

OIL SPILL PUBLIC INFO. CENTER



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[Shoreline evaluations, 1991].

Kenai PY-04 to PY-10

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REGION: KENAI

SEGMENT: ST/PY-04

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ PY-04 SUBDIVISION A (1 OF 1) DATE 4/25/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

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

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

4QQ National Wildlife Refuge

5R Seabird colony (5/1 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. Avoid disturbance to the pinniped haulout areas and seabird rookeries.

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 2572 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

X No Treatment Recommended

_____ Treatment Recommended

_____ Manual Pickup

_____ Bioremediation

_____ Tarmat Removal

_____ Snare/Absorbent Booms

_____ Oil Snares (pom poms)

_____ Absorbents (pads,rolls,etc)

_____ Spot Washing: _____ Wands

_____ Beach Cleaner

_____ Other (see comments)

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

- 1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
 1B Salmon stream mouth - spawning (7/10 to 8/31)
 No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream 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 (8/11 to 7/25)
 Contact ADF&G for specific dates, locations and constraints. Restrict boat and air traffic to essential minimum. When set net sites are present (1L) restrict beach operations to essential minimum as authorized by ADF&G. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G James Brady 424-3212
- 2M Herring spawning (4/1 to 6/15)
 Contact ADF&G for confirmation - dates and locations may vary. Restrict boat traffic to essential minimum. Avoid damage to uncoiled intertidal and subtidal algae and seagrass. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G Evelyn Biggs 424-3235
- 3N Harbor seal and sea lion pupping (5/15 to 7/1)
 3O, 3Q Harbor seal and sea lion molting (8/15 to 9/15)
 Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts. No application of Inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31).
 Contact ADF&G and USFWS prior to treatment for confirmation.
 AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 586-7235
 ADF&G Don Calkins 267-2403
- 5R Seabird colony (5/1 to 9/1)
 Restrict air and boat traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from colony. Contact USFWS prior to treatment.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 5S Shorebird/waterfowl concentration (4/1 to 5/15)
 Restrict all activity to essential minimum, especially air traffic. Contact USFWS and ADF&G for confirmation.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
 ADF&G Tom Roth 267-2206
- 5T All Bald Eagle nests (3/1 to 6/1)
 Active Bald Eagle nests (3/1 to 9/1)
 Restrict air traffic and all disturbance to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 6U Recreation: Tent sites (8/1 to 9/15)
 6V Anchorages (8/1 to 9/15)
 6W Forest Service cabins (8/1 to 9/15)
 6X Lodge (8/1 to 9/15)
 6Y Special use destination
- 7Z Subsistence area: Salmon harvesting (5/1 to 9/30)
 7HH Finfish harvesting
 Deer harvesting (8/15 to 2/28)
 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 / PY 004 SUBDIVISION: A (141) DATE 4/25/90

NOAA
ESSG

NAME DONALD A. MacDONALD SIGNATURE Donald A. MacDonald

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

The entire segment was surveyed from the ship. The segment includes seabird colonies and sea lion haulout and pupping areas. There were no visible signs of oil. The entire segment is subject to high wave action. Hundreds of sea birds and numerous sea lions were seen. The segment consists of the southern and southwestern shore of outer island.

ADEC
NAME JOHN R. REED SIGNATURE John R. Reed

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

No oil was observed in this segment. This segment consists of vertical rock walls. Seabirds rest on rock walls. I agree with data on SSAT Forms.

LAND MANAGER - USFWS

NAME Mary Portner SIGNATURE Mary Portner

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

No oil was observed in this segment (PY-4 no longer includes the oiled beach at the far northern end of Outer Island). This segment has several critical wildlife habitats including a seabird rookery with black legged Kittiwakes, glaucous winged gulls, red faced cormorants and pelagic cormorants. The SE and southern portion of Outer Island is also the main sea lion rookery and haulout.

SHORELINE OILING SUMMARY

REVISION NO. 04/13/90

OG Sawyer NOAA USCG MacDonal SEGMENT ST/ PY-4
 RIG Carr LAND REP Partner SUBDIVISION A (1 OF 1)
 ON Boyer ADEC Reed TIME 11:10 to 11:30
 FORM NO. 18 TIDE LEVEL +3.5 to +5.0 DATE Apr 25 1990
 EST. SUBDIVISION LENGTH: 2479 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☐ Forest ☒ Rock
 SURVEYED FROM: ☐ Foot ☒ Boat ☐ Helo WORKING DIRECTION: N to S
 SURFACE SEDIMENTS: R 90 % B 10 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Lang 0 % Hang 5 % Vert 95 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 0 m NO 2479 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	IC	FB	FP	FS	SP	BP	BP	BT	BL	TL	TL	TL	SU	U	M	U
ASPHALT																
PAVEMENT																
POOLED																
COVER																
COAT																
STAIN																
MOUSSE																
PATTIES																
BALLS																
FILM																
NO OIL																

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

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS?

YES ☐ NO ☒TYPE 0#BAGS 0

Photographs:

Roll No. ST-18-8Frames 35 & 36

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	OP	NO		VO	UC	SP	BP	BP	BT	BL	TL	TL	TL					

COMMENTS PY-4A: Nearly all of this segment is comprised of bedrock cliffs, except for one high angle boulder beach. Hence, no pits were dug.

111

4/27/90

OG Sav

SEGMENT ST/PY-4

SUBDIVISION A

DATE Apr 25 90

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Entry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HMR/LWR
- ☐ SS
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ PH Location(s)
- ☐ Photo Location(s)

LEGEND

1 Δ

PH - No Subsurface Oil

2 Δ

PH - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

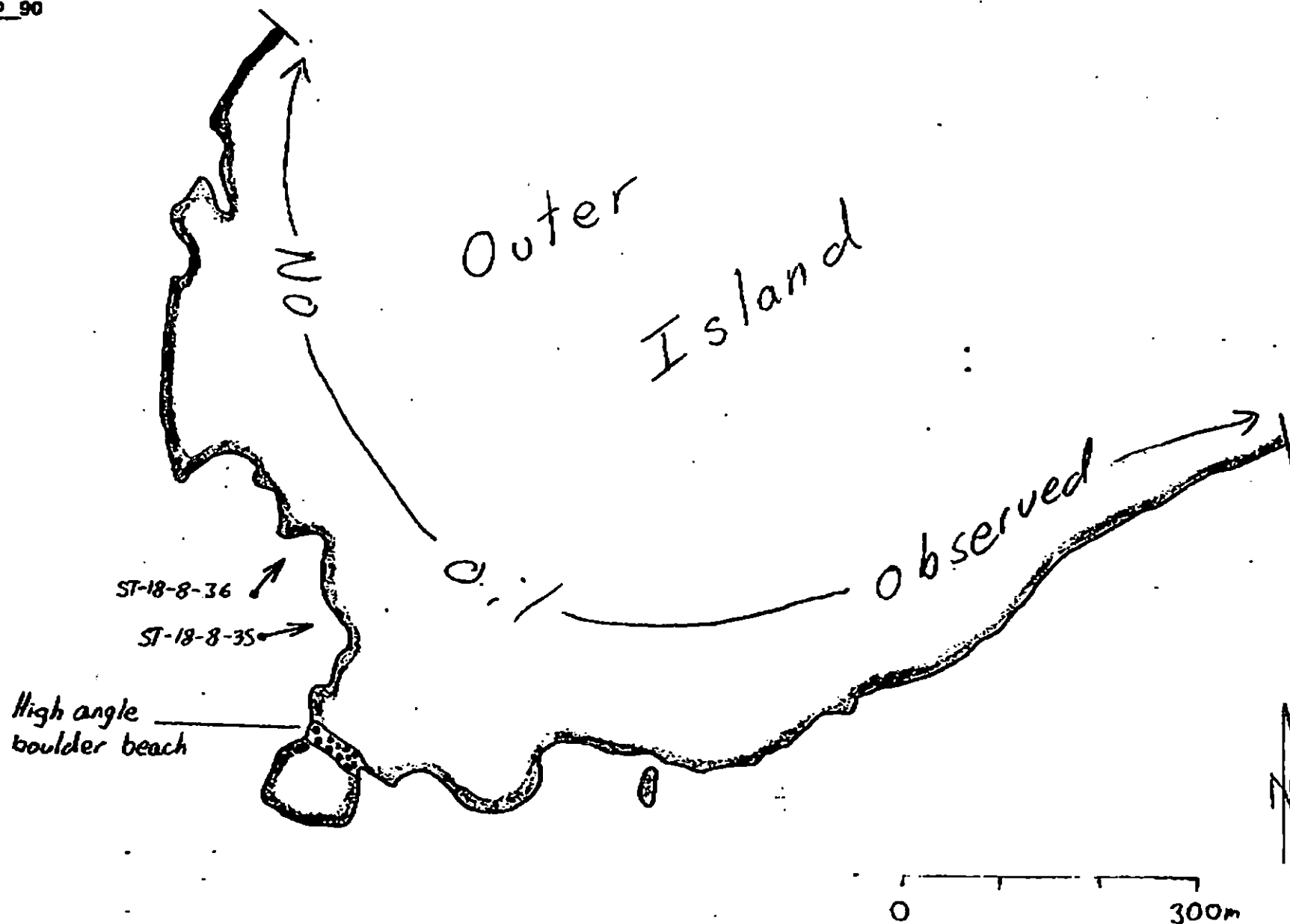
eee

Oiled Vegetation

1 →

Photo location, direction,
and number

SKETCH MAP



SHORELINE ECOLOGICAL SUMMARY

REVISION: 02/22/90

Segment ST / PY-4 Subdivision A Date (mo / day / yr) 1-25-90
 (24 hr) 11:10 Biologist MARK CARR

- (A) Substrate type and % of segments:
 (1) Bedrock 90 (2) Boulder 10 (3) Cobble — (4) Pebble — (5) Sand — (6) Silt —
- (B) Overall % cover of biota (% of 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:
 Roll No. ST-18-8

Frames 35 & 36

BARNACLES.

	Dense			Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
200	2	2	2	2	2	2	2	2	2	2	2	2	NOT PRESENT
200	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	
200	2	2	2	2	2	2	2	2	2	2	2	2	NOT PRESENT IN UPPER AND LOWER INTERTIDAL
200	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	
200	2	2	2	2	2	2	2	2	2	2	2	2	INACCESSIBLE
200	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	
200	2	2	2	2	2	2	2	2	2	2	2	2	NOT PRESENT IN UPPER AND LOWER INTERTIDAL
200	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:

Stellar's sea lion (10) bald eagle (3) (1 immature, 2 mature).
 red-faced cormorant (~90) oyster catcher (3), pigeon guillemot (10)
 glaucous-winged gull (~300) black-legged kittiwake (~800) on rocks

Ecological Considerations:

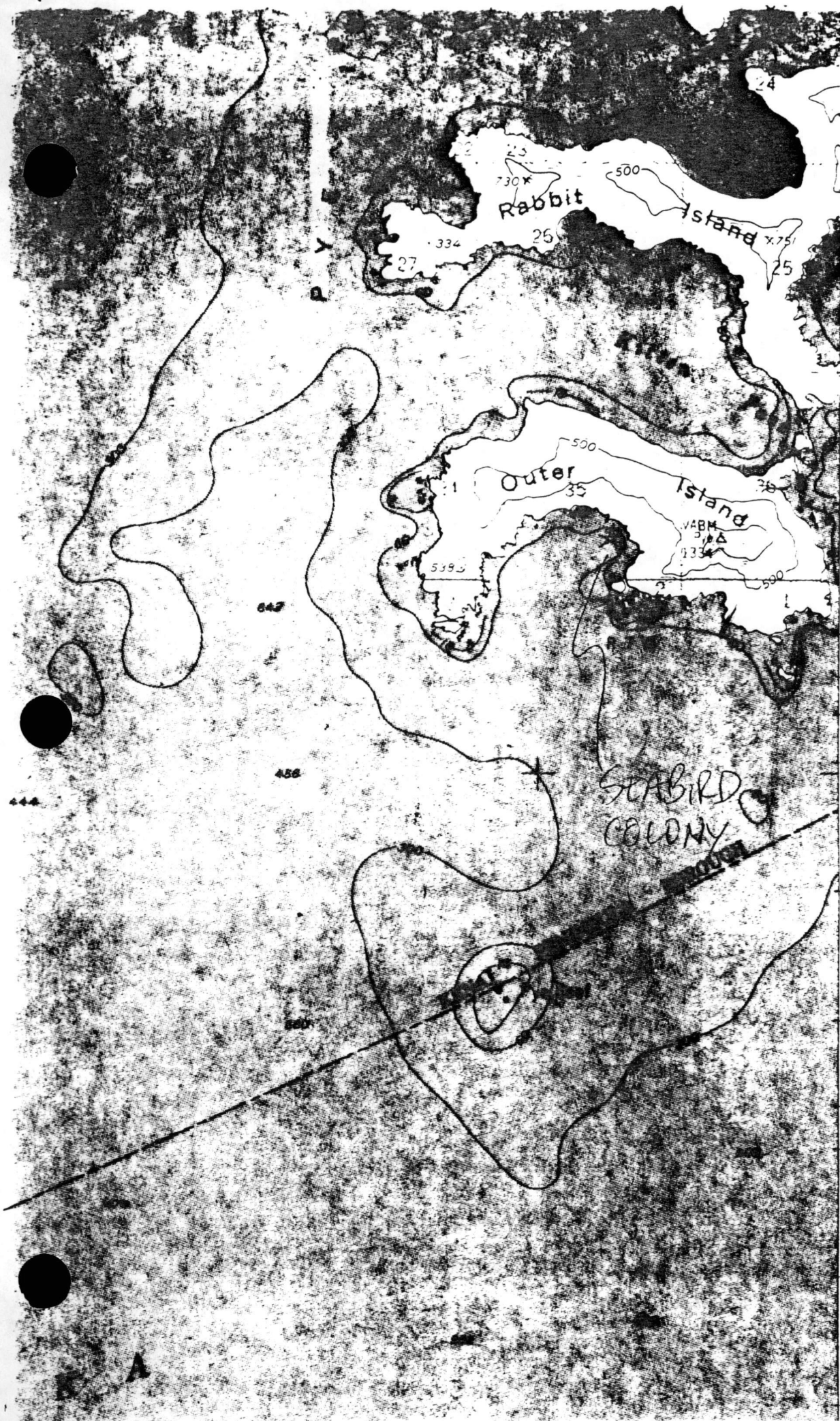
SR (Seabird colony), 3 P,Q (pinniped pupping and molting), 4 Q,Q (National Wildlife Refuge).

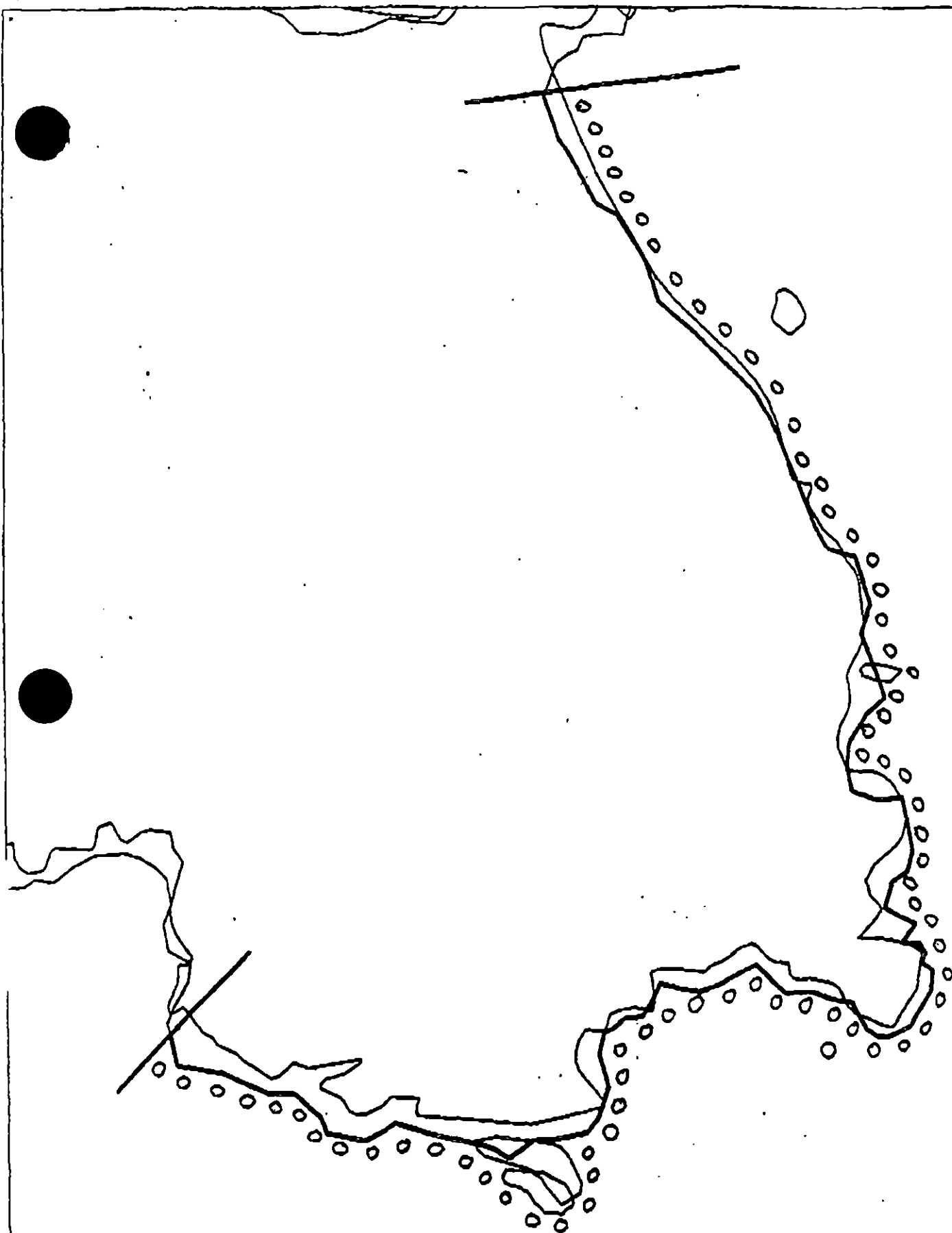
ECOLOGICAL MAP

3NP, 306
400
52

ISELDVIA B II

Py-04





PY-4

XXX Wide

/// Medium

--- Narrow

TTTT Very Light

ADEC Segment Length: 2370m

Map Key: KEN-920

Name: SawyerDate: Apr. 25, 1990

REGION: KENAI

SEGMENT: ST/PY-05

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ PY-05 SUBDIVISION A (1 OF 1) DATE 4/24/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

4QQ National Wildlife Refuge

5R Seabird colony (5/1 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 treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 32 m: Narrow 0 m: V.Light 2139 m: No Oil 9521 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 Removal	☐ Beach Cleaner
	☐ Other (see comments)

COMMENTS: Recommended treatment includes bioremediation of area of subsurface oil as indicated on attached sketch map. Due to seabird colony time constraints, contact USFWS for specific work dates.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

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

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

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

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

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 (8/11 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

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

✓SR Seabird colony (5/1 to 9/1)

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

ADF&G Tom Roth 267-2206

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

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

6U Recreation:

Tent sites (6/1 to 9/15)

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

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

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

6Y Special use destination

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

7HH Finfish harvesting

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

7J 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 / Py-05 SUBDIVISION: A (1 of 1) DATE 4/24/90

NAME Donald A. Macdonald SIGNATURE Donald A. Macdonald

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS Special concerns of NOAA include the presence of marine mammals (sea otters) in the area. The SSAT forms are well done.

ADEC NAME JOAN R. REED SIGNATURE John R Reed

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS I am recommending manually removal of the patchy mussel on the pocket beach in the NW corner of Py-05. Shovels or hand trowels should do the trick. There is also patchy coat on the boulders in this pocket beach. Some scattered coat persists throughout the segment I agree with data on SSAT Forms.

LAND MANAGER - USFWS NAME Mary Porter SIGNATURE Mary Porter

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS Oil persists in this segment primarily as splatters of coat and stains on several boulder beaches. At the boulder beach in the NW portion of the core there is a 45% patchy coat in a 12 m x 5 m area and patchy mussel in a 3x10 m. area. Scattered throughout is cover and stains. The patchy mussel between boulders and cobbles should be removed manually. This mussel is still fairly soft and can be removed with shovels and trowels. The coat on the boulders is fairly hard and tough at this time.

SHORELINE OILING SUMMARY

REVISION NO. 04/15/90

OG Sawyer ~~NOFA~~ USCG MacDonald SEGMENT ST/ PY-5
 BIO Carr LAND REP Partner (USFWS) SUBDIVISION A (1 OF 1)
 EXON Boyer ADEC Read TIME 07:45 10/11:00
 M NO. 18 TIDE LEVEL -2.0 to +6.0 DATE Apr 124 190
 EST. SUBDIVISION LENGTH: 12918 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: E to W
 SURFACE SEDIMENTS: R 20 % B 15 % C 5 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 15 % Hang 5 % Vert 80 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 25 m N 0 m VL 2250 m NO 10643 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													
STAIN													
MOUSSE													
PATTIES													
TARBALLS													
NO OIL													

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

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS?

YES ☒: NO ☐TYPE buoy, net, mous.#BAGS 3

Photographs:

Roll No. ST-18-8Frames 24-26

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	NO		VO	VO	30	35	40	45	50	SU	U	M	L				
1	15																					B-C, R
2	15																					B-C, P, R
3	10																					B-C, R
4	15						3-7															B-C, B
5	15						0-15													Y		B-P, B
6	20						0-20													Y		B-P, G

COMMENTS ST/PY-5 comprises mostly granitic bedrock with a few low angle boulder beaches. Little or no oil was observed in this segment with the exception of a small boulder beach in the northwest part (see sketch map).

REVIEWER BATDATE 29 Aug

SEGMENT PYS

SUBDIVISION A

DATE Apr 1 24 90

CHECKLIST

- ☐ H Anter
- ☐ Approx. Scale
- ☐ Seg/Sub Bndry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HML/LVL
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Pt Location(s)
- ☐ Photo Location(s)

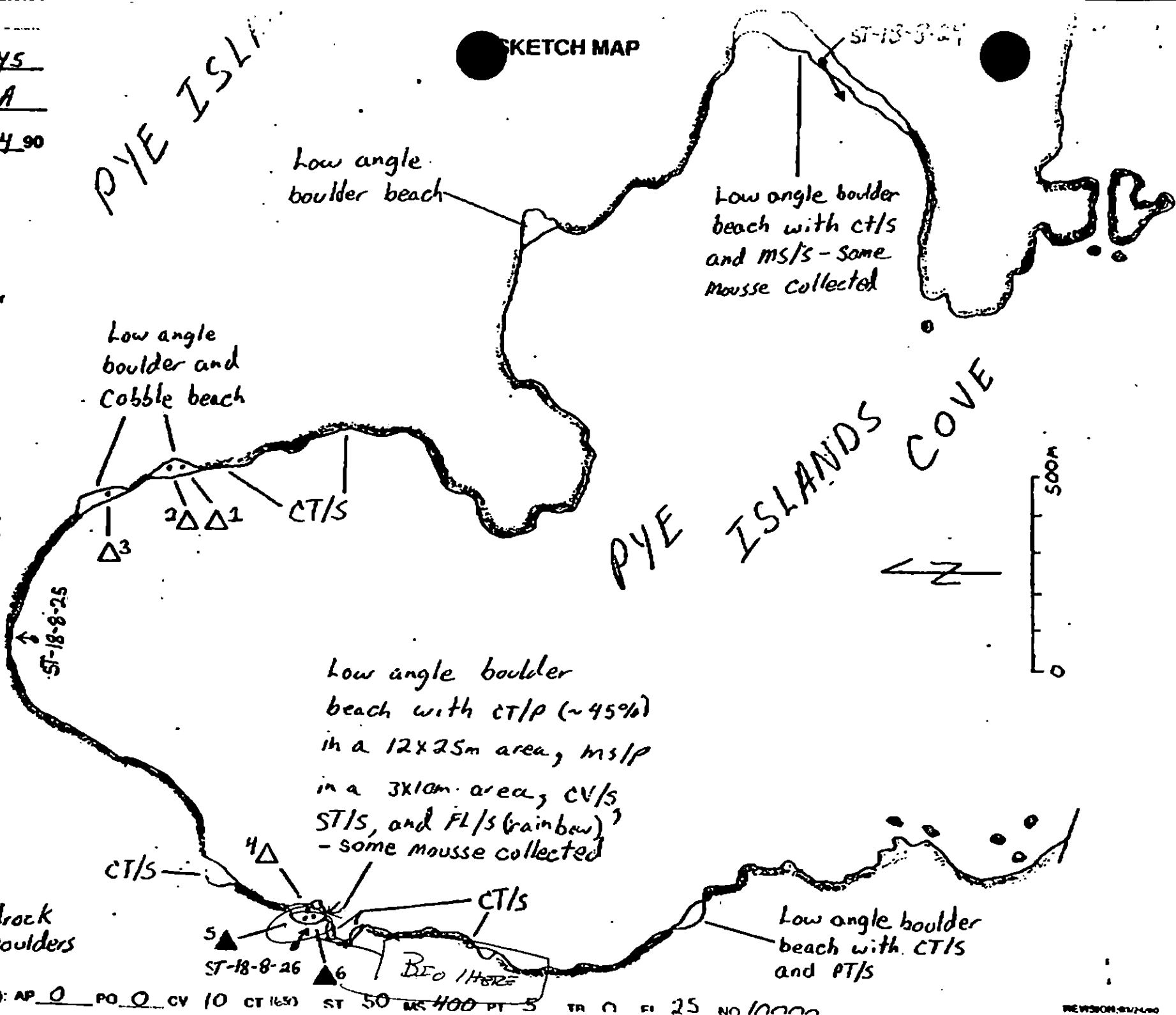
LEGEND

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

bedrock
 $\pm$ boulders

Oil Character Length (m): AP 0 PO 0 CV 10 CT 1630 ST 50 MS 400 PT 5 TR 0 FI 25 NO 10000

SKETCH MAP



SHORELINE ECOLOGICAL SUMMARY

REVISION: 05/28/90

 Segment ST / PY-5 Subdivision A Date (mo / day / yr) 4-29-90

 24 hr) 0745 Biologist MARK CARR

 (A) Substrate type and % of ^{SUBDIVISION} segments:
 (1) Bedrock 80 (2) Boulder 15 (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 tidal-L); juveniles / adults (X), new settlement (3)

 Photographs:
 Roll No. ST-18-8

 Frames 24-26

BARNACLES

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

MYTILUS

	Dense	1L	Moderate	1U	1M	1L	Sparse	1U	1M	1L	Rare	1U	1M	1L	
BE	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
BE	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
COBB	4	4	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	5	5	NOT PRESENT IN ANY ZONE
	6	6	6	6	6	6	6	6	6	6	6	6	6	6	

GASTROPODS

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

FUCUS

	Dense	1L	Moderate	1U	1M	1L	Sparse	1U	1M	1L	Rare	1U	1M	1L	
BE	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
BE	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
COBB	4	4	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	5	5	NOT PRESENT AT ANY ZONE
	6	6	6	6	6	6	6	6	6	6	6	6	6	6	

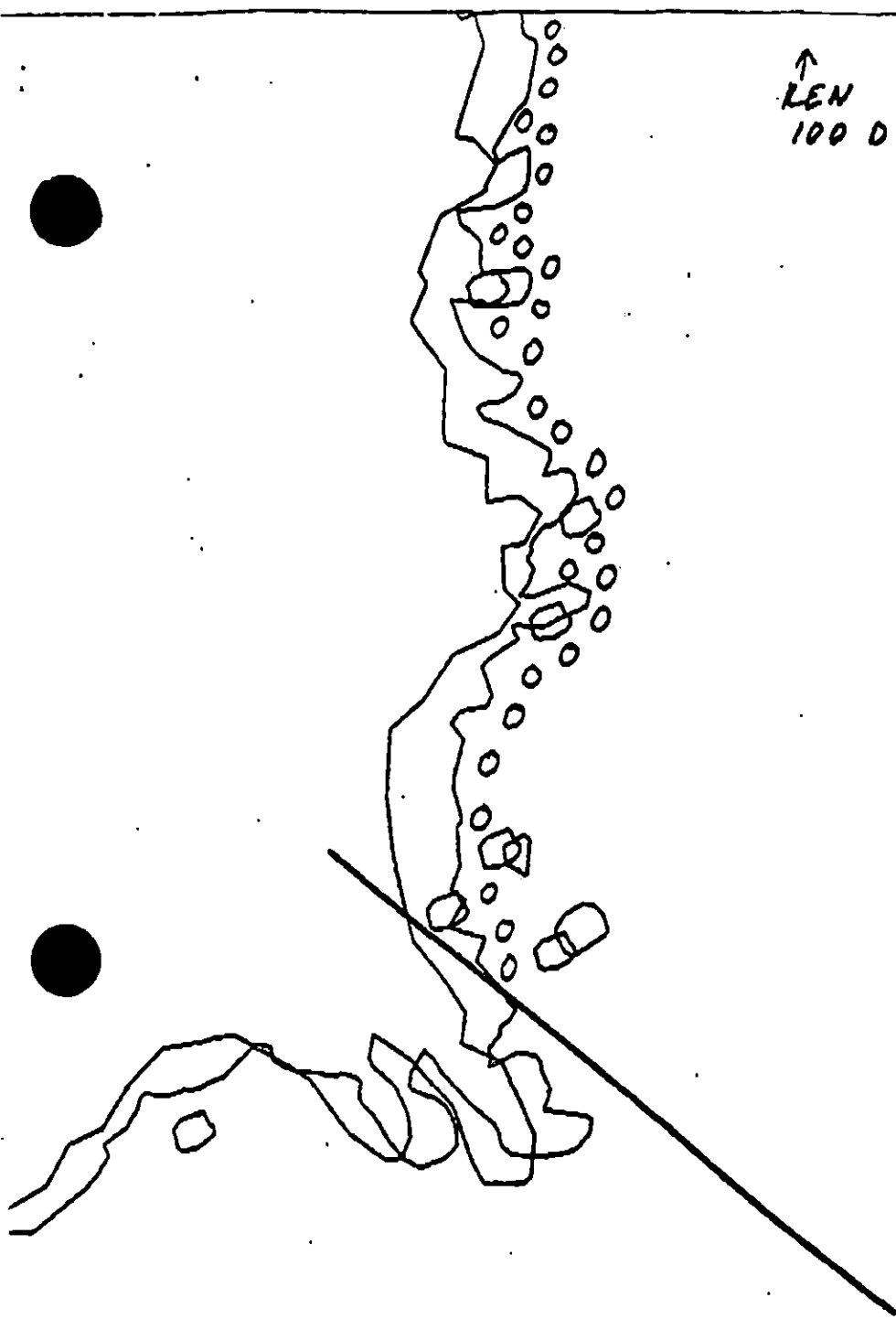
Wildlife Observations/ General Comments:

glaucous-winged gulls (72), red-crested commorant (1), oyster-catcher (2), harlequin duck (18), N.W. crows (2), bald eagle (8), sea otter (1)

Ecological Considerations:

ST (Active bald eagle nest), 4QQ (National Wildlife Refuge)

Sensitivity Codes

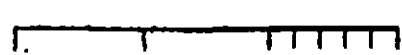


KEN
100B →

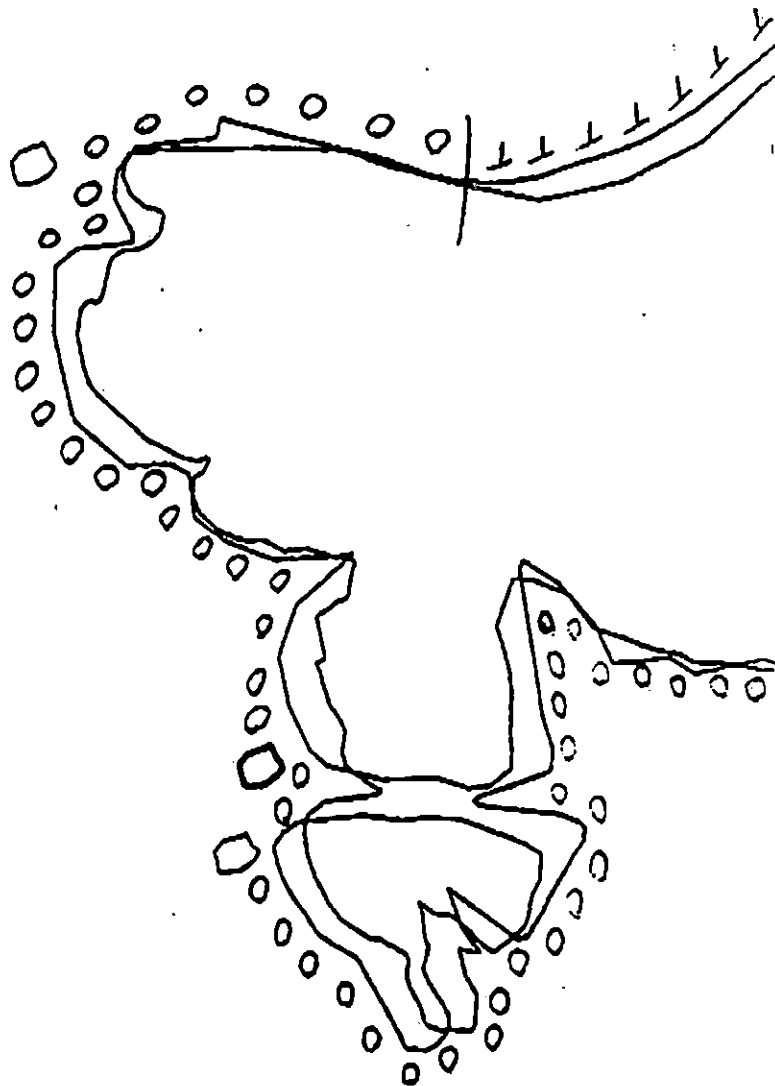
XXX Wide
 /// Medium
 --- Narrow
 TTTT Very Light

PY-5

ADEC Segment Length: 100m



Map Key: KEN-1000
 Name: Sawyer
 Date: 4-25-90



← KEN
100A

KEN
100C →

PY-5.

