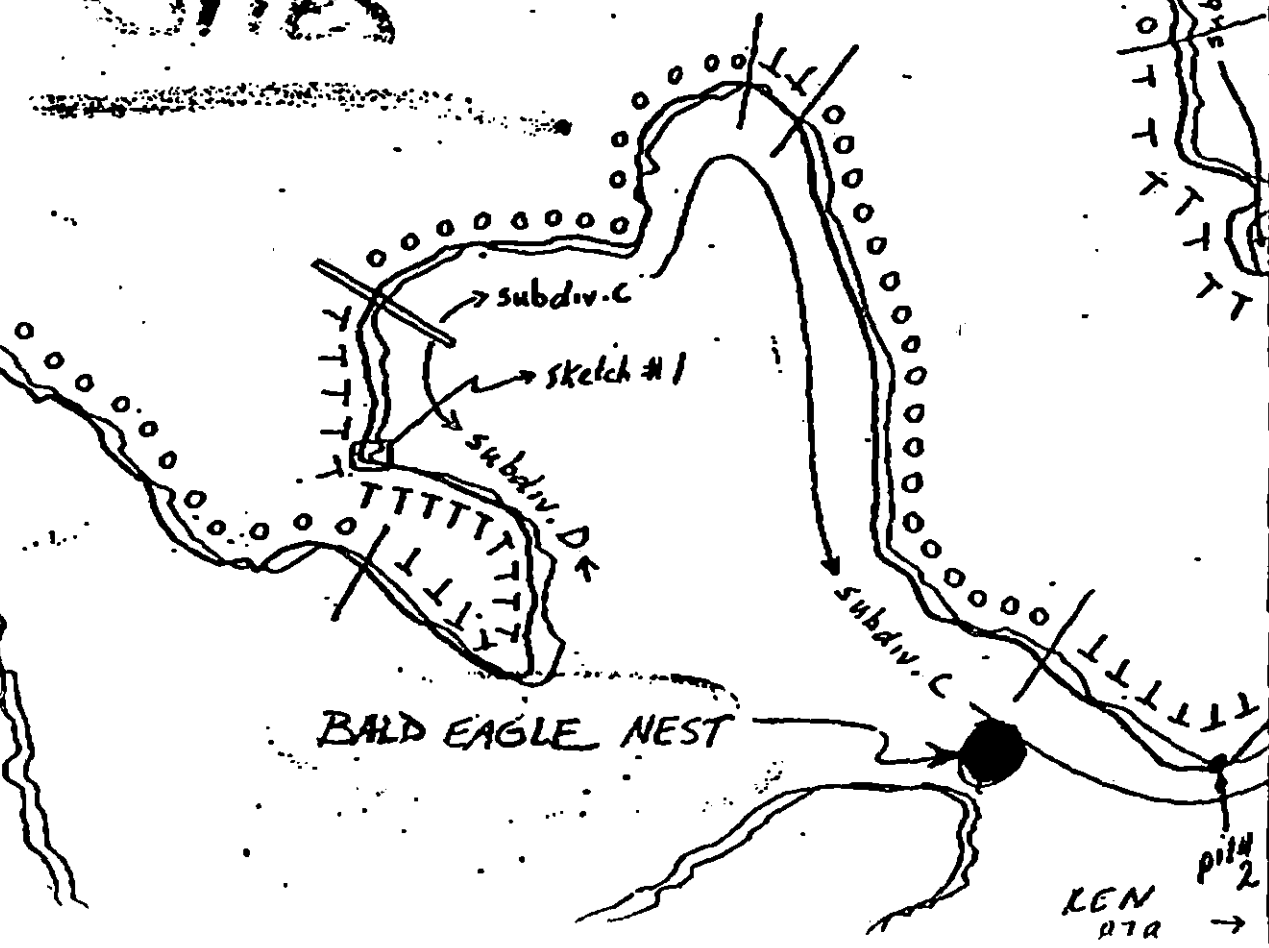
east

Subdiv. A
Sites

PY-15



APR-03-1990 23:24 FROM Ensco Atlas Ensco TO SSAT P.21



MR-1

to sheet #3
east →

PY-15

PY-15

PY-13

subdiv. D

subdiv. C

Sketch #1

subdiv. D

subdiv. C

KEN
87B

pit #2

XXXX Wide D=1260m

//// Medium 1350m

---- Narrow 1260m

TTTT Very light

PY-15 1:18,000

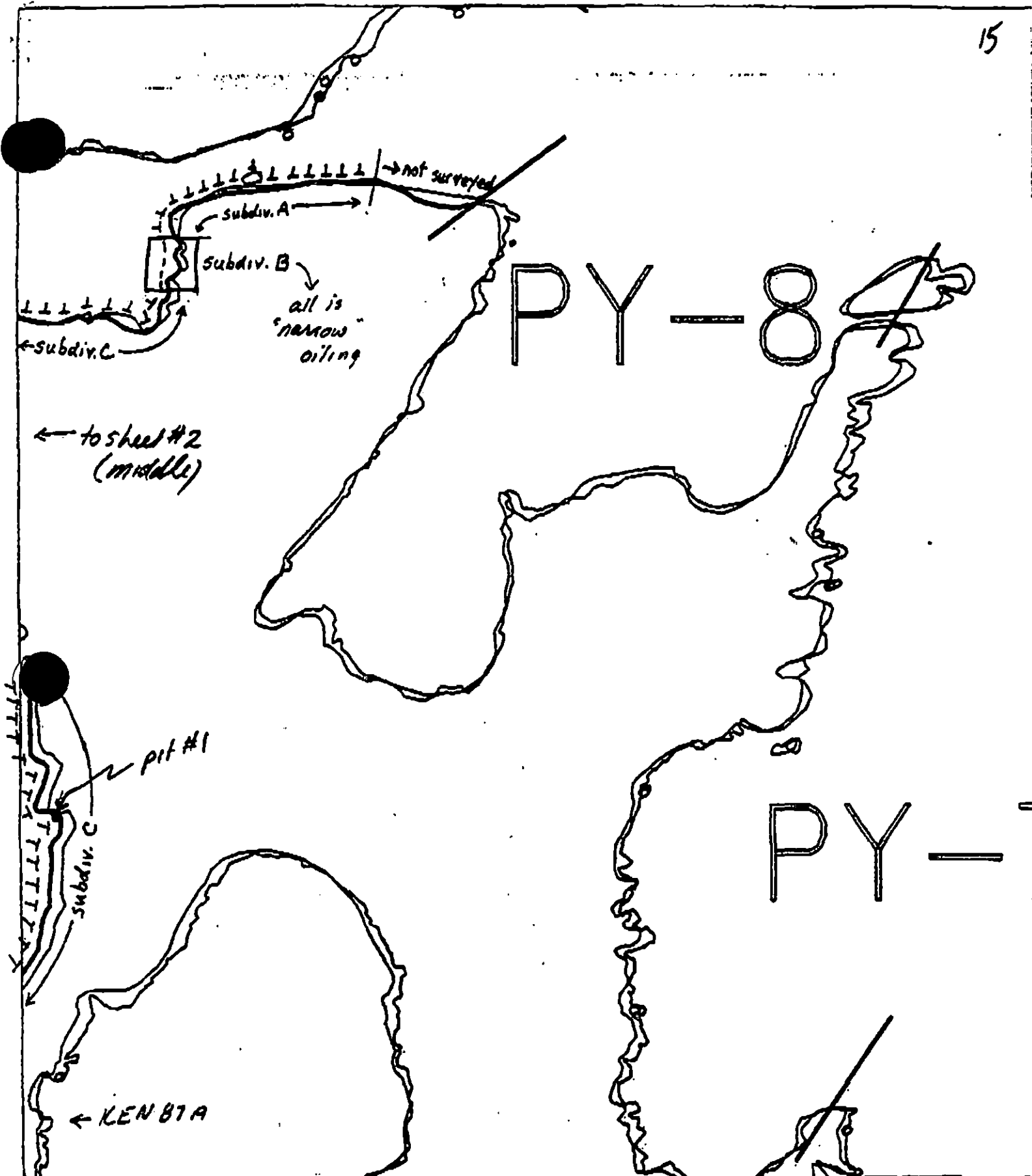
ADEC Segment Length: 11862m

Sheet 2 of 2

Map Key: KEN-87a

Name: MannDate: 3/31/90

15



XXX Wide

/// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

PY-15

ADEC Segment Length: 11862m

0 500 600 900

Sheet 3 of 3 (east)

Map Key: KEN-87b

Name: MannDate: 31 March 90

Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ PY-015 SUBDIVISION C (3 OF 4) DATE 3/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
National Wildlife Refuge (4QQ)

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid disturbance/damage to unoiled biota and substrate.

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

SHPO SIGNATURE: Charles E. Johnson DATE: 4/17/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 4083m: No Oil 3110 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: <u> </u> Breakup	<u> </u> <u> </u> Beach Cleaner
<u> </u> <u> </u> Removal	<u> </u> Other (see comments)

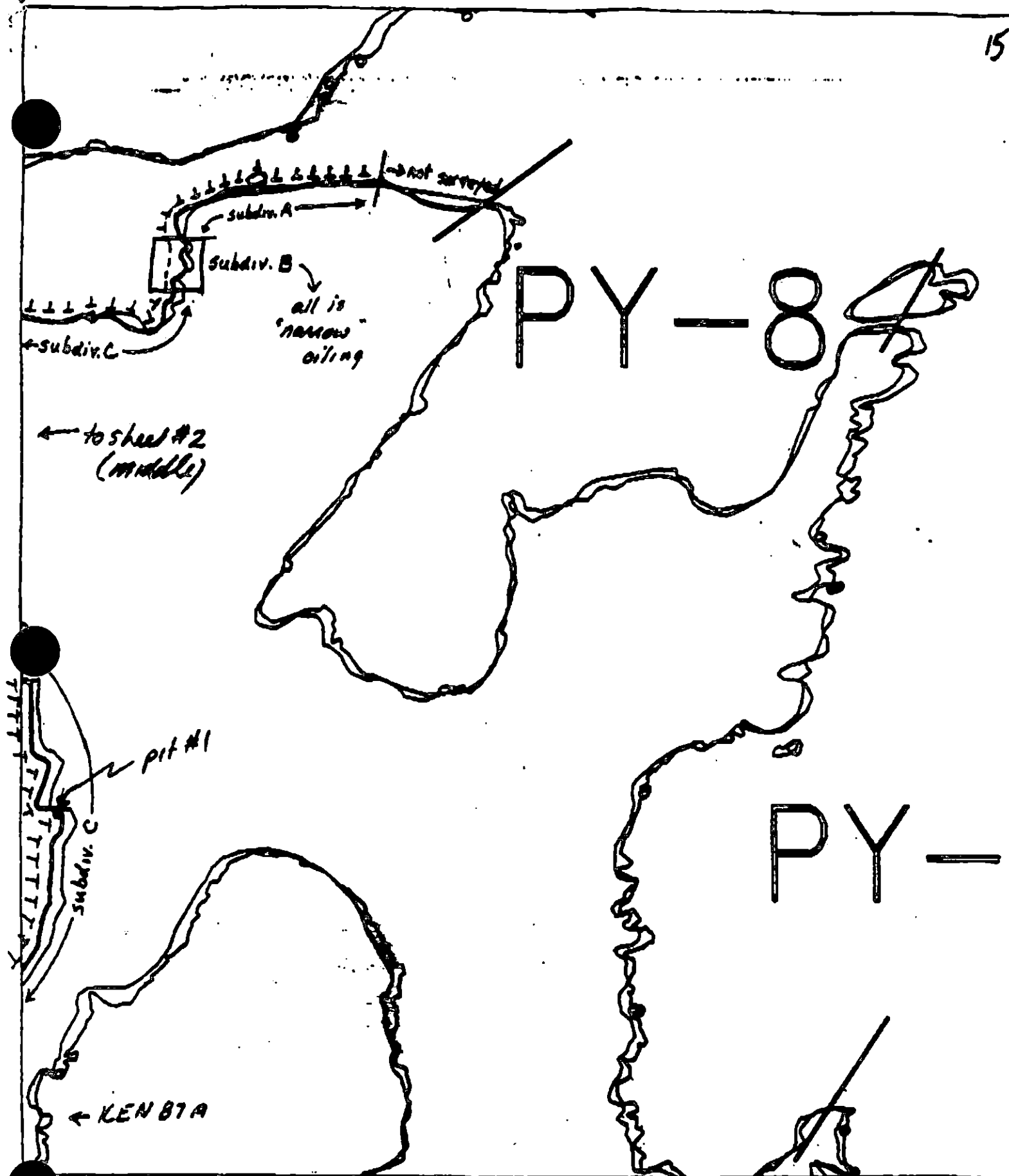
COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 4/17/90
ADEC Art Weaver Dyl Weaver
EXXON Away TEA Reg S
NOAA Bu. I Worcott Bu. I Worcott
USCG Kenneth K. K. K. Kenneth K. K. K.

FOSC: [Signature] DATE: 4-22-90

15



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

PY-15

ADEC Segment Length: 11882m

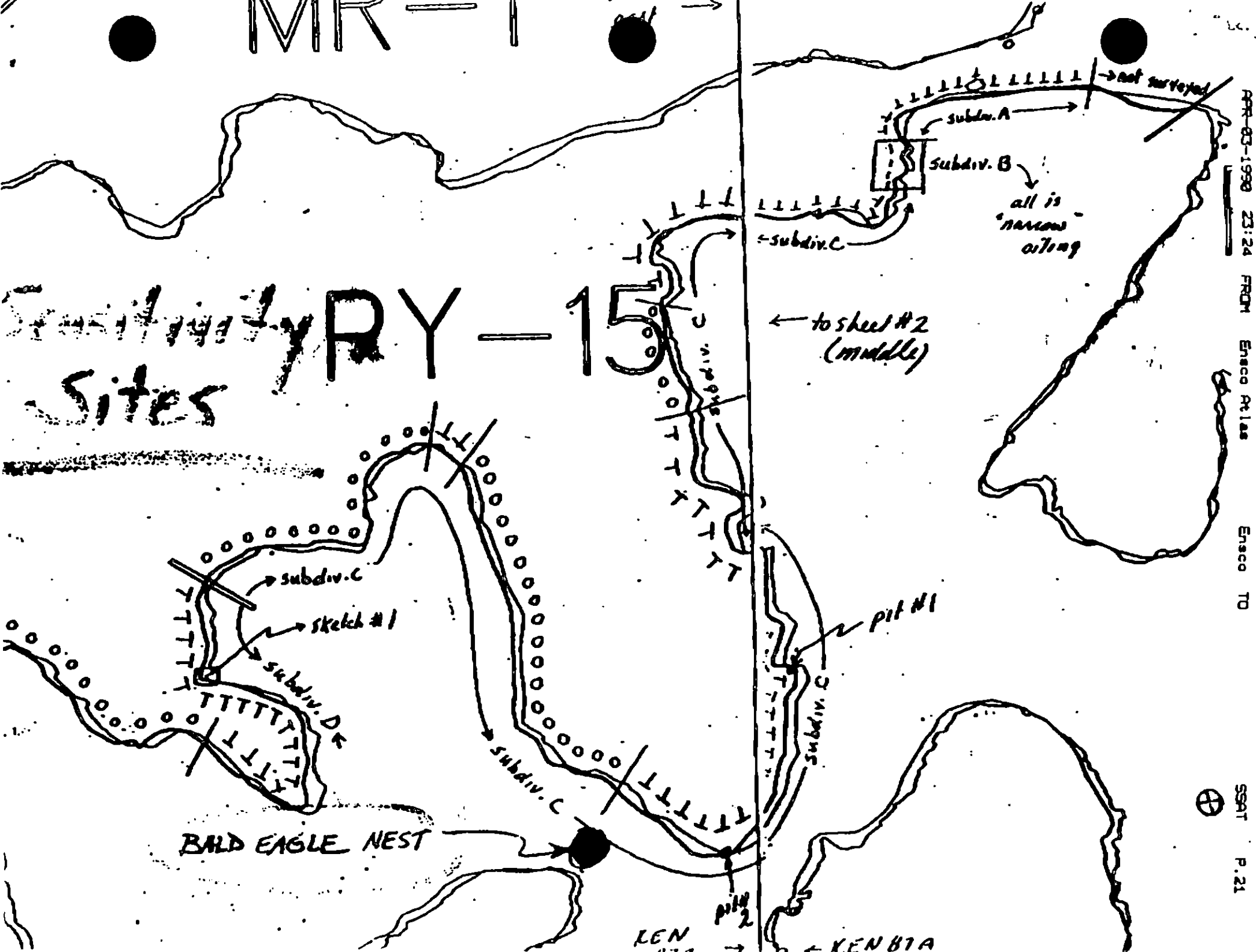
Sheet 3 of 3 (east)

Map Key: KEN-87b

Name: MannDate: 31 March 90

MR-1

Stairway Sites
RY-15



APR-03-1990 23:24 FROM Enaco Atlas ENACO TO
SSAT P.21

MR-1

to sheet #3
past →

PY-15

to sheet
#1
(west)

subdiv. C

sketch #1

subdiv. D

KEN
87B →XXXX Wide
//// Medium
--- Narrow
TTTT

PY-15

ADEC Segment Length: 11002m

Sheet 2 of 3 (middle)

Map Key: KEN-87a

Name: _____

SHORELINE EVALUATION

SEGMENT ST/ PY-015 SUBDIVISION B (2 OF 4) DATE 3/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
National Wildlife Refuge (4QQ)

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid disturbance/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. *CEA* nt stop work a member of -3658 or 364-

SHPO SIGNATURE: Charles H. Jones DATE: 4/17/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 239 m: V.Light 0 m: No Oil 0 m
Subsurface Oil Observed: Yes X No Maximum Depth 20 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> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> <u>X</u> Removal	<u> </u> Other (see comments)

COMMENTS: The treatment recommendations are as follows: 1) Manual pick up of mousse and pooled oil, 2) Tarmat removal and, 3) Bioremediate area of pooled oil and broken cover as shown on attached sketch map. No time constraints identified.

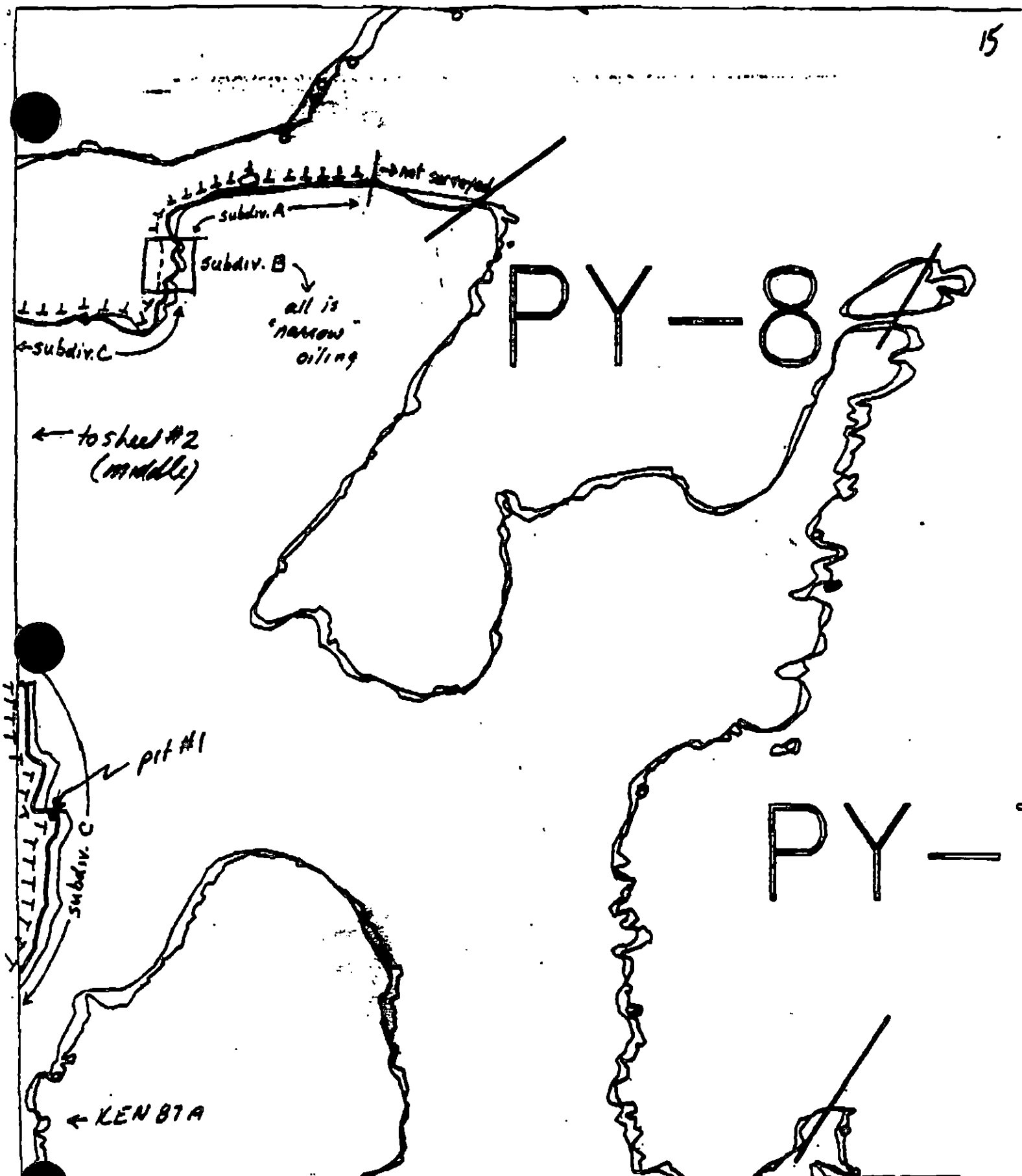
TAG COMMENTS:

TAG APPROVAL DATE: 4/17/90
ADEC ART WEINER
EXXON ANDY TATE
NOAA Burt Wesscott
USCG KENNETH KEANE

FOSC: Day L DATE: 4-22-90

Bioremediation subject to Land Owner approval - if not obtained, do not bioremediate!
v

15



XXX Wide

//// Medium

---- Narrow

TTTT Very Light

PY-15

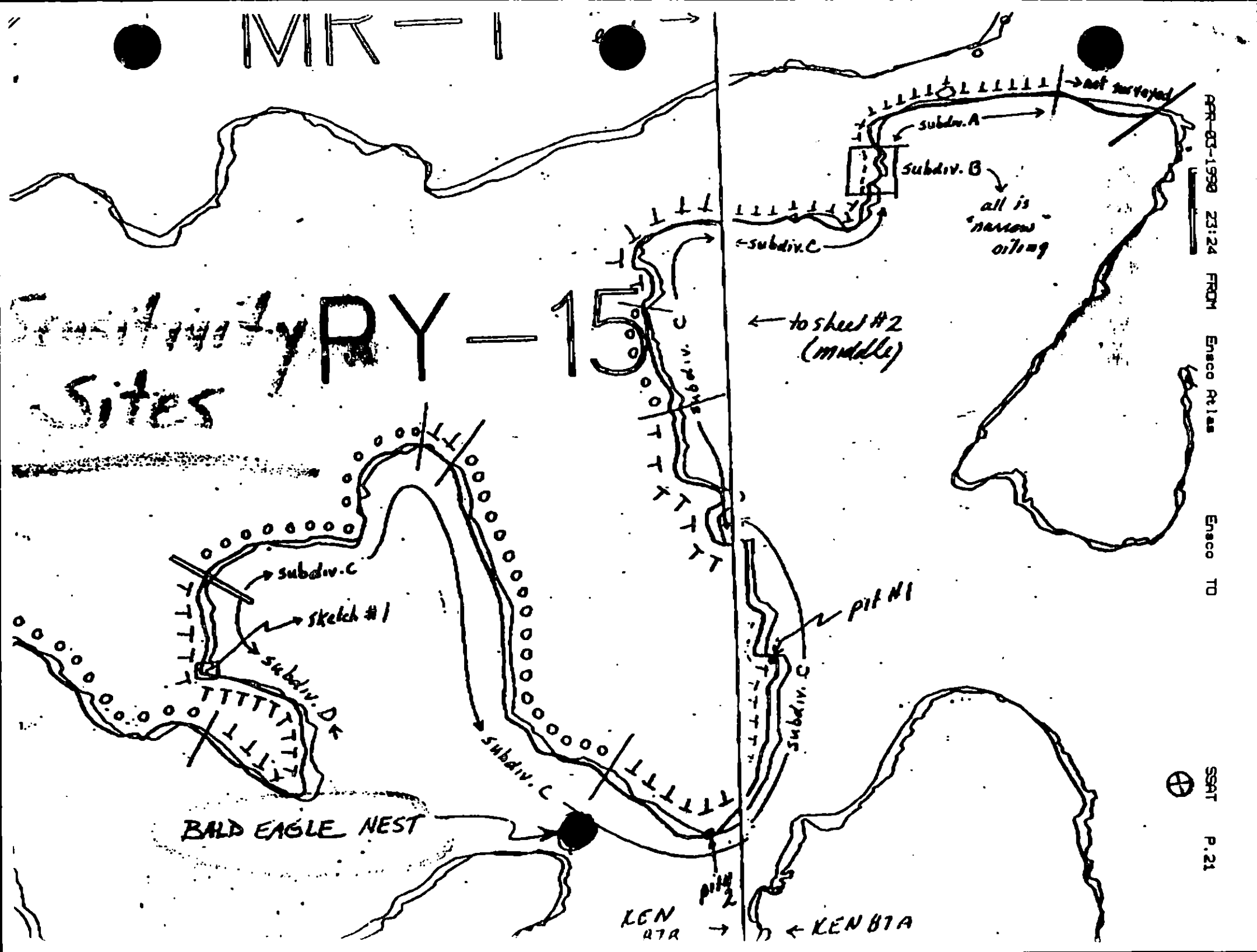
ADEC Segment Length: 11802m

Sheet 3 of 3 (east)

Map Key: KEN-87b

Name: MannDate: 31 March 90

MR-1



APR-03-1998 23:24 FROM Enaco Atlas Enaco TO SSAT P.21

SHORELINE EVALUATION

SEGMENT ST/ PY-015 SUBDIVISION A (1 OF 4) DATE 3/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
National Wildlife Refuge (4QQ)

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid disturbance/damage to unoiled biota and substrate.

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

SHPO SIGNATURE: Charles E. Mc... DATE: 4/17/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 845 m: No Oil 0 m
Subsurface Oil Observed: Yes No X Maximum Depth

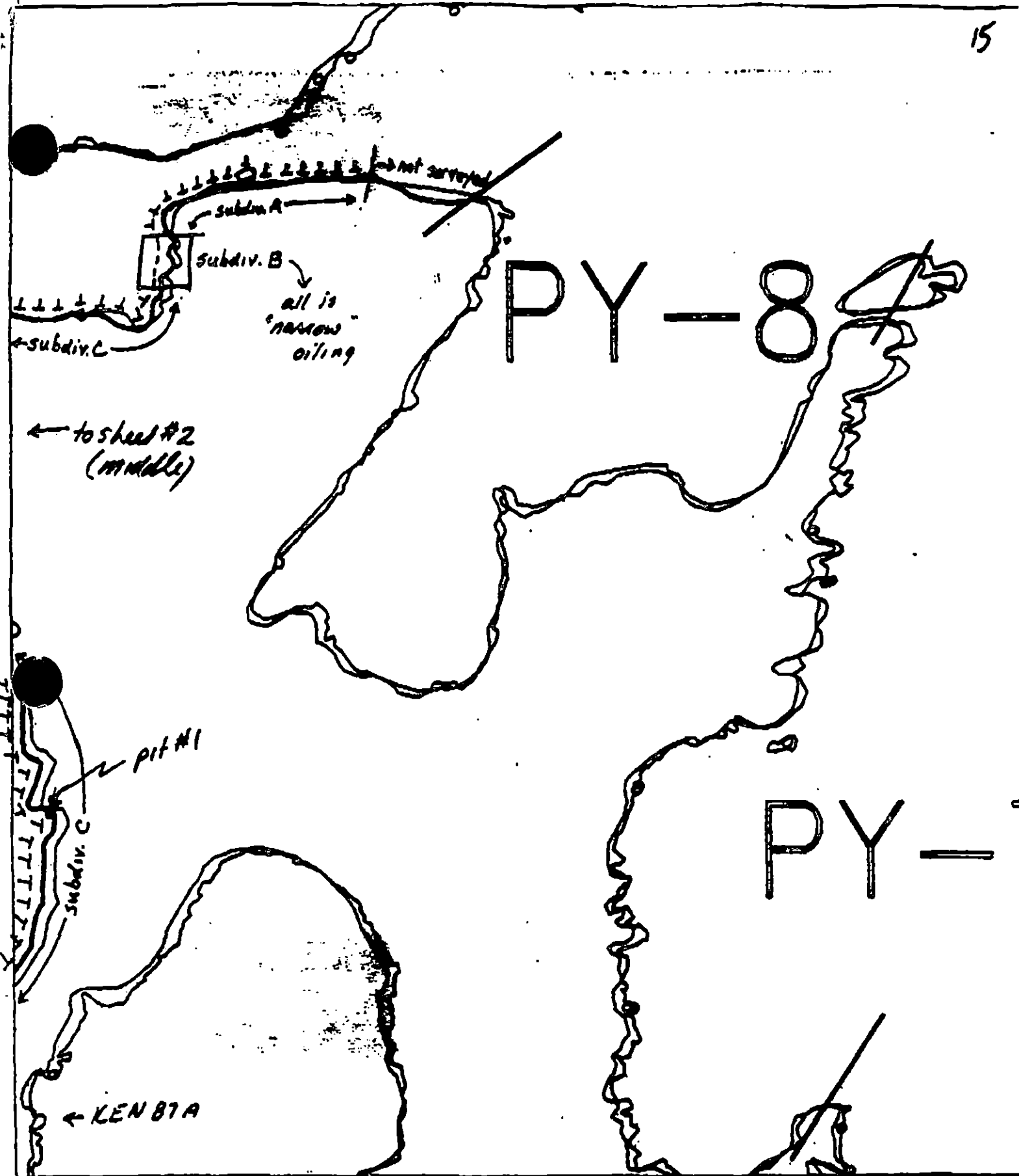
RECOMMENDATIONS:

<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: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> Removal	<u> </u> Other (see comments)

COMMENTS:

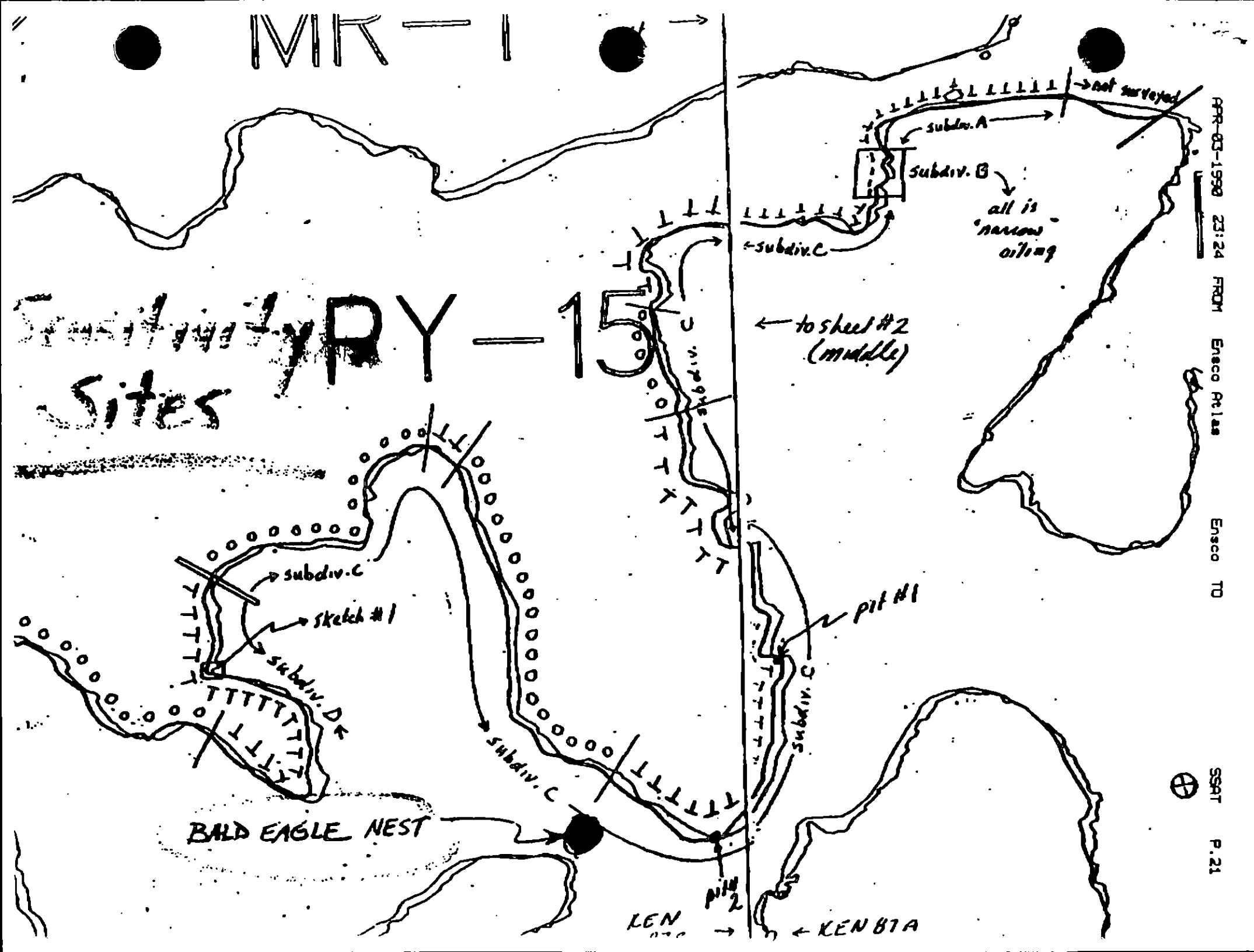
TAG COMMENTS:

TAG APPROVAL DATE: 4/17/90
ADEC Art Weir Art Weir
EXXON ANDY TEAR ANDY TEAR FOSC: L DATE: 4-22-90
NOAA Bruce Warratt Bruce Warratt
USCG KENNETH KEANE Kenneth Keane



XXXX Wide /// Medium --- Narrow TTTT Very Light 0000 No Oil	PY-15 ADEC Segment Length: 11862m 0 500 1000 1500 METERS	Sheet 3 of 3 (east) Map Key: KEN-87b Name: <u>Mann</u> Date: <u>31 March 90</u> Date Entered:
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MR-1



WORK PLAN ADDENDUM

Segment PY-015

Subdivision B

Dated 5/16/90

MODIFICATION

1. REASON FOR MODIFICATION

- Admirals' requirement.
- Landowner recommendation.

2. ADJUSTMENT TO WORK PLAN

- Customblen may be used in the area of pooled oil and broken cover as indicated on the sketch, after manual removal of mousse, pooled oil, etc.
- A USFWS representative must be onsite for treatment.

SHPO APPROVAL NEEDED YES. _____
NO X

SHPO SIGNATURE _____

TAG APPROVAL DATE 5/18/20

ADEC : ART WEINER Art Weiner

EXXON ANDY TGA Real

NOAA Gary Feroce Law Enforcement

USCG G.A. KETTER B.A. Deite

FOSC

DATE _____

5-18-90

1991 MAYSAP EVALUATION

SEGMENT: PY 015 SUB: B REGION: KEN SURVEY DATE: 5/15/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: Timothy P. Smith

Date: 6/03/91

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 31 1991

FOSC APPROVAL DATE: 6/5/91

ADEC

FOSC

EXXON

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

USCG

NOAA

MAYSAP FIELD SHORELINE COMMENT SHEET

PY 015-B

1/9

16

TEAM NO. 4 SEGMENT PY. 015 SUBDIVISION B DATE May 15, 1991

ADEC

NAME Clara S. Crosby SIGNATURE Clara S. Crosby☐ NTR☒ Treatment recommended.

Crews Veco workers were scheduled to return to this site - High tide prevented Cleanups - This area would take $\approx$ 2 hours to complete - if a crew is in the area suggest spending the time to remove. H50R

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/15/91☐ NTR

The H50R area 3m x 12m was partially worked while surveying the beach but due to time constraints on PY-6 (Bird Colony) the Veco crew was unable to return to the location prior to high tide.

LANDMANAGER

NAME John P. Hardister OF USFWS SIGNATURE John P. Hardister 5/16/91☒ NTR

No treatment recommended.

USCG/NOAA

NAME Capt. L. Mc Mahon SIGNATURE L. Mc Mahon☒ NTR

Sparsic AP/TB, VECO crew picked up several bags, but area does not warrant full clean-up crew - would cause more environmental damage from removal process.

11 MAY / 12 MAY 91 11:15 AC 11:15 AC 11:15 AC 11:15 AC 11:15 AC 11:15 AC 11:15 AC 11:15 AC 11:15 AC 11:15 AC

MAYSAP SHORELINE OILING SUMMARY

PAGE 2 OF 9TEAM NO. 4OG J. M. SimpsonBIO J. BarrySEGMENT Py.015 BCrosbyLANDMANAGER Hardister for USFWSSUBDIVISION BEXXON George P. StilesUSCG/NOAA McMahon / Mr. DmaloDATE May 115 191TIME 10:23 to 11:01TIDE LEVEL +0.5 ft. to +3.7 ft.ENERGY LEVEL: ☒ H ☐ M ☐ LSURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELOWEATHER: ☐ SUN ☒ CLOUDS ☐ FOG ☒ RAIN ☐ SNOWTOTAL LENGTH SHORELINE SURVEYED: 239 mNEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONEEST. OIL CATEGORY LENGTH: W 1 m M 1 m N 1 m VL 239 m NO 1 m US 1 m

L O C	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE VHML	AREA		ZONE				NOTES
	AP	MS	TB	SOF	CV	CT	ST	FL	DB	NO			WIDTH m	LENGTH m	S	UI	MI	LI	
A1				S	T	T					cb/pb/R	L	6	20	*				See map
A2		T			T	T					W			219	*				
A3	Very few scattered ct st										all	<	10cm	dia	in	UI	TZ		
	no meaningful band																		

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-

FRAMES

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	20							X	-	Y	-	-	X				pb/sd	See map
2	20							X	-	Y	-	-	X				"	top 5cm H2O
3	20							X	-	Y	-	-	X				residual	face

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

OG COMMENTS:

Shoreline consists of sloping bedrock to the south and a pocket of cobble / pebbles / boulders among bedrock outcrops to the north. Southern area has very few scattered ct cv all < 10cm dia on bedrock or on boulder surfaces. On band of H2O / pavement present in the northern part. This band was worked on but high tide prevented completing manual work.

Reviewed: MC 5/20/91
revised 5.20 91

Original sketch map

Py. 015. B

for Samples

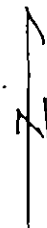
May 15/91

1023. 1101

Legend

-  Sloping bedrock
-  Angular boulders over bedrock
-  Cobble/pbbles/boulders
-  Pb/cb.

Meters
0 50



MAYSA P 4-3-22

Worked on A1
but
not terminated
due
to high tide.

Picked up

2m² of cv
< 10%

450R < 10%
3 x 12

inside

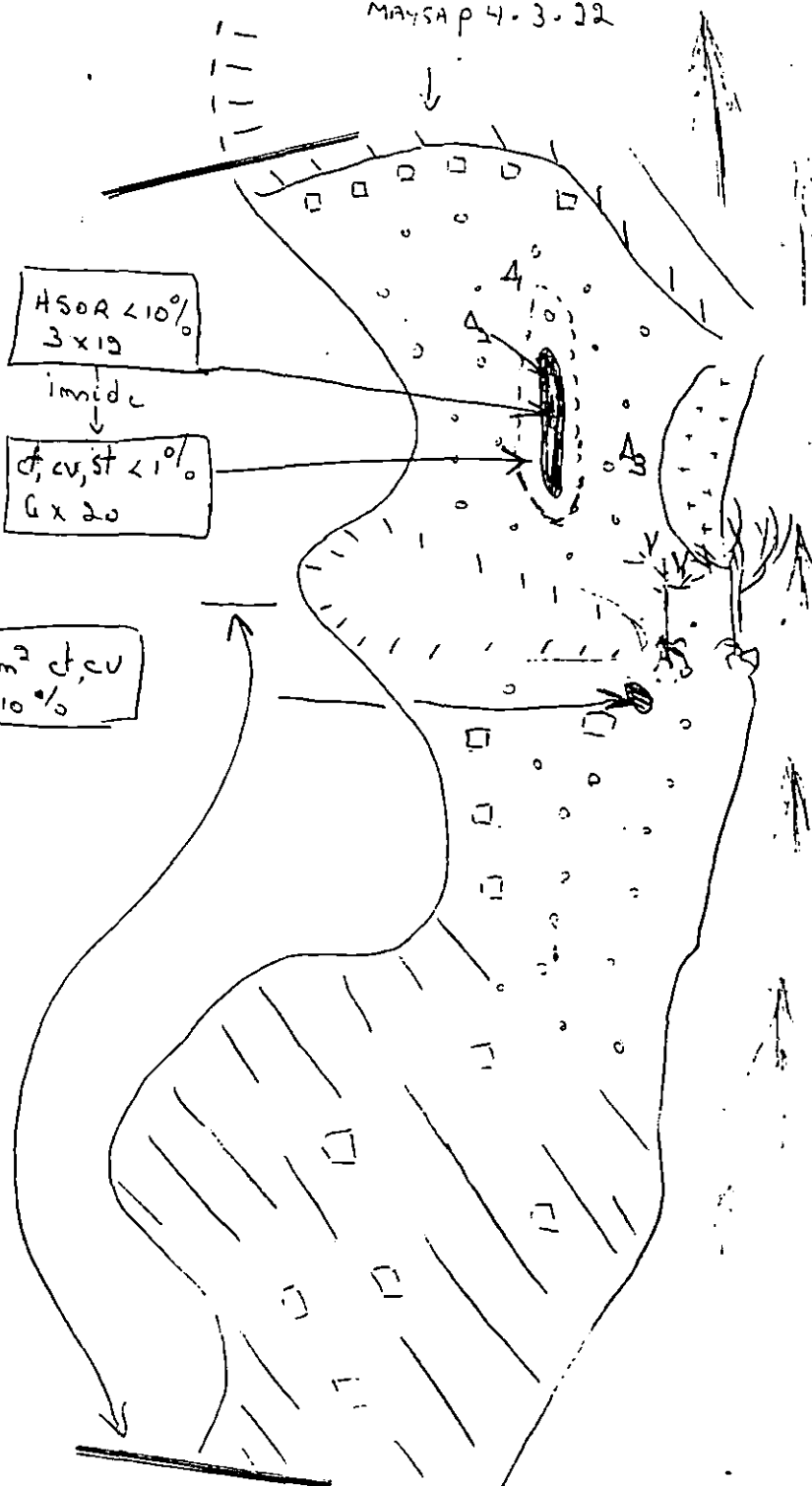
of cv, st < 1%
6 x 20

A2

Very few of, cv on
bedrock in unit

Very small ms
bedrock boulders.

Picked up all that
could be picked
up



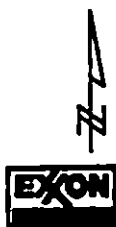
Reviewed: MC 5/20/91

Reviewed 5.20 91

Location Map

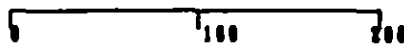
Surveyed
by foot

B



PY015 B

METERS



AK State Plans, Zone 4
april 1988

Subdivision Field Map

Map Key: KENPY015Bbb

Name: J. M. Semples

Date: May 15/9

reviewed 5.20.94

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 15, 1991 1023 - 1101
SEGMENT #	PY015	TIDAL HEIGHT (Range)	-1.9 => -0.1
SUBDIVISION	B	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Variable 0-10 kt, rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

General Features of PY015-B

This short subdivision is located along MacArthur Pass, a site with very low wave exposure. The shore varies from high angle talus boulders to a medium angle cobble and pebble beach. Greater cover of biota is found on the talus and boulder shores than the cobble beach. The highest densities of biota on the beach are found on the largest cobble, boulders, and occasional bedrock outcrop. The biota appear generally healthy, with normal abundances of flora and fauna throughout the cobble beach and adjacent bedrock outcrops. Several species are present as juveniles, indicating recent recruitment.

The zonation pattern along this subdivision is similar to the entire segment, with black lichen along the upper edge of the intertidal and a transition to Fucus, barnacles, limpets, and littorines in the highest intertidal, grading to denser cover of Fucus, green and red algae in the lower shore. Mussels form a band in the mid-shore as a narrow bed amongst the beach cobble. Barnacles are patchy, but generally quite abundant throughout the shore from the high to the low zones. The subtidal is nearly completely covered by large brown algae.

A1, A2 The oiled area is located in the upper zone of the cobble/pebble beach. At this location there are sparsely distributed barnacles, and moderate densities of limpets and littorine snails. A thin film of filamentous green algae (Urospora?) is also located in the vicinity of the oil. A moderately dense mussel bed is present approximately 6 m from A1/A2. The lower shore below the mussel bed is mostly red and brown algae.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED
			SPECIES PRESENT
Eagles			
Seabirds	2	3	
Waterfowl			
Gulls/Kittiwakes	2	4	
Shorebirds	1	3	
Corvids			
Other Birds			
MARINE MAMMALS	# OBSERVED	LAND MAMMALS	# OBSERVED
		SPECIES	
Sea Otters			
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

Reviewed M.B. 5/20/91

PY015-B Biology Report, continued

Manual cleanup was performed during the survey. Additional manual cleanup, if recommended, would not harm the biota along this segment. Care must be taken, however, to restrict activities to the oiled area in the upper zone and prevent disturbance to the nearby mussel bed.

A3 This oil is somewhat higher in the intertidal zone and extends through much of the segment as a patchy cover or coat of SOR. The oil is confined to the upper zone amongst the transitional flora and fauna between the zone of black lichen (*Verrucaria*) and the upper intertidal assemblage of *Fucus*, barnacles, green algae, limpets, and littorine snails. The shores are quite diverse and healthy and show no evidence of recent oil-related damage. Below the oiled area, *Fucus*, limpets, barnacles, littorine snails, and other lower zone flora and fauna cover the shore very densely, except the mid-zone cobble/pebble beach habitat where cover is somewhat sparser. The extreme low zone and subtidal habitat is dominated by large brown algae.

Manual cleanup was performed during the survey. Additional manual cleanup, if recommended, would not harm the biota along this segment.

General Zonation of PY015-B

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal
Oil Spatters	- -	--++++-				
Black Lichen		---+*-----				
Bare Rock		-- -- -- -- --				
Rockweed (Fucus)			-- - - + * + * + *	- -		
Barnacles (Balanus)			--- - + + + ++++	- - - -		
Odonthalia (Red Alga)			- - - -++ + **+-**+-			
Other Red Algae			- - - ---++**+-+----**			
Green Algae (Ulva/other)			- - - --+- -+ + - - -	- +++		
Mussels (Mytilus)			- - - -+***- - -			
Crustose Brown Algae (Hildenbrandia)			- - -+***+-+			
Upright Brown Algae (not Fucus)				-- - -+++*****		
Whelks (Nucella sp., Searlesia sp.)				- - ++ + + + ++ - -		

Legend: (-) Sparse to rare, (+) Moderate, (*) Abundant

List of Common Species from PY015-B

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., *Prasiola meridionalis*, *Ulva* sp., *Urospora* sp.
3. Brown Algae - Phaeophyta
Costaria costata, *Ectocarpus* spp., *Fucus distichus*, *Hildenbrandia* sp.,
Laminaria groenlandica, *L. saccharina*, *Ralfsia* sp., *Syctosiphon lomentaria*
4. Red Algae - Rhodophyta
Endocladia muricata, *Halosaccion glandiforme*, *Lithothamnion* sp., *Membranoptera*
dimorpha, *Odonthalia floccosa*, *Palmaria palmata*, *Petrocelis* sp., *Porphyra* sp.,
Ptilota filicina, *Rhodomela larix*
5. Higher Plants - *Leymus mollis* (beach rye grass)

Reviewed M.B. 5/20/44

PY015-B Biology Report, continued

II. Marine Animals

1. Sponges - Porifera - Halichondria sp.
2. Anemones - Anthopleura artemesia, Epiactis ritteri, Epizoanthus scotinus, Metridium senile, Urticina crassicornis,
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaete Worms
 - Nereidae - Nereis spp.
 - Serpulidae - Serpula sp.
 - Spirorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii
10. Crustaceans
 - a. Amphipods - Orchestia sp.?, Traskorchestia traskiana
 - b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs
 - Haplogaster sp., Paguridae (hermit crabs)
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
11. Mollusca
 - a. Chitons - Mopalia mucosa, Katharina tunicata, Tonicella lineata,
 - b. Snails - Gastropods
 - Littorina sitkana, L. keenae, Natica clausa, Nucella lamellosa, N. lima, Searlesia dira
 - c. Limpets - Acmaea mitra, Lottia persona, Tectura fenestrata, T. persona, T. scutum, Siphonaria thersites
 - d. Nudibranches - Lamellidoris fusca, Onchidoris sp?.
 - e. Bivalves - Mytilus edulis, Pododesmus cepio
12. Echinoderms
 - a. Brittle Stars - Ophiolus sp., ?
 - b. Sea stars - Dermasterias imbricata, Leptasterias hexactis, Orthasterias keohleri, Pycnopoda helianthoides, Solaster sp.
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Microporina borealis, Schizoporella sp.
15. Fishes
 - Cottidae
 - Stichaeidae - Xiphister atropurpureus, X. mucosus

III. Birds

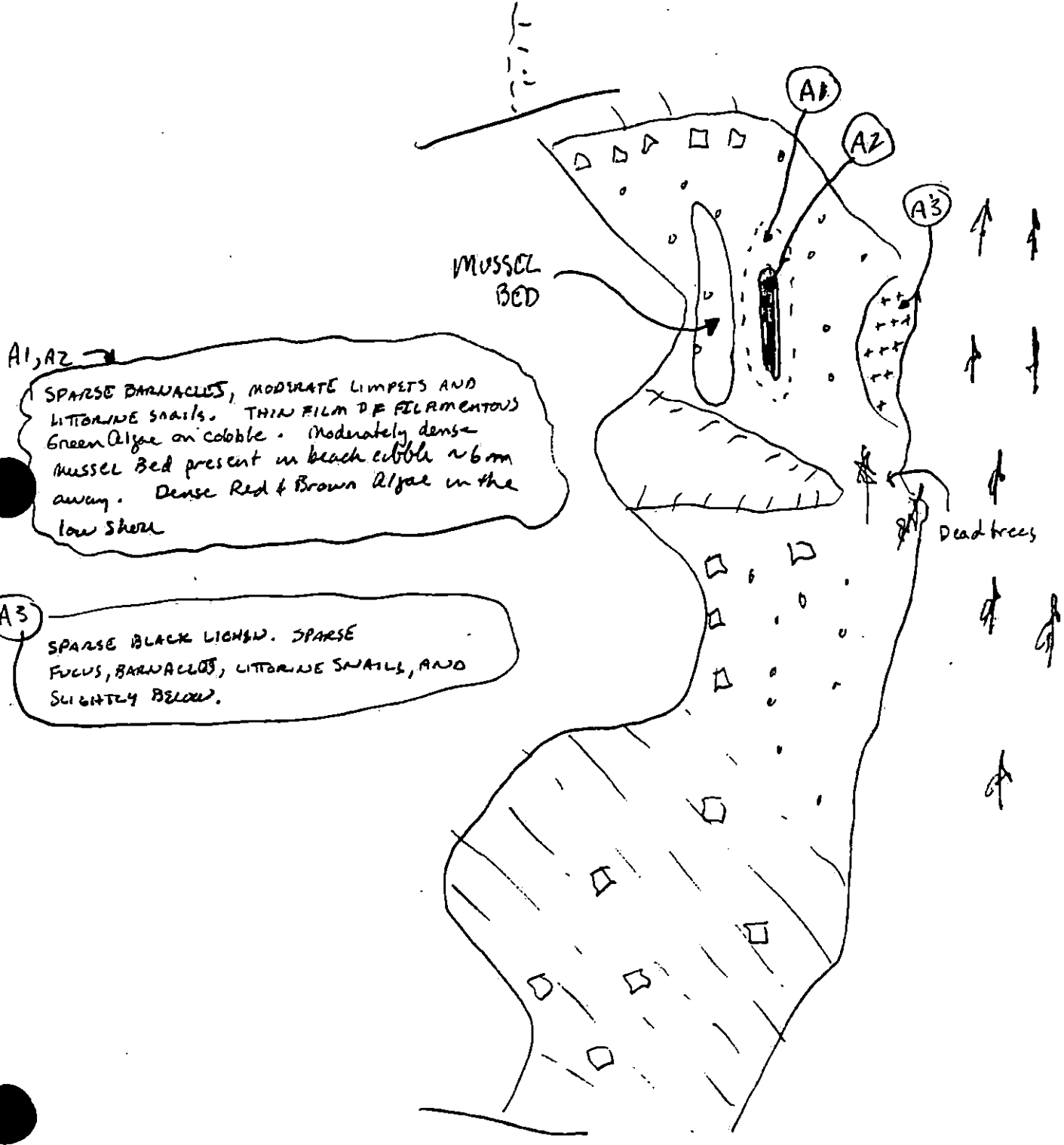
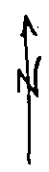
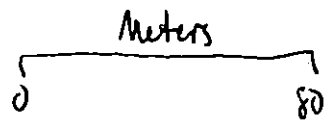
Marbled Murrelet (2), Red-faced Cormorant (1), Glaucous-winged Gull (2), Black-legged Kittiwake (2), Western Sandpiper (3)

BIO SKETCH MAP

JP BARRY
P4015-B
15 MAY 1991
1023-1101

Legend

- Sloping bedrock
- Angular boulders over bedrock
- cobbles/pebbles/boulders
- Pb/Cb



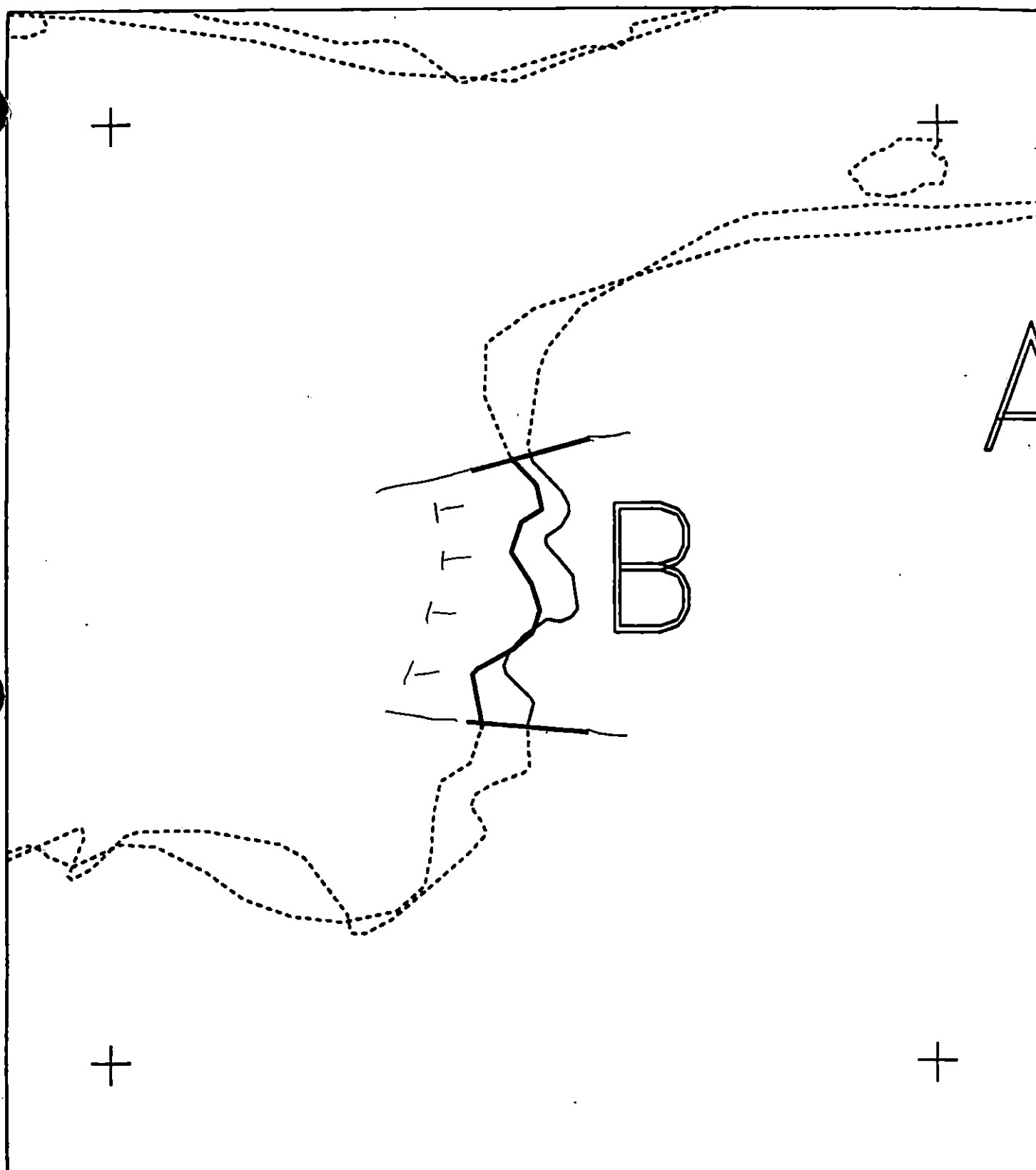
A1, A2

SPARSE BARNACLES, MODERATE LIMPETS AND LITTORINE SNAILS. THIN FILM OF FILAMENTOUS GREEN ALGAE ON COBBLE. Moderately dense MUSSEL BED present in beach rubble ~6m away. Dense Red & Brown ALGAE in the low shore

A3

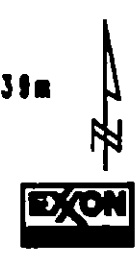
SPARSE BLACK LICHEN. SPARSE FUCUS, BARNACLES, LITTORINE SNAILS, AND SLIGHTLY BELOW.

Dead trees



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

PY015 B
ADEC Subsegment Length: 239m
METERS
0 100 200
AK State Plane Zone 4
apr815b



Subdivision Field Map
Map Key: KENPY015B
Name: JM Sempala
Date: May 15/91
Data Entered:

Reviewed: 5/20/91 MC
Reviewed S.20 4y

1991 MAYSAP EVALUATION

SEGMENT: PY 015 SUB: A REGION: KEN SURVEY DATE: 5/15/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: Timothy Smith Date: 5/30/91

RECOMMENDATIONS:

	INITIAL	TAG	FOSC
TREATMENT REQUIRED (Y or N)	<u>N</u>	<u>N</u>	<u>N</u>
Manual Pickup (Check as Req.)	<u> </u>	<u> </u>	<u> </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:

FOSC:

TAG APPROVAL DATE: MAY 29 1991

ADEC [Signature]

EXXON [Signature]

USCG [Signature]

NOAA [Signature]

FOSC APPROVAL DATE: 6/5/91

FOSC [Signature]

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

⑦

NAME Clara S. Crosby SIGNATURE Clara S. Crosby

~~No~~ previous piling data available -
indicated no oil -

EXXON
NAME George P. Stiles SIGNATURE George P. Stiles 5/17/91

No recoverable oil found.

LANDMANAGER
NAME JOHN P. HARDISTER OF USFWS SIGNATURE J.P. Hardister 5/16/91

No treatment recommended.