XXX Wide
/// Medium
--- Narrow
T-TTT Very Light

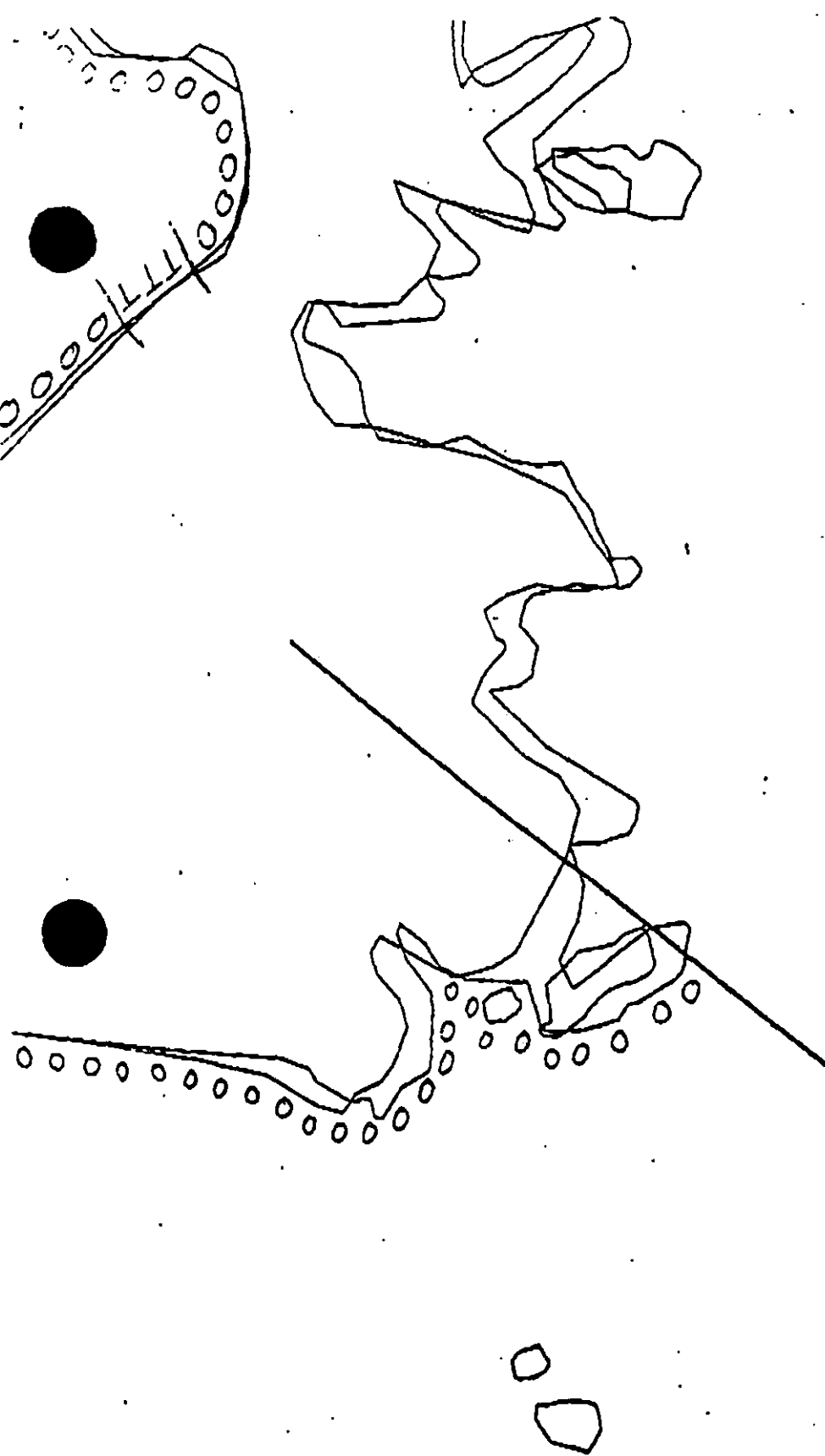
ADEC Segment Length: 100m



Map Key: KEN-100b

Name: Sawyer

Date: 4-24-90



R

P

KEN
100B

XXX Wide
/● Medium
--- Narrow
TTT Very Light
OOO No Oil

PY-5

ADEC Segment Length: 100m

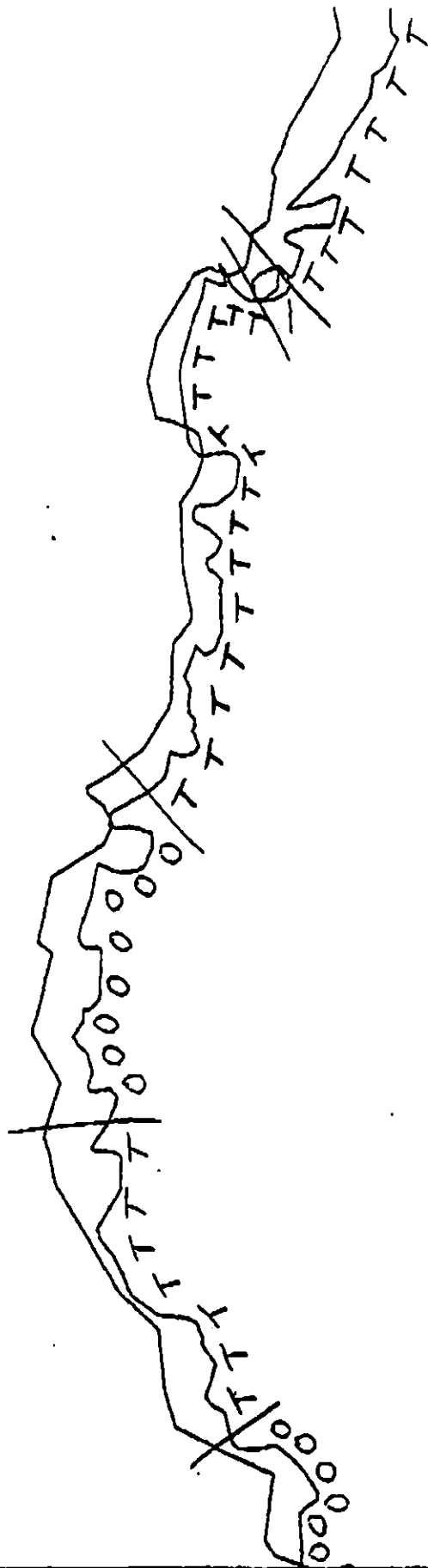
0 100 200 300

Map Key: KEN-100c

Name: Sawyer

Date: 4-24-90

Notes: _____



↑
KEN
100G

KEN
100E →

↓ KEN
100A

XXXX Wide

● / Medium

--- Narrow

TTTT Very Light

OOOO No Oil

PY-5

ADEC Segment Length: 100m

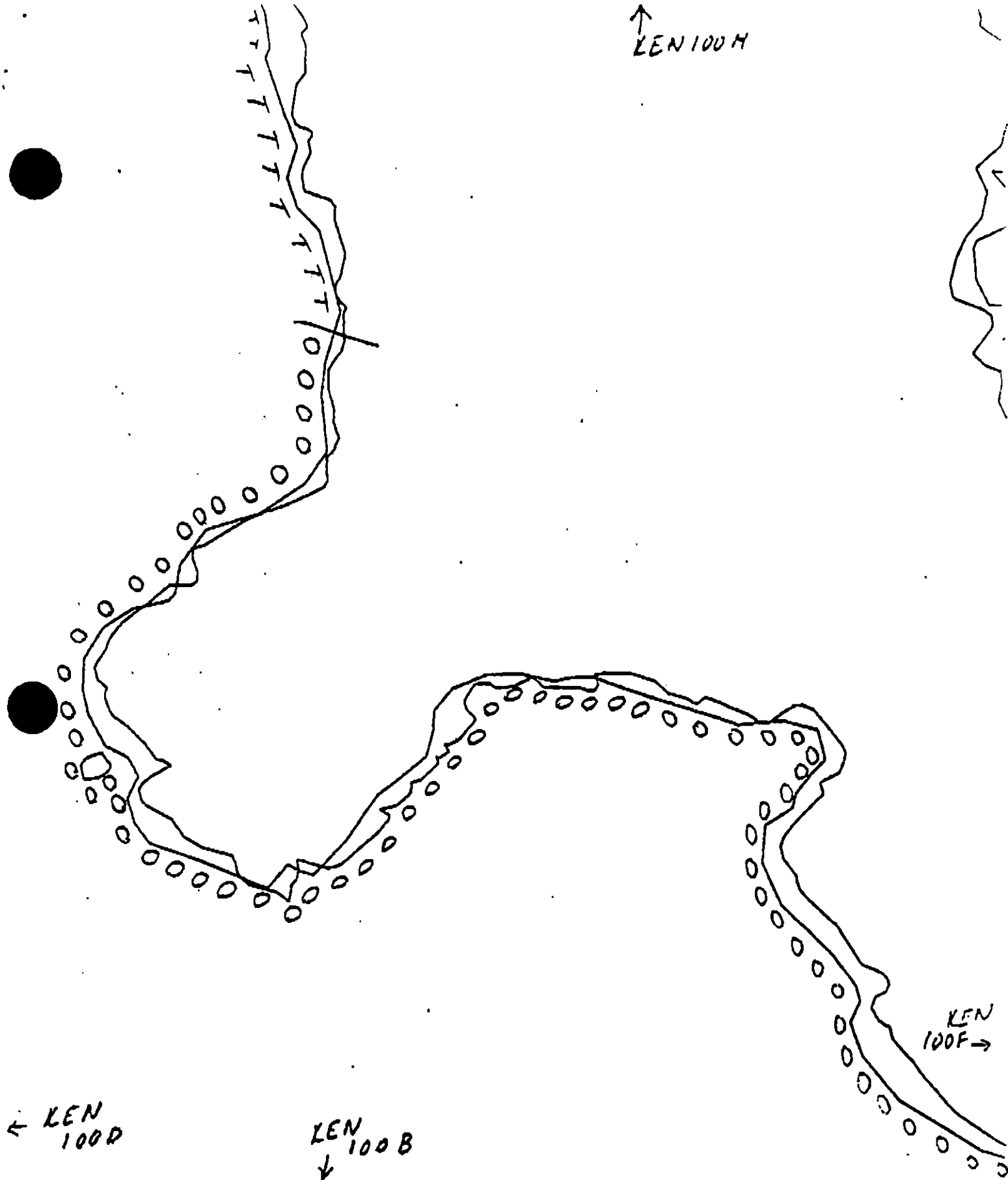


Map Key: KEN-100d

Name: Sawyer

Date: 4-24-90

Data Entered:



XXXX Wide

● // Medium

--- Narrow

TTTT Very Light

OOOO No Oil

PY-5

ADEC Segment Length: 100m



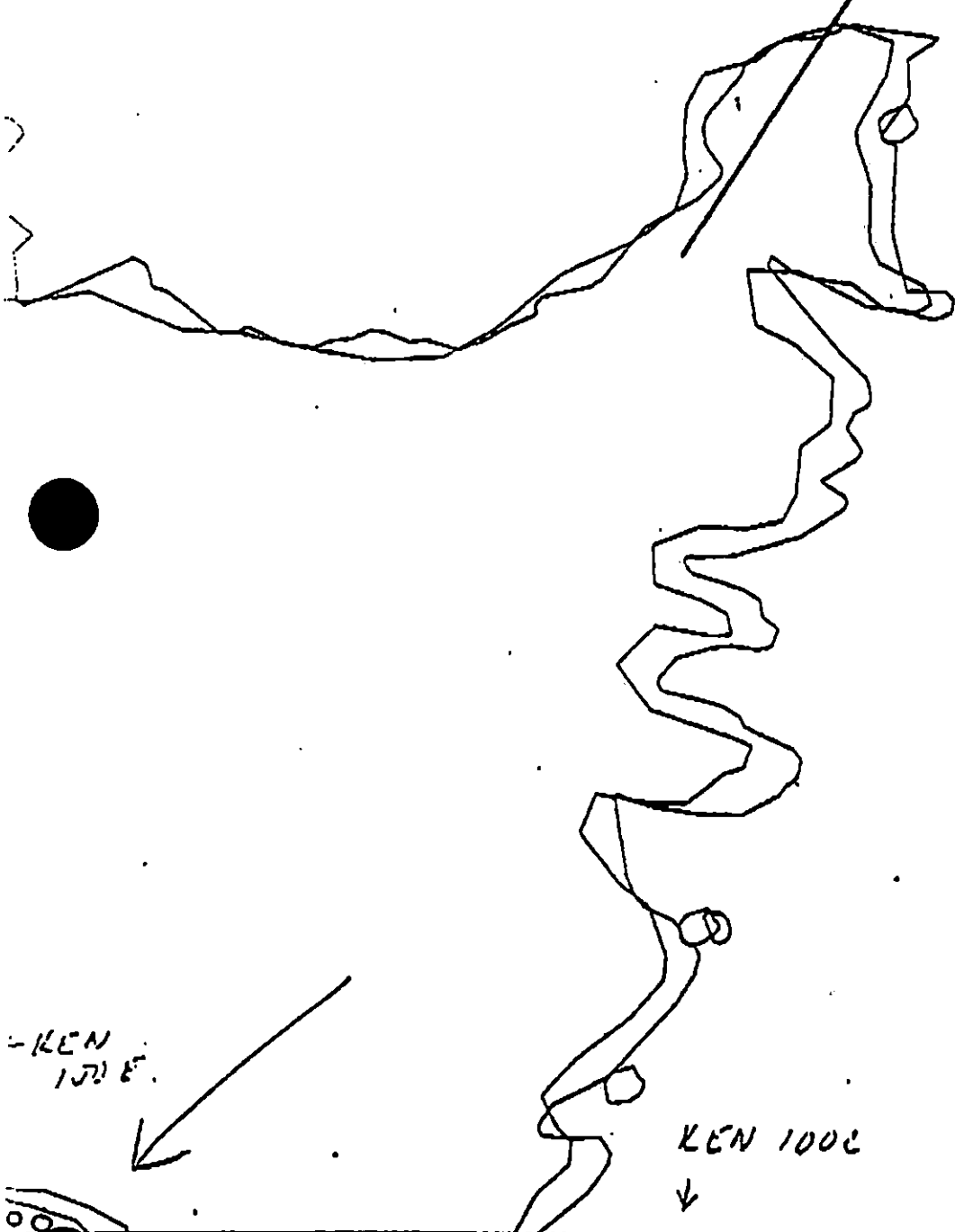
Map Key: KEN-100e

Name: Sawyer

Date: 4-24-90

Data Entered:

↑
KEN
1001



-KEN
1001 E.

KEN 1000
↓

XX Wide

/// Medium

- - - Narrow

TTTT Very Light

PY-5

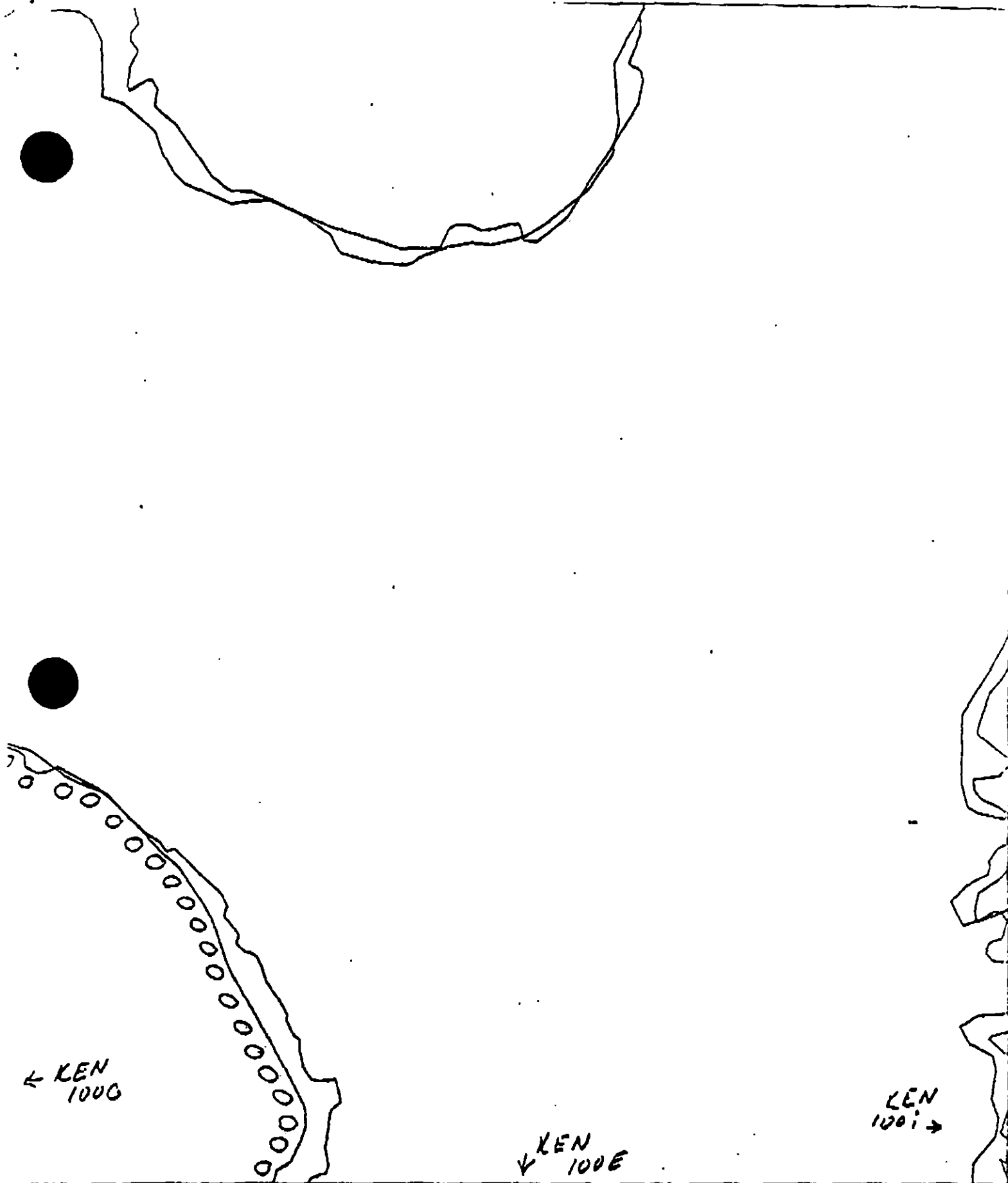
ADEC Segment Length: 100m

Map Key: KEN-1001

Name: Sawyer

Date: 4-24-90





X X Wide
 / / / Medium
 - - - Narrow
 T T T T Very Light

PY-5

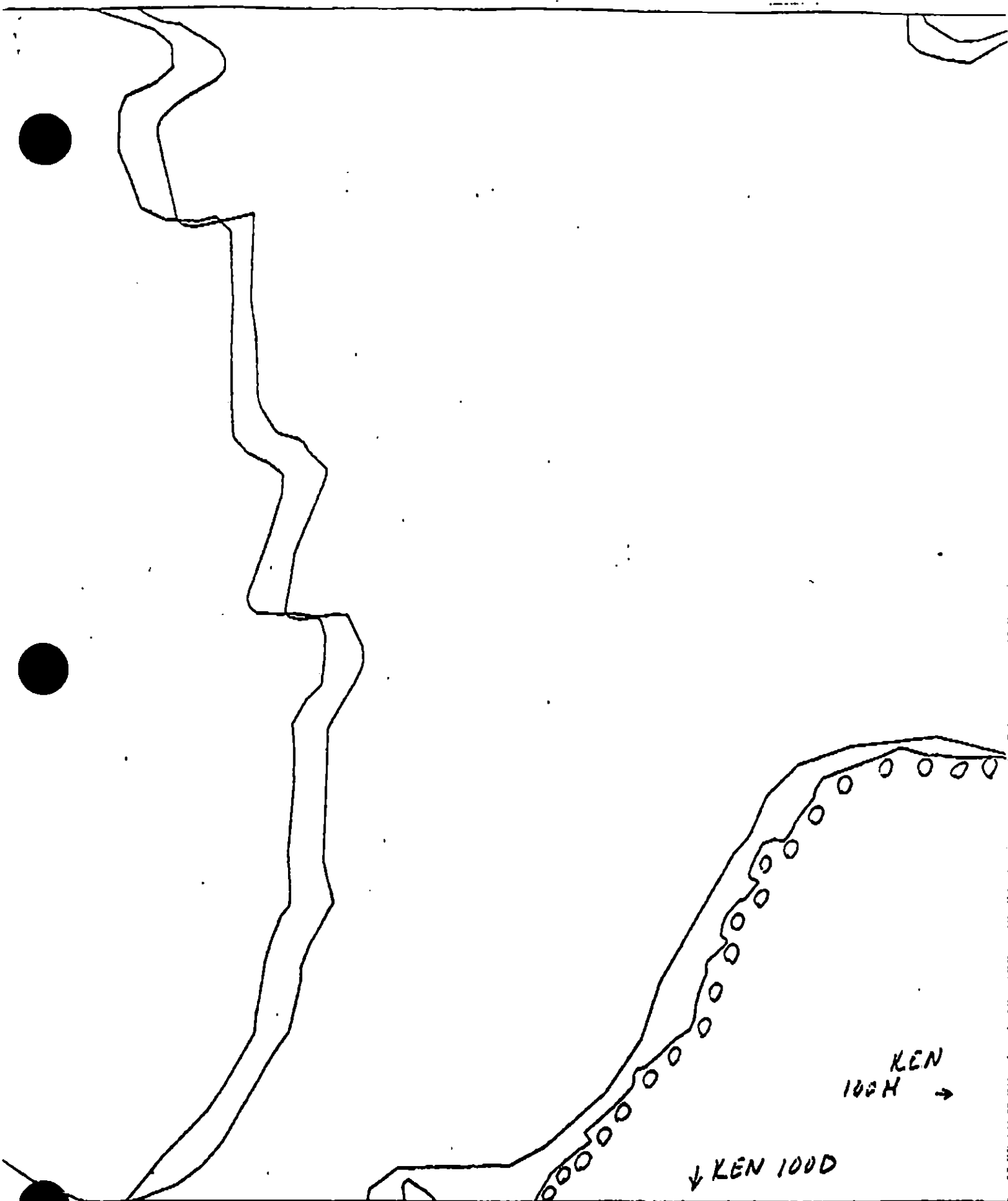
ADEC Segment Length: 100m



Map Key: KEN-100h

Name: Sanger

Date: 4-24-90



XXXX Wide
 //// Medium
 --- Narrow

PY-5

ADEC Segment Length: 100m



Map Key: KEN-100g

Name: Sawyer

Date: 4-24-90

SHORELINE EVALUATION

SEGMENT ST/ PY-05 SUBDIVISION A (1 OF 1) DATE 4/24/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

4QQ National Wildlife Refuge

5R Seabird colony (5/1 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 treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: Michael Ditzgen DATE: 5/15/90

OILING CATEGORIZATION:

Wide 0 m: Medium 32 m: Narrow 0 m: V. Light 2139 m: No Oil 9521 m
Subsurface Oil Observed: Yes X No Maximum Depth 20+ 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: Recommended treatment includes bioremediation of area of
subsurface oil as indicated on attached sketch map. Due to seabird
colony time constraints, contact USFWS for specific work dates.

TAG COMMENTS: MANUAL REMOVAL OF AVAILABLE MOUSSE PRIOR TO
BIOREMEDIATION

TAG APPROVAL DATE: 5/15/90

ADEC Art Weaver Attorney

EXXON Andy Gen Gen

NOAA Joseph Talbot IC

USCG G.A. REITER G.A. Decker

FOSC: myl

DATE: 7-10-90

Bioremediation not Authorized

SEGMENT APYS

SUBDIVISION A

DATE Apr 1 24 90

CHECKLIST

- ☐ N Area
- ☐ Approx. Scale
- ☐ Seg/Sub Entry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HW/LW
- ☐ SSI
- ☐ 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
Pecdy Distribution

CT/S
Splashed Distribution

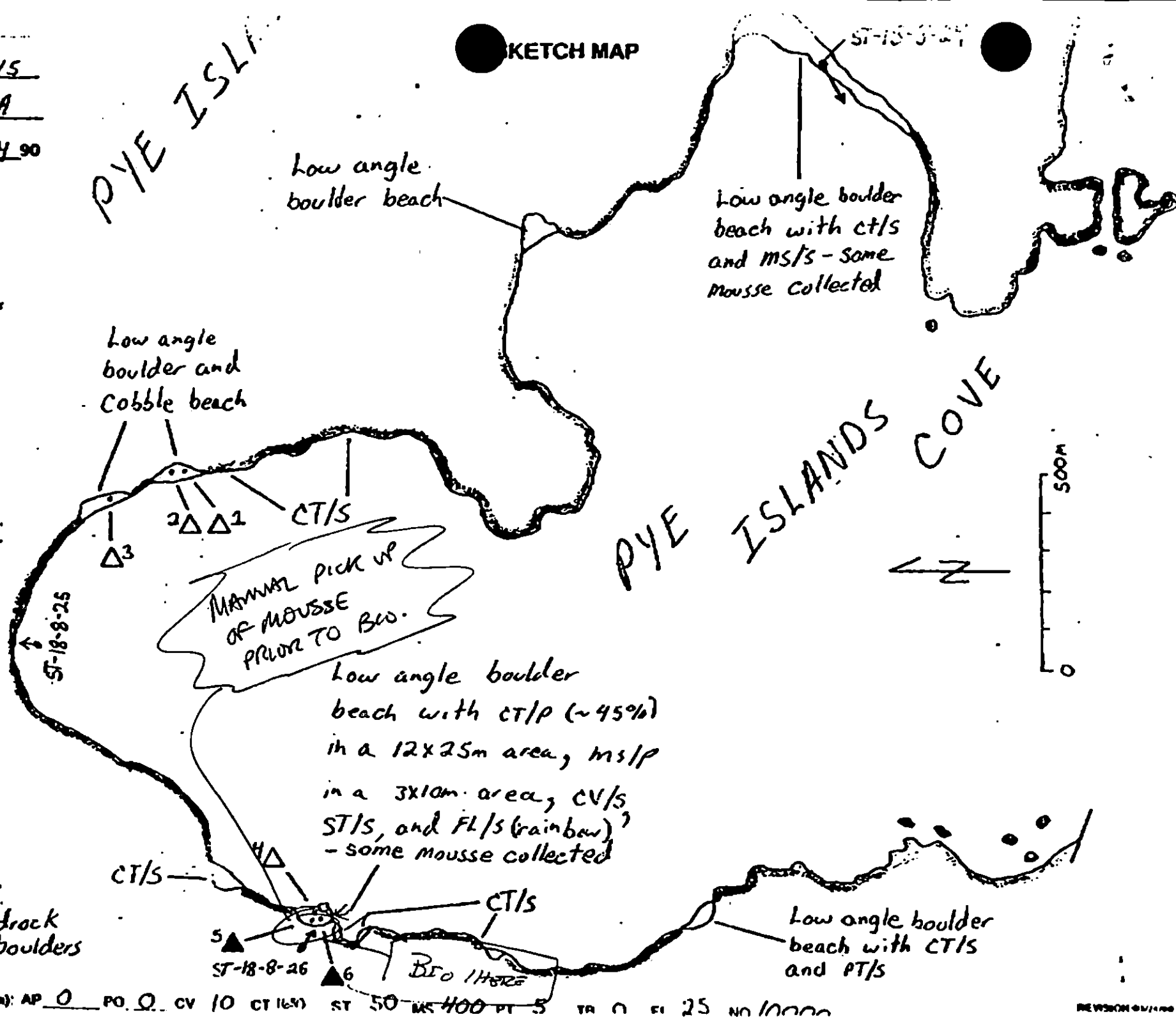
eee
Oiled Vegetation

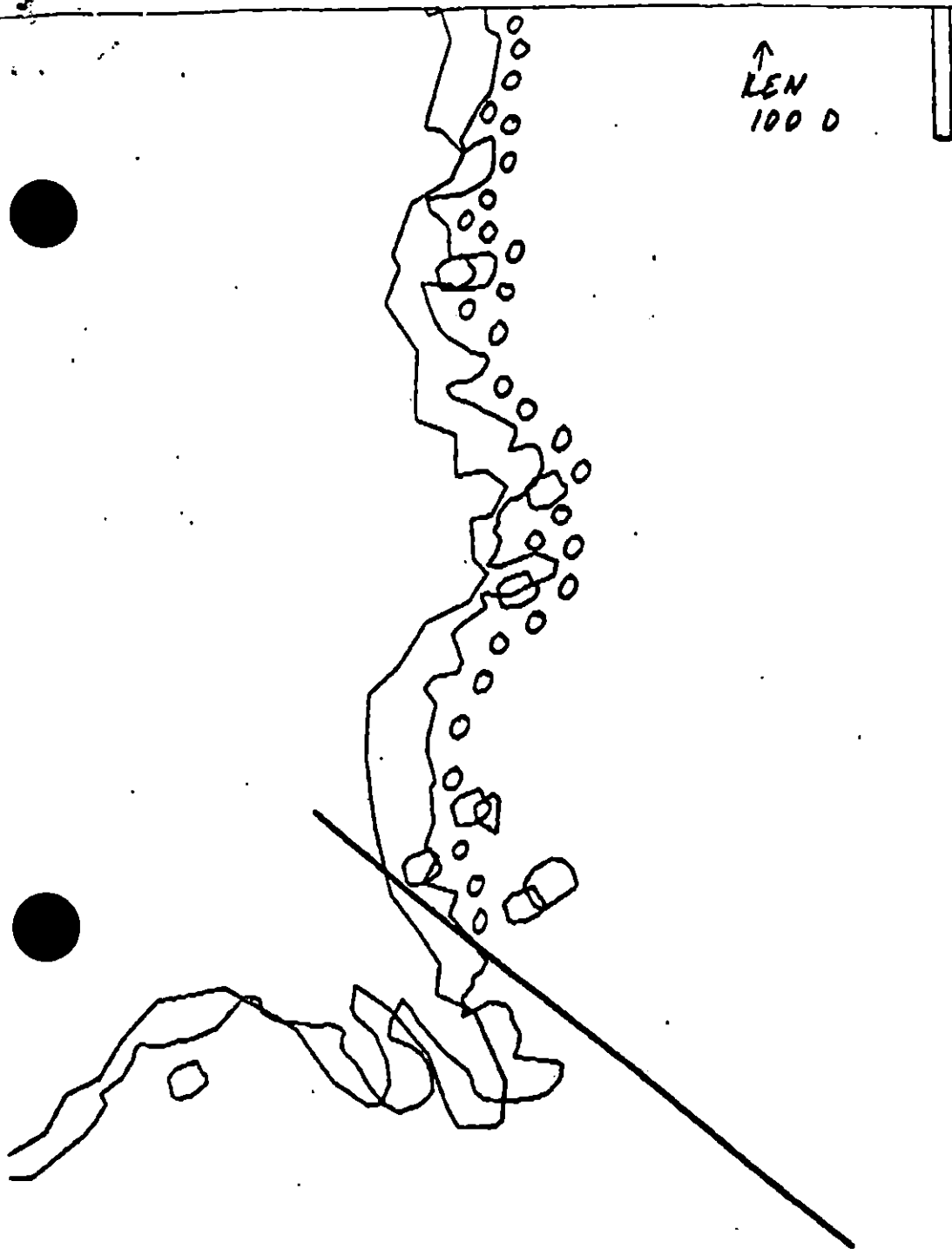
1 $\rightarrow$
Photo location, direction, and number

bedrock
± boulders

Oil Character Length (m): AP 0 PO 0 CV 10 CT 16 ST 50 MS 400 PT 5 TR 0 EI 25 NO 10000

KETCH MAP





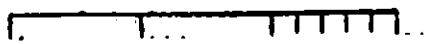
↑
KEN
100 0

KEN
100B →

● XX Wide
 /// Medium
 --- Narrow
 TTTT Very Light

PY-5

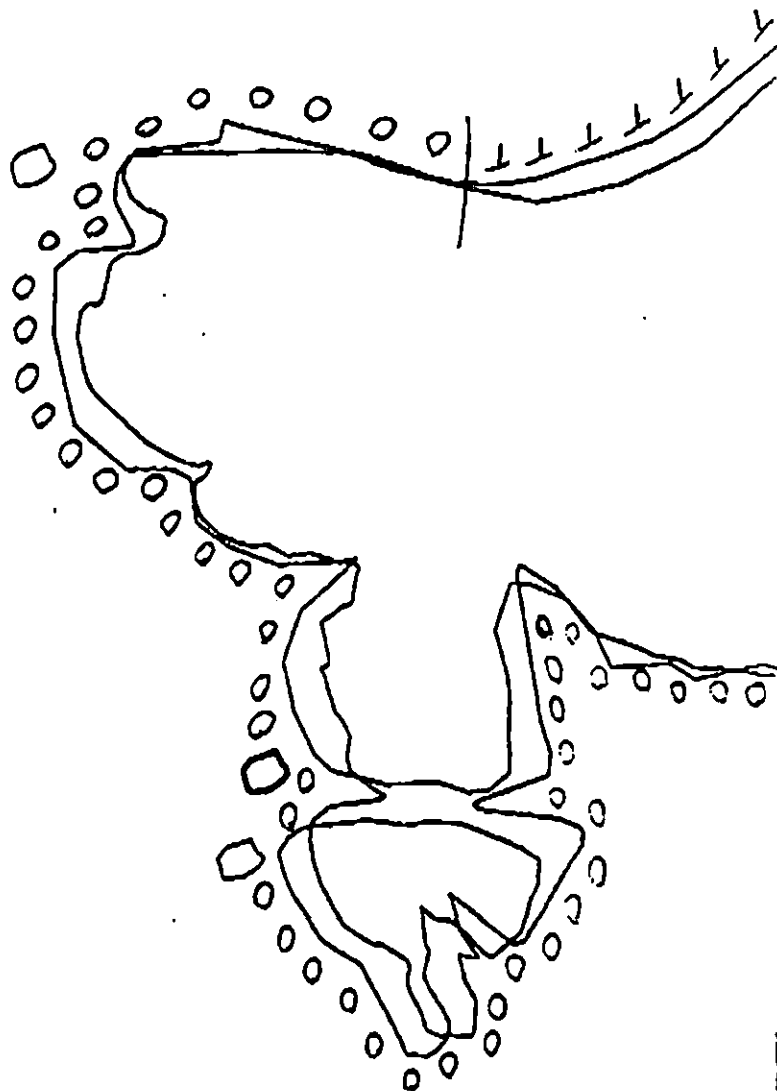
ADEC Segment Length: 100m



Map Key: KEN-100a

Name: Sawyer

Date: 4-25-90



← KEN
100A

KEN
100C →

PY-5.

XXXX Wide

/// Medium

--- Narrow

T-T-T-T Very Light

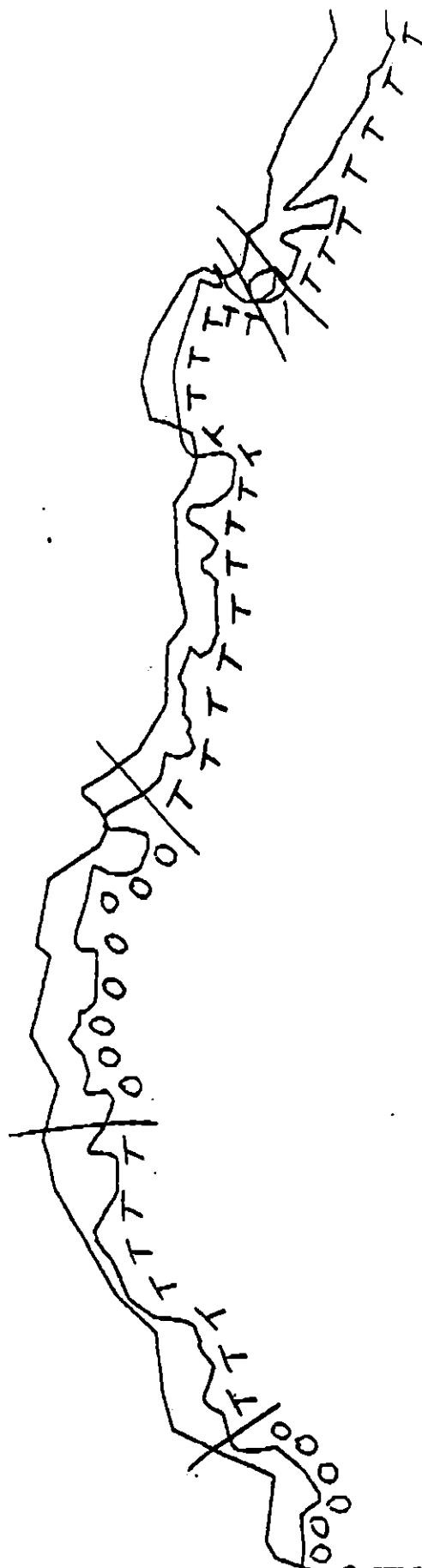
ADEC Segment Length: 100m



Map Key: KEN-100b

Name: Sawyer

Date: 4-24-90



↑ KEN
100G

KEN
100E →

↓ KEN
100A

XXXX Wide

// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

PY-5.

ADEC Segment Length: 100m



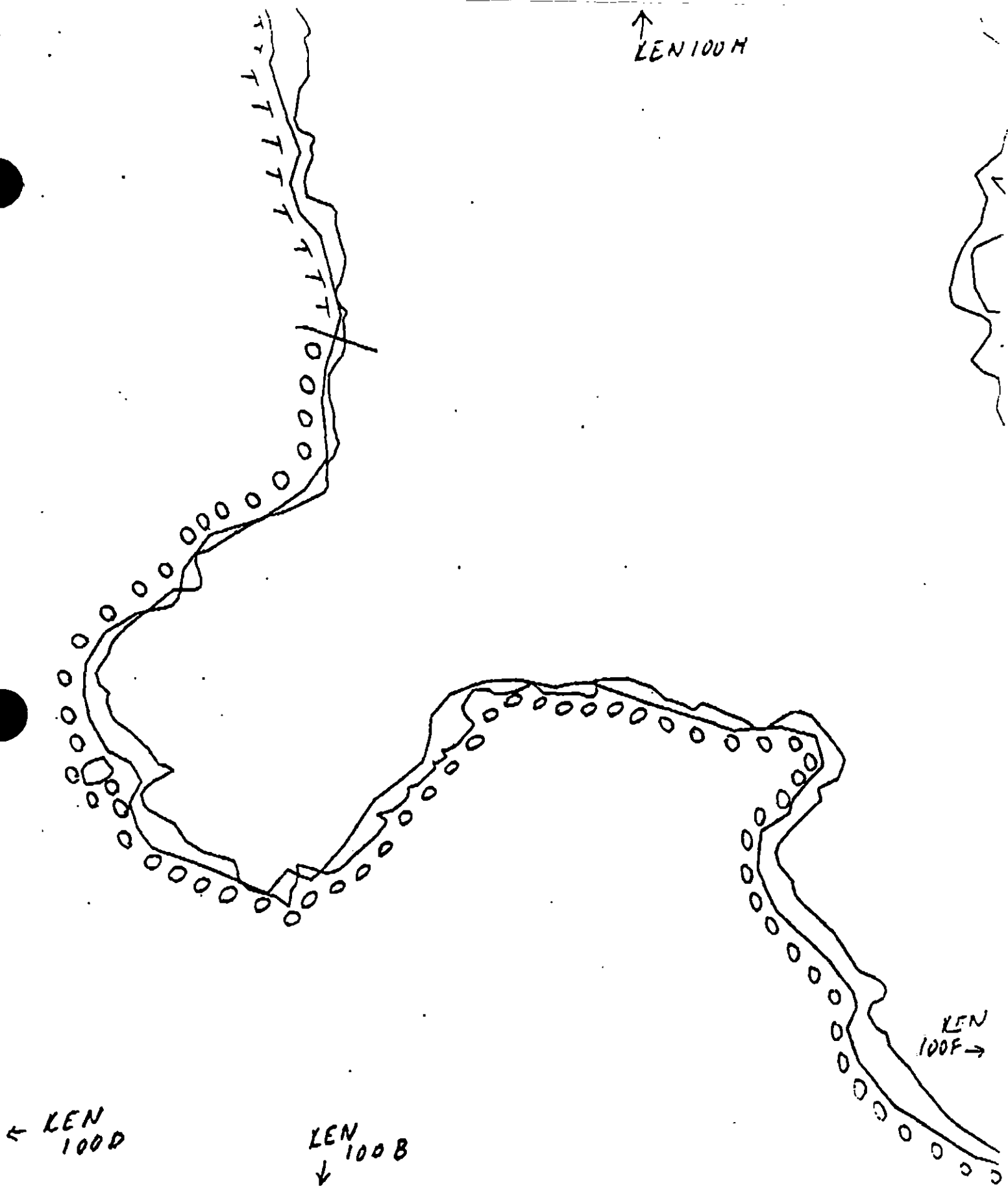
Map Key: KEN-100d

Name: Sawyer

Date: 4-24-90

Data Entered:

↑
LEN 100M



← LEN 100D

LEN 100B
↓

LEN 100F →

XXXX Wide

/// Medium

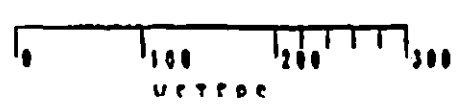
--- Narrow

TTTT Very Light

OOOO No Oil

PY-5

ADEC Segment Length: 100m



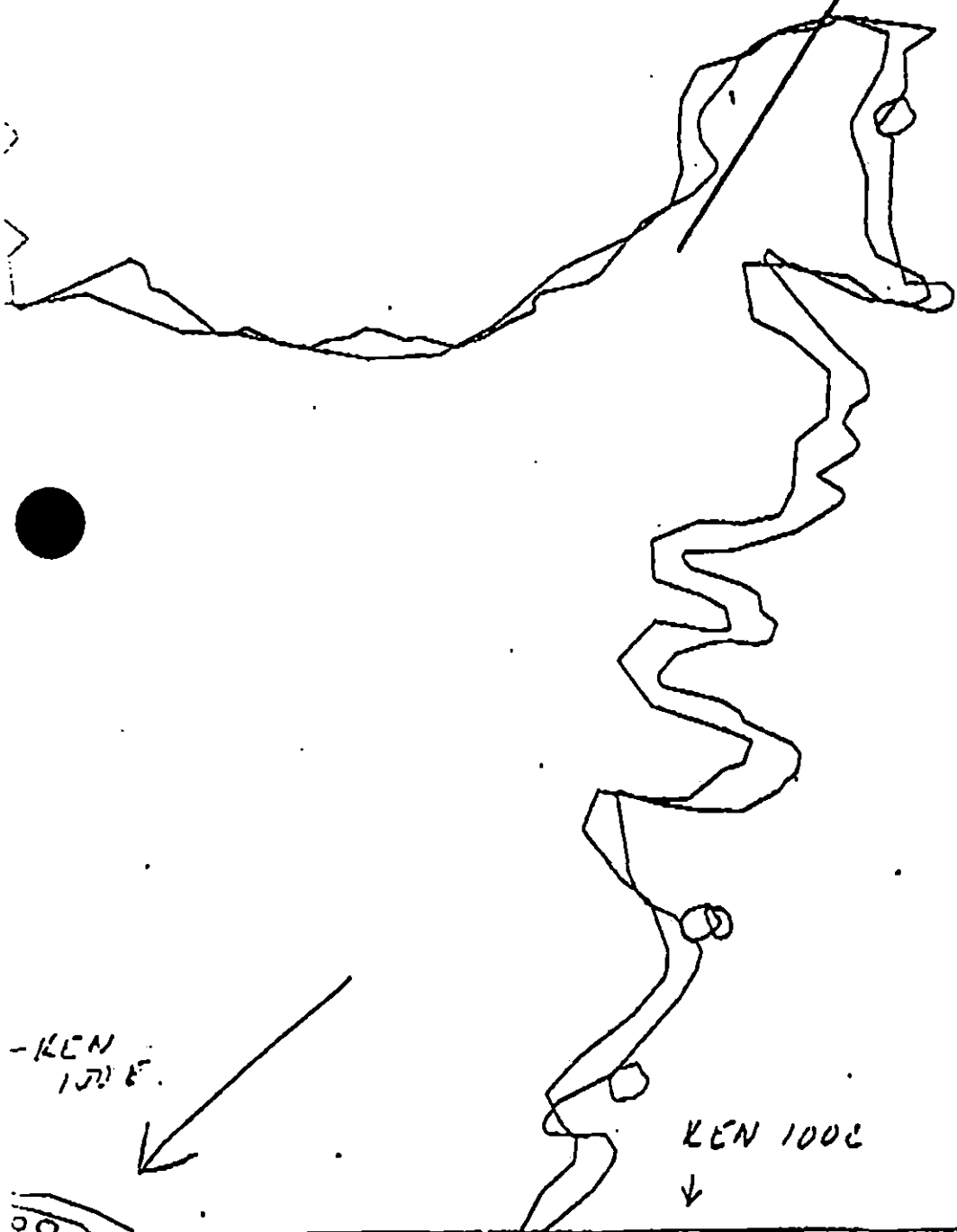
Map Key: KEN-1000

Name: Sawyer

Date: 4-24-90

Data Entered:

↑
KEN
1001



-KEN
1001

KEN 1002



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

PY-5

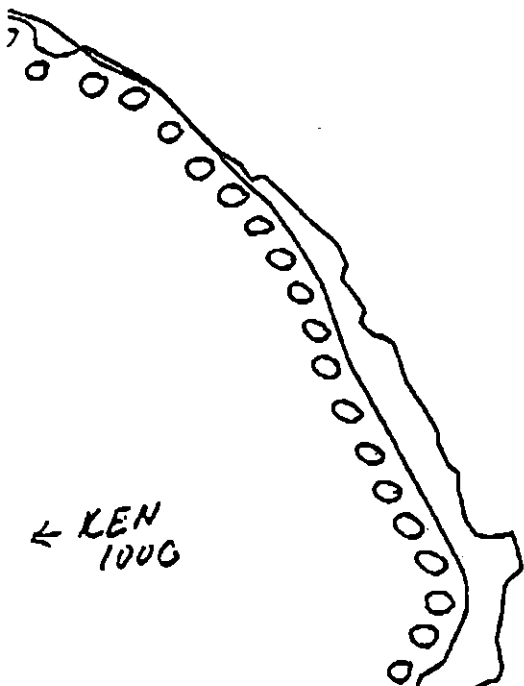
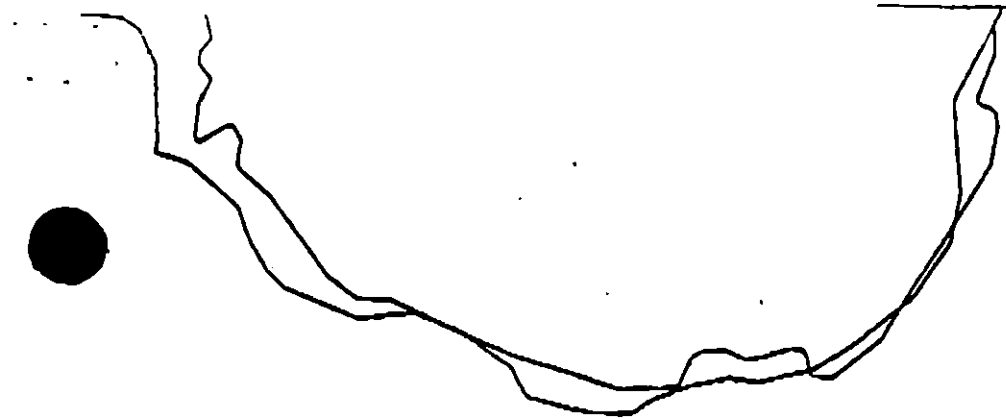
ADEC Segment Length: 100m



Map Key: KEN-1001

Name: Sawyer

Date: 4-24-90



← KEN
100G

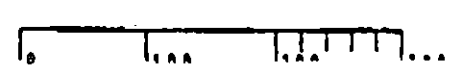
↓ KEN
100E

KEN
100I →

● XX Wide
/// Medium
--- Narrow
TTTT Very Light

PY-5

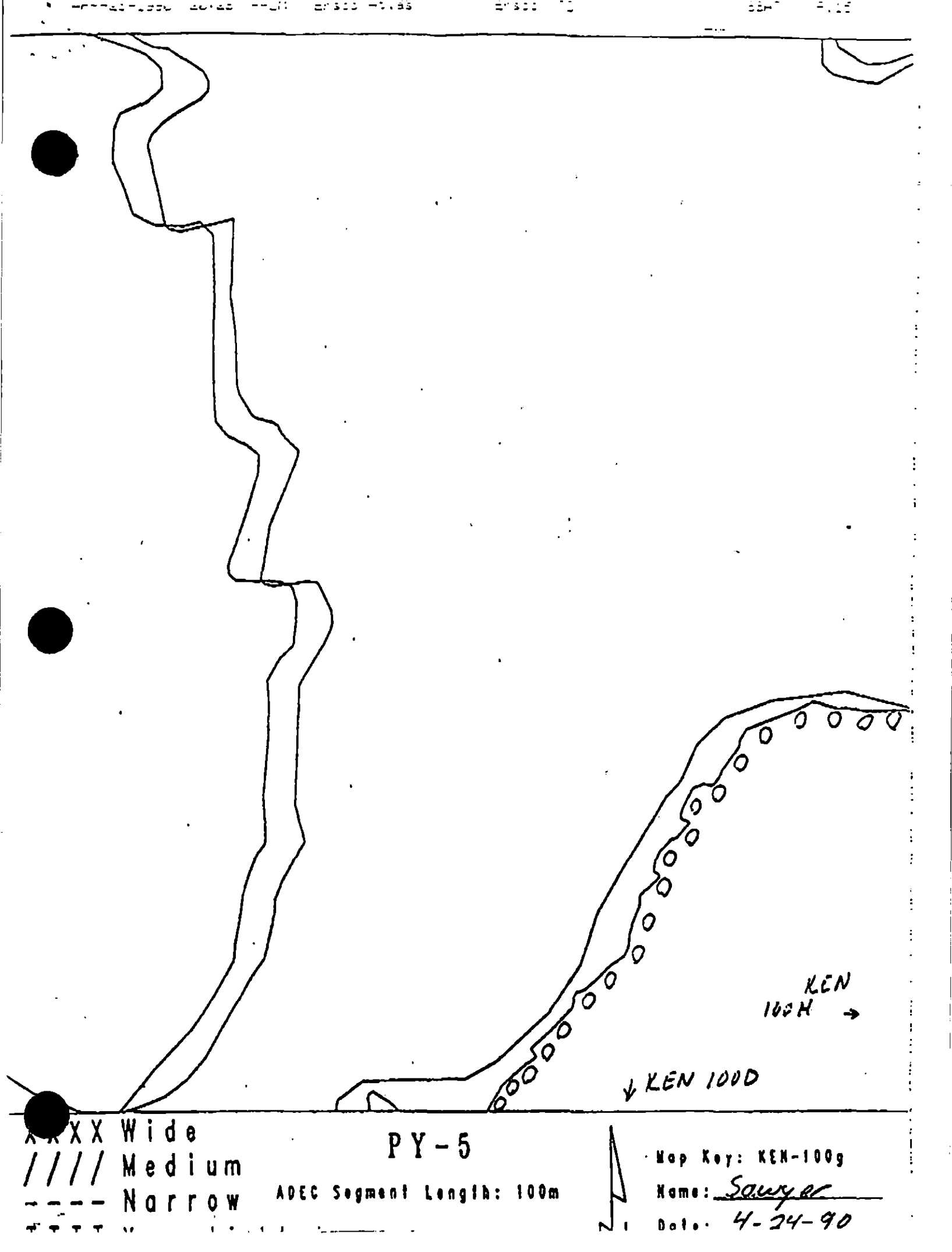
ADEC Segment Length: 100m



Map Key: KEN-100h

Name: Sawyer

Date: 4-24-90



ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT PY-5 SUBDIVISION A (1 of 1)

WORK WINDOW	
Manual Pickup	OPEN

CULTURAL RESOURCE EVALUATION REQUIRED PRIOR TO TREATMENT

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

5R Seabird Colony

NO CONSTRAINT. Work site is more than 800m from seabird colony.

OTHER ECOLOGICAL CONSIDERATIONS

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

FOSC

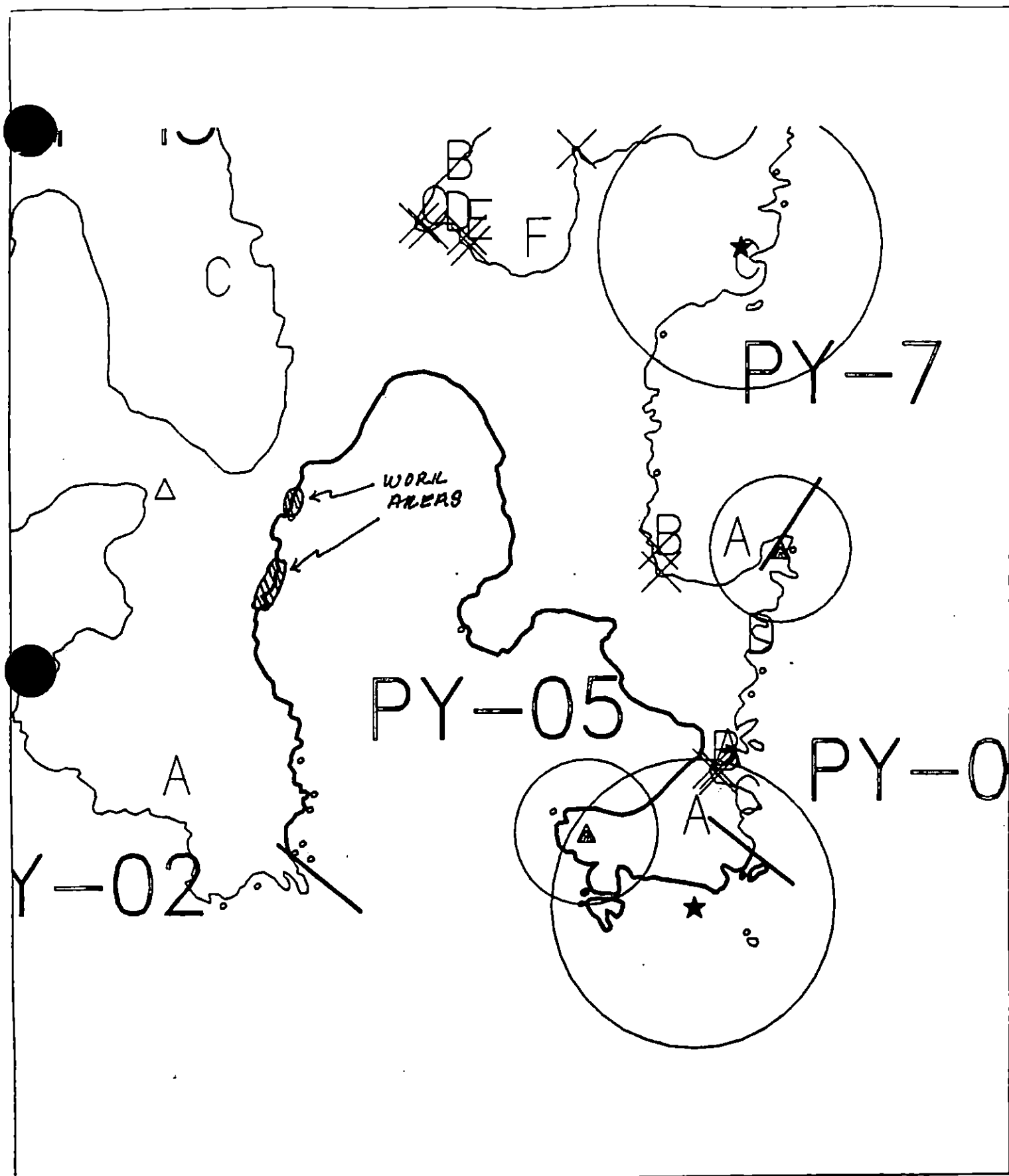
Date

7-11-90

Prepared by

Date

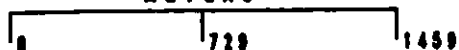
7/10/90



Exxon Company, USA
Map Key: KEN-PY-5
June 10, 1990



ECOLOGY MAP
SEGMENT PY-5
SUBDIVISION A (1 of 1)
METERS



- ★ Seabird Colony
- ▲ Active Eagle Nest
- △ Inactive Eagle Nest

1 inch = 2393 feet

SHORELINE EVALUATION

SEGMENT ST/ PY-05 SUBDIVISION A (1 OF 1) DATE 4/24/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

QQ National Wildlife Refuge
R Seabird colony (5/1 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 treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: Michael Ditzgen DATE: 5/15/90

OILING CATEGORIZATION:

Wide 0 m: Medium 32 m: Narrow 0 m: V.Light 2139 m: No Oil 9521 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> </u> Tarmat Removal	<u> </u> Beach Cleaner
	<u> </u> Other (see comments)

COMMENTS: Recommended treatment includes bioremediation of area of subsurface oil as indicated on attached sketch map. Due to seabird colony time constraints, contact USFWS for specific work dates.

 SEE CONSTRAINTS ADDENDUM DATED 7/10/90 JP

TAG COMMENTS: MANUAL REMOVAL OF AVAILABLE MOUSE PRIOR TO BIOREMEDIATION

TAG APPROVAL DATE: 5/15/90

DEC Art Weimer
EXXON Andy
NOAA Joseph J. Bhatt
USCG G.A. REITER

FOSC: myl

DATE: 7-10-90

Bioremediation not Authorized

REGION: KENAI

SEGMENT: PY-06

SUBDIVISIONS: A (1 OF 4)

SHORELINE EVALUATION

SEGMENT ST/ PY-06 SUBDIVISION A (1 OF 4) DATE 4/1/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Bald eagle nest (5T) - 3/1 to 6/1; Seabird colony (5R) - 5/1 to 9/1; National Wildlife Refuge (40Q). Restrict air traffic to essential minimum. Approach and takeoff from and to seaward only. Contact ADF&G and USFWS prior to treatment.

SUBDIVISION ECOLOGICAL CONSTRAINTS: Avoid unnecessary 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 47 m: Narrow 0 m: V.Light 0 m: No Oil 0 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 15 cm

RECOMMENDATIONS:

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

COMMENTS: Manual removal of pooled oil, oily trash and debris, bio-remediate. Should be done before 5/1, weather and safe access permitting. No air traffic or work crew access from 5/1 to 9/1.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

SEGMENT ST / PY 06 SUBDIVISION: A DATE APRIL 1, 1990

USEG NOAA
ME JACQUI MICHEL SIGNATURE J. Michel

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

Manual removal of oiled debris and readily recoverable oil — especially the pooled oil in the upper 172 on the north end of the beach (mapped as broken distribution). Cleanup will be effective only if done early. If we have to wait until Sept., the oil will harden further. Hopefully, cleanup can be completed prior to the bird colony critical time window (1 May).

ADEC
NAME JOHN R. REED SIGNATURE John R. Reed

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

I am suggesting manual removal of the pooled oil and the oiled debris, keeping in mind the time window for the bird colonies.

LAND MANAGER - USFWS

NAME Mary Partner SIGNATURE Mary Partner

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

Oiled debris and readily recoverable oil should be removed, especially in the NW corner of the beach. Due to the limited oil cleanup methods available adequate treatment will be difficult. Because of the presence of critical wildlife nearby including a bald eagle nest, peregrine falcon nest and seabird colony cleanup must be completed by early May. If significant sheening occurs further treatment should be considered.

REVISION NO. 03/21/88

SHORELINE OILING SUMMARY

REVISION NO. 03/22/98

OG MANN USCG/NOAA MICHEL SEGMENT ST/ PY 6
 BIO CARR LAND REP PORTNER - EWS SUBDIVISION A
 EXXON BOYER ADEC REED TIME 12:15 to 13:00
 TEAM NO.: 18 TIDE LEVEL: 0.0 to +0.1 DATE APRIL 1 1990
 EST. SUBDIVISION LENGTH: 180 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 ISLANDS DESCRIPTION: ☒ Grass ☐ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: all to over
 SURFACE SEDIMENTS: R 30 % B 68 % C 2 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Lang. 70 % Hang 0 % Vert 30 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 40 m N 30 m VL 30 m NO 80 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	AC	BC	PC	SC	1	2	3	4	5	SU	U	M	L
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	0	0	0
Trash		✓	
Debris		✓	

DEBRIS COLLECTED
☐ YES ☒ NOTYPE —#BAGS —

Photographs:

Roll No. 18-2Frames 26-28, 32-39SUBSURFACE OIL *Note: the average boulder size on this beach is 1.2m (diameter).*

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	1	2	3	4	5	SU	U	M	L		
1	25					✓	-												NO	BCP throughout
2	25	✓					0-5	✓		✓					✓	✓	✓			"
3	25	✓					0-5	✓		✓					✓	✓	✓			"
4	25	✓					0-5	✓		✓					✓	✓	✓			"
5	25					✓	-													
6	25					✓	-													
7	25	✓					0-15	✓		✓					✓	✓	✓		"	"
8	25						0-15	✓		✓					✓	✓	✓		"	"

COMMENTS

Regarding pits: subsurface oil is considered any oil that is in interstices below the generalized surface where the boulders sit. It is not a continuous unit but is instead discontinuous around the boulders (nor is it continuous between the boulders). Boulder surfaces have mostly <10% cv, ct, and (mostly) stain left as remnant patches on protected surfaces.

Page 1 of

REVIEWED BAT DATE 4 Apr 90

Segment ST / PY 6 Subdivision A (of A-D) Date (mo / day / yr) 4 / 1 / 90

Time (24 hr) 1150 Biologist M. LARR

(A) Substrate type and % of ^{SUBDIVISION} segments:
(1) Bedrock 5 (2) Boulder 95 (3) Cobble — (4) Pebble — (5) Sand — (6) Silt —

(B) Overall % cover of biota (% of ^{SUBDIVISION} segment): 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. 2

Frames 26-28, 32-39

BARNACLES

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
→ 2	2	2	2	2	2	X 2	X 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 UPPER.
NOT PRESENT IN LOWER INTER, BOTH SUBSTRATES

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 LOWER ZONE
NOT PRESENT IN UPPER & LOWER
NOT PRESENT

GASTROPODS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
→ 2	2	2	X 2	2	X 2	X 2	X 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 IN UPPER & MIDDLE
NOT PRESENT

Wildlife Observations/ General Comments:

Bald eagle (1), mature.

Ecological Considerations:

Sensitivity codes: S-T (Bald eagle nest), S-R (Seabird colony),
Y-QQ (Nat. Wildlife Refuge).

2

OG

SEGMENT ST/ P16

SUBDIVISION A

DATE APRIL 1 1990

CHECKLIST

- ✓ N Arrow
- ✓ Approx. Scale
- ✓ Seg/Sub Body
- ✓ Oil Dist.
- Width
- Length
- % Cover
- ✓ Substrate Character
- ✓ Est. HML/LVL
- ✓ SSI
- Profile Location(s)
- Profile(s)
- ✓ PH Location(s)
- Photo Location(s)

LEGEND

1 Δ

PH - No Subsurface Oil

2 Δ

PH - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

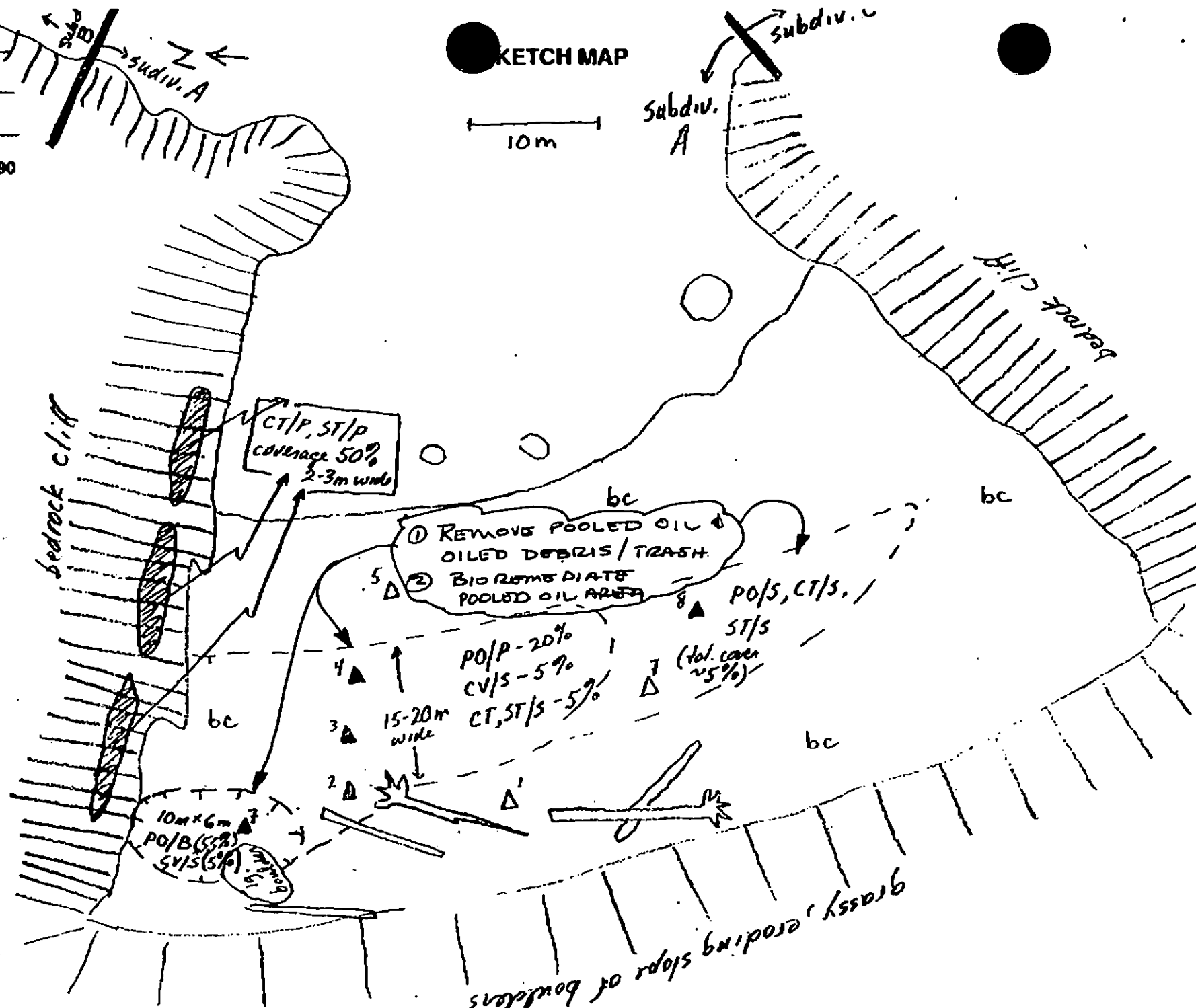
Oiled Vegetation

1 →

Photo location, direction, and number

SKETCH MAP

10m



Oil Character Length (m): AP 0 PO 40 CV 40 CT 95 ST 95 MS 0 PT 0 TB 0 FL 0 NO 30

REVISION: 01/24/00

Sensitive Sites

PY-7

PY-05

due to convoluted shoreline, it is impossible to show boundaries of subdiv. A + B.

I suggest you enter this to GIS as 100 of "medium" somewhere in this cove.

data entry: put 2 "11"s in this area somewhere

PY-6

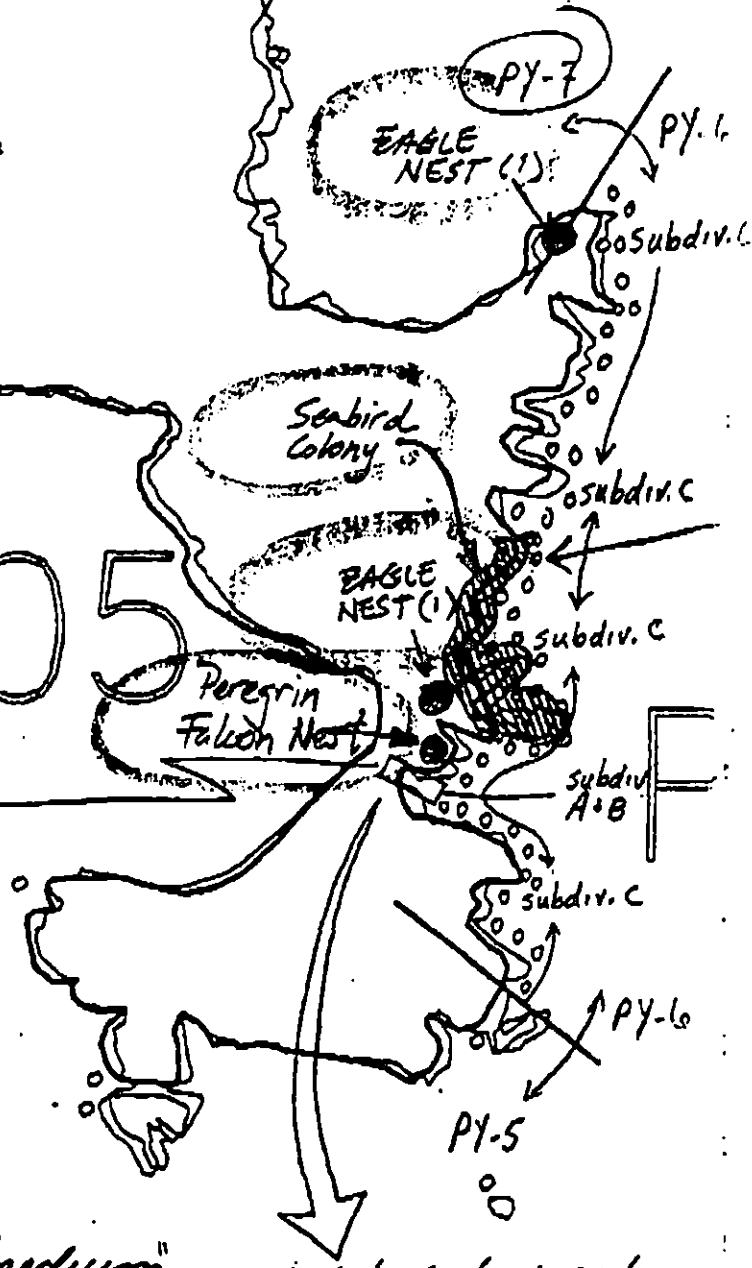
XXX Wide
 /// Medium
 --- Narrow
 TTTT Very Light

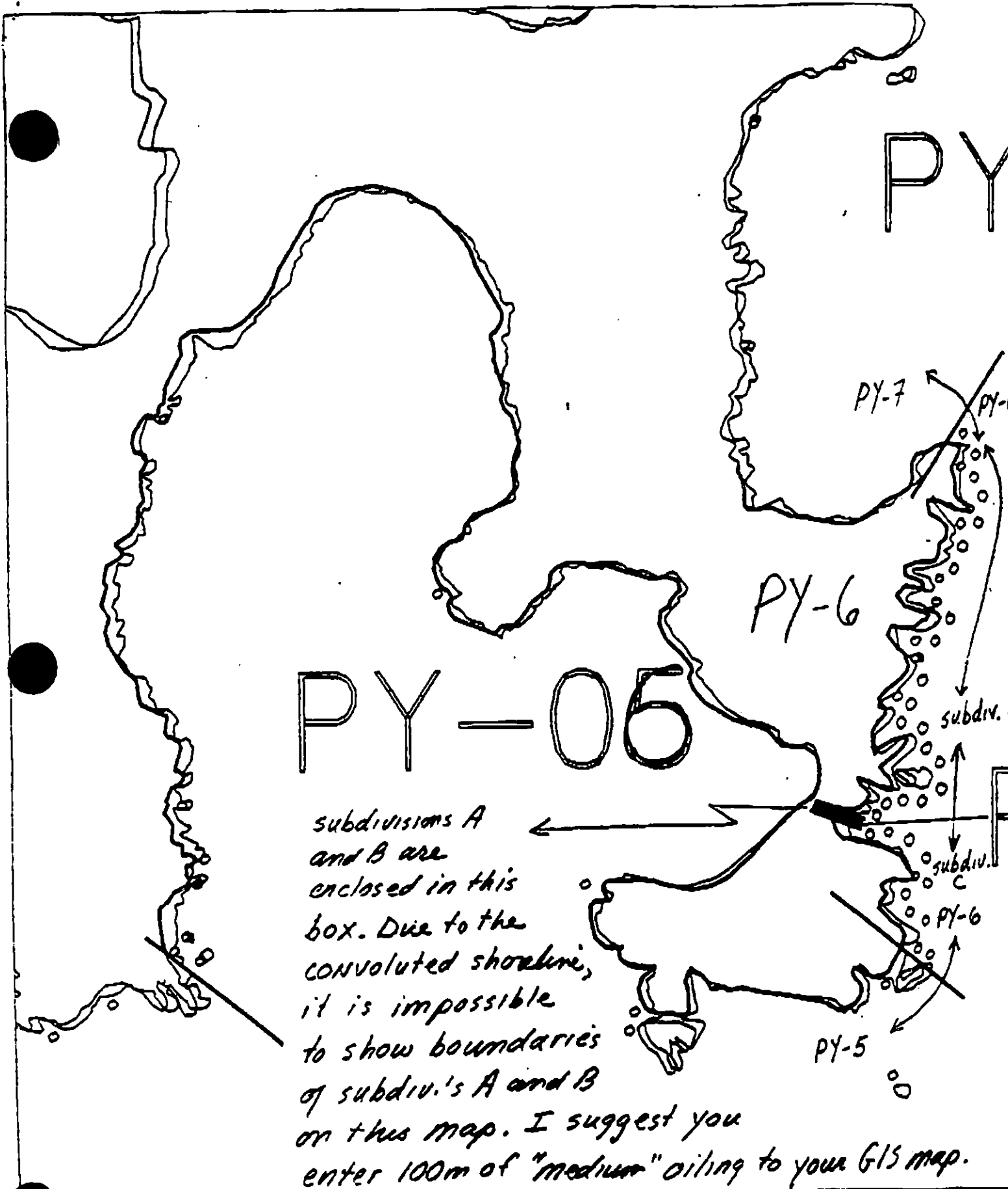
ADEC Segment Length: 15052m

Map Key: KEN-1010

Name: Mann

Date:





A hand-drawn map of a coastal area, possibly a bay or inlet. The map shows a large central area labeled 'PY-05'. To the right, there is a narrow strip of land with several smaller areas labeled 'PY-6', 'PY-7', and 'PY-5'. A box is drawn around a portion of the central area, with an arrow pointing to it from the text below. The coastline is irregular and convoluted. There are several small circles and dots scattered along the coast, particularly on the right side. The text 'subdiv. A', 'subdiv. B', 'subdiv. C', and 'subdiv. D' are written near the coast, with arrows pointing to specific locations. The text 'PY' is written in large letters in the upper right corner.

PY-05

subdivisions A
and B are
enclosed in this
box. Due to the
convoluted shoreline,
it is impossible
to show boundaries
of subdiv.'s A and B
on this map. I suggest you
enter 100m of "medium" oiling to your GIS map.

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

PY-6

ADEC Segment Length: 15052m

Map Key: KEN-101a

Name: ManrDate: 4/1/90

REGION: KENAI

SEGMENT: PY-06

SUBDIVISIONS: B (2 OF 4)

SHORELINE EVALUATION

SEGMENT ST/ PY-06 SUBDIVISION B (2 OF 4) DATE 4/1/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Bald eagle nest (5T) - 3/1 to 6/1; Seabird colony (5R) - 5/1 to 9/1; National Wildlife Refuge (400). Restrict air traffic to essential minimum. Approach and takeoff from and to seaward only. Contact ADF&G and USFWS prior to treatment.

SUBDIVISION ECOLOGICAL CONSTRAINTS: Avoid unnecessary disturbance/ 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 42 m: Narrow 0 m: V.Light 0 m: No Oil 0 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: _____

SEGMENT ST / PY 06 SUBDIVISION: B DATE APRIL 1, 1990

~~SEG~~ NOAA

NAME

JACQUI MICHEL

SIGNATURE

J. Michel

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

This site is inaccessible.

ADEC

NAME

JOHN R. REED

SIGNATURE

John R. Reed

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

This site is inaccessible.

AND MANAGER - USFWS

NAME

Mary Portner

SIGNATURE

Mary Portner

☒ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

Oil remains in the form of stain, coat cover and pooled to a height of 15m. in the Hoot Pt. Crack. Due to the inaccessibility of the area it cannot be adequately treated. Weathering of this oil since 1989 is negligible.

REVISION NO. 09/21/90

OG MANN USCG/NOAA MICHEL SEGMENT ST/ PV06
 BIO CARR LAND REP PORTNER - FWS SUBDIVISION B Hoot Point Crack
 EXXON BOVER ADEC REED TIME 11:50 to 12:15
 TEAM NO.: 18 TIDE LEVEL: +0.2 to 0.0 DATE APRIL 1 1990
 EST. SUBDIVISION LENGTH: 120 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☐ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: NA to _____
 SURFACE SEDIMENTS: R 90 % B 10 % C _____ % P _____ % G _____ % S _____ % M _____ % V _____ %
 SLOPE: Long 10 % Hang _____ % Vert 90 % WAVE EXPOSURE: ☐ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 90 m N 10 m VL 0 m NO 20 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	C	B	P	R	SP	BR	ST	OR	BL	SU	U	M	U
ASPHALT PAVEMENT													
POOLED				✓	✓					✓			
COVER		✓			✓					✓			
COAT		X	✓		X					X	✓		
STAIN			✓		✓						✓		
MOUSSE													
PATTIES													
TARBALLS													
FILM													
NO OIL											✓	✓	

PAVEMENT: H F S NO sq. m by N/A cm

PATTIES / TARBALLS 0 BAGS

NEAR SHORE SHEEN? NO BR RW SL TL

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

DEBRIS COLLECTED
☐ YES ☒ NO

TYPE N/A

#BAGS N/A

Photographs:

Roll No. 18-2

Frames 29-31

SUBSURFACE OIL NO PITS DUG BECAUSE SITE IS INACCESSIBLE TO FOOT TRAFFIC.

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			SP	BR	ST	OR	BL	FL	SU	U	M	U		
<u>0</u>																				

COMMENTS * We observed Hoot Point Crack by binoculars from atop a 100' cliff.

This site is inaccessible due to high cliffs. The spectacular oiling of its walls was the result of oil spraying ^{upward} during big waves. Weathering of the oil on the walls has been slight since last August — except for the lowest parts of these walls.

OG 1
 SEGMENT ST/PY06
 SUBDIVISION B
 DATE APRIL 1 1990

CHECKLIST

- ☒ H. Area
- ☒ Approx. Scale
- ☒ Seg/Sub Body
- ☒ Oil Dist.
- ☒ Width
- ☒ Length
- ☒ % Cover
- ☒ Substrate Character
- ☒ E.g. HW/LWL
- ☒ CSI
- ☒ Profile Location(s)
- ☒ Profile(s)
- ☒ P/L Location(s)
- ☒ Photo Location(s)

LEGEND

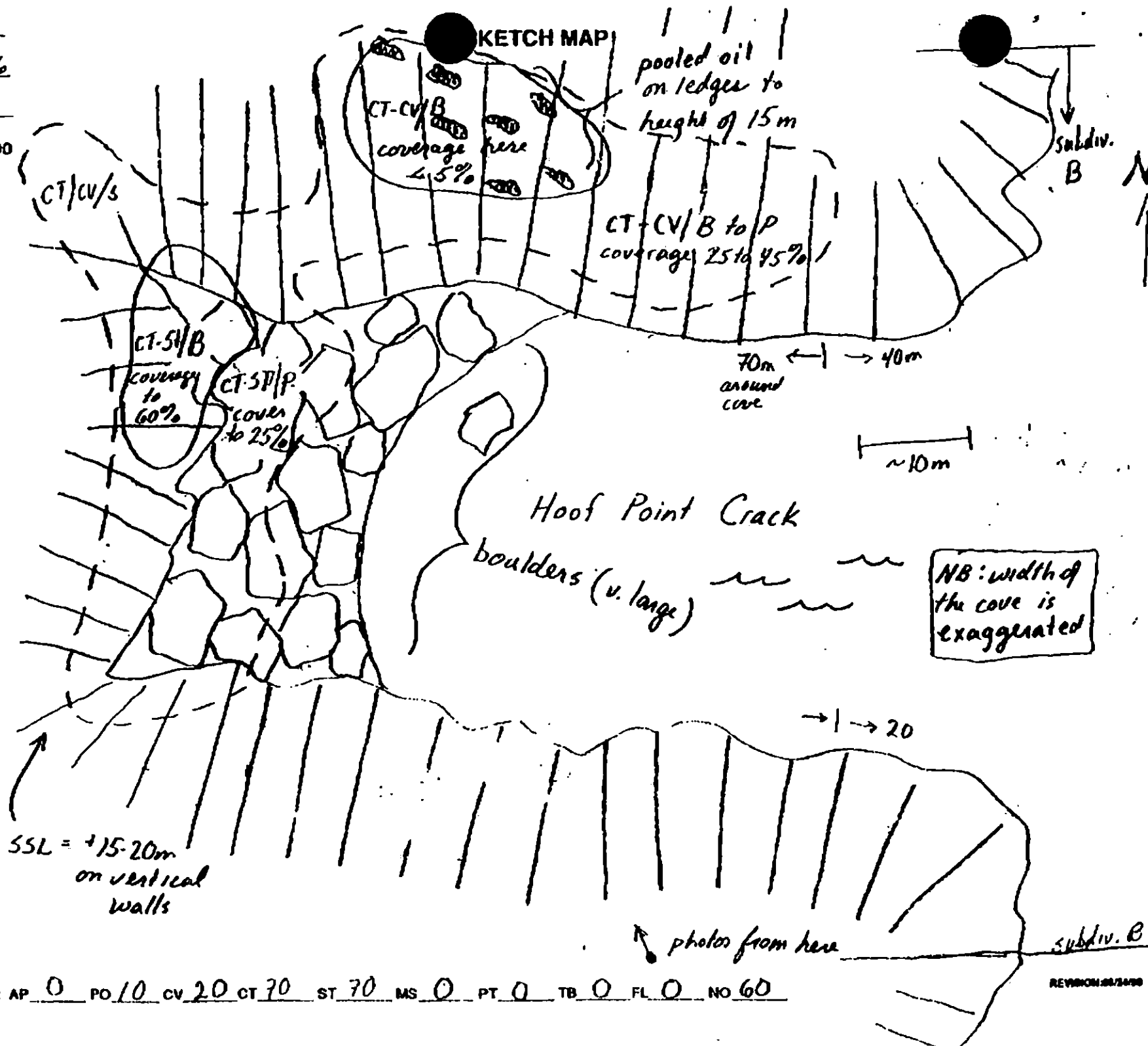
- 1 Δ
 P/L - No Subsurface Oil
- 2 Δ
 P/L - Subsurface Oil
- CT/C

 Continuous Distribution
- CT/B

 Broken Distribution
- CT/P

 Patchy Distribution
- CT/S

 Splashed Distribution
- $\odot$
 Oiled Vegetation
- 1 $\Rightarrow$
 Photo location, direction, and number



Oil Character Length (m): AP 0 PO 10 CV 20 CT 30 ST 30 MS 0 PT 0 TB 0 FL 0 NO 60

REVISION 00/24/90

Sensitive Sites

PY=

PY-05

due to convoluted shoreline, it is impossible to show boundaries of subdiv. A + B.