USCG/NOAA
NAME 0202 J. Mc Mallon SIGNATURE [Signature]

no recoverable oil located

11011/12011, 11. 12. 1971, 11. 12. 1971, 11. 12. 1971, 11. 12. 1971

PAGE _____ OF _____

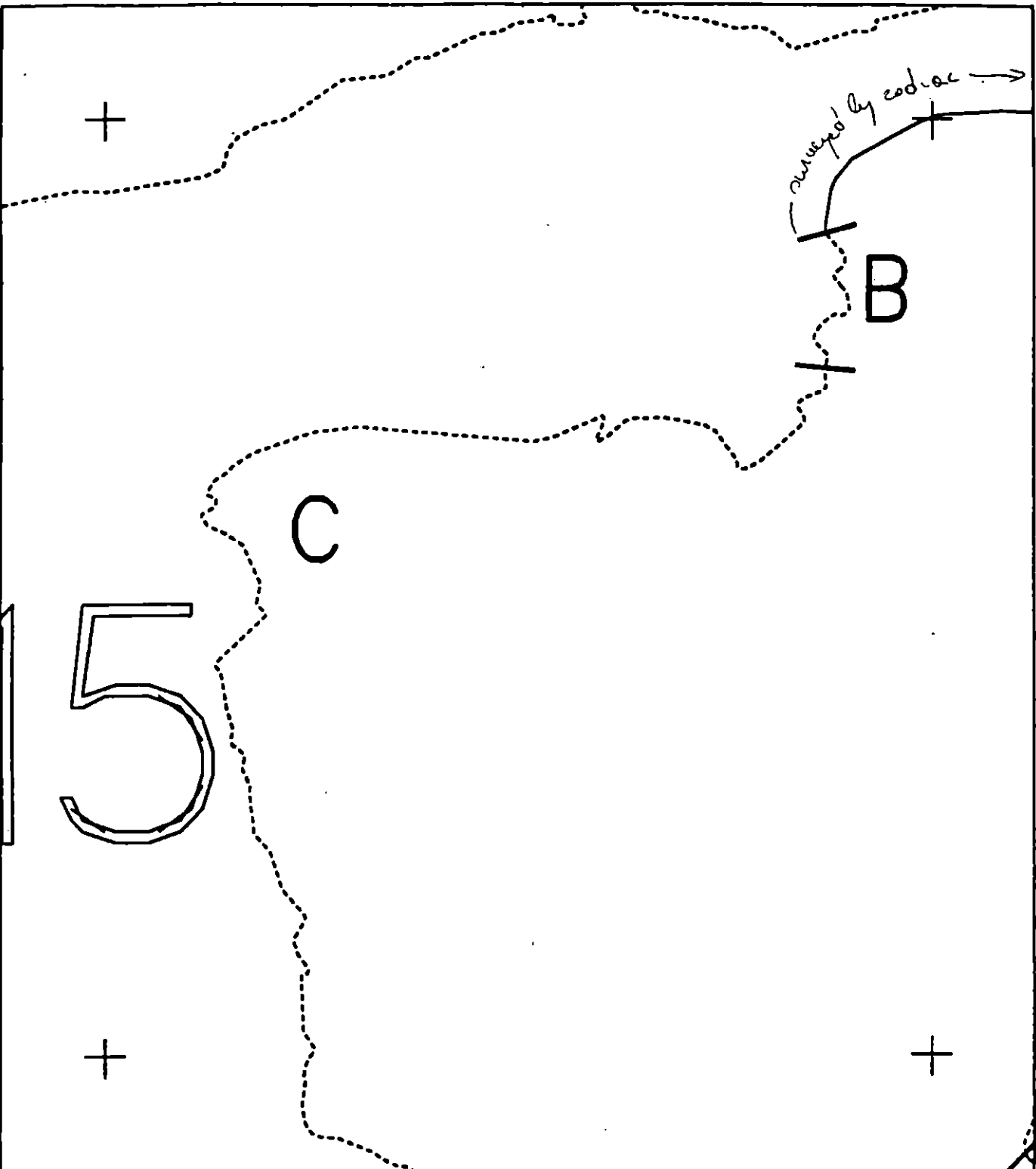
DATE MAY 15 191

EST. OIL CATEGORY LENGTH: W____m M____m N____m VL____m NO 845m US____m

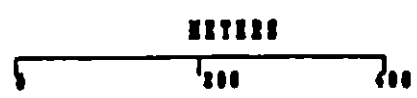
SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE PHOTO ROLL # MAYSAP-_____ - _____ FRAMES

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

reviewed 5.20.94
E/12 E/17



PY015 A

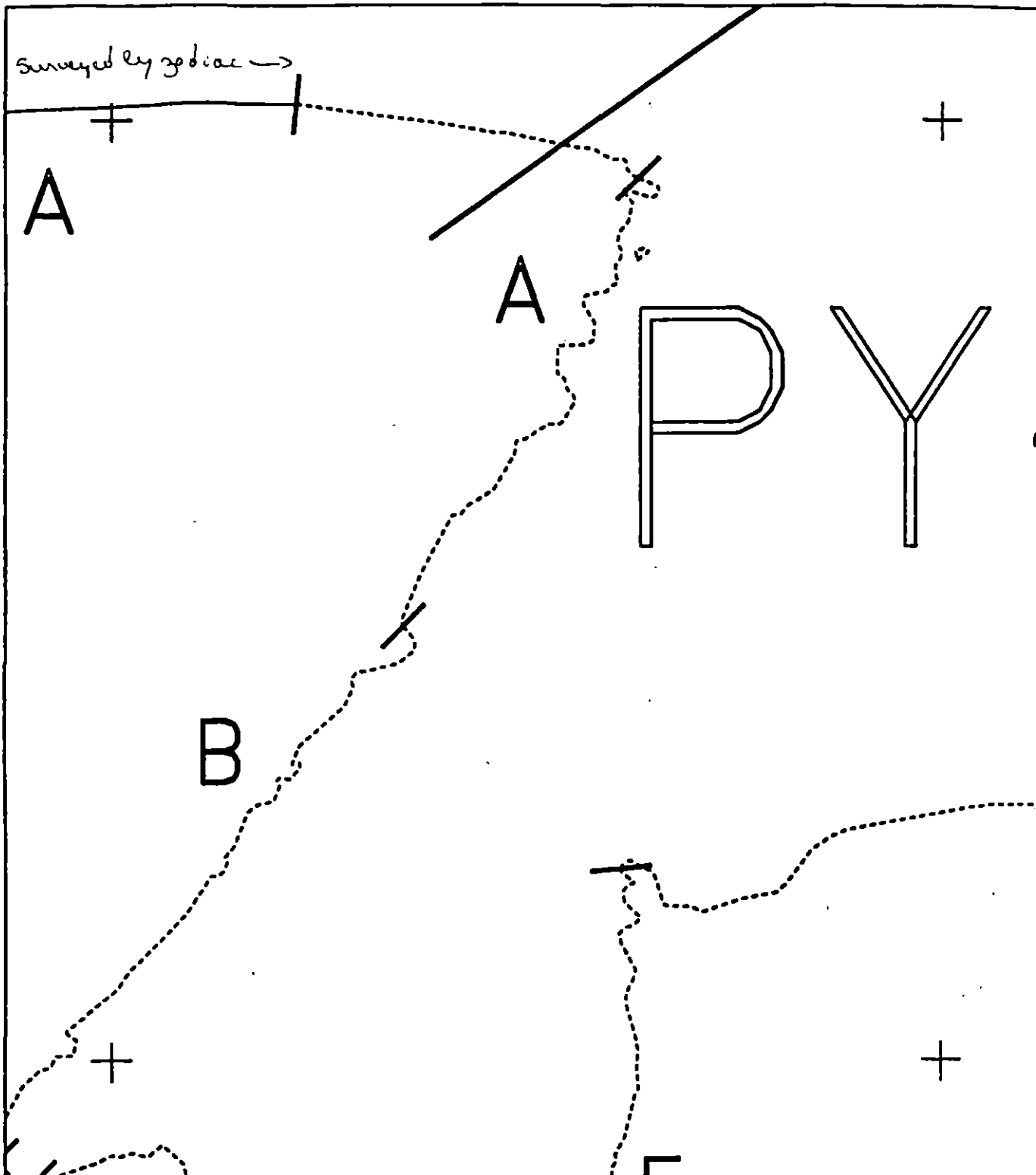


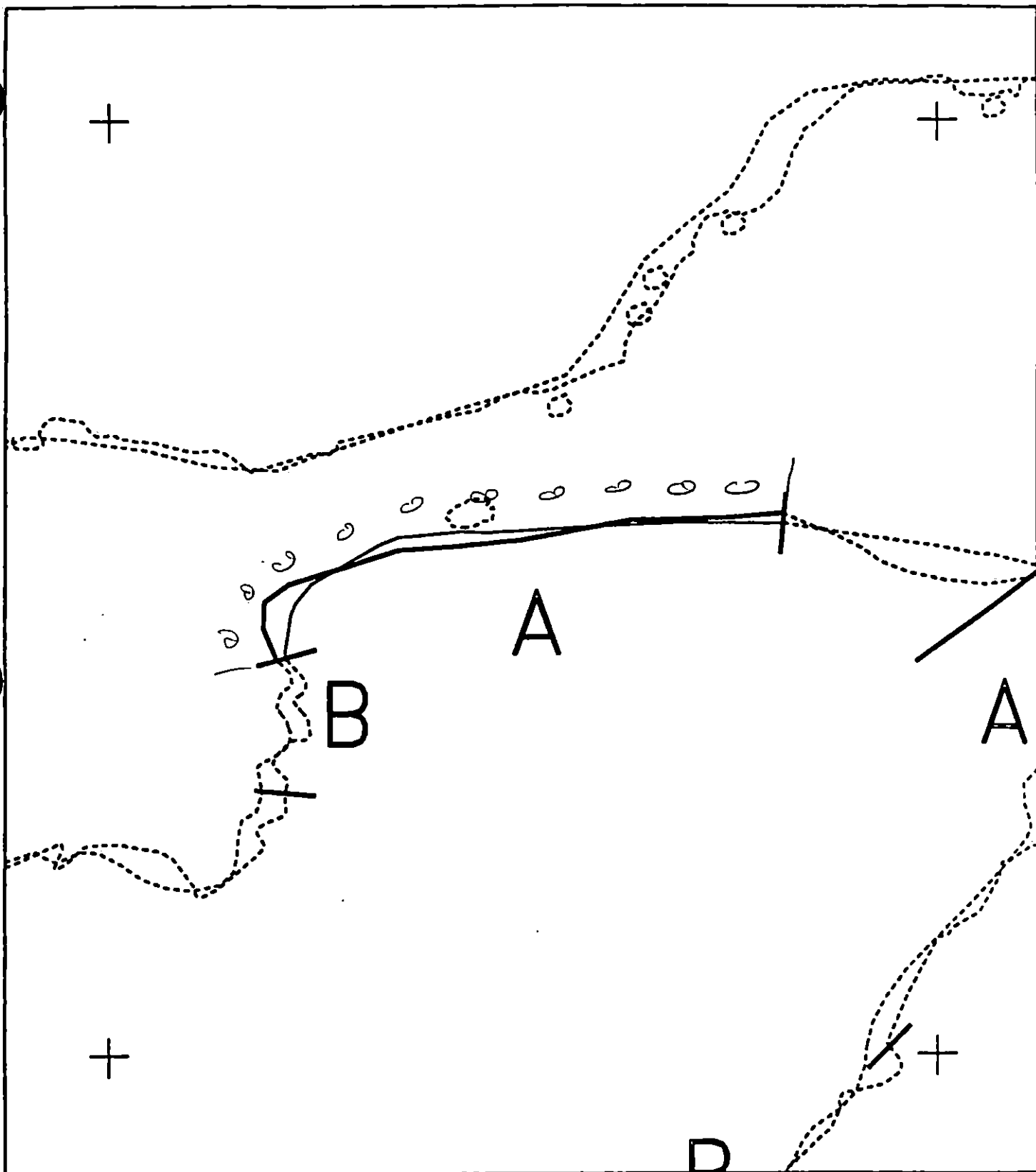
AK State Plane Zone 4
NAD 83

Subdivision Field Map
Map Key: KENPY015Ag
Name: J M Sempel
Date: MAY 15/91

reviewed 5/20 Gy
5/20 F.W.

reviewed 5.20 qy
5/20 F.W.





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

PY015 A
 ADEC Subsegment Length: 845m
 METERS
 0 200 400
 AK State Plane Zone 4
 apy015a



Subdivision Field Map
 Map Key: KENPY015A
 Name: J.M. Sengels
 Date: 15 May 1991
 Data Entered:

reviewed 5.20 99.

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 15, 1991 1100 - 1105
SEGMENT #	PY015	TIDAL HEIGHT (Range)	-0.1 => +0.1
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Variable 0-10 kt, rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

General Features of PY015-A

This subdivision was not closely surveyed and was seen only from boats cruising along the shore. Little or no oil was reported previously for the subdivision.

The shore is largely high angle bedrock cliffs or outcrops, with some talus boulder and cobble shores. The biota of the shore are typical of a low exposure beach with steep bedrock cliffs. Black lichen is abundant in the supratidal and marine species increase from the high intertidal to the subtidal. The adjacent subdivisions in this segment appear to have similar distribution of species. Overall, the subdivision appears healthy. Cover of algae is high, particularly in the low zone, and I suspect that recruitment has occurred recently for many of the common species, as is true for nearby shores.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl			
Gulls/Kittiwakes			
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 5/20/91

PY015-A Biology Report, continued

General Zonation of PY015-A

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal
Oil Spatters		???				
Black Lichen		---+*-----				
Bare Rock		-- --				
Rockweed (Fucus)			---+*+*+*+*+*--+-			
Barnacles (Balanus)			- - +---+--- - - - - -			
Odonthalia (Red Alga)			- -+*+*+*+ - -++ -			
Palmaria (Red Alga)			---+*+*+*+*+*+*+*+*+*			
Other Red Algae				---+*+*+*+*+*+*+*+*+*		
Green Algae (Ulva/other)			- - -++- -+ + - - - -++			
Mussels (Mytilus)			- - - - -			
Crustose Brown Algae (Hildenbrandia)			-----+---+---			
Upright Brown Algae (not Fucus)				-- - -++*+*+*+*+*+*+*+*+*+*		

Legend: (-) Sparse to rare, (+) Moderate, (*) Abundant

List of Species Expected at PY015-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., Prasiola meridionalis, Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Agarum fimbriatum, Costaria costata, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Laminaria saccharina, Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Bossiella sp., Calliarthron sp., Corallina sp., Cryptosiphonia woodii, Cumagloia andersonii, Endocladia muricata, Halosaccion glandiforme, Iridaea sp., Lithothamnion sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria palmata, Petrocelis sp., Porphyra sp., Ptilota filicina, Rhodomela larix
5. Higher Plants - Leymus mollis (beach rye grass)

II. Marine Animals

1. Sponges - Porifera
Halichondria sp., Halichondria panicea, Tethys sp.
2. Anemones - Anthopleura artemesia, A. elegantissima, A. xanthogrammica, Epiactis ritteri, Epizoanthus scotinus, Metridium senile, Urticina crassicornis.
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile, Tubulanus polymorphus
8. Polychaete Worms
Glyceridae
Nereidae - Nereis spp.
Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii

Reviewed M.B. 5/20/91
-1-

PY015-A Biology Report, continued

10. Crustaceans
 - a. Amphipods - *Orchestia* sp.?
 - b. Barnacles - *Balanus glandula*, *Chthamalus dalli*, *Semibalanus cariosus*
 - c. Crabs
Haplogaster sp., *Paguridae* (hermit crabs), *Oregonia gracilis*,
 - d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimorsphaeroma oregonensis*
11. Mollusca
 - a. Chitons - *Mopalia mucosa*, *Katharina tunicata*, *Tonicella lineata*,
 - b. Snails - Gastropods
Amphissa columbiana, *Littorina sitkana*, *L. keenae*, *Natica clausa*,
Nucella lamellosa, *N. lima*, *Tachyrhynchus* sp.
 - c. Limpets - *Acmaea mitra*, *Lottia persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
 - d. Nudibranches - *Lamellidoris fusca*, *Melibe leonina*
 - e. Bivalves - *Chlamys hastata*, *Clinocardium* sp., *C. nuttalli*, *Hiatella arctica*, *Macoma nasuta*, *Modiolus modiolus*, *Mytilus edulis*,
Pododesmus cepio, *Prototheca staminea*, *Saxidomus giganteus*
 - f. Cephalopods - *Octopus dofleini*
12. Echinoderms
 - a. Brittle Stars - *Ophiolus* sp., ?
 - b. Sea stars - *Dermasterias imbricata*, *Evasterias truscheli*, *Henricia leviuscula*, *Leptasterias hexactis*, *Mediaster aequalis*,
Orthasterias keohleri, *Pycnopoda helianthoides*, *Solaster* sp., *Crossaster papposus*
 - c. Sea Cucumbers - *Holothurians* - *Eupentacta* sp.
 - d. Urchins - *Strongylocentrotus droebachiensis*
13. Bryozoans - *Membranipora* sp., *Microporina borealis*, *Schizoporella* sp.
15. Fishes
 - Cottidae
 - Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*

F.W. 5/20/91
Reviewed M.B. 5/20/91

1991 MAYSAP EVALUATION

SEGMENT: PY 015 SUB: A REGION: KEN SURVEY DATE: 5/15/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

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

TEAM NO. 4 SEGMENT DY. 015 SUBDIVISION A DATE MAY 15 1991

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara S. Crosby☒ NTR

~~No~~ previous oiling data available -
indicated no oil -

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles 5/17/91☒ NTR

No recoverable oil found.

LANDMANAGER

NAME

JOHN P. HARDISTER OF USFWS

SIGNATURE

John P. Hardister 5/16/91☒ NTR

No treatment recommended.

USCG/NOAA

NAME

QUOZ J. Mc MAHON

SIGNATURE

Joe Mc Mahon☒ NTR

No recoverable oil located

11/10/91 11:15 AM 11/10/91

PAGE _____ OF _____

SEGMENT Py. 015.

SUBDIVISION A

DATE MAY / 15 / 91

ENERGY LEVEL: ☒ H ☐ M ☐ LWEATHER: ☐ SUN ☒ CLOUDS ☐ FOG ☒ RAIN ☐ SNOWNEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☐ NONE

EST. OIL CATEGORY LENGTH: W_____m M_____m N_____m VL_____m NO. 845m US_____m

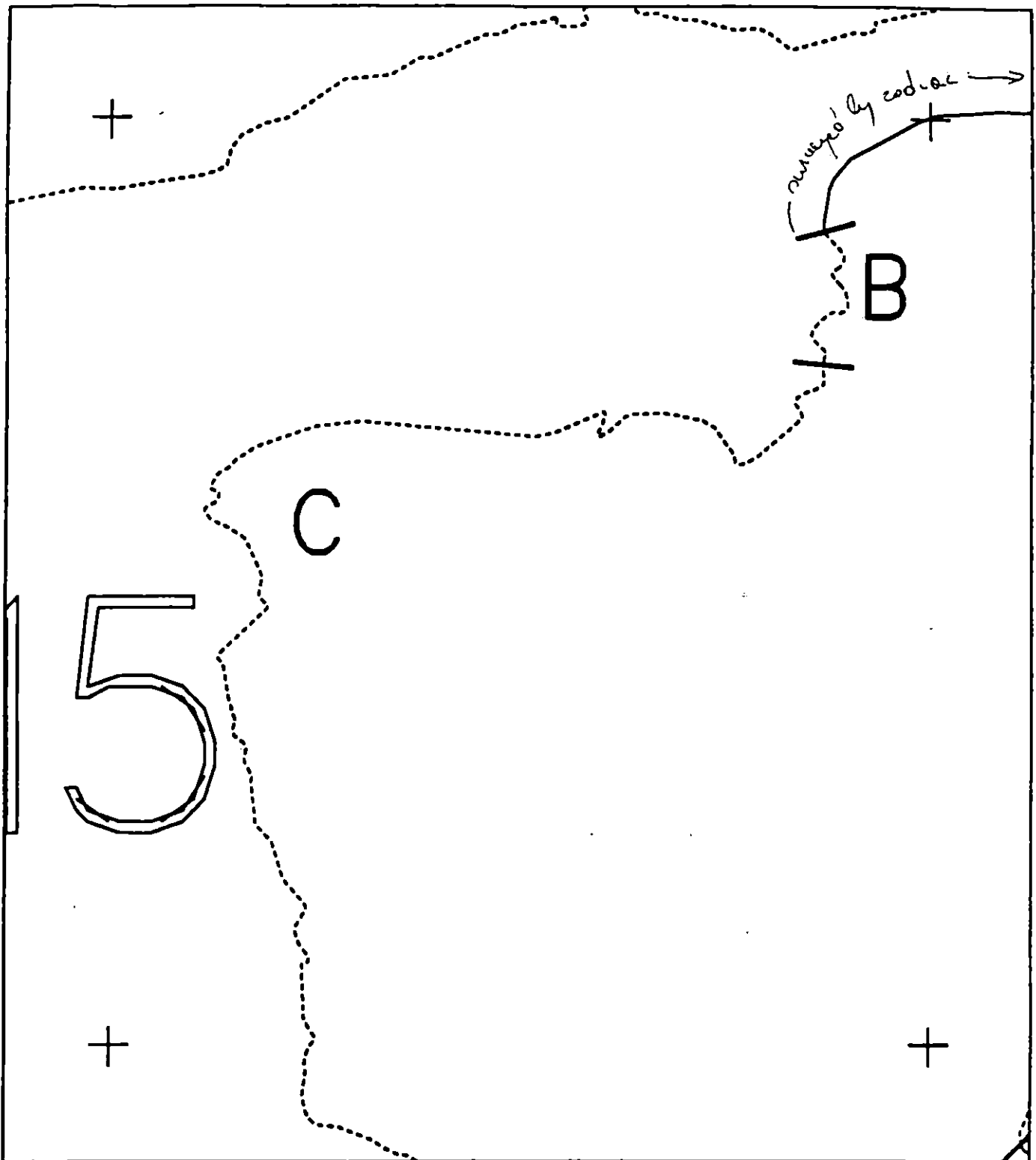
DISTRIBUTION: C = 91-100%; B = 51-90%; P = 11-50%; S = 1-10%; T = <1%

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE PHOTO ROLL # MAYSAP-_____-_____ FRAMES

SHEEN COLOR: B - BROWN: R - RAINBOW: S - SILVER: N - NONE

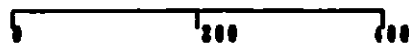
OG COMMENTS: Seaman was surveyed by govt because no o.c.
2.5 but found too small & poor survey and because
the station was being fairly deep. 2.0 m. and so, it
was not a good idea to do a survey.

reviewed 5.20 y4
5/20 F.W.



PY015 A

METERS



AK State Plane Zone 4
SPY015A

Subdivision Field Map

Map Key: KENPY015A

Name: J.M. Sempel

Date: MAY 15 1991

reviewed 5-20 Gy
5/20 F.W.

Surveyed by gpd iac →

A

A

P

Y

B

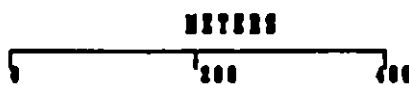
PY015 A

Subdivision Field Map

Map Key: KENPY015A4

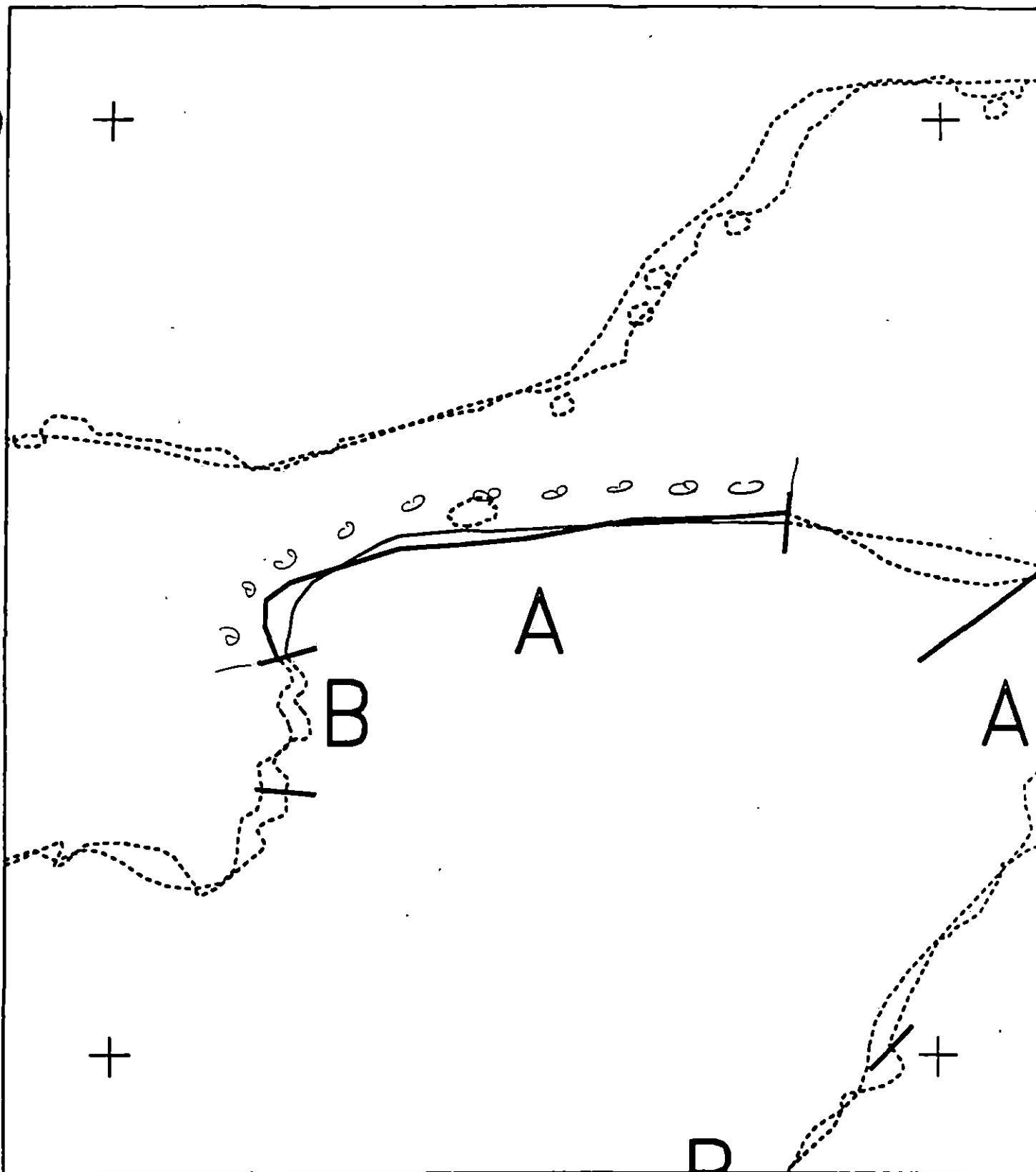
Name: JM Sample

Date: May 15/94



AK State Plane Zone 4
NAD83

reviewed 5/20/94
5/20 F.W.



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

PY015 A
 ADEC Subsegment Length: 845m
 METERS
 0 200 400
 AK State Plane Zone 4
 npy015a



Subdivision Field Map
 Map Key: KENPY015A
 Name: J.M. Serpelo
 Date: 15 May 1991
 Date Entered:

reviewed S.20 Gy
 5/20 P.W.

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 15, 1991 1100 - 1105
SEGMENT #	PY015	TIDAL HEIGHT (Range)	-0.1 => +0.1
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Variable 0-10 kt, rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

General Features of PY015-A

This subdivision was not closely surveyed and was seen only from boats cruising along the shore. Little or no oil was reported previously for the subdivision.

The shore is largely high angle bedrock cliffs or outcrops, with some talus boulder and cobble shores. The biota of the shore are typical of a low exposure beach with steep bedrock cliffs. Black lichen is abundant in the supratidal and marine species increase from the high intertidal to the subtidal. The adjacent subdivisions in this segment appear to have similar distribution of species. Overall, the subdivision appears healthy. Cover of algae is high, particularly in the low zone, and I suspect that recruitment has occurred recently for many of the common species, as is true for nearby shores.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl			
Gulls/Kittiwakes			
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 5/20/91
F.W. 5/20/91

PY015-A Biology Report, continued

General Zonation of PY015-A

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal
Oil Spatters		???				
Black Lichen		---+*-----				
Bare Rock		-- --				
Rockweed (Fucus)			---+*+*+*+*+---+--			
Barnacles (Balanus)			- - +--+---+--- -- --			
Odonthalia (Red Alga)			- -+*+*+*+ - --++ -			
Palmaria (Red Alga)			---+*+*+*+---*+*+--			
Other Red Algae				---+*+*+*+---+*+*+*		
Green Algae (Ulva/other)			- - --++ - + + - - - -++			
Mussels (Mytilus)			- - - - -			
Crustose Brown Algae (Hildenbrandia)			-----+*+*+*+--			
Upright Brown Algae (not Fucus)				-- - -+*+*+*+*+*+*+*+*+*+*		

Legend: (-) Sparse to rare, (+) Moderate, (*) Abundant

List of Species Expected at PY015-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., Prasiola meridionalis, Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Agarum fimbriatum, Costaria costata, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Laminaria saccharina, Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Bossiella sp., Calliarthron sp., Corallina sp., Cryptosiphonia woodii, Cumagloia andersonii, Endocladia muricata, Halosaccion glandiforme, Iridaea sp., Lithothamnion sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria palmata, Petrocelis sp., Porphyra sp., Ptilota filicina, Rhodomela larix
5. Higher Plants - Leymus mollis (beach rye grass)

II. Marine Animals

1. Sponges - Porifera
Halichondria sp., Halichondria panicea, Tethys sp.
2. Anemones - Anthopleura artemesia, A. elegantissima, A. xanthogrammica, Epiactis ritteri, Epizoanthus scotinus, Metridium senile, Urticina crassicornis,
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile, Tubulanus polymorphus
8. Polychaete Worms
Glyceridae
Nereidae - Nereis spp.
Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
9. Peanut worms - Sibunculids - Phascolosoma agassizii

Reviewed M.B. 3/20/9
F.W. 5/20/9

PY015-A Biology Report, continued

10. Crustaceans
 - a. Amphipods - *Orchestia* sp.?
 - b. Barnacles - *Balanus glandula*, *Chthamalus dalli*, *Semibalanus cariosus*
 - c. Crabs
Haplogaster sp., *Paguridae* (hermit crabs), *Oregonia gracilis*,
 - d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimosphera oregonensis*
11. Mollusca
 - a. Chitons - *Mopalia mucosa*, *Katharina tunicata*, *Tonicella lineata*,
 - b. Snails - *Gastropods*
Amphissa columbiana, *Littorina sitkana*, *L. keenae*, *Natica clausa*,
Nucella lamellosa, *N. lima*, *Tachyrhynchus* sp.
 - c. Limpets - *Acmaea mitra*, *Lottia persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
 - d. Nudibranches - *Lamellidoris fusca*, *Melibe leonina*
 - e. Bivalves - *Chlamys hastata*, *Clinocardium* sp., *C. nuttalli*, *Hiatella arctica*, *Macoma nasuta*, *Modiolus modiolus*, *Mytilus edulis*,
Pododesmus cepio, *Prototheca staminea*, *Saxidomus giganteus*
 - f. Cephalopods - *Octopus dofleini*
12. Echinoderms
 - a. Brittle Stars - *Ophiolus* sp., ?
 - b. Sea stars - *Dermasterias imbricata*, *Evasterias truscheli*, *Henricia leviuscula*, *Leptasterias hexactis*, *Mediaster aequalis*,
Orthasterias keohleri, *Pycnopoda helianthoides*, *Solaster* sp., *Crossaster papposus*
 - c. Sea Cucumbers - *Holothurians* - *Eupentacta* sp.
 - d. Urchins - *Strongylocentrotus droebachiensis*
13. Bryozoans - *Membranipora* sp., *Microporina borealis*, *Schizoporella* sp.
15. Fishes
 - Cottidae*
 - Stichaeidae* - *Xiphister atropurpureus*, *X. mucosus*

F.W. 5/20/
Reviewed M.B. 5/20/61

1991 MAYSAP EVALUATION

SEGMENT: PY 015 SUB: C REGION: KEN SURVEY DATE: 5/15/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: Timothy A. Smith

Date: 6/04/91

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: June 4 1991

FOSC APPROVAL DATE: 6/18/91

ADEC

FOSC

EXXON

USCG

NOAA

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

ADEC

NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☒ NTR

Please refer to OG's comments -
Survey crew manually removed oil that is
accessible.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/17/91

☒ NTR

Survey crew manually removed all
recoverable oil.

LANDMANAGER

NAME John Hackett OF USFWS SIGNATURE _____

☐ NTR

USCG/NOAA

NAME CWO2 J. MC Matton SIGNATURE J. Mc Matton

☒ NTR

light traces of TB/AP - VECO crew successfully
removed majority.

NRAA / DONALD A. MACI 301 and

Donald A. Maci

TEAM NO. 4 SEGMENT P4.0/5 SUBDIVISION C DATE 7/15/91

ADEC	
NAME _____	SIGNATURE _____
☐ NTR	

EXXON	
NAME _____	SIGNATURE _____
☐ NTR	

LANDMANAGER	
NAME <u>JOHN P. HARDISTER</u> OF <u>USFWS</u>	SIGNATURE <u>John P. Hardister 7/16/91</u>
☒ NTR <i>most of the oil located on this subsection was removed during the survey. Further cleanup is not necessary.</i>	

USCG/NOAA	
NAME _____	SIGNATURE _____
☐ NTR	

PAGE ____ OF ____

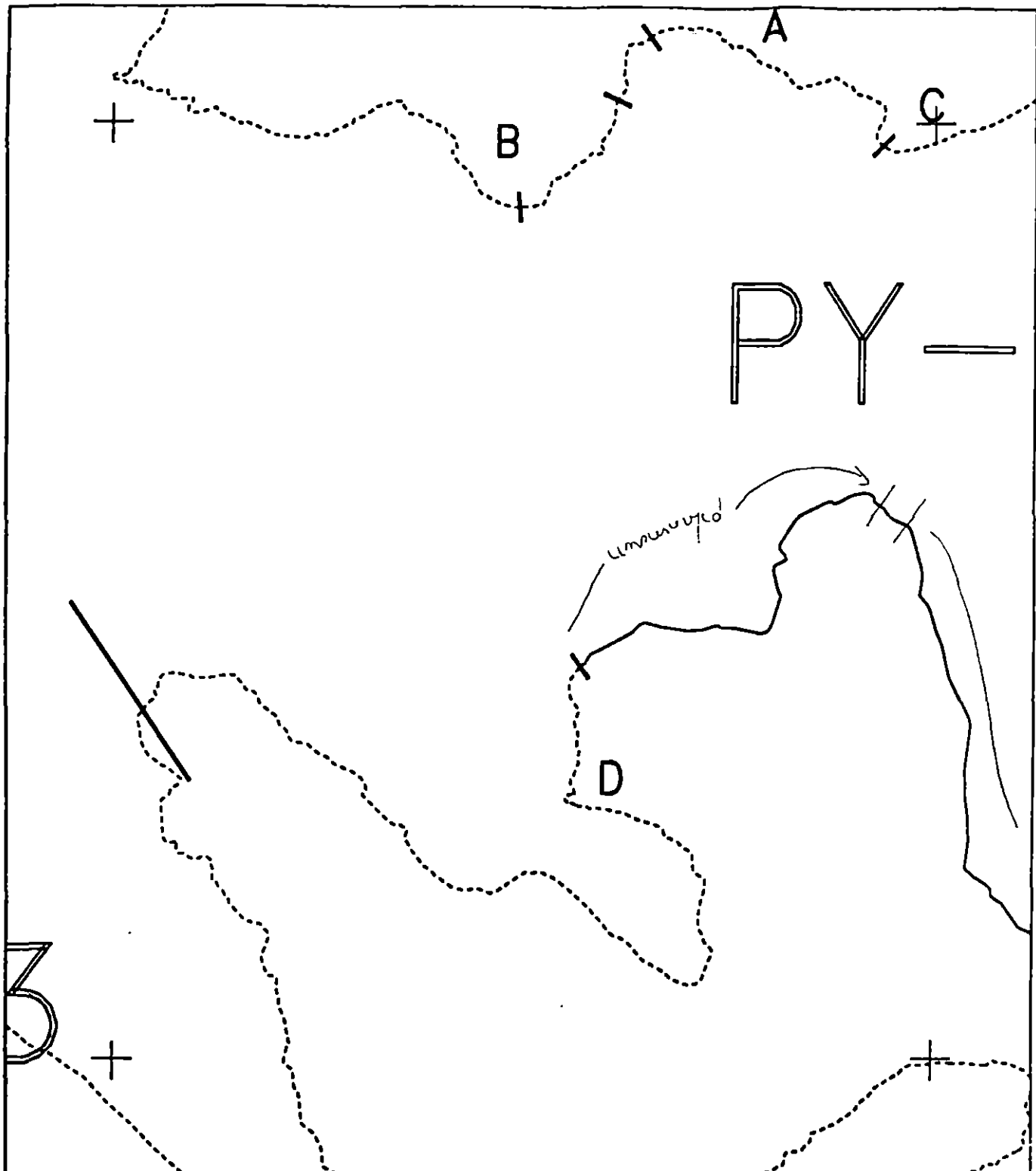
DATE MAY 11 1915

ENERGY LEVEL: ☒ H ☐ M ☐ L

W - m M - m N - m VL 3900 m NO - m US 3993 m

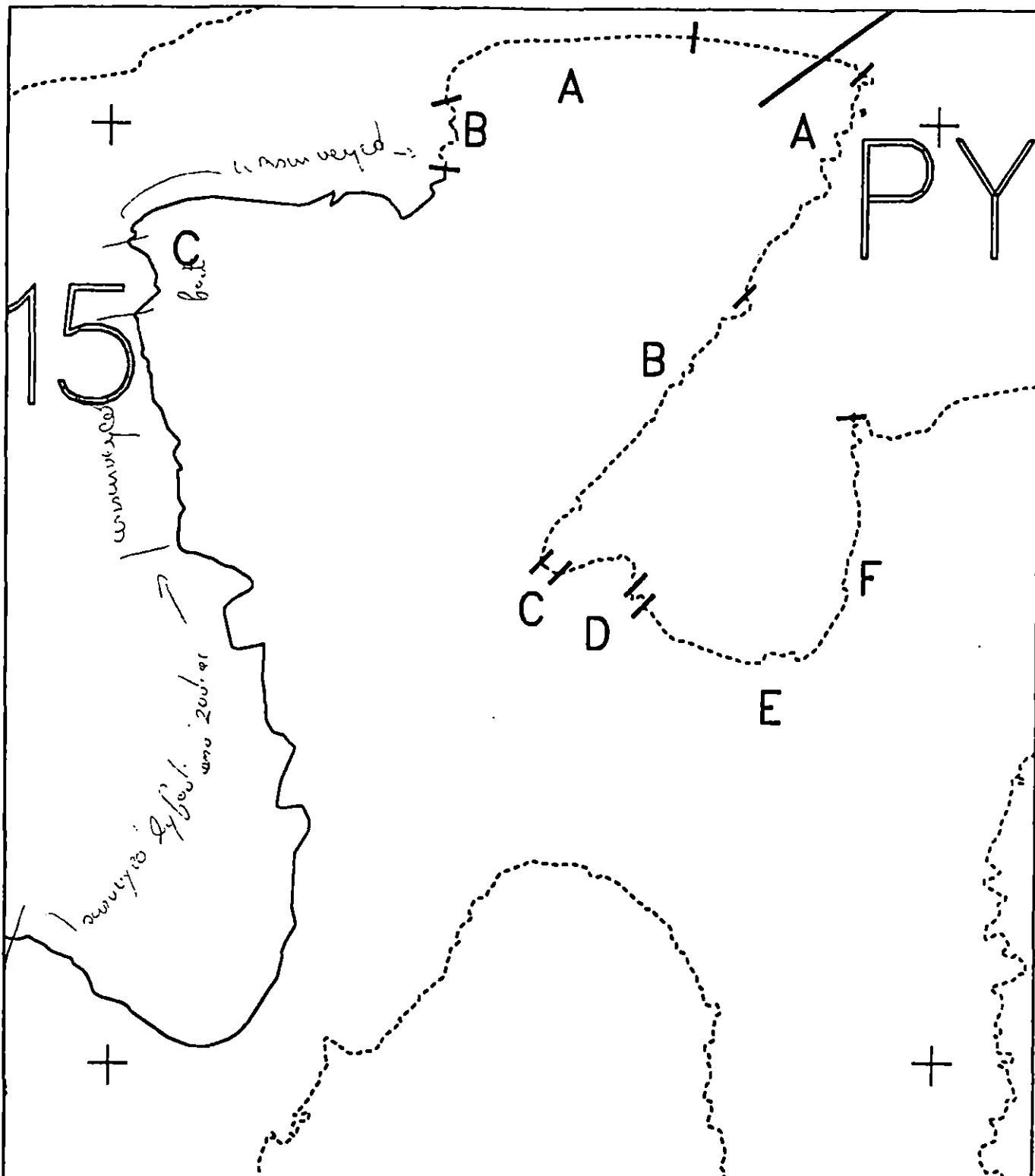
SHEEN COLOR: B - BROWN: R - RAINBOW: S - SILVER: N - NONE

REVISED: F.W. 5/26/91



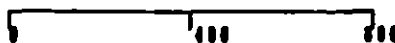
 	PY015 C		Subdivision Field Map
	METERS		Map Key: KENPY015Ca
	0 100 200		Name: <u>J.M. Semple</u>
	AK State Planning Zone 4 py015ca		Date: <u>May 15/91</u>

REVIEWED: F.W. 5/26/91



PY015 C

METERS



AK State Plane Zone 4
applied

Subdivision Field Map

Map Key: KENPY015C6

Name: J.M. Gempich

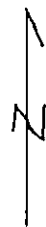
Date: May 15/91

REVIEWED: F.W. S66K

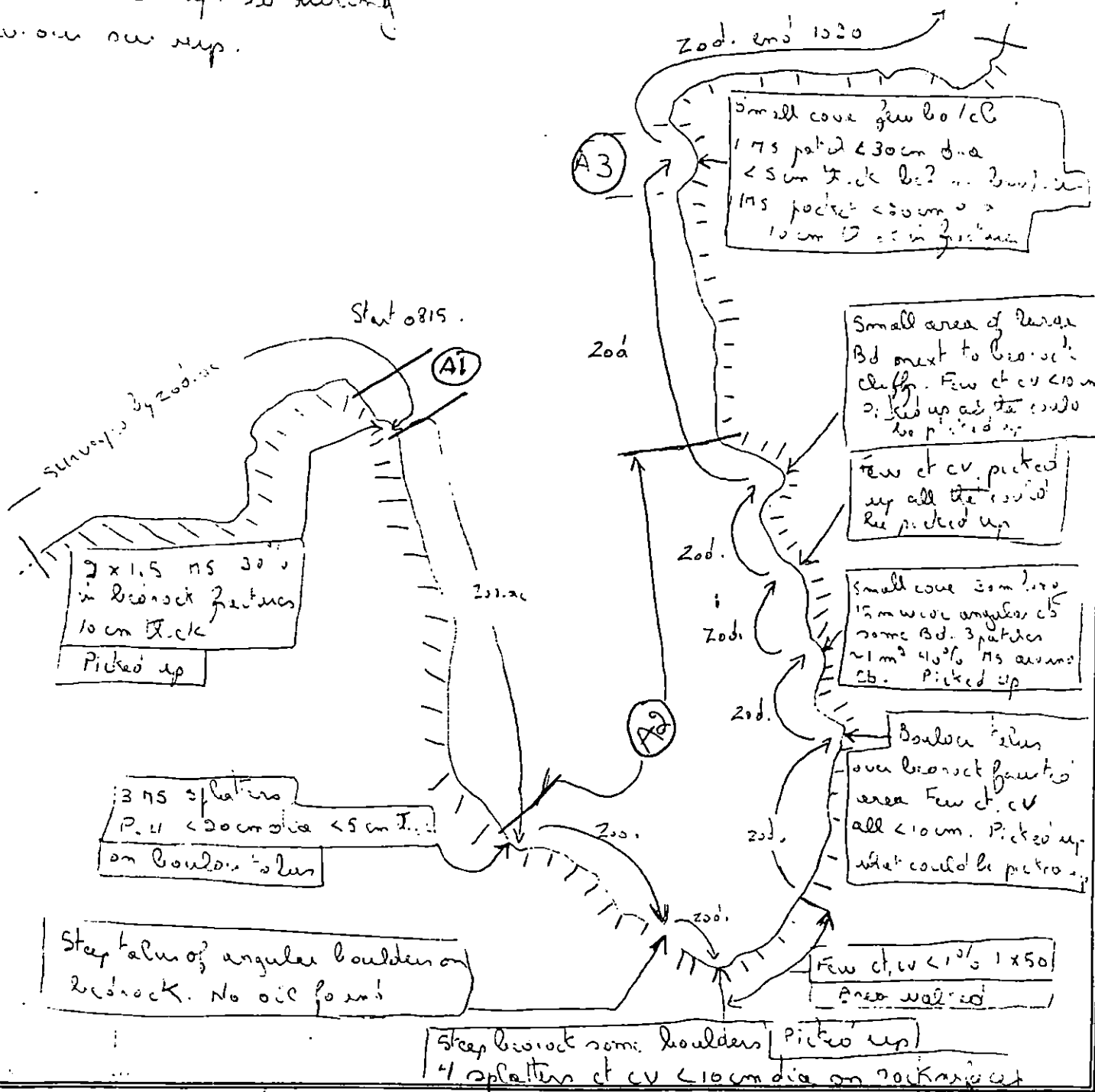
D.G. Skel Map

P4.015.C
 JM Samples
 May 15/91
 08:50-1030

Legend
 ▣ Steeply sloping
 bedrock, occasional
 steepening of lower
 angular boulders.



Alt. Spot checked by Zodiak
 over areas of which no
 3 C has been reported during
 previous survey.



REVIEWED: F.D. 5/26/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 15, 1991 0815 - 1020
SEGMENT #	PY015	TIDAL HEIGHT (Range)	-2.7 => -3.5 => -2.0
SUBDIVISION	C	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Variable 0-10 kt, rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

General Features of PY015-C

This long subdivision encompasses the larger of 2 coves on segment PY015 and is very similar to PY015-D. The cove faces the north and is protected from large waves. Most of the shore is high angle bedrock or talus, with occasional pocket beaches of cobble and pebbles. The shores nearly all exhibit similar zonation patterns and are dominated by Fucus in the mid-shore and several species of red and green algae in the low shore. The subtidal is nearly completely covered by large brown algae. The nudibranch, Melibe leonina, was particularly abundant on the kelps in the subtidal zone along this subdivision.

A1 This extended area all shows similar oiling in the upper intertidal zone, with scattered patches of SOR. The oil is mainly confined to the upper zone amongst the transitional flora and fauna between the zone of black lichen (Verrucaria) and the upper intertidal assemblage of Fucus, barnacles, green algae, limpets, and littorine snails. The shores are quite diverse and healthy and show no evidence of recent oil-related damage. Below the oiled area, Fucus, as well as limpets, barnacles, littorine snails, and the lower zone flora and fauna cover the shore very densely, and grade into a subtidal habitat dominated by large brown algae. At a couple locations where the shore is somewhat more shallow in slope, the subtidal has a sparse eel grass and clam bed.

Manual cleanup was performed during the survey. Additional manual cleanup, if recommended, would not harm the biota along this segment.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	3	26	
Waterfowl	2	6	
Gulls/Kittiwakes	2	30	
Shorebirds	1	5	
Corvids			
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters		River Otter	1
Pinnipeds (specify)		Black Bear	1
Sea Lion	10		
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

7/15/91 NW

PY015-C Biology Report, continued

General Zonation of PY015-C

Biotas:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal
Oil Spatters		- - -				
Black Lichen		--++*-----				
Bare Rock		-- - -				
Rockweed (Fucus)			--+***+*-+-	- -		
Barnacles (Balanus)			- - +++-+---	---	---	
Odonthalia (Red Alga)				- ++**++ -	---++ -	
Palmaria (Red Alga)				---+*****--***-+		
Other Red Algae					---+***+-+*****	
Green Algae (Ulva/other)			- - --+-	+ + - -	- - -+++	
Mussels (Mytilus)				- - - -	-	
Crustose Brown Algae (Hildenbrandia)				-----+++-+--		
Upright Brown Algae (not Fucus)					-- - -++++*****	
Eel Grass						- -++*
Clams						- - - - -

Legend: (-) Sparse to rare, (+) Moderate, (*) Abundant

List of Common Species from PY015-C

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., *Prasiola meridionalis*, *Ulva* sp., *Urospora* sp.
3. Brown Algae - Phaeophyta
Alaria marginata, *Agarum fimbriatum*, *Costaria costata*, *Ectocarpus* spp., *Fucus distichus*, *Hildenbrandia* sp., *Laminaria saccharina*, *Ralfsia* sp., *Syctosiphon lomentaria*
4. Red Algae - Rhodophyta
Bossiella sp., *Calliarthron* sp., *Corallina* sp., *Cryptosiphonia woodii*, *Cumagloia andersonii*, *Endocladia muricata*, *Halosaccion glandiforme*, *Iridaea* sp., *Lithothamnion* sp., *Membranoptera dimorpha*, *Odonthalia floccosa*, *Palmaria palmata*, *Petrocelis* sp., *Porphyra* sp., *Ptilota filicina*, *Rhodomela larix*
5. Higher Plants - *Leymus mollis* (beach rye grass)

II. Marine Animals

1. Sponges - Porifera
Halichondria sp., Halichondria panicea, Tethys sp.
2. Anemones - Anthopleura artemesia, A. elegantissima, A. xanthogrammica,
Epiactis ritteri, Epizoanthus scotinus, Metridium senile, Urticina
crassicornis,
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile, Tubulanus polymorphus
8. Polychaete Worms
Glyceridae
Nereidae - Nereis spp.
Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
Spriorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii

PYQ15-C Biology Report, continued

10. Crustaceans

- a. Amphipods - *Orchestia* sp.?
- b. Barnacles - *Balanus glandula*, *Chthamalus dalli*, *Semibalanus cariosus*
- c. Crabs
Haplogaster sp., Paguridae (hermit crabs), *Oregonia gracilis*,
- d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimorsphaeroma oregonensis*

11. Mollusca

- a. Chitons - *Mopalia mucosa*, *Katharina tunicata*, *Tonicella lineata*,
- b. Snails - Gastropods
Amphissa columbiana, *Littorina sitkana*, *L. keenae*, *Natica clausa*,
Nucella lamellosa, *N. lima*, *Tachyrhynchus* sp.
- c. Limpets - *Acmaea mitra*, *Lottia persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
- d. Nudibranches - *Lamellidoris fusca*, *Melibe leonina*
- e. Bivalves - *Chlamys hastata*, *Clinocardium* sp., *C. nuttalli*, *Hiatella arctica*, *Macoma nasuta*, *Modiolus modiolus*, *Mytilus edulis*,
Pododesmus cepio, *Prototheca staminea*, *Saxidomus giganteus*
- f. Cephalopods - *Octopus dofleini*

12. Echinoderms

- a. Brittle Stars - *Ophiolus* sp., ?
- b. Sea stars - *Dermasterias imbricata*, *Evasterias truscheli*, *Henricia leviuscula*, *Leptasterias hexactis*, *Mediaster aequalis*,
Orthasterias keohleri, *Pycnopoda helianthoides*, *Solaster* sp., *Crossaster papposus*
- c. Sea Cucumbers - Holothurians - *Eupentacta* sp.
- d. Urchins - *Strongylocentrotus droebachiensis*

13. Bryozoans - *Membranipora* sp., *Microporina borealis*, *Schizoporella* sp.

15. Fishes

Cottidae

Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*

III. Birds

Marbled Murrelet (6), Red-faced Cormorant (10), Pigeon Guillemot (10),
Barrow's Goldeneye (2), Glaucous-winged Gull (10), Black-legged Kittiwake
(20), Western Sandpiper (5), common merganser (4)

BIO SKETCH MAP

P4015-C

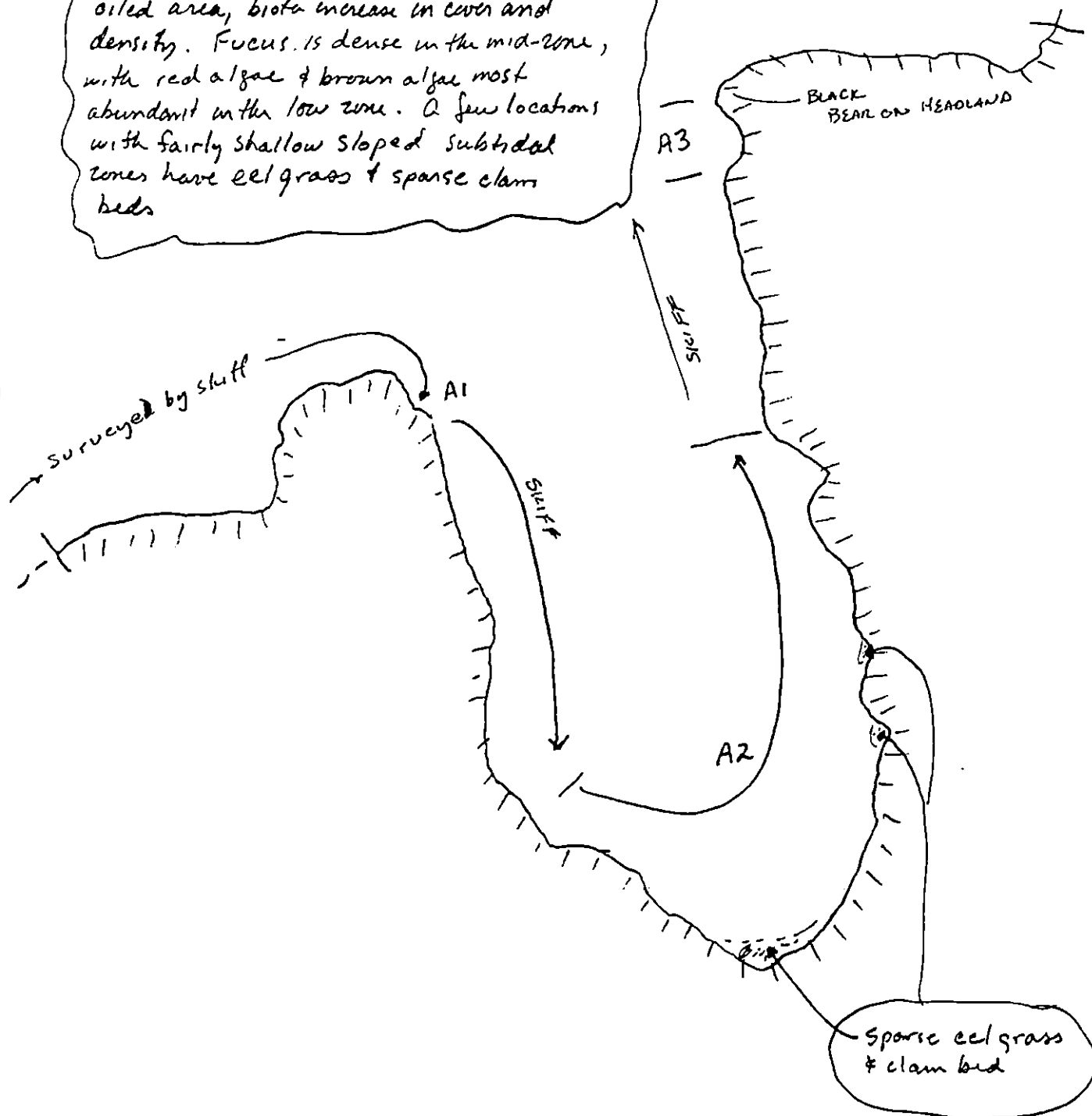
15 MAY 1991

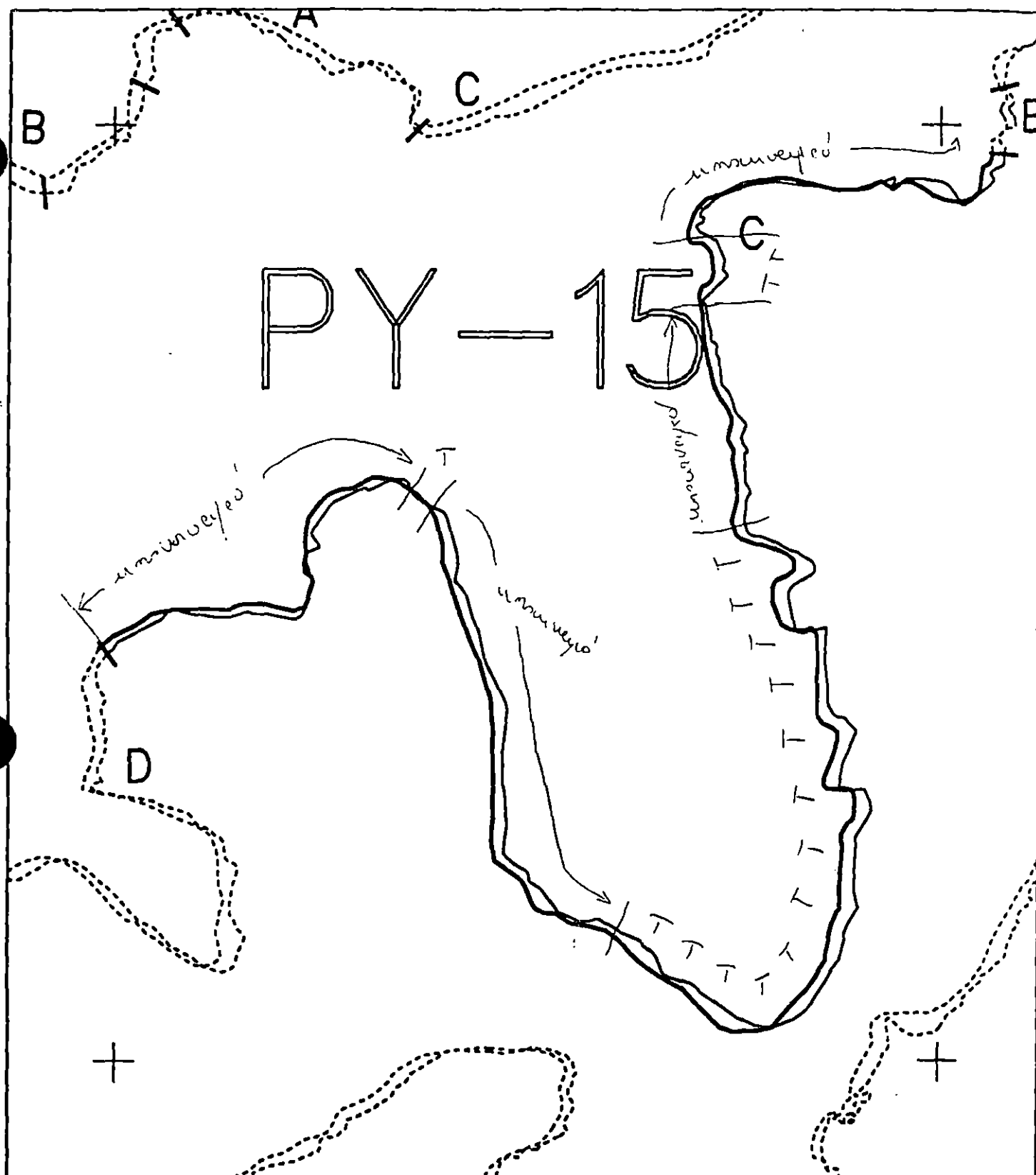
J P BARRY

Legend

- ☐ Steeply Sloping bedrock, occasional steep talus of large angular boulders.

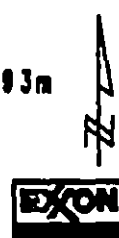
A1-A3 - Similar distribution of oil and biota at each location. Oil confined to upper zone. Black lichen and upper edge of marine species (barnacles, green algae, *Fucus*, limpets, littorine snails). Below oiled area, biota increase in cover and density. *Fucus* is dense in the mid-zone, with red algae & brown algae most abundant in the low zone. A few locations with fairly shallow sloped subtidal zones have eel grass & sparse clam beds.





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

PY015 C
 ADEC Subsegment Length: 7193m
 METERS
 0 400 800
 AK State Plane Zone 4
 sp9013ca



Subdivision Field Map
 Map Key: KENPY015Ca
 Name: J M Semple
 Date: MAY 15 / 91
 Date Entered:

REVIEWED: F.W. 5/26/91

1991 MAYSAP EVALUATION

SEGMENT: PY 015 SUB: D REGION: KEN SURVEY DATE: 5/15/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: Timothy A. Smith Date: 5/30/91

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 29 1991

FOSC APPROVAL DATE: 6/5/91

ADEC

FOSC

EXXON

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

USCG

NOAA

MAYSAP FIELD SHORELINE COMMENT SHEET

P4015-D

1/8

TEAM NO. 4 SEGMENT P4.015 SUBDIVISION 3 DATE May 15 /91

ADEC

NAME Clara J. Crosby SIGNATURE Clara J. Crosby☒ NTR

Survey crew recovered oiling observed - & accessible -
Lt CV/CT remains in splatter distribution.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/16/91☒ NTR

No appreciable oil remaining. Survey
crew picked up. 1 1/2 bags. while surveying.

LANDMANAGER

NAME JOHN P. HARDISTER OF USFWS SIGNATURE John P. Hardister 5/16/91☒ NTR

concur with ADEC and EXXON representatives.

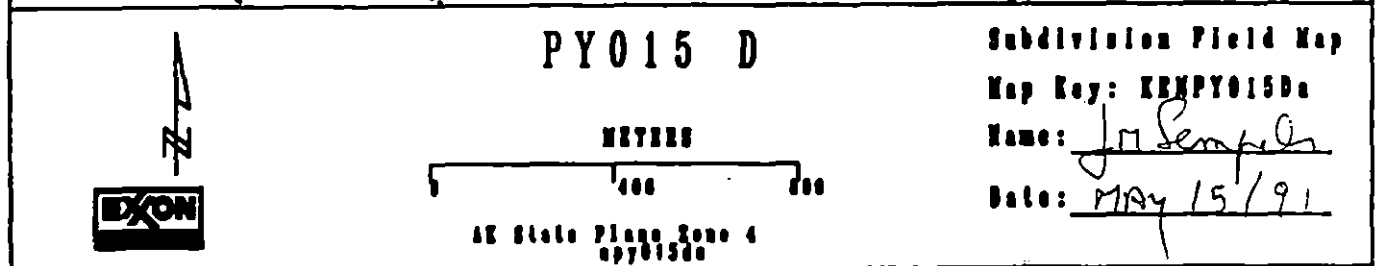
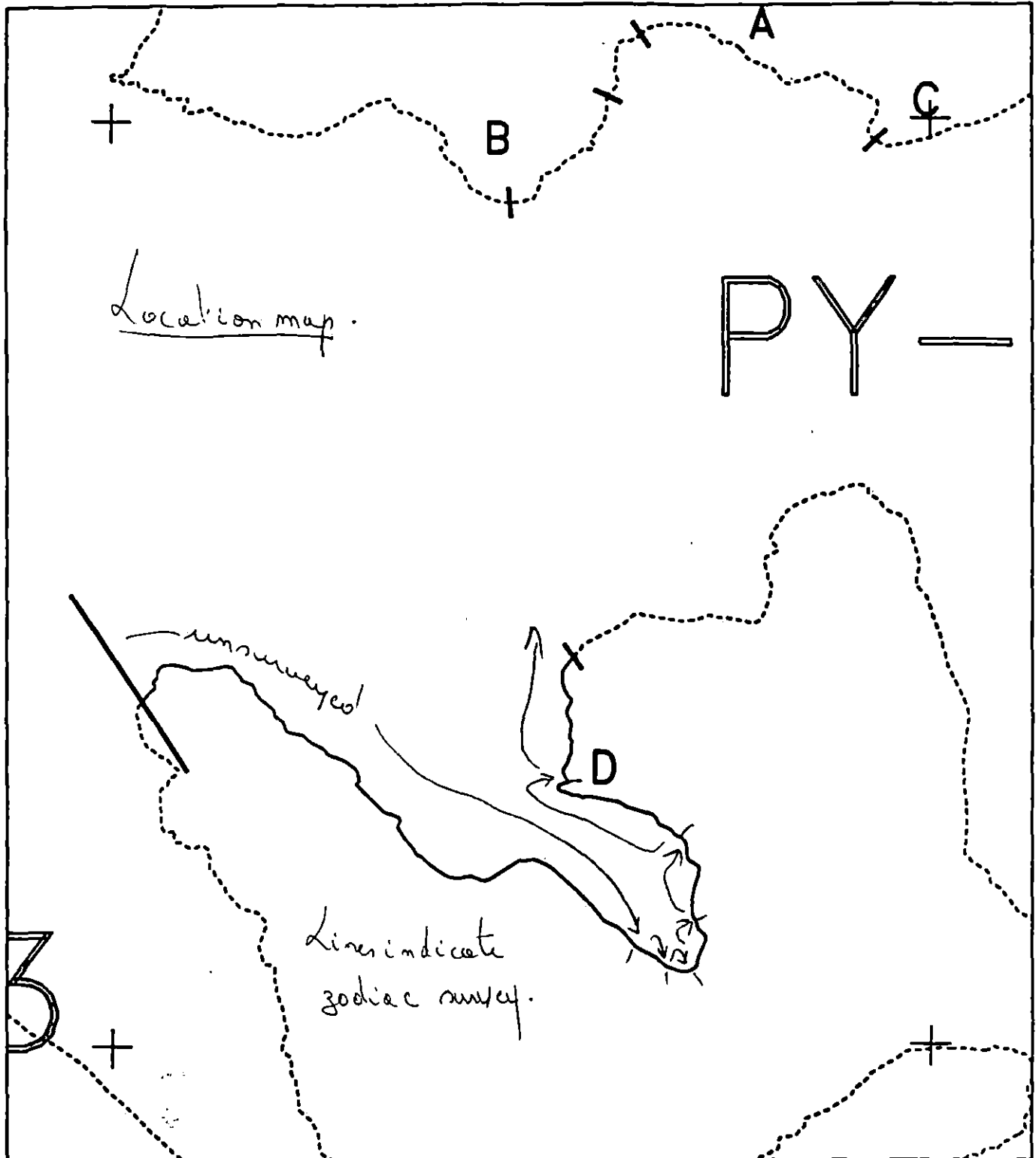
USCG/NOAA

NAME Curtis J. McIlhenny SIGNATURE Curtis J. McIlhenny☒ NTR

Concur with Exxon rep.

PAGE 2 OF 9

reviewed 5.18.91 QY



reviewed 5.18.91 GY
REVIEWED CD 18 MAY

og Sketch Map

P4 015-D

JM Samples

May 15/91

0633.0758

Legend

 Steep bedrock

 Bd / cb / pb

all angular

Long narrow of steep bedrock sometimes with steep
talus of angular boulders / cobbles / pebbles, particularly
in faulted areas. Much too steep to be accessible
and survey consisted of 30m act + as many
spot checks as possible.

Meters

0 100

Zodiac

Typical Profile

15m

Leave 0758

1 MS splatter
< 20cm dia

P.U

Few small
MS, cv splatters
< 10cm dia

P.U

Bd / pb accumulation
near streams, 2 small
MS splatters < 10cm each

P.U.

Arrive 0633

Low rounded bedrock headland
A few ct, cv, 1 HSOA where MS
is penetrated sed

P.U

Few small cv, MS - P.U

cb / Bd / pb
small cv, MS

- P.U

Large boulder talus in front of
slide area. Includes small intertidal
pond. Few tiny ct, 1 area 5x8
cv, MS < 20cm < 5%

Worked on

reviewed 5.18.91 JY
REVIEWED 18 MAY

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 15, 1991 0633 - 0815
SEGMENT #	PY015	TIDAL HEIGHT (Range)	+2.7 => -2.7
SUBDIVISION	D	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Variable 0-10 kt, rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

General Features of PY015-D

This long subdivision encompasses the smaller of 2 coves on segment PY015. The cove faces the north and is protected from waves, except for the headlands bordering the cove, which experience moderate swell. Most of the shore is high angle bedrock or talus, with occasional pocket beaches of cobble and pebbles. The shores nearly all exhibit similar zonation patterns and are dominated by Fucus in the mid-shore and several species of red and green algae in the low shore. The subtidal is nearly completely covered by large brown algae. The nudibranch Melibe leonina was particularly abundant on the kelps in the subtidal zone along this subdivision.

- A1 This extended area all shows similar oiling in the upper intertidal zone, with scattered patches of SOR. The oil is mainly confined to the upper zone amongst the transitional flora and fauna between the zone of black lichen (Verrucaria) and the upper intertidal assemblage of Fucus, barnacles, green algae, limpets, and littorine snails. The shores are quite diverse and healthy and show no evidence of recent oil-related damage. Below the oiled area, Fucus, as well as limpets, barnacles, littorine snails, and the lower zone flora and fauna cover the shore very densely, and grade into a subtidal habitat dominated by large brown algae. At a couple locations where the shore is somewhat more shallow in slope, the subtidal has a sparse eel grass and clam bed.

Some manual pickup performed on shore. Additional manual pickup, if performed, will do no harm to the intertidal biota.
(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	3	6	
Waterfowl	1	8	
Gulls/Kittiwakes	2	11	
Shorebirds	1	2	
Corvids	1	2	
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

Good photo, no

General Zonation of PY015-D

Legend: (-) Sparse to rare, (+) Moderate, (*) Abundant

List of Common Species from PY015-D

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., *Prasiola meridionalis*, *Ulva* sp., *Urospora* sp.
3. Brown Algae - Phaeophyta
Alaria marginata, *Agarum fimbriatum*, *Costaria costata*, *Ectocarpus* spp., *Fucus distichus*, *Hildenbrandia* sp., *Laminaria saccharina*, *Ralfsia* sp., *Syctosiphon lomentaria*
4. Red Algae - Rhodophyta
Bossiella sp., *Calliarthron* sp., *Corallina* sp., *Cryptosiphonia woodii*, *Cumagloia andersonii*, *Endocladia muricata*, *Halosaccion glandiforme*, *Iridaea* sp., *Lithothamnion* sp., *Membranoptera dimorpha*, *Odonthalia floccosa*, *Palmaria palmata*, *Petrocelis* sp., *Porphyra* sp., *Ptilota filicina*, *Rhodomela larix*
5. Higher Plants - *Leymus mollis* (beach rye grass)

II. Marine Animals

1. Sponges - Porifera
Halichondria sp., Halichondria panicea, Tethys sp.
2. Anemones - Anthopleura artemesia, A. elegantissima, A. xanthogrammica,
Epiactis ritteri, Epizoanthus scotinus, Metridium senile, Urticina
crassicornis,
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile, Tubulanus polymorphus
8. Polychaete Worms
Glyceridae
Nereidae - Nereis spp.
Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii

PY015-D Biology Report, continued

10. Crustaceans

- a. Amphipods - *Orchestia* sp.?
- b. Barnacles - *Balanus glandula*, *Chthamalus dalli*, *Semibalanus cariosus*
- c. Crabs
Haplogaster sp., *Paguridae* (hermit crabs), *Oregonia gracilis*,
- d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimorsphaeroma oregonensis*

11. Mollusca

- a. Chitons - *Mopalia mucosa*, *Katharina tunicata*, *Tonicella lineata*,
- b. Snails - *Gastropods*
Amphissa columbiana, *Littorina sitkana*, *L. keenae*, *Natica clausa*,
Nucella lamellosa, *N. lima*, *Tachyrhynchus* sp.
- c. Limpets - *Acmaea mitra*, *Lottia persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
- d. Nudibranches - *Lamellidoris fusca*, *Melibe leonina*
- e. Bivalves - *Chlamys hastata*, *Clinocardium* sp., *C. nuttalli*, *Hiatella arctica*, *Macoma nasuta*, *Modiolus modiolus*, *Mytilus edulis*,
Pododesmus cepio, *Prototheca staminea*, *Saxidomus giganteus*
- f. Cephalopods - *Octopus dofleini*

12. Echinoderms

- a. Brittle Stars - *Ophiolus* sp., ?
- b. Sea stars - *Dermasterias imbricata*, *Evasterias truscheli*, *Henricia leviuscula*, *Leptasterias hexactis*, *Mediaster aequalis*,
Orthasterias keohleri, *Pycnopoda helianthoides*, *Solaster* sp., *Crossaster papposus*
- c. Sea Cucumbers - *Holothurians* - *Eupentacta* sp.
- d. Urchins - *Strongylocentrotus droebachiensis*

13. Bryozoans - *Membranipora* sp., *Microporina borealis*, *Schizoporella* sp.

15. Fishes

Cottidae

Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*

III. Birds

Marbled Murrelet (2), Red-faced Cormorant (2), Pigeon Guillemot (2), Barrow's Goldeneye (8), Sparrow (1), Glaucous-winged Gull (3), Black-legged Kittiwake (8), Western Sandpiper (2), crow (2)

BIO SKETCH MAP

P4015-D

JP BARRY

MAY 15 1991

0633-0758

Legend

-  Steep Bedrock
-  Boulder/cobble/Pebble
all angular

Meters

0 200

Typical Profile

-BLACK LICHEN

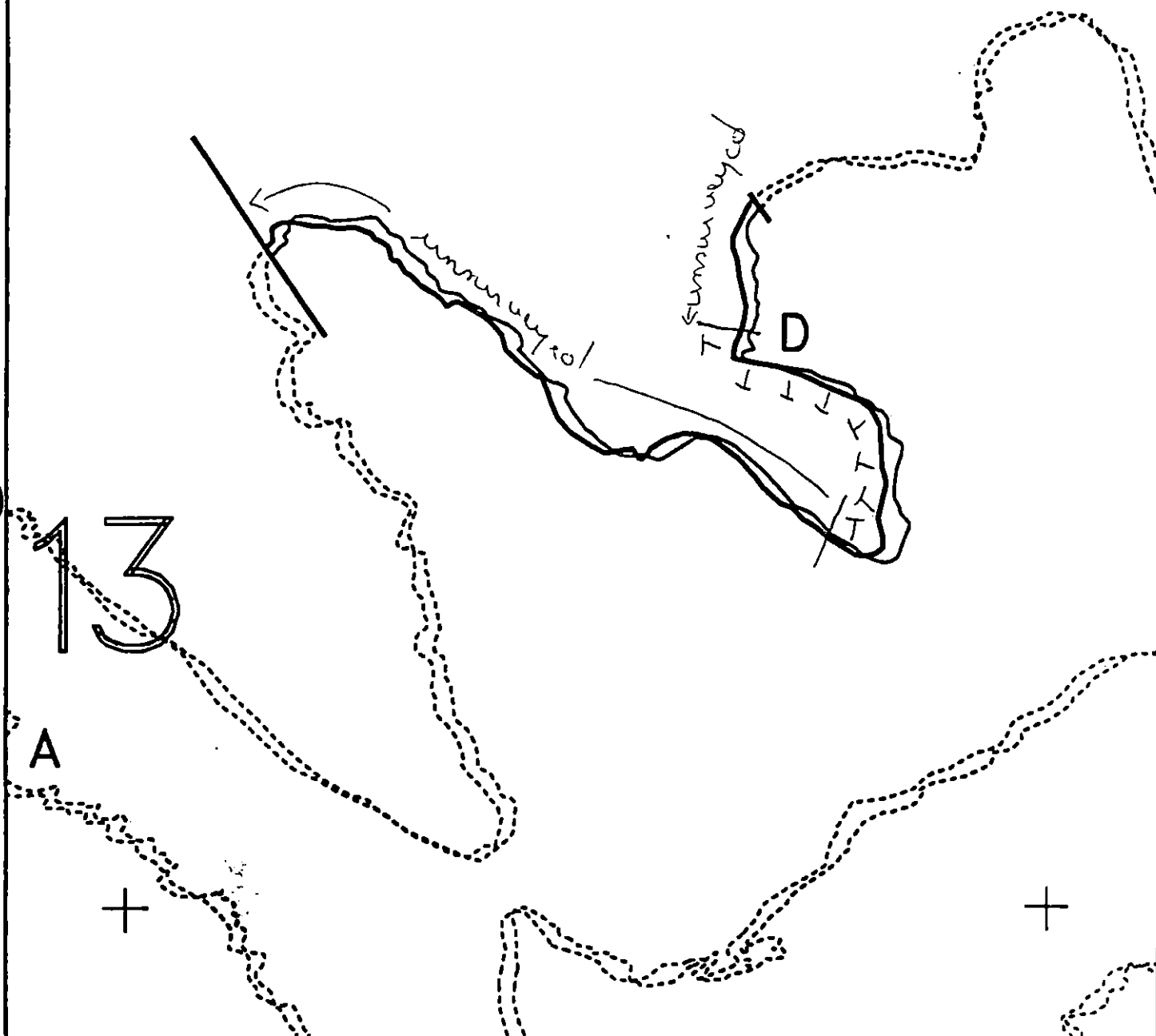
-FUCUS

RED ALGAE

BROWN ALGAE

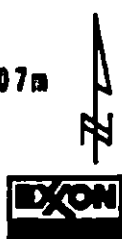
Oiling throughout located
in upper zone where biota
are somewhat scarce.
Black lichen, Fucus,
Green Algae, limpets,
Littorines, and barnacles
all are near the upper or
lower extent of their
range. RICH BIOTA BELOW
OILED AREAS. RED, GREEN & BROWN
ALGAE ARE ABUNDANT.

PY



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

PY015 D
 ADEC Subsegment Length: 3207m
 METERS
 0 400 800
 AK State Plane Zone 4
 497015d



Subdivision Field Map
 Map Key: KENPY015D
 Name: for Sem...
 Date: MAY 15/90
 Date Entered:

reviewed 5.18.91 gq

1991 MAYSAP EVALUATION

SEGMENT: PY 015 SUB: B REGION: KEN SURVEY DATE: 5/15/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

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 _____

1/9
16

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara L. Crosby

NTR

☒ Treatment recommended.

~~Cross~~ Veco workers were scheduled to return to this site - High tide prevented cleanings - This area would take ≤ 2 hours to complete - if a crew is in the area suggest spending the time to remove. H50R

EXXON

NAME _____

George P. Stiles

SIGNATURE

George P. Fisher 5/15/91

☐ NTR

The H50R area 3m x 12m was partially worked while surveying the beach but due to time constraints on PY-6 (Bird Colony) the Veco crew was unable to return to the location prior to high tide.

LANDMANAGER

NAME

Mr. P. HARSTER

OF

USFWS

SIGNATURE

John P. Hendrich 5/16/91

☒ NTR

No treatment recommended.

USCG/NOAA

NAME

Case 2. J. Mc Mahon

SIGNATURE

Ernest M. ...

☒ NTR

sporadic AP/TB. VECO crew picked up several bags. but Area does not want full clean-up crew - would cause more environmental damage from removal process.

M. J. P. / 10/10/60 Pl. 1 Ac 10/10/60

MAYSAP SHORELINE OILING SUMMARY

PAGE 2 OF 9TEAM NO. 4OG J. SampleBIO J. BeringSEGMENT 24.015 BADEC CrosbyLANDMANAGER Headister for USFWSSUBDIVISION BXON George P. StillerUSCG/NOAA McMahon / McDonaldDATE May 115 191TIME 10:23 to 11:01TIDE LEVEL +0.5 ft. to +3.7 ft.ENERGY LEVEL: ☒ H ☐ M ☐ LSURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELOWEATHER: ☐ SUN ☒ CLOUDS ☐ FOG ☒ RAIN ☐ SNOWTOTAL LENGTH SHORELINE SURVEYED: 239 mNEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONEEST. OIL CATEGORY LENGTH: W 1 m M m N m VL 239 m NO m US 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	
A1				S	T	T					cb/pb/rl	L	6	20	*				See map
A2					T	T					b/r			219	*				
A3				Very few scattered ct st							all	<	10cm	dia					
				no meaningful band															

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- _____ FRAMES _____

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	20							X	-	Y	-	-	X				1b/5d	See map
2	20							X	-	Y	-	-	X				"	top 5cm H2O
3	20							X	-	Y	-	-	X					mean surface

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

OG COMMENTS:

Shoreline consists of sloping bedrock to the south with a pocket of cobble / pebbles between among bedrock outcrops to the north. Southern area has very few scattered ct cv all < 10cm dia on bedrock or on boulder surfaces. On band of H2O / pavement present in the northern part. This band was worked on but high tide prevented completing manual work.

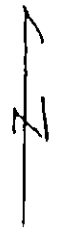
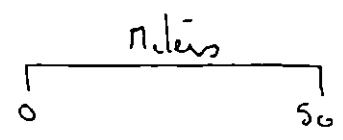
REVIEWERS: MC 5/20/91
revised 5.20 91

00 sketch map

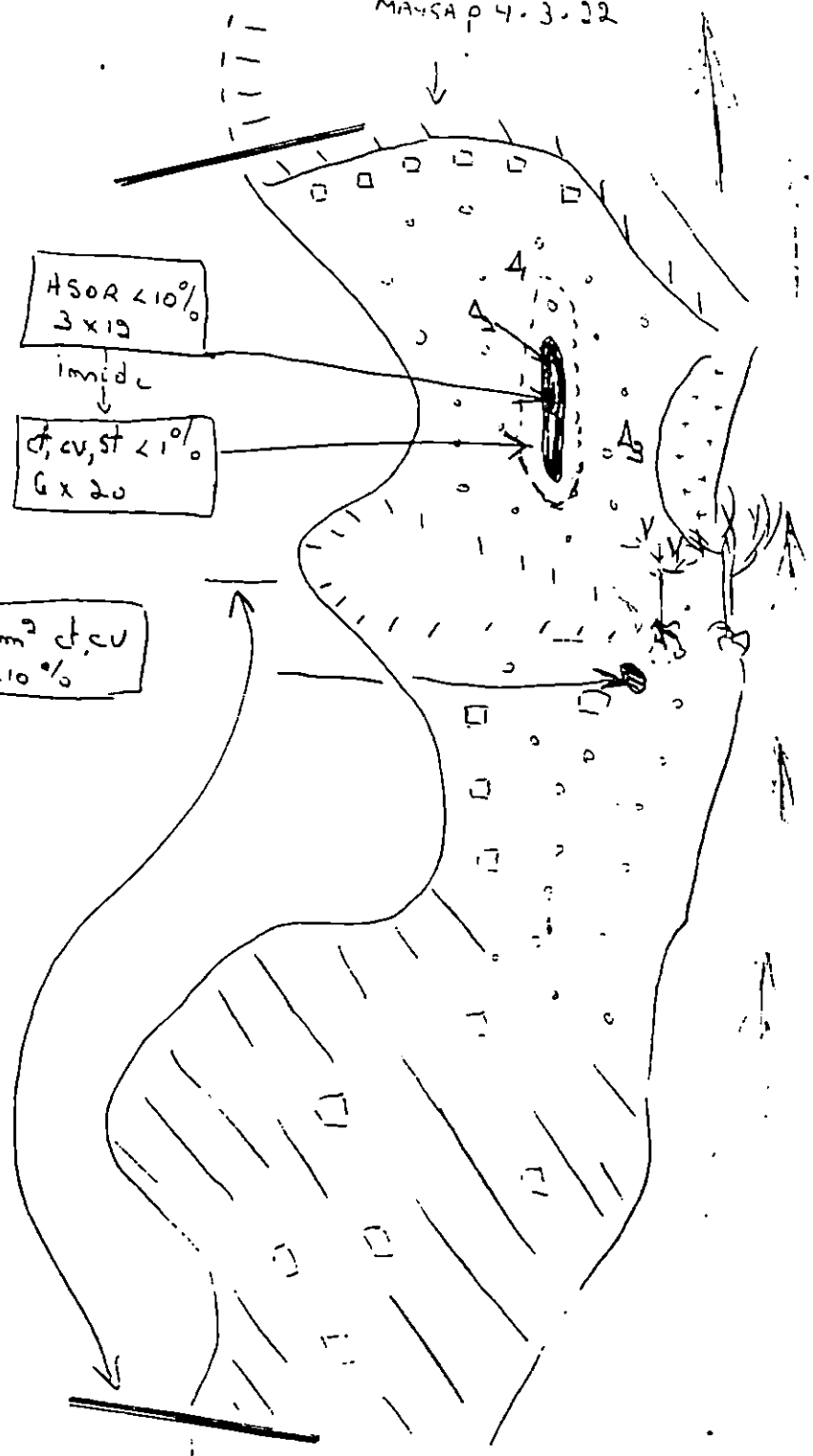
Legend

Py. 015. B
17 Samples
MAY 15/91
023. 1101

-  Sloping bedrock
-  Angular boulders over bedrock
-  Cobble/pbbles/boulders
-  Pb/Cb.



MAUSA p 4.3.22



Worked on A1
but
not terminated
due
to high tide.

450R < 10%
3 x 12
inside

ct, cv, st < 1%
6 x 20

Picked up

2m² ct, cv
< 10%

A2

Very few ct, cv on
bedrock in situ
very small ms
bedrock boulders.

Picked up all that
could be picked
up

Reviewed: MC 5/20/91
Reviewed 5.20 91

Location Map

Surveyed
by foot

B



PY015 B

METERS

0 100 200

AK State Plane Zone 4
sp9015bbb

Subdivision Field Map

Map Key: KENPY015Bbb

Name: JM Kemp

Date: May 15/94

Reviewed 5.20.94

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 15, 1991 1023 - 1101
SEGMENT #	PY015	TIDAL HEIGHT (Range)	-1.9 => -0.1
SUBDIVISION	B	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Variable 0-10 kt, rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

General Features of PY015-B

This short subdivision is located along MacArthur Pass, a site with very low wave exposure. The shore varies from high angle talus boulders to a medium angle cobble and pebble beach. Greater cover of biota is found on the talus and boulder shores than the cobble beach. The highest densities of biota on the beach are found on the largest cobble, boulders, and occasional bedrock outcrop. The biota appear generally healthy, with normal abundances of flora and fauna throughout the cobble beach and adjacent bedrock outcrops. Several species are present as juveniles, indicating recent recruitment.

The zonation pattern along this subdivision is similar to the entire segment, with black lichen along the upper edge of the intertidal and a transition to Fucus, barnacles, limpets, and littorines in the highest intertidal, grading to denser cover of Fucus, green and red algae in the lower shore. Mussels form a band in the mid-shore as a narrow bed amongst the beach cobble. Barnacles are patchy, but generally quite abundant throughout the shore from the high to the low zones. The subtidal is nearly completely covered by large brown algae.

A1, A2 The oiled area is located in the upper zone of the cobble/pebble beach. At this location there are sparsely distributed barnacles, and moderate densities of limpets and littorine snails. A thin film of filamentous green algae (Urospora?) is also located in the vicinity of the oil. A moderately dense mussel bed is present approximately 6 m from A1/A2. The lower shore below the mussel bed is mostly red and brown algae.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	2	3	
Waterfowl			
Gulls/Kittiwakes	2	4	
Shorebirds	1	3	
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. 5/20/91

PY015-B Biology Report, continued

Manual cleanup was performed during the survey. Additional manual cleanup, if recommended, would not harm the biota along this segment. Care must be taken, however, to restrict activities to the oiled area in the upper zone and prevent disturbance to the nearby mussel bed.

A3 This oil is somewhat higher in the intertidal zone and extends through much of the segment as a patchy cover or coat of SOR. The oil is confined to the upper zone amongst the transitional flora and fauna between the zone of black lichen (*Verrucaria*) and the upper intertidal assemblage of *Fucus*, barnacles, green algae, limpets, and littorine snails. The shores are quite diverse and healthy and show no evidence of recent oil-related damage. Below the oiled area, *Fucus*, limpets, barnacles, littorine snails, and other lower zone flora and fauna cover the shore very densely, except the mid-zone cobble/pebble beach habitat where cover is somewhat sparser. The extreme low zone and subtidal habitat is dominated by large brown algae.

Manual cleanup was performed during the survey. Additional manual cleanup, if recommended, would not harm the biota along this segment.

General Zonation of PY015-B

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal
Oil Spatters		- -	---+++-			
Black Lichen		---+*-----				
Bare Rock		-- - - - - - - -				
Rockweed (<i>Fucus</i>)			-- - - + +* + * + * - -			
Barnacles (<i>Balanus</i>)			--- - + + + + + - - - - -			
Odonthalia (<i>Red Alga</i>)			- - - -++ + *++-***-			
Other Red Algae			- - - -++*++-++*++*			
Green Algae (<i>Ulva</i> /other)			- - - -++- -+ + - - - -+++			
Mussels (<i>Mytilus</i>)			- - - -++*++- - - -			
Crustose Brown Algae (<i>Hildenbrandia</i>)			- - - -++*++-+-			
Upright Brown Algae (not <i>Fucus</i>)				- - - -++++*****		
Whelks (<i>Nucella</i> sp., <i>Searlesia</i> sp.)				- - ++ + + + + - -		

Legend: (-) Sparse to rare, (+) Moderate, (*) Abundant

List of Common Species from PY015-B

- A. Marine Plants
 - 1. Diatoms, Blue Greens
 - 2. Green Algae - Chlorophyta
 - Cladophora* sp., *Prasiola meridionalis*, *Ulva* sp., *Urospora* sp.
 - 3. Brown Algae - Phaeophyta
 - Costaria costata*, *Ectocarpus* spp., *Fucus distichus*, *Hildenbrandia* sp., *Laminaria groenlandica*, *L. saccharina*, *Ralfsia* sp., *Syctosiphon lomentaria*
 - 4. Red Algae - Rhodophyta
 - Endocladia muricata*, *Halosaccion glandiforme*, *Lithothamnion* sp., *Membranoptera dimorpha*, *Odonthalia floccosa*, *Palmaria palmata*, *Petrocelis* sp., *Porphyra* sp., *Ptilota filicina*, *Rhodomela larix*
 - 5. Higher Plants - *Leymus mollis* (beach rye grass)

Reviewed M.B. 3/20/4

PY015-B Biology Report, continued

II. Marine Animals

1. Sponges - Porifera - Halichondria sp.
2. Anemones - Anthopleura artemesia, Epiactis ritteri, Epizoanthus scotinus, Metridium senile, Urticina crassicornis,
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaete Worms
 - Nereidae - Nereis spp.
 - Serpulidae - Serpula sp.
 - Spirorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii
10. Crustaceans
 - a. Amphipods - Orchestia sp.?, Traskorchestia traskiana
 - b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs
 - Haplogaster sp., Paguridae (hermit crabs)
 - d. Isopods - Cirrana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
11. Mollusca
 - a. Chitons - Mopalia mucosa, Katharina tunicata, Tonicella lineata,
 - b. Snails - Gastropods
 - Littorina sitkana, L. keenae, Natica clausa, Nucella lamellosa, N. lima, Searlesia dira
 - c. Limpets - Acmaea mitra, Lottia persona, Tectura fenestrata, T. persona, T. scutum, Siphonaria thersites
 - d. Nudibranches - Lamellidoris fusca, Onchidoris sp?.
 - e. Bivalves - Mytilus edulis, Pododesmus cepio
12. Echinoderms
 - a. Brittle Stars - Ophiolus sp., ?
 - b. Sea stars - Dermasterias imbricata, Leptasterias hexactis, Orthasterias keohleri, Pycnopoda helianthoides, Solaster sp.
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Microporina borealis, Schizoporella sp.
15. Fishes
 - Cottidae
 - Stichaeidae - Xiphister atropurpureus, X. mucosus

III. Birds

Marbled Murrelet (2), Red-faced Cormorant (1), Glaucous-winged Gull (2), Black-legged Kittiwake (2), Western Sandpiper (3)

BIO SKETCH MAP

JP BARRY

P4015-B

15 MAY 1991

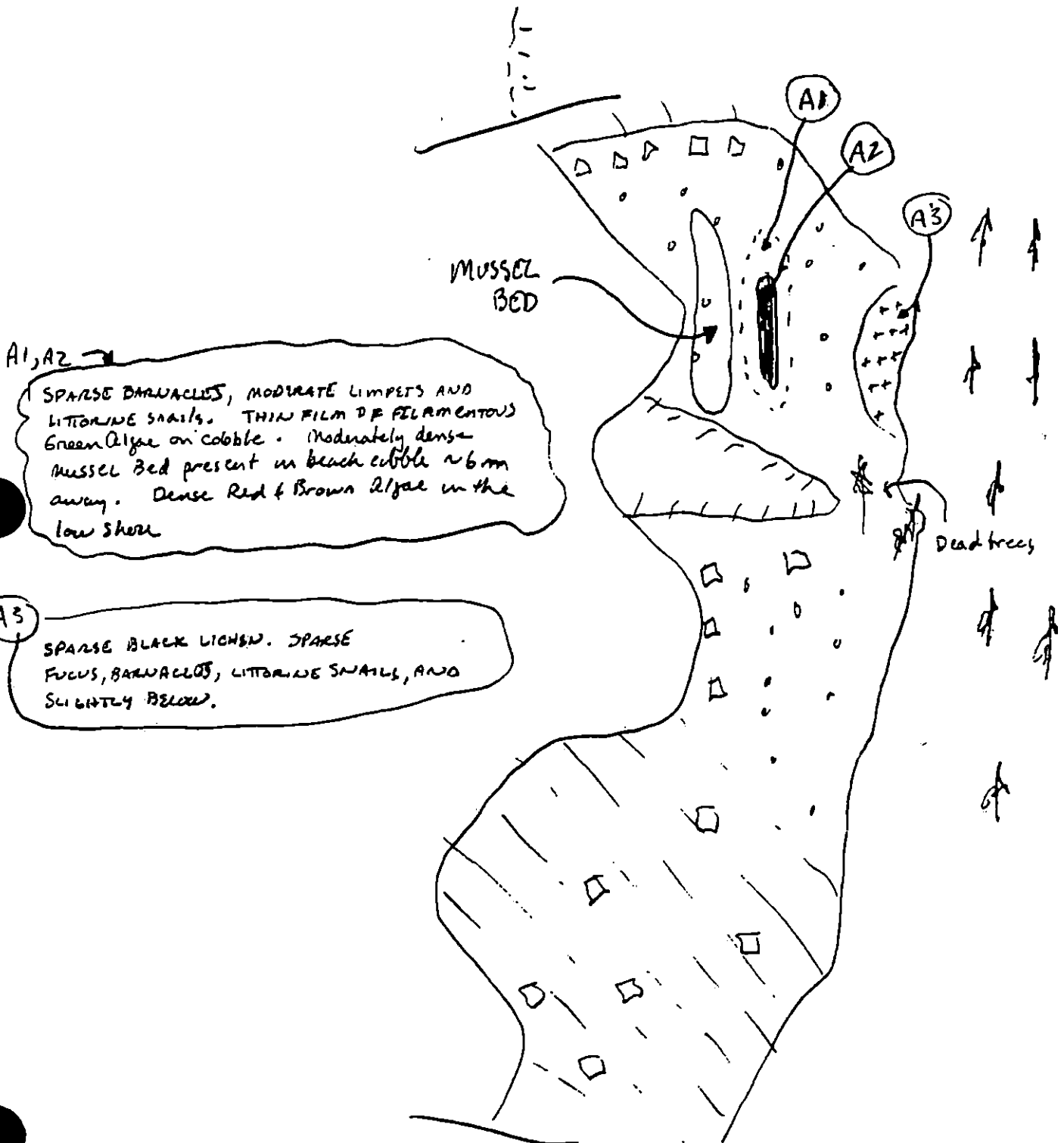
1023-1101

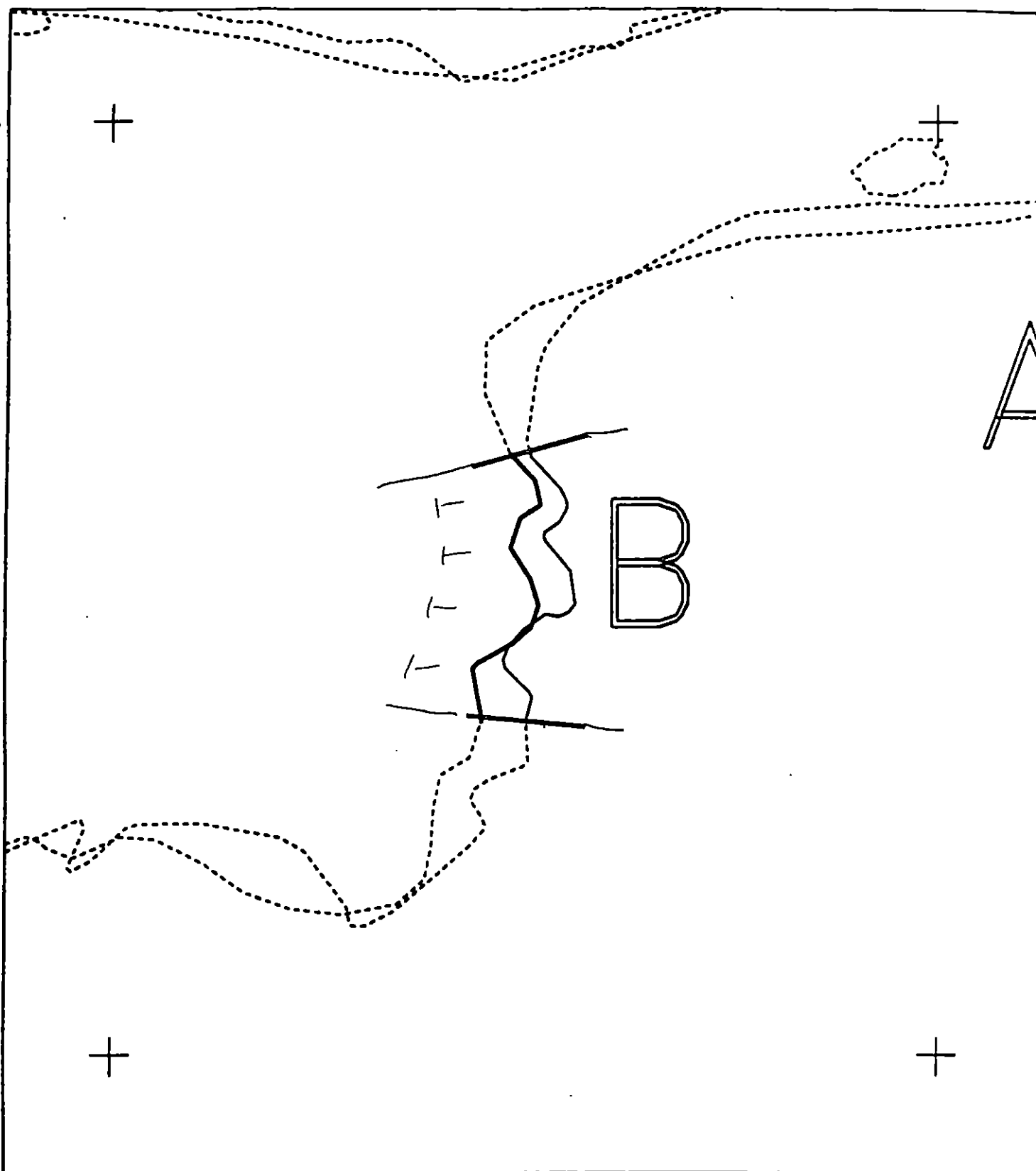
Legend

-  Sloping bedrock
-  Angular boulders over bedrock
-  cobbles/pebbles/boulders
-  Pb/Cb

Meters

0 80



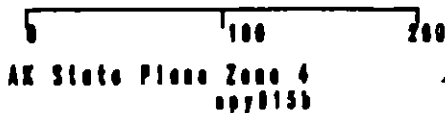


XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

PY015 B

ADEC Subsegment Length: 230m

METERS



Subdivision Field Map

Map Key: KENPY015B

Name: J. M. Sempin

Date: May 15/90

Date Entered:

Reviewed: 5/20/91 MC
 reviewed 5.20 94

1991 MAYSAP EVALUATION

SEGMENT: PY 015 SUB: C REGION: KEN SURVEY DATE: 5/15/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: _____ Date: _____

<u>RECOMMENDATIONS:</u>	<u>INITIAL</u>	<u>TAG</u>	<u>FOSC</u>
TREATMENT REQUIRED (Y or N)	<u>N</u>	_____	_____
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 _____

ADEC

NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☒ NTR

Please refer to OG's comments -
Survey crew manually removed oil that is
accessible.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/17/91

☒ NTR

Survey crew manually removed all
recoverable oil.

LANDMANAGER

NAME John Haroldston OF USFWS SIGNATURE _____

☐ NTR

USCG/NOAA

NAME CWO2 J. Mc Melton SIGNATURE J. Mc Melton

☒ NTR

light trace of TB/AP - VECO crew successfully
removed majority.

VIA A / DONALD A. MACDONALD

Donald A. Macdonald

WATERWAY DEVELOPMENT COMMENT SHEET

TEAM NO. 4 SEGMENT P4.015 SUBDIVISION C DATE 11/15/91

ADEC

NAME _____

SIGNATURE _____

☐ NTR

EXXON

NAME _____

SIGNATURE _____

☐ NTR

LANDMANAGER

NAME John P. Hardister OF USFWS

SIGNATURE John P. Hardister 5/16/91

☒ NTR

most of the oil located on this subsection was removed during the survey. Further cleanup is not necessary.

USCG/NOAA

NAME _____

SIGNATURE _____

☐ NTR

SEGMENT P.I. 015
SUBDIVISION C
DATE MAY 15 191

TIME 07:15 to 02:30

TIDE LEVEL 2.7 ft. to -3.5 ft.

ENERGY LEVEL: ☒ H ☐ M ☐ L

SURVEYED FROM: ☒ FOOT ☒ BOAT ☐ HELO

WEATHER: ☐ SUN ☒ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

TOTAL LENGTH SHORELINE SURVEYED: 2.50 m

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

EST. OIL CATEGORY LENGTH: W - m M - m N - m VL 3900 m NO - m US 3993 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-_____-_____ FRAMES

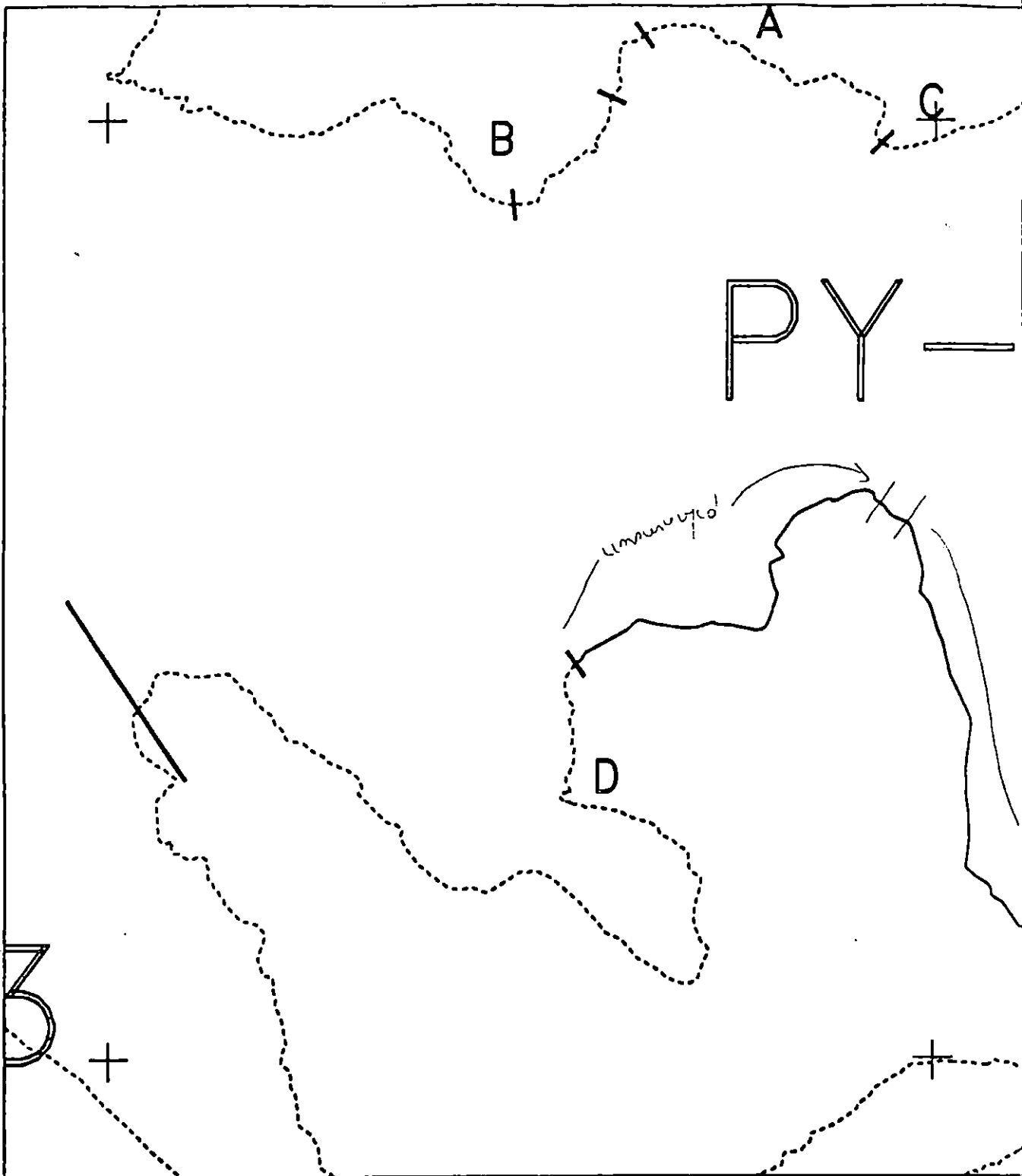
[illegible]

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

OG COMMENTS: This segment consists of steep bedrock locally with steep talus of angular boulders. Exact and detailed mapping of the oil is not possible because of: 1: difficult shoreline access allowing spot checking only, 2: large boulders & many obstructions of oil, and 3: very scattered distribution of seepers. All locations very low showed traces of oil except one. Estimated of the amount of oil seepers was covered in some st. and it remains. Because of the complete nature the were spot checked at relatively close intervals were assigned a VL category evaluation.

REVISED: F.W. 5/26/91

REVISED: F.W. 5/26/91

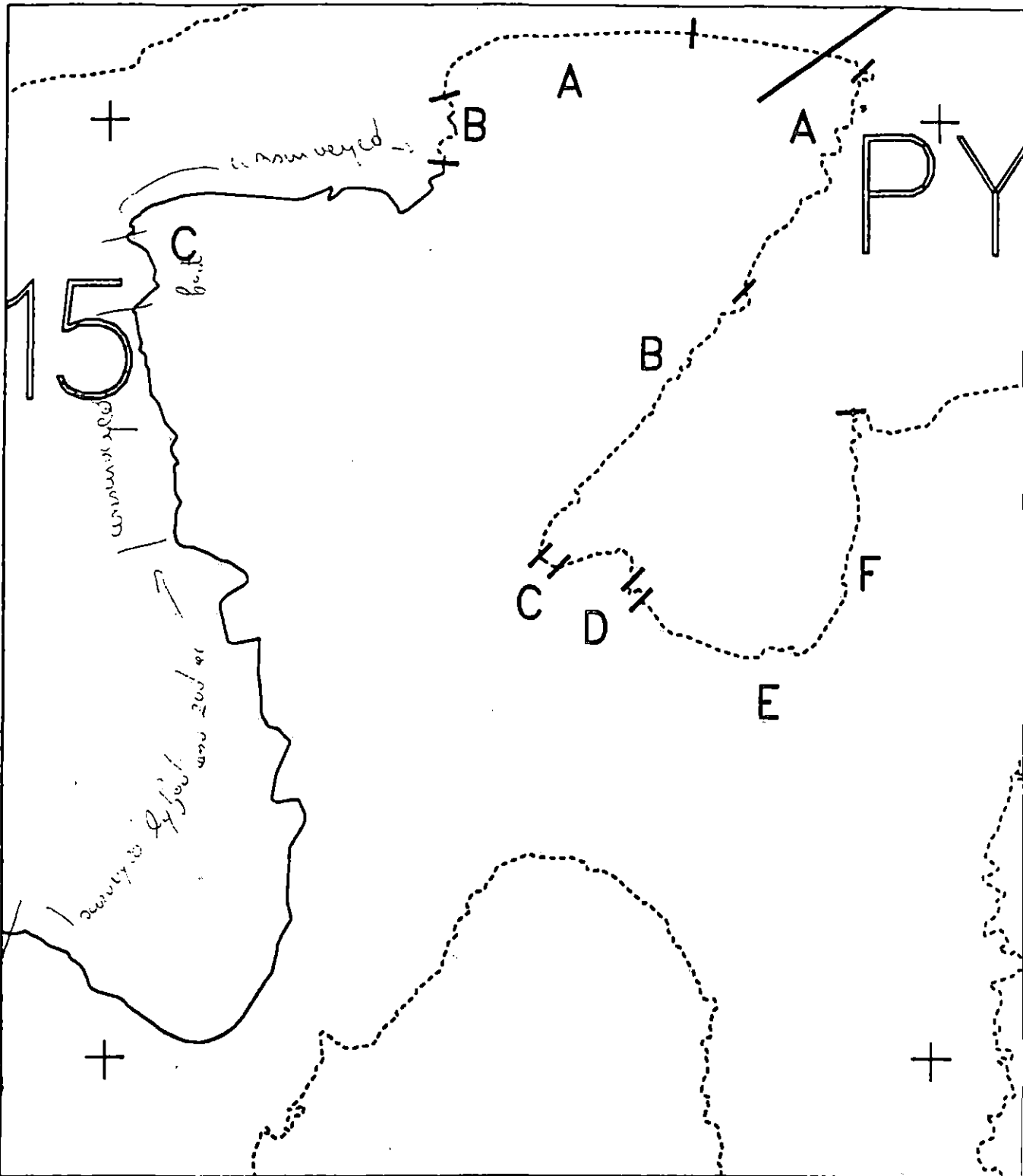


PY015 C

Subdivision Field Map
Map Key: KENPY015C
Name: J.M. Sample
Date: May 15/91
REVIEWED: F.W. 5/26/91

EXON

AK State Plane Zone 4
april 1988



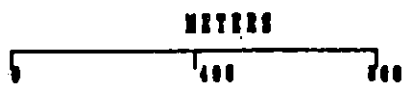
PY015 C

Subdivision Field Map

Map Key: KENPY015Cb

Name: J. M. Sengul

Date: MAY 15/91



AK State Plane Zone 4
Opys15Cb

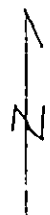
REVIEWED: F.W. S/26/91

53 Sketch Map

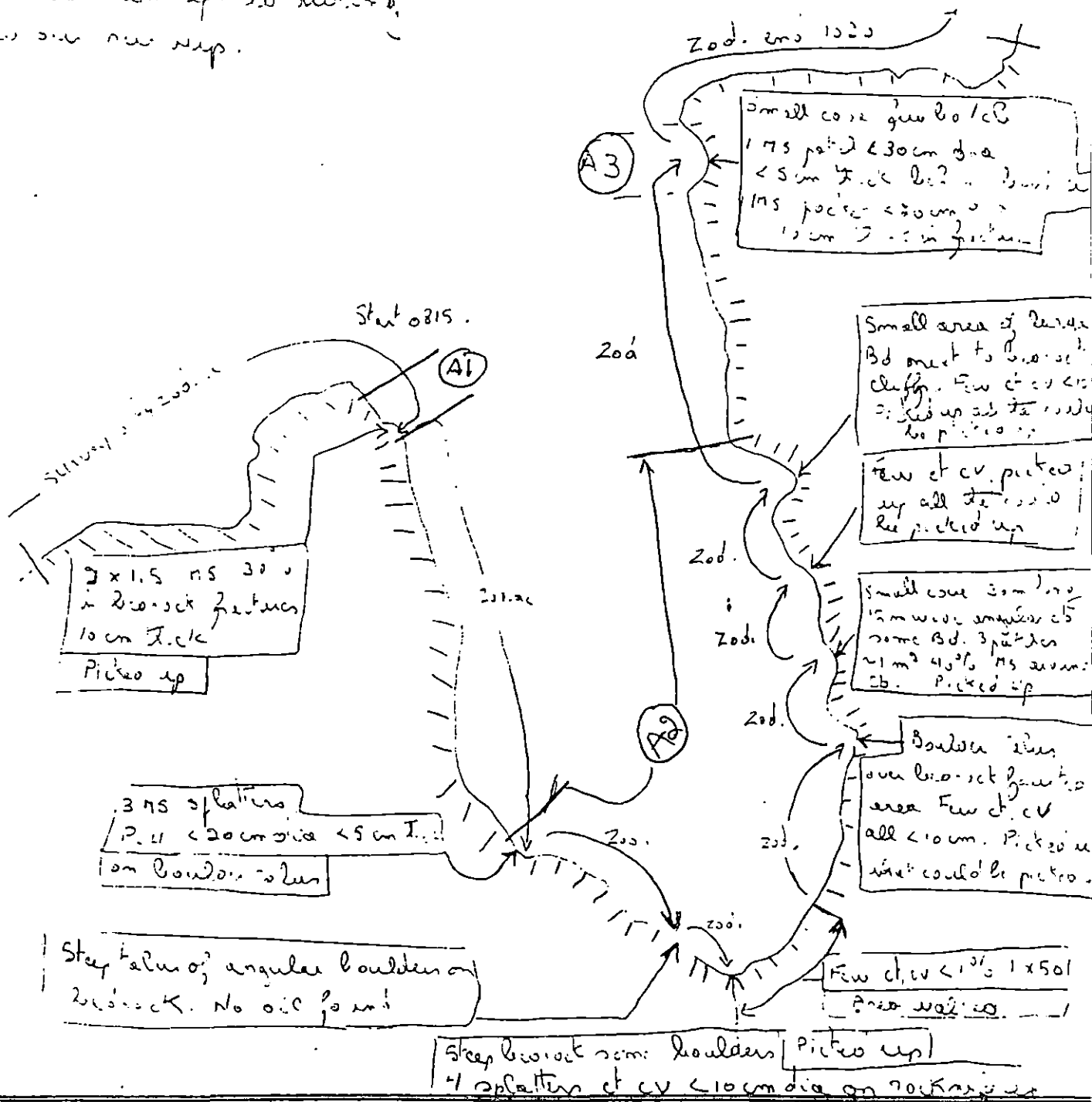
Legend

P4.015.C
 for Samples
 May 15/91
 03 2. 1020

Steeply sloping
 bedrock, occasional
 steep facing ledge
 angular boulders.



At 100m elevation by road
 some areas of which are
 also been reported to have
 been on the map.



REVIEWED: F.O. 5/26/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 15, 1991 0815 - 1020
SEGMENT #	PY015	TIDAL HEIGHT (Range)	-2.7 => -3.5 => -2.0
SUBDIVISION	C	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Variable 0-10 kt, rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

General Features of PY015-C

This long subdivision encompasses the larger of 2 coves on segment PY015 and is very similar to PY015-D. The cove faces the north and is protected from large waves. Most of the shore is high angle bedrock or talus, with occasional pocket beaches of cobble and pebbles. The shores nearly all exhibit similar zonation patterns and are dominated by Fucus in the mid-shore and several species of red and green algae in the low shore. The subtidal is nearly completely covered by large brown algae. The nudibranch, Melibe leonina was particularly abundant on the kelps in the subtidal zone along this subdivision.

A1 This extended area all shows similar oiling in the upper intertidal zone, with scattered patches of SOR. The oil is mainly confined to the upper zone amongst the transitional flora and fauna between the zone of black lichen (Verrucaria) and the upper intertidal assemblage of Fucus, barnacles, green algae, limpets, and littorine snails. The shores are quite diverse and healthy and show no evidence of recent oil-related damage. Below the oiled area, Fucus, as well as limpets, barnacles, littorine snails, and the lower zone flora and fauna cover the shore very densely, and grade into a subtidal habitat dominated by large brown algae. At a couple locations where the shore is somewhat more shallow in slope, the subtidal has a sparse eel grass and clam bed.

Manual cleanup was performed during the survey. Additional manual cleanup, if recommended, would not harm the biota along this segment.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	3	26	
Waterfowl	2	6	
Gulls/Kittiwakes	2	30	
Shorebirds	1	5	
Corvids			
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters		River Otter	1
Pinnipeds (specify)		Black Bear	1
Sea Lion	10		
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

General Zonation of PY015-C

Legend: (-) Sparse to rare, (+) Moderate, (*) Abundant

A. Marine Plants

- ## II. Marine Animals

1. Sponges - Porifera
Halichondria sp., Halichondria panicea, Tethys sp.
2. Anemones - Anthopleura artemesia, A. elegantissima, A. xanthogrammica,
Epiactis ritteri, Epizoanthus scotinus, Metridium senile, Urticina
crassicornis,
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile, Tubulanus polymorphus
8. Polychaete Worms
Glyceridae
Nereidae - Nereis spp.
Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
Spriorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii

10. Crustaceans
 - a. Amphipods - *Orchestia* sp.?
 - b. Barnacles - *Balanus glandula*, *Chthamalus dalli*, *Semibalanus cariosus*
 - c. Crabs
Haplogaster sp., *Paguridae* (hermit crabs), *Oregonia gracilis*,
 - d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimorsphaeroma oregonensis*
 11. Mollusca
 - a. Chitons - *Mopalia mucosa*, *Katharina tunicata*, *Tonicella lineata*,
 - b. Snails - Gastropods
Amphissa columbiana, *Littorina sitkana*, *L. keenae*, *Natica clausa*,
Nucella lamellosa, *N. lima*, *Tachyrhynchus* sp.
 - c. Limpets - *Acmaea mitra*, *Lottia persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
 - d. Nudibranches - *Lamellidoris fusca*, *Melibe leonina*
 - e. Bivalves - *Chlamys hastata*, *Clinocardium* sp., *C. nuttalli*, *Hiatella arctica*, *Macoma nasuta*, *Modiolus modiolus*, *Mytilus edulis*,
Pododesmus cepio, *Prototheca staminea*, *Saxidomus giganteus*
 - f. Cephalopods - *Octopus dofleini*
 12. Echinoderms
 - a. Brittle Stars - *Ophiolus* sp., ?
 - b. Sea stars - *Dermasterias imbricata*, *Evasterias truscheli*, *Henricia leviuscula*, *Leptasterias hexactis*, *Mediaster aequalis*,
Orthasterias keohleri, *Pycnopoda helianthoides*, *Solaster* sp., *Crossaster papposus*
 - c. Sea Cucumbers - *Holothurians* - *Eupentacta* sp.
 - d. Urchins - *Strongylocentrotus droebachiensis*
 13. Bryozoans - *Membranipora* sp., *Microporina borealis*, *Schizoporella* sp.
 15. Fishes
 - Cottidae
 - Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*
- III. Birds
- Marbled Murrelet (6), Red-faced Cormorant (10), Pigeon Guillemot (10), Barrow's Goldeneye (2), Glaucous-winged Gull (10), Black-legged Kittiwake (20), Western Sandpiper (5), common merganser (4)

BIO SKETCH MAP

P4015-C

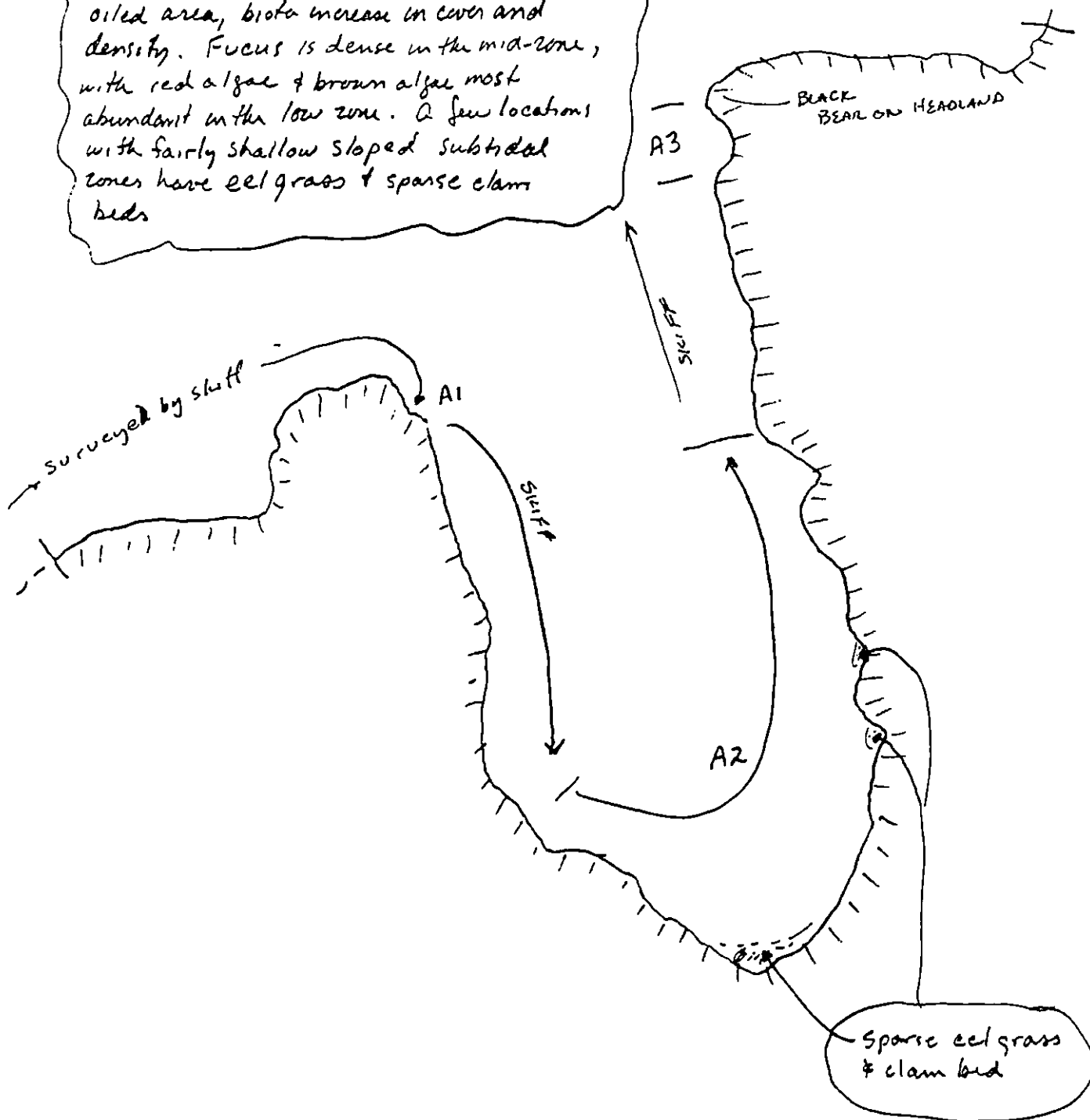
15 MAY 1991

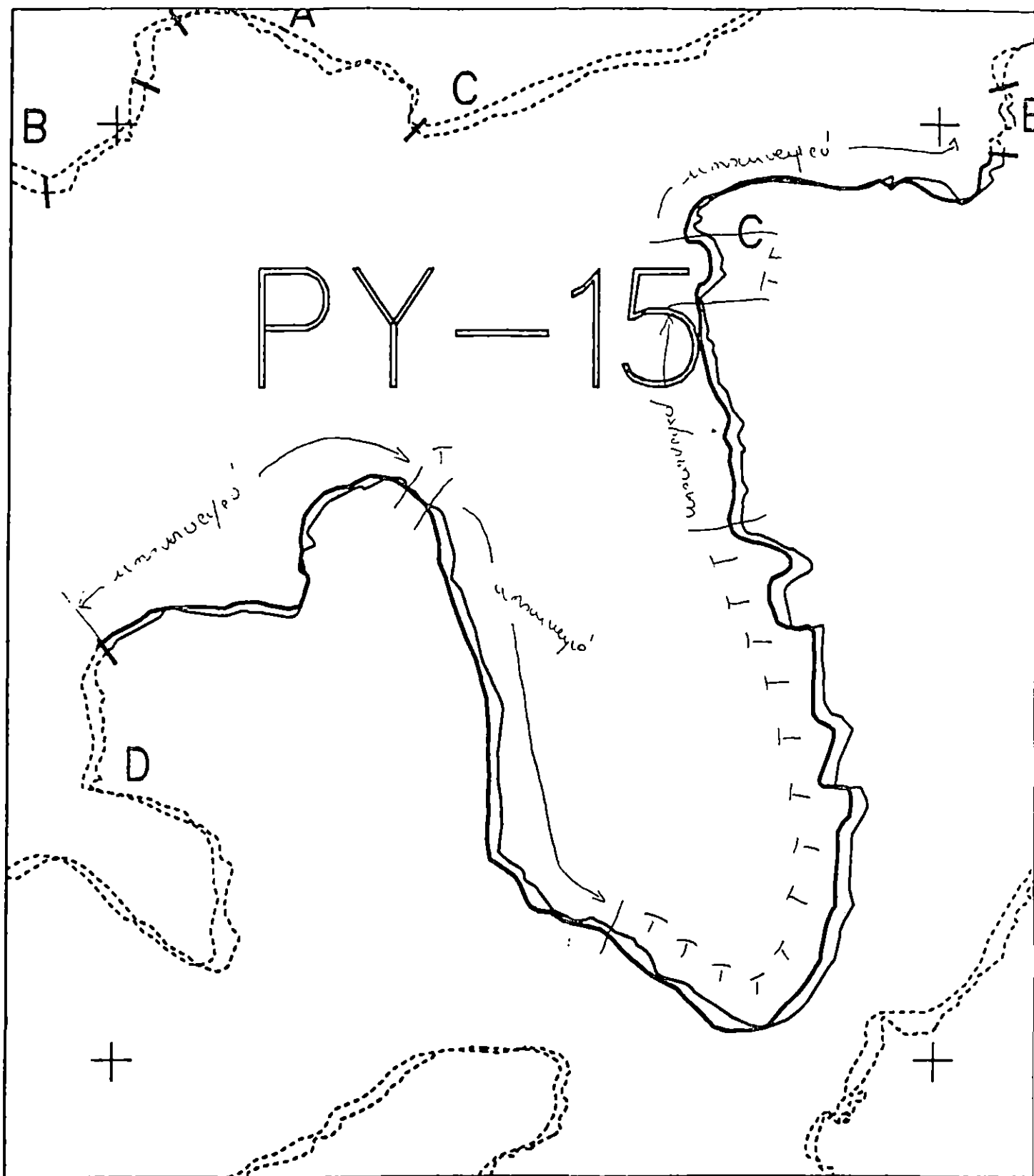
J P BARRY

Legend

- ☐ Steeply Sloping bedrock, occasional steep talus of large angular boulders.