I suggest you enter this to G15 as 100 of "medium" somewhere in this cave.

data entry: put
2 "11"s in this area
somewhere

P Y - 6

XXX Wide

Medium

----- Narrow

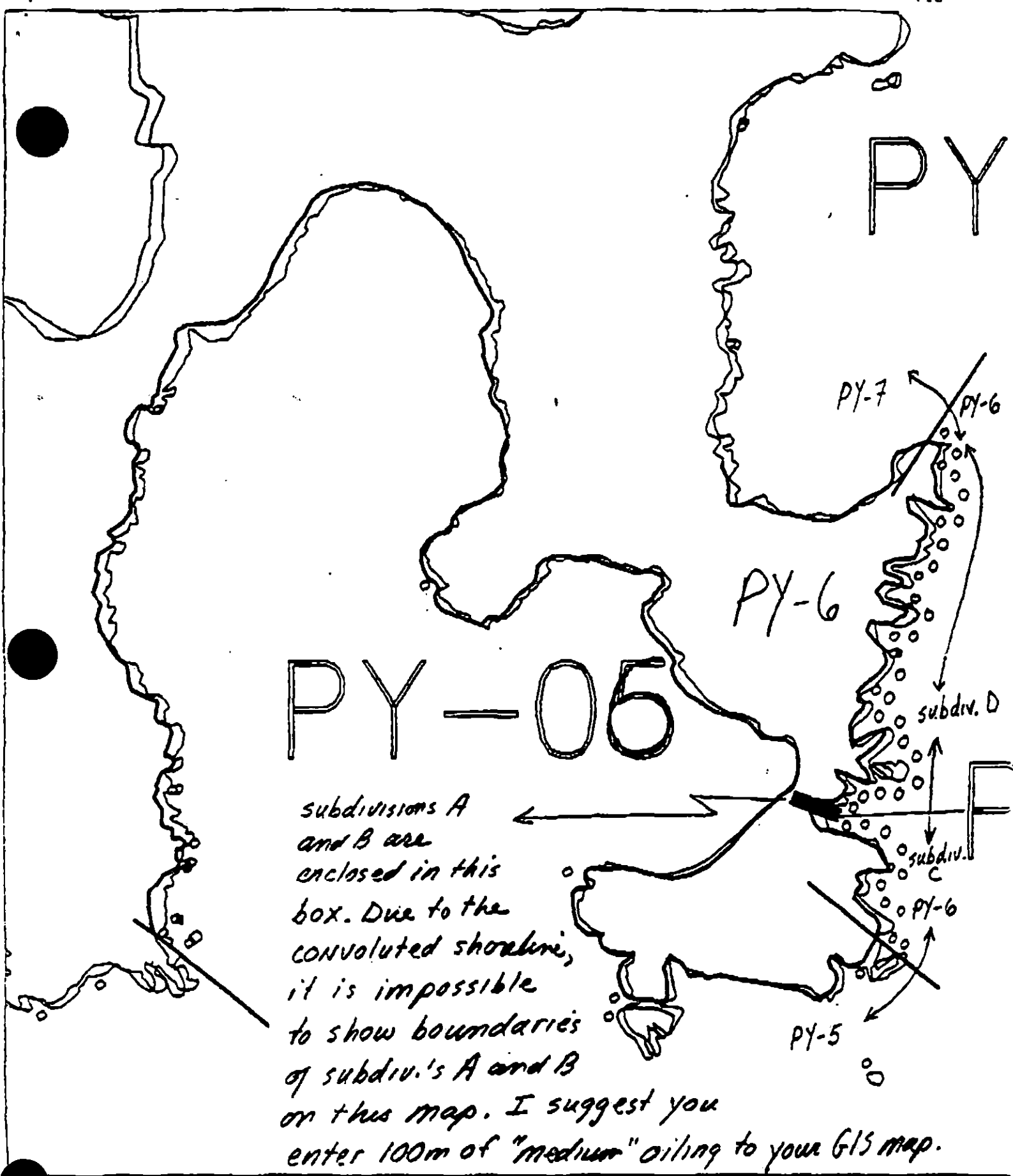
T-T-T T Very Light

ADEC Segment Length: 15.052m

Map Key: KEN-1010

Name: Mann

Date: _____



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

PY-6

ADEC Segment Length: 15052m

Map Key: KEN-1010

Name: Mann

Date: 4/1/90

REGION: KENAI

SEGMENT: PY-06

SUBDIVISIONS: C (3 OF 4)

SHORELINE EVALUATION

SEGMENT ST/ PY-06 SUBDIVISION C (3 OF 4) DATE 4/1/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Bald eagle nest (5T) - 3/1 to 6/1; Seabird colony (5R) - 5/1 to 9/1; National Wildlife Refuge (400). Restrict air traffic to essential minimum. Approach and takeoff from and to seaward only. Contact ADF&G and USFWS prior to treatment.

SUBDIVISION ECOLOGICAL CONSTRAINTS: Avoid unnecessary 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 785 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: _____

SEGMENT ST / PY-6 SUBDIVISION: C DATE 4/1/90

USCG/NOAA

NAME JACQUI MICHEL SIGNATURE J Michel

☒ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

No oil was observed.

ADEC
NAME JOHN R. REED SIGNATURE John R. Reed

☒ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

No oil was spotted.

LAND MANAGER

NAME Mary Portner SIGNATURE Mary Portner

☒ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

No oil was observed

SHORELINE OILING SUMMARY

REVISION NO. 02/1978

OG MARR USCG/NOAA MICHEL SEGMENT ST/ PY-6
 BIO CARR LAND REP Palmer (USEWS) SUBDIVISION C
 EXXON Boyer ADEC REED TIME 13:00 to 13:20
 TEAM NO.: 18 TIDE LEVEL: _____ to _____ DATE 4/1/90
 EST. SUBDIVISION LENGTH: 3618 m 668m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☐ Foot ☒ Boat ☐ Helo WORKING DIRECTION: S to N
 SURFACE SEDIMENTS: R 95 % B 5 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 5 % Hang 45 % Vert 50 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 0 m NO 3708 m
668m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	TC	TS	TP	TR	SP	SN	SO	SL	ST	SB	SC	SD	SU	UR	MR	UR
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. noneFrames noneSUBSURFACE OIL no pits dug because: 1) coastline inaccessible 2) substrate = bedrock

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-DM)	BELOW	OIL / FILM COLOR								PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO			SP	SN	SO	SL	ST	SB	SC	SD	SU	UR	MR	UR		

COMMENTS

We failed to find any oil here. Lighting was good, tide level was suckable, and the rock is light-colored. This subdivision is uniform in geomorphology and oiling (none) and so compresses everything in PY-6 except subdivisions A and B.

SKETCH MAP

SEGMENT PY6

SUBMISSION C

DATE 4/1/90

CHECKLIST

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

NO sketch - NO OIL

LEGEND

1 

Pt - No Subsurface Oil

2 

Pt - Subsurface Oil

CV/C

Continuous Distribution

CV/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

Oiled Vegetation

1 

Photo location, direction,
and number

Oil Character Length (m): AP 0 PO 0 CV 0 CT 0 ST 0 MS 0 PT 0 TB 0 FL 0 NO 750

Segment ST/ PY-6 Subdivision C (of A-D) Date (mo/day/yr) 4/1/90

Time (24 hr) 1330 Biologist M. CARR

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

(B) Overall % cover of biota (% of segment): ^{SUBSTRATE} 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	
→	2	2	2	2	2	2	2	2	2	2	2	2	NOT PRESENT
→	3	3	3	3	3	3	3	3	3	3	3	3	
	4	4	4	4	4	4	4	4	4	4	4	4	
	5	5	5	5	5	5	5	5	5	5	5	5	
	6	6	6	6	6	6	6	6	6	6	6	6	
	6	6	6	6	6	6	6	6	6	6	6	6	

MYTILUS

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

GASTROPODS

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

FUCUS

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

Wildlife Observations/ General Comments:

Glaucous-winged gull (2 colonies = 250 indivs) Floating dead mt. goat! (1)
Surf Scoter (5) Sea otter (1) (a real find)
Pigeon guillemot (1) Commorants, red-faced (100)

Ecological Considerations:

Sensitivity codes: Same as PY-6 A

52 - SEABIRD COLONY 1 MAY - 1 SEPT

ST - ACTIVE EAGLE NEST 1 MAR - 1 JUNE

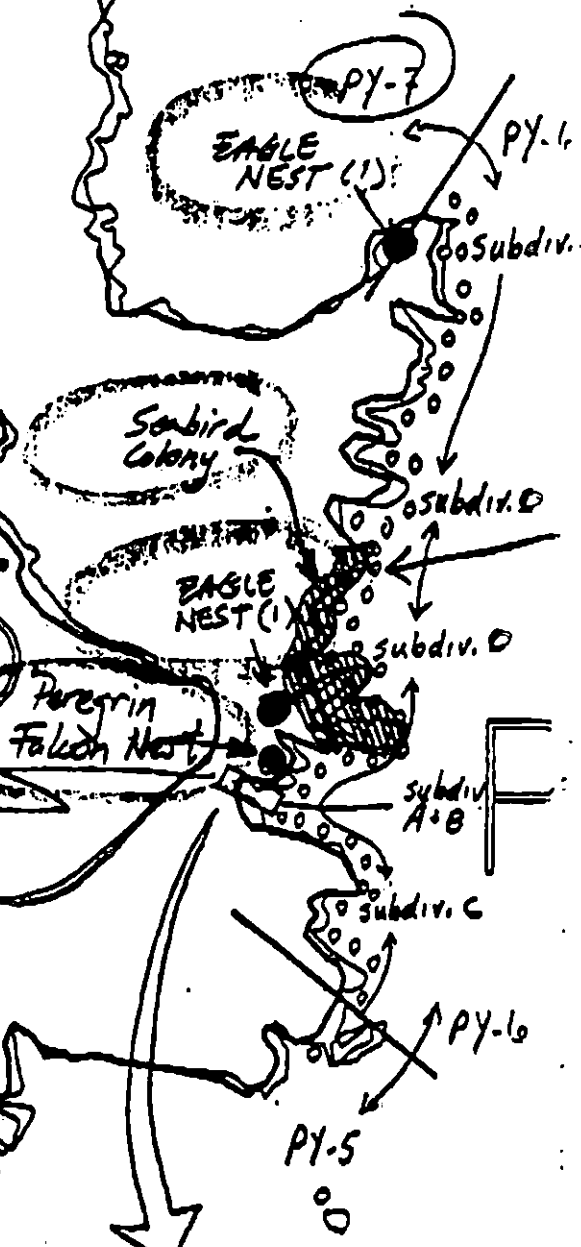
4QQ - NAT'L WILDLIFE REFUGE

- Boulder are so large, floral & faunal abundances are very similar to bedrock.

Sensitive Sites

PY-

PY-05



due to convoluted shoreline, it is impossible to show boundaries of subdiv. A + B.

I suggest you enter this to GIS as 100' of "medium" somewhere in this cove.

data entry: put 2'//''s in this area somewhere

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

PY-6

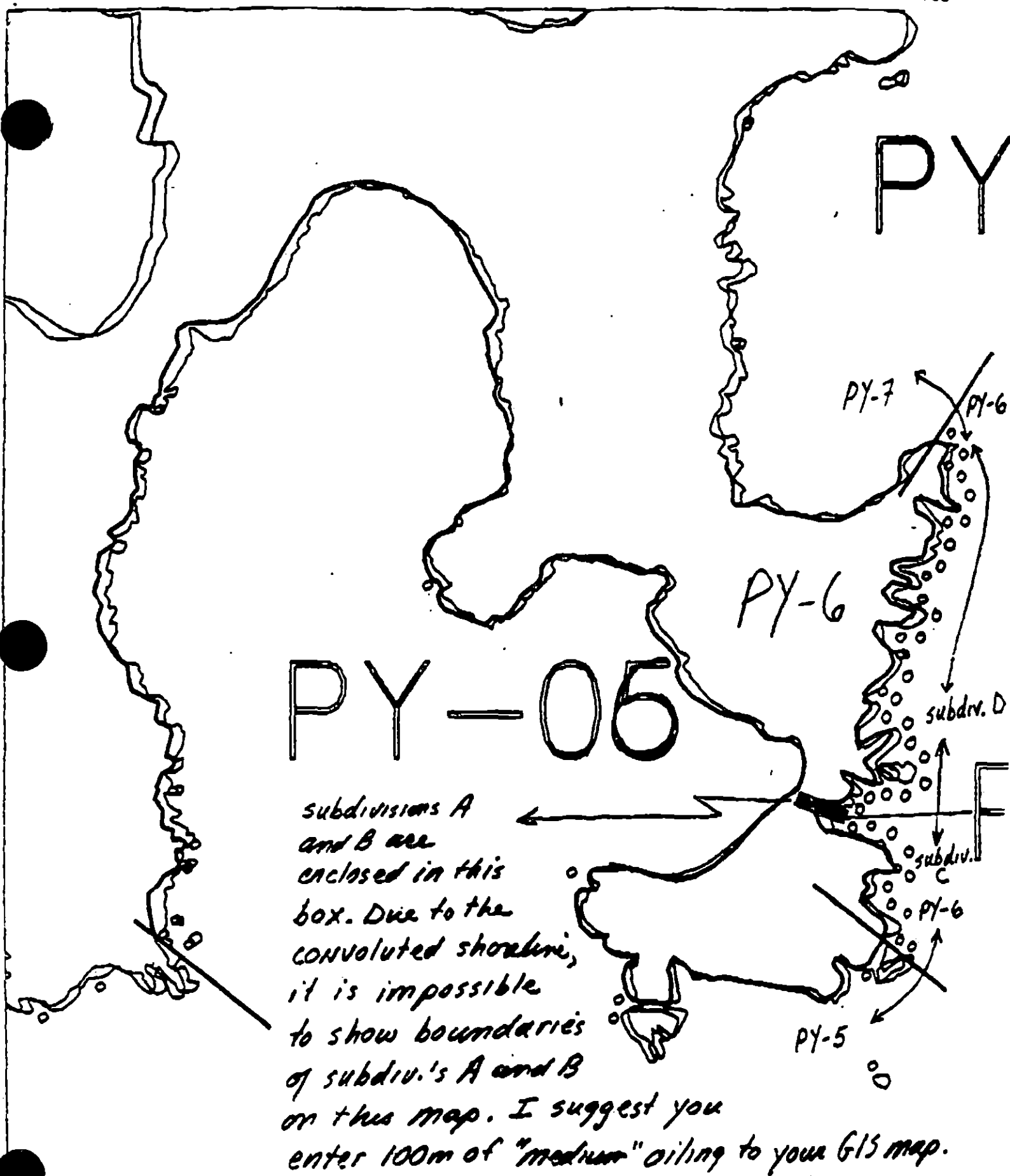
ADEC Segment Length: 15052m



Map Key: KEN-1010

Name: Mann

Date: _____



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

PY-6

ADEC Segment Length: 15052m

Map Key: KEN-1010

Name: MannDate: 4/1/90

REGION: KENAI

SEGMENT: PY-06

SUBDIVISIONS: D (4 OF 4)

SHORELINE EVALUATION

SEGMENT ST/ PY-06 SUBDIVISION D (4 OF 4) DATE 4/5/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Bald eagle nest (5T) - 3/1 to 6/1; Seabird colony (5R) - 5/1 to 9/1; National Wildlife Refuge (4QQ). Restrict air traffic to essential minimum. Approach and takeoff from and to seaward only. Contact ADF&G and USFWS prior to treatment.

SUBDIVISION ECOLOGICAL CONSTRAINTS: Avoid unnecessary 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 2611 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 6 SUBDIVISION: D DATE 4/1/90USCG/NOAANAME JACQUE MICHEL SIGNATURE Michel☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

No oil observed.

ADECNAME JOAN R. REED SIGNATURE John R. Reed☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

No oil was spotted.

LAND MANAGERNAME Mary Portner SIGNATURE Mary Portner☒ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

No oil was observed

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG MANN USCG/NOAA MICHEL SEGMENT ST/ PY6
 BIO CARR LAND REP PARTNER-FWS SUBDIVISION D
 EXXON BOYER ADEC REED TIME 13:00 to 13:20
 TEAM NO.: 18 TIDE LEVEL: +0.1 to 0.0 DATE 4/1/90
 EST. SUBDIVISION LENGTH: 2950 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 LANDS DESCRIPTION: ☐ Grass ☐ Forest ☒ Rock
 SURVEYED FROM: ☐ Foot ☒ Boat ☐ Helo WORKING DIRECTION: SOUTH to NORTH
 SURFACE SEDIMENTS: R 90 % B 10 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 10 % Hang 0 % Vert 90 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 0 m NO 2950 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	IC	IS	IP	IS	1	2	3	4	5	6	7	8	SU	U	M	L
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT																
STAIN																
MOUSSE																
PATTIES																
TARBALLS																
FILM																
NO OIL													☒	☒	☒	☒

PAVEMENT: H F S N/A sq. m by N/A cmPATTIES / TARBALLS N/A BAGSNEAR 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 SHORELINE WAS INACCESSIBLE / SHEER ROCK CLIFF

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	1	2	3	4	5	6	7	8	SU	U	M	L		
<u>C</u>																							

COMMENTS

We failed to find any oil on this subdivision. Lighting was good, tide level was suitable, and the rock is light colored (and it was dry). This subdivision is uniform in geomorphology and oiling (no oil).

OG Mamm

SKETCH MAP

SEGMENT STI PY-6

SUBDIVISION D

DATE 4 / 1 / 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)
- ☐ PH Location(s)
- ☐ Photo Location(s)

NO SKETCH - NO OIL

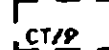
LEGEND

1 
PH - No Subsurface Oil

2 
PH - Subsurface Oil


CT/C
Continuous Distribution


CT/B
Broken Distribution


CT/P
Patchy Distribution


CT/S
Splashed Distribution

Oiled Vegetation

1 
Photo location, direction,
and number

Oil Character Length (m): AP 0 PO 0 CV 0 CT 0 ST 0 MS 0 PT 0 TB 0 FL 0 NO 2950

REVISION 93/24/90

HP-03-1990 21:45 FROM Enso Rtlas Enso TO SSAT P.06

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / PY-6 Subdivision D (of A-D) Date (mo / day / yr) 4/1/90Time (24 hr) 1300 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 segment): ^{SUBDIVISION} Dense 90 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	1U	1M	1U	1U	
→ 2	2	2	2	2	
3	3	3	3	3	NOT PRESENT
4	4	4	4	4	
5	5	5	5	5	
6	6	6	6	6	

MYTILUS

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

GASTROPODS

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

FUCUS

	Dense	Moderate	Sparse	Rare	
→ 1U	1M	1U	1M	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 in upper & low both substrates.

Wildlife Observations/ General Comments:

Ecological Considerations:

Sensitivity codes: ST (Bald eagle nest)
 SR (Seabird Colony)
 4 QQ (Natural Wildlife Refuge)

SENSITIVE SITES

PY

PY-05

subdivisions A and B are enclosed in this box. Due to the convoluted shoreline, it is impossible to show boundaries of subdiv.'s A and B on this map. I suggest you enter 100m of "medium" oiling to your GIS map.

SEABIRD COLONY

EAGLE NEST (1)

EAGLE NEST (1)

Peregrin Falcon Nest

PY-5

PY-7

PY-6

subdiv. D

subdiv. C

PY-6

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

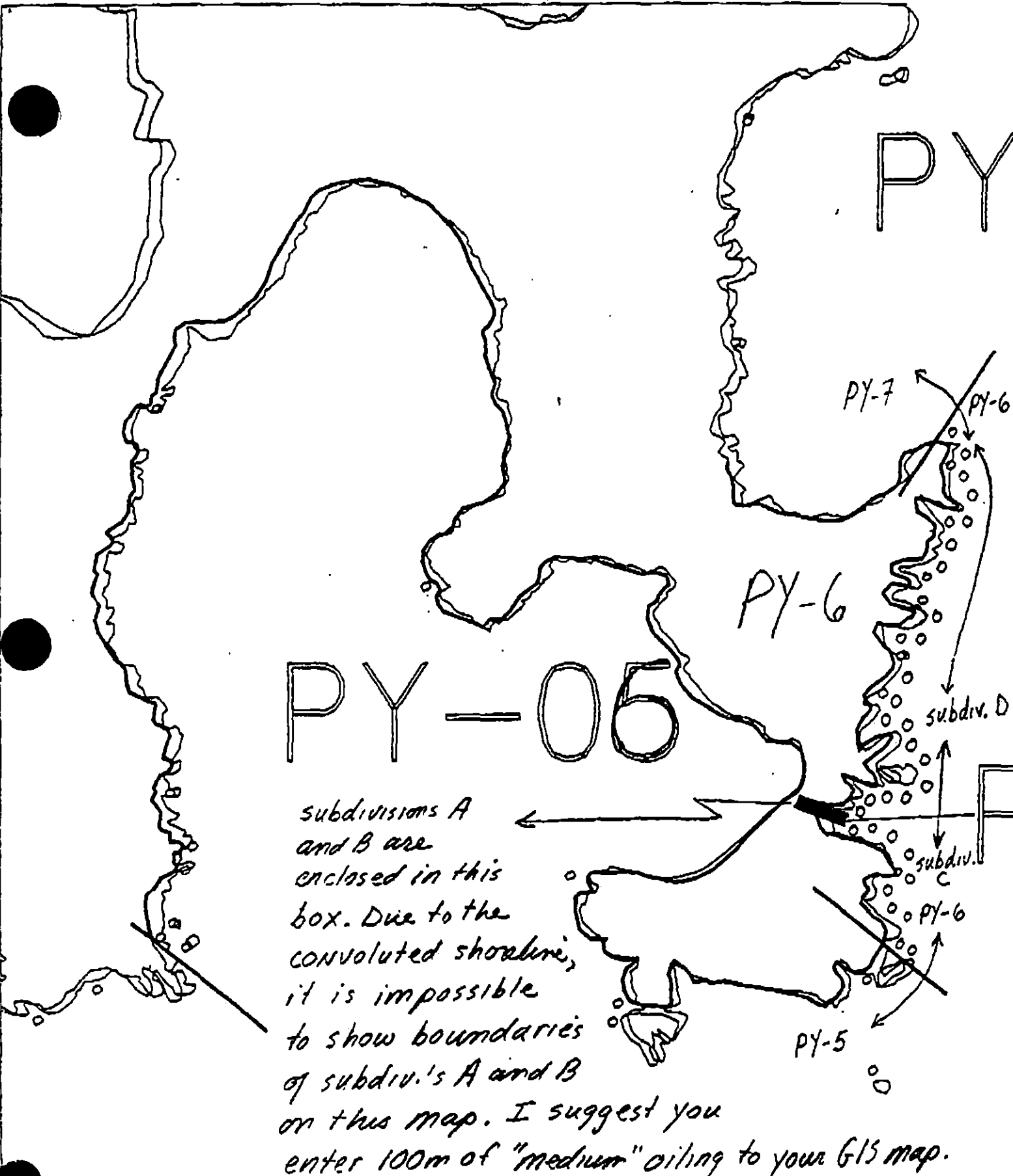
PY-6

ADEC Segment Length: 15052m

Map Key: KEN-1010

Name: Mann

Date: 4/1/90



A hand-drawn map of a coastal area, possibly a bay or inlet. The map shows a large central area labeled 'PY-05'. To the right, there is a narrow strip of land with several small circles representing oiling points. This strip is labeled 'PY-6' in two locations. Further right, there is a small area labeled 'PY-7' and another labeled 'PY-5'. A box is drawn around a portion of the narrow strip, with an arrow pointing to it from the text 'subdivisions A and B are enclosed in this box'. Another arrow points from the text 'Due to the convoluted shoreline, it is impossible to show boundaries of subdiv.'s A and B on this map. I suggest you enter 100m of "medium" oiling to your GIS map.' to the same area. The map also shows a coastline with various inlets and points. There are some handwritten notes and arrows indicating specific areas of interest.

PY-05

subdivisions A
and B are
enclosed in this
box. Due to the
convoluted shoreline,
it is impossible
to show boundaries
of subdiv.'s A and B
on this map. I suggest you
enter 100m of "medium" oiling to your GIS map.

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

PY-6

ADEC Segment Length: 15052m

Map Key: KEN-1010

Name: NarrDate: 4/1/90

SHORELINE EVALUATION

SEGMENT ST/ PY-06 SUBDIVISION A (1 OF 4) DATE 4/1/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Bald eagle nest (5T) - 3/1 to 6/1; Seabird colony (5R) - 5/1 to 9/1; National Wildlife Refuge (400). Restrict air traffic to essential minimum. Approach and takeoff from and to seaward only. Contact ADF&G and USFWS prior to treatment.

SUBDIVISION ECOLOGICAL CONSTRAINTS: Avoid unnecessary 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.

ARCHAEOLOGICAL CONSTRAINTS: An Exxon archaeological monitor is required on-site during shoreline treatment.

covered
rk/the
trial re-
by.

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

OILING CATEGORIZATION:

Wide 0 m: Medium 47 m: Narrow 0 m: V.Light 0 m: No Oil 0 m
Subsurface Oil Observed: Yes X No Maximum Depth 15 cm

RECOMMENDATIONS:

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

COMMENTS: Manual removal of pooled oil, oily trash and debris, bio-remediate. Should be done before 5/1, weather and safe access permitting. No air traffic or work crew access from 5/1 to 9/1.

TAG COMMENTS: DUE TO LAND MANAGER COMMENTS (USFWS) ON
BIOREMEDIATION, INIPOL MAY NOT BE APPROVED BY THE
LAND MANAGER. SHOULD THAT BE THE CASE WE RECOMMEND
THE USE OF 'CUSTOMBLEW' FOR THE BIOREMEDIATION
APPLICATION.

TAG APPROVAL DATE: 4/13/90.

ADEC

EXXON

NOAA

USCG

JOHN BAUER

ANDY BELL

Burl Wierhoff

G.A. REITER

J. Holden

Burl Wierhoff

Burl Wierhoff

G.A. REITER

FOSC:

DATE: 4-20-90

Do not bioremediate!

OG MA
 SEGMENT STI PY6
 SUBDIVISION A

DATE APRIL 1 1990

CHECKLIST

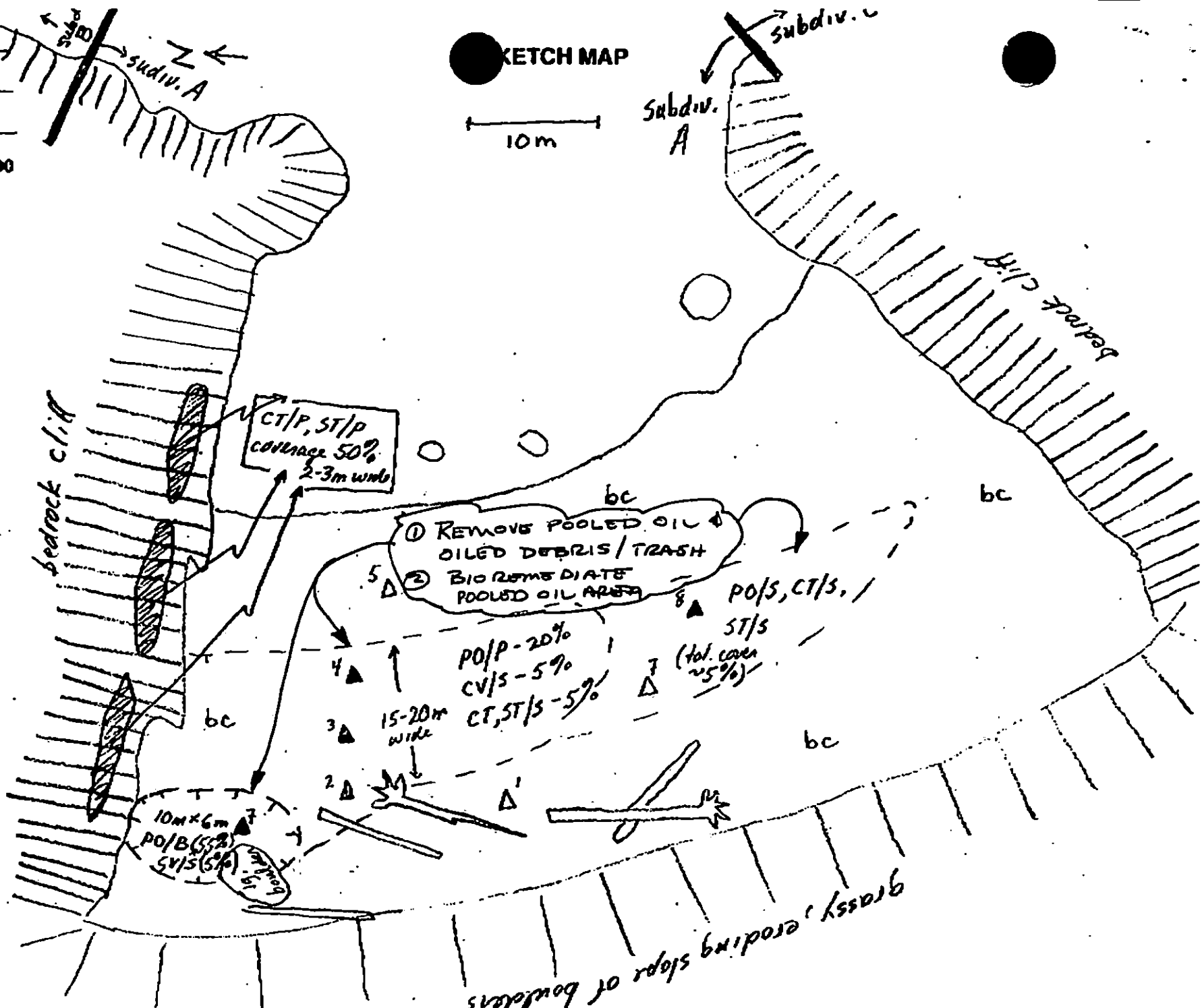
- ☒ N Arrow
- ☒ Approx. Scale
- ☒ Seg/Sub Body
- ☒ Oil Dist
- ☒ Width
- ☒ Length
- ☒ % Cover
- ☒ Substrate Character
- ☒ Est. HML/LWL
- ☒ SSI
- ☒ Profile Location(s)
- ☒ Profile(s)
- ☒ PH Location(s)
- ☒ Photo Location(s)

LEGEND

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

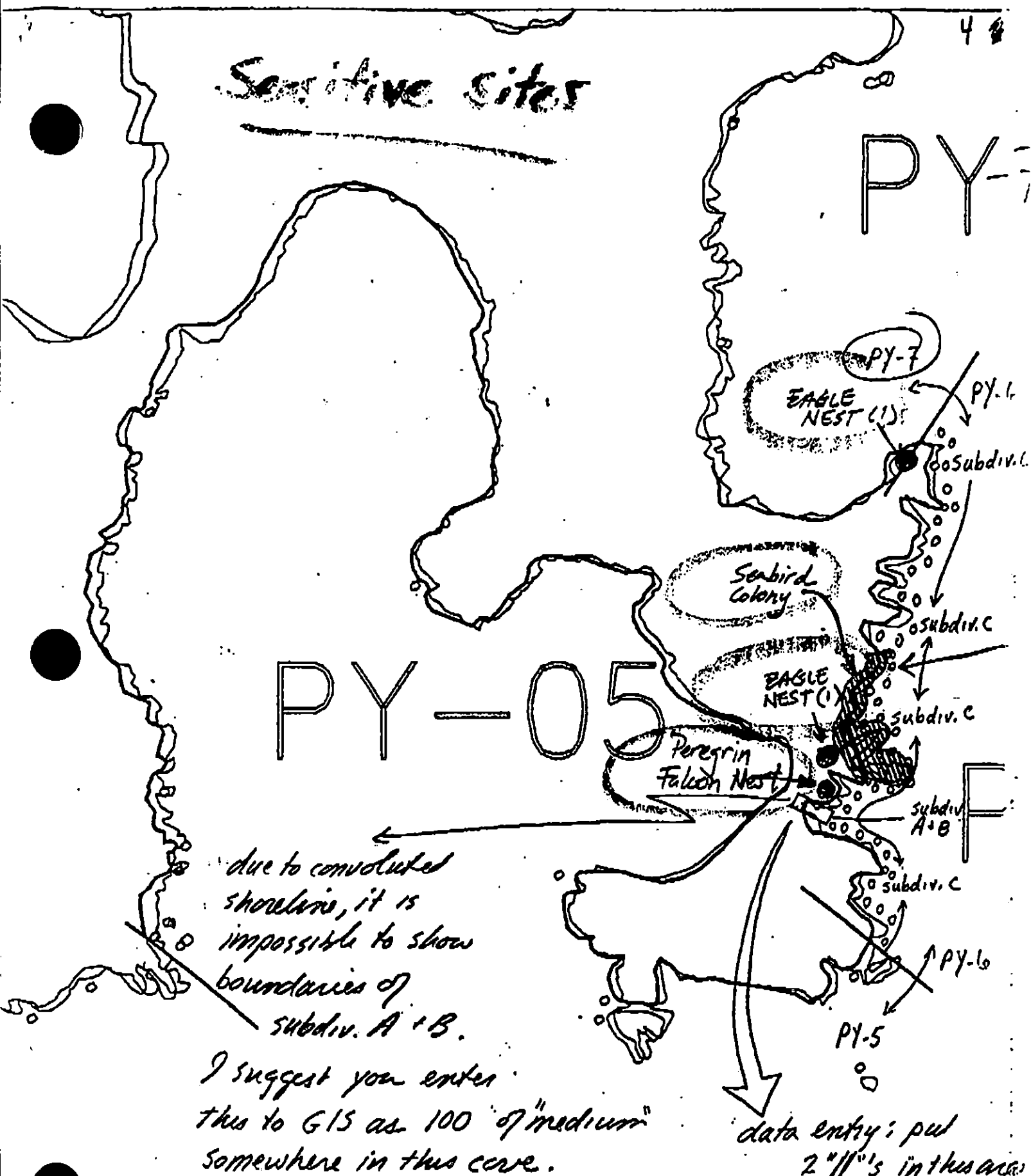
SKETCH MAP

10m



Oil Character Length (m): AP 0 PO 40 CV 40 CT 95 ST 95 MS 0 PT 0 TB 0 FL 0 NO 30

REVISION: 832400



XX Wide
 /// Medium
 --- Narrow
 TTTT Very light

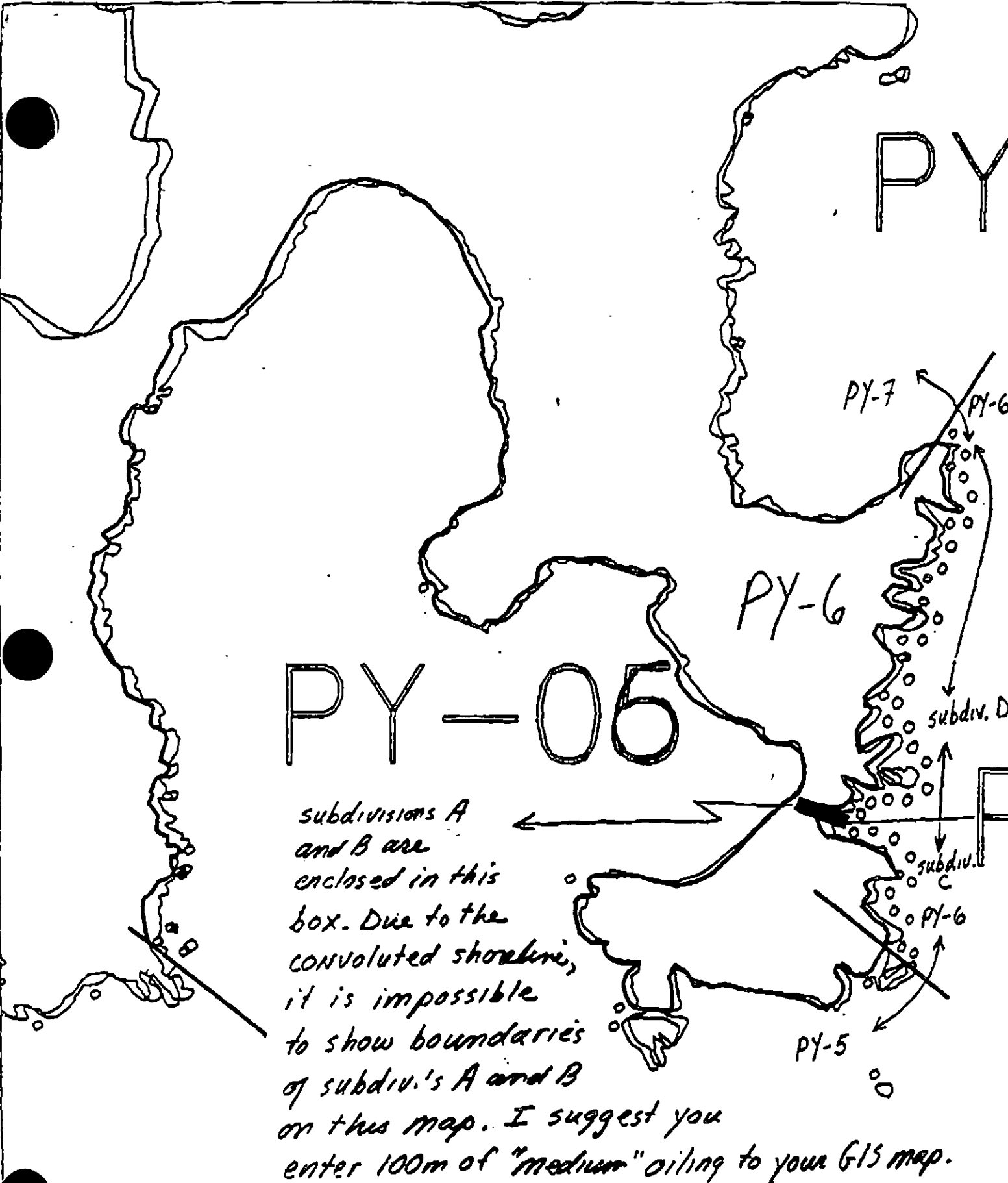
PY-6

ADEC Segment Length: 15052m

Map Key: KEN-1010

Name: Mann

Date: _____



PY-05

subdivisions A
and B are
enclosed in this
box. Due to the
convoluted shoreline,
it is impossible
to show boundaries
of subdiv.'s A and B
on this map. I suggest you
enter 100m of "medium" oiling to your GIS map.

XXXX Wide

//// Medium

--- Narrow

TTTTT Very Light

PY-6

ADEC Segment Length: 15052m

Map Key: KEN-1010

Name: MannDate: 4/1/90

SHORELINE EVALUATION

SEGMENT ST/ PY-06 SUBDIVISION B (2 OF 4) DATE 4/1/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Bald eagle nest (5T) - 3/1 to 6/1; Seabird colony (5R) - 5/1 to 9/1; National Wildlife Refuge (400). Restrict air traffic to essential minimum. Approach and takeoff from and to seaward only. Contact ADF&G and USFWS prior to treatment.

SUBDIVISION ECOLOGICAL CONSTRAINTS: Avoid unnecessary 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. Hoffman DATE: April 14, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 42 m: Narrow 0 m: V.Light 0 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: 4/12/90

ADEC JOHN BAUER

EXXON ANDY GR

NOAA Bull Wessett

USCG G.A. FEETER

FOSC:

DATE: 4-20-90

44

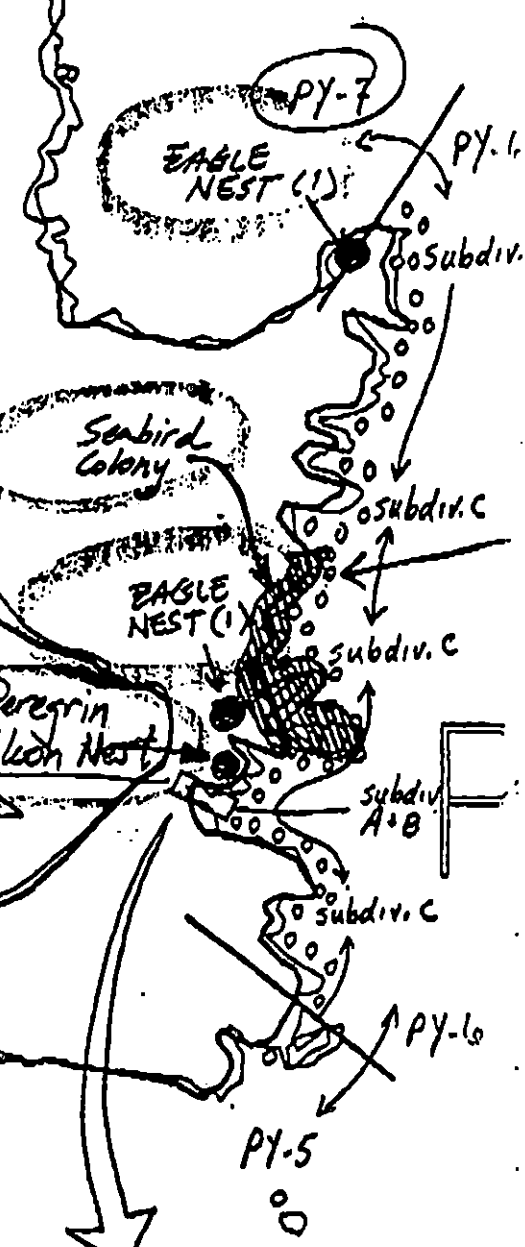
Sensitive Sites

PY-

PY-05

due to convoluted shoreline, it is impossible to show boundaries of subdiv. A + B.

I suggest you enter this to GIS as 100 of "medium" somewhere in this cove.



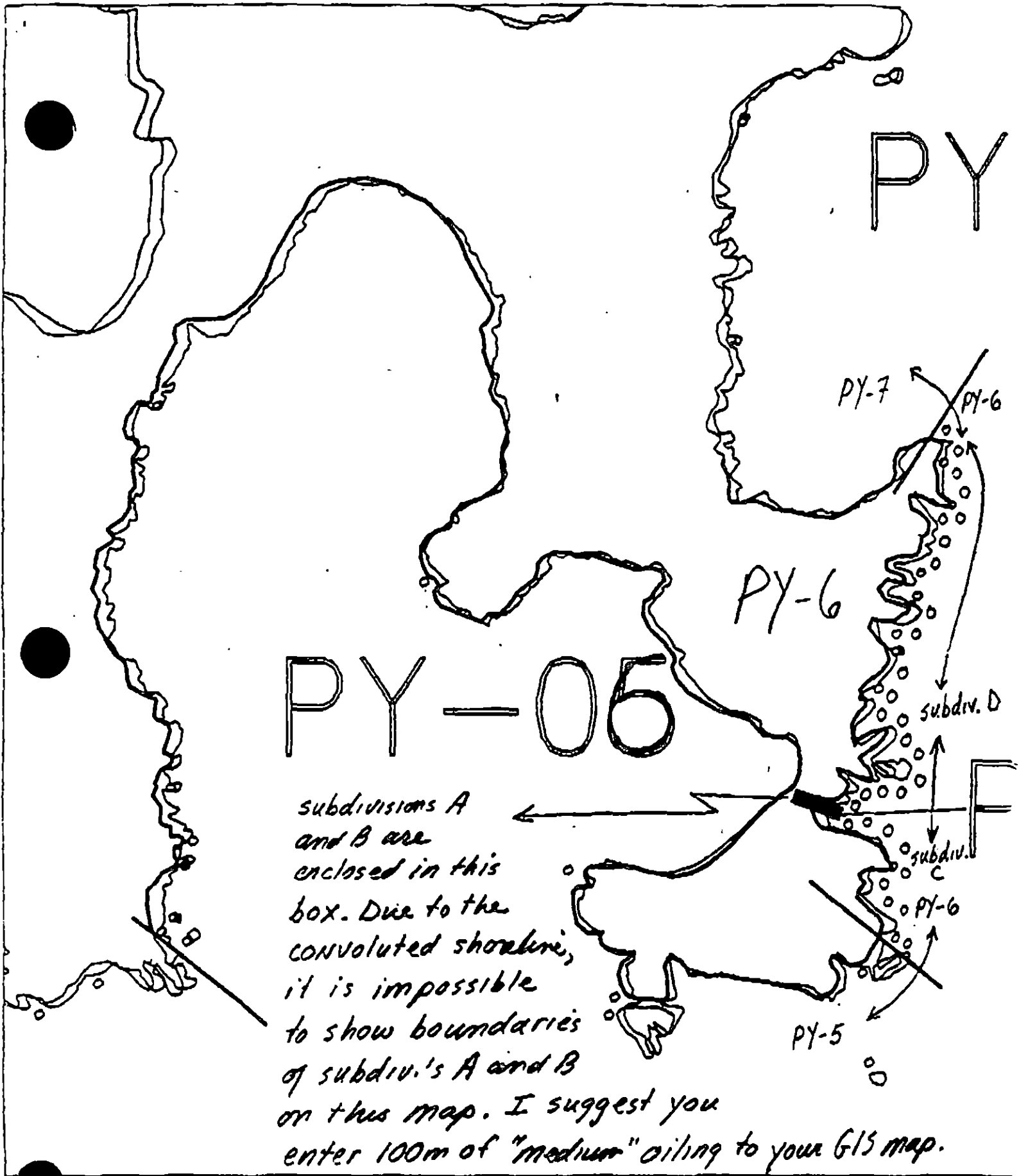
data entry: put 2 "11"s in this area somewhere

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

PY-6

ADEC Segment Length: 15052m

Map Key: KEN-1010
 Name: Mann
 Date: _____



subdivisions A and B are enclosed in this box. Due to the convoluted shoreline, it is impossible to show boundaries of subdiv.'s A and B on this map. I suggest you enter 100m of "medium" oiling to your GIS map.

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

PY-6

AOEC Segment Length: 15052m

Map Key: KEN-1010

Name: Marr

Date: 4/1/90

SHORELINE EVALUATION

SEGMENT ST/ PY-06 SUBDIVISION C (3 OF 4) DATE 4/1/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Bald eagle nest (5T) - 3/1 to 6/1; Seabird colony (5R) - 5/1 to 9/1; National Wildlife Refuge (400). Restrict air traffic to essential minimum. Approach and takeoff from and to seaward only. Contact ADF&G and USFWS prior to treatment.

SUBDIVISION ECOLOGICAL CONSTRAINTS: Avoid unnecessary 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. Holmes DATE: April 14, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 785 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: 4/13/90

ADEC John Bauer John Bauer

EXXON Andy Tetz Andy Tetz

NOAA Burt Wergott Burt Wergott

USCG G.A. KETTER G.A. Ketter

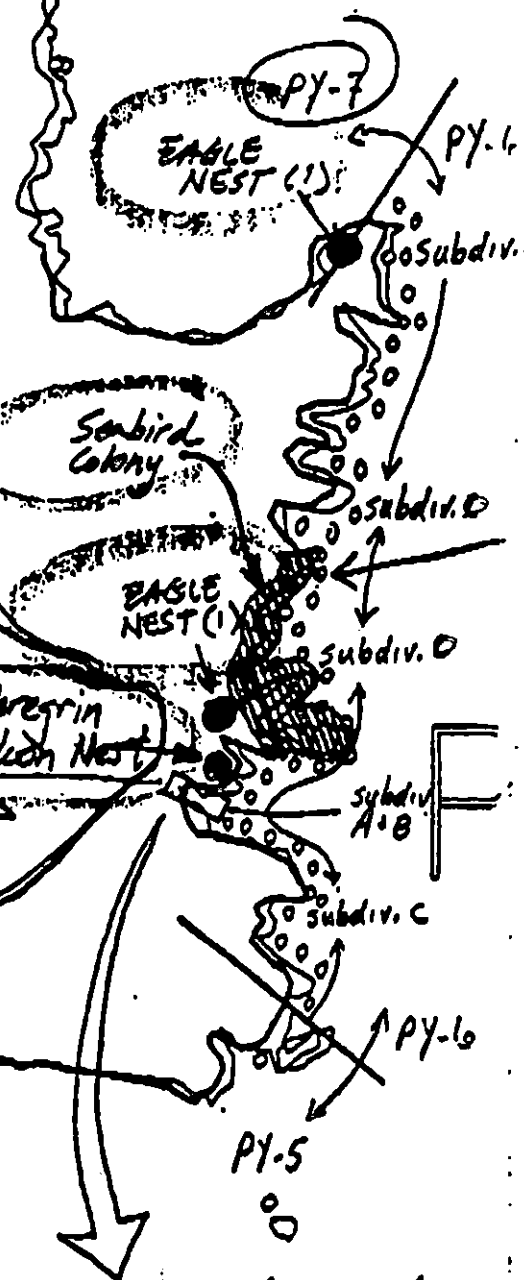
FOSC: DATE: 4-20-90

44

Sensitive Sites

PY-

PY-05



due to convoluted shoreline, it is impossible to show boundaries of subdiv. A + B.

I suggest you enter this to GIS as 100 of "medium" somewhere in this cove.

data entry: put 2 "11"s in there somewhere

XX Wide
 /// Medium
 --- Narrow
 TTTT Very light

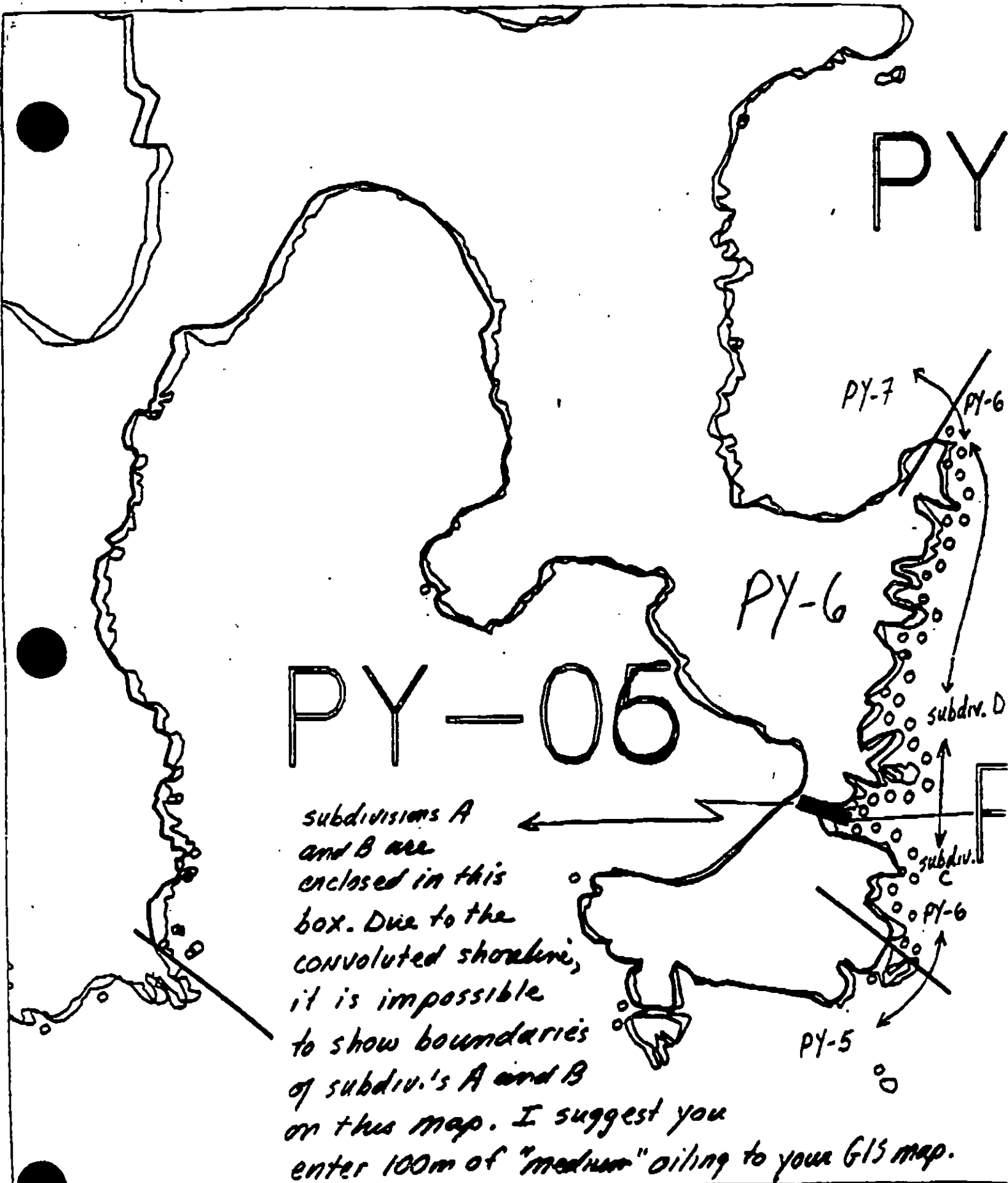
PY-6

ADEC Segment Length: 15,952m

Map Key: KEN-1010

Name: Mann

Date: _____



XXXX Wide
 /// Medium
 --- Narrow

PY-6

ADEC Segment Length: 15052m

Map Key: KEN-1010

Name: Manr

4/1/90

SHORELINE EVALUATION

SEGMENT ST/ PY-06 SUBDIVISION D (4 OF 4) DATE 4/5/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Bald eagle nest (5T) - 3/1 to 6/1; Seabird colony (5R) - 5/1 to 9/1; National Wildlife Refuge (400). Restrict air traffic to essential minimum. Approach and takeoff from and to seaward only. Contact ADF&G and USFWS prior to treatment.

SUBDIVISION ECOLOGICAL CONSTRAINTS: Avoid unnecessary disturbance/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 Hoffman DATE: April 14, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 2611 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: 4/13/90.
ADEC JOHN BAUER
EXXON ANDY TOL
NOAA Burt Wescott
USCG G.A. Reiter

FOSC: DATE: 4-20-90

SENSITIVE SITES

PY

PY-05

subdivisions A and B are enclosed in this box. Due to the convoluted shoreline, it is impossible to show boundaries of subdiv.'s A and B on this map. I suggest you enter 100m of "medium" oiling to your GIS map.

SEABIRD COLONY

PY-7
EAGLE NEST (1)

PY-6
EAGLE NEST (1)

Peregrin Falcon Nest

subdiv. D

subdiv. C

PY-5

PY-6

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

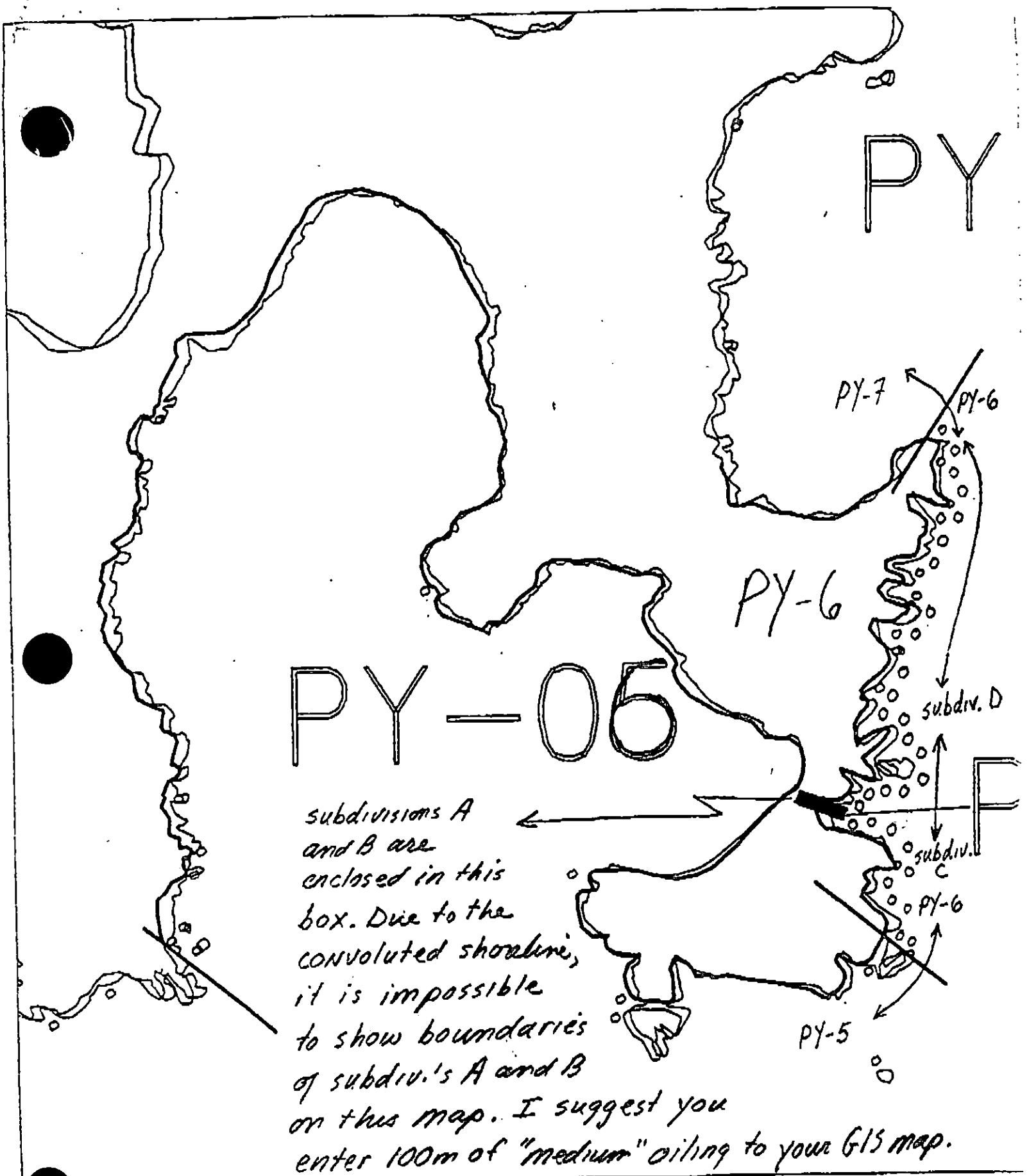
PY-6

ADEC Segment Length: 15052m

Map Key: KEN-1010

Name: Mann

4/1/90



A hand-drawn map of a coastal area, possibly a bay or inlet. The map shows a large central area labeled 'PY-05'. To the right, there is a narrow strip of land with several small circles representing oiling points. This strip is divided into sections labeled 'PY-6', 'PY-7', 'PY-5', and 'PY-6'. A box is drawn around a portion of this strip, with an arrow pointing to it from the text below. The box is labeled 'subdiv. D', 'subdiv. C', and 'PY-6'. A line labeled 'F' runs vertically through the strip. The coastline is irregular and convoluted. There are two large black circles on the left side of the map, likely punch holes.

PY-05

subdivisions A
and B are
enclosed in this
box. Due to the
convoluted shoreline,
it is impossible
to show boundaries
of subdiv.'s A and B
on this map. I suggest you
enter 100m of "medium" oiling to your GIS map.

XXX Wide
/// Medium
--- Narrow

ADEC Segment Length: 15052m

PY-6

Map Key: KEN-1010

Name: Manr

Date: 4/1/90

1991 MAYSAP EVALUATION

SEGMENT: PY 006 SUB: A REGION: KEN SURVEY DATE: 5/13/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) RESTRICTED 5/15 - 9/1

Ecological/Constraints (see page two for details) Seabird colony

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

Seabird Colony: Access restricted. USF&WS authorization required after 5/15. Maintain 1000' vertical and 1/2 mile horizontal buffer.

TEAM NO. 4 SEGMENT P4006 SUBDIVISION A DATE MAY 13/91

ADEC

NAME CLARA S. CROSBY SIGNATURE Clara S. Crosby

- ☐ NTR ☒ TREATMENT RECOMMENDED. Although this Subsegment has a SUBSTANTIAL AMT OF MS/OIL REMAINING - A CONSISTENT BAND UNDER LG B & > 10cm in depth - I AM AT A LOSS TO RECOMMEND TREATMENT FOR THIS SITE. VESSEL ACCESS FROM THE EAST WOULD HAVE TO BE UNDER IDEAL CONDITIONS & CUTTING OVERLAND FROM THE WEST WOULD RESULT IN IMPACT TO THE UPLANDS - MANUAL REMOVAL IF PERFORMED WOULD BE SUPERFICIAL.

EXXON

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

- ☒ NTR The MS remaining under the Volkswagen size boulders is hard to estimate due to the size of the boulders. There is a lot of debris with some of it being oiled. A hand trowel would be very ineffective since the boulders can not be moved.

LANDMANAGER

NAME JOHN P. HARDISTER OF USFWS SIGNATURE John P. Hardister

- ☒ NTR The boulders that cover this segment would prevent a significant amount of oil from being removed. Thus a cleanup effort would be ineffective and is, therefore, not recommended.

USCG/NOAA

NAME CWO2 J. MC MAHON SIGNATURE J. McMahon

- ☒ NTR Cleanup would be impracticable due to the light oiling of the segment.

NOAA/ DONALD A. MCDONALD

Donald A. McDonald

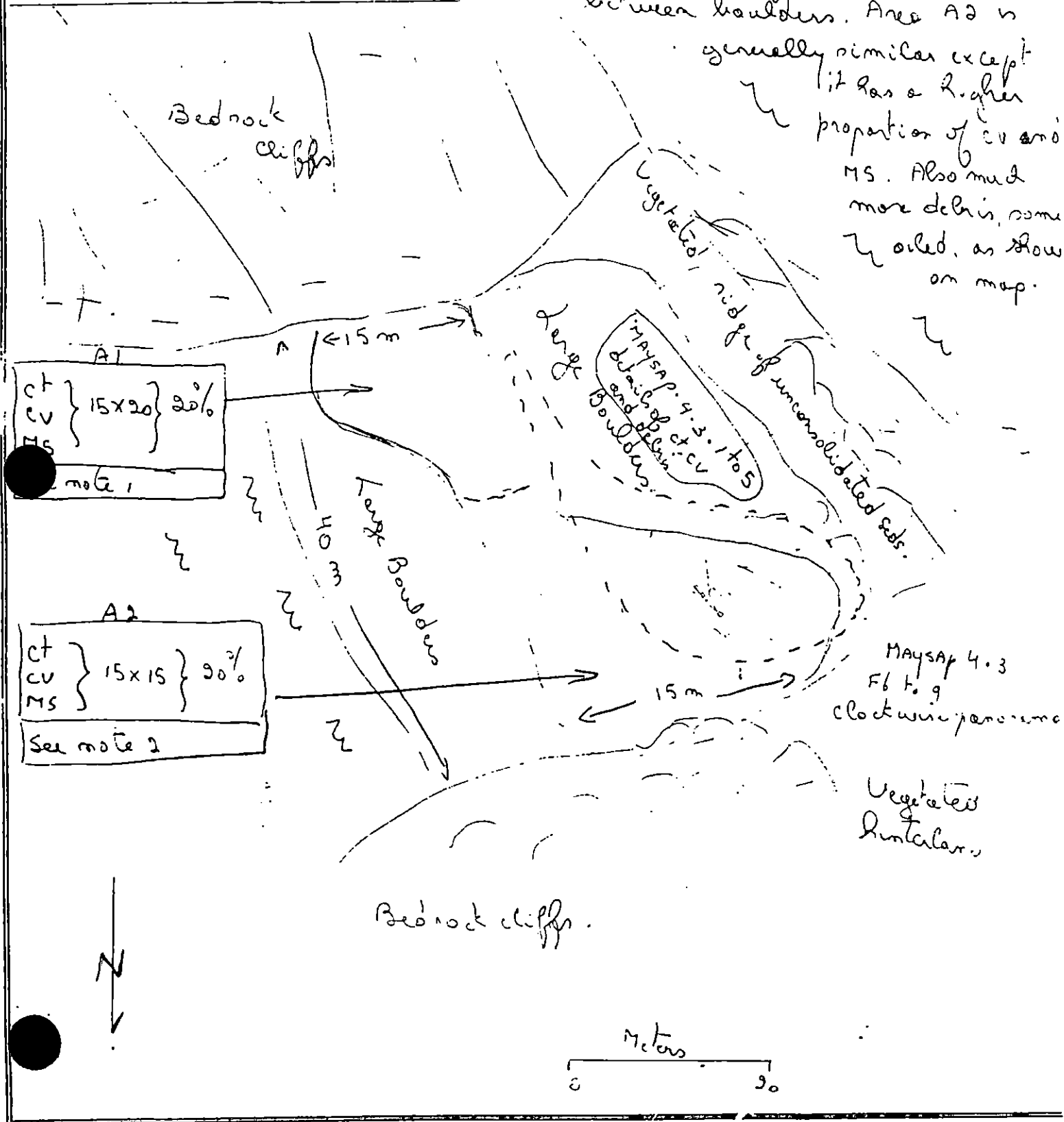
Majority of oil was down in crevices and under large boulders, exact extent of oiling was difficult to determine.

PAGE 2 OF 11

Very difficult area to work also very difficult to estimate accurately extent and type of soil because of large size of boulders present. Lot of debris. some solid ones.

Orig sketch Map	Legend
Py. 006. A JM Samples May 13, 1991 1710 - 1800h	(---) area of concentration of debris driftwood

Pocket cove of large boulders bounded by steep and high bedrock cliffs and a backshore of grassy till.
oiling area A1 As it (very tany and partly removed on lid surfaces) cu on more sheltered lid surfaces and ms between boulders. Area A2 is generally similar except it has a higher proportion of cu and ms. Also much more debris, some oiled, as shown on map.



MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 13, 1991	1730 - 1815
SEGMENT #	PY006	TIDAL HEIGHT (Range)	+4.8 → +3.2	
SUBDIVISION	A	BIOLOGIST	JIM BARRY	
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm	

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

This beach is exposed to very high waves. The boulder and cobble beach is bounded by bedrock cliffs on either side and deep water offshore. Oiling is largely or entirely restricted to the high intertidal zone and supratidal zone. Because of the very high exposure these zones are expanded above sea level to higher levels than on less exposed beaches.

Location A1, A2

This entire beach has some oil in the upper zone. At this level there are few live organisms. Occasional spots of black lichen are was the only organisms observed. Towards the middle intertidal zone, boulders and cobble are generally nearly totally covered by thin filamentous or fast growing bladelike green (Urospora, Enteromorpha) and red (Porphyra) algae. These species cover the surfaces of most boulders which clearly are scoured by cobble and debris during heavy wave episodes. From this level, there is a general zonation of algae and invertebrates into the subtidal. This general pattern is characterized below:

WILDLIFE OBSERVATIONS - Completed on all subdivisions

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

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

Shoreline subdivision map showing important biological features attached.

PY006-A Biology Report, continued

Intertidal zonation at PY006-A

Biota - Tidal Level Supratidal High Middle Low Subtidal

Oil	---+*****+---					
Black Lichen	***++-- - -					
Logs/Debris	-- -++*+*****+---					
Thin Green Algae				---+*****+ -+ -+*+		
Thin Red Algae				-++*****+---+ -		
Limpets				-- + +++ ---+-		
Littorines				- - + + +-+ - - -		
Barnacles				-++-*****+*+---+--- - +		
Mussels				- - -+** -+ *-+* --		
Fucus				-+-*+-----		
Kelps/Brown Algae				-- - ++*****		

Owing to the harsh physical conditions at this location, most biota are killed before they reach large size or old age. Thus, the biota are generally small, comprising the recent recruits to the site. Small individuals of many species were present, including, mussels, barnacles, algae, littorine snails, limpets. The high tide prevented observation of the extreme low zones.

Cleanup operations, if performed will have no negative impacts to the biota of the subdivision.

List of Common Species from PY006-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., Prasiola meridionalis, Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Ralfsi sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Endocladia muricata, Halosaccion glandiforme, 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. Anemones - Anthopleura artemesia, A. xanthogrammica, Metridium senile, Urticina crassicornis, Stomphia sp.
2. Flatworms - Platyhelminthes - Polyclads
8. Polychaete Worms
Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
Spiorobidae - Spiorobis sp.
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles - Balanus glandula, Semibalanus cariosus
 - c. Crabs - Hermit Crabs (Paguridae)
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
11. Mollusca
 - a. Chitons - Katharina tunicata.

- b. Snails - Gastropods
 - Littorina sp., Nucella lamellosa,
- c. Limpets - Lottia digitalis, L. persona, Tectura persona, T. scutum, Siphonaria thersites
- e. Mussels and Clams - Mytilus edulis
- 12. Echinoderms
 - a. Brittle Stars - Ophiolus sp. ?
 - b. Sea stars - 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.

Birds Eagles (1 immature, carrying kittiwake), Glaucous-winged gull (5), Black legged Kittiwake (5).

BIO SKETCH MAP

P4006-A

13 MAY 1991

J. BARRY

BEDROCK
CLIFFS

OCEAN

VEGETATED
ROCKLINE

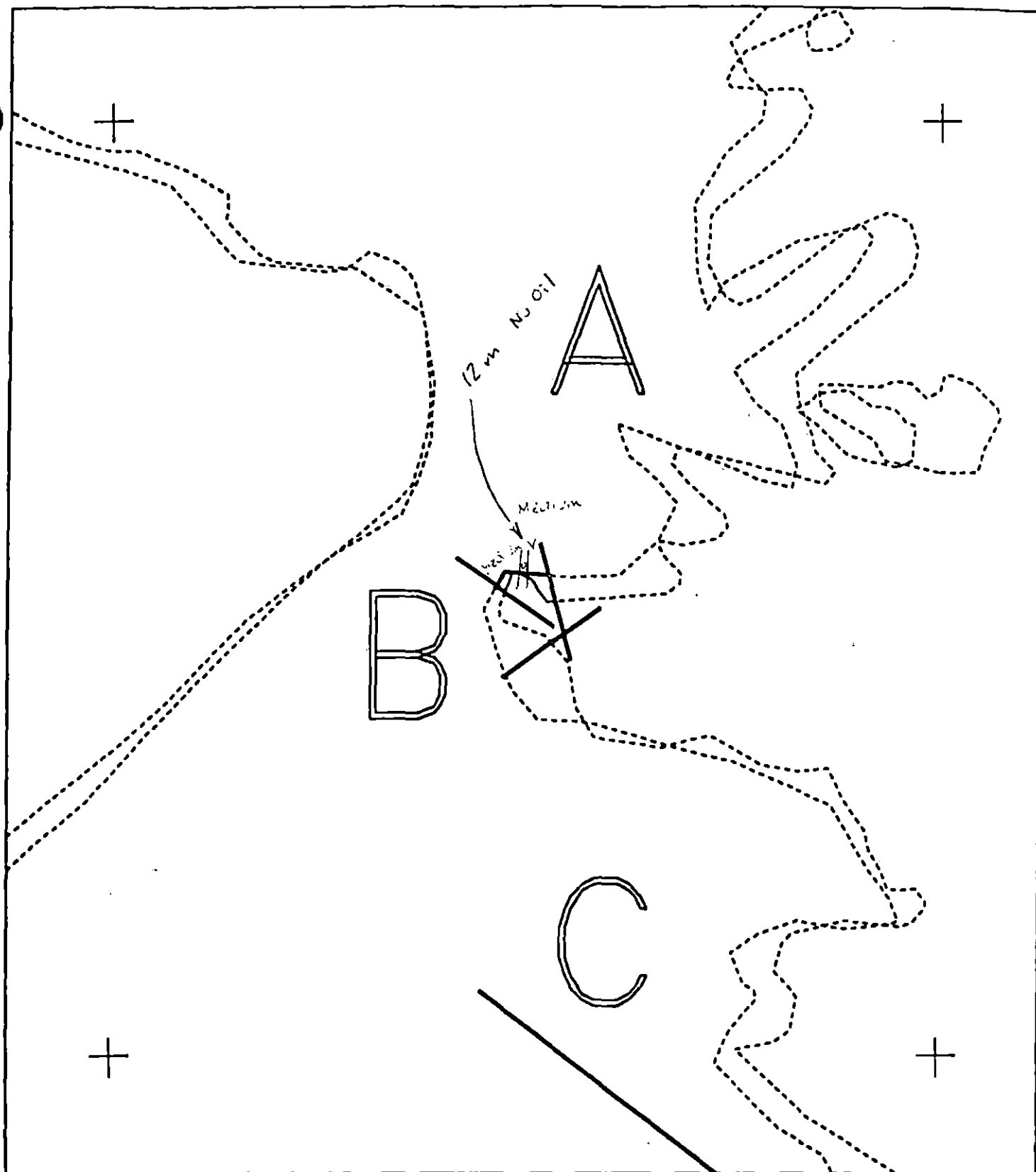
OCEAN

LARGE
SUBTIDAL
BROWN
ALGAE

PORPHYRYTES

THICK GREEN
MUSSELS
RED
ALGAE

BEDROCK CLIFFS



XXXX
 ////

 TTTT
 0000

Wide
 Medium
 Narrow
 Very Light
 No Oil

PY006 A

ADEC Subsegment Length: 47m

METERS

0 100 200
 AK State Plane Zone 4
 apr006a



Subdivision Field Map

Map Key: KENPY006A

Name:

Date: 13 June 1990

Data Entered:

1991 MAYBAP EVALUATION

SEGMENT: PY 006 SUB: C REGION: KEN SURVEY DATE: 5/13/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) RESTRICTED 5/15 - 9/1

Ecological/Constraints (see page two for details) Seabird colony

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: Subdivision surveyed by skiff. No oil observed.

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____

FOSC APPROVAL DATE: _____

ADEC _____

FOSC _____

EXXON _____

USCG _____

NOAA _____

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Seabird Colony: Access restricted. USF&WS authorization required after 5/15. Maintain 1000' vertical and 1/2 mile horizontal buffer.

ADEC
NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☒ NTR

Past oiling data indicated no oil within subdivision - Access is very limited & a safety hazard.

EXXON
NAME George P. Stiles SIGNATURE George P. Stiles 5/20/91

☒ NTR

Past survey's found very little oiling. I would not recommend treatment due to the safety hazard of getting on and off the beach.

LANDMANAGER
NAME John Hardister OF USFWS SIGNATURE John P. Hardister

☒ NTR

consult with ADEC representative.

USCG/NOAA
NAME Carl J. McMahon SIGNATURE Carl McMahon

☒ NTR

same as P4 006 B

NOAA/Donna A. McDonald Donna A. McDonald

MAYSAP SHORELINE OILING SUMMARY

PAGE 2 OF 7

TEAM NO. 4

OG Samples

BIO BERRY

SEGMENT Py.006

ADEC Crosby

LANDMANAGER Hardister for USFWS

SUBDIVISION C

EXXON Stiles

USCG/NOAA McMahon / McDonald

DATE May 13 / 91

TIME 11 : 50 to 12 : 10

TIDE LEVEL ⁺2.8 ⁺ft. to 3.7 ft.

ENERGY LEVEL: ☒ H ☐ M ☐

SURVEYED FROM: ☐ FOOT ☒ BOAT ☐ HELO

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

TOTAL LENGTH SHORELINE SURVEYED: 785 m

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

EST. OIL CATEGORY LENGTH: W m M m N m VL m NO 785 m US m

[illegible]

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

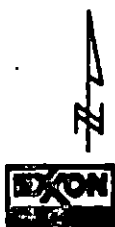
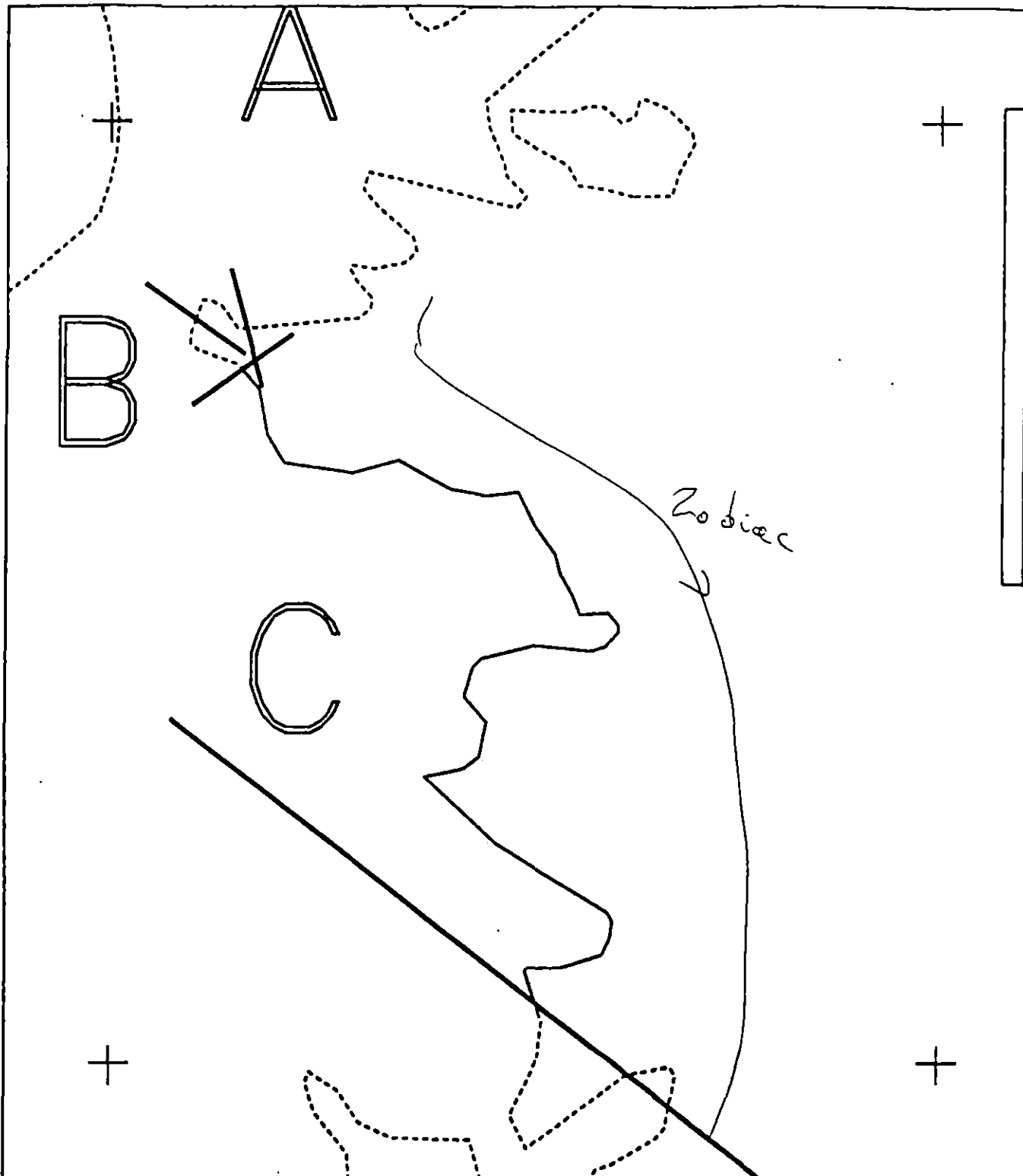
SLOPE: V = VERTICAL: H = HIGH ANGLE: M = MEDIUM ANGLE: L = LOW ANGLE PHOTO ROLL # MAYSAP- _____ - _____ FRAMES

[illegible]

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

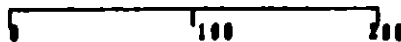
OG COMMENTS: Unable to land because swell waves are too high. Observed from Zodiac. No owl seen from the boat but we were unable to get close enough for useful observation.

REVIEWED: F.W. 5/25/91



PY006 C

METERS



AK State Plane Zone 4
NAD83

Subdivision Field Map

Map Key: KENPY006C

Name: for Sample

Date: May 13/91

REVIEWED: F.W. 5/25/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 15, 1991 1150 - 1210
SEGMENT #	PY006	TIDAL HEIGHT (Range)	+2.6 => +3.7
SUBDIVISION	C	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

General Features of PY006-C

This subdivision report is identical to that for PY006-D. Both subdivisions were surveyed by skiff from 100 or more meters distance. The shore was inaccessible due to the high surf. The shores are mostly moderately to highly exposed sloping bedrock. Little oil was reported from the subdivision. Observable areas on the subdivision appear to have floral and faunal assemblages typical of exposed coasts. Black lichen is visible in the supratidal zone, with green and red filamentous algae abundant in the upper to middle zone, moderate to dense cover of Fucus below, and patchy, but generally continuous cover of Mytilus along sections of the subdivision. Brown algae cover the lowest zones and subtidal. Cleanup will probably not be required, but would probably not impact the biota unless hot water cleaning was performed.

A seabird colony is located in PY006, and many marine birds were observed along the segment, including marbled murrelets, red faced cormorants, pelagic cormorants, common murres, tufted puffins, horned puffins, red necked phalaropes, glaucous-winged gulls, black-legged kittiwakes, fork tailed petrels, harlequin ducks, common mergansers, rhinoceros auklets, pigeon guillemots, Bonaparte's gull, aleutian tern, arctic tern, and others? Two eagle nests were sighted at the locations marked on the ecology map near the northern and southern ends of the segment. We were unable to identify whether the nests were active, but did observe one adult eagle near each nest.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	2	
Seabirds	many		
Waterfowl			
Gulls/Kittiwakes			
Shorebirds			
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.