A1-A3 - Similar distribution of oil and biota at each location. Oil confined to upper zone. Black lichen and upper edge of marine species (barnacles, green algae, *Fucus*, limpets, littorine snails). Below oiled area, biota increase in cover and density. *Fucus* is dense in the mid-zone, with red algae & brown algae most abundant in the low zone. A few locations with fairly shallow sloped subtidal zones have eel grass & sparse clam beds.





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

PY015 C

ADEC Subsegment Length: 7193m

METERS

0 400 800

AK State Plane Zone 4
 sp015ca



Subdivision Field Map

Map Key: KENPY015Ca

Name: J. M. Sengels

Date: MAY 15/91

Date Entered:

REVIEWED: F.W. 5/26/91

1991 MAYSAP EVALUATION

SEGMENT: PY 015 SUB: D REGION: KEN SURVEY DATE: 5/15/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

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 _____

TEAM NO. 4SEGMENT PY-015SUBDIVISION 3DATE May 15 /91

ADEC

NAME

Clara J. Crosby

SIGNATURE

Clara J. Crosby☒ NTR

Survey crew recovered oiling observed - & accessible -
Lt CV/CT remains in splatter distribution.

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles 5/16/91☒ NTR

No appreciable oil remaining. Survey
crew picked up 1 1/2 bags while surveying.

LANDMANAGER

NAME

JOHN P. HARDISTER OF USFWS

SIGNATURE

John P. Hardister 5/16/91☒ NTR

concur with ADEC and EXXON representatives.

USCG/NOAA

NAME

CWO J. McPherson

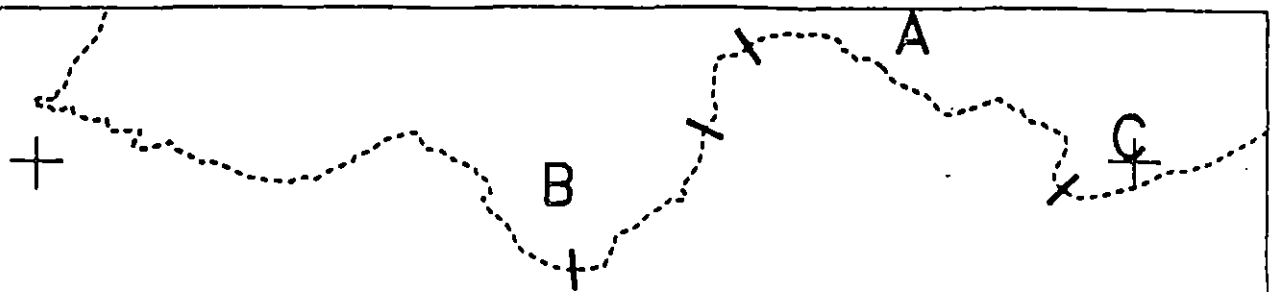
SIGNATURE

J. McPherson☒ NTR

Concur with Exxon rep.

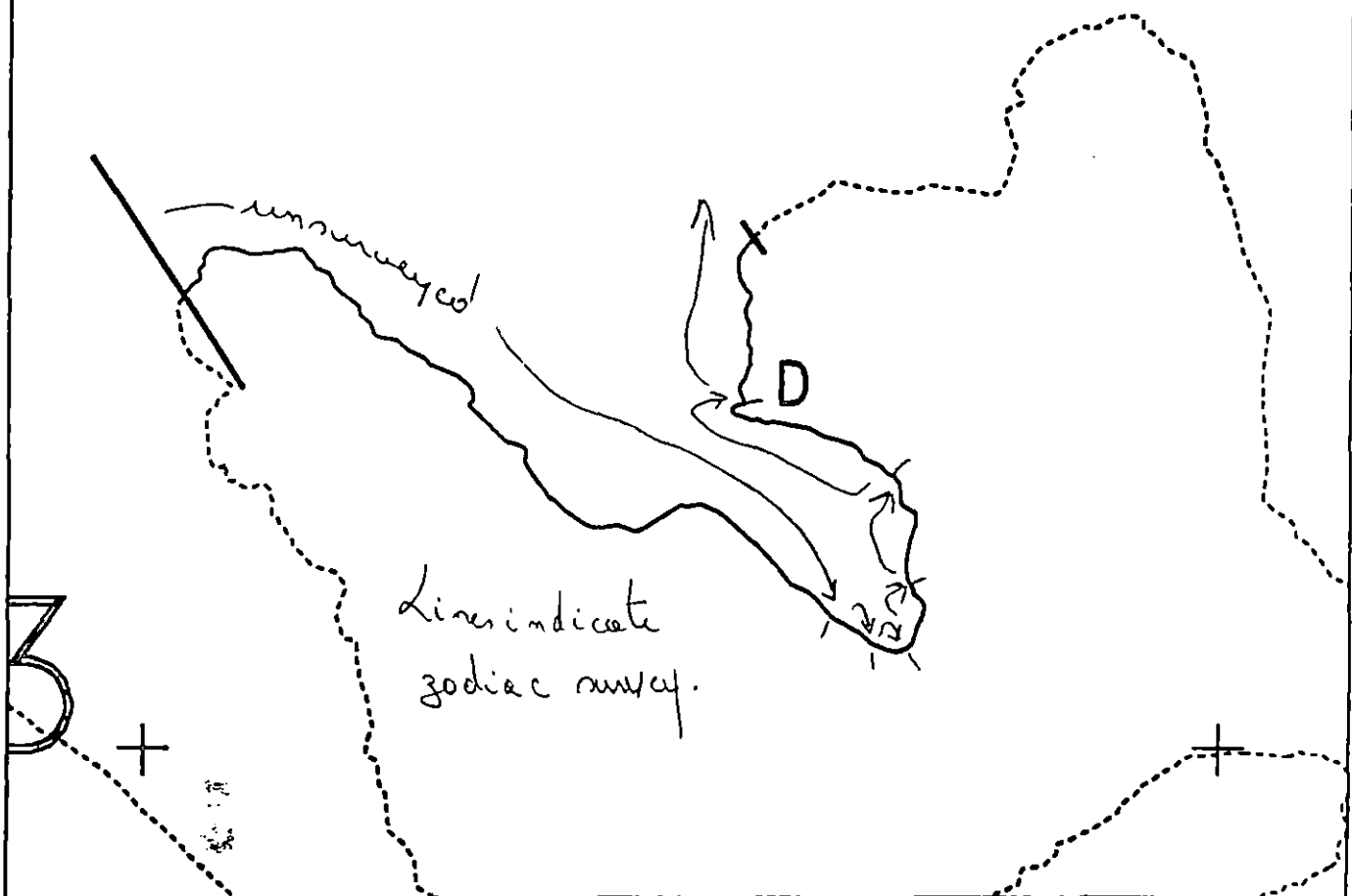
PAGE 2 OF 7

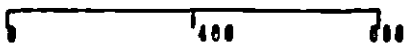
reviewed 5.18.91 QY
REVIEWED CD 12 MAY



Location map.

PY—



	PY015 D		Subdivision Field Map
	METERS 		Map Key: KENPY015Da
	AK State Plane Zone 4 spyo15da		Name: <u>Jo Sempich</u>
			Date: <u>MAY 15/91</u>

reviewed 5.18.91 Qy
 REVIEWED CD 18 MAY

og Sketch Map
 Py 015-D
 JM Samples
 May 15/91
 633.0758

Legend
 ▣ Steep bedrock
 □ Bd / cb / pb
 all angular

Long narrow strip of steep bedrock sometimes with steep
 talus of angular boulders / cobbles / pebbles, particularly
 in gutter series. Much is too steep to be accessible
 and survey consisted of 300-act + as many
 spot checks as possible.

Meters
 0 100

Typical Profile



Zodiac

Amuse 0633

Leave 0758

1 MS splatter
 < 20cm dia
 P.U.

Few small
 MS, cv splatters
 < 10cm dia
 P.U.

Low rounded bedrock headland
 a few ct, cv, 1 H50A where MS
 has penetrated sed.
 P.U.

Few small cv, MS - P.U.

cb / Bd / pb
 small cv, MS - P.U.

cb / Bd / pb accumulation
 on talus stream. 2 small
 splatters < 10cm dia
 P.U.

Large boulder talus in front of
 slide area. Includes small intertidal
 pond. Few tiny ct. 1 area 5x8
 cv, MS < 20cm < 5%.

Worked on

reviewed 5.18.91 gy
 REVIEWED 10 18 MAY

NAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 15, 1991 0633 - 0815
SEGMENT #	PY015	TIDAL HEIGHT (Range)	+2.7 => -2.7
SUBDIVISION	D	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Variable 0-10 kt, rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

General Features of PY015-D

This long subdivision encompasses the smaller of 2 coves on segment PY015. The cove faces the north and is protected from waves, except for the headlands bordering the cove, which experience moderate swell. Most of the shore is high angle bedrock or talus, with occasional pocket beaches of cobble and pebbles. The shores nearly all exhibit similar zonation patterns and are dominated by Fucus in the mid-shore and several species of red and green algae in the low shore. The subtidal is nearly completely covered by large brown algae. The nudibranch Melibe leonina was particularly abundant on the kelps in the subtidal zone along this subdivision.

- A1 This extended area all shows similar oiling in the upper intertidal zone, with scattered patches of SOR. The oil is mainly confined to the upper zone amongst the transitional flora and fauna between the zone of black lichen (Verrucaria) and the upper intertidal assemblage of Fucus, barnacles, green algae, limpets, and littorine snails. The shores are quite diverse and healthy and show no evidence of recent oil-related damage. Below the oiled area, Fucus, as well as limpets, barnacles, littorine snails, and the lower zone flora and fauna cover the shore very densely, and grade into a subtidal habitat dominated by large brown algae. At a couple locations where the shore is somewhat more shallow in slope, the subtidal has a sparse eel grass and clam bed.

Some manual pickup performed on shore. Additional manual pickup, if performed, will do much to the intertidal biotas
(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	3	6	
Waterfowl	1	8	
Gulls/Kittiwakes	2	11	
Shorebirds	1	2	
Corvids	1	2	
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

Revised 5/15/91 JMB

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal
Oil Spatters		- - -				
Black Lichen		---+*-----				
Bare Rock		-- - -				
Rockweed (Fucus)			---+*+*+*+*---+-	- - -		
Barnacles (Balanus)			- - +++---+---	- - - - -		
Odonthalia (Red Alga)				- -+*+*+*+ - ---++ -		
Palmaria (Red Alga)				---+*+*+*+---***-+-		
Other Red Algae					---+*+*+*+---+***	
Green Algae (Ulva/other)			- - --+-	-+ + - -	- -+++	
Mussels (Mytilus)				- - - - -	-	
Crustose Brown Algae (Hildenbrandia)				-----++-+-+-		
Upright Brown Algae (not Fucus)					-- - -++++*****	
Eel Grass						- -+*+
Clams						- - - - -

List of Common Species from PY015-D

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Cladophora sp., *Prasiola meridionalis*, *Ulva* sp., *Urospora* sp.
3. Brown Algae - Phaeophyta
Alaria marginata, *Agarum fimbriatum*, *Costaria costata*, *Ectocarpus* spp., *Fucus distichus*, *Hildenbrandia* sp., *Laminaria saccharina*, *Ralfsia* sp., *Syctosiphon lomentaria*
4. Red Algae - Rhodophyta
Bossiella sp., *Calliarthron* sp., *Corallina* sp., *Cryptosiphonia woodii*, *Cumagloia andersonii*, *Endocladia muricata*, *Halosaccion glandiforme*, *Iridaea* sp., *Lithothamnion* sp., *Membranoptera dimorpha*, *Odonthalia floccosa*, *Palmaria palmata*, *Petrocelis* sp., *Porphyra* sp., *Ptilota filicina*, *Rhodomela larix*
5. Higher Plants - *Leymus mollis* (beach rye grass)

II. Marine Animals

1. Sponges - Porifera
Halichondria sp., *Halichondria panicea*, *Tethys* sp.
2. Anemones - *Anthopleura artemesia*, *A. elegantissima*, *A. xanthogrammica*, *Epiactis ritteri*, *Epizoanthus scotinus*, *Metridium senile*, *Urticina crassicornis*,
3. Hydroids - Sertularidae - *Sertularella*?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - *Emplectonema gracile*, *Tubulanus polymorphus*
8. Polychaete Worms
Glyceridae
Nereidae - *Nereis* spp.
Serpulidae - *Serpula* sp., *Crucigera* sp., *Eudistylia polymorpha*
Spirorbidae - *Spirorbis* sp.
9. Peanut worms - Sipunculids - *Phascolosoma agassizii*

10. Crustaceans
 - a. Amphipods - *Orchestia* sp.?
 - b. Barnacles - *Balanus glandula*, *Chthamalus dalli*, *Semibalanus cariosus*
 - c. Crabs
Haplogaster sp., *Paguridae* (hermit crabs), *Oregonia gracilis*,
 - d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimorsphaeroma oregonensis*
11. Mollusca
 - a. Chitons - *Mopalia mucosa*, *Katharina tunicata*, *Tonicella lineata*,
 - b. Snails - *Gastropods*
Amphissa columbiana, *Littorina sitkana*, *L. keenae*, *Natica clausa*,
Nucella lamellosa, *N. lima*, *Tachyrhynchus* sp.
 - c. Limpets - *Acmaea mitra*, *Lottia persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
 - d. Nudibranches - *Lamellidoris fusca*, *Melibe leonina*
 - e. Bivalves - *Chlamys hastata*, *Clinocardium* sp., *C. nuttalli*, *Hiatella arctica*, *Macoma nasuta*, *Modiolus modiolus*, *Mytilus edulis*,
Pododesmus cepio, *Prototheca staminea*, *Saxidomus giganteus*
 - f. Cephalopods - *Octopus dofleini*
12. Echinoderms
 - a. Brittle Stars - *Ophiolus* sp., ?
 - b. Sea stars - *Dermasterias imbricata*, *Evasterias truscheli*, *Henricia leviuscula*, *Leptasterias hexactis*, *Mediaster aequalis*,
Orthasterias keohleri, *Pycnopoda helianthoides*, *Solaster* sp., *Crossaster papposus*
 - c. Sea Cucumbers - *Holothurians* - *Eupentacta* sp.
 - d. Urchins - *Strongylocentrotus droebachiensis*
13. Bryozoans - *Membranipora* sp., *Microporina borealis*, *Schizoporella* sp.
15. Fishes
 - Cottidae*
 - Stichaeidae* - *Xiphister atropurpureus*, *X. mucosus*

III. Birds

Marbled Murrelet (2), Red-faced Cormorant (2), Pigeon Guillemot (2), Barrow's Goldeneye (8), Sparrow (1), Glaucous-winged Gull (3), Black-legged Kittiwake (8), Western Sandpiper (2), crow (2)

BIO SKETCH MAP

P4015-D

JP BARRY

MAY 15 1991

0633-0758

Legend

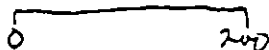


Steep Bedrock

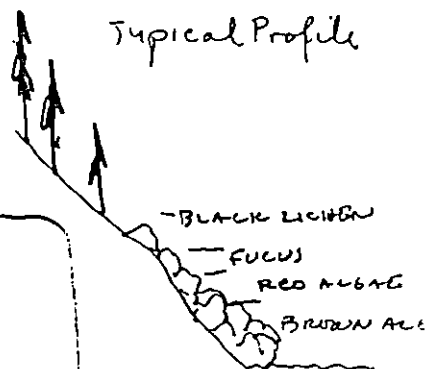


Boulder/Cobble/Rebble
all angular

Meters

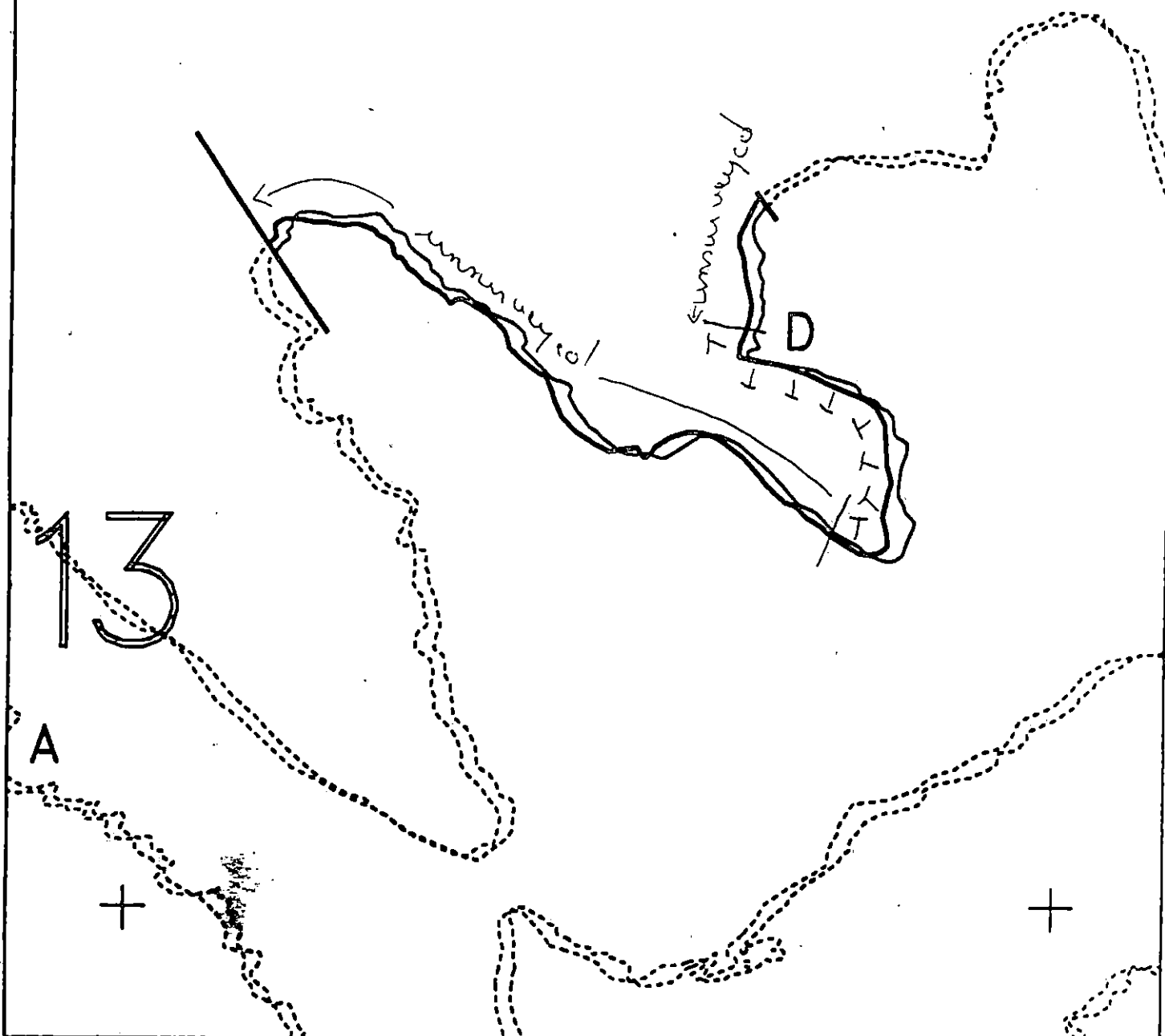


Typical Profile



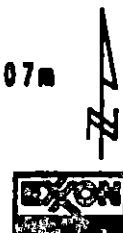
Oiling throughout located
in upper zone where biota
are somewhat scarce.
Black lichen, Fucus,
Green Algae, limpets,
Littorines, and barnacles
all are near the upper or
lower extent of their
range. RICH BIOTA BELOW
OILED AREAS. RED, GREEN & BROWN
ALGAE ARE ABUNDANT.

PY



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

PY015 D
 ADEC Subsegment Length: 3207m
 METERS
 0 400 800
 AK State Plane Zone 4
 npy015d



Subdivision Field Map
 Map Key: KENPY0150
 Name: for Sem...
 Date: MAY 15 90
 Date Entered:

Reviewed 5.18.91 gy
 REVIEWED 18 MAY

REGION: KENAI

SEGMENT: ST/ PY-016

SUBDIVISIONS: A (1 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ PY-016 SUBDIVISION A (1 OF 2) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Harbor seal and sea lion pupping (3N, P) - 5/15 to 7/1 and molting (3O, Q) - 8/15 to 9/15; National Wildlife Refuge (4QQ); Seabird colony (5R) 5/1 to 9/1.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid unnecessary disturbance to unoiled biota and substrate.

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 59 m: V.Light 0 m: No Oil 77 m
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: _____

FIELD SHORELINE COMMENT SHEET 4

SEGMENT ST/ PY 16 SUBDIVISION: A DATE APRIL 1, 1990~~USEG~~ NOAANAME JACQUI MICHEL SIGNATURE *J. Michel*☒ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

The band of oil on the ^{VERTICAL} rock wall on the north side of the beach is very high (UPPER AND SUPRA ITZ) AND NOT AMENABLE TO BIOREMEDIATION.

THERE IS NOTHING ELSE PRESENT SUITABLE FOR MANUAL REMOVAL.

ADEC

NAME JOHN R. REED SIGNATURE *John R. Reed*☒ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

DUE TO THE STATE AND LOCATION OF THE OIL I AM RECOMMENDING NO TREATMENT. I AGREE WITH ALL INFO ON SSAT FORMS.

LAND MANAGER - USFWS

NAME Mary Portner SIGNATURE *Mary Portner*☒ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

The coat to cover present on the north wall and on the boulders on the NW part of the beach is dry and tarry and not suitable for bioremediation or manual removal. If sheering does occur from this beach it should be reevaluated for treatment.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG MANN USCG/NOAA MICHEL SEGMENT ST/ PY 16
 BIO CARR LAND REP PORTNER - FWS SUBDIVISION A
 EXXON BOYER ADEC REED TIME 09:00 to 09:45
 TEAM NO.: 18 TIDE LEVEL: +6.5 to +5.5 DATE 4/1/1990
 EST. SUBDIVISION LENGTH: 100 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: N to S
 SURFACE SEDIMENTS: R 5 % B 85 % C 10 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 95 % Hang 0 % Vert 5 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 20 m VL 80 m NO 60 m
 40

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	10	15	10	15	SP	OR	OL	OF	NO	UC	UC	UC	SU	U	M	U
ASPHALT PAVEMENT																
POOLED																
COVER	✓		X		✓								X	✓		
COAT			X		✓								✓	X		
STAIN			X		✓								✓	X		
MOUSSE																
PATTIES																
TARBALLS																
FILM																
NO OIL														✓	✓	

PAVEMENT: H F S N/A sq. m by N/A cmPATTIES / TARBALLS 0 BAGSNEAR SHORE SHEEN? NO BR RW SL TL

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

DEBRIS COLLECTED
☒ YES ☐ NOTYPE FISHING Debr.#BAGS 2

Photographs:

Roll No. 18-2Frames (16-22)

SUBSURFACE OIL NO DIGGING POSSIBLE - BOULDERS ARE VERY LARGE AND INTERLOCKED.

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CH)	BELOW	OIL / FILM COLOR								PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO			UC	UC	UC	UC	UC	UC	UC	UC	SU	U	M	U		

COMMENTS MOST OF THIS BEACH IS CLEAN EXCEPT FOR A 15M X 7M ^{OILED} BOULDER PATCH IN THE LEE OF A LARGE BED ROCK KNOB AND A ZONE OF 80% COVER 2M WIDE ON THE VERTICAL ROCK WALL COMPRISING THE NORTH END OF THE BEACH. THIS BAND EXTENDS ABOVE THE HIGH TIDE, WHERE THE OIL COVERAGE DECREASES TO ~30%. THE OILED BOULDERS HAVE COAT AND STAIN, BOTH ON THE SURFACE AND DOWN TO THE SECOND LAYER OF BOULDERS. THERE HAS BEEN A SIGNIFICANT REDUCTION IN THE AMOUNT OF OIL SINCE 1989.

SKE MAP

~10m

SEGMENT ST/ PT-16
 SUBDIVISION A
 DATE 4/1/90

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

PR - No Subsurface Oil

2 Δ

Pit - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

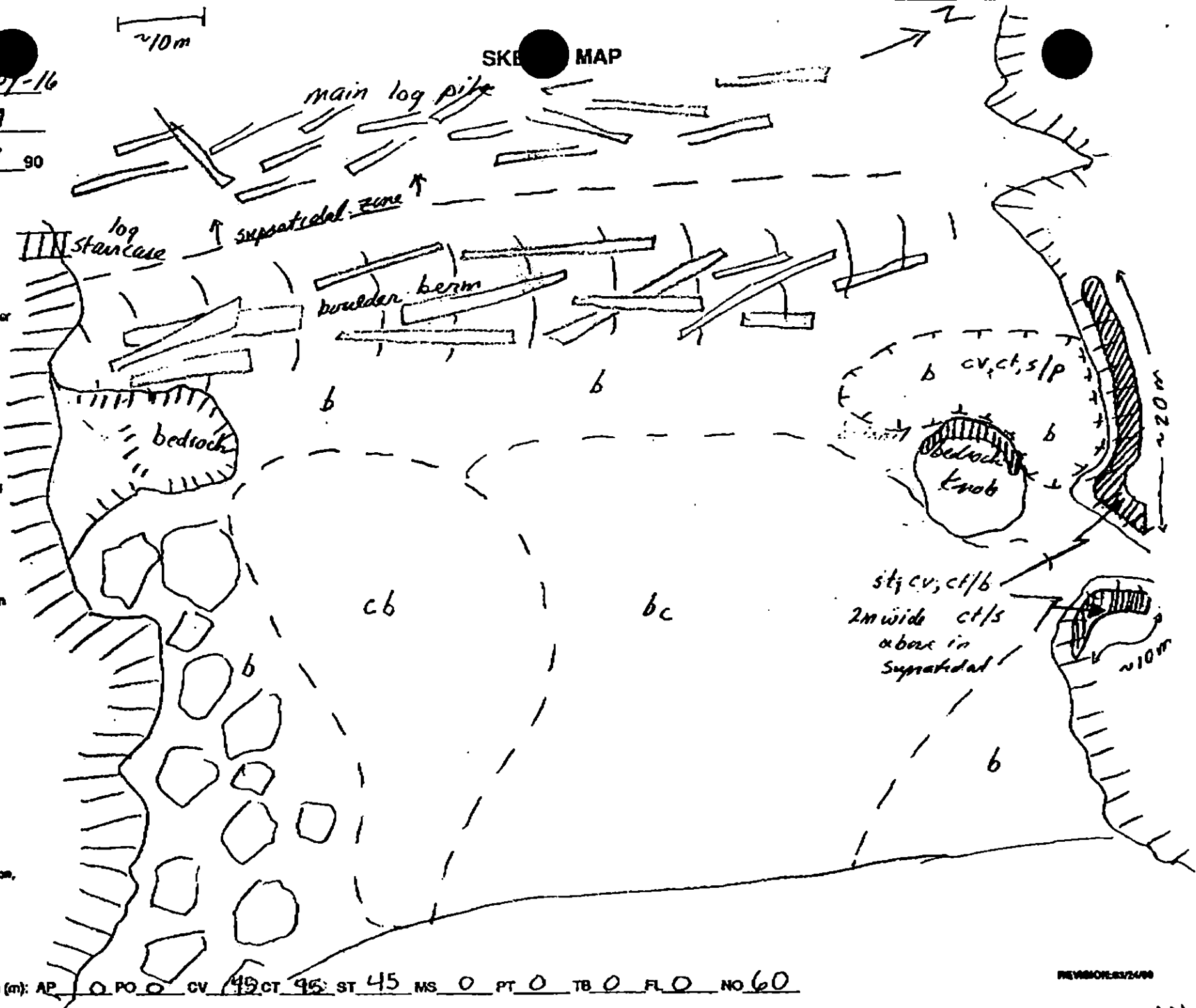
Splashed Distribution

Oil Vegetation

1 →

Photo location, direction, and number

Character Length (m): AP 0 PO 0 CV 45 CT 45 ST 45 MS 0 PT 0 TB 0 FL 0 NO 60



SHORELINE ECOLOGICAL SUMMARY

REVISION: 000000

Segment ST-1 PY 16 Subdivision A (EAST) (of A-B) Date (mo / day / yr) 4 / 1 / 90
 Time (24 hr) 0850 Biologist M. CARR

- (A) Substrate type and % of segments ^{SUBDIVISION}
 (1) Bedrock 5 (2) Boulder 5 (3) Cobble — (4) Pebble — (5) Sand — (6) SR —
 (B) Overall % cover of biota (% of segment): ^{SUBDIVISION} Dense — Moderate — Low 100%
 (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: 2
 Roll No. 2

Frames 16-20

BARNACLES

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
→ 1	2	2	2	2	2	2	2	2	X	X	1L ← NOT PRES. IN BEDROCK
→ 2	3	3	3	3	3	3	3	3	3	3	2 ← LOWER TIDAL. INACCESSIBLE
3	4	4	4	4	4	4	4	4	4	4	NOT PRESENT
4	5	5	5	5	5	5	5	5	5	5	
5	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
→ 1	2	2	2	2	2	2	2	2	2	2	1L ← NOT PRESENT ON OTHER SUBSTRATE
→ 2	3	3	3	3	3	3	3	3	3	3	2 ← NOT PRESENT
3	4	4	4	4	4	4	4	4	4	4	NOT PRESENT
4	5	5	5	5	5	5	5	5	5	5	
5	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
→ 1	2	2	2	2	2	2	X	2	X	2	1L ← NOT PRESENT ON BEDROCK
→ 2	3	3	3	3	3	3	3	3	3	3	2 ← LOWER TIDAL. INACCESSIBLE
3	4	4	4	4	4	4	4	4	4	4	NOT PRESENT
4	5	5	5	5	5	5	5	5	5	5	
5	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
→ 1	2	2	2	2	2	2	2	2	2	2	1L ← NOT PRESENT ON EITHER SUBSTRATE
→ 2	3	3	3	3	3	3	3	3	3	3	2 ← NOT PRESENT
3	4	4	4	4	4	4	4	4	4	4	
4	5	5	5	5	5	5	5	5	5	5	
5	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments:

♀ seen other w/ pup = (2) Commensal (unid.) (5)
 Glaucous-winged gulls (60)

Ecological Considerations:

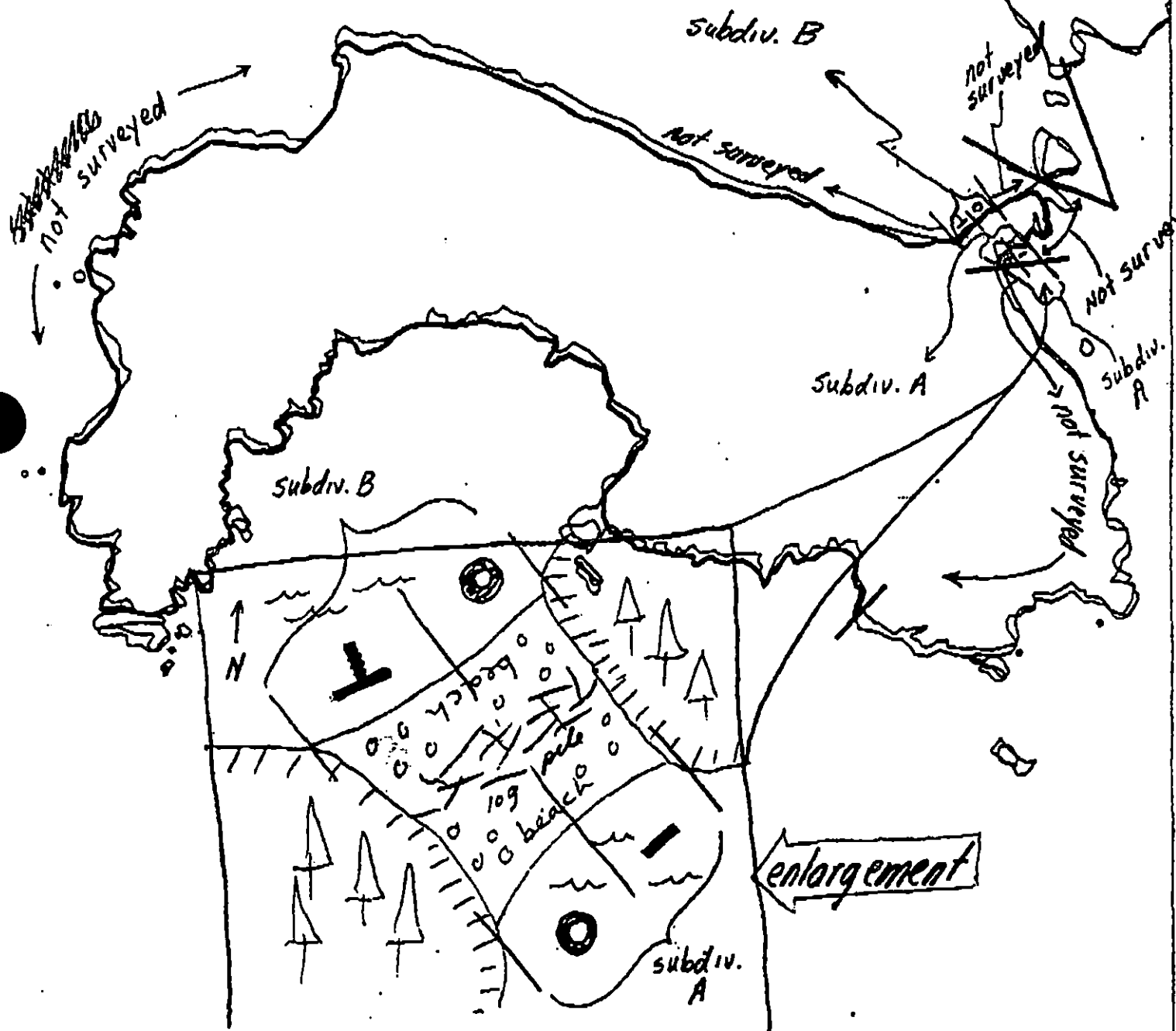
- site is exposed to extremely strong wave action.
- Organisms appear to have been scoured from both substrate types.

Sensitivity codes: 4-QQ (Nat. Wildlife Ref), 5-R (Seabird colony),

PWS 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 (4/20 to 5/10)
 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 (7/21 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.

PY-16



● XXX Wide

//// Medium

--- Narrow

TTTT Very Light

PY-16

ADEC Segment Length: 9857m

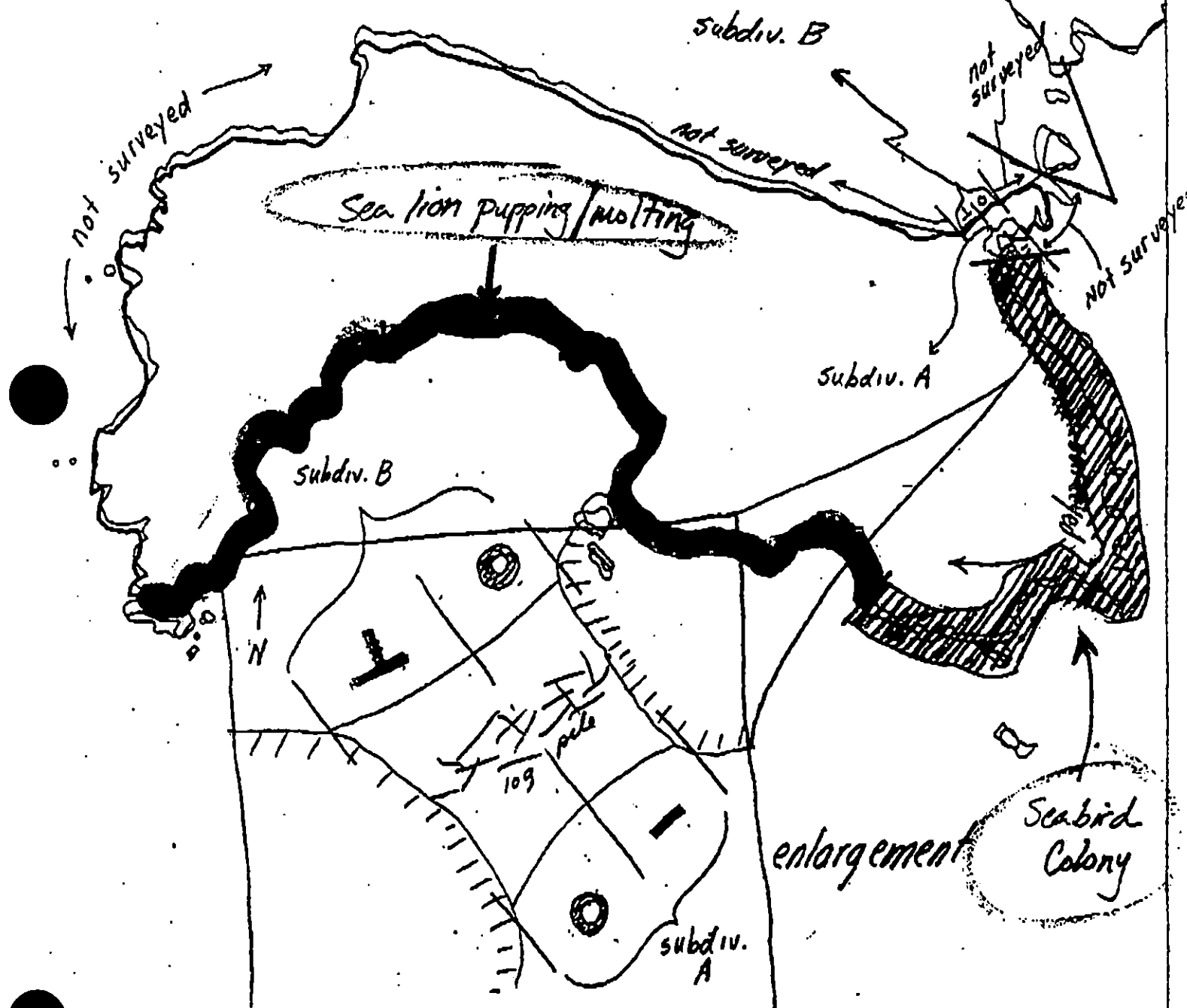
0 500 1000 1500

Map Key: KEN-88a

Name: Main

Date: 1 Apr 90

PY-16



XXX Wide
 /// Medium

PY-16

--- Narrow

ADEC Segment Length: 9857m

TTTT Very light

Map Key: KEN-88a

Name: _____

Date: _____

REGION: KENAI

SEGMENT: PY-16

SUBDIVISIONS: B (2 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ PY-016 SUBDIVISION B (2 OF 2) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Harbor seal and sea lion pupping (3N, P) - 5/15 to 7/1 and molting (3O, Q) - 8/15 to 9/15; National Wildlife Refuge (4QQ); Seabird colony (5R) 5/1 to 9/1.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid unnecessary disturbance to unoiled biota and substrate.

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 104m: No Oil 81 m
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: _____

FIELD SHORELINE COMMENT SHEET

5

SEGMENT ST/ PY 16 SUBDIVISION: B DATE APRIL 1, 1990~~USEG~~ NOAANAME JACQUI MICHEL SIGNATURE J. Michel☒ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

ALL THE AGENCIES AGREED THAT FURTHER TREATMENT WAS NOT WARRANTED.

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed☒ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

THIS IS A VERY SMALL AREA OF SPLASHES THAT DOES NOT WARRANT FURTHER TREATMENT. I AGREE WITH ALL INFO ON S.S.A.T. FORMS.

LAND MANAGER - USFWS

NAME Mary Fortner SIGNATURE Mary Fortner☒ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

There is a small oiled area approx 5 x 7 m remaining on the south end of the boulder beach. The oil is present primarily in the form of coat and stain on and between boulders. There are scattered splashes throughout the rest of the beach. The amount and character of the oil may not warrant treatment at this time.

SHORELINE OILING SUMMARY

REVISION NO. 03/25/88

2

OG Maan USCG Nichel SEGMENT ST/ PY16
 BIO Cam LAND REP Porter USFWS SUBDIVISION B
 AXON Boyer ADEC Reed TIME 9:45 to 10:10
 TEAM NO.: 12 TIDE LEVEL: +5.5 to +4.0 DATE APRIL 1 1990
 EST. SUBDIVISION LENGTH: 80 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: all to directions
 SURFACE SEDIMENTS: R 0 % B 100 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Lang 100 % Hang 0 % Vert 0 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 7 m NO 73 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	IC	IS	IF	IR	1	2	3	4	5	SU	UI	MI	LI
ASPHALT PAVEMENT													
POOLED													
COVER													
COAT				✓				✓				✓	
STAIN				✓				✓				✓	
MOUSSE													
PATTIES													
TARBALLS													
FILM													
NO OIL										✓	✓		✓

PAVEMENT: H F S NO sq. m by N/A cmPATTIES / TARBALLS 0 BAGSNEAR SHORE SHEEN? NO BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☒ YES ☐ NOTYPE Fishing debris#BAGS 2

Photographs:

Roll No. 18-2Frames 23-25SUBSURFACE OIL NO

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	VG	1	2	3	4	5	SU	UI	MI	LI		
<u>0</u>							-													
							-													
							-													
							-													
							-													
							-													
							-													

COMMENTS

On south end of boulder beach, there is a 5x7m zone of splashes of oil. CT & ST named between the boulders. Elsewhere there are a few areas of very sparse splashes of oil, some of which looked like tracks from workers on last year's cleanup.

OG PY MANN

SEGMENT ST/ PYØIL

SUBDIVISION 3

DATE 1 1 APRIL 90

CHECKLIST

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

LEGEND

1 

Pit - No Subsurface Oil

2 

Pit - 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

SKETCH MAP

Oil Character Length (m): AP 0 PO 0 CV 0 CT 7 ST 7 MS 0 PT 0 TB 0 FL 0 NO 73

REVISION: 03/24/90

SHORELINE ECOLOGICAL SUMMARY

REVISION: 08/22/88

Segment ST/ PY 16 Subdivision B (west) (of A-B) Date (mo/day/yr) 4/1/90Time (24 hr) 0920 Biologist M. CARR(A) Substrate type and % of segments: ^{SUBDIVISION}
(1) Bedrock (2) Boulder 100 (3) Cobble (4) Pebble (5) Sand (6) Silt (B) Overall % cover of biota (% of segment): ^{SUBDIVISION} Dense Moderate Low 100 %

(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. 2Frames 23-25

BARNACLES

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	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	

MYTILUS

Dense			Moderate			Sparse			Rare			NOT PRESENT (IN ANY ZONE)
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	

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	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	

FUCUS

Dense			Moderate			Sparse			Rare			NOT PRESENT (IN UPPER ZONE)
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	

Wildlife Observations/ General Comments:

Bald eagle (immature) (1) Bald eagle (6 = 2 mature, 4 unidentified)
Sparrow (Fox?) (1)

Ecological Considerations:

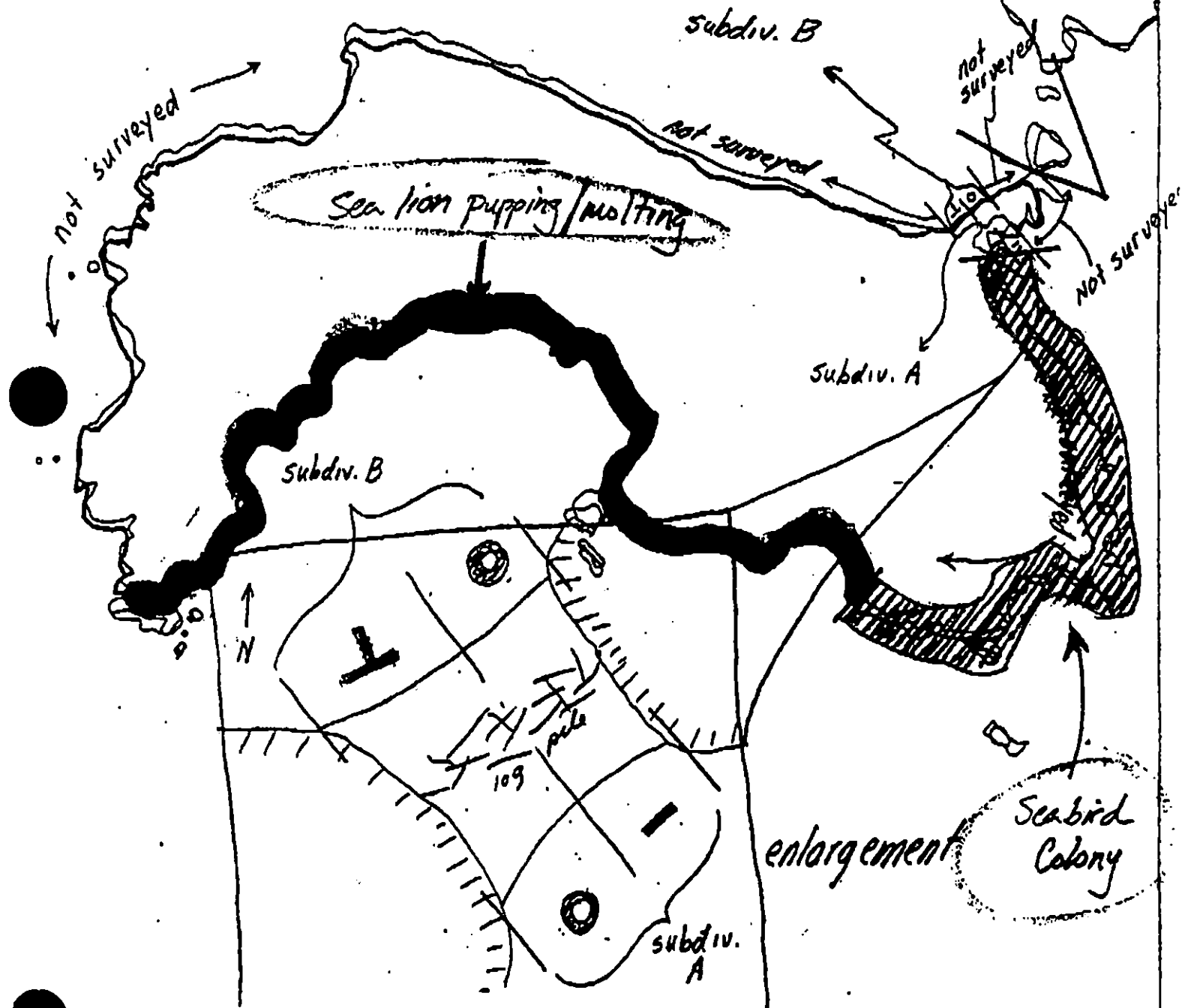
Many drift logs w/ no epifauna or epiflora.

Sensitivity codes: same as Pytle A. Sensitive sites are not in immediate vicinity of contaminated area.

PWS 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 (4/20 to 5/10)
 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 (7/21 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.

PY-16



XXX Wide
 /// Medium
 --- Narrow

PY-16

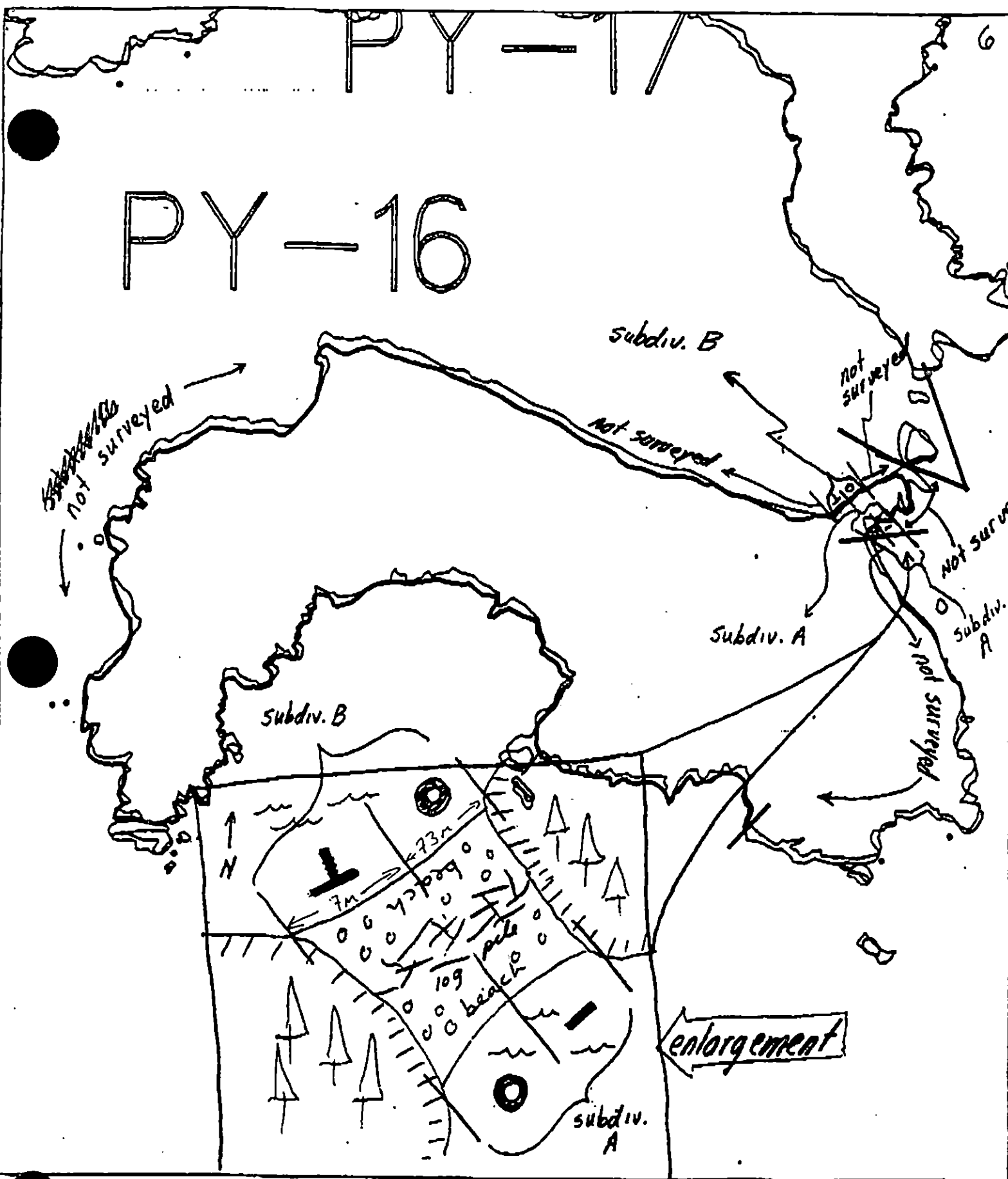
ADEC Segment Length: 9857m

Map Key: KEN-880

Name: _____

Date: _____

PY-16



XXX Wide
 /// Medium
 --- Narrow
 TTTT Very Light

PY-16

ADEC Segment Length: 9857m

Map Key: KEN-080

Name: MAN

Date: 1 Apr 90

REGION: KENAI

SEGMENT: ST/PY-17

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ PY-17 SUBDIVISION A (1 OF 1) DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
National Wildlife Refuge (4QQ).

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid disturbance/damage to unoiled biota and substrate.

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 2039m: No Oil 3129 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:

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ PY 17 SUBDIVISION: A DATE 4/6/90

USCG/NOAA

NAME JACQUI MICHEL SIGNATURE J. Michel

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

The very light oil contamination does not warrant further treatment. This segment is readily exposed to wave activity.

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

Very steep shoreline of bed rock and boulders with high wave energy. Very scattered splashes does not warrant treatment. I have read and agree with all data on S.S.A.T. Forms.

LAND MANAGER - USFWS

NAME Mary Partner SIGNATURE Mary Partner

☒ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

Oil contamination in this segment is very light. I feel this was a good survey and agree with the SSAT forms

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG Mann ^{NOAA} USCG Michel SEGMENT ST/ py-17
O Carr LAND REP/ KEUS - Partner SUBDIVISION A
AXON Bayer ADEC Reed TIME 16:55 to 18:09
 TEAM NO.: 118 TIDE LEVEL: +7.5 to 0.7 DATE 4/16/90
 EST. SUBDIVISION LENGTH: 6354 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 90 % B 10 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Lang 10 % Hang 45 % Vert 45 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 1080 m NO 4874 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	10	15	20	25	SP BN	OR RW	GY	GR TL	BRN	BU	UI	M	U
ASPHALT PAVEMENT													
POOLED													
COVER													
COAT				✓		✓					✓		
STAIN				✓		✓					✓		
MOUSSE													
PATTIES													
TARBALLS													
FILM													
NO OIL										✓		✓	✓

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

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☐ YES ☒ NOTYPE N/A#BAGS 0

Photographs:

Roll No. ST 18-4Frames (4-7)SUBSURFACE OIL No pits dug because of inaccessibility and bedrock/boulders.

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	OP	NO		VO	UC	SP	OR	OL	OP	NO	BU	UI	M	U	BU	UI	M	U	
<u>0</u>																							

COMMENTS

This is a steep and inaccessible shoreline with a wide fringe of kelp.
 Drift is sparse and takes the form of widely-separated clusters of
 patches, ^{and drifts} usually on lee sides of boulders and outcrops.

TAP

OG MANH
SEGMENT ST/ PY-17
SUBDIVISION A
DATE 4 16 90

SKETCH MAP

CHECKLIST

☐ N Area
☐ Approx. Scale
☐ Seg/Sob Bndry
☐ Oil Dist.
☐ Width
☐ Length
☐ % Cover
☐ Substrate Character
☐ Est. HAWLAWL
☐ SSL
☐ Profile Location(s)
☐ Profile(s)
☐ Pit Location(s)
☐ Photo Location(s)

NO sketch required

LEGEND

1 ▲

Pit - No Subsurface Oil

2 ▲

Pit - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Scattered Distribution

Oiled Vegetation

1 ➡

Photo location, direction,
and number

The oil character length is estimated by assuming 10% occurrence in the VL category.