List of Species Expected along PY006-C

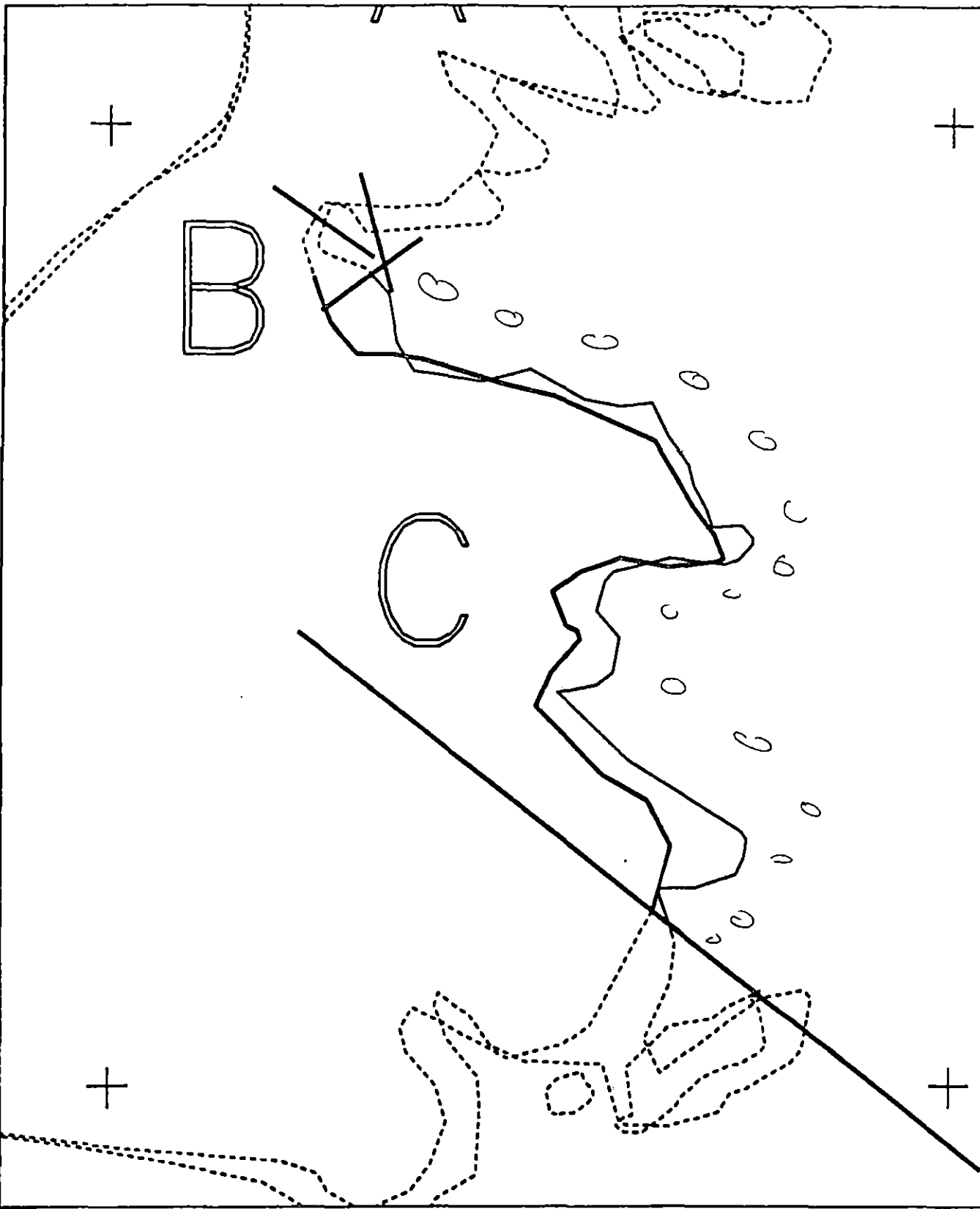
A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Acrosiphonia sp., *Cladophora* sp., *Enteromorpha* sp., *Prasiola meridionalis*,
Ulva sp., *Urospora* sp.
3. Brown Algae - Phaeophyta
Alaria marginata, *Ectocarpus* spp., *Fucus distichus*, *Hedophyllum sessile*,
Hildenbrandia sp., *Laminaria groenlandica*, *Nereocystis leutkeana*, *Ralfsia* sp.,
Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Anfelia plicata, *Bossiella* sp., *Calliarthron* sp., *Corallina* sp.,
Cryptosiphonia woodii, *Cumagloia andersonii*, *Endocladia muricata*, *Halosaccion*
glandiforme, *Iridaea* sp., *Lithothamnion* sp., *Membranoptera dimorpha*, *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*, *Ophlitaspongia pennata*, *Tethys* sp.
2. Anemones - *Anthopleura artemesia*, *A. elegantissima*, *A. xanthogrammica*,
Epiactis ritteri, *E. prolifera*?, *Metridium senile*, *Urticina*
crassicornis, *Epizoanthus scotinus*
3. Hydroids - Sertularidae - *Sertularella*?, *Abietinaria* sp.
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms
Emplectonema gracile, *Tubulanus polymorphus*
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.?, *Traskorchestia traskiana*
 - b. Barnacles - *Balanus glandula*, *Chthamalus dalli*, *Semibalanus cariosus*
 - c. Crabs
Acantholithodes hispidus, *Haplogaster* sp., Paguridae (hermit crabs),
Oregonia gracilis, *Pugettia* sp.,
 - d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimorsphaeroma*
oregonensis

11. Mollusca
 - a. Chitons - *Cryptochiton stelleri*, *Mopalia* sp., *M. mucosa*, *Katharina tunicata*, *Tonicella lineata*.
 - b. Snails - Gastropods
Amphissa columbiana, *Fusitriton oregonensis*, *Littorina scutulata*, *L. sitkana*, *L. keenae*, *Nucella lamellosa*, *N. lima*, *Tachyrhynchus* sp.
 - c. Limpets - *Acmaea mitra*, *Diadora aspera*, *Lottia digitalis*, *L. persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
 - d. Nudibranches - *Lamellidoris fusca*, *Onchidella* sp.
 - e. Bivalves - *Mytilus edulis*, *Pododesmus cepio*
 - 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
Cucumaria miniata, *C. vegae*, *Eupentacta* sp., *Leptosynapta* sp.
 - d. Urchins - *Strongylocentrotus droebachiensis*
13. Bryozoans - *Carbacea carbacea*, *Eucratea loricata*, *Membranipora* sp.,
Microporina borealis, *Phidolopora pacifica*, *Schizoporella* sp.
15. Fishes
 - Cottidae - *Artedius harringtoni*, *Oligocottus* sp. (bright green),
Rhanphocottus richardsonii
 - Liparidae - *Liparis callyodon*
 - Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*



XXXX	Wide	PY006 C	Subdivision Field Map
////	Medium	ADEC Subsegment Length: 785m	Map Key: KENPY006C
----	Narrow	METERS	Name: <u>Jim Sempis</u>
TTTT	Very Light	0 100 200	Date: <u>MAY 13/91</u>
0000	No Oil	AK State Plane Zone 4 NAD83	Date Entered:



REVIEWED: F.W. 5/25/91

1991 MAYSAP EVALUATION

SEGMENT: PY 006 SUB: B REGION: KEN SURVEY DATE: 5/13/91

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: 6/07/91

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 6 1991

FOSC APPROVAL DATE: 6/0/91

ADEC

FOSC

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

EXXON

USCG

NOAA

TEAM NO. 41 SEGMENT P4.006 SUBDIVISION B DATE MAY 13, 1991

ADEC

NAME Clara S. Crosby SIGNATURE Clara S. Crosby☒ NTR

Past oiling data indicated Pooled oil/s, cover/B, coat/B - Due to the exposure of this subdivision is the safety hazard it poses. I would not recommend treatment at this site. Survey crew could not gain access to shore.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/19/91☒ NTR

Concur with ADEC. The safety hazard of getting on and off the beach is not worth the risk.

NDMANAGER

NAME John Hardister OF USFWS SIGNATURE _____☐ NTR

see next page

USCG/NOAA

NAME CWO2 J. McMillanSIGNATURE J. McMillan☒ NTR

viewed from AVON as it became a safety concern to beach.

NAME Donna A. McMillanSIGNATURE Donna A. McMillan

TEAM NO. 41 SEGMENT P4.006 SUBDIVISION B DATE MAY 13 1991

ADEC

NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☒ NTR Past oiling data indicated Pooled oil/s, cover/B, coast/B - Due to the exposure of this subdivision is the safety hazard. it poses. I would not recommend treatment at this site. Survey crew could not gain access to shore.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/19/91

☒ NTR Concur with ADEC. The safety hazard of getting on and off the beach is not worth the risk.

NDMANAGER

NAME John Hardister OF USFWS SIGNATURE John P. Hardister

☒ NTR concur with ADEC and other team members.

USCG/NOAA

NAME CWO2 J. McMillan SIGNATURE J. McMillan

☒ NTR viewed from AVON as it became a safety concern to beach.

NAME Donald A. MacDonnellSIGNATURE Donald A. MacDonnell

PAGE 2 OF 7

SEGMENT py.006

SUBDIVISION B

DATE MAY / 13 / 91

ENERGY LEVEL: ☒ H ☐ M ☐ L

EST. OIL CATEGORY LENGTH: W m M m N m VL m NO 49 m US m

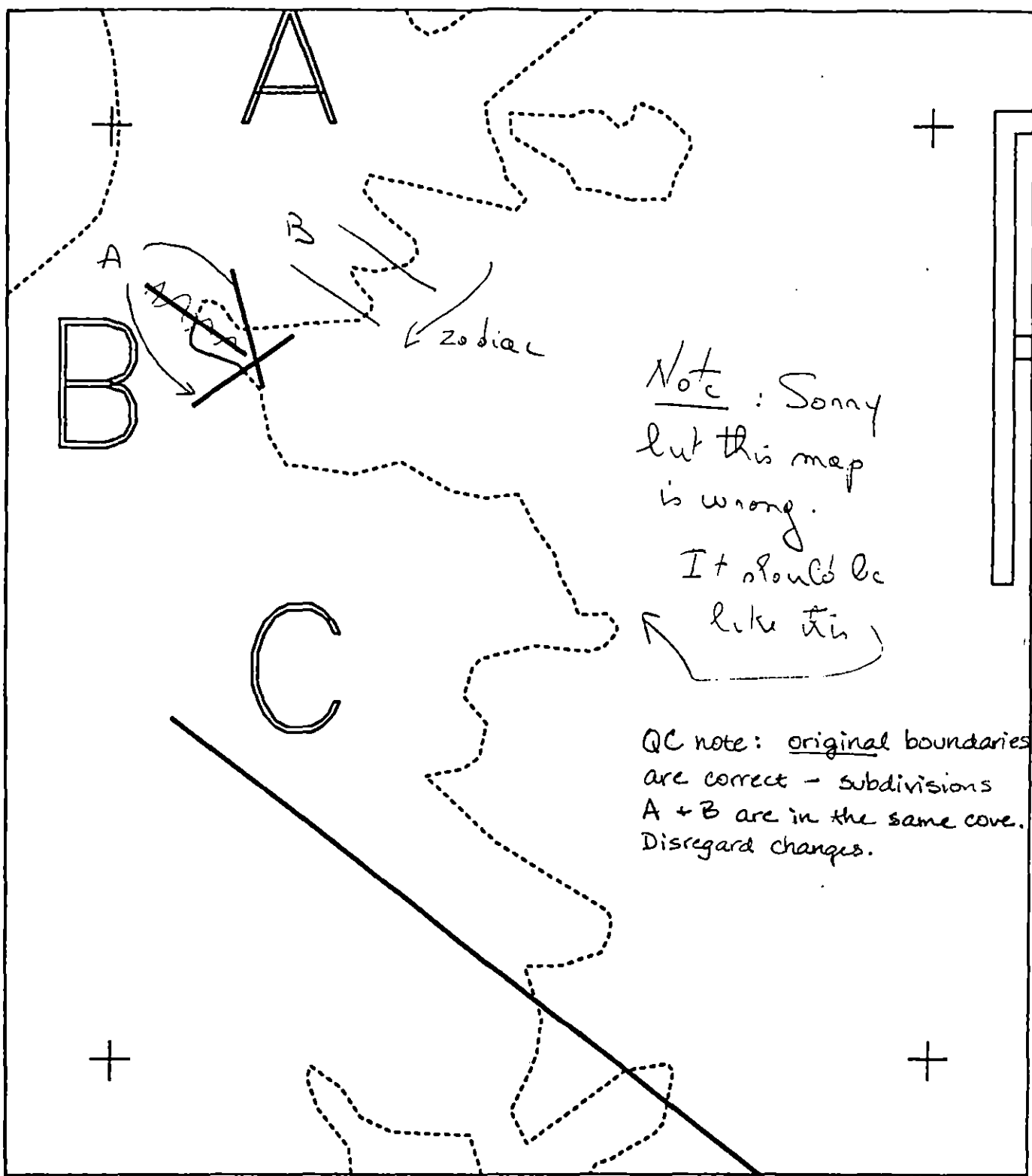
DISTRIBUTION: C = 91-100%; B = 51-90%; P = 11-50%; S = 1-10%; T = <1%

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: Note: observed from Zodiac, wave energy (small) too light to be able to land. 1/2 o.c. seem obviously good as surfer, but were unable to come close to shore.

RECEIVED: MC 5/31/91



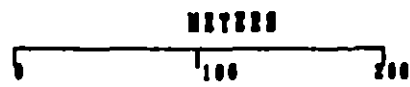
Note : Sorry
but this map
is wrong.

It should be
like this

QC note: original boundaries
are correct - subdivisions
A + B are in the same covr.
Disregard changes.



PY006 B



AK State Plane Zone 4
NAD 83

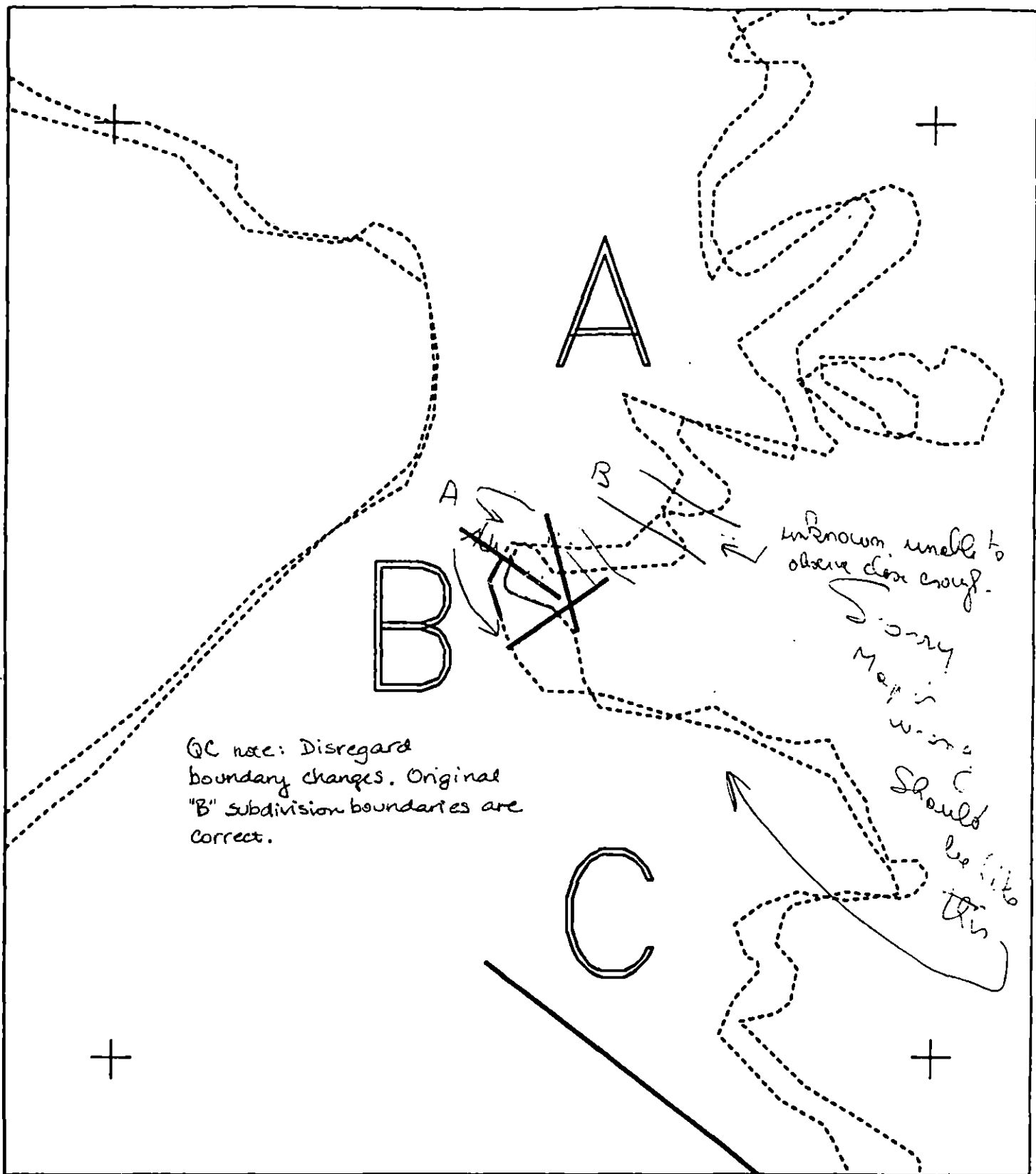
Subdivision Field Map

Map Key: XENPY006B

Name: for Sample

Date: MAY 13/91

Revised: 5/31/91 MC

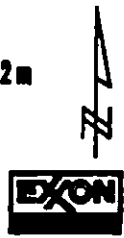


QC note: Disregard boundary changes. Original "B" subdivision boundaries are correct.

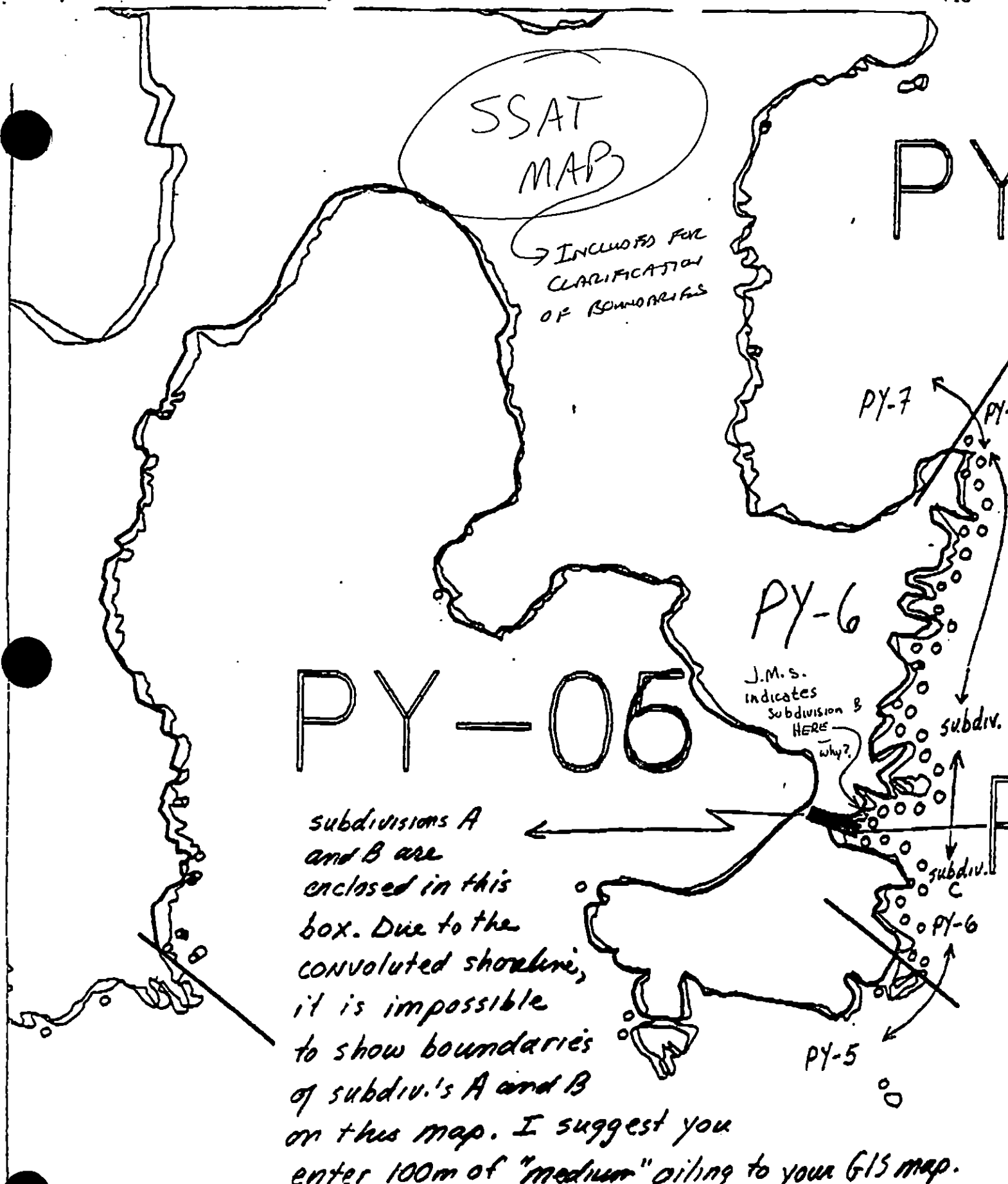
unknown, unable to observe close enough.
Sorry Map is wrong
Should be like this

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

PY006 B
 ADEC Subsegment Length: 42m
 METERS
 0 100 200
 AK State Plane Zone 4
 apy006b



Subdivision Field Map
 Map Key: KENPY006B
 Name: J. J. Semper
 Date: MAY 13/91
 Date Entered:



XXXX Wide
 //// Medium
 --- Narrow

PY-6

ADEC Segment Length: 15052m

Map Key: KEN-1010

Name: Manr

Date: 4/1/90

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 13, 1991 1800 - 1800
SEGMENT #	PY006	TIDAL HEIGHT (Range)	+4.5
SUBDIVISION	B	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Due to high waves, this subdivision was not accessible for survey. The subdivision is, however, adjacent to PY006-A, and is likely very similar with regard to biological features. The description of the biota from PY006-A is repeated below.

This beach is exposed to very high waves. The boulder and cobble beach is bounded by bedrock cliffs on either side and deep water offshore. Previous surveys report that oil is largely or entirely restricted to the high intertidal and supratidal zones. Because of the very high exposure these zones are expanded above sea level to higher levels than on less exposed beaches.

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	
Seabirds			
Waterfowl			
Gulls/Kittiwakes	2	8	
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. 5/30/91

PY006-B Biology Report, continued

Intertidal zonation at PY006-B

Biota	Tidal Level	Supratidal	High	Middle	Low	Subtidal
-------	-------------	------------	------	--------	-----	----------

Oil

--*****+---

Black Lichen

***++-- --

Logs/Debris

-- -++++*****+---

Thin Green Algae

---*****+ -+ -+*****+---

Thin Red Algae

-+*****+---+ -

Limpets

-- + +++ ---+

Littorines

- - + + +-+ - - -

Barnacles

-+-+*****+*****+--- - +

Mussels

- -+** -+ *-+* --

Fucus

-+-*+---

Kelps/Brown Algae

-- - +*****

Owing to the harsh physical conditions at this location, most biota are killed before they reach large size or old age. Thus, the biota are generally small, comprising the recent recruits to the site. Small individuals of many species were present, including, mussels, barnacles, algae, littorine snails, limpets. The high tide prevented observation of the extreme low zones.

List of Common Species from PY006-A

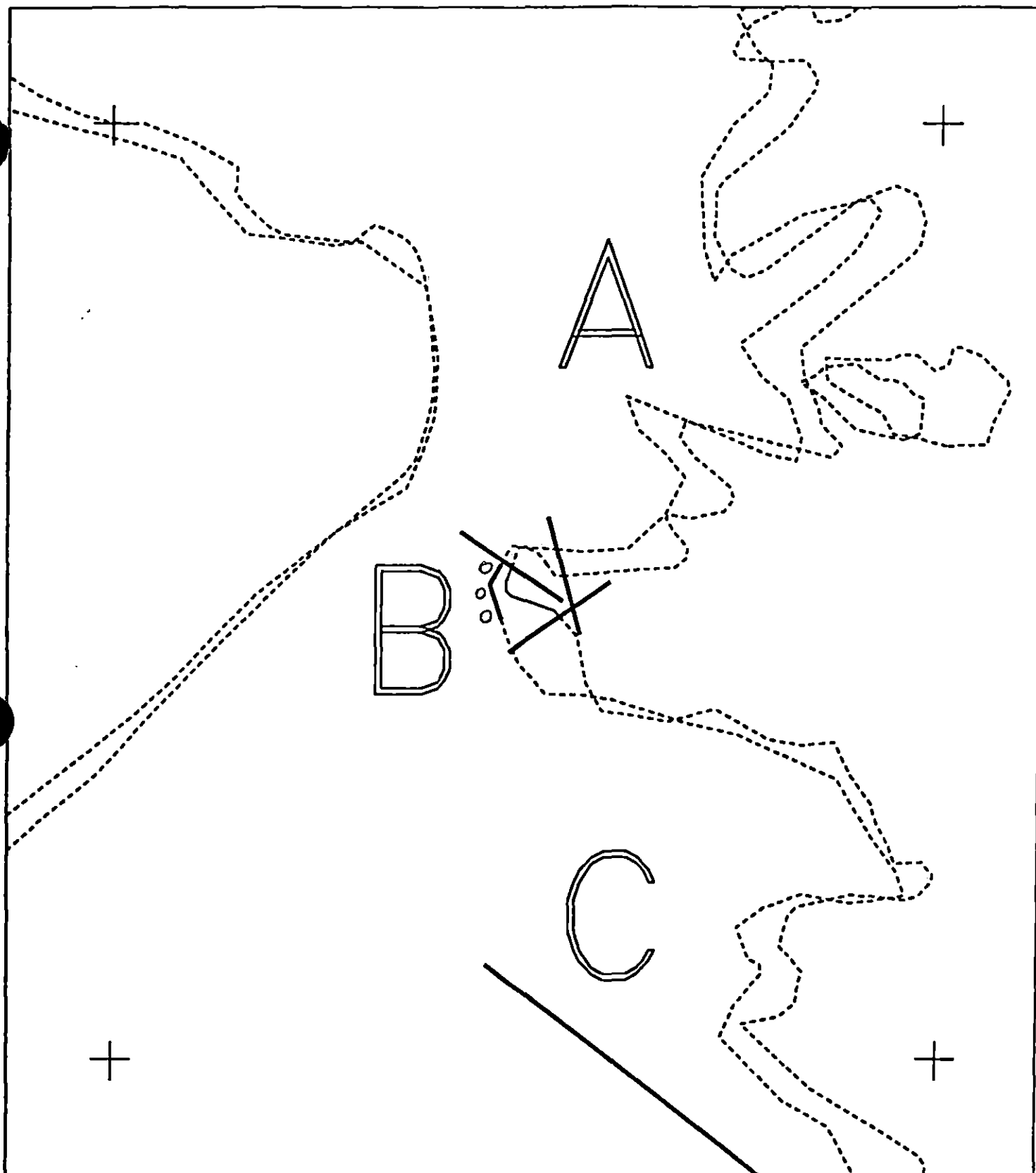
A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., Prasiola meridionalis, Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Endocladia muricata, Halosaccion glandiforme, 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. Anemones - Anthopleura artemesia, A. xanthogrammica, Metridium senile, Urticina crassicornis, Stomphia sp.
2. Flatworms - Platyhelminthes - Polyclads
8. Polychaete Worms
Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles - Balanus glandula, Semibalanus cariosus
 - c. Crabs - Hermit Crabs (Paguridae)
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
11. Mollusca
 - a. Chitons - Katharina tunicata,
 - b. Snails - Gastropods
Littorina sp., Nucella lamellosa,
 - c. Limpets - Lottia digitalis, L. persona, Tectura persona, T. scutum, Siphonaria thersites

- e. Mussels and Clams - *Mytilus edulis*
12. Echinoderms
- a. Brittle Stars - *Ophiolus* sp., ?
 - b. Sea stars - *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.



XXXX
////

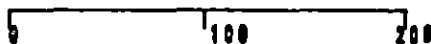
TTTT
0000

Wide
Medium
Narrow
Very Light
No Oil

PY006 B

ADEC Subsegment Length: 42m

METERS



AK State Plane Zone 4
apv006b



Subdivision Field Map

Map Key: KENPY006B

Name: JM Sempels

Date: May 13 1991

Data Entered:

revised 5/30/91 KG

Revised: MC 5/31/91

1991 MAYSAP EVALUATION

SEGMENT: PY 006 SUB: A REGION: KEN SURVEY DATE: 5/13/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) RESTRICTED 5/15 - 9/1

Ecological/Constraints (see page two for details) Seabird colony

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: *Richard Dan Dahn* 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]*

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Seabird Colony: Access restricted. USF&WS authorization required after 5/15. Maintain 1000' vertical and 1/2 mile horizontal buffer.

MAYSAP FIELD SHORELINE COMMENT SHEET

PY-006 R 1/127

TEAM NO. 4 SEGMENT P4006 SUBDIVISION A DATE MAY 13 1991

ADEC

NAME CLARA S. CROSBYSIGNATURE Clara S. Crosby

- ☐ NTR Treatment Recommended. Although this Subsegment has a substantial amt of MS/OIL REMAINING - A CONSISTENT BAND UNDER LG B & > 10 cm in depth - I am AT A LOSS TO RECOMMEND TREATMENT FOR THIS SITE. VESSEL ACCESS FROM THE EAST WOULD HAVE TO BE UNDER IDEAL CONDITIONS & CUTTING OVERLAND FROM THE WEST WOULD RESULT IN IMPACT TO THE UPLANDS - MANUAL REMOVAL IF PERFORMED WOULD BE SUPERFICIAL.

EXXON

NAME George P. StilesSIGNATURE George P. Stiles 5/14/91

- ☒ NTR The MS remaining under the Volkswagen size boulders is hard to estimate due to the size of the boulders. There is a lot of debris with some of it being oiled. A hand trowel would be very ineffective since the boulders cannot be moved.

LANDMANAGER

NAME JOHN P. HARDISTER OF USFWSSIGNATURE John P. Hardister

- ☒ NTR The boulders that cover this segment would prevent a significant amount of oil from being removed. Thus a cleanup effort would be ineffective and is, therefore, not recommended.

USCG/NOAA

NAME CWO2 J. McMAHONSIGNATURE J. McMahon☒ NTR

Clean-up insured be impracticable due to the light oiling of the segment.

NOAA/ DONALD A. MCDONALD

SIGNATURE Donald A. McDonald

Majority of oil was down in crevices and under large boulders, exact extent of oiling was difficult to determine.

PAGE 2 OF 11

DATE May 13 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 35 m N m VL m NO 12 m 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

MAYSAO 4.3.1 to 9

PHOTO ROLL # MAYSAP-

FRAMES

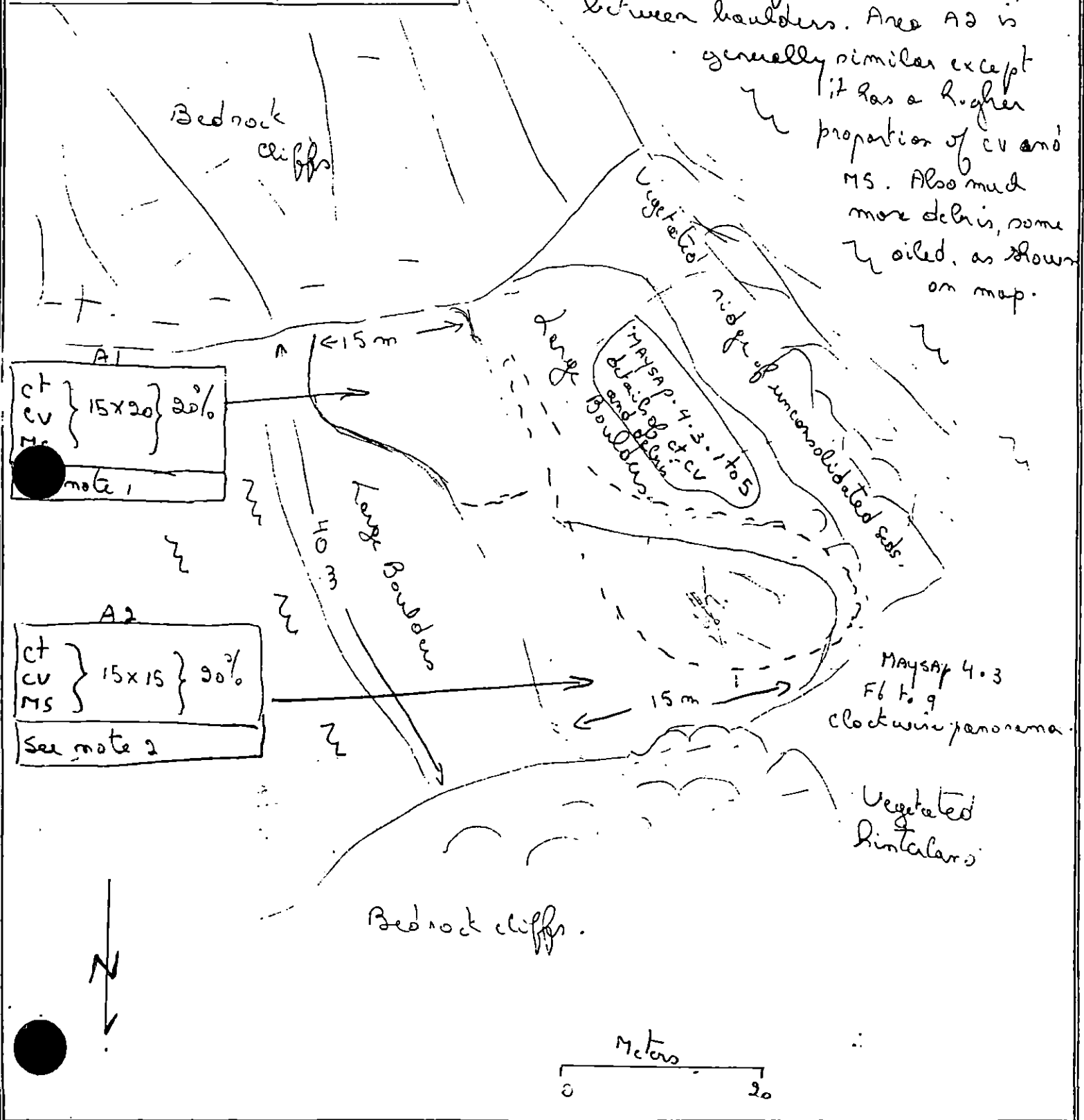
SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

Very difficult area to work, also very difficult to estimate accurately extent and type of oil because of large size of boulders present. Lots of debris, some oiled ones.

revised 5116191 KG
REVISÉ CD 16 MAY

Orig sketch Map	Legend
P4.006.A JM Samples May 13, 1991 1710 - 1800h	(dashed line) area of concentration of debris driftwood

Pocket cove of large boulders bounded by steep and high bedrock cliffs, and a backshore of grassy till. oiling area A1 Area ct (very heavy and partly removed on bed surfaces) cv on more sheltered bed surfaces and ms between boulders. Area A2 is generally similar except it has a higher proportion of cv and ms. Also much more debris, some oiled, as shown on map.



MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 13, 1991 1730 - 1815
SEGMENT #	PY006	TIDAL HEIGHT (Range)	+4.8 → +3.2
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

This beach is exposed to very high waves. The boulder and cobble beach is bounded by bedrock cliffs on either side and deep water offshore. Oiling is largely or entirely restricted to the high intertidal zone and supratidal zone. Because of the very high exposure these zones are expanded above sea level to higher levels than on less exposed beaches.

Location A1, A2

This entire beach has some oil in the upper zone. At this level there are few live organisms. Occasional spots of black lichen are was the only organisms observed. Towards the middle intertidal zone, boulders and cobble are generally nearly totally covered by thin filamentous or fast growing bladelike green (Urospora, Enteromorpha) and red (Porphyra) algae. These species cover the surfaces of most boulders which clearly are scoured by cobble and debris during heavy wave episodes. From this level, there is a general zonation of algae and invertebrates into the subtidal. This general pattern is characterized below:

WILDLIFE OBSERVATIONS - Completed on all subdivisions

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

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

Shoreline subdivision map showing important biological features attached.

REVIEWED CO 16 MAY
Reviewed M.B. 5/16/91

PY006-A Biology Report, continued

Intertidal zonation at PY006-A

Biota - Tidal Level Supratidal High Middle Low Subtidal

Oil	---+*****+---
Black Lichen	***++-- - -
Logs/Debris	-- -++*****+---
Thin Green Algae	---+*****+ -+ -+*
Thin Red Algae	-++*****+---+ -
Limpets	-- + +++ ---+-
Littorines	- - + + +-+ - - -
Barnacles	-+-+*****+***+--- - +
Mussels	- -+** -+ *-+* --
Fucus	-+-*+---
Kelps/Brown Algae	-- - +*****

Owing to the harsh physical conditions at this location, most biota are killed before they reach large size or old age. Thus, the biota are generally small, comprising the recent recruits to the site. Small individuals of many species were present, including, mussels, barnacles, algae, littorine snails, limpets. The high tide prevented observation of the extreme low zones.

Cleanup operations, if performed will have no negative impacts to the biota of the subdivision.

List of Common Species from PY006-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., Prasiola meridionalis, Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Endocladia muricata, Halosaccion glandiforme, 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. Anemones - Anthopleura artemesia, A. xanthogrammica, Metridium senile, Urticina crassicornis, Stomphia sp.
2. Flatworms - Platyhelminthes - Polyclads
8. Polychaete Worms
Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles - Balanus glandula, Semibalanus cariosus
 - c. Crabs - Hermit Crabs (Paguridae)
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
11. Mollusca
 - a. Chitons - Katharina tunicata,

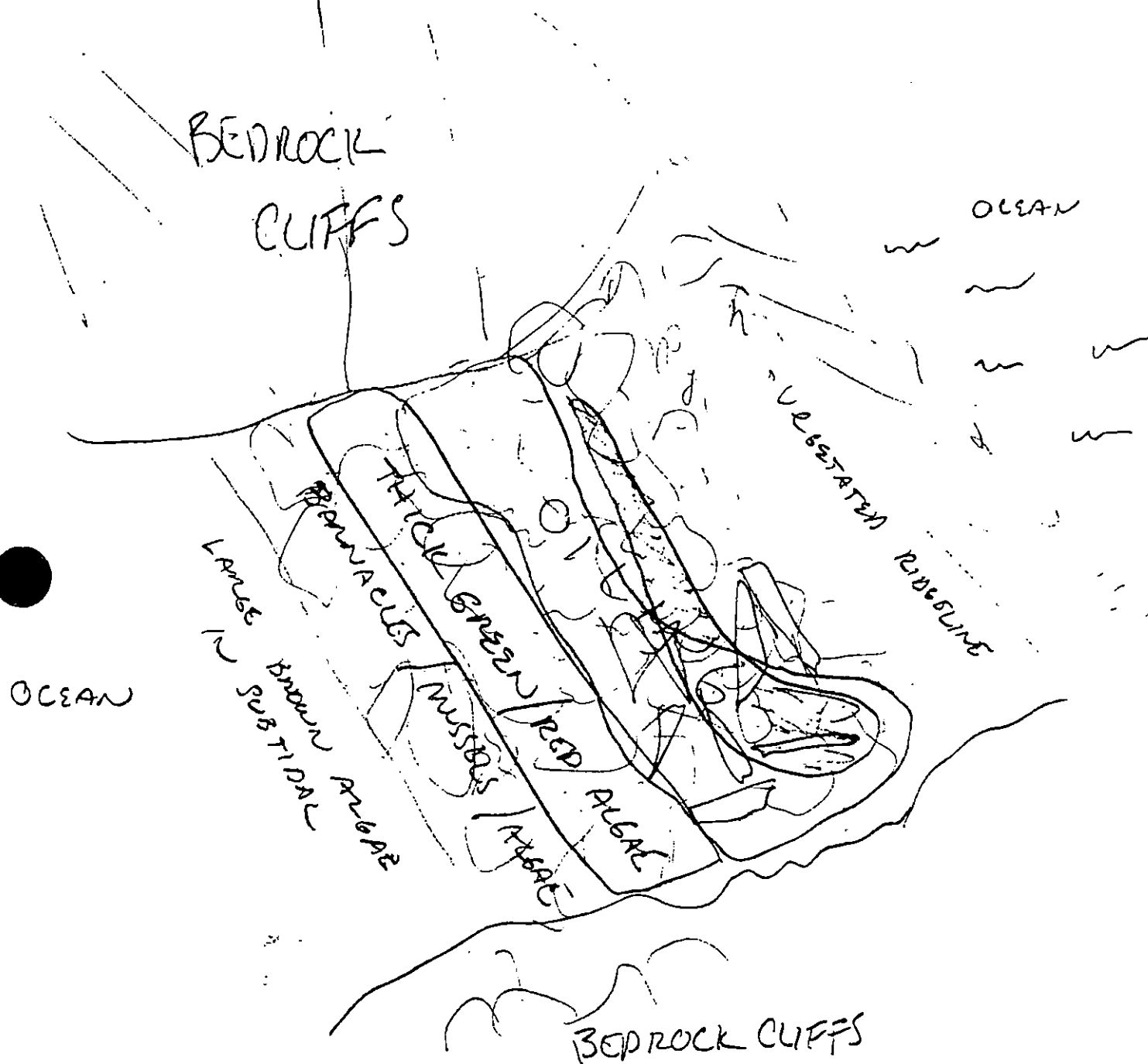
Reviewed M.B.5/16/91

- b. Snails - Gastropods
 - Littorina sp., Nucella lamellosa,
- c. Limpets - Lottia digitalis, L. persona, Tectura persona, T. scutum, Siphonaria thersites
- e. Mussels and Clams - Mytilus edulis
- 12. Echinoderms
 - a. Brittle Stars - Ophiolus sp., ?
 - b. Sea stars - 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.

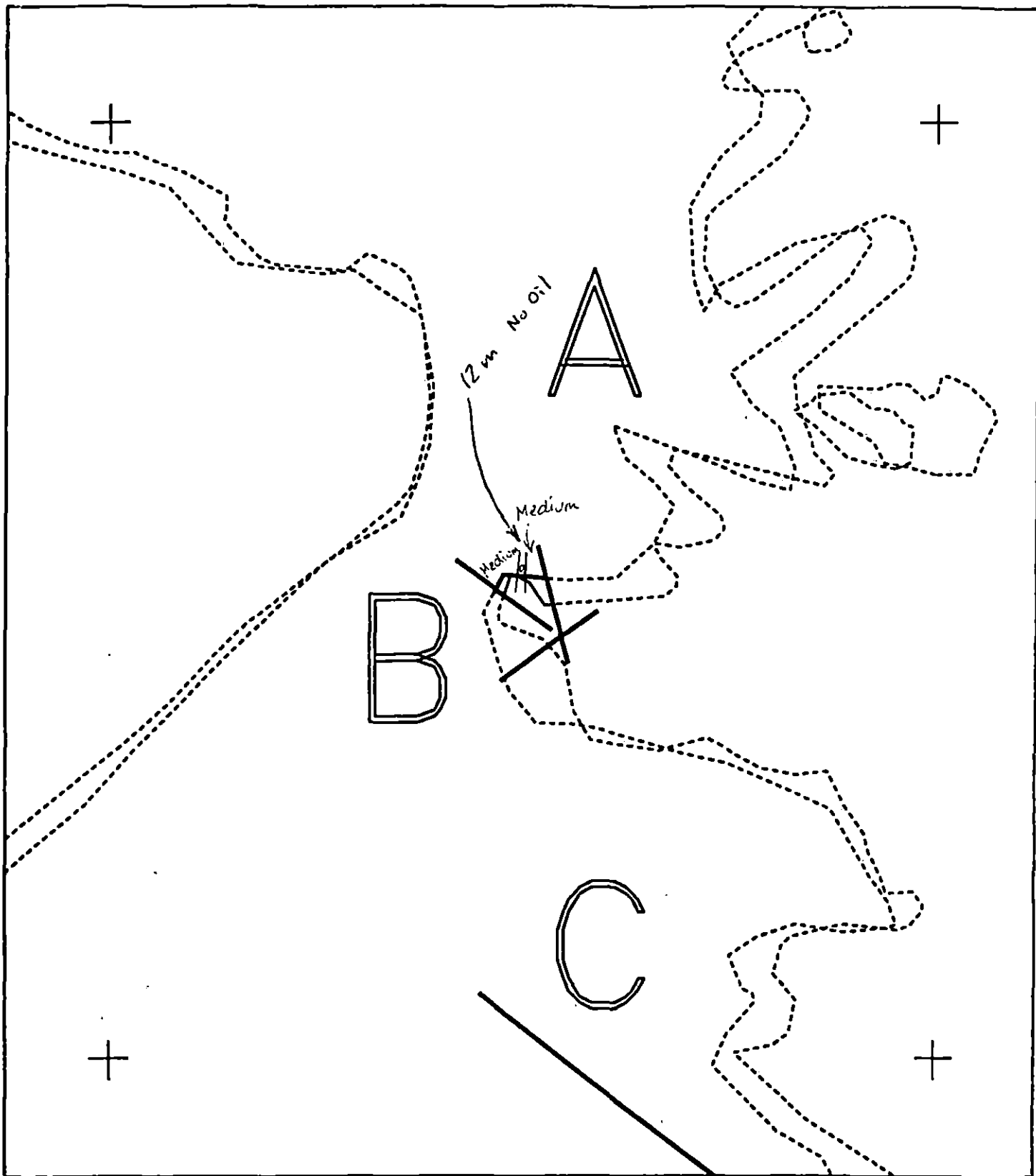
Birds Eagles (1 immature, carrying kittiwake), Glaucous-winged gull (5), Black legged Kittiwake (5).

BIO SKETCH MAP
P4006-A
13 MAY 1991
J BARNY

PY 006 H 7/87



Reviewed 5/16/91 M.B



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

PY006 A
 ADEC Subsegment Length: 47m
 METERS

5 100 200
 AK State Plane Zone 4
 npr006a



Subdivision Field Map

Map Key: KENPY006A

Name: Terri-Marie Sempels

Date: 13 May 1991

Data Entered:

revised 5/16/91 KG
 REVISED 16 MAY CB

1991 MAYSAP EVALUATION

SEGMENT: PY 006 SUB: C REGION: KEN SURVEY DATE: 5/13/91ENVIRONMENTAL SENSITIVITIES:Work Window(s) RESTRICTED 5/15 - 9/1Ecological/Constraints (see page two for details) Seabird colonyARCHAEOLOGICAL CONSTRAINTS:If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.SHPO Signature: Timothy J. Smith Date: 6/04/91RECOMMENDATIONS:

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: Subdivision surveyed by skiff. No oil observed.

TAG:

FOSC:

TAG APPROVAL DATE: June 4 1991FOSC APPROVAL DATE: 6/6/91

ADEC

FOSC

EXXON

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

USCG

NOAA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Seabird Colony: Access restricted. USF&WS authorization required after 5/15. Maintain 1000' vertical and 1/2 mile horizontal buffer.

ADEC
NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☒ NTR

Past oiling data indicated no oil within
subdivisions - Access is very limited & a
safety hazard.

EXXON
NAME George P. Stiles SIGNATURE George P. Stiles 5/20/91

☒ NTR

Past surveys found very little oiling.
I would not recommend treatment due
to the safety hazard of getting on
and off the beach.

LANDMANAGER
NAME John Hardiston OF USFWS SIGNATURE John P. Hardiston

☒ NTR

concur with ADEC representative.

USCG/NOAA
NAME Quartz J. McMillan SIGNATURE Quartz J. McMillan

☒ NTR

same as P4 006 B

NOAA/Donna A. MacDonald SIGNATURE Donna A. MacDonald

PAGE 2 OF 7

SEGMENT Py. 006

SUBDIVISION C

DATE MAY 13 / 91

ENERGY LEVEL: ☒ H ☐ M ☐ L

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

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

EST. OIL CATEGORY LENGTH: W m M m N m VL m NO 785 m US m

[illegible]

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

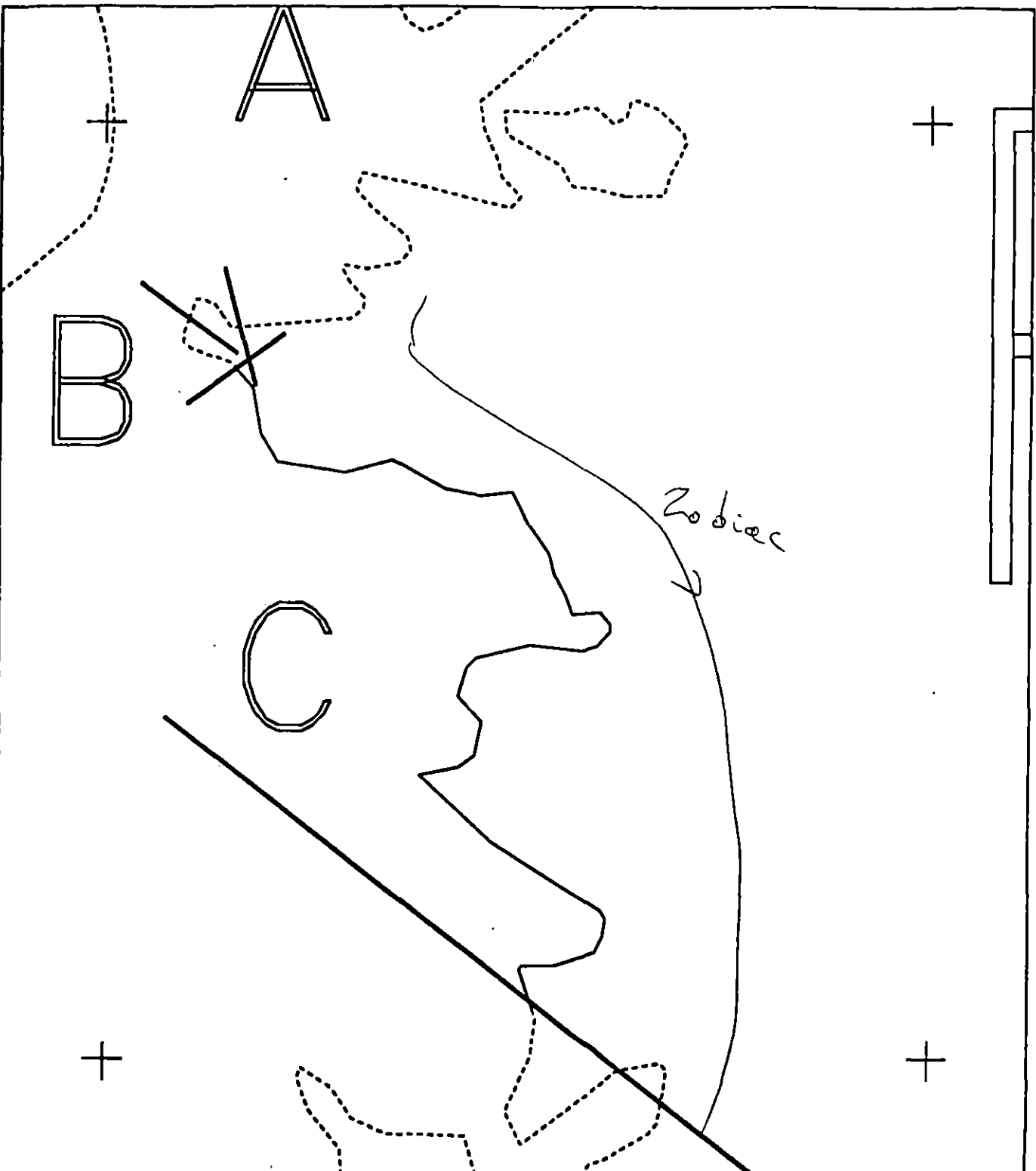
SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE PHOTO ROLL # MAYSAP-_____-_____ FRAMES _____

[illegible]

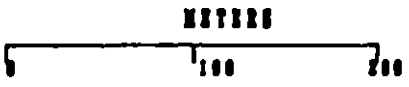
SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS: Unable to land because swell waves are too high. Observed from Zodiac. No oil seen from the boat but we were unable to get close enough for useful observation.

REVIEWED: F.W. 5/25/91



PY006 C



AK State Plane Zone 4
sp900600

Subdivision Field Map

Map Key: KMPY006Ca

Name: J. M. Sample

Date: May 13/91

REVIEWED: F.W. 5/25/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 15, 1991 1150 - 1210
SEGMENT #	PY006	TIDAL HEIGHT (Range)	+2.6 => +3.7
SUBDIVISION	C	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

General Features of PY006-C

This subdivision report is identical to that for PY006-D. Both subdivisions were surveyed by skiff from 100 or more meters distance. The shore was inaccessible due to the high surf. The shores are mostly moderately to highly exposed sloping bedrock. Little oil was reported from the subdivision. Observable areas on the subdivision appear to have floral and faunal assemblages typical of exposed coasts. Black lichen is visible in the supratidal zone, with green and red filamentous algae abundant in the upper to middle zone, moderate to dense cover of Fucus below, and patchy, but generally continuous cover of Mytilus along sections of the subdivision. Brown algae cover the lowest zones and subtidal. Cleanup will probably not be required, but would probably not impact the biota, unless hot water cleaning was performed.

A seabird colony is located in PY006, and many marine birds were observed along the segment, including marbled murrelets, red faced cormorants, pelagic cormorants, common murres, tufted puffins, horned puffins, red necked phalaropes, glaucous-winged gulls, black-legged kittiwakes, fork tailed petrels, harlequin ducks, common mergansers, rhinoceros auklets, pigeon guillemots, Bonaparte's gull, aleutian tern, arctic tern, and others? Two eagle nests were sighted at the locations marked on the ecology map near the northern and southern ends of the segment. We were unable to identify whether the nests were active, but did observe one adult eagle near each nest.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	2	
Seabirds	many		
Waterfowl			
Gulls/Kittiwakes			
Shorebirds			
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.

List of Species Expected along PY006-C

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Acrosiphonia sp., Cladophora sp., Enteromorpha sp., Prasiola meridionalis,
Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Ectocarpus spp., Fucus distichus, Hedophyllum sessile,
Hildenbrandia sp., Laminaria groenlandica, Nereocystis leutkeana, Ralfsia sp.,
Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Anfelia plicata, Bossiella sp., Calliarthron sp., Corallina sp.,
Cryptosiphonia woodii, Cumagloia andersonii, Endocladia muricata, Halosaccion
glandiforme, Iridaea sp., Lithothamnion sp., Membranoptera dimorpha, 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, Ophlitaspongia pennata, Tethys sp.
2. Anemones - Anthopleura artemesia, A. elegantissima, A. xanthogrammica,
Epiactis ritteri, E. prolifera?, Metridium senile, Urticina
crassicornis, Epizoanthus scotinus
3. Hydroids - Sertularidae - Sertularella?, Abietinaria sp.
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms
Emplectonema gracile, Tubulanus polymorphus
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.?, Traskorchestia traskiana
 - b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs
Acantholithodes hispidus, Haplogaster sp., Paguridae (hermit crabs),
Oregonia gracilis, Pugettia sp.,
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma
oregonensis

11. Mollusca

- a. Chitons - *Cryptochiton stelleri*, *Mopalia* sp., *M. mucosa*, *Katharina tunicata*, *Tonicella lineata*.
- b. Snails - Gastropods
Amphissa columbiana, *Fusitriton oregonensis*, *Littorina scutulata*, *L. sitkana*, *L. keenae*, *Nucella lamellosa*, *N. lima*, *Tachyrhynchus* sp.
- c. Limpets - *Acmaea mitra*, *Diadora aspera*, *Lottia digitalis*, *L. persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
- d. Nudibranches - *Lamellidoris fusca*, *Onchidela* sp.
- e. Bivalves - *Mytilus edulis*, *Pododesmus cepio*
- f. Cephalopods - *Octopus dofleini*

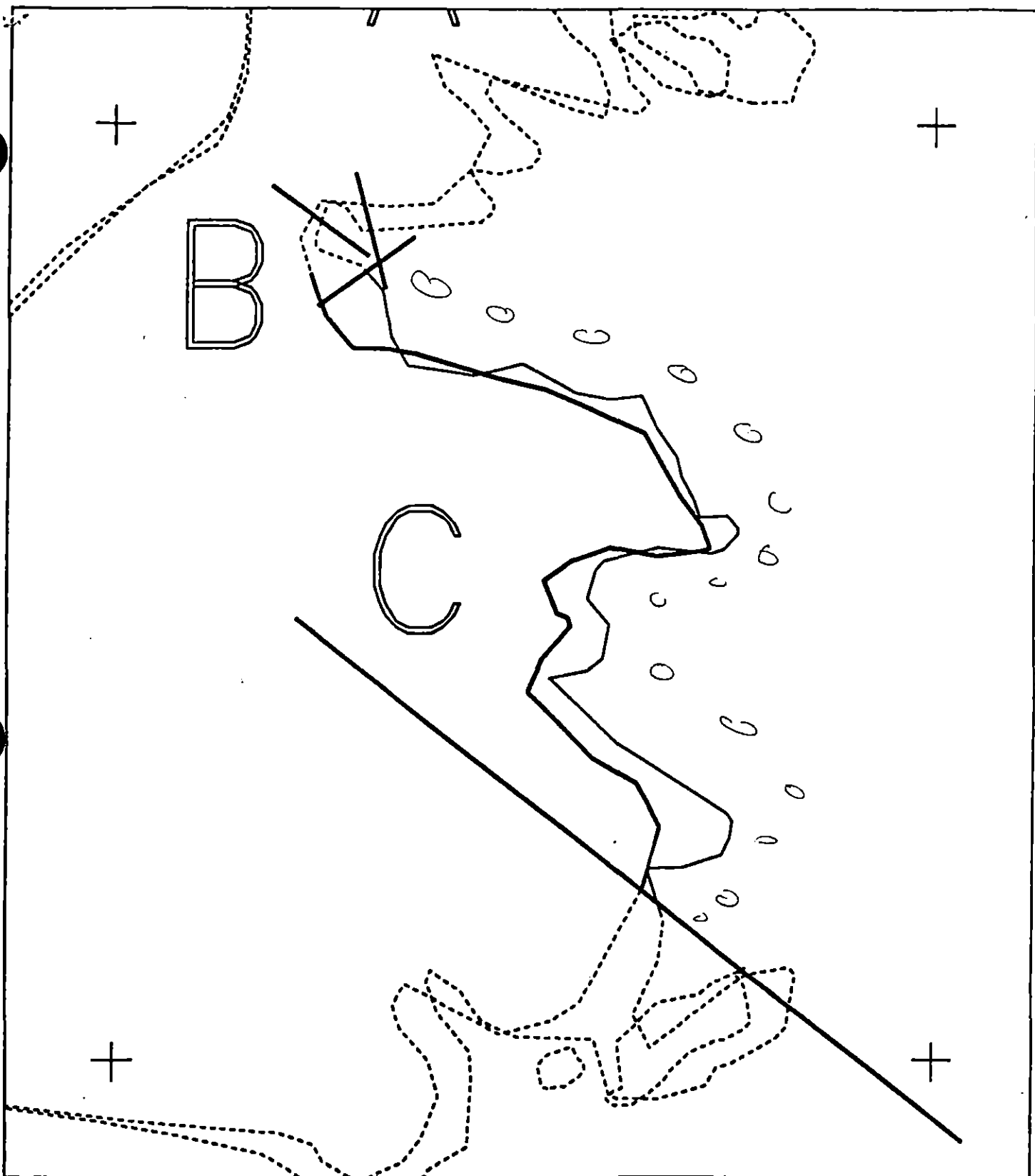
12. Echinoderms

- 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
Cucumaria miniata, *C. vegae*, *Eupentacta* sp., *Leptosynapta* sp.
- d. Urchins - *Strongylocentrotus droebachiensis*

- 13. Bryozoans - *Carbasea carbasea*, *Eucratea loricata*, *Membranipora* sp., *Microporina borealis*, *Phidolopora pacifica*, *Schizoporella* sp.

15. Fishes

- Cottidae - *Artedius harringtoni*, *Oligocottus* sp. (bright green), *Rhanphocottus richardsonii*
- Liparidae - *Liparis callyodon*
- Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*



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

PY006 C

ADEC Subsegment Length: 785m

METERS

0 100 200

AK State Plane Zone 4
 npy006c



Subdivision Field Map

Map Key: KENPY006C

Name: Jim Seay

Date: MAY 13/91

Date Entered:

REVIEWED: F.W. 5/6/91

1991 MAYSAP EVALUATION

SEGMENT: PY 006 **SUB:** B **REGION:** KEN **SURVEY DATE:** 5/13/91

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 Past oiling data indicated Pooled oil/s, cover/B, coat/B - Due to the exposure of this subdivision is the safety hazard it poses. I would not recommend treatment at this site. Survey crew could not gain access to shore.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/19/91

☒ NTR Concur with ADEC. The safety hazard of setting on and off the beach is not worth the risk.

LANDMANAGER

NAME John Hardister OF USFWS SIGNATURE _____

☐ NTR

see next page

USCG/NOAA

NAME CWO2 J. McMillan SIGNATURE J. McMillan

☒ NTR moved from ANON as it became a safety concern to beach.

John Hardister John Hardister

J. McMillan

TEAM NO. 41SEGMENT P4.006SUBDIVISION BDATE MAY 13 1991

ADEC

NAME Clara S. CrosbySIGNATURE Clara S. Crosby☒ NTR

Past oiling data indicated Pooled oil/s, cover/B, coat/B - Due to the exposure of this subdivision is the safety hazard. it goes. I would not recommend treatment at this site. Survey crew could not gain access to shore.

EXXON

NAME George P. StilesSIGNATURE George P. Stiles 5/19/91☒ NTR

Concur with ADEC. The safety hazard of getting on and off the beach is not worth the risk.

ANDMANAGER

NAME John Hardister OF USFWSSIGNATURE John P. Hardister☒ NTR

concur with ADEC and other team members.

USCG/NOAA

NAME William J. McMillanSIGNATURE William J. McMillan☒ NTR

Went from MGN as it became a safety concern to beach.

1/14/91/Donna A. MacDermottDonald A. MacDermott

(X)

PAGE 2 OF 7

SEGMENT 74.006

SUBDIVISION B

DATE MAY / 13 / 91

ENERGY LEVEL: ☒ H ☐ M ☐ L

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

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

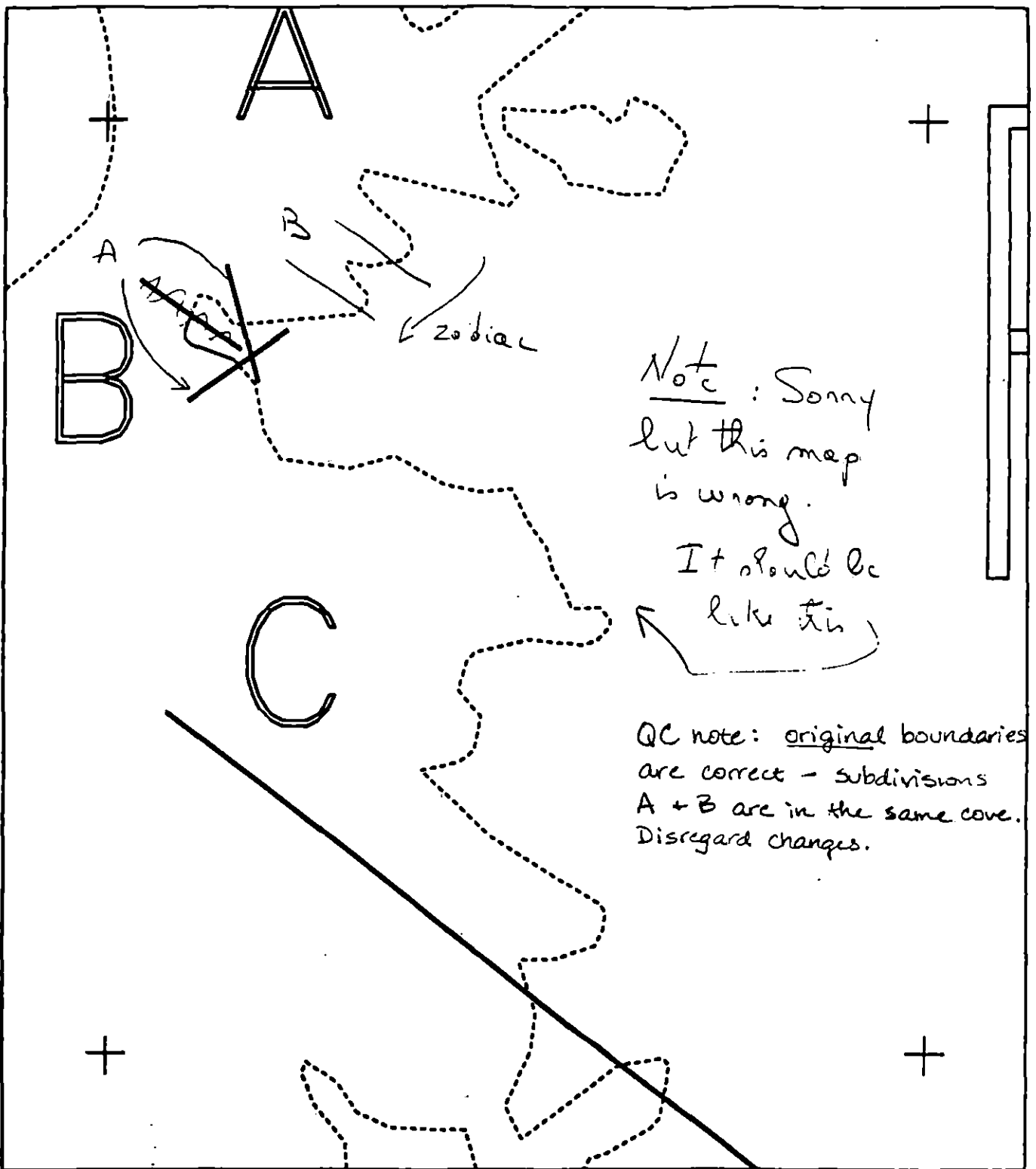
EST. OIL CATEGORY LENGTH: W m M m N m VL m NO 45m US m

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

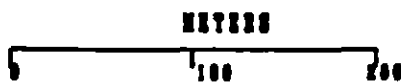
SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE PHOTO ROLL # MAYSAP-_____ - _____ FRAMES

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

REVISOR: MC 513191



PY006 B



AK State Plane Zone 4
NAD83

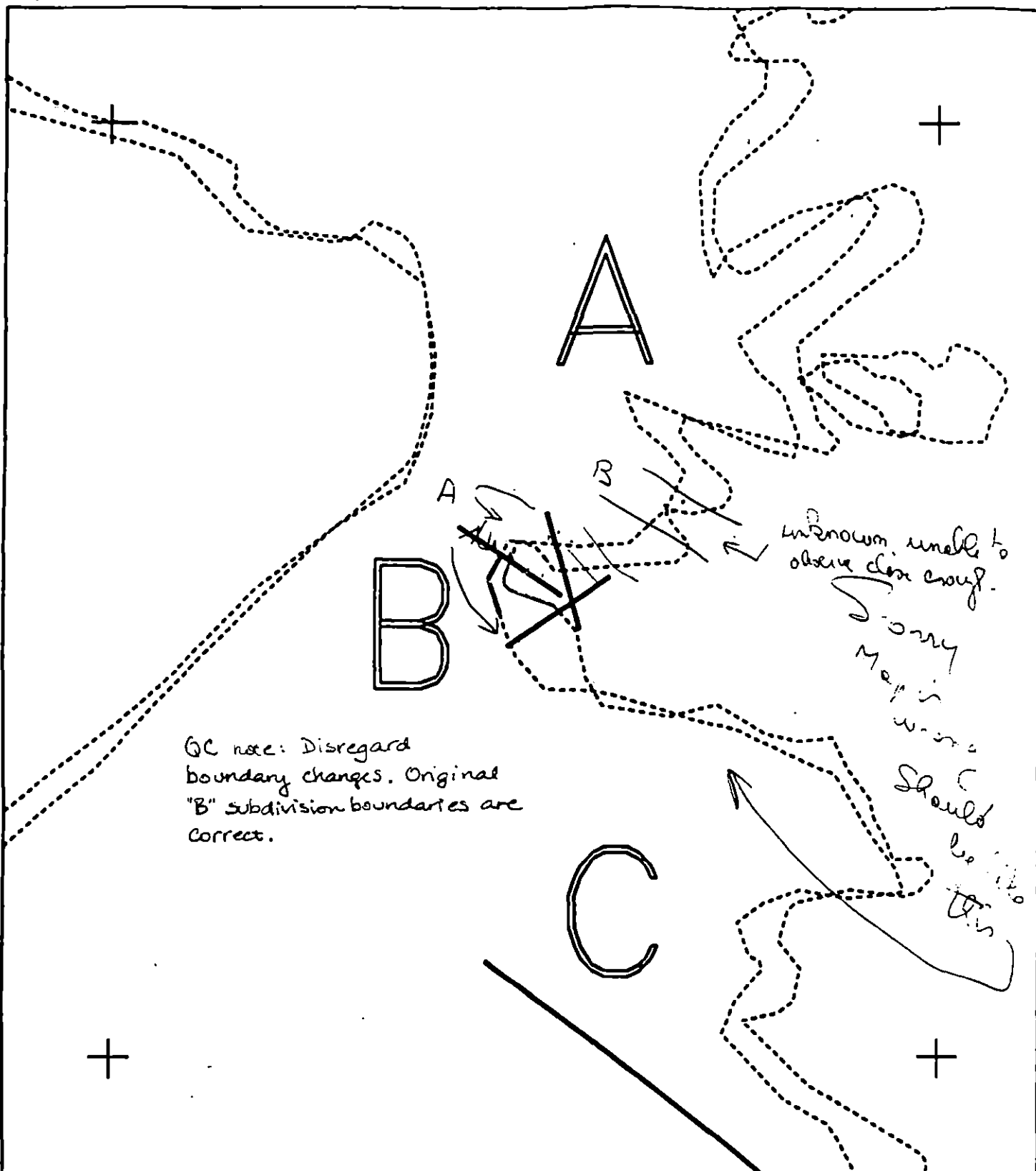
Subdivision Field Map

Map Key: KENPY006Ba

Name: for Sample

Date: MAY 13/91

Reviewed: 5/31/91 MC



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

PY006 B

ADEC Subsegment Length: 42m

METERS

0 100 200

AK State Plane Zone 4
 npr006b



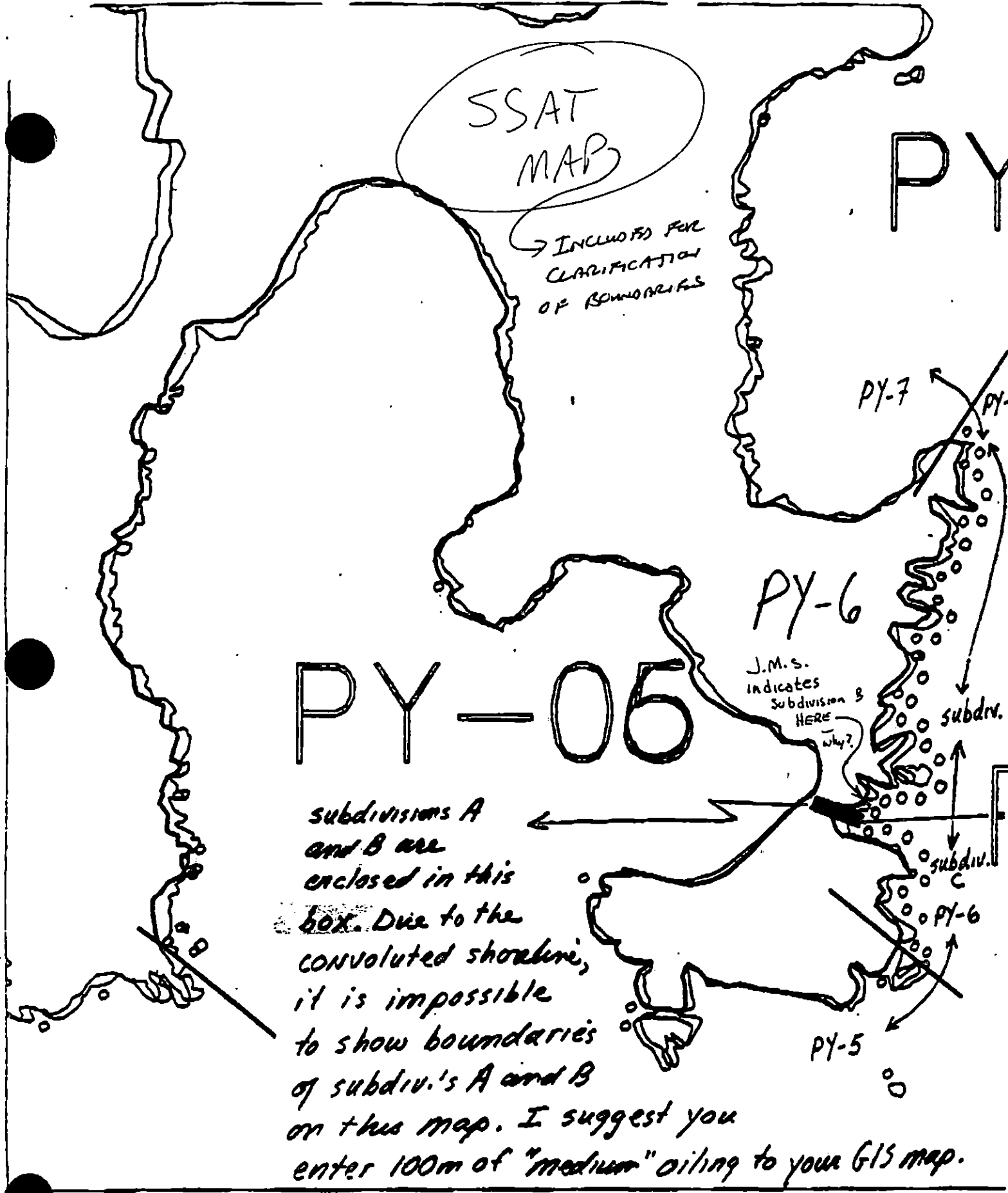
Subdivision Field Map

Map Key: KENPY006B

Name: J. J. Semper

Date: MAY 13/91

Date Entered:



XXX Wide

/// Medium

--- Narrow

TTTT Very light

PY-6

ADEC Segment Length: 15052m

Map Key: KEN-1010

Name: Mamr

Date: 4/1/90

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 4 DATE/TIME May 13, 1991 1800 - 1800
 SEGMENT # PY006 TIDAL HEIGHT (Range) +4.5
 SUBDIVISION B BIOLOGIST JIM BARRY
 SEA STATE Calm WIND SPEED/DIRECTION Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Due to high waves, this subdivision was not accessible for survey. The subdivision is, however, adjacent to PY006-A, and is likely very similar with regard to biological features. The description of the biota from PY006-A is repeated below.

This beach is exposed to very high waves. The boulder and cobble beach is bounded by bedrock cliffs on either side and deep water offshore. Previous surveys report that oil is largely or entirely restricted to the high intertidal and supratidal zones. Because of the very high exposure these zones are expanded above sea level to higher levels than on less exposed beaches.

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	
Seabirds			
Waterfowl			
Gulls/Kittiwakes	2	8	
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. 5/30/91

PY006-B Biology Report, continued

Intertidal zonation at PY006-B

Biota - Tidal Level Supratidal High Middle Low Subtidal

Oil	---+*****+---					
Black Lichen	***++-- --					
Logs/Debris	-- -++*****+---					
Thin Green Algae		---+*****--	++	++*****--		
Thin Red Algae		---+*****+---				
Limpets		-- + ++	---			
Littorines		- - + +	++	- - -		
Barnacles		---+*****+*****+---				
Mussels		- - + +	++	++	---	
Fucus		---+*****+---				
Kelps/Brown Algae		-- -	++*****			

Owing to the harsh physical conditions at this location, most biota are killed before they reach large size or old age. Thus, the biota are generally small, comprising the recent recruits to the site. Small individuals of many species were present, including, mussels, barnacles, algae, littorine snails, limpets. The high tide prevented observation of the extreme low zones.

List of Common Species from PY006-A

A. Marine Plants

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

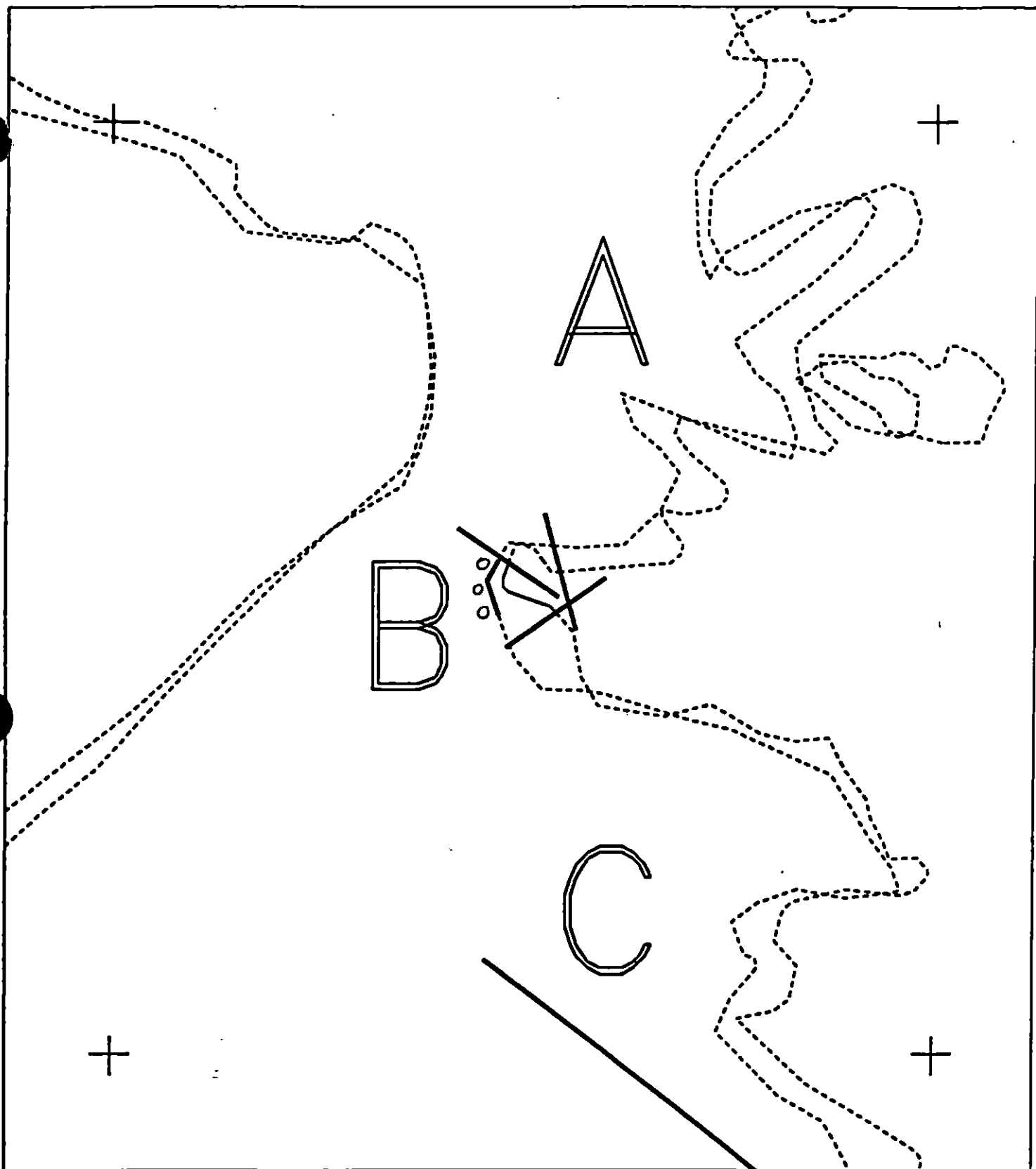
II. Marine Animals

1. Anemones - Anthopleura artemesia, A. xanthogrammica, Metridium senile, Urticina crassicornis, Stomphia sp.
2. Flatworms - Platyhelminthes - Polyclads
8. Polychaete Worms
Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles - Balanus glandula, Semibalanus cariosus
 - c. Crabs - Hermit Crabs (Paguridae)
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
11. Mollusca
 - a. Chitons - Katharina tunicata,
 - b. Snails - Gastropods
Littorina sp., Nucella lamellosa,
 - c. Limpets - Lottia digitalis, L. persona, Tectura persona, T. scutum, Siphonaria thersites

Reviewed MB 5/30/91

- e. Mussels and Clams - *Mytilus edulis*
- 12. Echinoderms
 - a. Brittle Stars - *Ophiolus* sp., ?
 - b. Sea stars - *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.