Oil Character Length (m): AP 0 PO 0 CV 0 CT 200 ST 200 MS 0 PT 0 TB 0 FL 0 NO 6154

REVISION: 03/24/90

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST: PY-17 Subdivision A (of A) Date (mo / day / yr) 4 / 6 / 90Time (24 hr) 1655 Biologist M. CARR

- (A) Substrate type and % of segments: ^{SUBDIVISION}
 (1) Bedrock 90 (2) Boulder 10 (3) Cobble (4) Pebble (5) Sand (6) Silt
- (B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense 80 Moderate 10 Low 10
- (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 (O)

Photographs: 4
Roll No. Frames 4-7

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
NOT PRESENT ON COBBLE AT ANY TIDAL ZONE

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 IN LOW ZONE
NOT PRESENT
NOT PRESENT ON COBBLE AT ANY TIDAL ZONE

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
NOT PRESENT IN MID AND LOW TIDAL ZONE

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
NOT PRESENT IN COBBLE AT ANY TIDAL ZONE

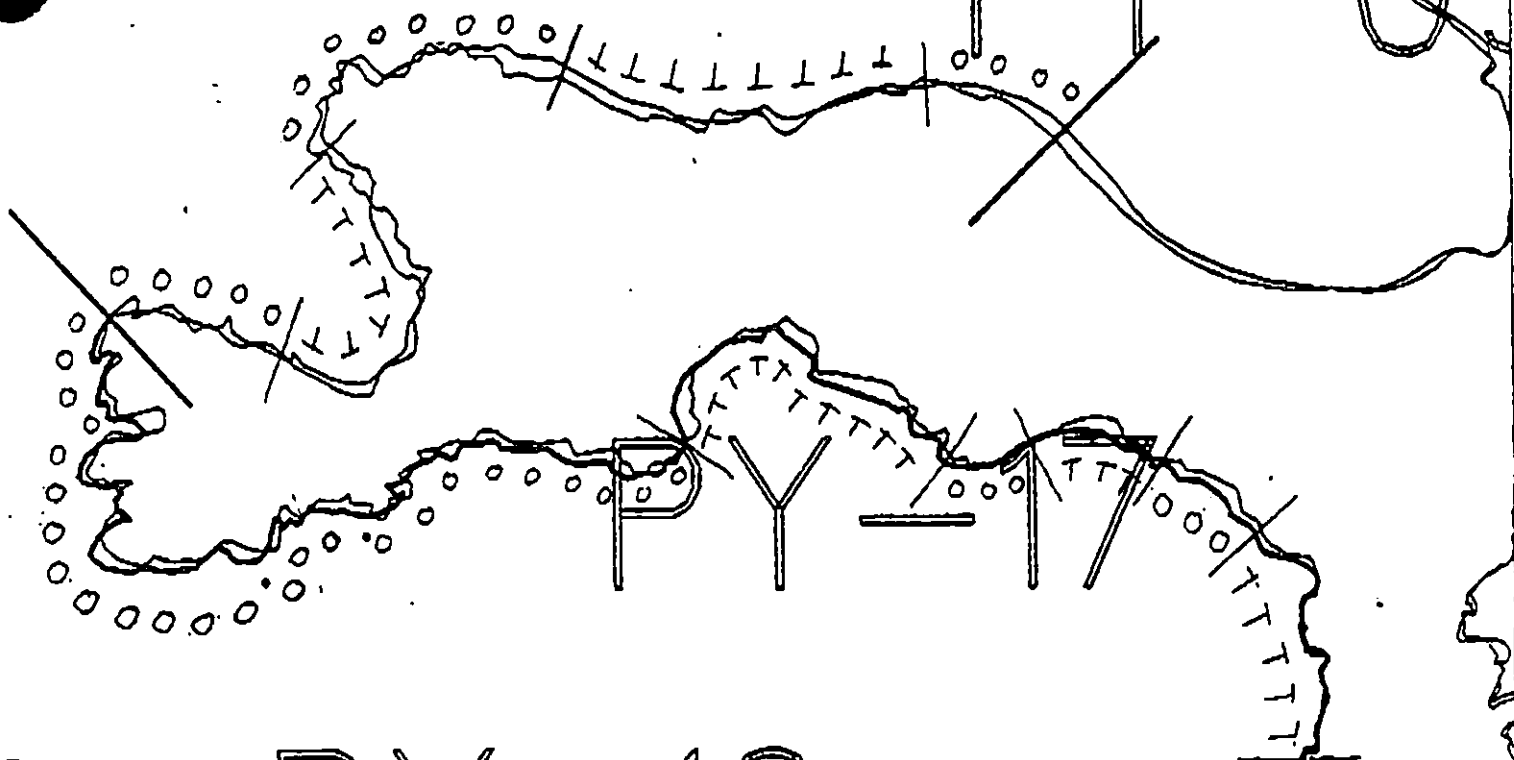
Wildlife Observations/ General Comments:

Ecological Considerations:

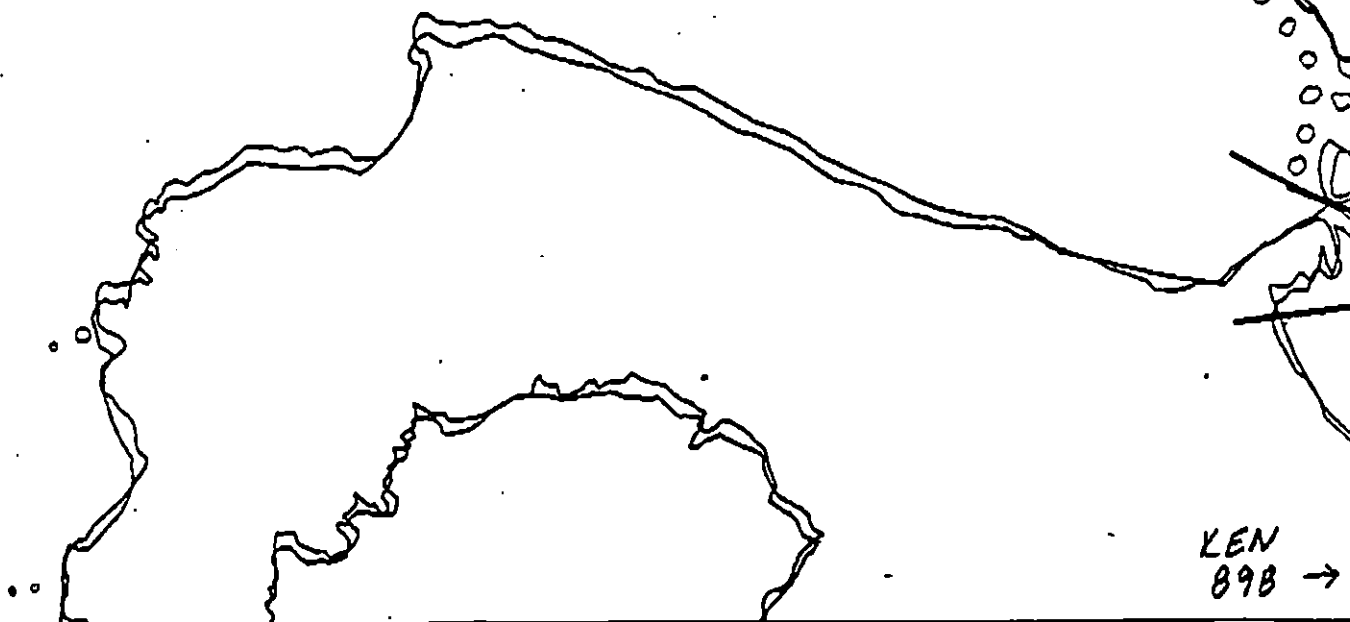
Sensitivity codes: 4-QQ (National Wildlife Refuge)

PY-14

PY-00



PY-16



KEN
89B →

XXX Wide

PY-17

/// Medium

--- Narrow

TTTT Very Light

OOOO No Coral

ADEC Segment Length: 6140m



"corrected" 4-9-90

Map Key: KEN-89a

Name: Mann

Date: 4/6/90

Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ PY-016 SUBDIVISION A (1 OF 2) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Harbor seal and sea lion pupping (3N, P) - 5/15 to 7/1 and molting (30,Q) - 8/15 to 9/15; National Wildlife Refuge (4QQ); Seabird colony (5R) 5/1 to 9/1.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid unnecessary disturbance to uncoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: Charles E. Hume DATE: April 14, 1980

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 59 m: V.Light 0 m: No Oil 77 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:

TAG COMMENTS:

TAG APPROVAL DATE: 4/14/90.
ADEC JOHN BAUER
EXXON AWOY TETZ FOSC: W L DATE: 5-1-90
NOAA Burt Was...
USCG G.A. REITER

G Man
 SEGMENT ST/ PJ-16
 SUBDIVISION A
 DATE 4/1/90

CHECKLIST

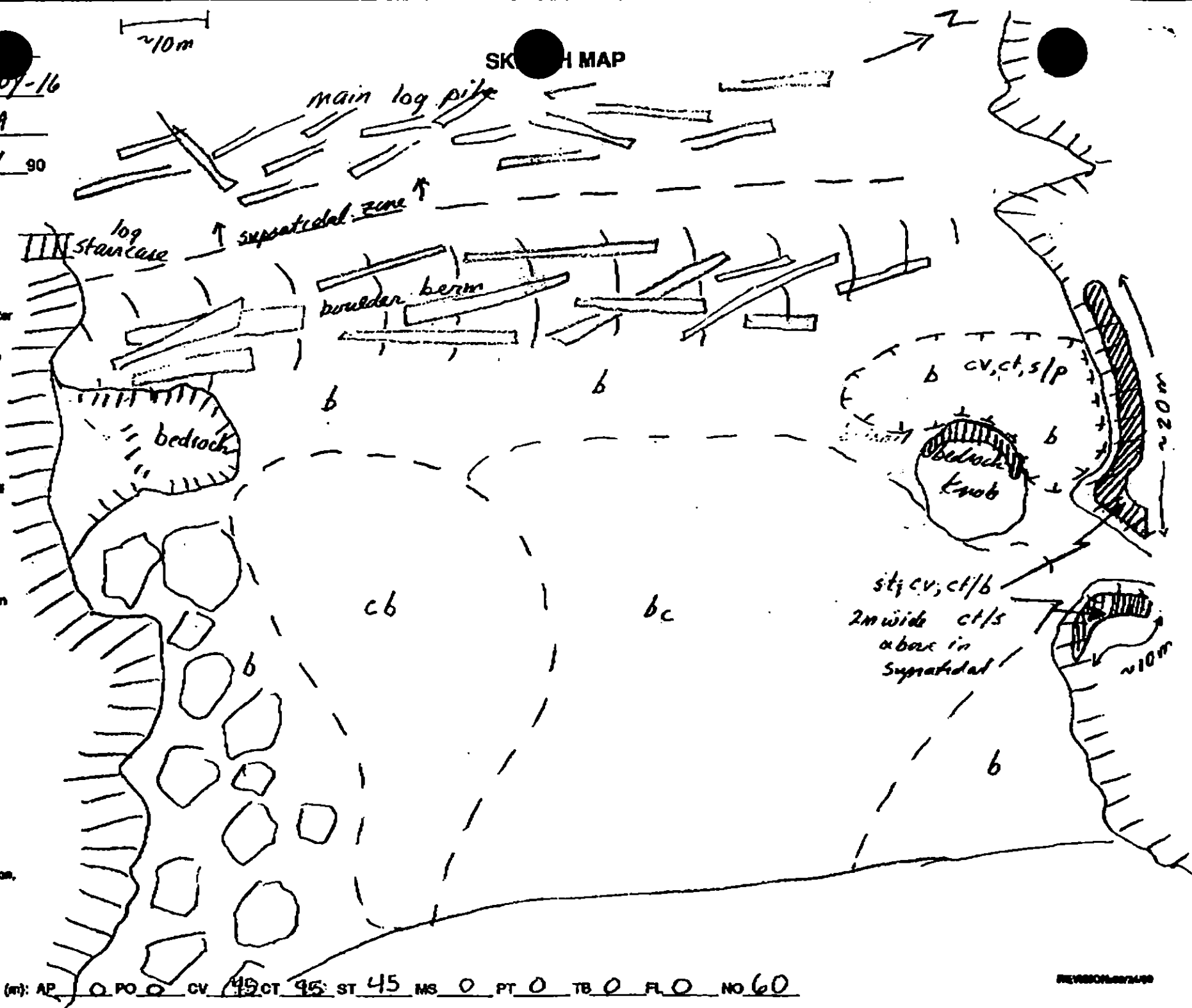
N Arrow
 Approx. Scale
 Seg/Sub Bdry
 Oil Dist.
 Width
 Length
 % Cover
 Substrate Character
 Est. HML/LWL
 SSL
 Profile Location(s)
 Profile(s)
 Plt Location(s)
 Photo Location(s)

LEGEND

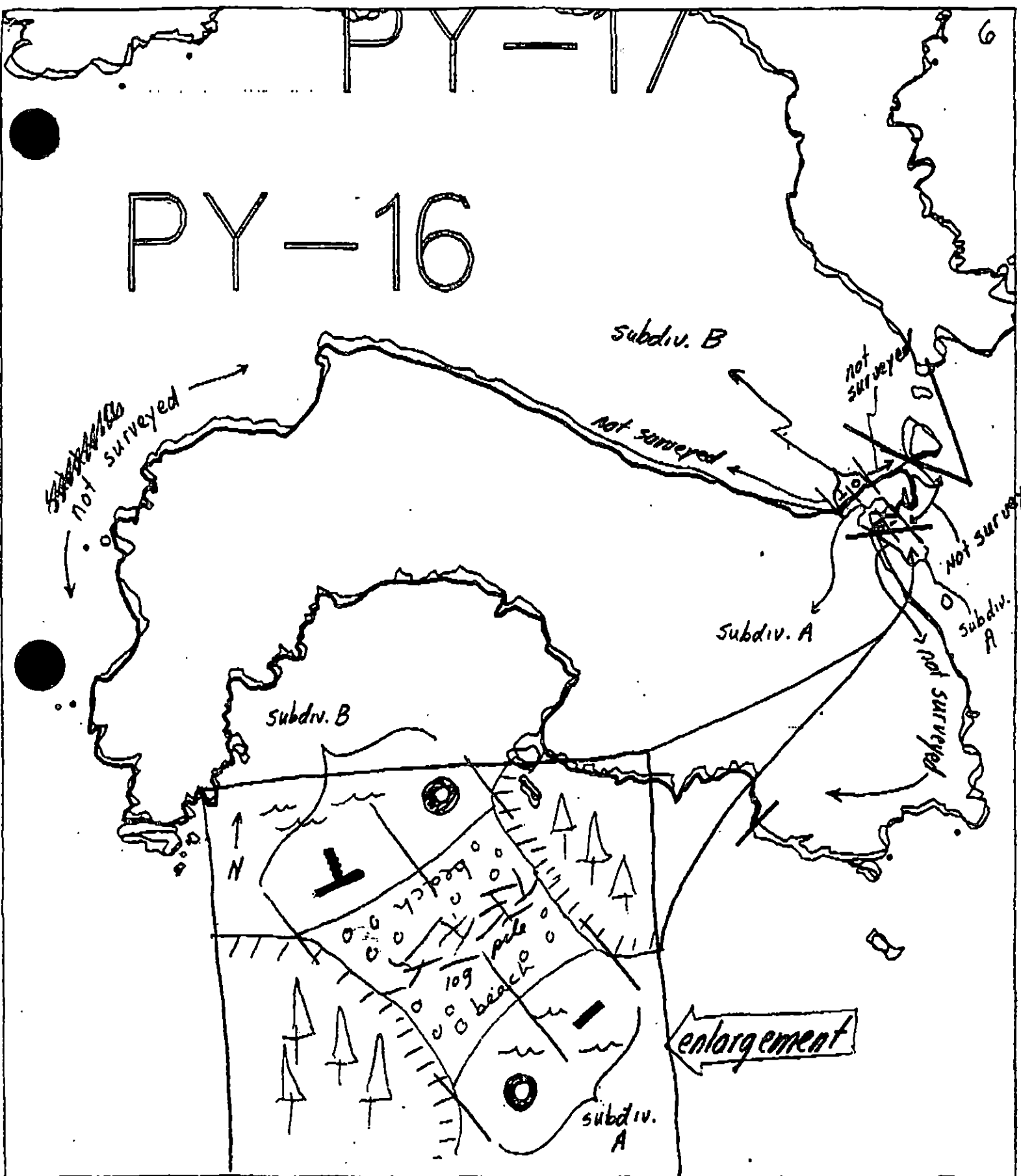
1 Δ
 No Subsurface Oil
 2 Δ
 Subsurface Oil
 CT/C
 Continuous Distribution
 CT/B
 Broken Distribution
 CT/P
 Patchy Distribution
 CT/S
 Plashed Distribution
 Wet Vegetation
 1 ●→
 Photo location, direction,
 and number

Character Length (m): AP 0 PO 0 CV 45 CT 45 ST 45 MS 0 PT 0 TB 0 FL 0 NO 60

SKETCH MAP



PY-16



● XX Wide
 /// Medium
 --- Narrow
 TTTT Very Light

PY-16

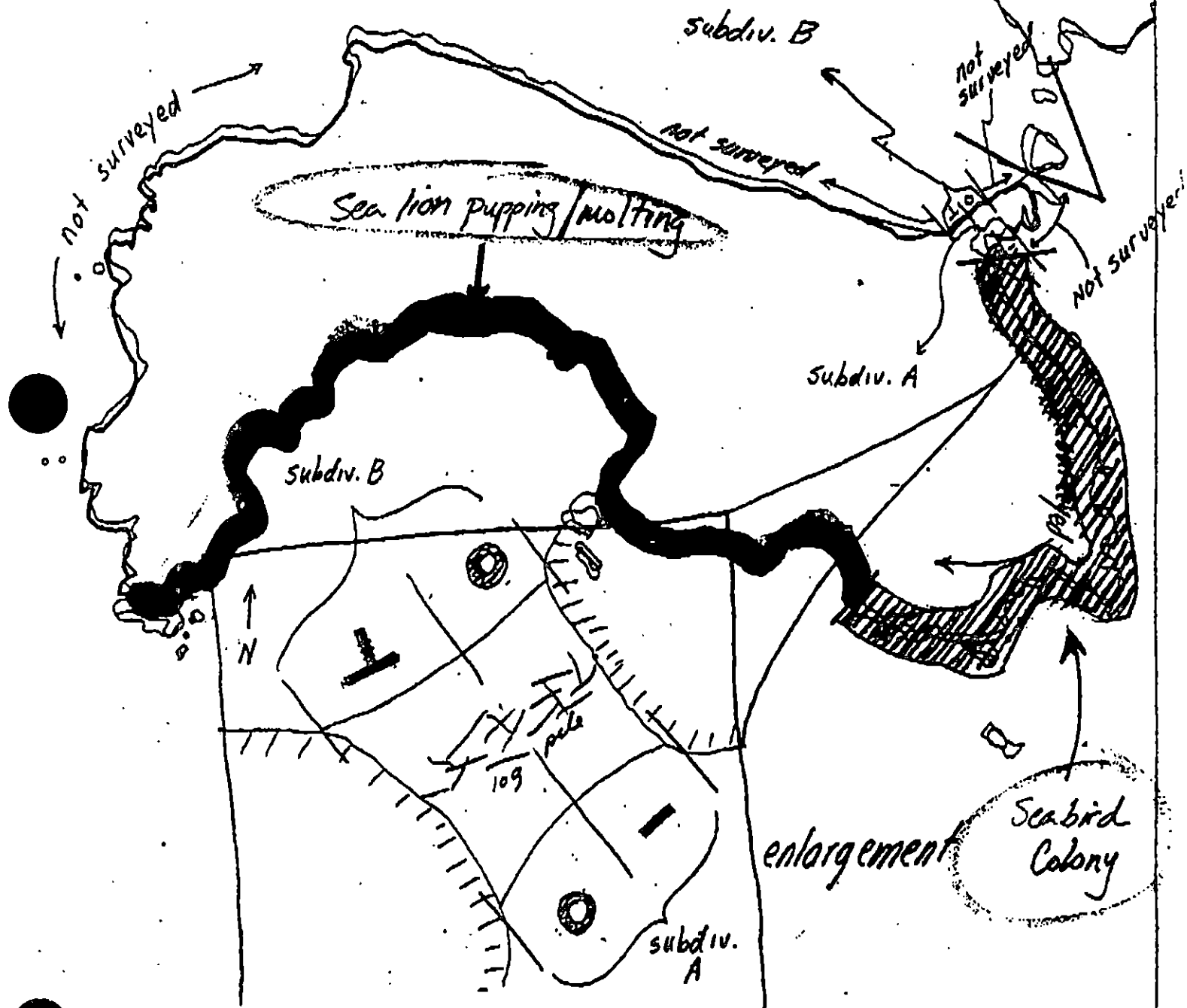
ADEC Segment Length: 9857m

Map Key: KEN-880

Name: Main

Date: 1 Apr 90

PY-16



XX Wide
 /// Medium
 --- Narrow
 TTTT Very light

PY-16

ADEC Segment Length: 9857m

Map Key: KEN-88a

Name: _____

Date: _____

SHORELINE EVALUATION

SEGMENT ST/ PY-016 SUBDIVISION B (2 OF 2) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Harbor seal and sea lion pupping (3N, P) - 5/15 to 7/1 and molting (3O, Q) - 8/15 to 9/15; National Wildlife Refuge (4QQ); Seabird colony (5R) 5/1 to 9/1.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid unnecessary disturbance to unopened biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: Charles E. Hume DATE: April 14, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V. Light 104 m: No Oil 81 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

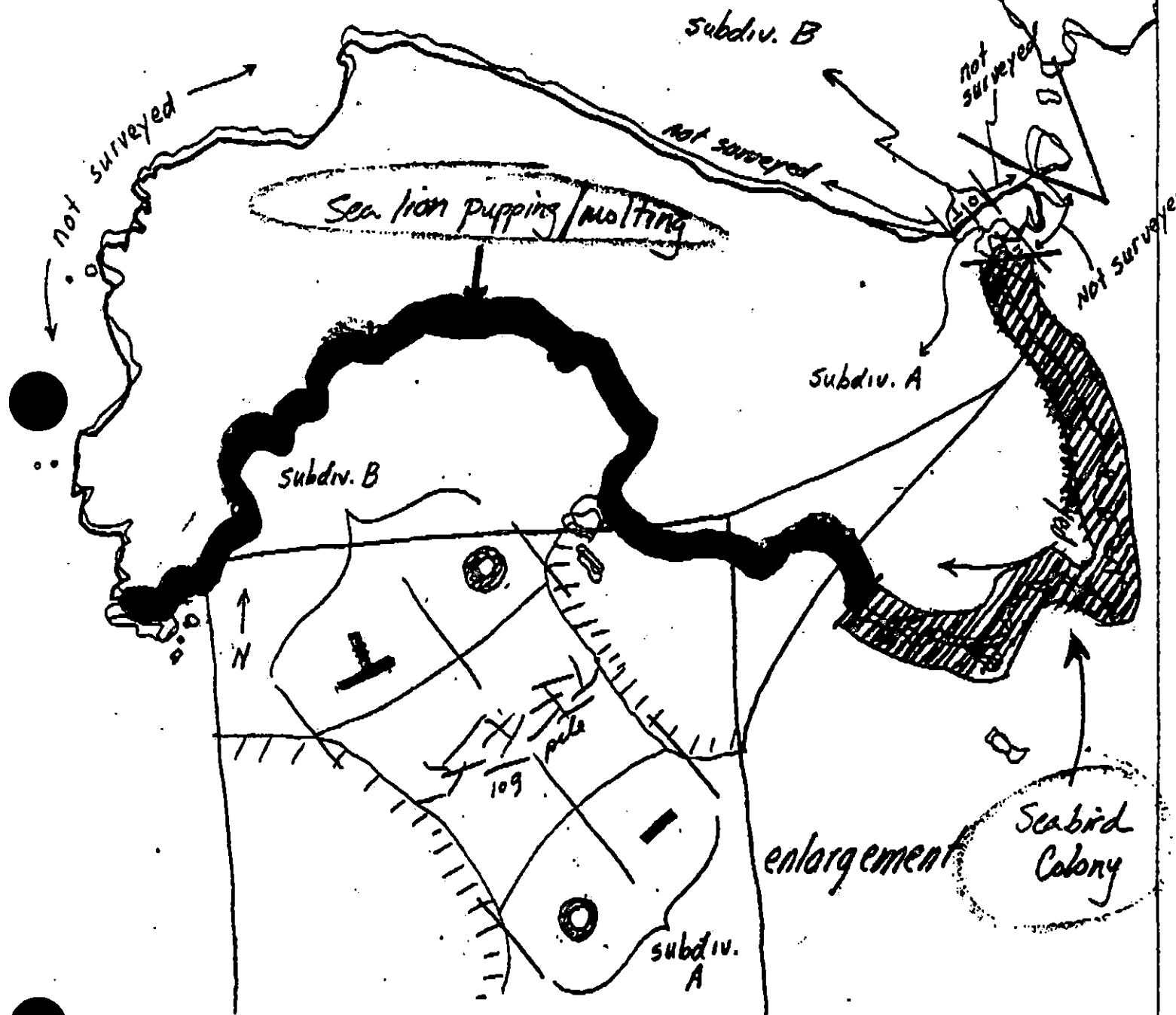
<u>X</u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u> </u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u> </u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u> </u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u> </u> Tarmat: <u> </u> Breakup	<u> </u> Beach Cleaner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

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 4/14/90.
ADEC Aret Weaver Detweiler
EXXON ANDY TSE Real FOSC: W L DATE: 5-1-90
NOAA Burt Wassoff Burt Wassoff
USCG G.A. REITER G.A. Reiter

PY-16



XXX Wide
 /// Medium
 --- Narrow

PY-16

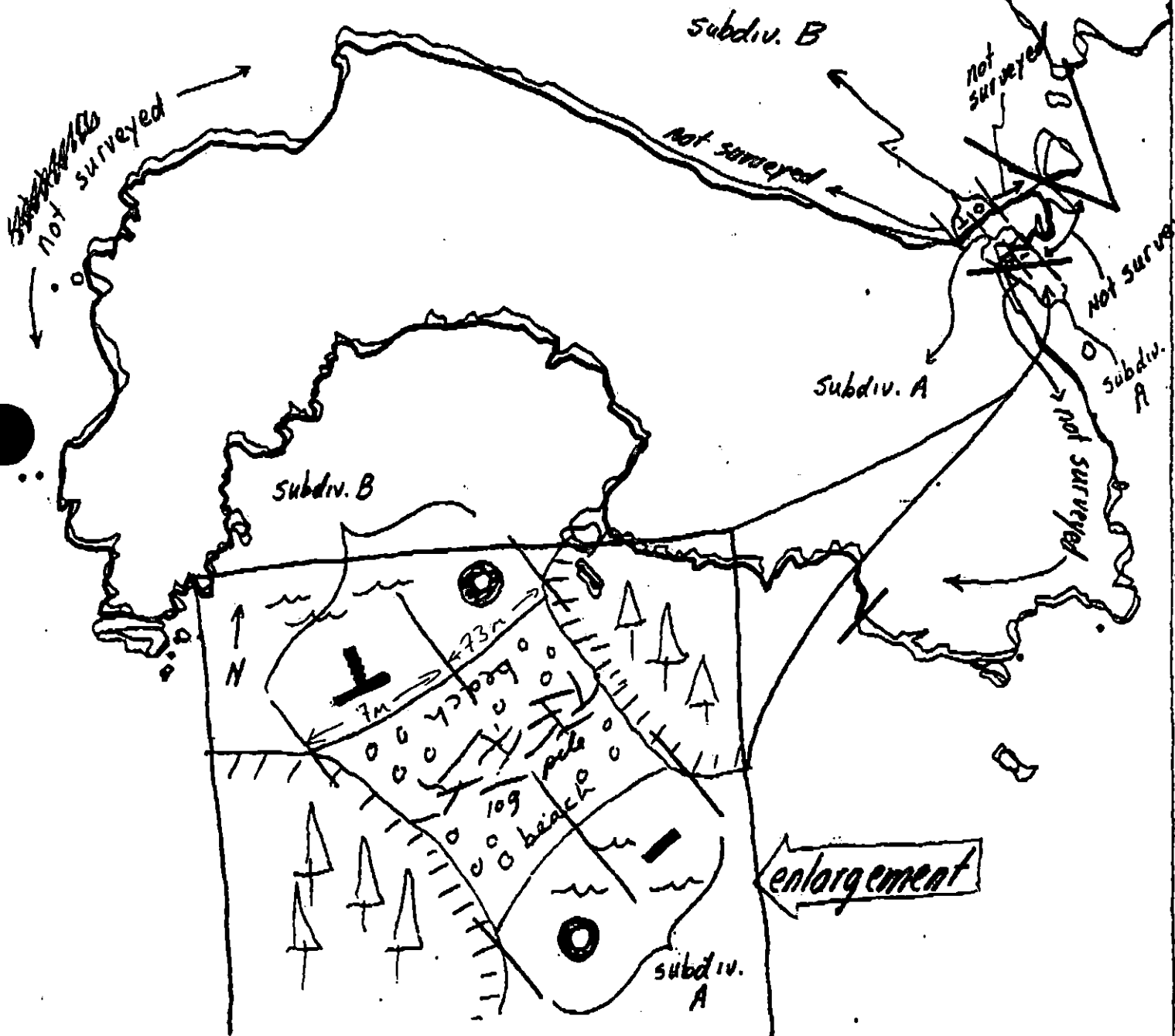
ADEC Segment Length: 9857m

Map Key: KEN-880

Name: _____

Date: _____

PY-16



● XX Wide
 /// Medium
 --- Narrow
 TTTT Very Light

PY-16

ADEC Segment Length: 9857m

Map Key: KEN-880

Name: MANN

Date: 1 Apr 90

SHORELINE EVALUATION

SEGMENT ST/ PY-17 SUBDIVISION A (1 OF 1) DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
National Wildlife Refuge (4QQ).

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid disturbance/damage to unoiled biota and substrate.

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

SHPO SIGNATURE: *Charles R. Shaw* DATE: 4/17/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V. Light 2039 m: No Oil 3129 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: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> Removal	<u> </u> Other (see comments)

COMMENTS:

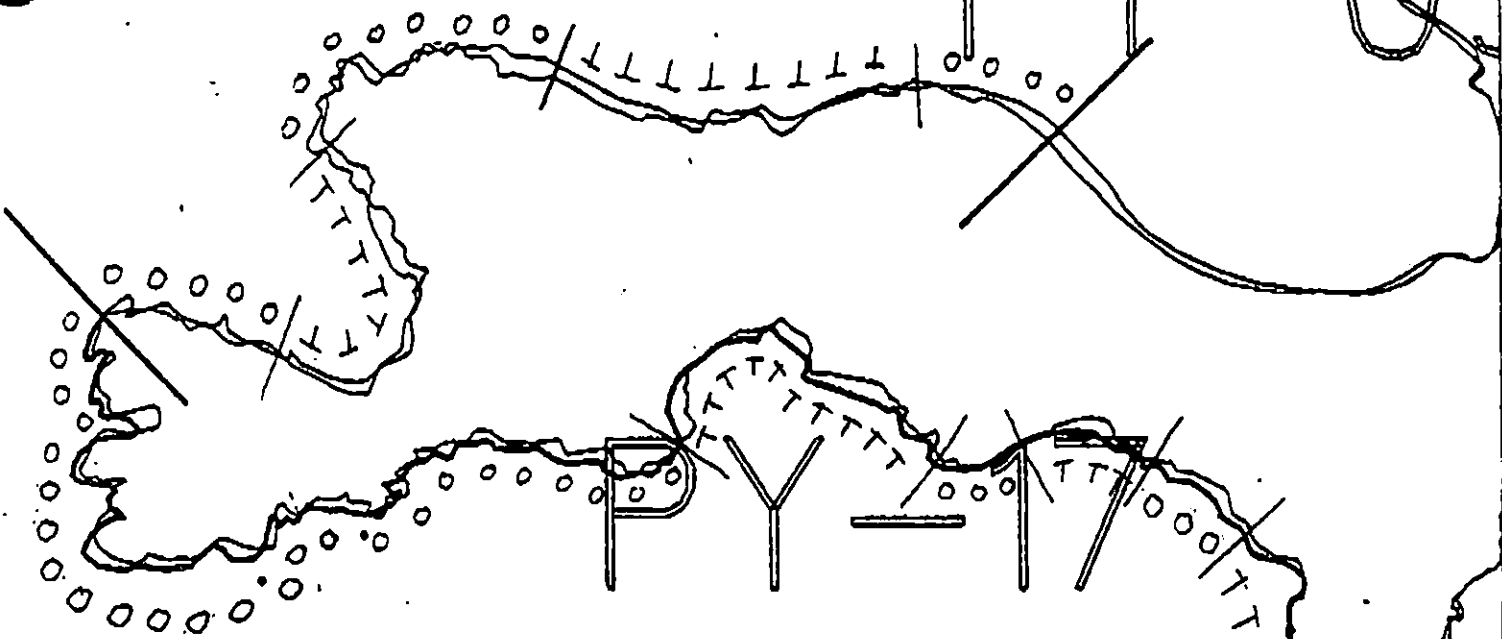
TAG COMMENTS:

TAG APPROVAL DATE: 4/17/90.
ADEC ART WEINER *Art Weiner*
EXXON ANDY TEAL *Andy Teal*
NOAA Burl Wesroft *Burl Wesroft*
USCG KENNETH KEANE *Kenneth Keane*

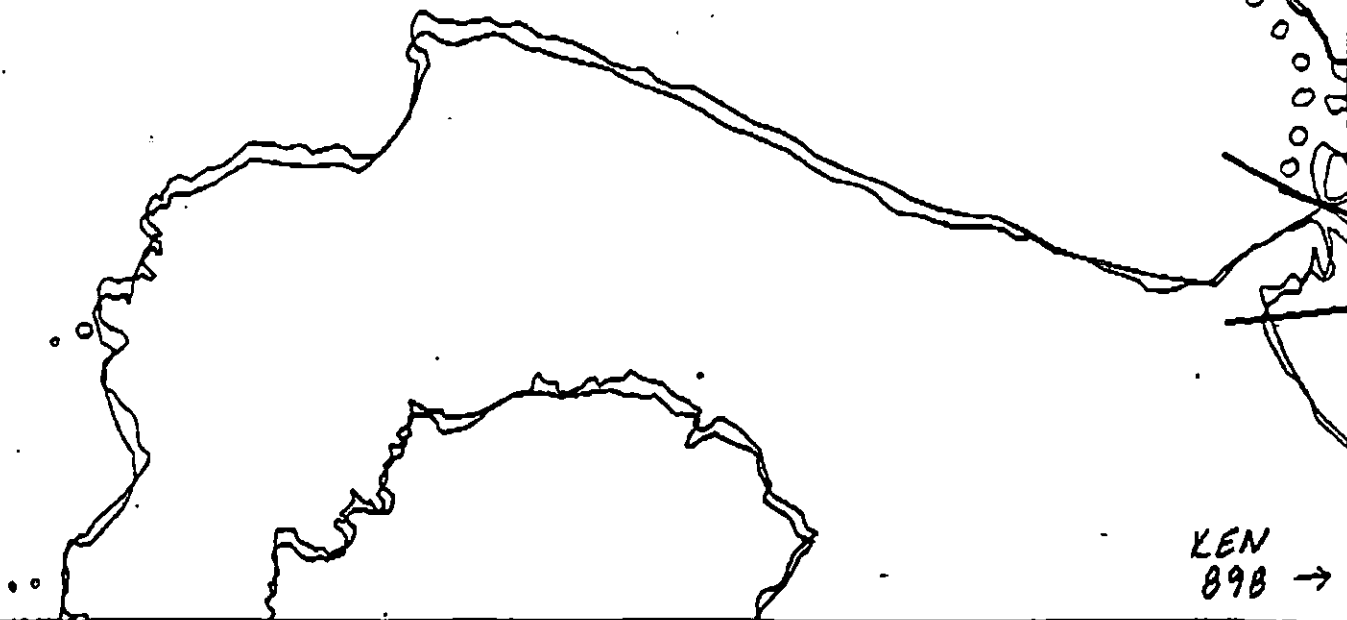
FOSC: *My L* DATE: 4-22-90

● PY-14

PY-00



● PY-16

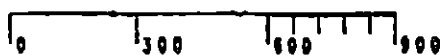


KEN
898 →

● XX Wide
/// Medium
--- Narrow
TTTT Very Light
OOOO No

PY-17

ADEC Segment Length: 6140m



"corrected" 4-9-90

Map Key: KEN-890

Name: Mann

Date: 4/6/90

Data Entered:

REGION: KENAI

SEGMENT: ST/QB-01

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ QB-01 SUBDIVISION A (1 OF 1) DATE 4/28/90

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)
2M Herring spawning (4/1 to 6/15)
4LL National Parks
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.

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 26 m: No Oil 934 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: _____

✓ 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 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

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. 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

✓ 6V

6W

6X

6Y

Recreation:

Tent sites (6/1 to 9/15)

Anchorage (6/1 to 9/15)

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

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 / QB001 SUBDIVISION: A (ENTIRE SEGMENT) DATE 4/26/91

USCG NAME Jerry Schultz SIGNATURE Jerry Schultz

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ADEC NAME Mike Ebel SIGNATURE Michael Ebel

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

QB-001-A : Two areas (one on each end of segment) were found to have very small splashes of coat. This was of no ~~substantive~~ substantive amount (very very light). No further impact recommended.

LAND MANAGER

NAME Mike Tetreau NPS SIGNATURE Mike Tetreau

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

Good survey. Very light splashes of coat observed at each end of the segment. No oil observed where noted last year. Removal of remaining oil is not necessary.

13/63

SHORELINE OILING SUMMARY

REVISION NO. 04

OG Randy Siegel USCG Jerry Schultz Mike Tetreu (NPS) SEGMENT ST/ QB-1
 BIO Lowie Sherman LAND REP Peter Zolner (CAC) SUBDIVISION A (1 OF 1)
 EXXON Leonard Herbst ADEC Mike Ebel TIME 10:40 10:11:30
 TEAM NO. 12 TIDE LEVEL -1.5' to -2.40' DATE 4 / 26 / 90
 EST. SUBDIVISION LENGTH: 1016 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: N to S
 SURFACE SEDIMENTS: R 5 % B 5 % C 10 % P 35 % G 35 % S 10 % M 0 % V 0
 SLOPE: Long 60 % Hang 40 % Vert 0 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 2 m NO 1014

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	C	S	P	S	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 0PATTIES / TARBALLS 0 BANEAR SHORE SHEEN? ☒ NO BR RW SL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS?

YES ☐ NO ☒TYPE 0#BAGS 0

None

Photographs: NoneRoll No Frames

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM)	BELOW		OIL / FILM COLOR					PIT ZONE				A N A	SHEEN (Y/N)	▼	SURFAC SUBSURF. SEDIMENT
		OP	OR	OL	OF	NO		UO	UC	1	2	3	4	5	SU	U	M	U				
1	30					X	0-0		X						X					-	-	P, G
2	26					X	0-0		X						X					N	20	P
3	24					X	0-0		X						X					N	15	P
4	42					X	0-0		X						X					-	-	P
5	36					X	0-0		X						X					-	-	P, G, S
6	34					X	0-0		X							X				N	30	G, S

COMMENTS

Short segment consisting of pebble-gravel beach at head of Rusty Bay.
 An anadromous stream cut through the beach. Two splashes of coal were observed along the beach. No oiling observed in pits.

REVIEWED YW DATE 4/27/90

2/63

REVISION 04 13 80

SUBSURFACE OIL (CONTINUED)

[illegible]

COMMENTS

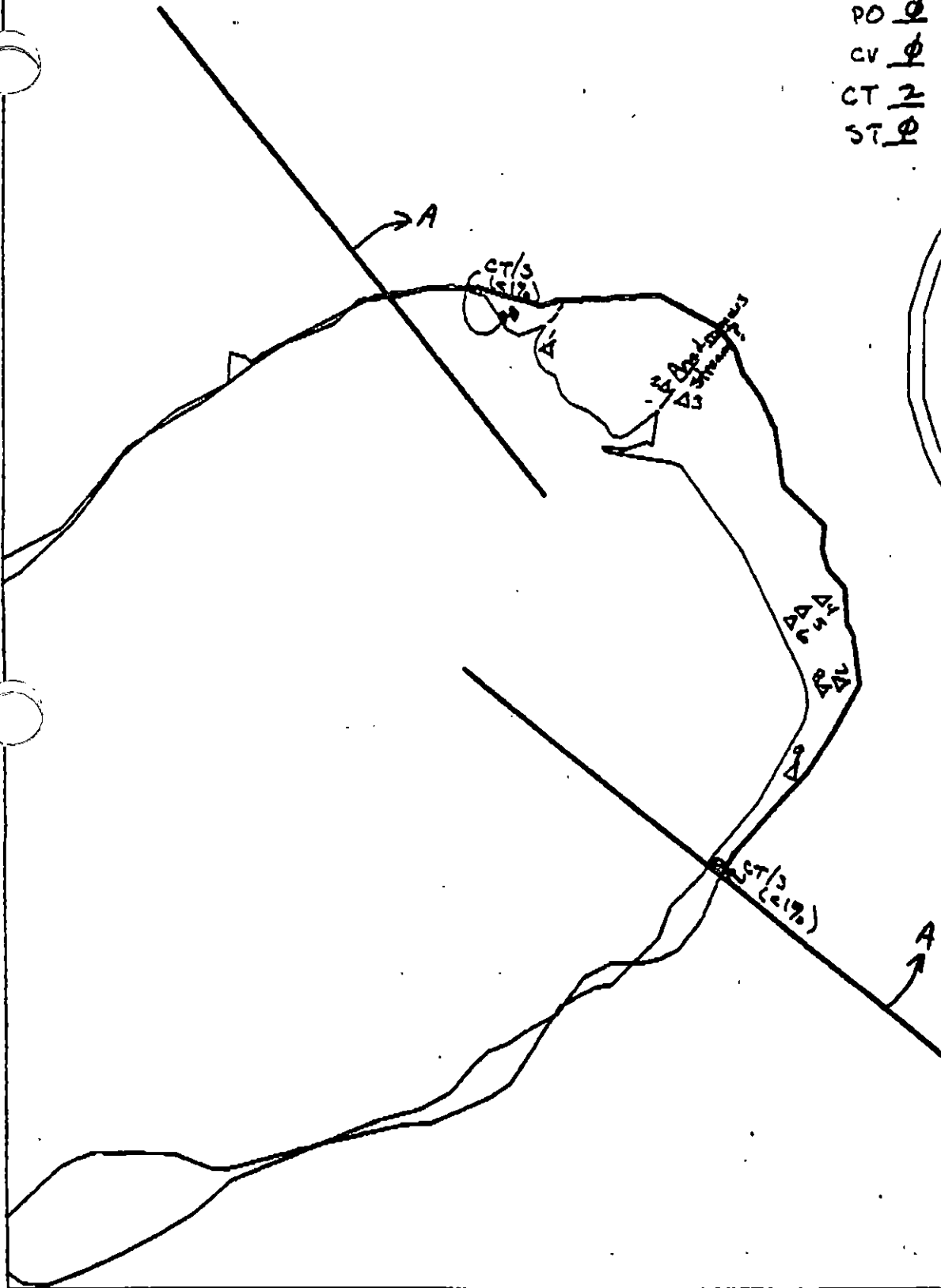
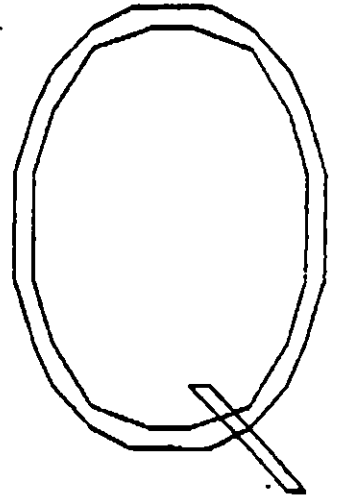
REVIEWED

DATE _____

3/63
DATE 4/27/90

Oil Character Length (m)

AP ϕ	MS ϕ
PO ϕ	PT ϕ
CV ϕ	TB ϕ
CT <u>2</u>	FL ϕ
ST ϕ	NO <u>1014</u>



XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

OOOO No Oil

QB-1

ADEC Segment Length: 960m



Map Key: KEN-98

Name: Patty Siegel

Date: 4/26/90

Date Entered: 4/6/93

SHORELINE ECOLOGICAL SUMMARY (Page 1 of 3)

REVISION: 002

Segment ST / QB-1 Subdivision A Date (mo / day / yr) 4/26/90

Time (24 hr) 1045-1130 Biologist SHARMAN

(A) Substrate type and % of segments SUBDIV.
 (1) Bedrock 5 (2) Boulder 5 (3) Cobble 10 (4) Pebble 35 (5) Sand 45 (6) S& + 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

Frames

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	

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	

GASTROPODS (ALCEGA, LITTORINA, LIMAEYS)

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	

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	

Wildlife Observations/ General Comments: 12 pairs Barnow's goldeneyes, 10 pairs glaucous-winged gulls, 2 pairs Common mergansers, 60 Steller's jays, 1 crow, varied thymus in forest 1 belted kingfisher. This area, abraded during the '64 earthquake as evidenced by dead trees along the supratidal fringe. As in other segments in the area, there are discontinuous sparse sedges.

Ecological Considerations:
 We received no information regarding resource sensitivity for this segment. See attached eco. map for location of possible anadromous stream. The biota of this segment cannot benefit from further human intrusion/disturbance.

9/63

QB-1

Shoreline Ecological Summary (cont.)
(Page 2 of 3)

Sharman
4/26/90

General Comments (cont.):

nearshore subtidally in shallow water, gently sloping fine-sediment beaches. Intertidal comments are very similar for this segment as for BB-901. Saxidomus, Protolaea, Chione shells, many drilled, on sandy beaches. Also an unusually great abundance of Pododemus. Primary bivalve predator appears to be Natice.

- observed several Natice shells + egg collars. Beneath boulders are pricklebuds, nereid tubes, limpets, Littorina, Idotea, Pagurus, verids. Abundant LTZ Enteromorpha on fine-sediment beaches. As elsewhere in this general area over the past few days, barnacle cyprid larvae have settled in great numbers but are only beginning to metamorphose into spat. Fucus and rocks are recruiting well where adults are established. Newly recruited Littorina & limpets are common. Biotically, this segment appears quite normal & healthy - exactly what would be expected on the different substrate types (both diversity and abundance).

10/63

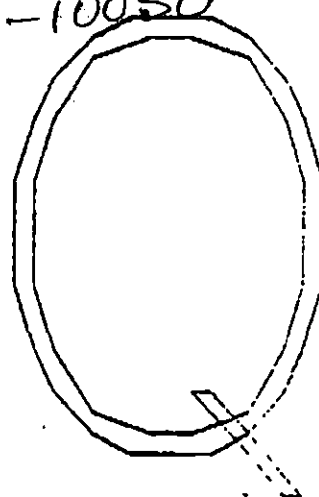
QB 001-A (1 of 1)

1A 1B
2M
4LL
6U
6V

ANADROMOUS STREAM

232-22-10050

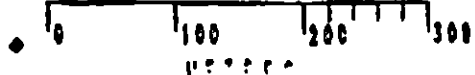
Anadromous
stream?



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

QB-1

ADEC Segment Length: 960m



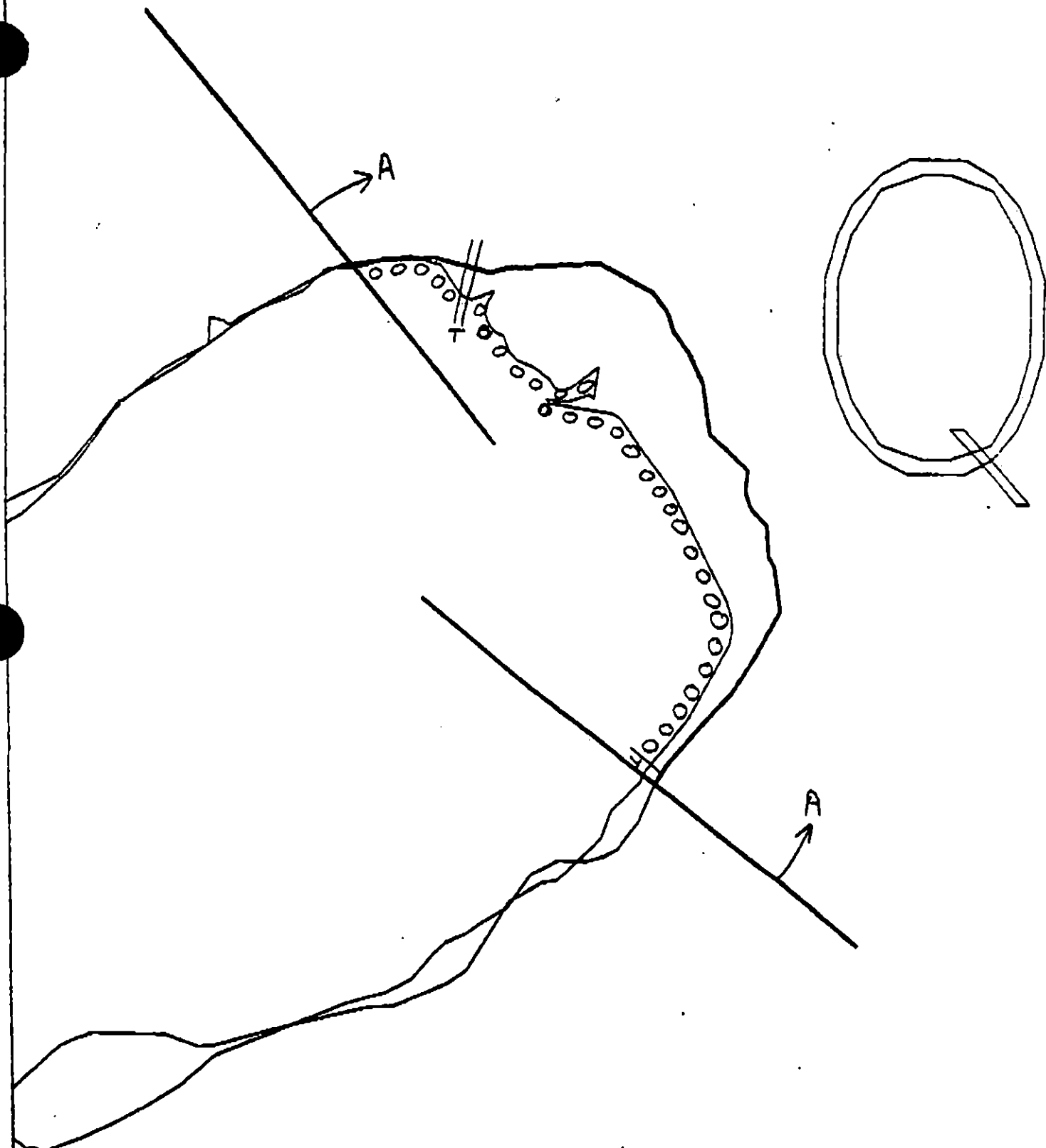
Map Key: KEN-98

Name: _____

Date: _____

Data Entered: _____

11/16/93



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

QB-1

ADEC Segment Length: 960m



Map Key: KEN-98

Name: Andy Singh

Date: 4/26/90

Data Entered: 5163

SHORELINE EVALUATION

SEGMENT ST/ QB-01 SUBDIVISION A (1 OF 1) DATE 4/28/90

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)
2M Herring spawning (4/1 to 6/15)
4LL National Parks
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.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: Charles E. Jones DATE: 5/5/80

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 26 m: No Oil 934 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)

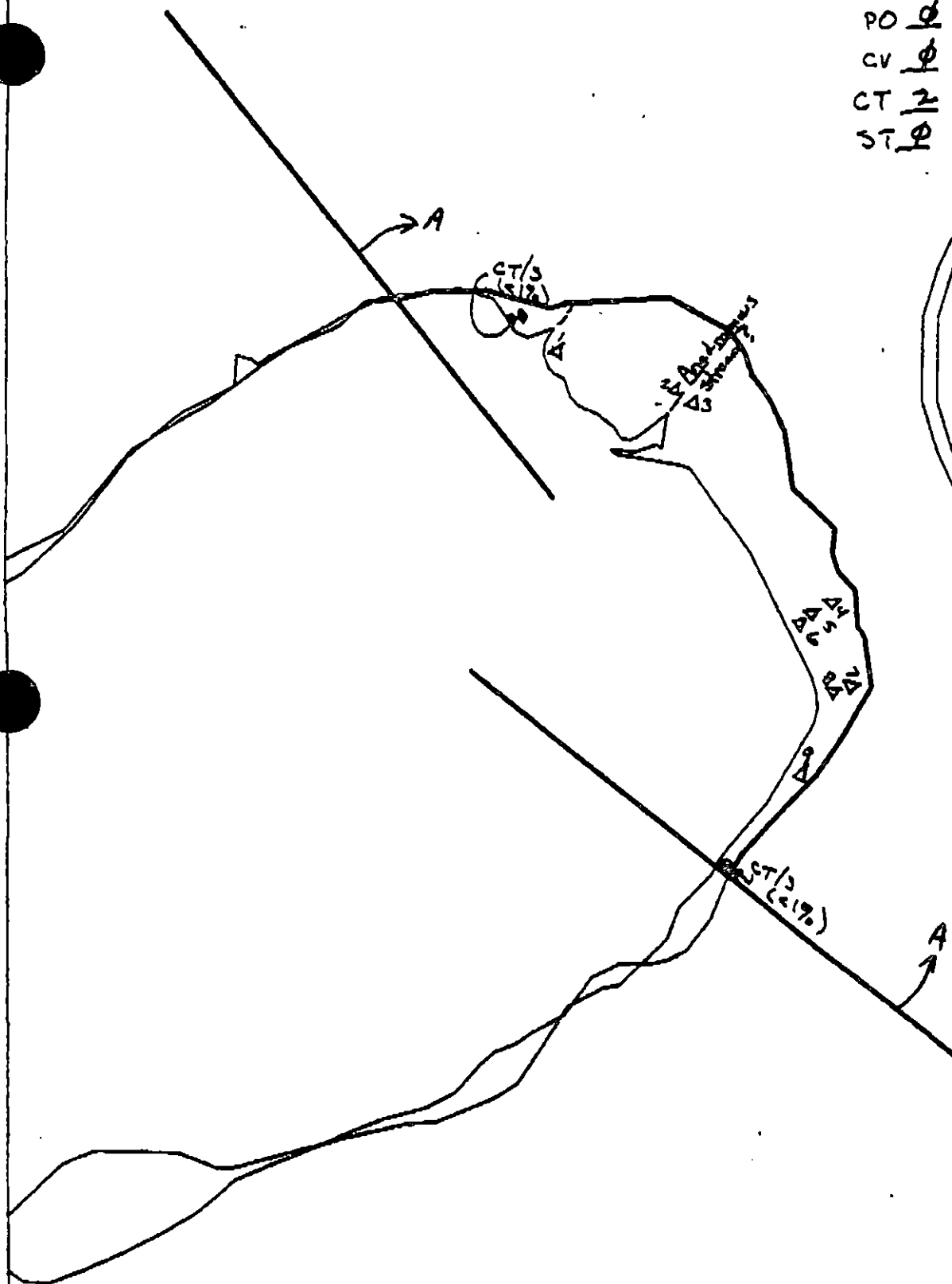
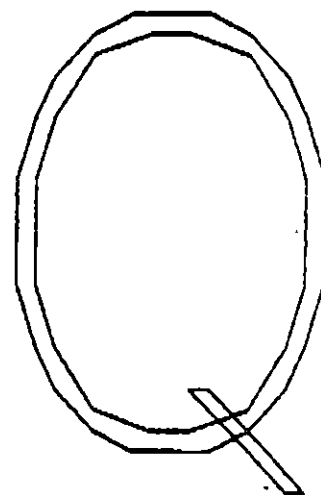
COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: May 5 1990
ADEC ART WEINER Art Weiner
EXXON Mark N. Silbert Mark N. Silbert FOSC: my L DATE: 5-9-90
NOAA Gary Petras Gary Petras
USCG G.A. Reiter G.A. Reiter

Oil Character Length (m)

AP ϕ	MS ϕ
PO ϕ	PT ϕ
CV ϕ	TB ϕ
CT <u>2</u>	FL ϕ
ST ϕ	NO <u>1014</u>



XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

OOOO No Oil

QB-1

ADEC Segment Length: 960m



Map Key: KEN-98

Name: Andy Siegel

Date: 4/26/90

Date Entered: 4/6/93

Eco. Map

(Page 3 of 3)

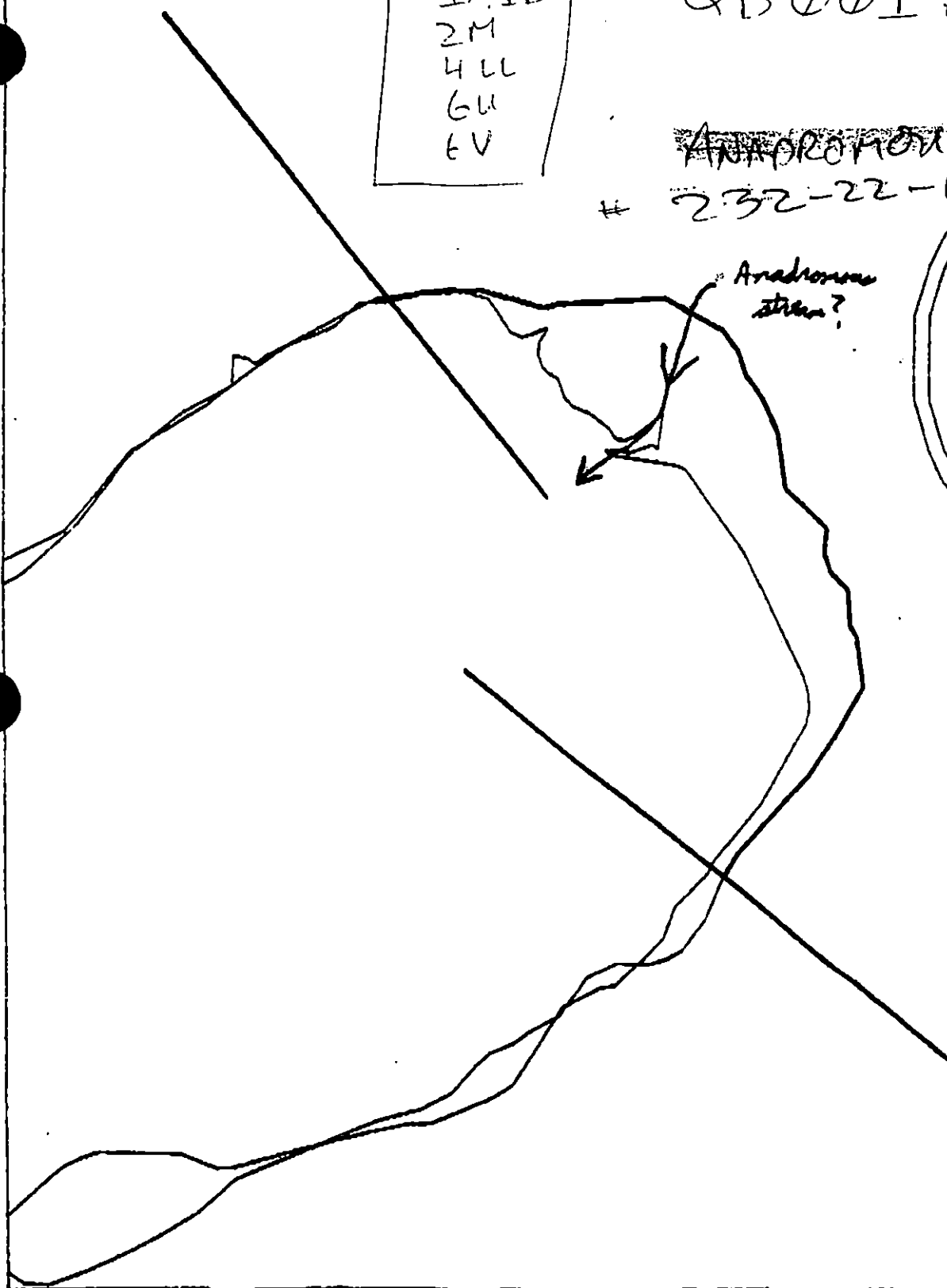
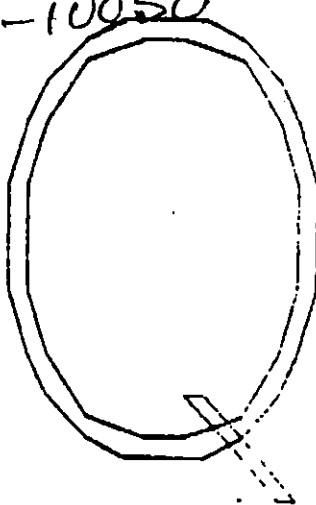
QB 001-A (1 of 1)

1A.1B
2M
4LL
6U
6V

~~ANADROMOUS STREAM~~

232-22-10050

Anadromous
stream?



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

QB-1

ADEC Segment Length: 960m

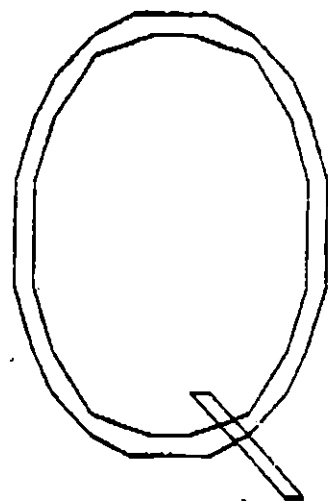
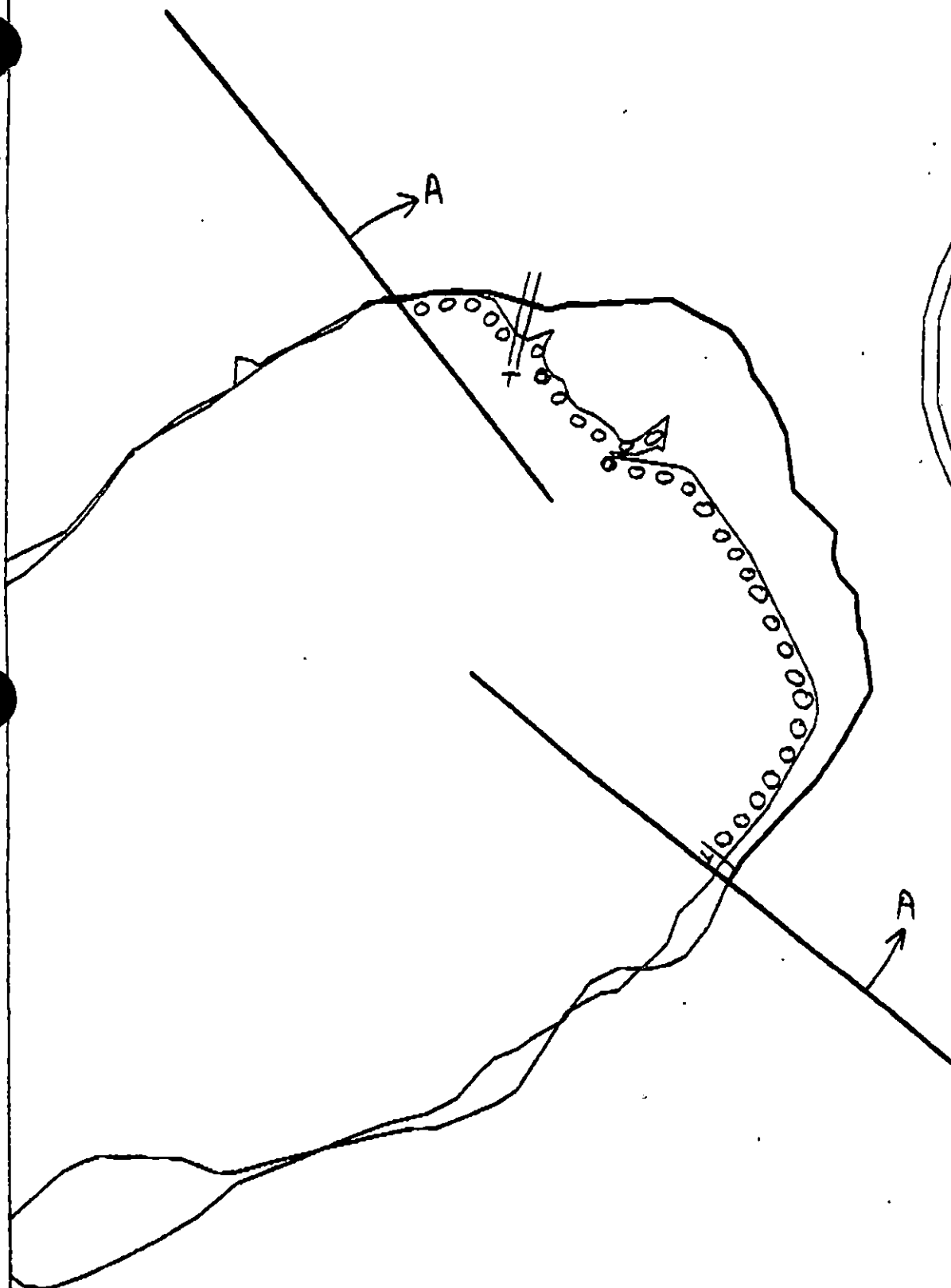


Map Key: KEN-98

Name: _____

Date: _____

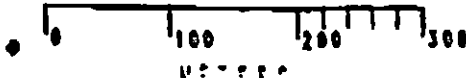
Date Entered:
11/16/93



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

QB-1

ADEC Segment Length: 980m



Map Key: KEN-98

Name: Andy Diaz

Date: 4/26/90

Data Entered: E112

SHORELINE EVALUATION

SEGMENT ST/ QB-01 SUBDIVISION A (1 OF 1) DATE 4/28/90

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)

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

4LL National Parks

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 unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

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

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

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 26 m: No Oil 934 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)

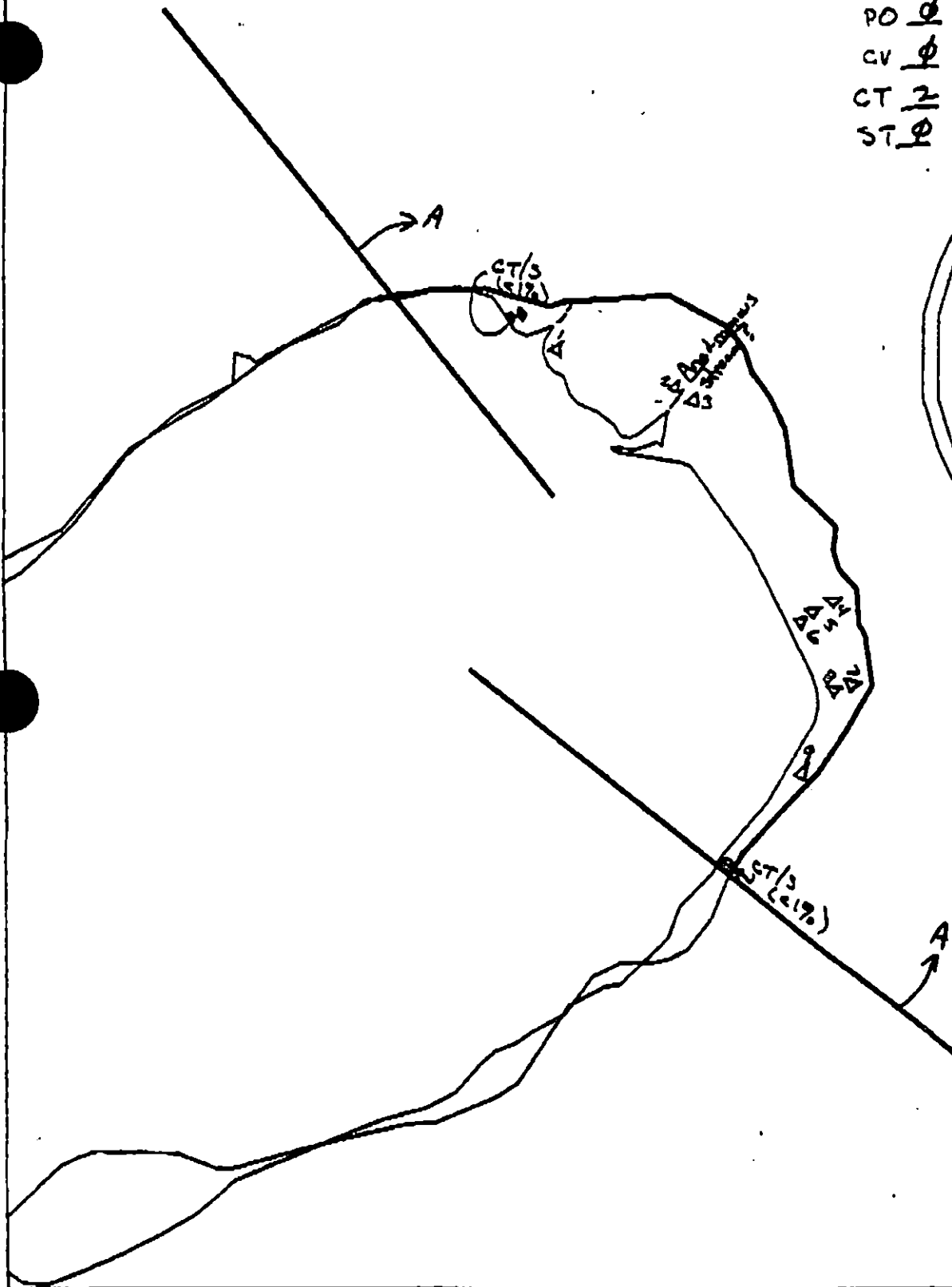
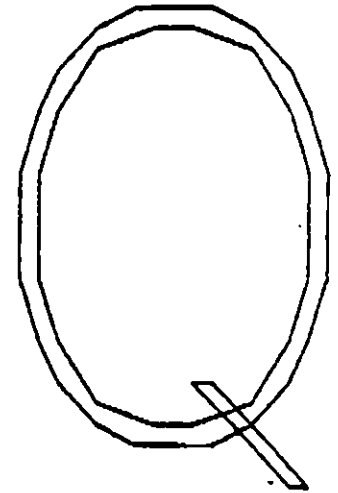
COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: May 5 1990
ADEC Art Weiner Det. Weiner
EXXON Mark McWhorter Mark N. Silbert FOSC: DATE: 5-9-90
NOAA Gary Petras Gary Petras
USCG G.A. Reiter G.A. Reiter

Oil Character Length (m)

AP ϕ	MS ϕ
PO ϕ	PT ϕ
CV ϕ	TB ϕ
CT <u>2</u>	FL ϕ
ST ϕ	NO <u>1014</u>



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

QB-1

ADEC Segment Length: 960m



Map Key: KEN-98
 Name: Ruby Singh
 Date: 4/26/90
 Date Entered: 4/6/93

Eco. Map

(Page 3 of 3)

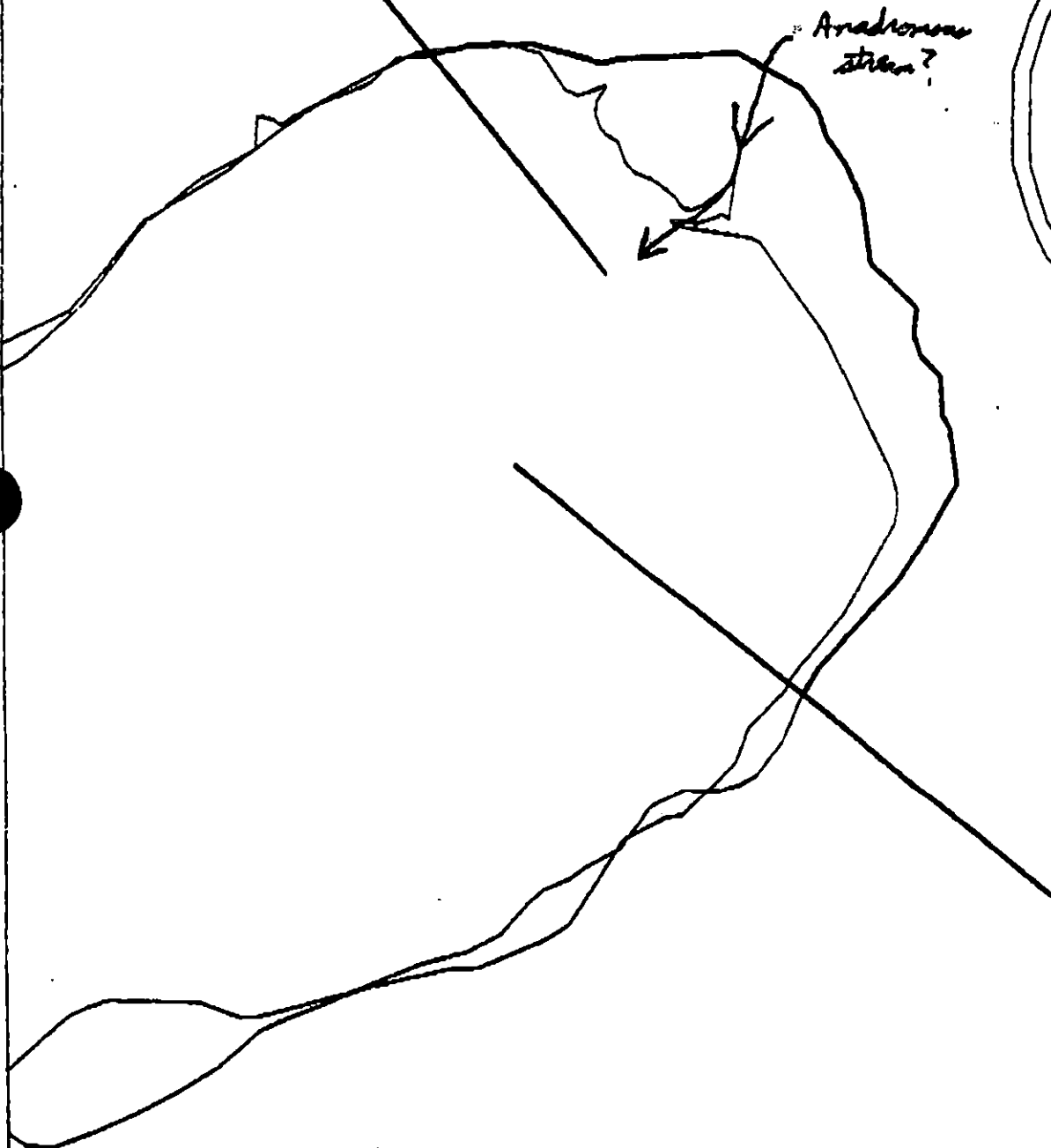
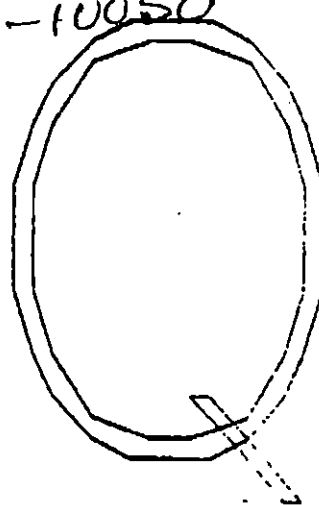
QB 001-A (1 of 1)

1A, 1B
2M
4LL
6U
6V

~~ANADROMOUS STREAM~~

232-22-10050

Anadromous
stream?



XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

OOOO No Oil

QB-1

ADEC Segment Length: 960m

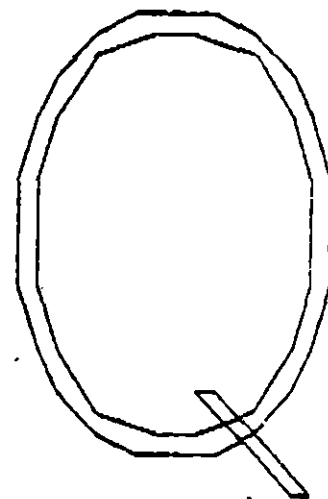
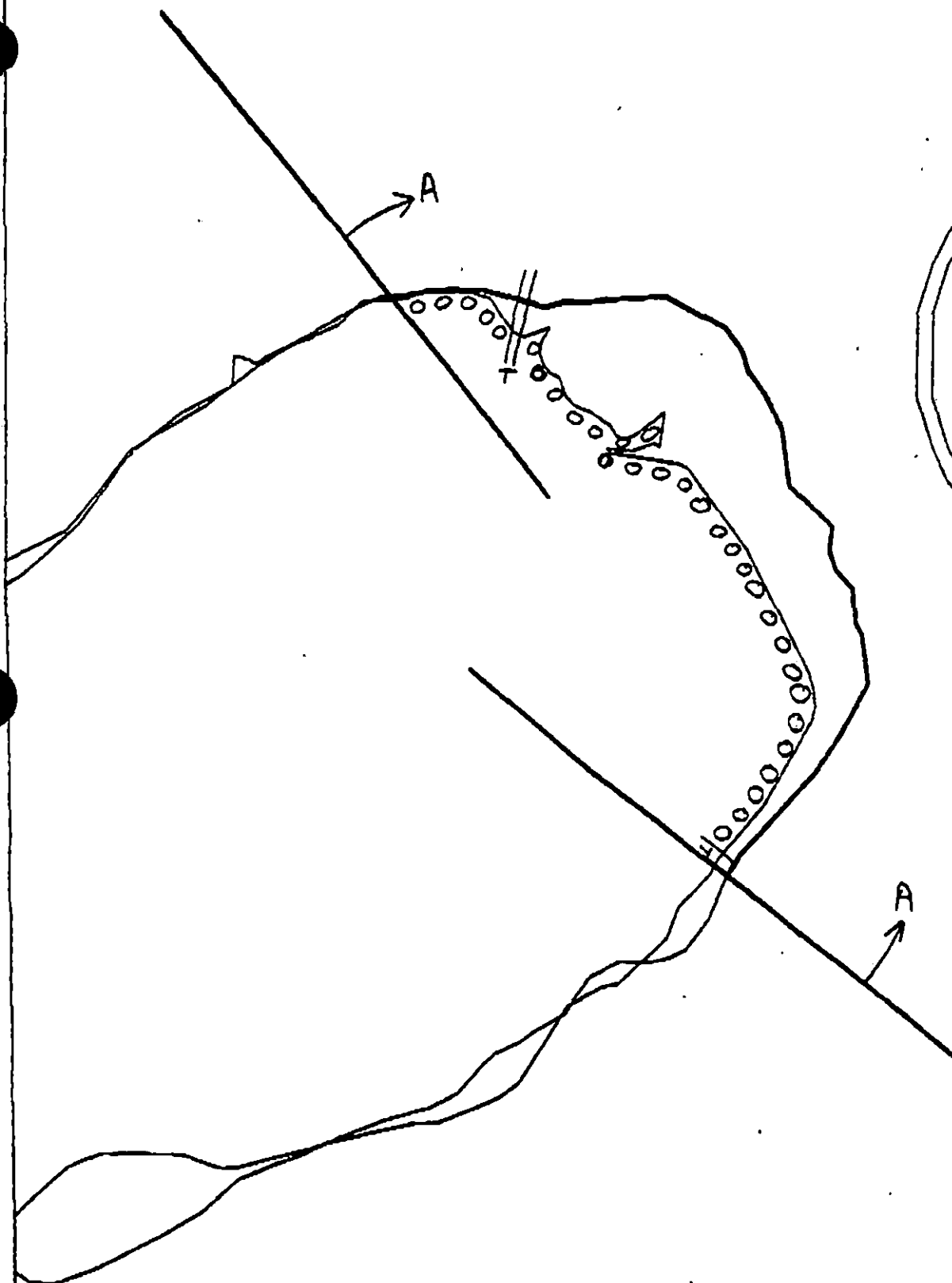


Map Key: KEK-98

Name: _____

Date: _____

Data Entered:
11/16/03



XXXX Wide

//// Medium

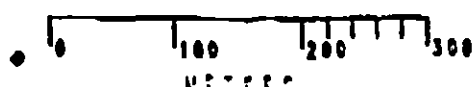
--- Narrow

TTTT Very Light

OOOO No Oil

QB-1

ADEC Segment Length: 980m



Map Key: KEM-98

Name: Poly diesel

Date: 4/26/90

Data Entered: E112

REGION: KENAI

SEGMENT: ST/RB-01

SUBDIVISIONS: A (1 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ RB-01 SUBDIVISION A (1 OF 2) DATE 4/19/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Possible 3N,30 Harbor seal and sea lion pupping (5/15 to 7/1)
4GG Alaska State Wilderness Park
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.

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 87 m: Narrow 0 m: V.Light 300 m: No Oil 268 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 12 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: Recommend manual pickup of oiled trash and mousse and bioremediate subsurface oil in areas shown on sketch map. Bioremediation should be conducted between 7/1 and 8/1 due to pinniped concerns. No time constraints for manual pickup.

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 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 1 RB-1 SUBDIVISION: A DATE 4/19/90

SCG/NOAA

NAME Miles Hayes

SIGNATURE

[Signature]

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

I agree with comments in both reports (geology and biology).
The only treatment that I would consider is bioremediation, particularly in the LITZ (east central portion) where the application should be accompanied by overturning cobbles, mixing finer sediments, etc. The ridge in the center of the site (LITZ) is also a possible site for bioremediation.

Oil occurrence is controlled by sedimentation processes, with maximum occurrences: (a) in lee of large rock outcrop in center of area (a tombolo); and (b) in the sheltered eastern corner.

ADEC

NAME Russell Kanibe

SIGNATURE

[Signature]

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

RB-1 A.

The heaviest oiling occurred in the northeast corner of the cove. I found a large bedrock outcropping in the LITZ. The oiling was a thin (cm) layer of mousse and sediments below and between the cobbles and boulders. This area is directly below ADEC transect 30T-T. There was also a small band, shown on the sketch map 6 m x 30 m, in the lower MITZ. Some of this oil was found in the sand under the mousse. A small amount of asphalt/mousse was also located in the sediment.
Manual pick up of the surface asphalt/mousse where possible. Bioremediation of the LITZ in the northeast corner of the cove after the cobbles have been turned over. Possible bioremediation of the small 6 m x 30 m band of oiling in the lower MITZ.

ADNR / DPOR

LAND MANAGER

NAME Roger L. Mac Campbell

SIGNATURE

[Signature]

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

I generally concur with this report. This area is in Kilauea Bay State Wilderness Park, it has a high human use criterion. There is some oil for MITZ material that can be picked up. Otherwise I agree with Miles Hayes Comments (NOAA). LITZ is rich in intertidal life. Matted bed area in LITZ between H+ is should be avoided. Manual removal of oil may be called for by overturning cobbles & small rocks and removing saturated sediment - mousse in interstitial spaces.

SHORELINE OILING SUMMARY

REVISION NO 04-1-20

OG CLEAN HEDMAN NOAA USCG MILES HAYES SEGMENT ST/ RB-001
 BIO Don RAIDER ADRLAND REP ROGER MACCAMPBELL SUBDIVISION A (1 OF 2)
 EXXON JOHN DEAN ADEC RUSSEL KUNLBE TIME 13:25 10/6/90
 TEAM NO. 17 TIDE LEVEL +3.5 to +2 DATE 4/19/90
 EST SUBDIVISION LENGTH: 940 m ☒ Sun ☒ Clouds ☐ Fog ☒ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: SE to NW
 SURFACE SEDIMENTS: R 25 % B 50 % C 10 % P 10 % G 5 % S - % M - % V - %
 SLOPE Lang 80 % Hang 10 % Vert 10 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W - m M 90 m N - m VL 600 m NO 250 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	C	S	P	B	1	2	3	4	5	6	7	8	BU	U	M	L
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT			X	X		X							X	X		
STAIN																
MOUSSE		X		X				X					X	X		
PATTIES																
TARBALLS																
FILM																
NO OIL													X			X

PAVEMENT H F S 0 sq. m by 0 cmPATTIES / TARBALLS 0 BAGSNEAR SHORE SHEEN? ☒ NO BR RW SL IL

OILED DEBRIS	AMOUNT			DID YOU COLLECT DEBRIS?
	SM	MD	LG	
Logs				YES ☐ NO ☒
Vegetation				
Trash	X			TYPE _____
Debris				#BAGS _____

Photographs: "Trash" = 1 buoy (orange)

Roll No. ST-17-1Frames 1-8ST-17-2
1-5

SUBSURFACE OIL

PIT NO	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm)	BELOW		OIL / FILM COLOR								PIT ZONE				A N A	SHEEN (Y/N)	F	SURFACE SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UO	1	2	3	4	5	6	7	8	BU	U	M	L				
1	20					X	.		X									X				N	-	-	C/PGS
2	5		X				2.3		X				X					X				N	Y	4	C/PGR
* 3	12		X				3.8		X	X									X			N	Y	8	CB/GS
4	5					X	.		X										X			N	Y	2	B/GS
5	30					X	.		X									X				N		-	P-G/PGS
6	15	X					0.7		X				X					X				N	Y	7	B-C/GS

COMMENTS * Pit 3- believe to be UC, not completely sure due to water @ 8 cm.

Subdivision consists generally of boulder-cobble beach w/ metamorphic rock outcrops. Surface oiling occurs as dull black coat (can be scraped w/ fingernail). One area of surface mousse in bedrock crevasses ~1m x 1m. (see next page)

REVIEWED BATDATE 21 Apr 90

SEGMENT ST/ RB-001 SUBDIVISION A (2 OF 2)

SUBSURFACE OIL (CONTINUED)

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CM)	BELOW		OIL / FILM COLOR							PIT ZONE				A	N	SHEEN (Y/N)	!	SURFACE SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UG	UG	SOIL BR	DAK	WH	GY	BL	DRK	LT	DR	SU	U	M	L				
7	10					X	.		X									X				N	Y	7	B-G/GS
8	7	X					3.5		X						X			X				N	-	-	B/GSB
9	13	X					10-12		X						X			X				N	-	-	S/S
10	25					X	.		X									X				N	-	-	S-P/GS
11	35					X	.		X									X				N	-	-	P/P GS
12	30					X	.		X									X				N	-	-	P/G/P.S
13	10					X	.		X												X	N	N	8	C-P/P.G
14	15					X	.		X											X		N	-	-	B-C/P.G
15	12		X				0-10		X						X				X			N	Y	8	B-C/CPS
16	13	X					4-6		X						X				X			N	-	-	B-C.PS/GS
17	25					X	.		X									X				N	-	-	P-G/P.G.S
18	30					X	.		X									X				N	-	-	P-G/P.G-C
							.																		
							.																		

COMMENTS

Subsurface oiling in area of CT/P occurs as thin layer of mousse-like oil beneath boulders & cobbles. Subsurface oil appears to have a broken to patchy distribution. Bottoms of boulders/cobbles frequently have dark brown film when overturned (in area of CT/P only). Oiling generally confined to granule/pebble/sand mixture which fills the interstices beneath top layer of boulders & cobbles.

Surface mousse in Pit 15 & 16 area occurs generally as rim around boulder bases & extends into granule/pebble/cobble mixture beneath surface.

Pits 9, 10, 11, & 12 dug in granule bar down to paleosol - green-brown poorly sorted clay, sand & pebbles. Pit 9 has ~2 cm thick OP mousse layer atop paleosol, above & below mousse is clean.

REVIEWED BATDATE 20 APR 90

SEGMENT 8-001

SUBDIVISION A

DATE 4 / 19 90

CHECKLIST

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

LEGEND

- 1 ▲**
PI - No Subsurface Oil
- 2 ▲**
PI - Subsurface Oil

CT/C
Continuous Distribution

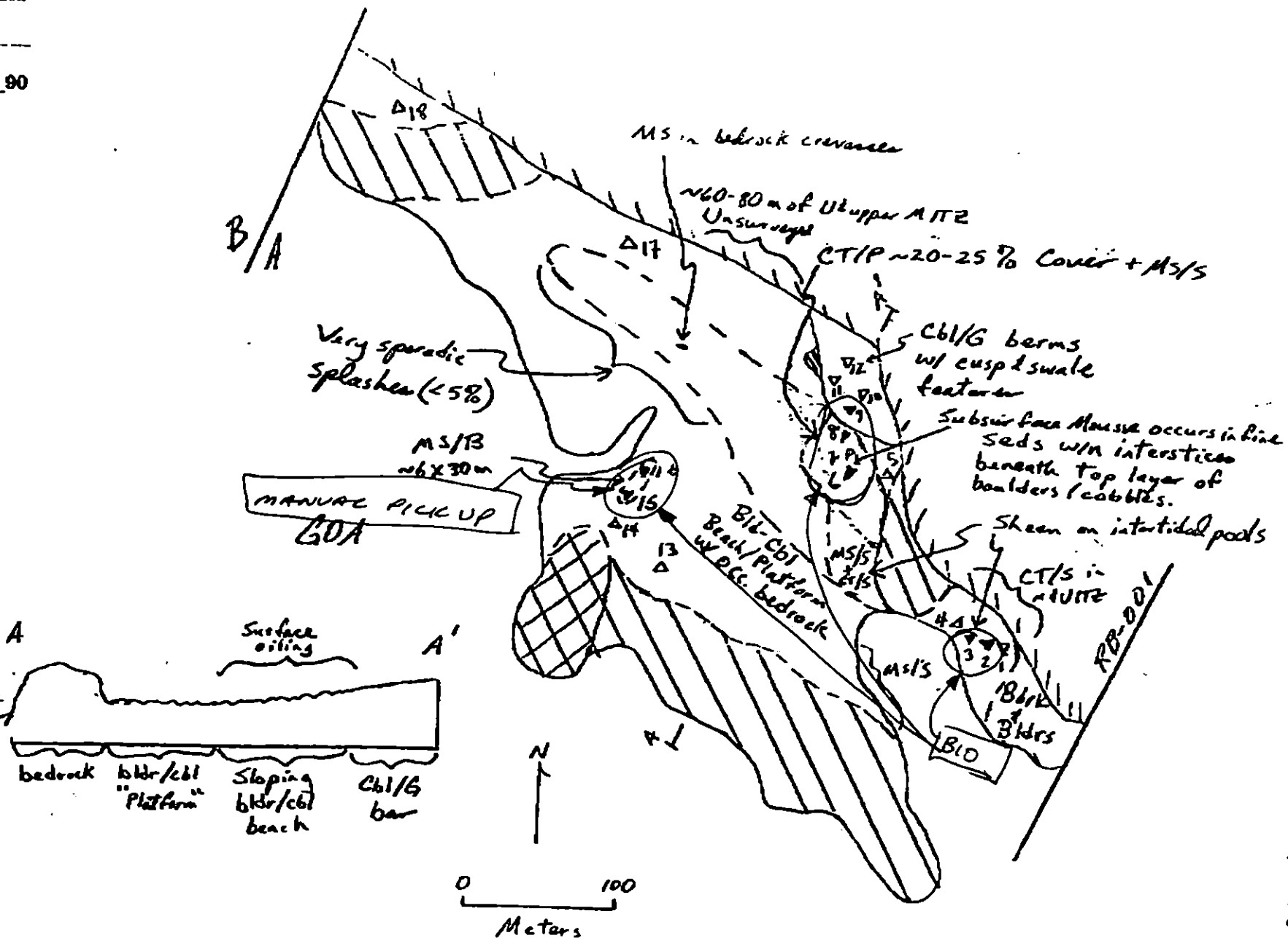
CT/B
Breast Distribution

CT/P
Priority Distribution

CT/S
Splashed Distribution

Old Vegetation

Photo location, direction,
and number



Estimated linearly, not
along coast line $\checkmark$

 Extensive
creek
features

ON Character Length (m) AP _ _ _ PO _ _ CV _ _ CT 400 ST _ _ MS 30 PT _ _ TB _ _ FL _ _ NO 250

REVISION: 357470

Revision 1

SHORELINE ECOLOGICAL SUMMARY

REVISION NO. 12

Segment ST / RB 001 Subdivision A Date (mo / day / yr) 4/19/70

Time (24 hr) 13:00 Biologist DANIEL RAIDER

(A) Substrate type and % of segments:

(1) Bedrock 25 (2) Boulder 50 (3) Cobble 10 (4) Pebble 5 (5) Sand 0 (6) Silt 2

(B) Overall % cover of biota (% of segment): Dense 40 Moderate 35 Low 25

to none

(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. 1

Frames 1-8

BARNACLES

Roll 2

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: - Glaucous Gulls (*Larus hyperboreus*) - roughly 200

Two Eagles sited; I believe they are males and are nesting in the general area of the most eastern section of the segment, but was not able to actually spot a nest in addition; One juvenile female spotted;

Ecological Considerations:

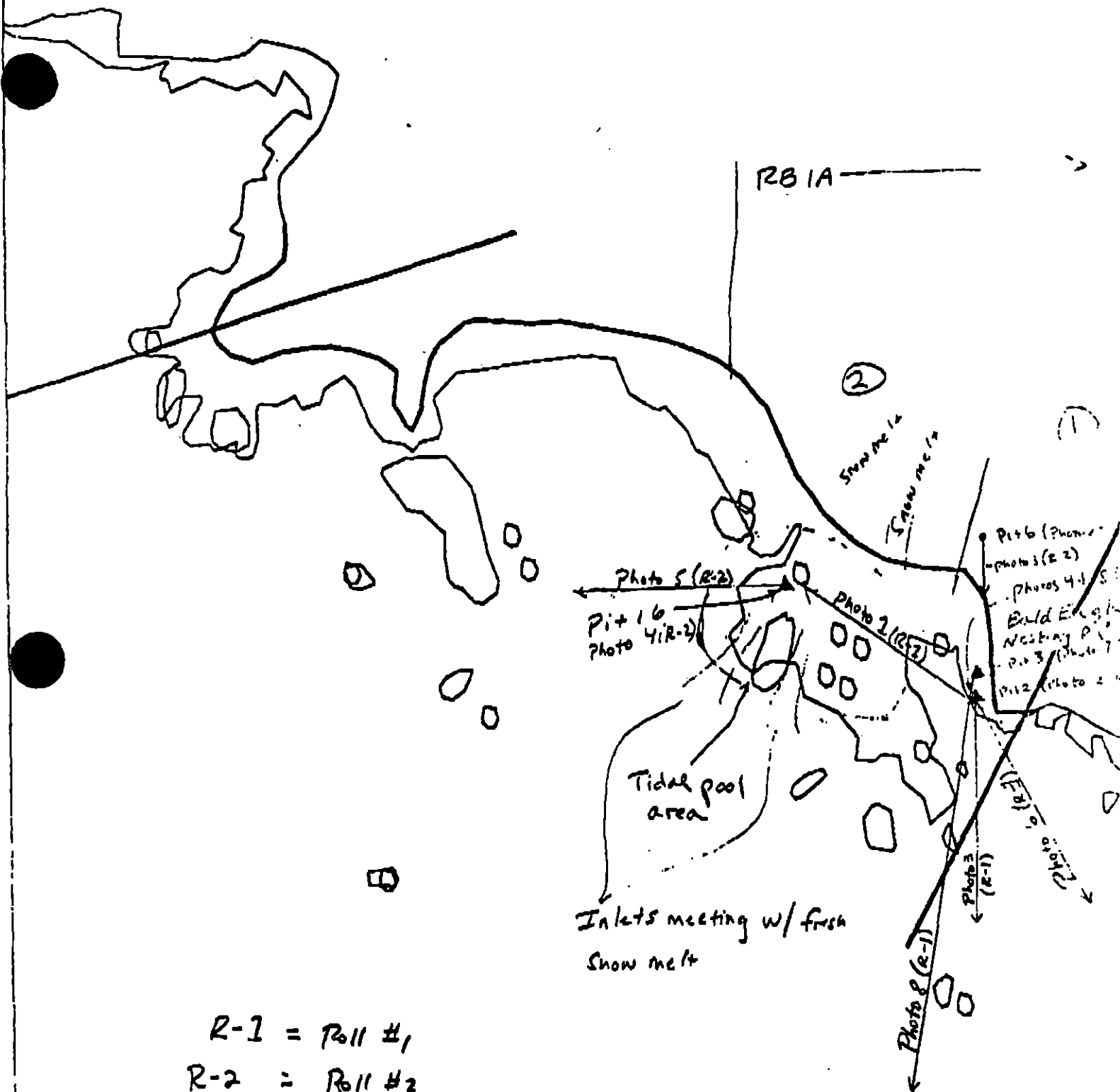
3N - Harbor Seal pupping

1/1A

REVISION TO RB001A
-Biology Section

4/20/90

- Text under "Wildlife Observation" has been altered to indicate that while two nesting eagles were sighted, no actual nest was found/seen. No "ST" is listed.
- Text in map indicated a site for the bald eagle nest (indicated by a triangle ▲) in the eastern portion of the segment has been revised to say "Bald Eagle Nesting Pair" and indicated that general area in which they were sighted.



R-1 = Roll #1
R-2 = Roll #2

XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

0000 No Oil

RB-1

ADEC Segment Length: 1387m



Map Key: KEN-101

Name: _____

Date: _____

Data Entered: _____

DATE 4/19/90 TIME 13:20 TIDE HEIGHT +3.5 - 12

1 = BEDROCK 2 = BOULDER 3 = COBBLE 5 = SAND 6 = SILT

FLORA:

SPECIES	UITZ	MITZ	LITZ	COMMENTS
BOSSIELLA/CORALLINA				
CALLIARTHRON/CORALLINA				
CLADOPHORA SPP				
COSTARIA SPP				
ENDOCLADIA MURICATA				
FILMAENTOUS GREENS		1, 2		
FILAMENTOUS REDS		1, 2		
GLOIOPELTIS FURCATA				
HALOSACCION GLANDIFORME				
LAMINARIA SPP				
LITHOTHAMNION				
NEREOCYSTIS SPP				
PORPHYRA SPP				
RALPHSIA/HILDENBRANDIA				
PHODOMELA LARIX				
RHODOMENIA PALMATA		1, 2, 3		
SCYTOSIPHON SPP				
ULVA SPP	1, 2	1, 2		
ZOSTERA MARINA	1, 2	1, 2, 3		
ENTOROMORPHA				
FAUNA: ANTHOPLEURA SPP	1, 2	1		
(SEMI) BALUNUS CARIOSUS	1, 2			Localized dense areas



BIOLOGICAL COMMENTS RB1A

DANIEL R. HARRIS

TEAM 1 +

13 20 4/13/11

[SEE ENCLOSED MAP FOR LOCATION OF AREAS]

{Worked from +3.5 to +2 tide + could not enter LTZ}

-AREAL: RB1A

- Dense *Littorina sitkana* on bedrock and boulders in the MTZ and UTZ; this is the most dense example of *L. sitkana*, and *Littorina* in general, that I have witnessed up until now. Some areas were literally blanketed with *Littorina* such that you could not see the rock. Many of them were feeding off the relatively abundant brown kelp that died and had washed up shore.
- Dense *Littorina* eggs; on the bottom surface of many boulders in the MTZ and UTZ; again, the most productive example I have seen up until now.
- Rare limpet → sparse → moderate; overall, sparse.
- Sparse to moderate *Fucus* on bedrock and boulders in the UTZ and MTZ.
- Much brown kelp washed up in upper MTZ.
- Dense barnacles (*Semi-Balanus cariosus* + *B. glandula*) in UTZ on bedrock and boulders.

AREA 2

- Profuse amount of tidal pools with an abundant amount of flora + fauna; this is an extremely productive area and filled w/ green filamentous algae, *Zostera marina*, *Rhodomenia palmata*, brown algae (kelp), *Enteromorpha*, *Porphyra* sp., chitons (*Katharina tunicata*, *Tonicella* sp.), limpets, *Littorina sitkana* (w/ eggs present also), *Nucella lamellosa*, *Pagurus maclaughlinae*, *Leptasterias hexactis*,

RB 1A

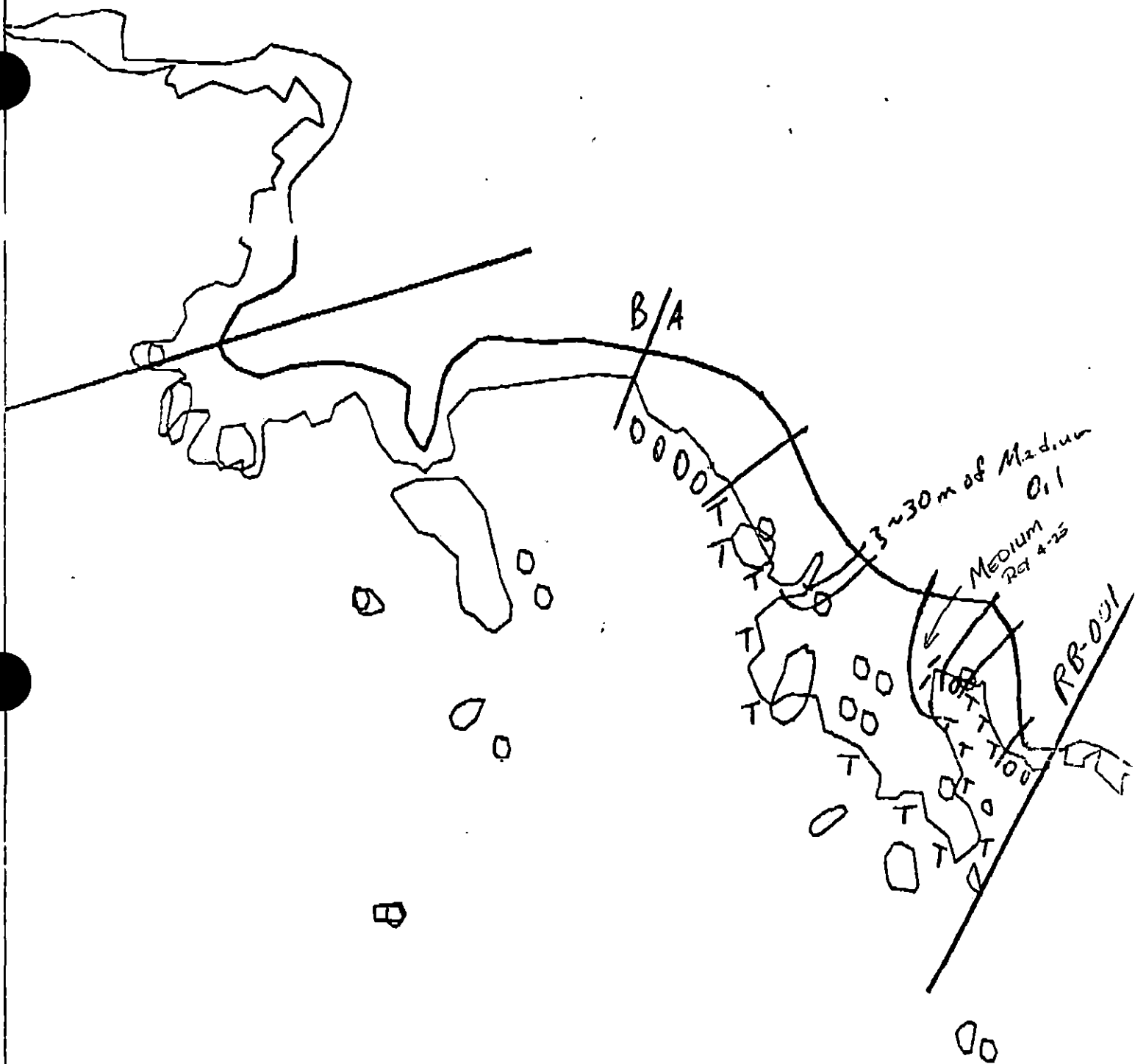
000

Gnorimosphaeroma oregonensis (profuse), *Ulva* spp.

- Dense barnacle spat (*Goni Ballanus*) on isolated boulders in upper MTZ
- *G. oregonensis* dense in tidal pools in MTZ/LITE underneath rocks
- Adult *Mytilus edulis*, dense on bedrock in MTZ
- Moderate *Fucus* in UTE + MTZ, adult, dense adult *fucus* on boulders/bedrock in MTZ
- *Mytilus edulis* beds dense - juvenile + new recruits
- profuse green + red algae in the pools

This moderately high energy beach has almost a plateau of bedrock which extends for several hundred meters out from the beach area/headlands and is filled with tidal pools. These pools have a great abundance of flora + fauna and do not appear to have had any direct damage (or, immediate damage) from the small amount of oil present, relatively speaking.

This area is quite ecologically sensitive and thus should be treated with great care if treated. Increased traffic flow could be devastating, esp for the dense littorina on the tops of many protruding boulders and on bedrock. Those areas which demand clean-up and are most accessible for foot traffic. There is a wide variety of fairly dense fauna + flora (*Littorina*, *Mytilus* + algae) which can be easily abused. Treatment of any kind (except localized and scout manual removal) may create more destruction than good that is gained.



XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

RB-1A

ADEC Segment Length: 1387m



Map Key: KEN-101

Name: G. Heyman

Date: 4-19-90

Data Entered:

REGION: KENAI

SEGMENT: ST/RB-01

SUBDIVISIONS: B (2 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ RB-01 SUBDIVISION B (2 OF 2) DATE 4/19/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Possible 3N,30 Harbor seal and sea lion pupping (5/15 to 7/1)
4GG Alaska State Wilderness Park
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. If treatment is planned, special consideration should be given to the biological health and sensitivity of the area especially with regards to bioremediation.

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 16 m: No Oil 716 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. 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
 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.

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / RB-1 SUBDIVISION: B DATE 4/18/90

USCG/NOAA

NAME Miles Hayes SIGNATURE Miles Hayes

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

I agree with GED and his reports. We found very little oil in this section and I do not recommend any type of cleanup.

There are some large (20m spacing) mounds on well-sorted, coarse gravel in places. We could not trench to bottom of these mounds, thus there is a possibility oil is buried there. However, the mounds appear to be intensely reworked by waves.

ADEC

NAME Russell Kumbie SIGNATURE Russell Kumbie

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

The oily debris was picked up by the SSAT team.

ADNR / OPOR
AND MANAGER

NAME Roger L. McCampbell SIGNATURE Roger L. McCampbell

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

I concur with SSAT team observations and recommendations for subdivision B. Oiled debris (trash) picked up by team. Three oiled logs observed but insignificant at this location. Several other tracks and black bear tracks observed.

SHORELINE OILING SUMMARY

Revision 1

REVISION NO 04-13-2

OG GLENN HEYMAN ^{NDA} USES MILES HAYES SEGMENT ST/ RB-001
 BIO DAVID RADEA LAND REP ROGER McCAMPBELL SUBDIVISION B (2 OF 2)
 EXXON JOHN DEAN ADEC RUSSEL KUMRE ADMR TIME 16:00 to 18:30
 TEAM NO. 17 TIDE LEVEL +2 to +3.5 DATE 4/19/90
 EST SUBDIVISION LENGTH: 815 m ☒ Sun ☒ Clouds ☐ Fog ☒ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: SE to NW
 SURFACE SEDIMENTS: R 30 % B 20 % C 10 % P 20 % G 15 % S 5 % M — % V —
 SLOPE: Long 40 % Hang 40 % Vert 20 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 15 m NO 800 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	10	15	20	25	30	35	40	45	50	SU	U	M	L
ASPHALT PAVEMENT													
POOLED													
COVER													
COAT				X	X					X	X		
STAIN													
MOUSE													
PATT													
TARB													
FILM													
NO OIL												X	X

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

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

DID YOU COLLECT DEBRIS?

Track YES ☒ NO ☐TYPE Garbage#BAGS 1

Photographs:

Roll No. ST-17-#2Frames 649

SUBSURFACE OIL

PIT NO	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm)	BELOW		OIL / FILM COLOR					PIT ZONE				A N A	SHEEN (Y/N)	▽	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	HO		UO	UG	30	35	40	45	50	SU	U	M	L				
1	27					X	.	X							X				N	N	16	G/GP-G
2	40					X	.	X							X				N	-	-	P/P-G
3	30					X	.	X							X				N	-	-	G/GS
4	30					X	.	X							X				N	-	-	G/GS
5	27					X	.	X							X				N	-	-	G/GS
6	40					X	.	X							X				N	-	-	PG/GPGS

COMMENTS

Coat in 2 areas only, 1) Not greater than 5m on rock faces as CT/S, and 2) on 3 drift trees in storm berm w/ very sporadic splashes on nearby cobbles and boulders. Remainder of subdivision B had no observed surface or subsurface oil.

REVIEWED BAT DATE 21 Apr 90

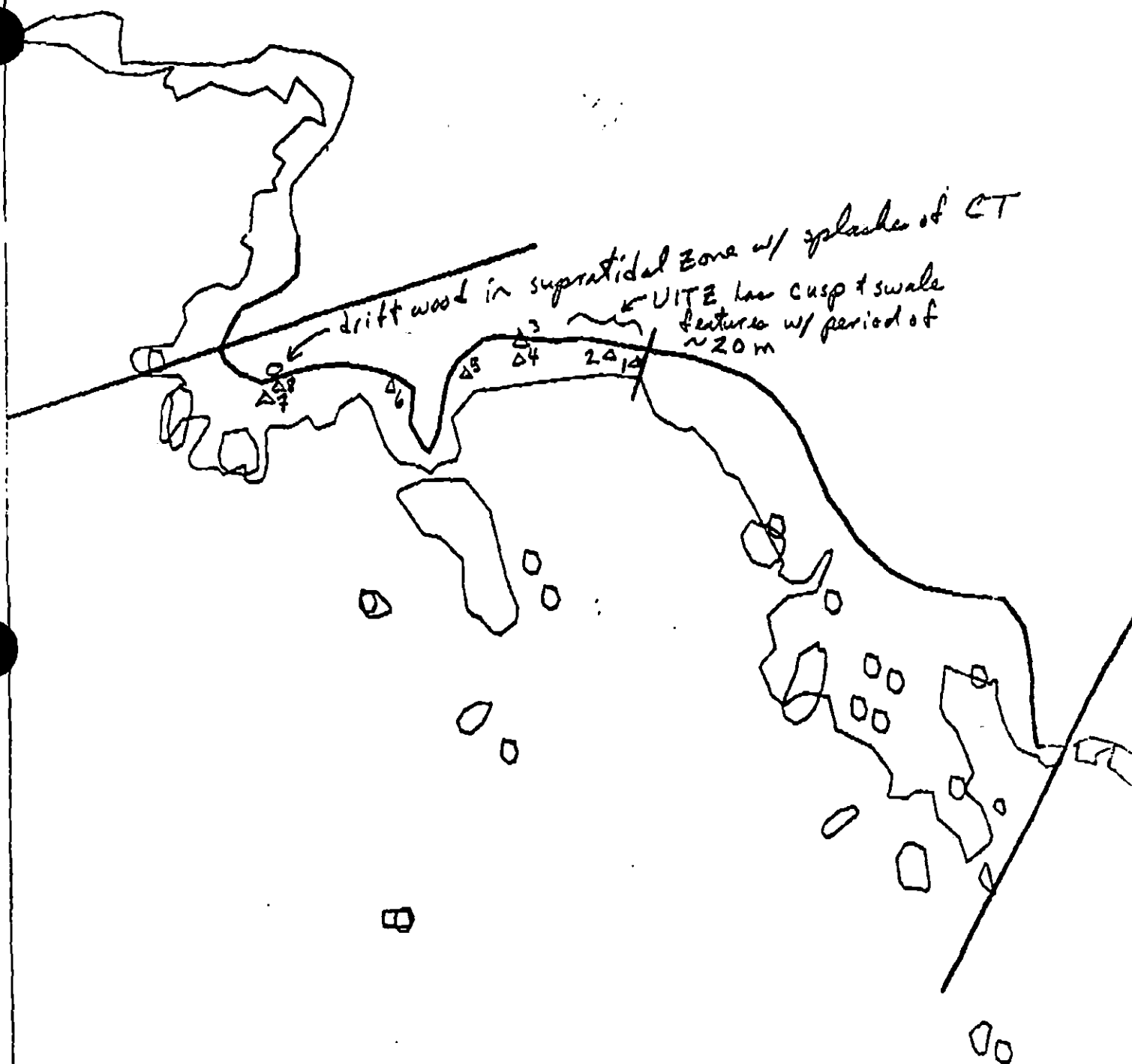
REVISION 04.1 : 00

SUBSURFACE OIL (CONTINUED)

[illegible]

COMMENTS

REVIEWED BAT DATE 21 Apr.



In lieu of sketch

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

RB-1B

ADEC Segment Length: 1387m



SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / R800 / Subdivision B Date (mo / day / yr) 4 / 19 / 90

Time (24 hr) 17:00 Biologist DANIEL TRAIDER

(A) Substrate type and % of segments:
(1) Bedrock 30 (2) Boulder 20 (3) Cobble 10 (4) Pebble 35 (5) Sand 5 (6) Silt 0

(B) Overall % cover of biota (% of segment): Dense 7 Moderate 10 Low to None 83

(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. 2

Frames 6 + 9

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:

- Harlequin Duck (1)
- Glaucous Gull (5)

Ecological Considerations:

3N - Harbor Seal pupping 5/15 - 7/1

146A

REVISIONS TO RB001-B
BIOLOGY SECTION

4/20/90

- Revision to "Shoreline Ecological Summary" sheet to include under "Ecological Constraints" section that ST (Bald Eagle Nests) should not be included
- Revision to map altering the indicated Bald Eagle nest to read as Bald Eagle nesting pair - so as not to indicate that a nest was sited, but that a pair of eagles (males) were sited. The actual nest was never seen.

Daniel Traider
Biologist

DATE 4/19/90 TIME 13:20 TIDE HEIGHT +3.5 - +2

1 = BEDROCK 2 = BOULDER 3 = COBBLE 5 = SAND 6 = SILT

FLORA:

SPECIES	UITZ	MITZ	LITZ	COMMENTS
BOSSIELLA/CORALLINA				
CALLIARTHRON/CORALLINA				
CLADOPHORA SPP				
COSTARIA SPP				
ENDOCLADIA MURICATA				
FILMAENTOUS GREENS		1, 2		
FILAMENTOUS REDS		1, 2		
GLOIOPELTIS FURCATA				
HALOSACCION GLANDIFORME				
LAMINARIA SPP				
LITHOTHAMNION				
NEREOCYSTIS SPP				
PORPHYRA SPP				
RALPHSIA/HILDENBRANDIA				
PHODOMELA LARIX				
RHODOMENIA PALMATA		1, 2, 3		
SCYTOSIPHON SPP				
ULVA SPP	1, 2	1, 2		
ZOSTERA MARINA	1, 2	1, 2, 3		
ENTOROMORPHA				

FAUNA:

ANTHOPLEURA SPP	1, 2	1		
(SEMI) BALUNUS CARIOSUS	1, 2			localized dense areas
B. GLANDULA	1, 2	2		
BRYOZOANS				
CHITONS (other than K. TUNICATA)		1		
CLAMS				
CRABS				
DERMASTERIAS IMBRICATA				
KATHARINA TUNICATA	2	2		moderately dense, on many rocks
LEPTASTERIAS HEXACTIS		2, 3		in localized areas - dense
LIMPETS	1, 2, 3	1, 2, 3		moderate
LITTORINA SPP	1, 2, 3	1, 2, 3		Very dense in many areas & many eggs
NUCELLA SPP		2, 3		rare / sparse
PAGURUS SPP	1, 2	1, 2		moderate
PISASTER OCHRACEUS				
POLYCHAETES				
PYCNOPODIA HELIANTHOIDES				
SEARLESIA DIRA				
SERPULIDS				
SIPHONARIA THERSITES				
TEALIA				
Girella ophryotrocha	2	2		moderately dense and found in
Oregonensis				shallow pools under rocks

DATE 4/19/90 TIME 17:00TIDE HEIGHT +2 - + 3.5

1 = BEDROCK 2 = BOULDER 3 = COBBLE 5 = SAND 6 = SILT

FLORA:

SPECIES	UITZ	MITZ	LITZ	COMMENTS
BOSSIELLA/CORALLINA				
CALLIARTHRON/CORALLINA				
CLADOPHORA SPP				
COSTARIA SPP				
ENDOCLADIA MURICATA				
FILMAENTOUS GREENS		2		
FILAMENTOUS REDS		1, 2		
GLOIOPELTIS FURCATA				
HALOSACCION GLANDIFORME				
LAMINARIA SPP				
LITHOTHAMNION				
NEREOCYSTIS SPP				
PORPHYRA SPP				
RALPHSIA/HILDENBRANDIA				
PHODOMELA LARIX	1, 2	1, 2		
RHOHOMENIA PALMATA				
SCYTOSIPHON SPP				
ULVA SPP		2		
ZOSTERA MARINA		1, 2		
ENTOROMORPHA				
Fucus	1, 2	1, 2		

AUNA:

ANTHOPLEURA SPP				
(SEM) BALUNUS CARIOSUS				
B. GLANDULA	1, 2	1, 2		
BRYOZOANS				
CHITONS (other than K. TUNICATA)	1	1		
CLAMS				
CRABS				
DERMASTIERIAS IMBRICATA				
KATHARINA TUNICATA		1		
LEPTASTERIAS HEXACTIS				
LIMPETS				
LITTORINA SPP				
NUCELLA SPP				
PAGURUS SPP		1, 2		
PISASTER OCHRACEUS				
POLYCHAETES				
PYCNOPODIA HELIANTHOIDES				
SEARLESIA DIRA				
SERPULIDS				
SIPHONARIA THERSITES				
TEALIA				

BIO-COMMENTS FOR RBTB

DANIEL RAIL

TEAM 11

4/11/10, 11

[See map for AREA distinction]

- This beach was walked at a ± 2 to ± 3.5 tide and thus the Lower Intertidal Zone was not really viewed but from the top and from a distance.

AREA 1

- Moderate adult *Mytilus Edulis* on bedrock in UTZ, dense localized packets w/ adult and juvenile mytilus. Packets (possibly 10 of roughly 1 meter X 1 cm in a long strip) of new *Mytilus edulis*, on bedrock in UTZ.
- Moderate focus on bedrock in UTZ
- A large portion of the beach, especially that of Area 1, is sandy/pebbly beach consisting of little living biota and some ~~det~~ organic debris in stream burn area
- The bedrock outcrops on either side of the sandy/pebbly beach consist of sparse to moderate vegetation & tundra.

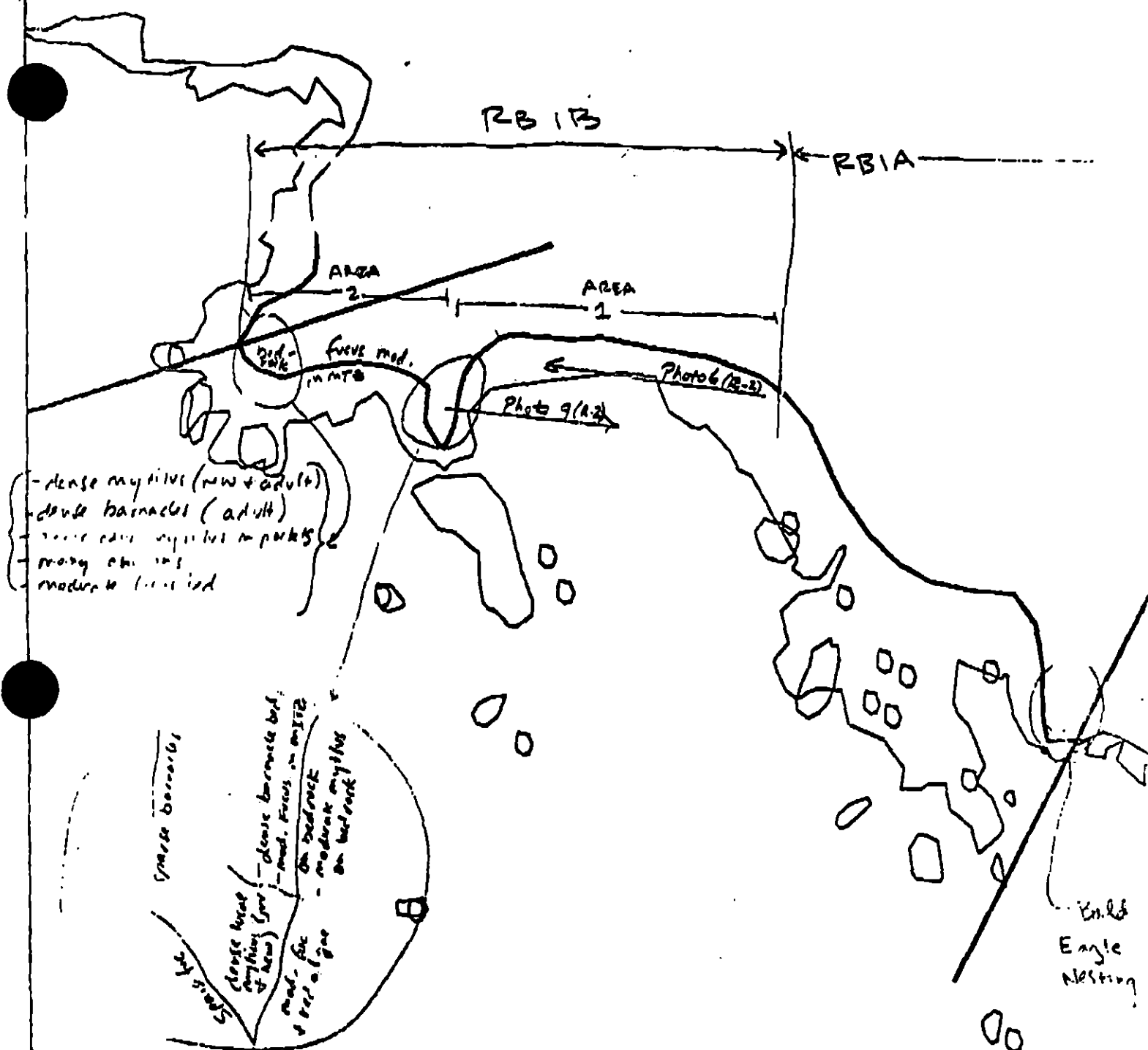
AREA 2

- This area is similar to Area 1 and consists of a smaller sandy/pebbly beach with bedrock outcroppings on either side.
 - *Mytilus edulis* is more abundant in new settlement stage - Sparse to moderate on Bedrock in UTZ.

RB-1B

- Moderate adult barnacles on bedrock in localized patches and continuous along Southern face of bedrock in a band in the VITZ for roughly 25 meters.
- dense focus on boulders and bedrock in M + VITZ along Southern face of outcrop.
- Chitons, sparse
- Limpets, adults sparse; *Littorina Sitkana* + *Nucula lamellosa* sparse to rare on outcrop

Overall this section of the beach (RB-1B) has relatively much less biota as compared to RB-1A; all biota is found on the bedrock outcrops which frame the cove.



R-2 = Roll 2

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

RB-1A

ADEC Segment Length: 1387m

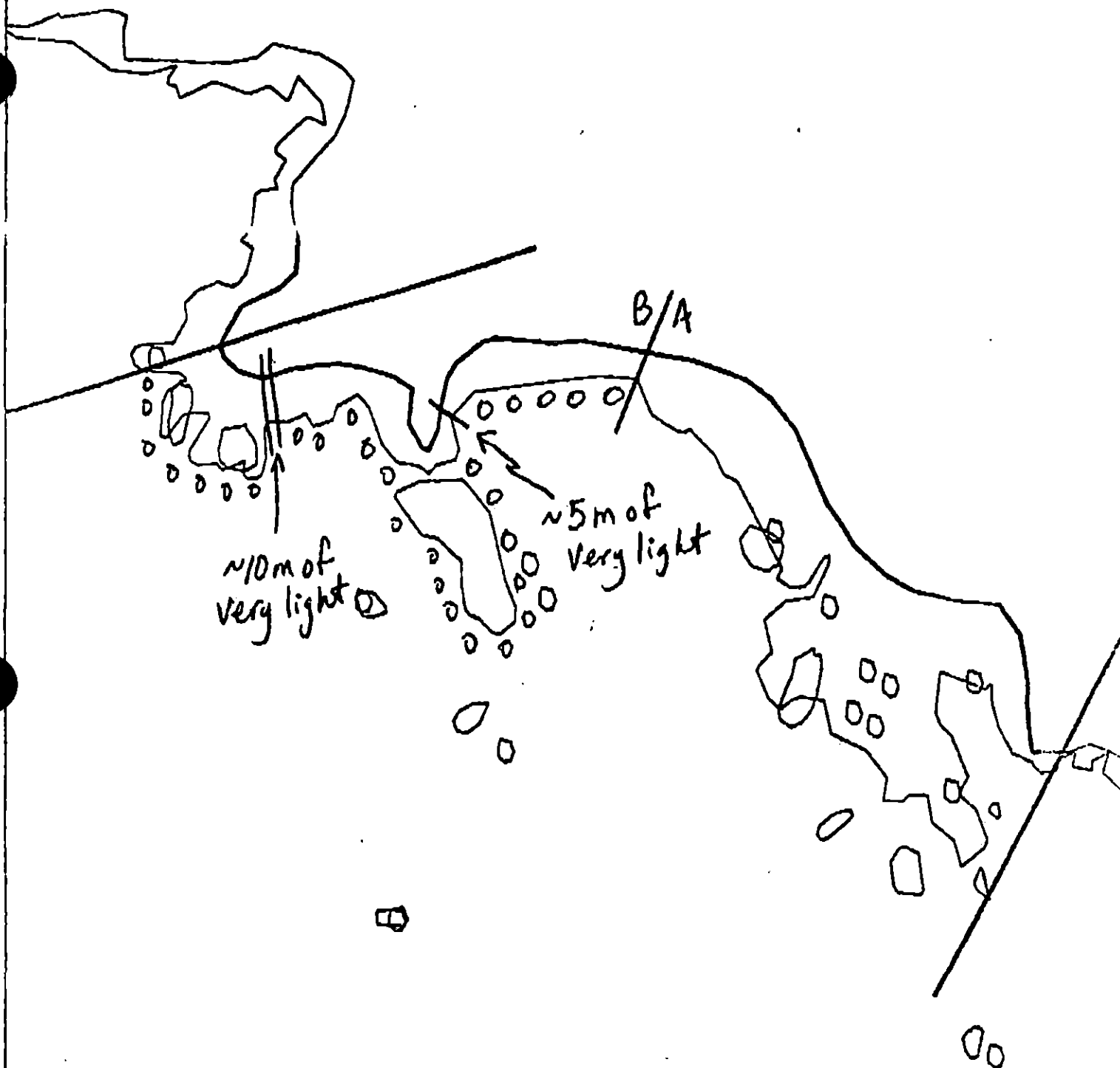


Map Key: KEN-101

Name: _____

Date: _____

Data Entered:



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

0000 No Oil

RB-1B

ADEC Segment Length: 1387m



Map Key: KEN-101
For
Name: G. HEYMAN

Date: 4-19-90

By Rm C. 4-23-90

Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ RB-01 SUBDIVISION A (1 OF 2) DATE 4/19/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Possible 3N,30 Harbor seal and sea lion pupping (5/15 to 7/1)
4GG Alaska State Wilderness Park
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.

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. Holmes DATE: 5/5/90

OILING CATEGORIZATION:

Wide 0 m: Medium 87 m: Narrow 0 m: V.Light 300 m: No Oil 268 m
Subsurface Oil Observed: Yes X No Maximum Depth 12 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> </u> Tarmat Removal	<u> </u> Beach Cleaner
	<u> </u> Other (see comments)

COMMENTS: Recommend manual pickup of oiled trash and mousse and bioremediate subsurface oil in areas shown on sketch map. Bioremediation should be conducted between 7/1 and 8/1 due to pinniped concerns. No time constraints for manual pickup.

TAG COMMENTS:

TAG APPROVAL DATE: 5/4/90

ADEC Art Weiler Art Weiler

EXXON Amy Tetz Amy Tetz

NOAA Gary Pefree Gary Pefree

USCG G.A. Heiter G.A. Heiter

FOSC: DATE: 5-9-90

SEGMENT RB-001

SUBDIVISION A

DATE 4/19/90

CHECKLIST

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

LEGEND

1 ▲

PT - No Subsurface Oil

2 ▲

PI - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

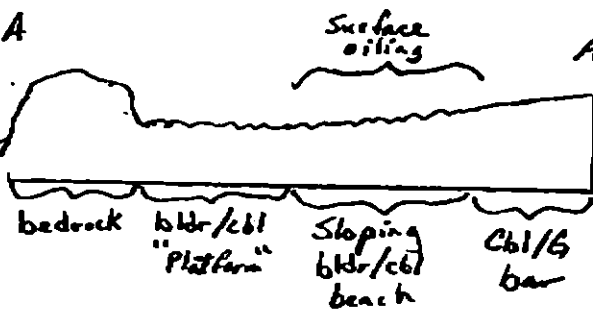
CT/S

Splashed Distribution

Oil Vegetation

1 ➡

Photo location, direction, and number

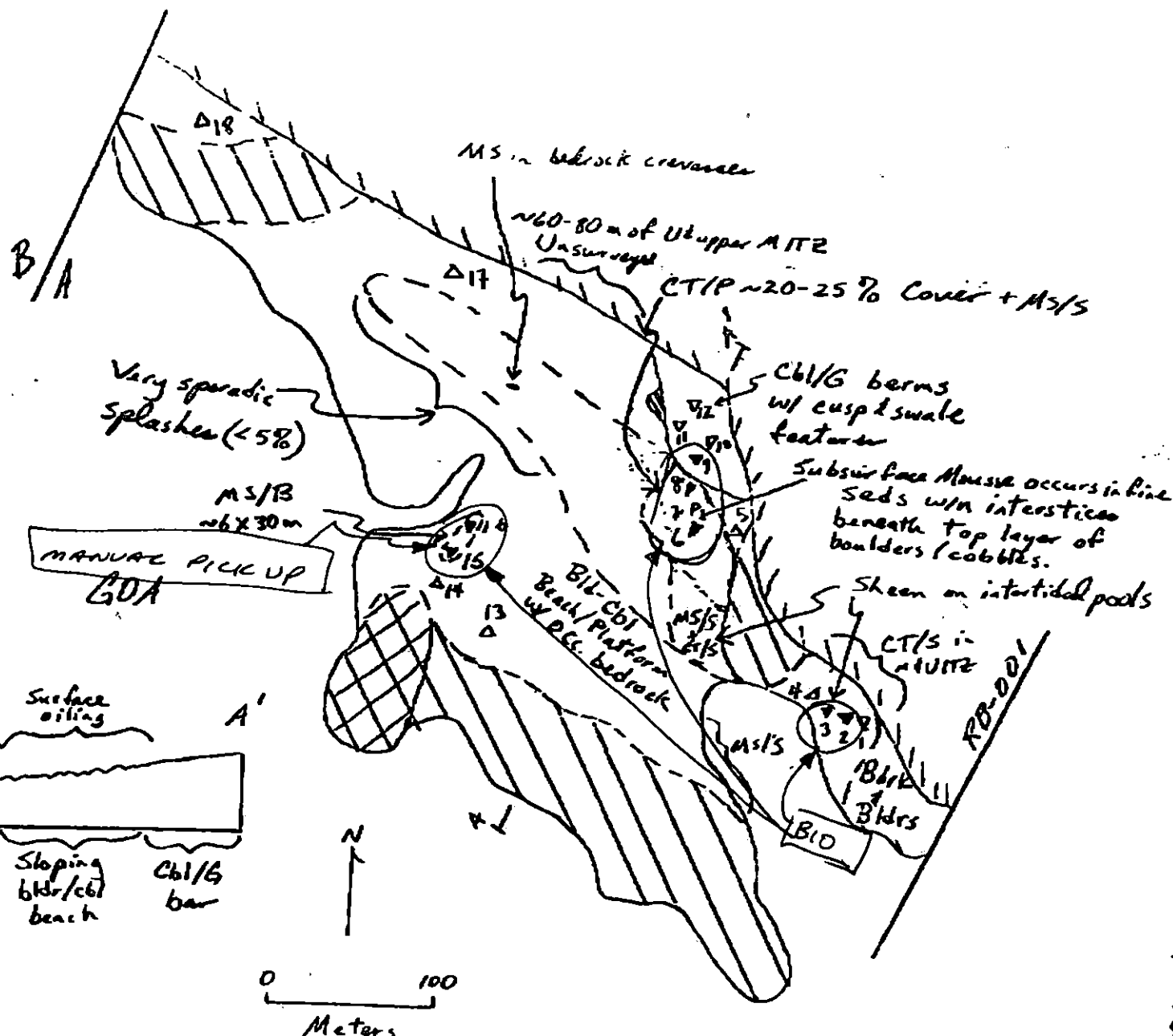


Estimated linearly, not along coast line

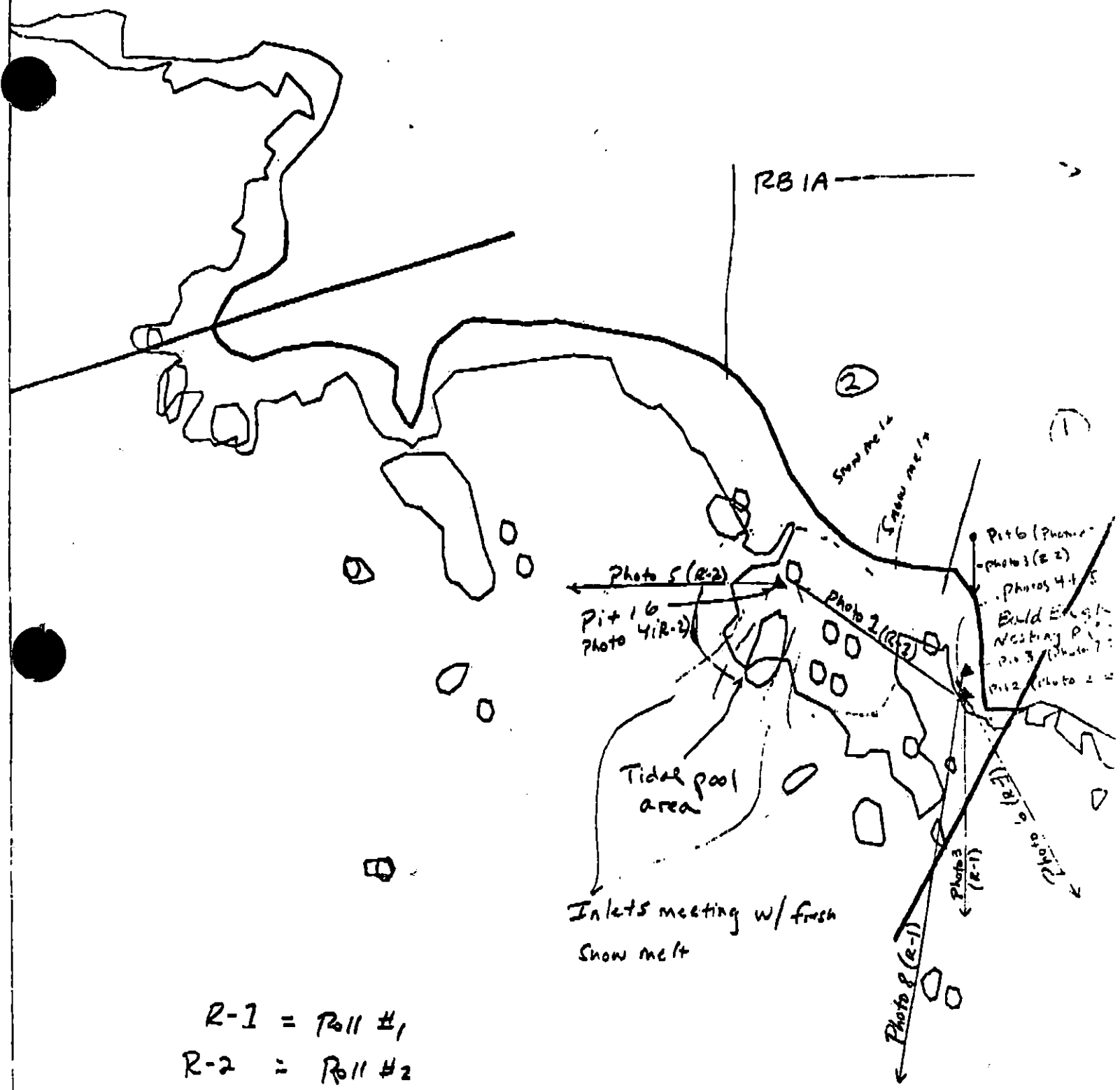
0 100
Meters

Extensive seabed exposures

SKETCH MAP



Revision 1



R-1 = Roll #1
R-2 = Roll #2

RB-1

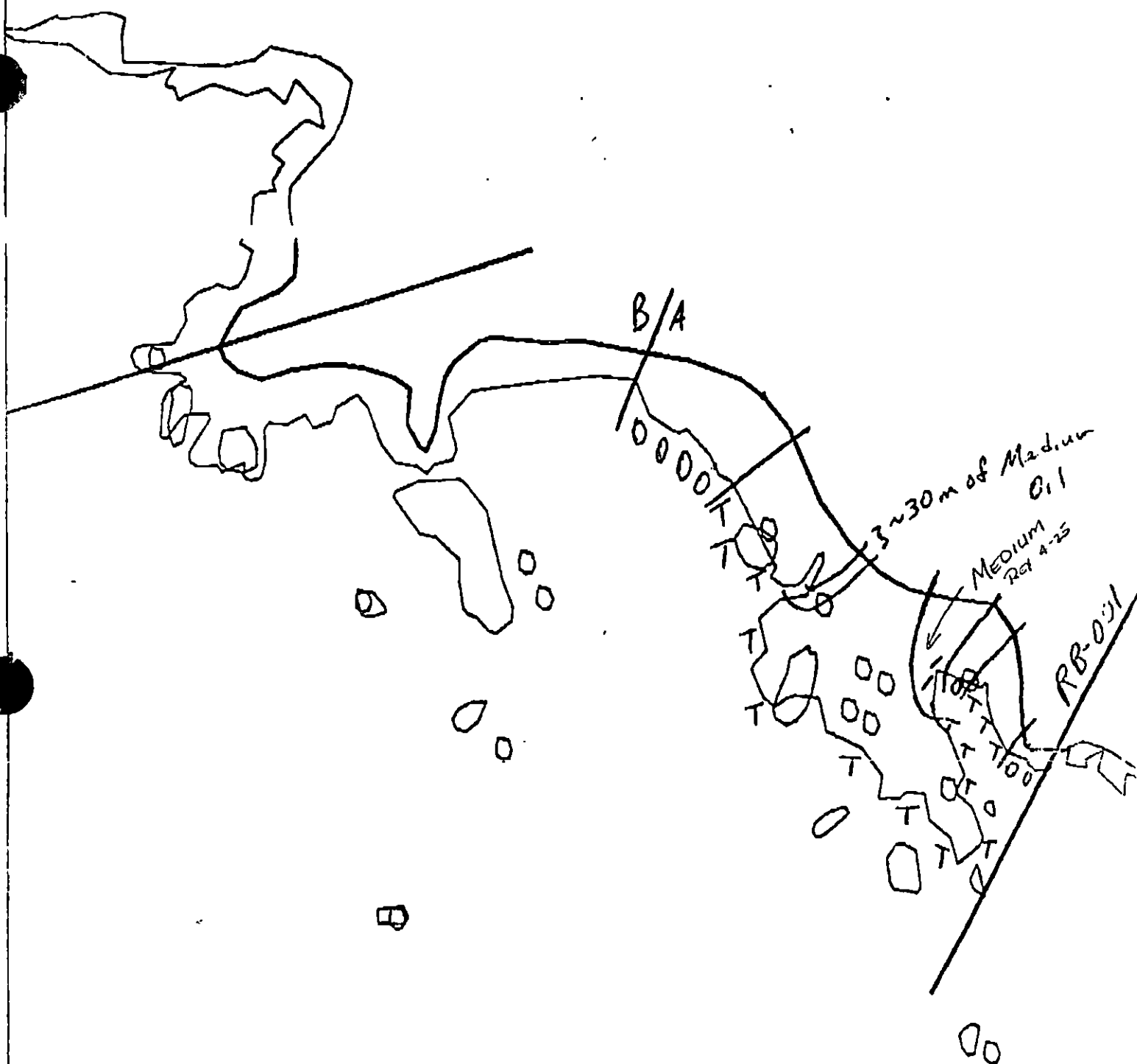
ADEC Segment Length: 1387m

Map Key: KEN-101

Name: _____

Date: _____

Data Entered: _____



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

RB-1A

ADEC Segment Length: 1387m



Map Key: KEN-101
 Name: G. HEYMAN
 Date: 4-19-90
 Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ RB-01 SUBDIVISION B (2 OF 2) DATE 4/19/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Possible 3N,30 Harbor seal and sea lion pupping (5/15 to 7/1)
4GG Alaska State Wilderness Park
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 unsoiled biota and substrate. If treatment is planned, special consideration should be given to the biological health and sensitivity of the area especially with regards to bioremediation.

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 0 m: V.Light 16 m: No Oil 716 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

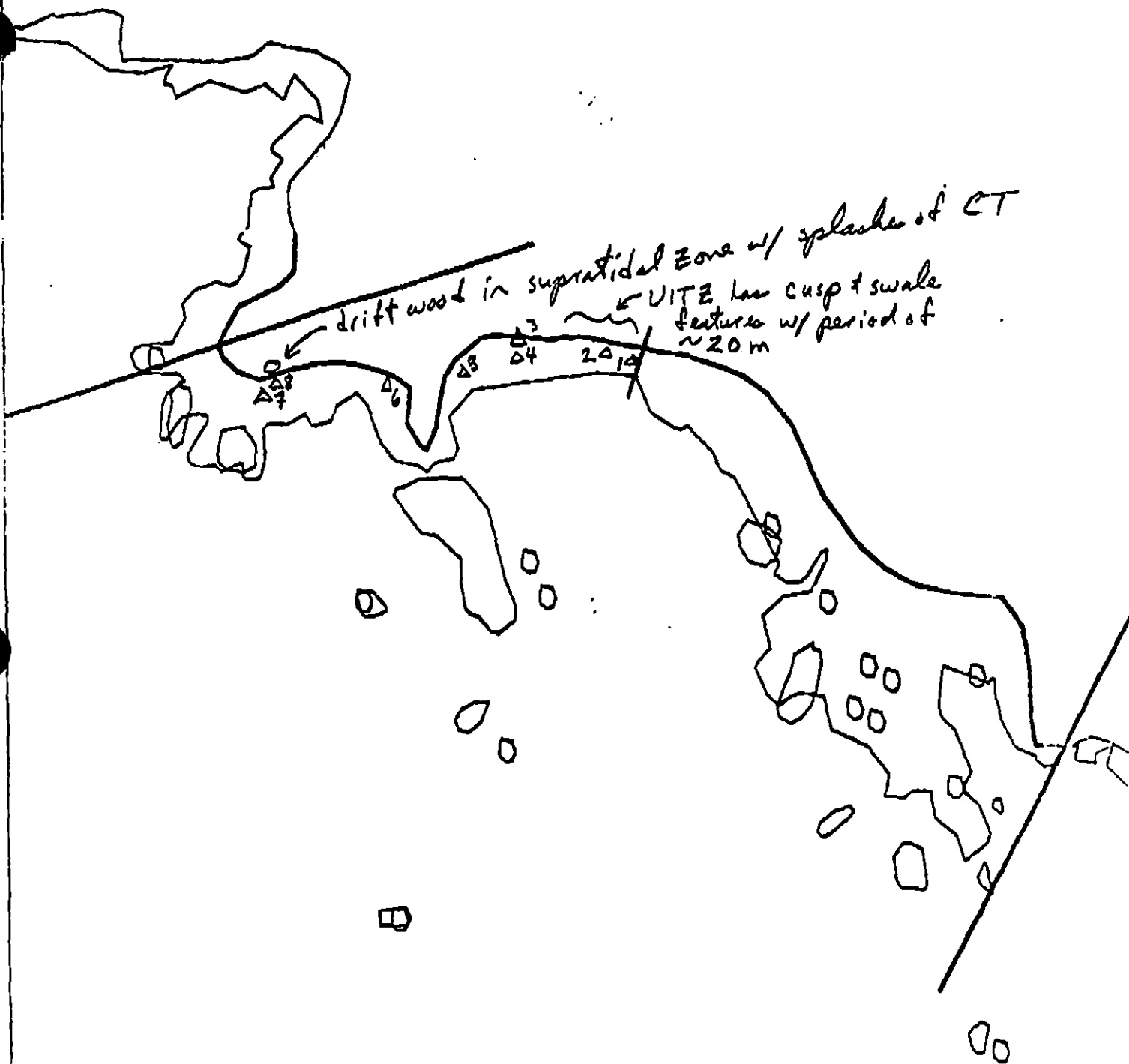
☒ No Treatment Recommended	☐ Snare/Absorbent Booms
☐ Treatment Recommended	☐ Oil Snares (pom poms)
☐ Manual Pickup	☐ Absorbents (pads, rolls, etc)
☐ Bioremediation	☐ Spot Washing: _____ Wands
☐ Tarmat Removal	☐ Beach Cleaner
	☐ Other (see comments)

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: 5/4/90
ADEC Art Weimer Art Weimer
EXXON Andy Tetz Andy Tetz
NOAA Gary Refraser Gary Refraser
USCG G.A. Reiter G.A. Reiter

FOSC: DATE: 8-7-90



In lieu of sketch

XXXX Wide

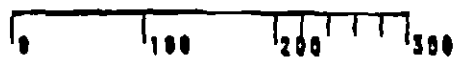
//// Medium

--- Narrow

TTTT Very Light

RB-1B

ADEC Segment Length: 1387m



Map Key: KEN-101

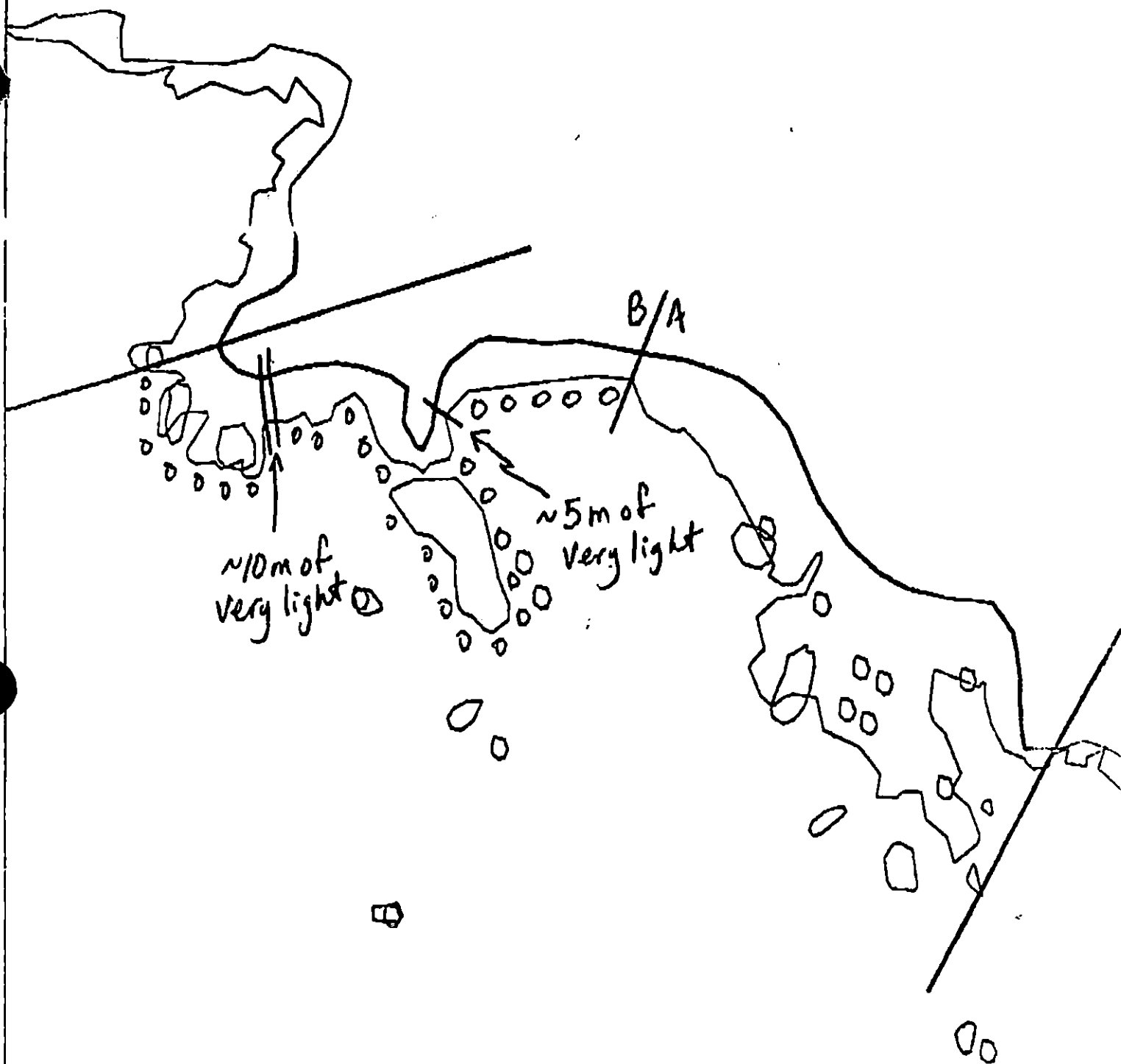
Name: G. HEYMAN

Date: 4-19-90

Data Entered:



Data Entered:



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

RB-1B

ADEC Segment Length: 1387m



Map Key: KEN-101
For
Name: G. HEYMAN

Date: 4-19-90

By Rm C. 4-23-90

Data Entered:

1991 MAYSAP EVALUATION

SEGMENT: RB 001 SUB: A REGION: KEN SURVEY DATE: 5/30/91

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. 4 SEGMENT RB01 A SUBDIVISION A DATE 5/30/91

ADEC

NAME STEVE FERGUSON

SIGNATURE

Steve Ferguson

☒ NTR ☐ TREATMENT RECOMMENDED

SILVER AND SOME COPPER COLORED SHEENS IN WATER RUNOFF COLLECTION POINTS AND A COUPLE OF THE TIDAL POOLS. LIGHT OIL FILMS MIXED IN WITH SILT-MUD OBSERVED DEPOSITED IN INTERSTITIAL AREAS ATOP BEDROCK. A M-L SOR WAS FOUND DEPOSITED UNDER A MUSSELL COLONY. I DON'T RECOMMEND REMOVING THIS DUE TO THE FACT IT'S A VERY SMALL AREA WITH A DIFFICULT APPROACH NOT BECAUSE OF THE MUSSELS. ON WB-28 A LOT OF MOUSSE COVERED MUSSELS WERE REMOVED IN 1990 AND UPON SURVEYING IT THIS YEAR, EVERY AREA MOILED COVERED MUSSELS WERE REMOVED THEY ALL HAD RECOLONIZATION.

EXXON

NAME George P. Stiles

SIGNATURE

George P. Stiles 5/30/91

☒ NTR

Some trace SOR / film was found mixed with the interstitial sand grains on the edges of cobble and around the mussel bed. Some light silver and rainbow sheens were observed. Very difficult beach to access if any wave action occurs.

LANDMANAGER

NAME

OF

SIGNATURE

☐ NTR

No land Rep. available

See attached ADNR letter ~~letter~~ designating ADEC Steve Ferguson as Rep.

USCG/NOAA

NAME W02 MCMAHON

SIGNATURE

Jim McMahon

☒ NTR

very light oil ~~trace~~ trapped in shell

Don't Miss

This is to designate Steve Ferguson
of ADCC as the "acting" land manager
Rep for ADNR, for MATSAP survey '91,
of RB-001. He will advise me of
the survey team's findings upon completion
of the segment. The reason for this
temporary designation is to reduce logistical
problems of providing a DNR rep for one
small segment in a remote area.

J. Bruce S. Johnson

Park Ranger, ADNR

PAGE 1 OF 1

DATE MAY 130/91

ENERGY LEVEL: ☒ H ☐ M ☐ L

WEATHER: ☐ SUN ☐ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

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

EST. OIL CATEGORY LENGTH: W 0 m M 5 m N 0 m VL 136 m NO 514 m US 0 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- 4(III) - 14 FRAMES 17-21

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

0 VEET HIGH ENERGY BEACH - OPEN WATER TO HAWAII

- FLAT, WAVE CUT PLATFORM HAS A THIN VENEER OF BOULDER, PEBBLES & GRANULES.
- MUSSEL BEDS COVER THE MEDIUM & LIGHT SOR AT LOCATION 'B'. THE SOR IS GENERALLY 2 TO 3 CM THICK. LIGHT SOR UNDER MUSSEL BED AT LOCATION 'A'.
- SILVER & RAINBOW SHEENS ARE OCCASIONALLY FOUND IN SMALL INTERTIDAL POOLS.

ITP - INTERTIDAL POOL

REVIEWED BY: MC 6/2/93

revised 5.31.94

23001-A
 OG SKETCH MAP
 30 MAY 91
 1006-1121
 BRYAN Trimm

ITP - intertidal pool

SAND
PEBBLE

MA 810 NO

TREES

Boulder-Rock-Pebble-Gravels
 WAVE CUT PLATFORM

A
 SOR-L 5%
 10 x 6 m

E
 ST < 1%
 5 x 4 m

Boulder Taus

D
 SOR-L 1%
 FL(RB) 1%
 4 x 7.5 m

PEBBLE-SAND BOULDER

Rocky Bay

B
 SOR-M/L 35%
 20 x 5 m
 SOR under gravel beds
 in crevices

Boulder-Rock-Pebble-Gravels
 WAVE CUT PLATFORM

ITP

ITP

ITP

MAYSAP-H-III-14
 #17-21

NORTH
 ↑

0 100
 meters

C
 SOR-L < 1%
 FL(SLV) < 1%
 40 x 130 m
 FILM IN INTERTIDAL
 POOLS

GULF OF ALASKA / PACIFIC OCEAN

Reused: MC 6/2/91
 reviewed 5.31 94

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #

4

DATE

30 MAY '91

SEGMENT #

RB001

TIDAL HEIGHT(Range) -1.34 to +0.67

SUBDIVISION

A

BIOLOGIST

Jim Roth

SEA STATE

6"

WIND SPEED/DIRECTION

PHOTOGRAPHS: ROLL #

FRAME #

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

- A. BOULDER/PEBBLE w/ SPARSE ENDOCLADIA; VERY DENSE MUSSELS, LITTORINES (INCL. EGGS); DENSE BARNACLES, LIMPETS; MODERATELY DENSE DOGWINKLES (NUCELLA) (INCL. EGGS).
- B. BOULDER/PEBBLE w/ MODERATELY DENSE ENDOCLADIA; VERY DENSE MUSSELS; DENSE LITTORINES, BARNACLES, LIMPETS; MODERATELY DENSE DOGWINKLES (INCL. EGGS)
- C., D. MODERATELY DENSE FUCUS, EELGRASS, ENDOCLADIA (ALL IN POOLS); DENSE TO EXTREMELY DENSE LITTORINES (INCL. EGGS); DENSE MUSSELS, BARNACLES (INCL. SPAT), MODERATELY DENSE LIMPETS, HERMIT CRABS, ISOPODS, DOGWINKLES.
- E. BOULDERS w/ VERUCARIA

GENERAL COMMENTS: A HIGH-ENERGY BEACH PROTECTED FROM STORMS BY AN OFFSHORE BEDROCK PLATFORM. INTER-TIDAL BIOTA AT THIS SITE IS HEALTHY AND THRIVING, WITH NUMEROUS ORGANISMS SHOWING SIGNS OF RECRUITMENT: FUCUS, MUSSELS, BARNACLES, LITTORINES, DOGWINKLES (NUCELLA). THE BOULDER/CORBLE AREA ADJACENT TO THE SANDY BEACH IS PARTICULARLY RICH, WITH LITTORINE ABUNDANCE EXTRAORDINARILY HIGH IN SOME PARTS, ESPECIALLY SMALL POOLS WHICH OCCUR THROUGHOUT THE AREA. THIS AREA IS COINCIDENTALLY ALSO WHERE MOST OF THE OIL WAS FOUND. OCCURRENCE OF OIL HAD NO OBVIOUS EFFECTS ON INTERTIDAL BIOTA ABUNDANCE OR

WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

(SEE ATTACHED SHEET)

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED	SPECIES PRESENT
Eagles				
Seabirds				
Waterfowl				
Gulls/Killdeer				
Shorebirds				
Corvids				
Other Birds				

MARINE MAMMALS

OBSERVED

LAND MAMMALS

SPECIES

OBSERVED

Sea Otters		BLACK BEAR	
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

10/1/91

SKETCH MAP
30 MAY - 91
1006-1121

BIO MAP
ROTH
ITP - intertidal pool

B.

MODERATELY DENSE
ENDOCLADIA; VERY DENSE
MUSSELS; DENSE LITTORINES,
BARNACLES, LIMPETS; MODERATELY
DENSE DOGWINKLES (INCL. EGGS)

E. VERRUCARIA

EAGLE NEST

BOULDER TALUS

PEBBLE - SAND - BOULDER

MATSAP-4(III)-14
217-21

EAGLE PERCH

SAND -
PEBBLE

TREES

Boulder-Rock-Pebble-Granite
WAVE CUT PLATFORM

ROCKY BAY

A.

SPARSE ENDOCLADIA;
VERY DENSE MUSSELS,
LITTORINES (INCL. EGGS);
DENSE BARNACLES,
LIMPETS; MODERATELY
DENSE DOGWINKLES
(INCL. EGGS)

NORTH

BOULDER-Rock-Pebble-Granite

WAVE CUT PLATFORM

C.

D.

MODERATELY DENSE Fucus,
100 EELGRASS, ENDOCLADIA (ALL
IN POOLS); DENSE TO
EXTREMELY DENSE LITTORINES
(INCL. EGGS); DENSE MUSSELS, BARNACLES
(INCL. SPAT); MODERATELY DENSE
LIMPETS, HERMIT CRABS, ISOPODS,
DOGWINKLES (INCL. EGGS).

0
meters

RB001-A 30 MAY '91 Jim ROTH

ITS ABILITY TO REPRODUCE.

BIRD AND MAMMAL NOTES: AN ACTIVE EAGLE NEST WAS NOTED (SEE BIO MAP), WITH BIRD SITTING ON NEST. SHE DID NOT FLY WHEN TEAM APPROACHED, BUT CROUCHED DOWN IN NEST. TEAM SKIRTED AROUND NEST, MAINTAINING CA. 100M AWAY. A SECOND ADULT BIRD APPROACHED WHEN TEAM WAS SURVEYING IN ZONES C+D. THIS BIRD APPEARED SLIGHTLY AGITATED, MADE A CHIRP/SQUAWK NOISE AND PERCHED IN A NEARBY TREE (SEE "EAGLE PERCH" ON MAP). A THIRD BIRD, WITH IMMATURE PLUMAGE, FLEW THROUGH THE SUBDIVISION.

A SMALL BLACK BEAR WAS SEEN JUST NORTH OF THE SUBDIVISION AS THE HELICOPTER APPROACHED.

1991 MAYSAP EVALUATION

SEGMENT: RB 001 SUB: A REGION: KEN SURVEY DATE: 5/30/91

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: Timothy O. Smith Date: 6/07/91

RECOMMENDATIONS:

	INITIAL	TAG	FOSC
TREATMENT REQUIRED (Y or N)	<u>N</u>	<u>N</u>	<u>N</u>
Manual Pickup (Check as Req.)	<u> </u>	<u> </u>	<u> </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:

FOSC:

TAG APPROVAL DATE: JUNE 7 1991

FOSC APPROVAL DATE: 6/11/91

ADEC Whitaker

FOSC E. E. Page

EXXON Beal

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

USCG Edmundo

NOAA JoTanner

**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. 4 SEGMENT RBO1 A SUBDIVISION A DATE 5/30/91

ADEC

NAME STEVE FERGUSON

SIGNATURE

[Signature]

☒ NTR ☐ TREATMENT RECOMMENDED

SILVER AND SOME COPPER COLORED SHEENS IN WATER RUNOFF COLLECTION POINTS AND A COUPLE OF THE TIDAL POOLS. LIGHT OIL FILMS MIXED IN WITH SILT-MUD OBSERVED DEPOSITED IN INTERSTITIAL AREAS ATOP BEDROCK. A M-LSOR WAS FOUND DEPOSITED UNDER A MUSSELL COLONY. I DON'T RECOMMEND REMOVING THIS DUE TO THE FACT IT'S A VERY SMALL AREA WITH A DIFFICULT APPROACH NOT BECAUSE OF THE MUSSELS. ON WB-2B A LOT OF MOUSSE COVERED MUSSELS WERE REMOVED IN 1990 AND UPON SURVEYING IT THIS YEAR, EVERY AREA OILED COVERED MUSSELS WERE REMOVED THEY ALL HAD RECOLONIZATION.

EXXON

NAME George P. Stiles

SIGNATURE

[Signature] 5/30/91

☒ NTR

Some trace SOR / film was found mixed with the interstitial sand grains on the edges of cobble and around the mussel bed. Some light silver and rainbow sheens were observed. Very difficult beach to access if any wave action occurs.

LANDMANAGER

NAME

OF

SIGNATURE

☐ NTR

No land Rep. available

See attached ADNR letter ~~letter~~ designating ADEC Steve Ferguson as Rep.

USCG/NOAA

NAME

W02 MCMAHON

SIGNATURE

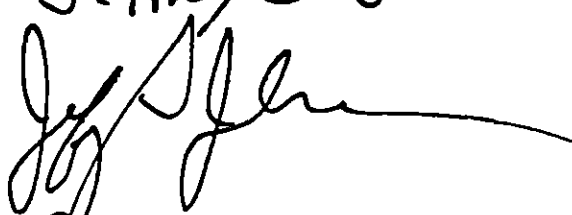
[Signature]

☒ NTR

very light oil ~~trace~~ trapped in shell

[Signature]

This is to designate Stue Ferguson
of ADEC as the "acting" Land Manager
Rep for ADNR, for MATSAP survey '91,
of RB-001. He will advise me of
the survey team's findings upon completion
of the segment. The reason for this
temporary designation is to reduce logistical
problems of providing a DNR rep for one
small segment in a remote area.

Jeffrey S. Johnson

Park Ranger, ADNR

PAGE 1 OF 1

DATE MAY 130 191

ENERGY LEVEL: ☒ H ☐ M ☐ L

WEATHER: ☐ SUN ☐ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

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

EST. OIL CATEGORY LENGTH: W 0 m M 5 m N 0 m VL 136 m NO 514 m US 0 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-4(III)- 14 FRAMES 17-21

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

ITP - INTERTIDAL POOL

REVIEW 50: MC 6/2/91

reviewed 5.31 9y

23001-A
OG SKETCH MAP
30 MAY - 91
1006-1121
BRYAN Trimm

ITP - intertidal pool

SAND -
PEBBLE

NVA
8/20/90

TREES

Boulder-Rock-Pebble-Gravels
WAVE CUT PLATFORM

A
SOR-L 5%
10 x 6 m

E
ST < 1%
5 x 4 m

Boulder TALS

D
SOR-L 1%
FL(RW) 1%
4 x 7.5 m

PEBBLE-SANDS BOULDER

Rocky Bay

B
SOR-M/L 35%
20 x 5 m
SOR under mussel beds
(in crevices)

Boulder-Rock-Pebble-Gravels
WAVE CUT PLATFORM

ITP

ITP

ITP

MAYSAP-4(III)-14
#17-21

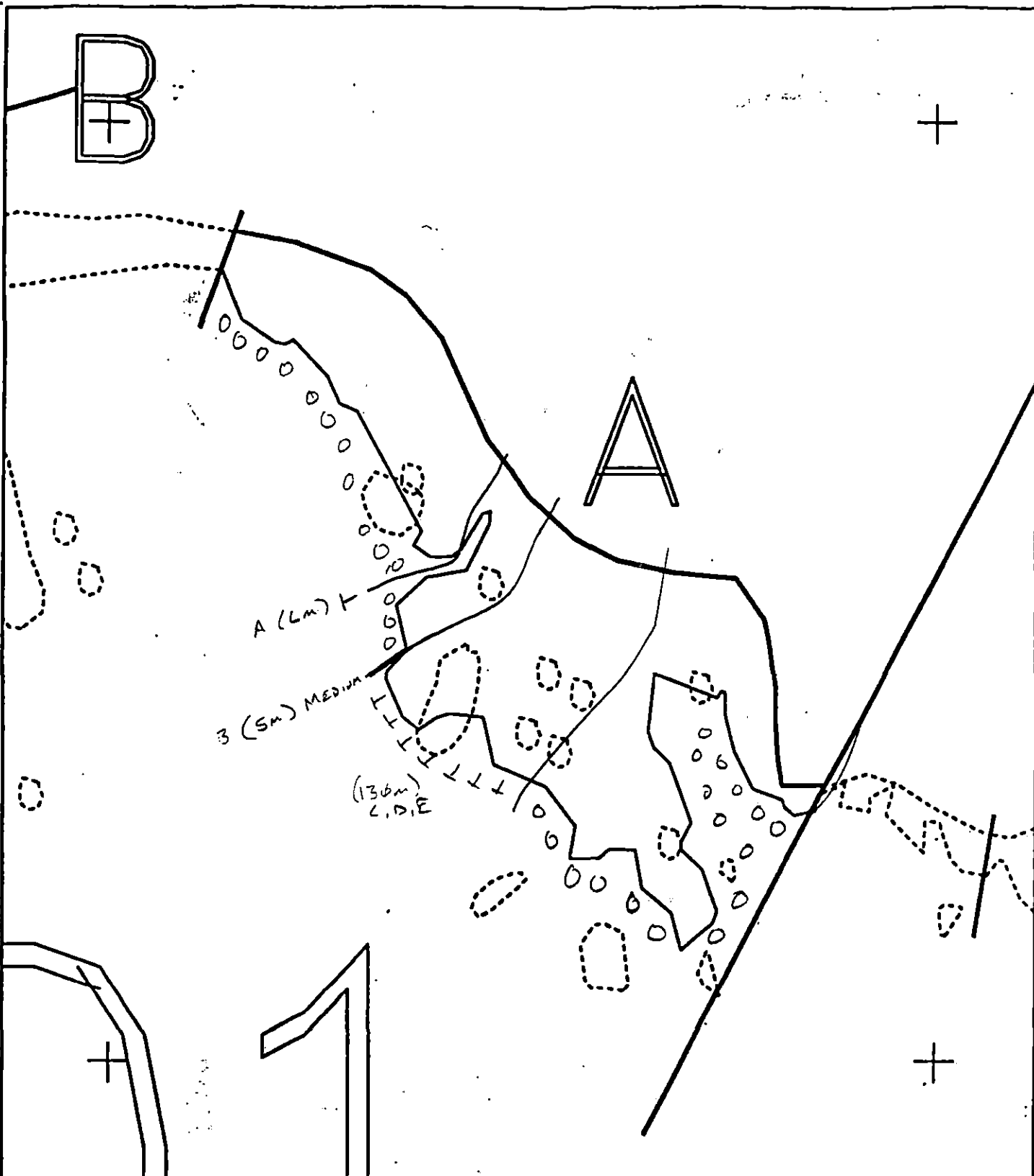
NORTH

0 100
meters

C
SOR-L < 1%
FL(SLV) < 1%
40 x 130 m
FILM IN INTERTIDAL
POOLS

GULF OF ALASKA/PACIFIC OCEAN

Revised: MC 6/2/91
Reviewed 5.31 91



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

RB001 A
 ADEC Subsegment Length: 635m
 METERS

0 100 200
 AK State Plane Zone 4
 arb001a



Subdivision Field Map
 Map Key: KENRB001A
 Name: TRIMM
 Date: 30-MAY-91
 Date Entered:

- SURFACE OIL CATEGORY MAP -

REVISED: MC 6/2/91
 reviewed 5.31 94

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 4 DATE 30 MAY '91
 SEGMENT # RB001 TIDAL HEIGHT (Range) -1.34 to +0.67
 SUBDIVISION A BIOLOGIST Jim Roth
 AREA STATE 6" WIND SPEED/DIRECTION
 PHOTOGRAPHS: ROLL # FRAME #

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

- A. BOULDER/PEBBLE W/ SPARSE ENDOCLADIA; VERY DENSE MUSSELS, LITTORINES (INCL. EGGS); DENSE BARNACLES, LIMPETS; MODERATELY DENSE DOGWINKLES (NUCELLA) (INCL. EGGS).
 B. BOULDER/PEBBLE W/ MODERATELY DENSE ENDOCLADIA; VERY DENSE MUSSELS; DENSE LITTORINES, BARNACLES, LIMPETS; MODERATELY DENSE DOGWINKLES (INCL. EGGS)
 C., D. MODERATELY DENSE FUCUS, EELGRASS, ENDOCLADIA (ALL IN POOLS); DENSE TO EXTREMELY DENSE LITTORINES (INCL. EGGS); DENSE MUSSELS, BARNACLES (INCL. SPAT), MODERATELY DENSE LIMPETS, HERMIT CRABS, ISOPODS, DOGWINKLES.
 E. BOULDERS W/ VERRUCARIA

GENERAL COMMENTS: A HIGH-ENERGY BEACH PROTECTED FROM STORMS BY AN OFFSHORE BEDROCK PLATFORM. INTER-TIDAL BIOTA AT THIS SITE IS HEALTHY AND THRIVING, WITH NUMEROUS ORGANISMS SHOWING SIGNS OF RECRUITMENT: FUCUS, MUSSELS, BARNACLES, LITTORINES, DOGWINKLES (NUCELLA). THE BOULDER/COBBLE AREA ADJACENT TO THE SANDY BEACH IS PARTICULARLY RICH, WITH LITTORINE ABUNDANCE EXTRAORDINARILY HIGH IN SOME PARTS, ESPECIALLY SMALL POOLS WHICH OCCUR THROUGHOUT THE AREA. THIS AREA IS COINCIDENTALLY ALSO WHERE MOST OF THE OIL WAS FOUND. OCCURRENCE OF OIL HAD NO OBVIOUS EFFECTS ON INTERTIDAL BIOTA ABUNDANCE OR

WILDLIFE OBSERVATIONS TO BE COMPLETED IN ALL SUBDIVISIONS

(SEE ATTACHED SHEET)

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl			
Gulls/Kittiwakes			
Shorebirds			
Corvids			
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

RODNEY A
SKETCH MAP
30 MAY - 91
1006-1121

Bio MAP
ROTH
ITP - intertidal pool

B.

MODERATELY DENSE
ENDOCLADIA; VERY DENSE
MUSSELS; DENSE LITTORINES,
BARNACLES, LIMPETS; MODERATELY
DENSE DOGWINKLES (INCL. EGGS)

E. VERRUCARIA

Boulder Talus

PEBBLE - SAND - BOULDER

MAYSAP-4(III)-14
#1721

EAGLE
PERCH

Boulder-Rock-Pebble-Granule
WAVE CUT PLATFORM

WAVE CUT PLATFORM

C.

D.

MODERATELY DENSE Fucus,
EELGRASS, ENDOCLADIA (ALL
IN POOLS); DENSE TO
EXTREMELY DENSE LITTORINES
(INCL. EGGS); DENSE MUSSELS, BARNACLES
(INCL SPAT); MODERATELY DENSE
LIMPETS, HERMIT CRABS, ISOPODS,
DOGWINKLES (INCL. EGGS).

NORTH

0 100
meters

SAND -
PEBBLE

Boulder-Rock-Pebble-Granule
WAVE CUT PLATFORM

Rocky Bay

A.

SPARSE ENDOCLADIA;
VERY DENSE MUSSELS,
LITTORINES (INCL. EGGS);
DENSE BARNACLES,
LIMPETS; MODERATELY
DENSE DOGWINKLES
(INCL. EGGS)

EAGLE
NEST

HIGH WAVE CUT

RB 001-A 30 MAY '91 Jim ROTH

ITS ABILITY TO REPRODUCE.

BIRD AND MAMMAL NOTES: AN ACTIVE EAGLE NEST WAS NOTED (SEE BIO MAP), WITH BIRD SITTING ON NEST. SHE DID NOT FLY WHEN TEAM APPROACHED, BUT CROUCHED DOWN IN NEST. TEAM SKIRTED AROUND NEST, MAINTAINING CA. 100M AWAY. A SECOND ADULT BIRD APPROACHED WHEN TEAM WAS SURVEYING IN ZONES C+D. THIS BIRD APPEARED SLIGHTLY AGITATED, MADE A CHIRP/SQUAWK NOISE AND PERCHED IN A NEARBY TREE (SEE "EAGLE PERCH" ON MAP). A THIRD BIRD, WITH IMMATURE PLUMAGE, FLEW THROUGH THE SUBDIVISION.

A SMALL BLACK BEAR WAS SEEN JUST NORTH OF THE SUBDIVISION AS THE HELICOPTER APPROACHED.

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT RB-1 SUBDIVISION A (1 of 2)

WORK WINDOW	
Manual Pickup	WORK 7/1 - 8/15
Bioremediation	WORK 7/1 - 7/31

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

3N,O,P,Q	Harbor Seal & Sea Lion Pupping and Molting	Closed to bioremediation before 7/1 and after 7/31. Closed to all activities before 7/1 and after 8/15.
5T	Bald Eagle Nest	NO CONSTRAINT. USFWS 6/1/90 map indicates no active nest within 400m of Segment BC-2 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. Avoid any unnecessary disturbance or damage to unrolled blots and substrate.

FOSC

Date

Prepared by

Date

6/13/90

6/12/90

RB-01

WORK
AREAS

ACTIVE
NEST

B



Exxon Company, USA
Map Key: KEN-RB-1
May 17, 1990

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

0 444 888

★ Seabird Colony
▲ Eagle Nest

1 inch = 1457 feet

SHORELINE EVALUATION

SEGMENT ST/ RB-01 SUBDIVISION A (1 OF 2) DATE 4/19/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Possible 3N,30 Harbor seal and sea lion pupping (5/15 to 7/1)

4GG Alaska State Wilderness Park

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 uncoiled 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. Holmes DATE: 5/5/90

OILING CATEGORIZATION:

Wide 0 m: Medium 87 m: Narrow 0 m: V.Light 300 m: No Oil 268 m
Subsurface Oil Observed: Yes X No Maximum Depth 12 cm

RECOMMENDATIONS:

No Treatment Recommended.

X Treatment Recommended

X Manual Pickup

X Bioremediation

Tarmat Removal

Snare/Absorbent Booms

Oil Snares (pom poms)

 Absorbents (pads, rolls, etc)

Spot Washing: _____ Wands _____

Beach Cleaner

Other (see comments)

COMMENTS: Recommend manual pickup of oiled trash and mousse and bioremediate subsurface oil in areas shown on sketch map. Bioremediation should be conducted between 7/1 and 8/1 due to pinniped concerns. No time constraints for manual pickup.

~~SEE CROSS REFS AND DOWNDATES~~
6/12/90 JRP

TAG COMMENTS: _____

TAG APPROVAL DATE: 5/4/90.

ADEC ART WENNA Art Wenna

EXXON Andy Terrell

NOAA Gary Petrac. Amy Petrac

FOSC: ML DATE: 5-9-90

USCG G.A. HEITEL G.A. Heiter

REGION: KENAI

SEGMENT: ST/RB-03

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ RB-03 SUBDIVISION A (1 OF 1) DATE 4/10/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (4/15 to 7/31)

1B Salmon stream mouth - spawning (7/15 to 9/10)

8AA Sensitive Estuary

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:

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 0 m: V.Light 258 m: No Oil 402 m

Subsurface Oil Observed: Yes X No _____ Maximum Depth 15 cm

(See note on OG Form,
Comments section)

RECOMMENDATIONS:

☐ No Treatment Recommended

☒ Treatment Recommended

☐ Manual Pickup

☐ Bioremediation

☒ Tarmat: ☐ Breakup

☒ Removal

☐ Snare/Absorbent Booms

☐ Oil Snares (pom poms)

☐ Absorbents (pads, rolls, etc)

☐ Spot Washing: _____ Wands

☐ Beach Cleaner

☐ Other (see comments)

COMMENTS: Recommend tarmat removal as indicated on sketch map. Treatment should be conducted with consent of ADF&G Habitat Division due to Salmon stream constraints.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / RB-3A SUBDIVISION: A DATE 4/10/90

USCG NAME R. Bryan Hurtle SIGNATURE R. Bryan Hurtle DCI

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

I agree with The Shoreline Oiling Summary Report For RB-03A subdivision A

ADEC NAME Russell Kanibe SIGNATURE Russell Kanibe

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

Out of 8 holes dug on the west side of the creek 3 produced light when shined in the water. The spear from one of the holes could be traced to a pile with droplets of mouse on it.

LAND MANAGER

NAME _____ SIGNATURE _____

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

See next page

Land manager (Pat Norman) left
without signing the Comments form. He gave
verbal for "No Treatment Recommended". Pat
will be in Anchorage tomorrow (4/11/90) and I
will have him sign off then.

Ruby Singel

4/10/90

SHORELINE OILING SUMMARY

REVISION NO. 03/23/90

OG Randy Stagg USCG Bryan Hirtle SEGMENT ST/ RB-3A (1 subdivision)
 BIO Mike Gurtner LAND REP Pat Norman (Pave) SUBDIVISION A
 EXXON John Deak ADEC Russell Kunihe TIME 08:00 to 09:15
 TEAM NO.: 17 TIDE LEVEL: -1.0 to +0.0 DATE 9/1/90
 EST. SUBDIVISION LENGTH: 8362 m 500m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 15 % B 10 % C 10 % P 10 % G 10 % S 30 % M 15 % V 0 %
 SLOPE: Lang 60 % Hang 40 % Vert 0 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W N/A m M N/A m N N/A m VL 850 m NO 450 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	IC	IS	IP	IR	BR	BL	OL	OR	SL	TL	TR	TL	SU	U	M	U
ASPHALT PAVEMENT				X		X							X			
POOLED																
COVER																
COAT	X		+	✓		X							X	✓		
STAIN	X		+	✓		X							X	✓		
MOUSSE																
PATTIES																
TARBALLS				X		X							X			
FILM				X				X					X	X		
NO OIL															X	X

PAVEMENT: H (F) S 1 sq. m by 2 cm cmPATTIES / TARBALLS 2 BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

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

DEBRIS COLLECTED
☐ YES ☒ NOTYPE #BAGS 0

Photographs:

Roll No. ST-17-6Frames 28-30, 35, 36

SUBSURFACE OIL * See "Pit Comments" on p.2.

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		UC	UC	BR	BL	OL	OR	SL	TL	TR	TL	SU	U	M	U		
1	25					X	0-0		X									X					S, M
2	50					X	0-0		X									X					S, M
3	15				X		0-15		X			X						X					S, M
4	15				X		0-15		X			X						X					S, M
5	15					X	0-0		X									X					S, M
6	20					X	0-0		X									X					S, M

COMMENTS The Exxon listed length for segment RB-3 is 8362 meters. No length is listed for segment RP-3A, but I measured it at 8500 meters from ADEC's map. Of this, only 2 areas were oiled from ADEC's Sep/Oct 1989 survey. (were inaccessible), and these were the only areas surveyed for SSAT. Surveyed length = 500 meters. The surveyed area consisted of bedrock cliffs and large sand/gravel beaches. An anadromous stream, 10-20 meters across and low flow at time of survey, flows across the largest beach. Very light oiling in this area.

SEGMENT ST/ RB-3A SUBDIVISION A

SUBSURFACE OIL (CONTINUED)

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	SP	BP	OP	BP	OL	BP	TL	LR	SU	UR			ML	LU		
7	15				X		0-15		X				X				X								S, M
8	25				X		0-15		X				X				X								S, M
9	25					X	0-0		X									X							S
							.																		
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COMMENTS

* Water filled pit to about 15 cm below grade and a silver sheen was observed on the collected water. ~~No~~ No oiling of sediments was observed, so the oiled interval is not known.

REVIEWED BAT DATE 12 Apr 98

SEGMENT B-3ASUBDIVISION ADATE 4/10/90

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Entry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. MYLAWL
- ☐ SBL
- ☐ 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

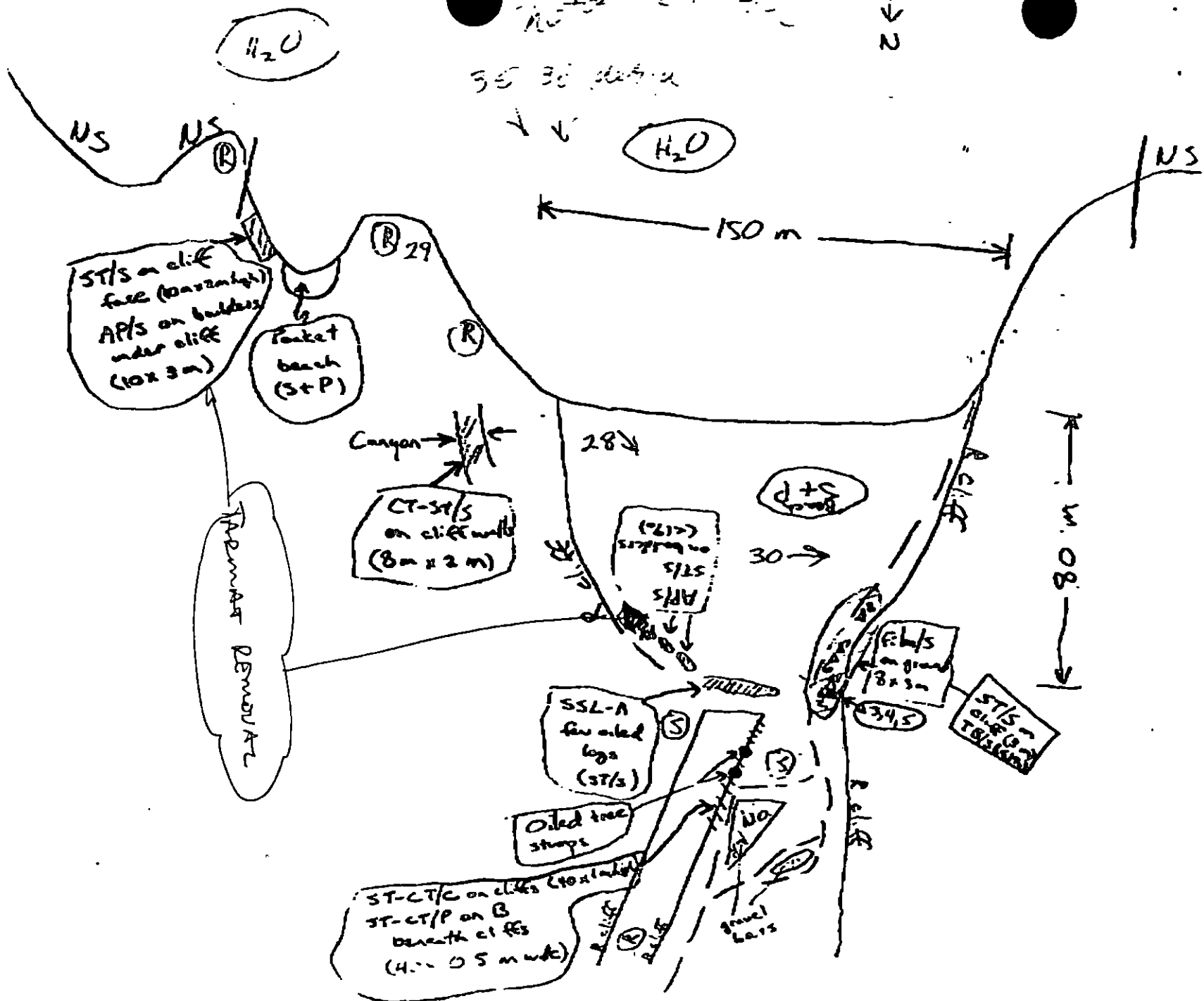
Spatched Distribution

Oil Vegetation

1 →

Photo location, direction,
and number

SKETCH MAP



Oil Character Length (m): AP 10 PO N/ACV N/ACT 50 ST SL MS N/A PT N/A TB N/A FL 15 NO 430 450m

SEGMENT ST. 23-3A

SUBDIVISION

DATE 6 / 10 90

CHECKLIST

☐ N Arrow
☐ Approx. Scale
☐ Seg/Sub Bndry
☐ Oil Dist.
☐ Width
☐ Length
☐ % Cover
☐ Substrate Character
☐ Est. Hgt./Wdth
☐ SSL
☐ Profile Location(s)
☐ Profile(s)
☐ PR Location(s)
☐ Photo Location(s)

LEGEND

1 Δ

PR: No Substances On

24

FIG - Subsurface Oil

CTAC

Continuous Distribution

CTAB

Blackman Old-Boston

CT/P

Faculty Distribution

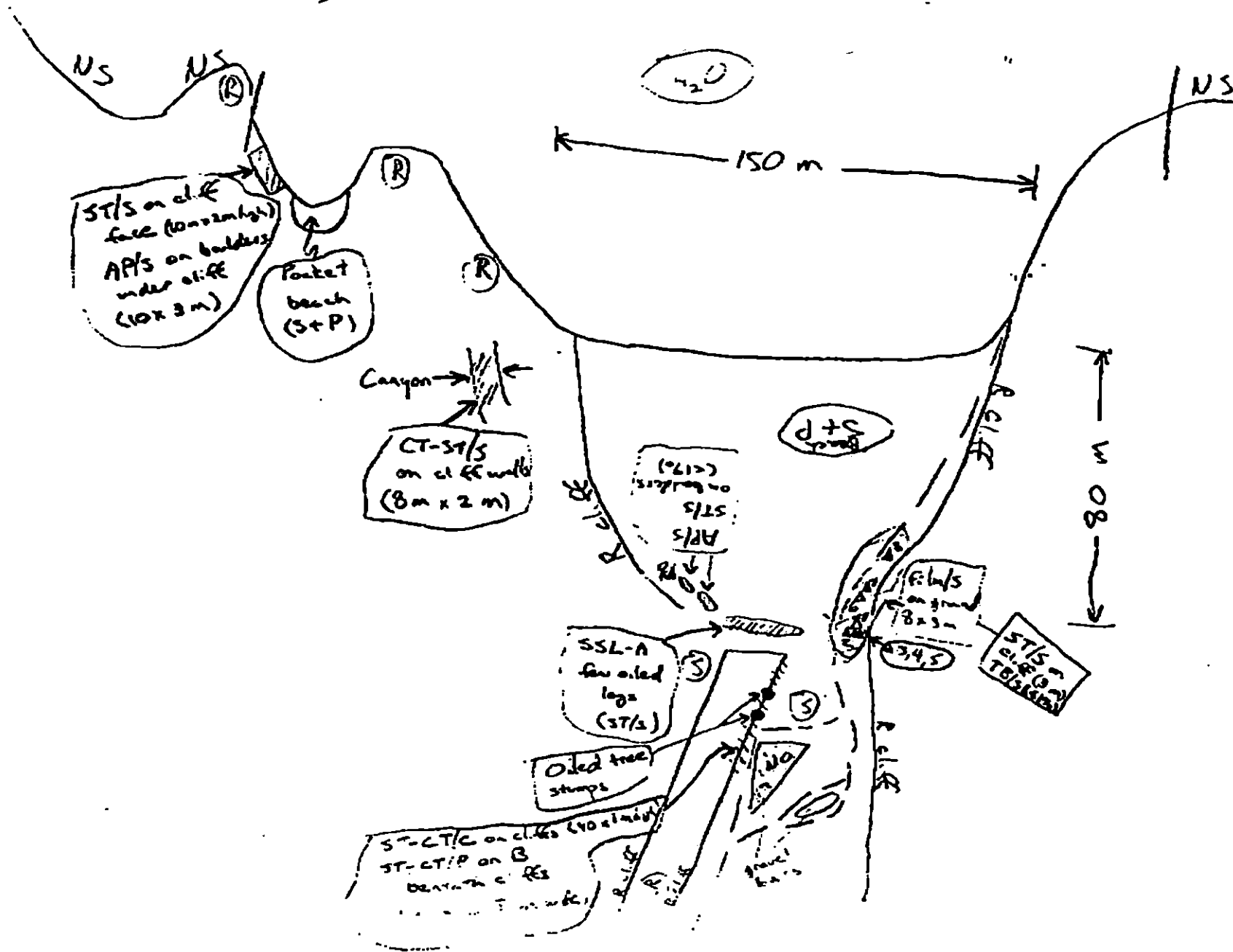
CT/S

Expanded Distribution

Offad Vegetation

1. **1.****Photo location, direction,
and number**

ETCH MAP



Off Character Length (m): AP 10 PO VIACV VIAC 50 ST 50 MS N/A PT VIA TB N/A FL 5 NO 480-450m

NEWSTON, 8:24 PM

SHORELINE ECOLOGICAL SUMMARY

REVISION: 02

Segment ST/RB3A Subdivision A Date (mo / day / yr) 4/10/90Time (24 hr) 0810-0920 Biologist M.H. Fawcett

(A) Substrate type and % of segments:

(1) Bedrock 15 (2) Boulder 10 (3) Cobble 10 (4) Pebble 10 (5) Sand 40 (6) ^{limed gravel} 15(B) Overall % cover of biota (% of segment): Dense _____ 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-17-6Frames 28-30, 35-36

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 PRESEN

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 PRESEN

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 PRESEN

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 PRESEN

Wildlife Observations/ General Comments:

1 set of river otter tracks beside stream, 1 mature eagle
see Attached sheet

Ecological Considerations:

1A

1B

8AA

KODIAK ECOLOGICAL CONSTRAINTS

1A
1B

Salmon stream mouth - fry outmigration (4/15 to 7/31)

Salmon stream mouth - spawning (7/15 to 9/10; PEAK 8/15)

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

Kotai Bay Hatchery release

Pink salmon - late May, early June; Chum salmon - June; Sockeye salmon - early July.

1H

Remote release site

1I

Gill net area

1J

Purse seine area

Mainland, West side Kodiak, Shuyak & Moser/Olga Bay - 6/9 to 10/1.

East side Kodiak, East side Afognak - 7/4 to 10/1.

1K

Purse seine hook-off

1L

Set net sites

USFWS setnet uplands permit 5/15 to 9/15.

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

2M

Herring spawning (4/15 to 6/30)

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 (5/10 to 6/30)

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

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 8/31)

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 (6/1 to 9/30)

7HH

Finfish harvesting

7II

Deer harvesting (8/1 to 1/7)

7JJ

Invertebrate harvesting

7KK

Bear harvesting (4/1 to 5/15 and 10/25 to 11/30)

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

RB3A-A

Rocky Bay

4/10/90

M. Fawcett

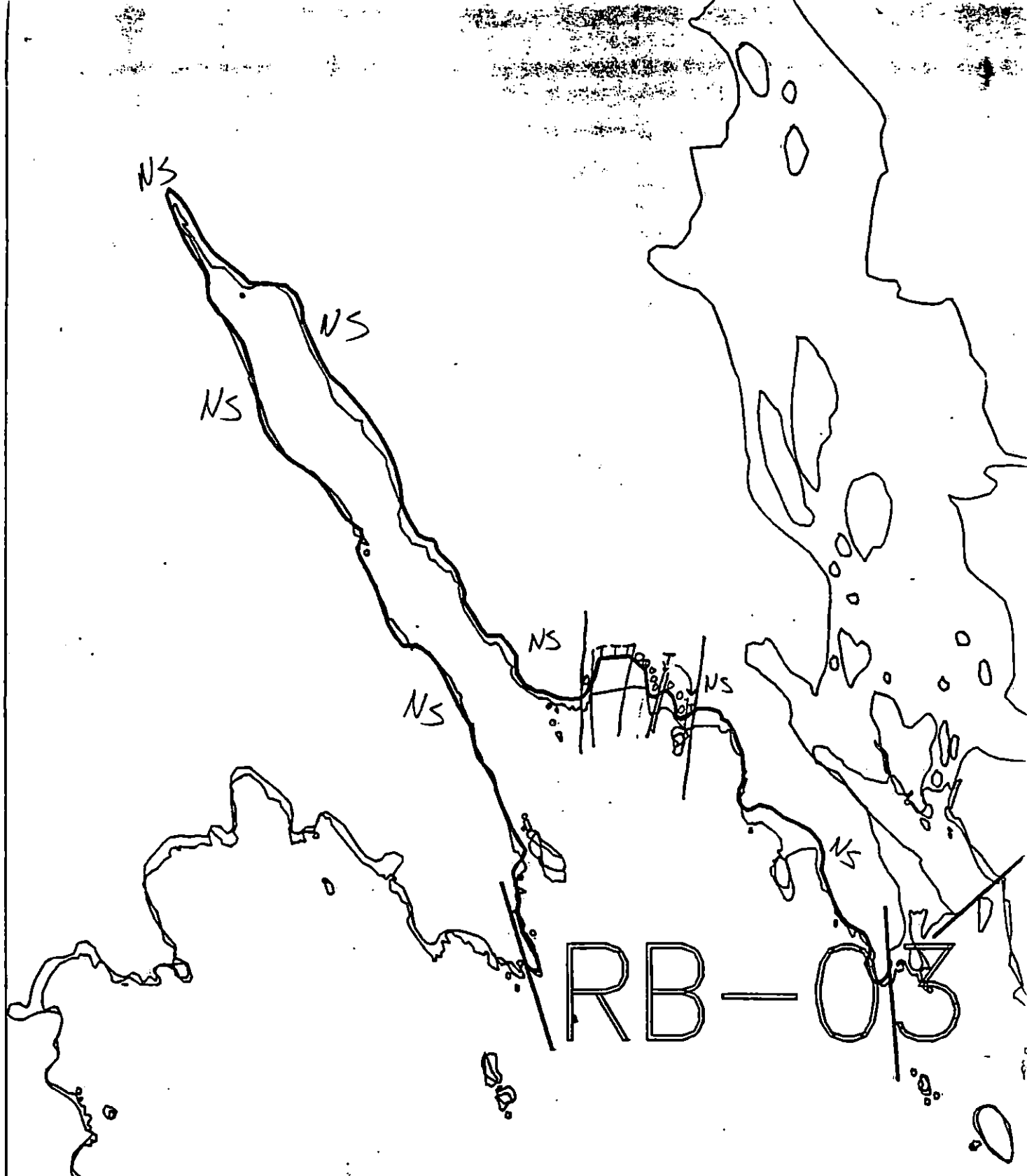
Wildlife Observations and General Comments

A very small stream said to be used by anadromous fish is in this subsection. No fry or other fish were seen. The stream mouth is on a fine sand beach in a cove with large outcrops and cliffs on either side. The beach is exposed to moderate to high wave energy from the southwest, and the biological community on the rocks is typical of fairly exposed shores. The starfish Pisaster ochraceus is particularly abundant in the LTZ, 70-80 specimens occurring in one aggregation near the stream mouth. Juvenile barnacles (Balanus glandula and B. cariosus) and spat (mostly Chthamalus) dominate the rock faces. Large, old B. cariosus are abundant in some areas but are being heavily preyed upon by the Pisaster. In general, the biota appears rich and healthy. Other starfish seen were Pycnopoda, Dermasterias and Leptasterias. Chitons and limpets are abundant, as are large anemones and 8 or 9 species of algae. On one area of UTZ bedrock, 60 percent or more of the juv. (3-4 mm) B. glandula in dense patches are dead.

RB3A-A

P. 2 of 2

but I also observed numerous nemertean worms feeding on barnacles in the same area.



XXXX Wide

//// Medium

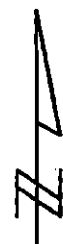
---- Narrow

TTTT Very Light

0000 No Oil

RB-3A

ADEC Segment Length: 7748m



Map Key: KEN-103

Name: Ly siep

Date: 4/10/90

Date Entered:

SHORELINE EVALUATION

SEGMENT ST/ RB-03 SUBDIVISION A (1 OF 1) DATE 4/10/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (4/15 to 7/31)
1B Salmon stream mouth - spawning (7/15 to 9/10)
8AA Sensitive Estuary

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:

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. Adams DATE: 4/20/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 258 m: No Oil 402 m
Subsurface Oil Observed: Yes X No Maximum Depth 15 cm

(See note on OG Form,
Comments section)

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> </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 tarmat removal as indicated on sketch map. Treatment should be conducted with consent of ADF&G Habitat Division due to Salmon stream constraints.

TAG COMMENTS:

TAG APPROVAL DATE: 4/20/90.
ADEC Art Weiner
EXXON Andy Tetz
NOAA Burt Westcott
USCG Kenneth Keane

FOSC: W L DATE: 5-12-90

SEGMENT **RB-3A**
 SUBDIVISION **A**

DATE **4/10/90**

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Beg/End Entry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HML/LML
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Photo Location(s)

LEGEND

1 Δ
 Pli: No Substrate Oil

2 Δ
 Pli: Substrate Oil

CT/C
 Continuous Distribution

CT/B
 Broken Distribution

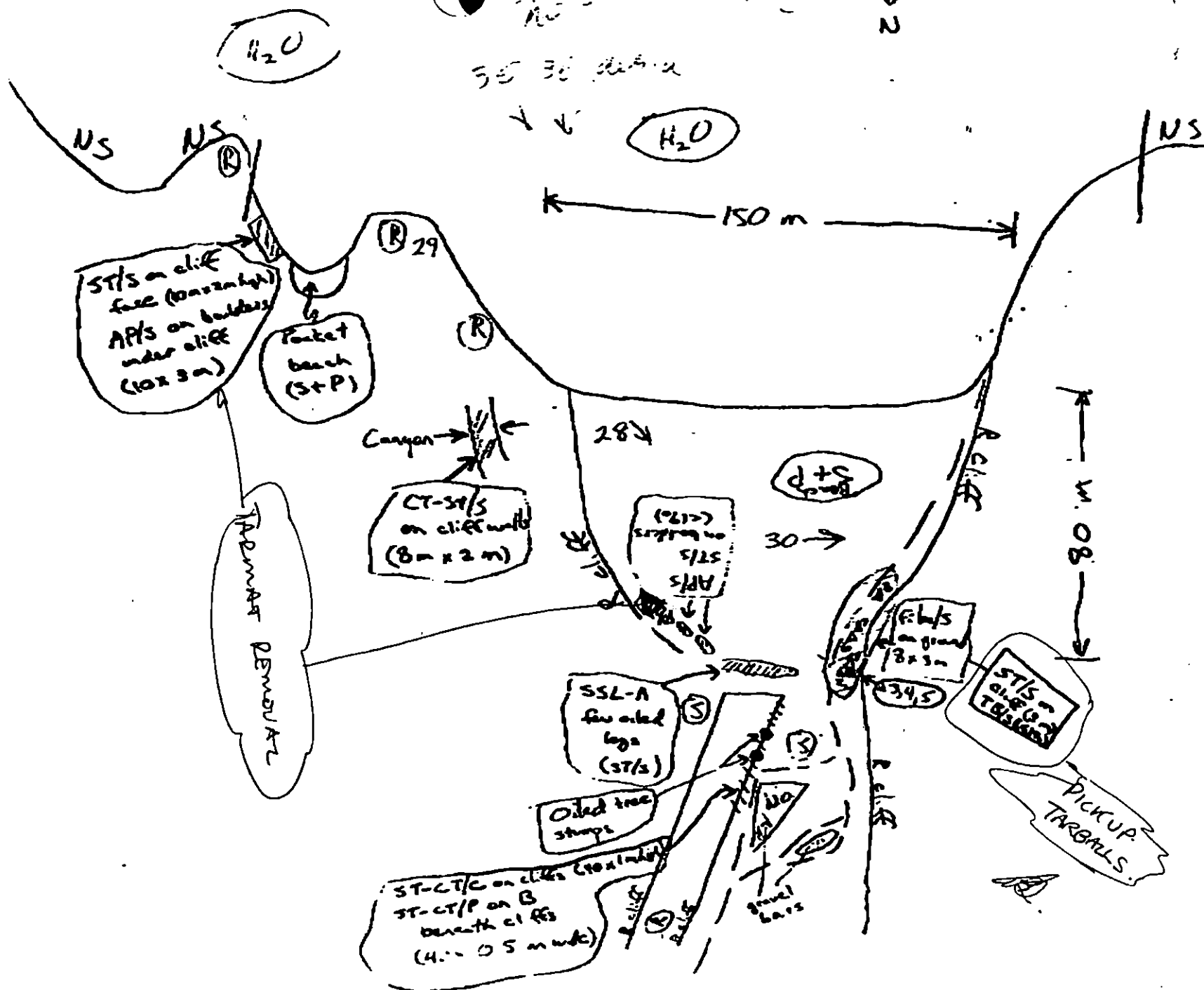
CT/P
 Patchy Distribution

CT/S
 Splashed Distribution

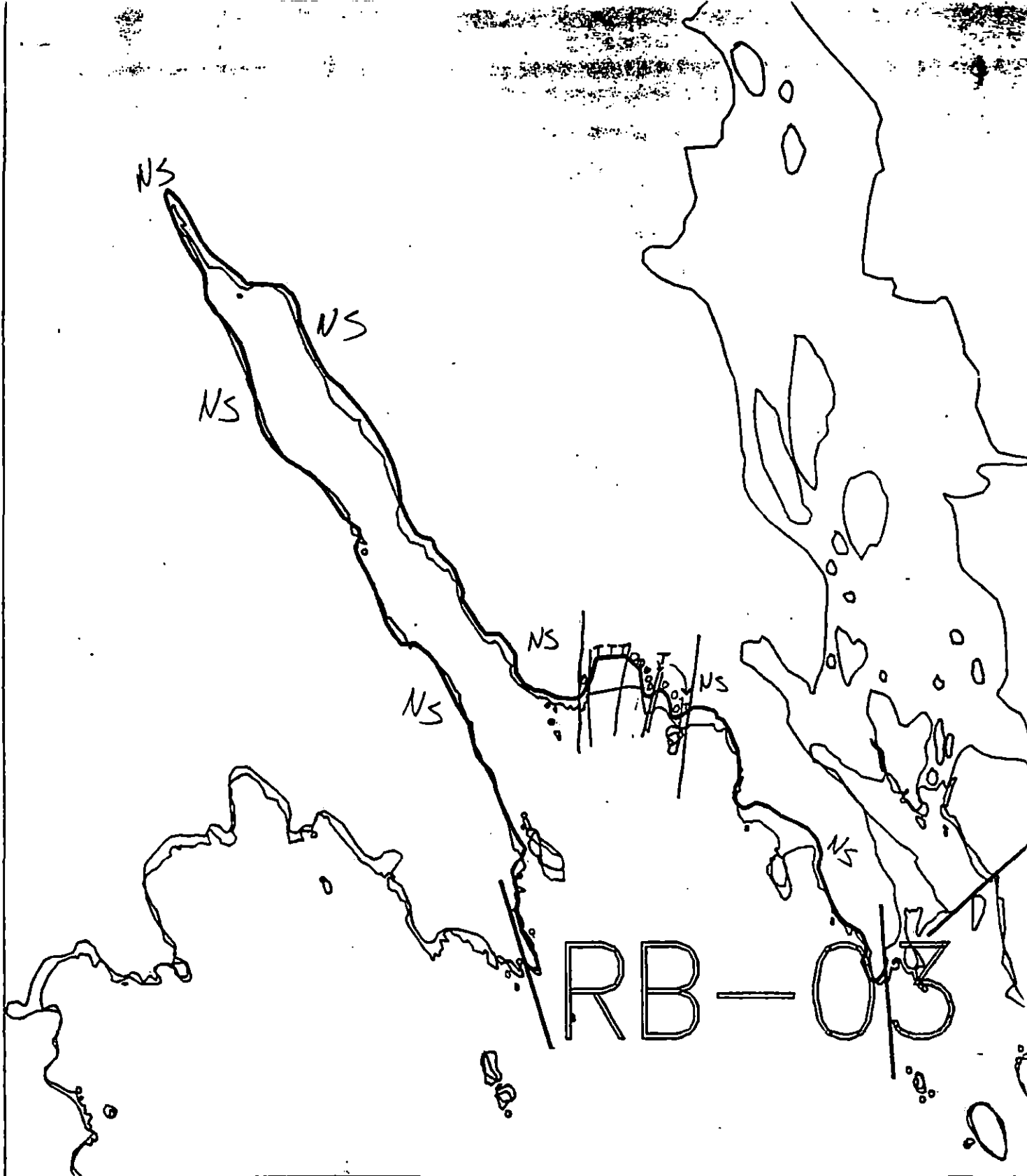
Cited Vegetation

Photo location, direction,
 and number

SKETCH MAP



Oil Character Length (m): AP **10** PO **N/ACV** N/ACT **50** ST **SL** MS **N/A** PT **N/A** TB **N/A** FL **LS** NO **430** **450**



XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

RB-3A

ADEC Segment Length: 7748m



Map Key: KEN-103

Name: Hydriol

Date: 4/10/90

Data Entered:

1991 MAYSAP EVALUATION

SEGMENT: RB 003 SUB: A REGION: KEN SURVEY DATE: 5/15/91

ENVIRONMENTAL SENSITIVITIES:

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

Ecological/Constraints (see page two for details) Eagle nest,
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)	<u>N</u>	_____	_____
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.

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 Doug Hill - ADF&G

SIGNATURE

Douglas D Hill*

☒ NTR NICE BEACH.*



EXXON

NAME Rex Coulter

SIGNATURE

Rex R. Coulter

☒ NTR NOTHING AT THIS BEACH TO COMMENT ABOUT, OTHER THAN THE SCENIC BEAUTY.

LANDMANAGER

NAME Seraphim Maganick OF Port Graham

SIGNATURE

Seraphim Maganick

☒ NTR

Light oiling above the creek. No real oil of significance considered more like residual and sheen. Half sq meters completely picked up and by the rock bank near the mine 1XB meter count

USCG/NOAA

NAME Chief Jem / Gary Shigenaka

SIGNATURE

Gary Shigenaka

☒ NTR There is no longer any detectable oil present on the shorelines, or places where it is likely to reach the water again.

CONCUR WITH ADF&G COMMENTS. A FINE SANDY BEACH THAT SEEMED SOMEWHAT SURREAL AFTER MILES OF ANKLE-STRAINING BOULDER COBBLE SHORELINES SURVEYED. A STREAM RUNS DOWN THE WEST SIDE OF THE BEACH, AND ONE ISOLATED OCCURRENCE OF SOR AND SHEEN WAS NOTED JUST BELOW A JUMBLE OF DEADFALLS AND LOGS ACROSS THE STREAMBED. VECO CREW RECOVERED SAME. COAT WAS OBSERVED ON A ROCK FACE ON THE SOUTHWEST BORDER OF THE BEACH. THESE WERE THE ONLY EVIDENCE OF OILING OBSERVED. ON THE EAST SIDE OF THE BEACH, HEAVY FUCUS GROWTH COVERED A BEDROCK OUTCROP WITH AN EXTREMELY HEAVY RECRUITMENT OF YOUNG MUSSELS (1-2 YRS). ALL CONSISTENTLY SMALL. A DERELICT CABIN WAS LOCATED IN THE SUPRATIDAL ALONG THE NORTHEAST SHORELINE.

PAGE 1 OF 1

DATE 15 / May / 91

ENERGY LEVEL: ☐ H ☒ M ☐ LWEATHER: ☐ SUN ☒ CLOUDS ☐ FOG ☐ RAIN ☐ SNOW

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

EST. OIL CATEGORY LENGTH: W m M m N m VL 3 m NO 406 m US 250 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- 6-15 FRAMES 19-23

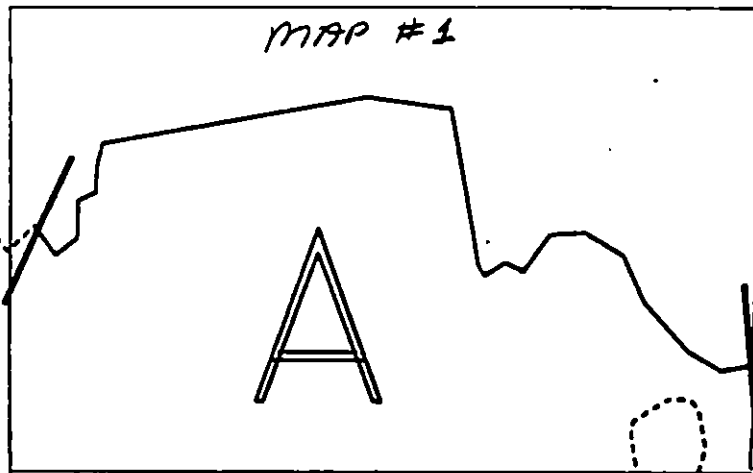
SHEEN COLOR: B - BROWN; R - RAINBOW; S - SILVER; N - NONE

OG COMMENTS: Segment located on the west side of Rock Bay consisting of sandy pocket beaches between bedrock headlands with an ANAD Stream #242-31-10125 at the west end of the segment. The oil found here was a CT/ST along a 3m length of vertical bedrock face. A 1/2m² area of sandy SOK was found and completely removed in front of the log-jam entrance of the ANAD Stream.

reviewed 5.17.91 +1



MAP #1



RB003 A

NS7225

0 100 200

AK State Plane Zone 4
NAD83

Subdivision Field Map

Map Key: KENR0003Ag

Name: D. Fitzgerald

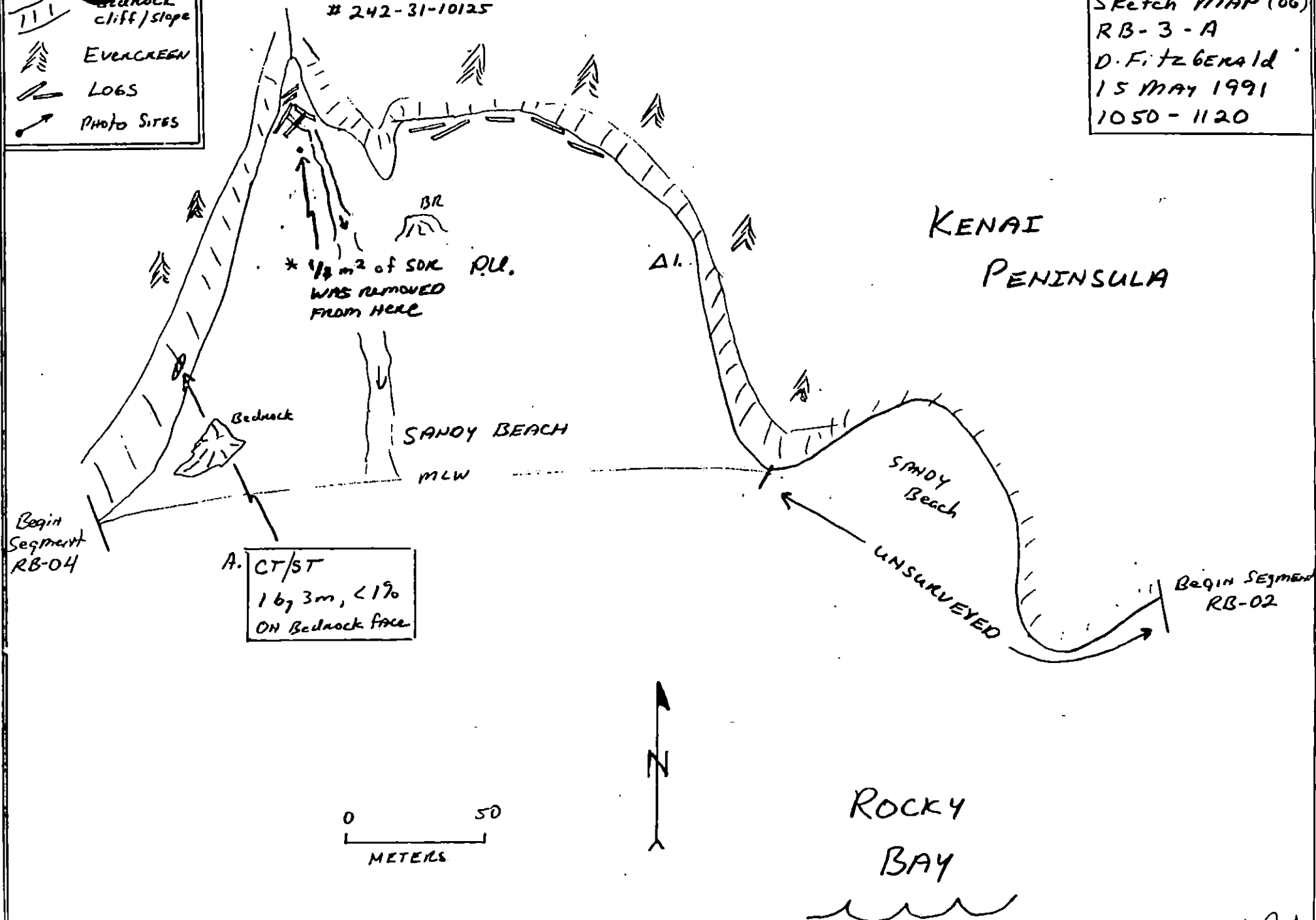
Date: 15 May 1991

25 released 5/17

-  Bedrock cliff/slope
-  EVERGREEN
-  LOGS
-  PHOTO SITES

ANAD. STREAM
242-31-10125

Sketch MAP (06)
RB-3-A
D. FITZGERALD
15 MAY 1991
1050-1120



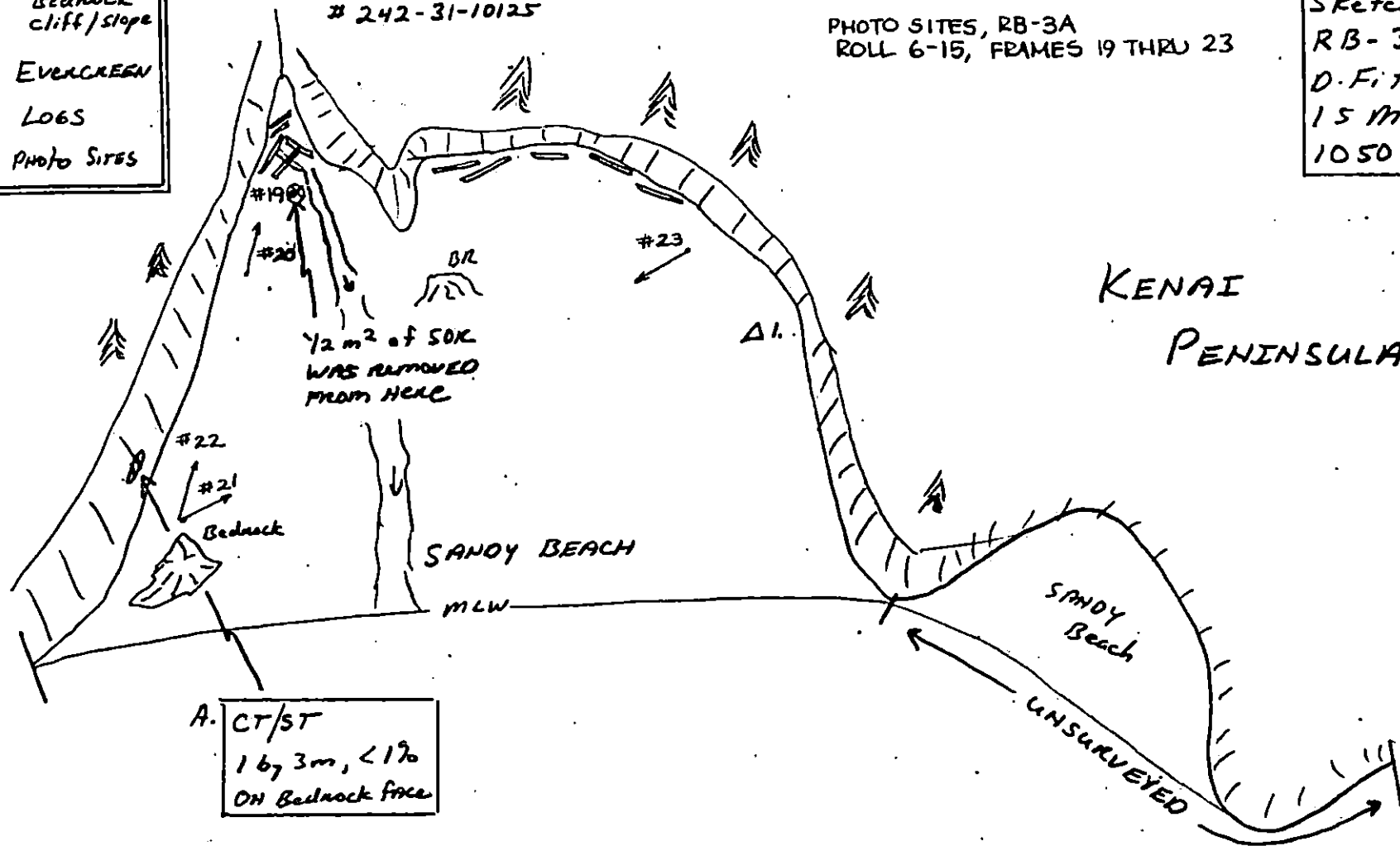
reviewed 5.17.91 gy
Reviewed 5/17

-  BEDROCK cliff/slope
-  EVERGREEN
-  LOGS
-  PHOTO SITES

ANAD. STREAM
242-31-10125

PHOTO SITES, RB-3A
ROLL 6-15, FRAMES 19 THRU 23

Sketch MAP (06)
RB-3-A
D. FITZGERALD
15 MAY 1991
1050-1120



A. CT/ST
1 by 3m, <1%
ON Bedrock face

0 50
METERS



ROCKY
BAY

reviewed 5.17.91
ax

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 6 DATE 5/15/91
 SEGMENT # RB-003 TIDAL HEIGHT (Range) +0.5 to +2.6 ft.
 SUBDIVISION A BIOLOGIST T.R. Schroeder
 SEA STATE calm WIND SPEED/DIRECTION SW. = 5-10 mph
 PHOTOGRAPHS: ROLL # FRAME #

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

95% of beach is fine sand. Rock outcropping east of the quadrumans stream and along the far eastern end of the beach had good fringes of growth and extensive quantities of juvenile mussel regrowth. Littorine snails and limpets were present along with sea anemones.

Beach was basically low in plant and animal life. The quadrumans stream has never produced large numbers of fish and is negligible in its contribution to the commercial or recreational salmon harvest in the area.

Due to the lack of any notable quantities of oil a separate bio. map was considered to be unnecessary.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl			
Gulls/Kittiwakes	1 gull	5	
Shorebirds			
Corvids			
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

Bio. Observations
T.R. Schroeder
RB-003-A 5/15/91

RB-04

RB-03

nest active

Co.



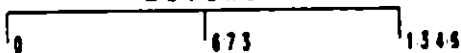
Exxon Company, USA
Map Keys KEN-RB-3
May 17, 1990



ECOLOGY MAP SEGMENT RB-3A

SUBDIVISION ____ (____ of ____)

METERS

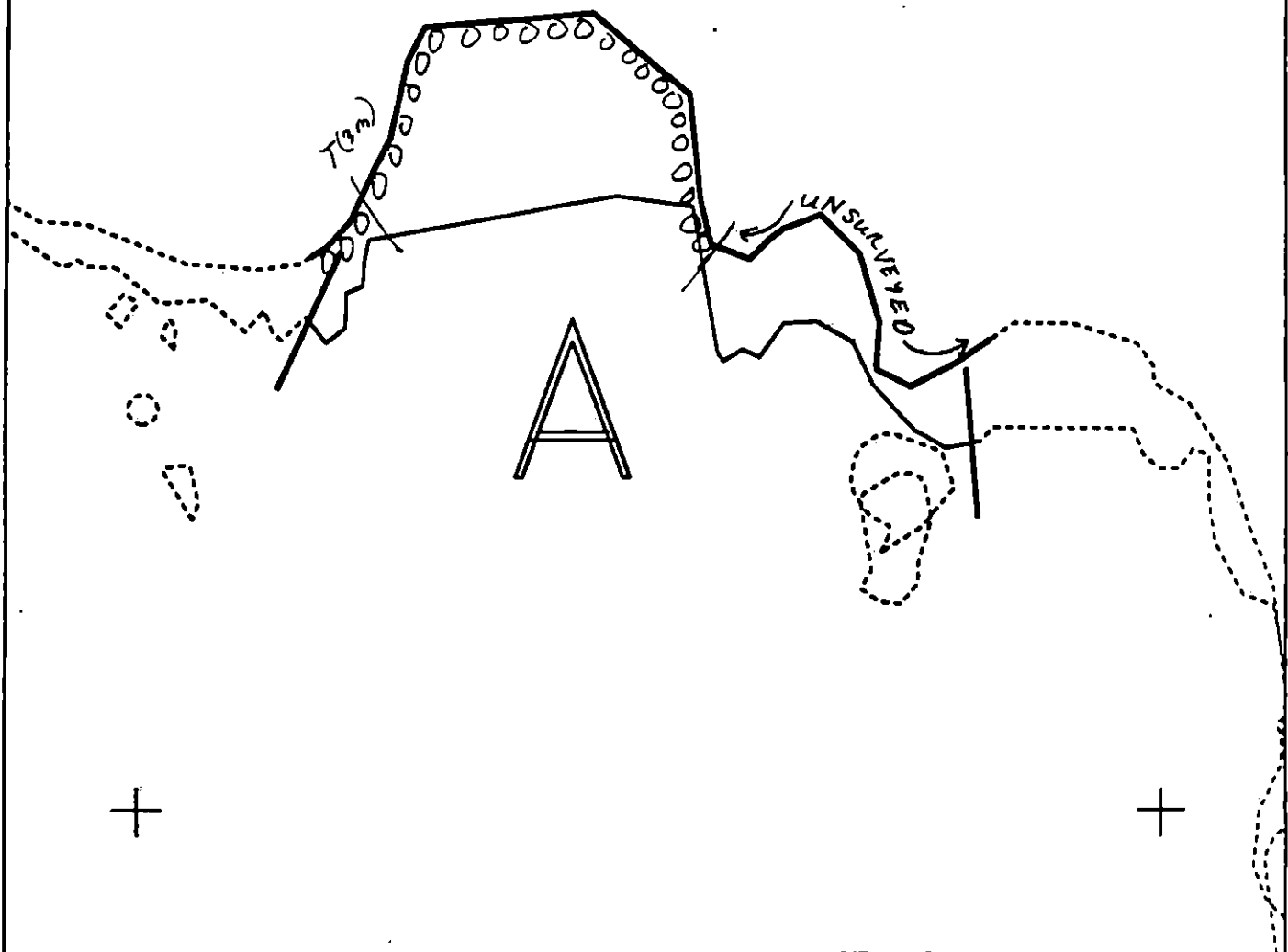


Seabird Colony



Eagle Nest

1 inch = 2209 feet



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

RB003 A

ADEC Subsegment Length: 650m
 METERS

0 100 200

AK State Plane Zone 4
 arb003a



Subdivision Field Map
 Map Key: KENRB003A
 Name: D. Fitzgerald
 Date: 15 May 199
 Date Entered:

reviewed 5.17.91
 reviewed 5/17

1991 MAYSAP EVALUATION

SEGMENT: RB 003 SUB: A REGION: KEN SURVEY DATE: 5/15/91ENVIRONMENTAL SENSITIVITIES:Work Window(s) RESTRICTED 3/1 - 9/15Ecological/Constraints (see page two for details) Eagle nest,
Fish harvest area, Anadromous streamARCHAEOLOGICAL CONSTRAINTS:If treatment is planned, a cultural resource evaluation is
required prior to shoreline treatment.SHPO Signature: Robert Jan Durr Date: 5/24/91RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or 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 24 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**

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ADEC

NAME Doug Hill - ADF&G

SIGNATURE

Douglas D Hill*☒ NTRNICE BEACH.*

EXXON

NAME Rex Coulter

SIGNATURE

Rex R. Coulter☒ NTR

NOTHING AT THIS BEACH TO COMMENT ABOUT, OTHER THAN THE SCENIC BEAUTY.

LANDMANAGER

NAME Seraphim Maganick OF Port Graham

SIGNATURE

Seraphim Maganick☒ NTR

Light oiling above the ore crease. No real oil of significance considered more like residual and sheen. Had 50 meters complete pick up and by the rock bank near the mine 1XB meter count

USCG/NOAA

NAME Chief Jensen / Gary Shigenaka

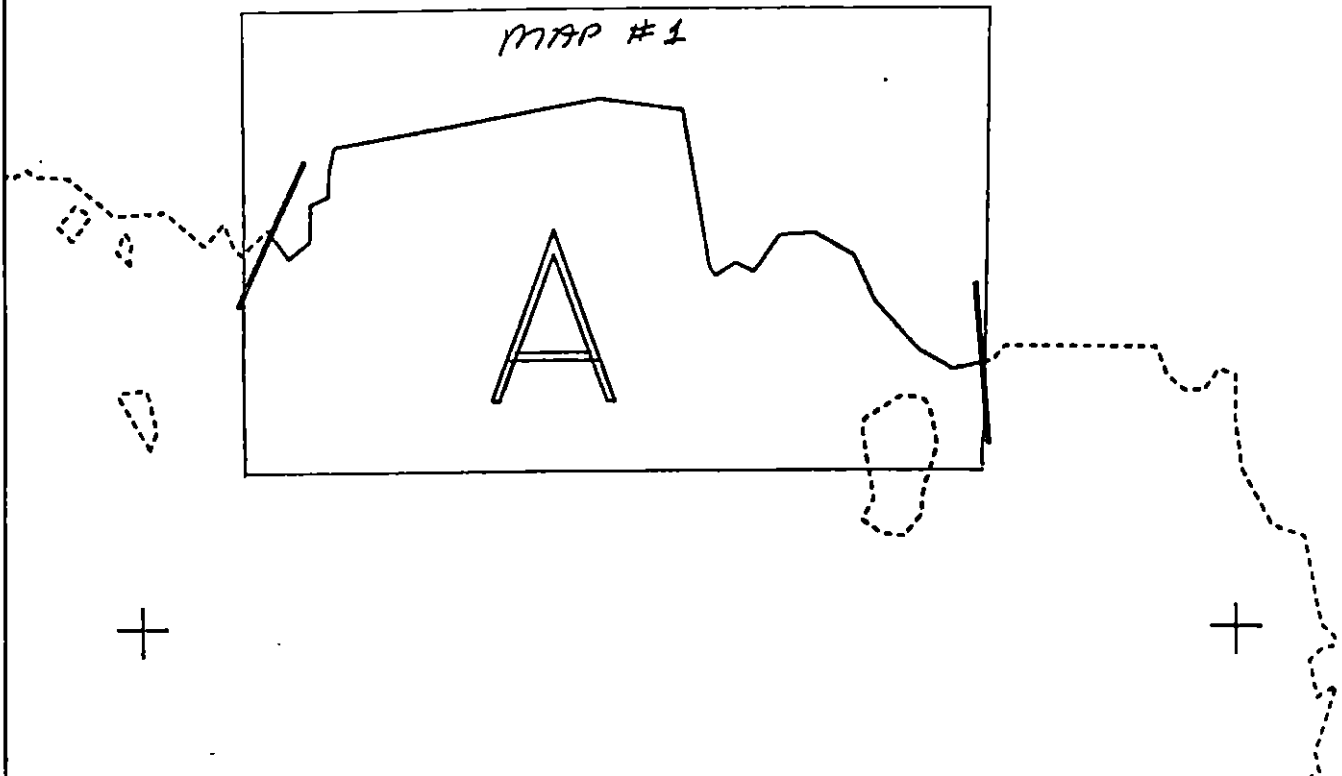
SIGNATURE

Robert Jensen Gary Shigenaka☒ NTR

There is no longer any detectable oil present on the water adjoining shorelines, or places where it is likely to reach the water again

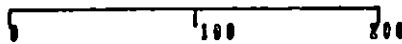
CONCUR WITH ADF&G COMMENTS, A FINE SANDY BEACH THAT SEEMED SOMEWHAT SURREAL AFTER MILES OF ANKLE-STRAINING BOULDER COBBLE SHORELINES SURVEYED. A STREAM RUNS DOWN THE WEST SIDE OF THE BEACH, AND ONE ISOLATED OCCURRENCE OF SOR AND SHEEN WAS NOTED JUST BELOW A JUMBLE OF DEADFALLS AND LOGS ACROSS THE STREAMBED. VECO CREW RECOVERED SAME. COAT WAS OBSERVED ON A ROCK FACE ON THE SOUTHWEST BORDER OF THE BEACH. THESE WERE THE ONLY EVIDENCE OF OILING OBSERVED. ON THE EAST SIDE OF THE BEACH, HEAVY FUCUS GROWTH COVERED A BEDROCK OUTCROP WITH AN EXTREMELY HEAVY RECRUITMENT OF YOUNG MUSSELS (<1-2 YRS), ALL CONSISTENTLY SMALL. A DERELICT CABIN WAS LOCATED IN THE SUPRATIDAL ALONG THE NORTHEAST SHORELINE.

reviewed 5.17.91 by
SS revised 5/17



RB003 A

METERS



AK State Plane Zone 4
ARB003A

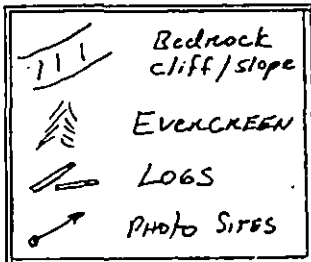
Subdivision Field Map

Map Key: RB003A

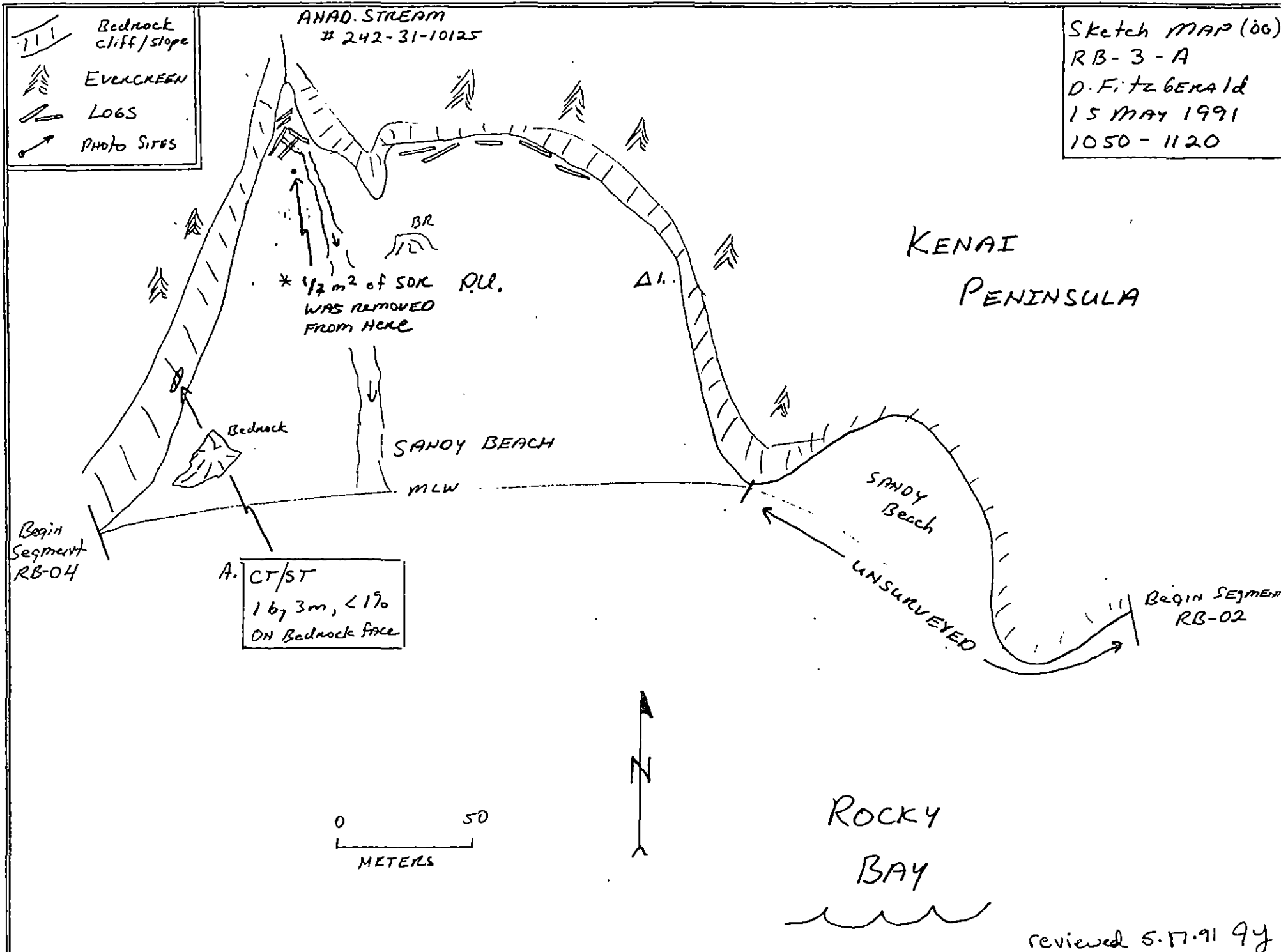
Name: D. Fitzgerald

Date: 15 May 1991

25 revised 5/17



Sketch MAP (06)
 RB-3-A
 D. Fitzgerald
 15 MAY 1991
 1050-1120



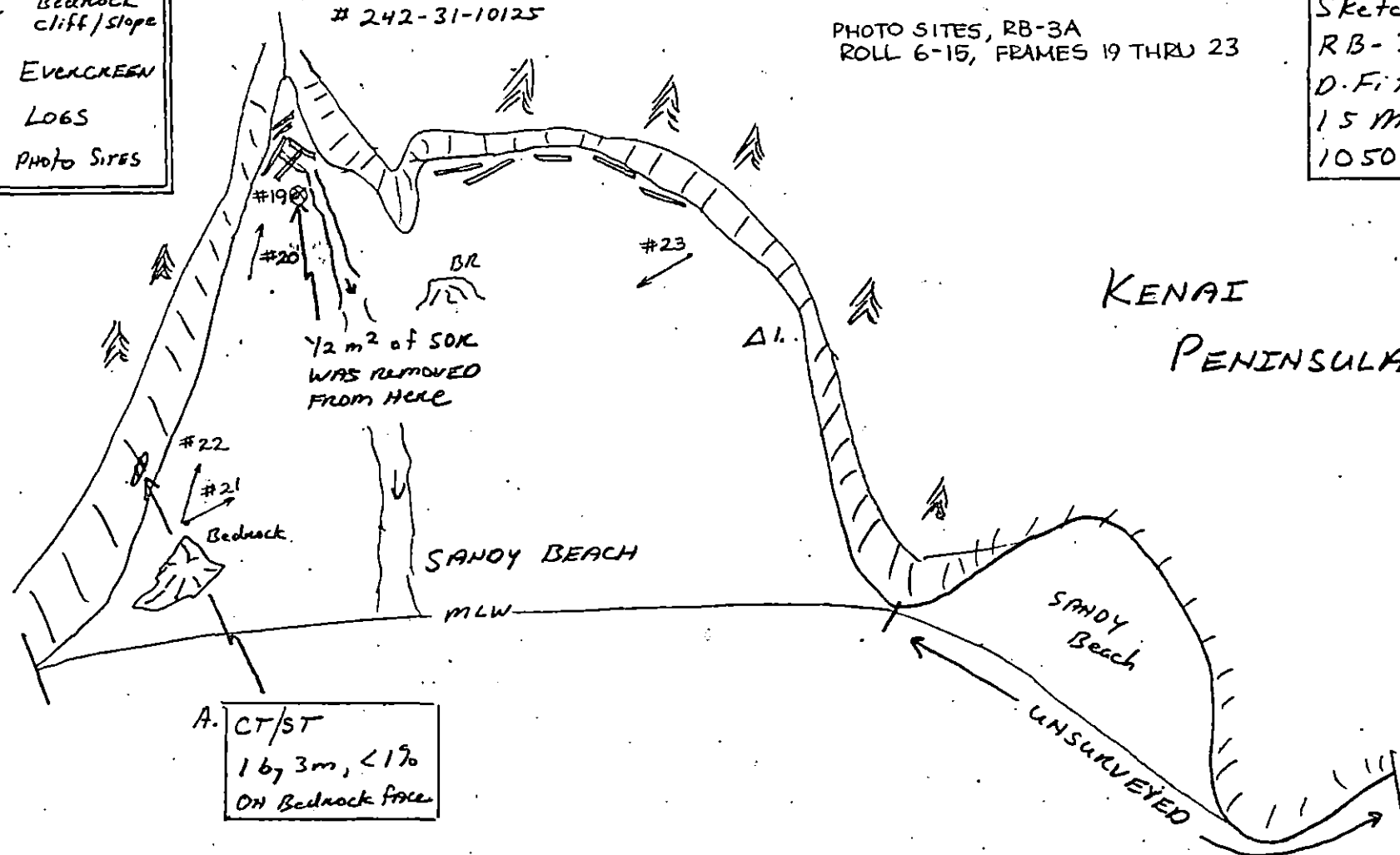
reviewed 5.17.91 9y

-  Bedrock cliff/slope
-  EVERGREEN
-  LOGS
-  PHOTO SITES

ANAD. STREAM
242-31-10125

PHOTO SITES, RB-3A
ROLL 6-15, FRAMES 19 THRU 23

Sketch MAP (06,
RB-3-A
D. FITZGERALD
15 MAY 1991
1050-1120



KENAI
PENINSULA

ROCKY
BAY

HAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 6

DATE 5/15/91

SEGMENT # RB-003

TIDAL HEIGHT (Range) +0.5 to +2.6 ft.

SUBDIVISION A

BIOLOGIST T.R. Schroeder

SEA STATE calm

WIND SPEED/DIRECTION S.W. = 5-10 mph

PHOTOGRAPHS: ROLL #

FRAME #

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

95% of beach is fine sand. Rock outcropping east of the quadrangus stream and along the far eastern end of the beach had good mussel growth and extensive quantities of juvenile mussel regrowth. Littorine snails and barnacles were present along with sea anemones.

Beach was basically low in plant and animal life. The quadrangus stream has never produced large numbers of fish and is negligible in its contribution to the commercial or recreational salmon harvest in the area.

Due to the lack of any notable quantities of oil a separate bio. map was considered to be unnecessary.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS

OF SPECIES

TOTAL BIRDS

FISH OBSERVED SPECIES PRESENT

Eagles			
Seabirds			
Waterfowl			
Gulls/kittiwakes	1 gull	5	
Shorebirds			
Corvids			
Other Birds			

MARINE MAMMALS

OBSERVED

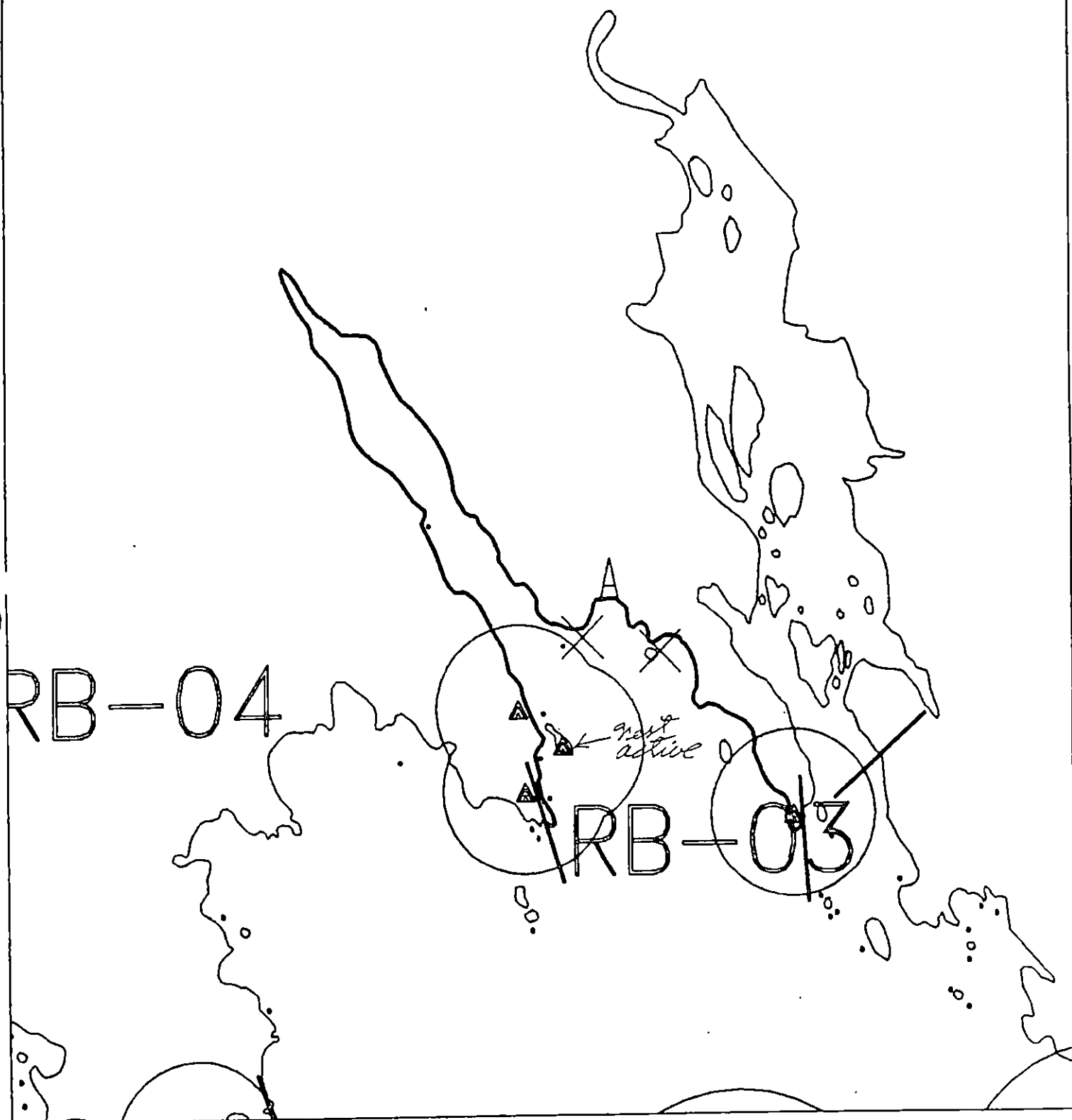
LAND MAMMALS SPECIES

OBSERVED

Sea Otters			
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

Bio. Observations
T. A. Schroeder
RB-003-A 5/15/91

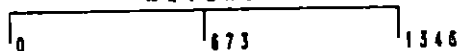


Exxon Company, USA
Map Key: KEN-RB-3
May 17, 1990

ECOLOGY MAP SEGMENT RB-3A

SUBDIVISION --- (--- of ---)

METERS

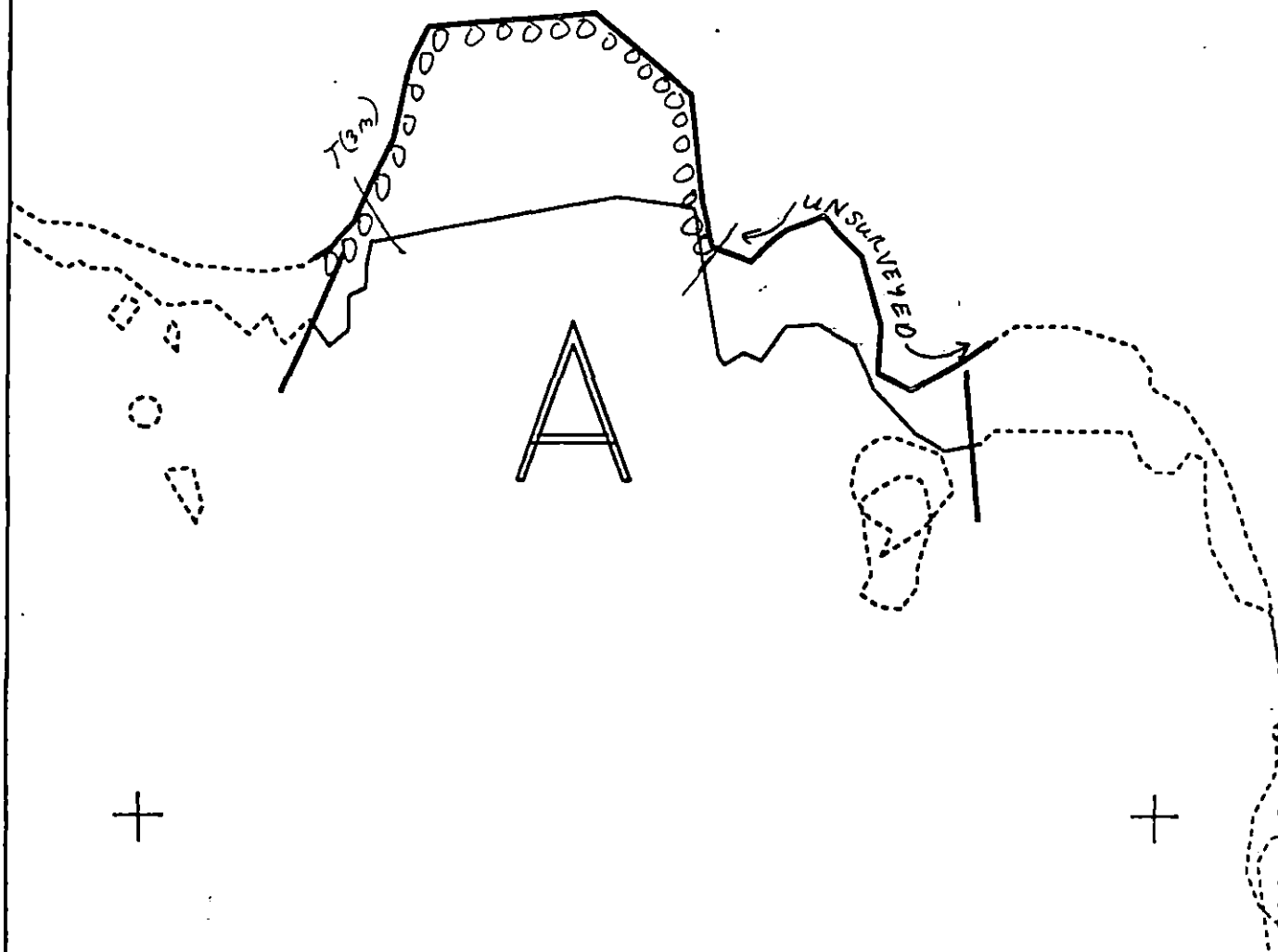


Seabird Colony



Eagle Nest

1 inch = 2209 feet



XXXX	Wide	RB003 A ADEC Subsegment Length: 659m METERS AK State Plane Zone 4 arb003a	 	Subdivision Field Map
////	Medium			Map Key: KENRB003A
----	Narrow			Name: <u>D. Fitzgerald</u>
TTTT	Very Light			Date: <u>15 May 1991</u>
0000	No Oil			Date Entered:

Reviewed 5.17.91
 Reviewed 5/17

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT RB-3 SUBDIVISION A (1 of 1)

WORK WINDOW

Tarmat Removal
Manual Pickup

OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B Salmon Stream

ADF&G catalogued anadromous streams (242-31-10125 and 242-31-10130) are in Subdivision A. No constraint to manual pickup and tarmat removal.

1J Purse Seine Area

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 A work site.

OTHER ECOLOGICAL CONSIDERATIONS

Sensitive estuary. Avoid any unnecessary disturbance or damage to unrolled biota and substrate.

FOSC

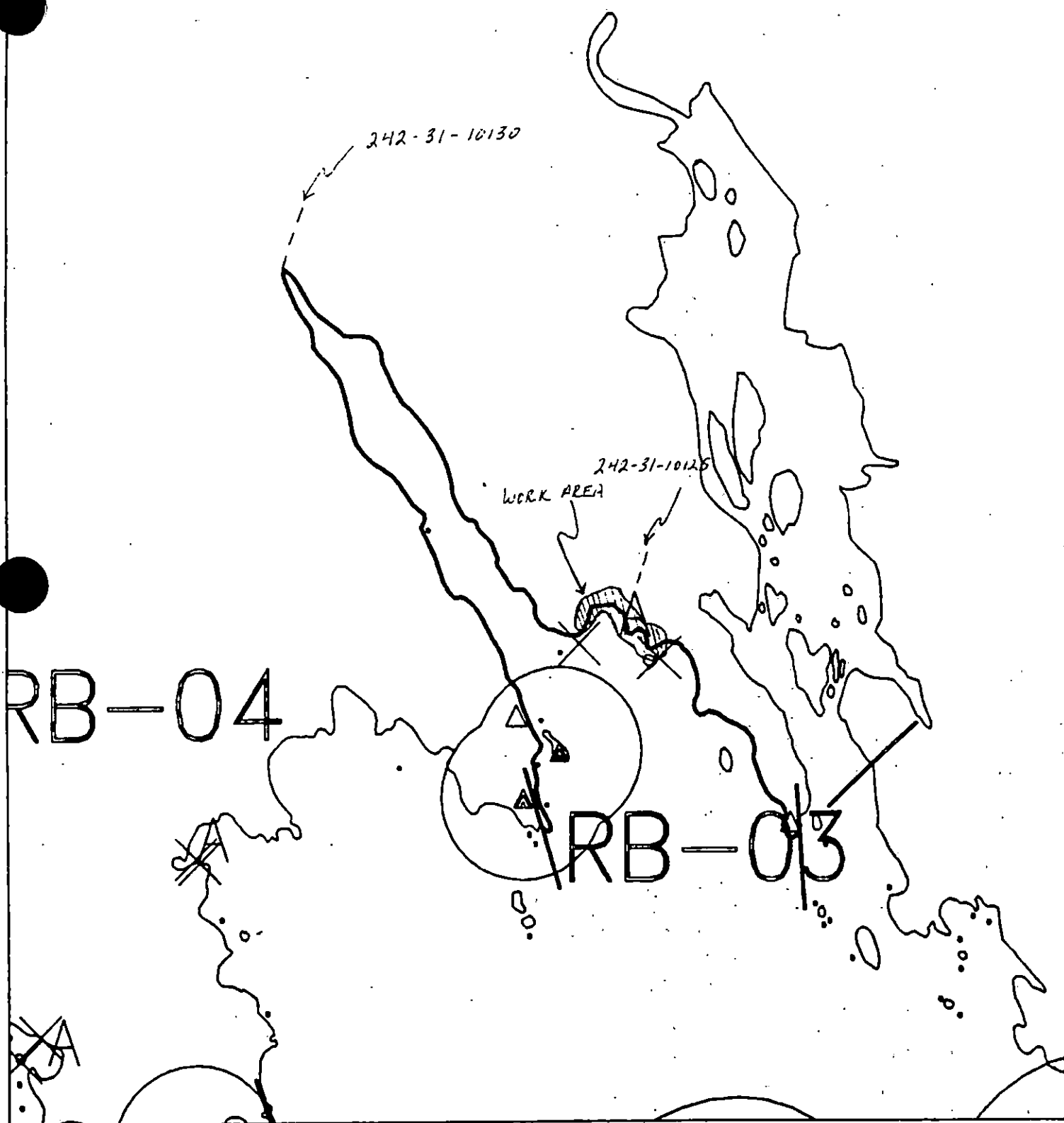
Date

Prepared by

Date

6/13/90

6/12/90



Exxon Company, USA
 Map Key: KEN-RB-3
 June 10, 1990



ECOLOGY MAP
 SEGMENT RB-3
 SUBDIVISION A (1 of 1)
 METERS
 0 673 1346

- | | |
|---|---------------------|
| ★ | Seabird Colony |
| ▲ | Active Eagle Nest |
| △ | Inactive Eagle Nest |

1 inch = 2209 feet

SHORELINE EVALUATION

SEGMENT ST/ RB-03 SUBDIVISION A (1 OF 1) DATE 4/10/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (4/15 to 7/31)

1B Salmon stream mouth - spawning (7/15 to 9/10)

8AA Sensitive Estuary

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:

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 S. Holmes DATE: 4/20/90

OILING CATEGORIZATION:

Wide_0_m: Medium_0_m: Narrow_0_m: V.Light_258_m: No Oil_402_m
Subsurface Oil Observed: Yes_X No Maximum Depth_15_cm

(See note on OG Form,
Comments section)

RECOMMENDATIONS:

 No Treatment Recommended

X Treatment Recommended

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: Recommend tarmat removal as indicated on sketch map. Treatment should be conducted with consent of ADF&G Habitat Division due to Salmon stream constraints. (CONSTRAINT) m

SEE ADDITIONAL dates 6/12/90/91

TAG COMMENTS:_____

TAG APPROVAL DATE: 7/20/16.

ADEC ART WEINER ArtWeiner

EXXON Andy Tetz *[Signature]*

NOAA Burt Wesselt Burt Wesselt

USCG KENNETH A. KENNEDY

FOSC: NY DATE: 5-12-80

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