Reviewed MB 5/3/91



XXXX
////

TTTT
0000

Wide
Medium
Narrow
Very Light
No Oil

PY006 B

ADEC Subsegment Length: 42m

METERS

0 100 200

AK State Plane Zone 4
ap7000b



Subdivision Field Map

Map Key: KENPY006B

Name: JM Sempels

Date: May 13 1991

Data Entered:

revised 5/30/91 KG

Revised: MC 5/31/91

1991 MAYSAP EVALUATION

SEGMENT: PY 006 SUB: D REGION: KEN SURVEY DATE: 5/13/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) RESTRICTED 5/15 - 9/1

Ecological/Constraints (see page two for details) Seabird colony

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: Subdivision surveyed by skiff. No oil observed.

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____

FOSC APPROVAL DATE: _____

ADEC _____

FOSC _____

EXXON _____

USCG _____

NOAA _____

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Seabird Colony: Access restricted. USF&WS authorization required after 5/15. Maintain 1000' vertical and 1/2 mile horizontal buffer.

ADEC

NAME Clara J. Crosby SIGNATURE Clara J. Crosby

☒ NTR

Due to the inaccessibility & safety hazard involved w/ this segment -

Past oiling indicated no oil observed.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/20/90

☒ NTR

Little oil remains based on historical surveys. Any treatment would not be worth the risk (safety) getting on and off the segment.

LANDMANAGER

NAME John Hardister OF USFWS SIGNATURE John P. Hardister

☒ NTR

Inaccessible ... safety risk ... no treatment recommended.

USCG/NOAA

NAME W. MC. Manton SIGNATURE W. MC. Manton

☒ NTR

same as 12400612

NOAA / DONALD A. MACDONALD

Donald A. Macdonald

⊗

PAGE 7 OF 7

Revised: F.W. 5/26/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 15, 1991 1150 - 1210
SEGMENT #	PY006	TIDAL HEIGHT (Range)	+2.6 => +3.7
SUBDIVISION	D	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

General Features of PY006-D

This subdivision report is identical to that for PY006-C. Both subdivisions were surveyed by skiff from 100 or more meters distance. Due to high surf we were unable to land at these shores. The shores are mostly moderately to highly exposed sloping bedrock. Little oil was reported from the subdivision. Observable areas on the subdivision appear to have floral and faunal assemblages typical of exposed coasts. Black lichen is visible in the supratidal zone, with green and red filamentous algae abundant in the upper to middle zone, moderate to dense cover of Fucus below, and patchy, but generally continuous cover of Mytilus along sections of the subdivision. Brown algae cover the lowest zones and subtidal. Cleanup will probably not be required, but would probably not impact the biota, unless hot water cleaning was performed.

A seabird colony is located in PY006, and many marine birds were observed along the segment, including marbled murrelets, red faced cormorants, pelagic cormorants, common murres, tufted puffins, horned puffins, red necked phalaropes, glaucous-winged gulls, black-legged kittiwakes, fork tailed petrels, harlequin ducks, common mergansers, rhinoceros auklets, pigeon guillemots, Bonaparte's gull, aleutian tern, arctic tern, and others? Two eagle nests were sighted at the locations marked on the ecology map near the northern and southern ends of the segment. We were unable to identify whether the nests were active, but did observe one adult eagle near each nest.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	2	
Seabirds	many		
Waterfowl			
Gulls/Kittiwakes			
Shorebirds			
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.

List of Species Expected along PY006-D

A. Marine Plants

1. Diatoms. Blue Greens
2. Green Algae - Chlorophyta
Acrosiphonia sp., Cladophora sp., Enteromorpha sp., Prasiola meridionalis,
Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Ectocarpus spp., Fucus distichus, Hedophyllum sessile,
Hildenbrandia sp., Laminaria groenlandica, Nereocystis leutkeana, Ralfsia sp.,
Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Anfeltia plicata, Bossiella sp., Calliarthron sp., Corallina sp.,
Cryptosiphonia woodii, Cumagloia andersonii, Endocladia muricata, Halosaccion
glandiforme, Iridaea sp., Lithothamnion sp., Membranoptera dimorpha, 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, Ophlitaspongia pennata, Tethys sp.
2. Anemones - Anthopleura artemesia, A. elegantissima, A. xanthogrammica,
Epiactis ritteri, E. prolifera?, Metridium senile, Urticina
crassicornis, Epizoanthus scotinus
3. Hydroids - Sertularidae - Sertularella?, Abietinaria sp.
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms
Emplectonema gracile, Tubulanus polymorphus
8. Polychaete Worms
Glyceridae
Nepthyidae
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.?, Traskorchestia traskiana
 - b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs
Acantholithodes hispidus, Haplogaster sp., Paguridae (hermit crabs),
Oregonia gracilis, Pugettia sp.,
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma
oregonensis

11. Mollusca

- a. Chitons - *Cryptochiton stelleri*, *Mopalia* sp., *M. mucosa*, *Katharina tunicata*, *Tonicella lineata*.
- b. Snails - Gastropods
Amphissa columbiana, *Fusitriton oregonensis*, *Littorina scutulata*, *L. sitkana*, *L. keenae*, *Nucella lamellosa*, *N. lima*, *Tachyrhynchus* sp.
- c. Limpets - *Acmaea mitra*, *Diadora aspera*, *Lottia digitalis*, *L. persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
- d. Nudibranches - *Lamellidoris fusca*, *Onchidela* sp.
- e. Bivalves - *Mytilus edulis*, *Pododesmus cepio*
- f. Cephalopods - *Octopus dofleini*

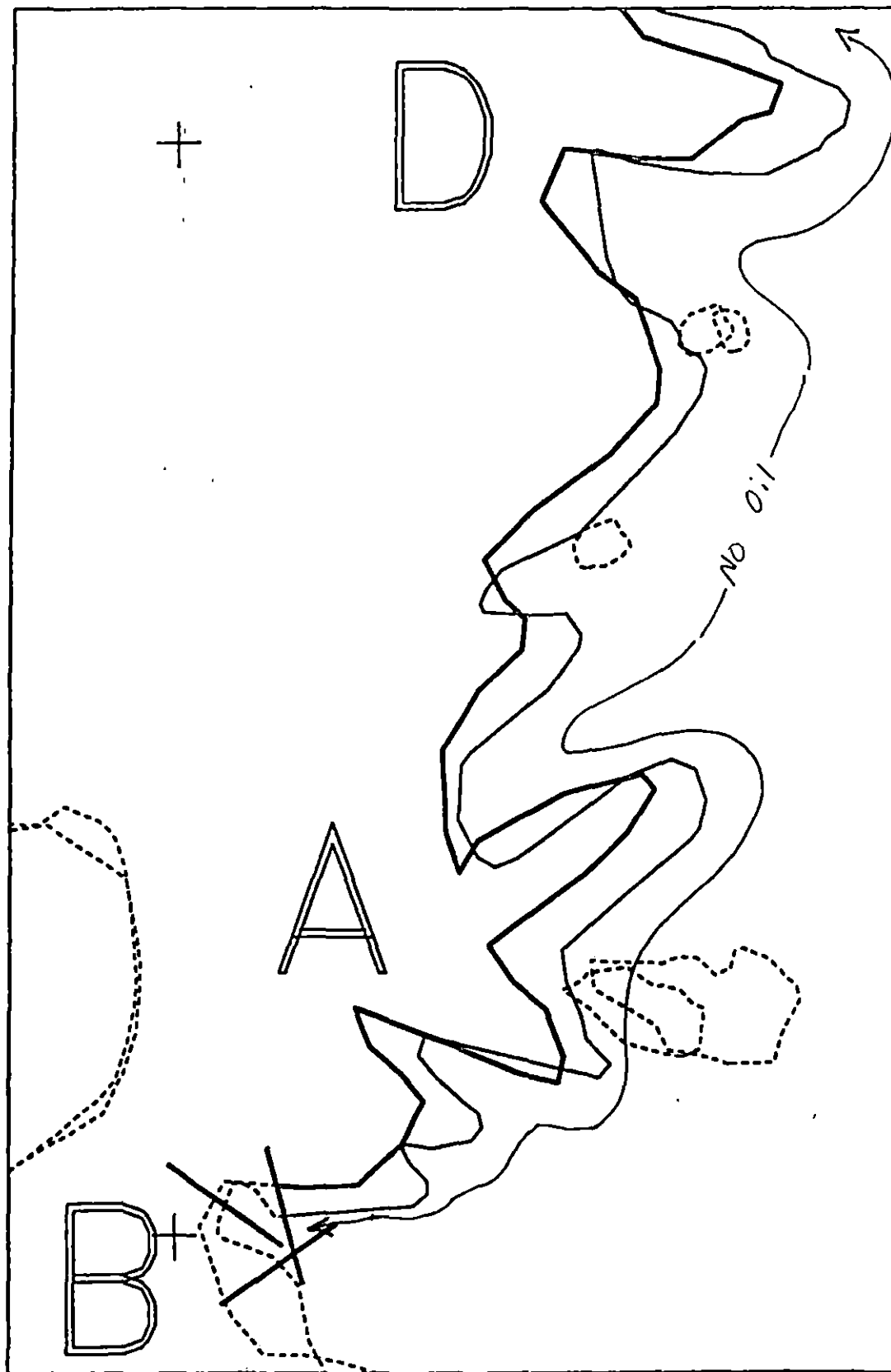
12. Echinoderms

- 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
Cucumaria miniata, *C. vegae*, *Eupentacta* sp., *Leptosynapta* sp.
- d. Urchins - *Strongylocentrotus droebachiensis*

13. Bryozoans - *Carbasea carbasea*, *Eucratea loricata*, *Membranipora* sp.,
Microporina borealis, *Phidolopora pacifica*, *Schizoporella* sp.

15. Fishes

- Cottidae - *Artedius harringtoni*, *Oligocottus* sp. (bright green),
Rhanphocottus richardsonii
- Liparidae - *Liparis callyodon*
- Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*



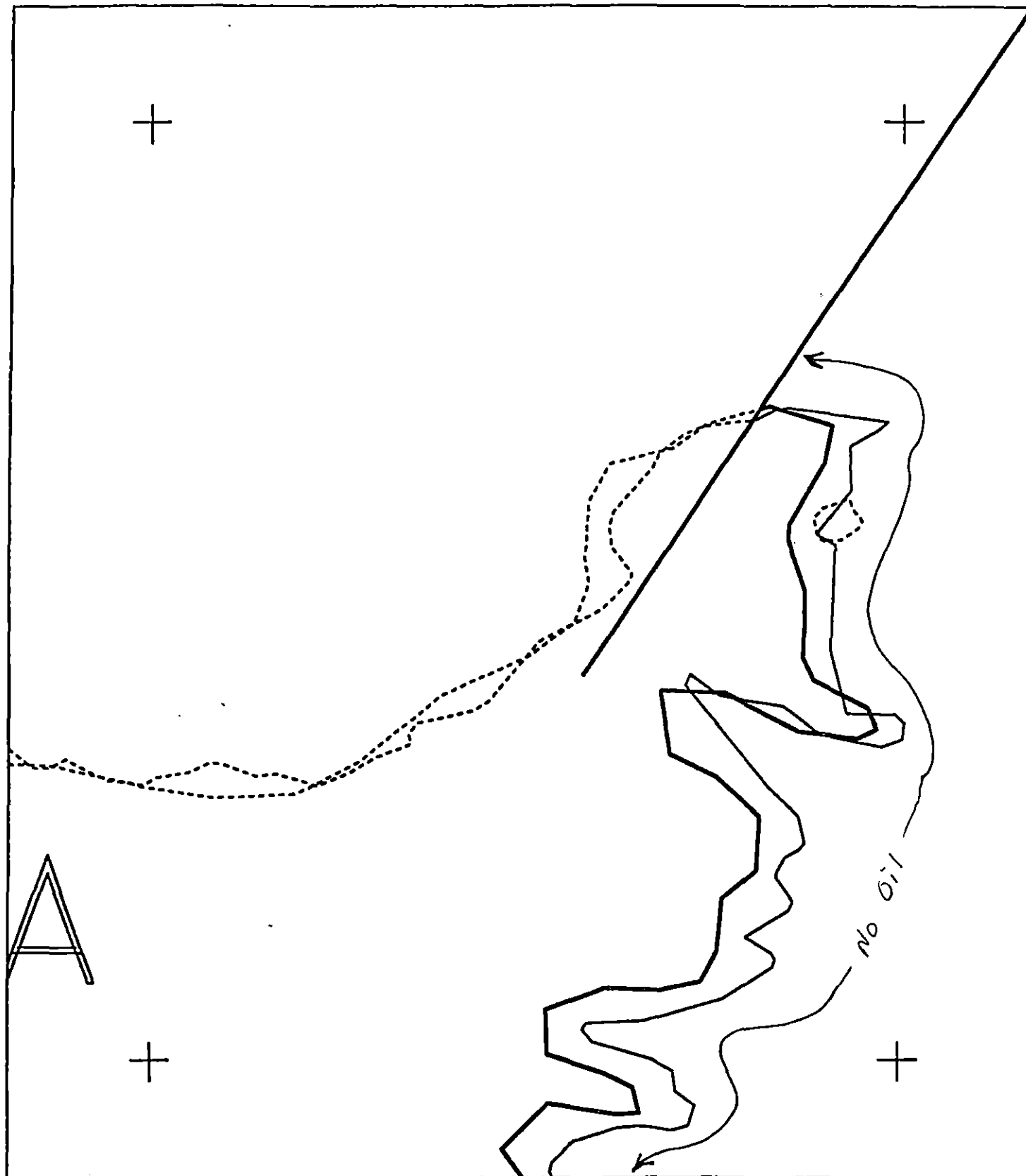
XXXX Wide
 //// Medium
 --- Narrow
 TTTT Very Light
 0000 No Oil

PY006 D
 ADEC Subsegment Length: 2811m
 METERS
 0 100 200
 AK State Plane Zone 4
 apy006da



Subdivision Field Map
 Map Key: KENPY006Da
 Name: Sempels
 Date: 5/13/91
 Data Entered:

REVISED: MC 5/14/91 PULCO. REVISED: F.W. 5/26/91



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

PY006 D

ADEC Subsegment Length: 2811m

METERS

0 100 200

AK State Plane Zone 4
 apy006db



Subdivision Field Map

Map Key: KENPY006Db

Name: Sempels

Date: 5/13/91

Data Entered:

Revised: MC 5/28/91 per R.D.

Revised: F.W. 5/26/91

1991 MAYSAP EVALUATION

SEGMENT: PY 006 SUB: D REGION: KEN SURVEY DATE: 5/13/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) RESTRICTED 5/15 - 9/1

Ecological/Constraints (see page two for details) Seabird colony

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: Timothy Phmich Date: 6/04/91

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: Subdivision surveyed by skiff. No oil observed.

TAG:

FOSC:

TAG APPROVAL DATE: June 4 1991 FOSC APPROVAL DATE: 6/7/91

ADEC John Bane

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

EXXON Beal

USCG Michael

NOAA John

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Seabird Colony: Access restricted. USF&WS authorization required after 5/15. Maintain 1000' vertical and 1/2 mile horizontal buffer.

TEAM NO. 4SEGMENT P4.006SUBDIVISION 2DATE May 13 / 91

ADEC

NAME Clara J. CrosbySIGNATURE Clara J. Crosby☒ NTR

Due to the inaccessibility & safety hazard involved
w/ this segment -

Past oiling indicated no oil observed.

EXXON

NAME George P. StilesSIGNATURE George P. Stiles 5/20/90☒ NTR

Little oil remains based on historical
surveys. Any treatment would not be
worth the risk (safety) getting on and
off the segment.

NDMANAGER

NAME John Hardister OF USFWSSIGNATURE John P. Hardister☒ NTR

Unacceptable ... safety risk ... no treatment recommended.

USCG/NOAA

NAME Don L. McManisSIGNATURE Don L. McManis☒ NTR

same as P4006B

NOAA / DONALD A. MACMANIS

Donald A. MacManis

(X)

PAGE 2 OF 5

OG COMMENTS: Unable to reach subdivision because
of well waves too high. No map available
for this subdivision at time of survey.

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 15, 1991 1150 - 1210
SEGMENT #	PY006	TIDAL HEIGHT (Range)	+2.6 => +3.7
SUBDIVISION	D	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

General Features of PY006-D

This subdivision report is identical to that for PY006-C. Both subdivisions were surveyed by skiff from 100 or more meters distance. Due to high surf we were unable to land at these shores. The shores are mostly moderately to highly exposed sloping bedrock. Little oil was reported from the subdivision. Observable areas on the subdivision appear to have floral and faunal assemblages typical of exposed coasts. Black lichen is visible in the supratidal zone, with green and red filamentous algae abundant in the upper to middle zone, moderate to dense cover of Fucus below, and patchy, but generally continuous cover of Mytilus along sections of the subdivision. Brown algae cover the lowest zones and subtidal. Cleanup will probably not be required, but would probably not impact the biota, unless hot water cleaning was performed.

A seabird colony is located in PY006, and many marine birds were observed along the segment, including marbled murrelets, red faced cormorants, pelagic cormorants, common murre, tufted puffins, horned puffins, red necked phalaropes, glaucous-winged gulls, black-legged kittiwakes, fork tailed petrels, harlequin ducks, common mergansers, rhinoceros auklets, pigeon guillemots, Bonaparte's gull, aleutian tern, arctic tern, and others? Two eagle nests were sighted at the locations marked on the ecology map near the northern and southern ends of the segment. We were unable to identify whether the nests were active, but did observe one adult eagle near each nest.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	2	
Seabirds	many		
Waterfowl			
Gulls/Kittiwakes			
Shorebirds			
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.

P. J. - L. H. N.M.

List of Species Expected along PY006-D

A. Marine Plants

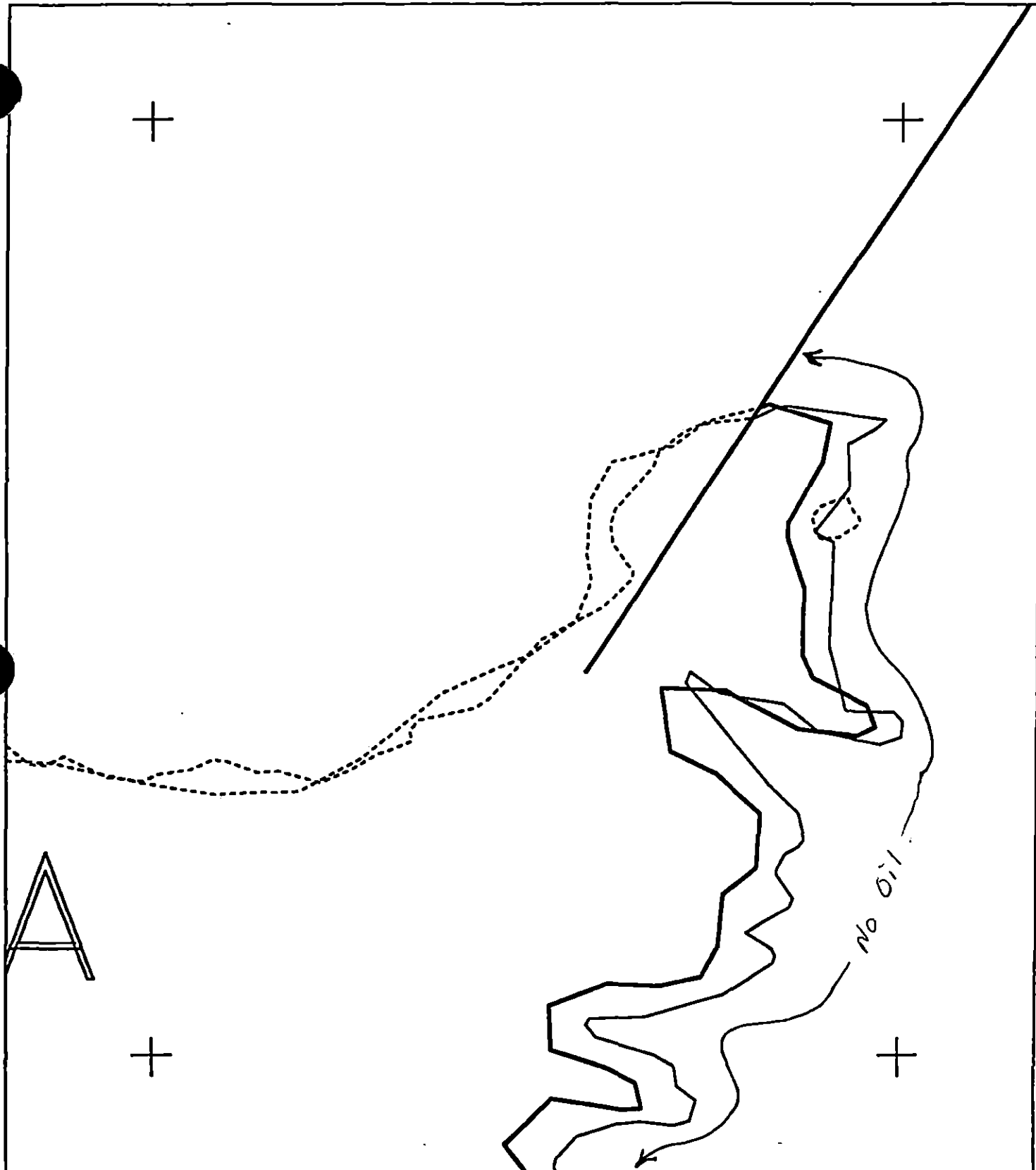
1. Diatoms. Blue Greens
2. Green Algae - Chlorophyta
Acrosiphonia sp., Cladophora sp., Enteromorpha sp., Prasiola meridionalis,
Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Ectocarpus spp., Fucus distichus, Hedophyllum sessile,
Hildenbrandia sp., Laminaria groenlandica, Nereocystis leutkeana, Ralfsia sp.,
Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Anfelia plicata, Bossiella sp., Calliarthron sp., Corallina sp.,
Cryptosiphonia woodii, Cumagloia andersonii, Endocladia muricata, Halosaccion
glandiforme, Iridaea sp., Lithothamnion sp., Membranoptera dimorpha, 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, Ophlitaspongia pennata, Tethys sp.
2. Anemones - Anthopleura artemesia, A. elegantissima, A. xanthogrammica,
Epiactis ritteri, E. prolifera?, Metridium senile, Urticina
crassicornis, Epizoanthus scotinus
3. Hydroids - Sertularidae - Sertularella?, Abietinaria sp.
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms
Emplectonema gracile, Tubulanus polymorphus
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.?, Traskorchestia traskiana
 - b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs
Acantholithodes hispidus, Haplogaster sp., Paguridae (hermit crabs),
Oregonia gracilis, Pugettia sp.,
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma
oregonensis

PY006-D Biology Summary, continued

11. Mollusca
 - a. Chitons - *Cryptochiton stelleri*, *Mopalia* sp., *M. mucosa*, *Katharina tunicata*, *Tonicella lineata*.
 - b. Snails - Gastropods
Amphissa columbiana, *Fusitriton oregonensis*, *Littorina scutulata*, *L. sitkana*, *L. keenae*, *Nucella lamellosa*, *N. lima*, *Tachyrhynchus* sp.
 - c. Limpets - *Acmaea mitra*, *Diadora aspera*, *Lottia digitalis*, *L. persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
 - d. Nudibranches - *Lamellidoris fusca*, *Onchidela* sp.
 - e. Bivalves - *Mytilus edulis*, *Pododesmus cepio*
 - 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
Cucumaria miniata, *C. vegae*, *Eupentacta* sp., *Leptosynapta* sp.
 - d. Urchins - *Strongylocentrotus droebachiensis*
13. Bryozoans - *Carbasea carbasea*, *Eucratea loricata*, *Membranipora* sp., *Microporina borealis*, *Phidolopora pacifica*, *Schizoporella* sp.
15. Fishes
 - Cottidae - *Artedius harringtoni*, *Oligocottus* sp. (bright green), *Rhanphocottus richardsonii*
 - Liparidae - *Liparis callyodon*
 - Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*



XXXX	Wide	PY006 D ADEC Subsegment Length: 2611m METERS 0 100 200 AK State Plane Zone 4 apj006db	Subdivision Field Map
////	Medium		Map Key: KENPY006Db
----	Narrow		Name: <u>Sempels</u>
TTTT	Very Light		Date: <u>5/13/91</u>
0000	No Oil		Data Entered:

Revised: MC 5/18/91 per C.D.

Revised: F.W. 5/26/91

REGION: KENAI

SEGMENT: PY-07

SUBDIVISIONS: A (1 OF 3)

SHORELINE EVALUATION

SEGMENT ST/ PY-07 SUBDIVISION A (1 OF 3) DATE 4/5/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Bald eagle nest (5T) - 3/1 to 7/1; Seabird colony (5R) - 5/1 to 9/1; National Wildlife Refuge (4QQ).

SUBDIVISION ECOLOGICAL CONSTRAINTS: Restrict air traffic to essential minimum. Air approach from and to seaward only. Contact USFWS prior to treatment for confirmation of dates and avoidance minimums.

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 82 m: No Oil 810 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

7

SEGMENT ST1 PY 07 SUBDIVISION: A DATE APRIL 1, 1990~~USEG~~ NOAA
NAME JACQUI MICHEL SIGNATURE *Jacqui Michel*☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

NONE.

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

No COMMENTS.

~~LAND MANAGER~~ - USFWSNAME Mary Portner SIGNATURE *Mary Portner*☒ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

Weathering has occurred below the upper intertidal zone. Above the upper intertidal zone weathering has been ^{and supralittoral} less extensive. An area in the upper intertidal ^{discussed} in 1989 as having standing mounds 10cm deep and heavily coated boulders is now covered with fresh rock and snow and difficult to assess.

SHORELINE OILING SUMMARY

REVISION NO. 03/23/90

OG Mann USCG/NOAA MICHEL SEGMENT ST/ PY-7
 BIO Carr LAND REP Partner - FWS SUBDIVISION A
 AXON Boyer ADEC REED TIME 1405:1420 1515:1545
 EAM NO.: 18 TIDE LEVEL: +1.2 to +4.1 DATE 4/1/90
 EST. SUBDIVISION LENGTH: 900 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☐ Foot ☒ Boat ☐ Helo WORKING DIRECTION: S to N
 SURFACE SEDIMENTS: R 90 % B 10 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Lang 5 % Hang 35 % Vert 60 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 60 m NO 840 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR						IMPACTED ZONES			
	CG	AS	PS	BS	BR	OR	OL	OP	NO	LA	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 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 N/A

#BAGS N/A

Photographs:

Roll No. none

Frames none

SUBSURFACE OIL No pits possible due to bedrock/large boulder substrate.

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	VO	BR	OR	OL	OP	NO	LA	SU	UI	M	U		

COMMENTS

Oiling on this segment consists of sparse spots of CV, CT, and ST. These spots show little evidence of wave erosion since their deposition last summer. This shoreline is high-angled, inaccessible on foot, and exposed to heavy waves. Bedrock is granitic making a vivid

Mann PY-7 Subdiv. A. Comments

4/1/90

visited the cove described as site A (during the August 1989 SCAT). Much oil has disappeared through natural processes at this site where it existed as CV and CT on boulder tops in the UITE and as pooled (mousse) in boulder interstices in the UITE. This area of boulders rests directly on bedrock and winter storm waves have rolled and battered these stones, removing oil but a <5% ST/S. Above the UITE, weathering has been much less effective. I have included the northern bedrock outcrop originally mapped in Site A (1989) in subdivision B in this report. Here, in the supratidal zone, little or no weathering of oil spots has occurred. At the SW end of 1989's site A, fresh rockfall debris and snow obscure the previously -oiled rocks. I suspect little oil is left here (beyond CT/S, ST/S) because waves have eroded the front of this gulley-debris deposit.

D.H.M.

G. MANN

SKE MAP

EGMENT ST/ PY-7

UBDIVISION A

ATE 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)
- ☐ Pk Location(s)
- ☐ Photo Location(s)

No sketch provided

LEGEND

1 Δ

Δ - No Subsurface Oil

2 ▲

▲ - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

Oil on Vegetation

1 ➡

Photo location, direction,
and number

DHM

if Character Length (m): AP 0 PO 0 CV 60 CT 60 ST 60 MS 0 PT 0 TB 0 FL 0 NO 840

REVISION 83/2498

SHORELINE ECOLOGICAL SUMMARY

REVISION: 02/22/90

Segment ST / PY-7 Subdivision A (of A-C) Date (mo / day / yr) 4/1/90Time (24 hr) 1400 Biologist M. LARR

- (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 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	1U	1U	1U	
→ 2	3	2	2	2	
3	3	3	3	3	NOT PRESENT
4	4	4	4	4	
5	5	5	5	5	
6	6	6	6	6	

MYTILUS

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

GASTROPODS

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

FUCUS

	Dense	Moderate	Sparse	Rare	
→ 1U	1M	1U	1M	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	

Wildlife Observations/ General Comments:

Bald eagle (2) mature w/ nest, Harlequin ducks (5)
 Golden-eye (1) Sea otter (1) Cormorants: red-faced (5) pelagic (1)

Ecological Considerations:

Sensitivity codes: 4-QQ (National Wildlife Refuge), 5-T (Bald eagle nest),
 5-R (Seabird colony)

- Boulders so large, floral & faunal abundances very similar to bedrock.

PY-8

and 345 PM 7/1/90

PY-7

start 205 PM 4/1/90

v. light

NVO

narrow

v. light

30 m of
v. light

subdiv. B

subdiv. A

Subdiv.
A

subdiv. C
subdivision C
subdiv. C

NVO = No visible
oil

PY-7

ADEC Segment Length: 512m

Map Key: KEN-102

Name: Mann

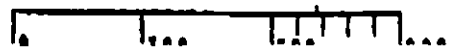
Date: 4/1/90

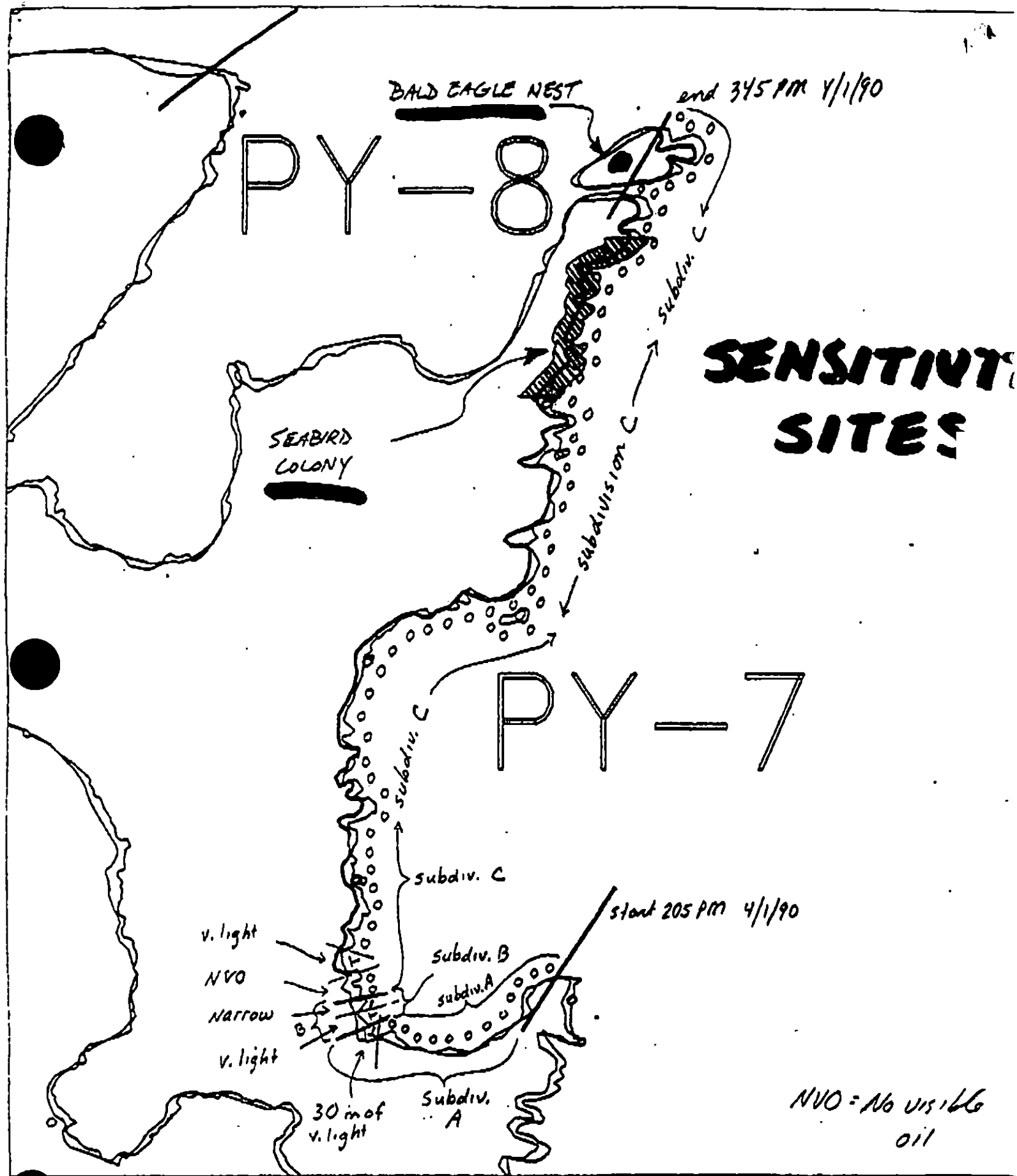
XXX Wide

/// Medium

--- Narrow

TTTT Very Light





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

PY-7

ADEC Segment Length: 5121m

Map Key: KEM-102

Name: Maar

Date: 4/1/90

REGION: KENAI

SEGMENT: PY-07

SUBDIVISIONS: B (2 OF 3)

SHORELINE EVALUATION

SEGMENT ST/ PY-07 SUBDIVISION B (2 OF 3) DATE 4/5/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Bald eagle nest (5T) - 3/1 to 7/1; Seabird colony (5R) - 5/1 to 9/1; National Wildlife Refuge (4QQ).

SUBDIVISION ECOLOGICAL CONSTRAINTS: Restrict air traffic to essential minimum. Air approach from and to seaward only. Contact USFWS prior to treatment for confirmation of dates and avoidance minimums.

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 63 m: V.Light 60 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 oiled trash and debris. Work done ASAP before 5/1 weather and safe access permitting.

TAG COMMENTS:

TAG APPROVAL DATE:

ADEC
EXXON
NOAA
USCG

FOSC: DATE:

FIELD SHORELINE COMMENT SHEET

7

SEGMENT ST 1 PY 07 SUBDIVISION: B DATE APRIL 1, 1990

USCG NOAA

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

COMMENTS

Manual removal of oiled debris only. MOST OF THE REMAINING SHORELINE OIL IS ON THE UPPER/SUPRA ITZ ON A VERTICAL ROCK WALL - NOT AMENABLE TO MANUAL REMOVAL/BIOREMEDIATION.

ADEC

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

COMMENTS

Manual Removal of oiled debris. Due to the lack of oil removal technology, and location of the oil at the site, the contamination will be very hard to remove.

LAND MANAGER - USFWS

NAME Mary Fortner SIGNATURE Mary Fortner☐ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

Remove oiled net, boom and debris. Due to the nature and location of the oil, current cleanup technology will not provide adequate treatment for oil on the boulders, bedrock and rock face.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG Mann USCG/NORA MICHEL SEGMENT ST/ PY-7
 BIO Can LAND REP Portman - FWS SUBDIVISION B
 EXXON Boyer ADEC REED TIME 14:20 to 15:15
 TEAM NO.: 18 TIDE LEVEL: +1.4 to +3.5 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: S to N
 SURFACE SEDIMENTS: R 40 % B 59 % C 1 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 40 % Hang 35 % Vert 25 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 30 m N 20 m VL 50 m NO 10 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR						IMPACTED ZONES			
	IC	IB	IP	IS	SB	SB	SB	SB	SB	SB	SU	U	M	U
ASPHALT PAVEMENT														
POOLED				✓		✓						✓		
COVER				✓				✓			✓	✓		
COAT		✓	✓	✓				✓			✓	✓		
STAIN		✓	✓	✓				✓			✓	✓		
MOUSSE														
PATTIES														
TARBALLS														
FILM														
NO OIL												✓	✓	

PAYEMENT: H F S NO sq. m by — cmPATTIES / TARBALLS NO 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 NA

Photographs:

Roll No. noneFrames noneSUBSURFACE OIL NO PITS D4G because substrate is bedrock and lg. boulder

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	SB	SB	SB	SB	SB	SU	U	M	U		
<u>0</u>							-														
							-														
							-														
							-														
							-														
							-														

COMMENTS

This subdivision is at back of the shallow bay in PY-7. Its unifying features are splashes of CT to CV by black oil residue evident on boulder and bedrock surfaces in the upper and supratidal zones. Oily debris and trash are trapped between boulders. We noted little change in oiling conditions here from August 1989. Wave erosion of oil is slight.

SKE MAP

N
~20m

G Mann

SEGMENT ST/ PY-1

JBDIVISION B

DATE 4/1/90

CHECKLIST

- ☒ Arrow
- ☒ Approx. Scale
- ☒ Sub Bndry
- ☒ C/O Det.
- ☒ Width
- ☒ Length
- ☒ % Cover
- ☒ Substrate Character
- ☒ Est. HML/LML
- ☒ SSL
- ☒ Profile Location(s)
- ☒ Profile(s)
- ☒ P/L Location(s)
- ☒ Photo Location(s)

LEGEND

1 Δ
it - No Subsurface Oil

2 Δ
H - Subsurface Oil

CT/C
continuous Distribution

CT/B
broken Distribution

CT/P
patchy Distribution

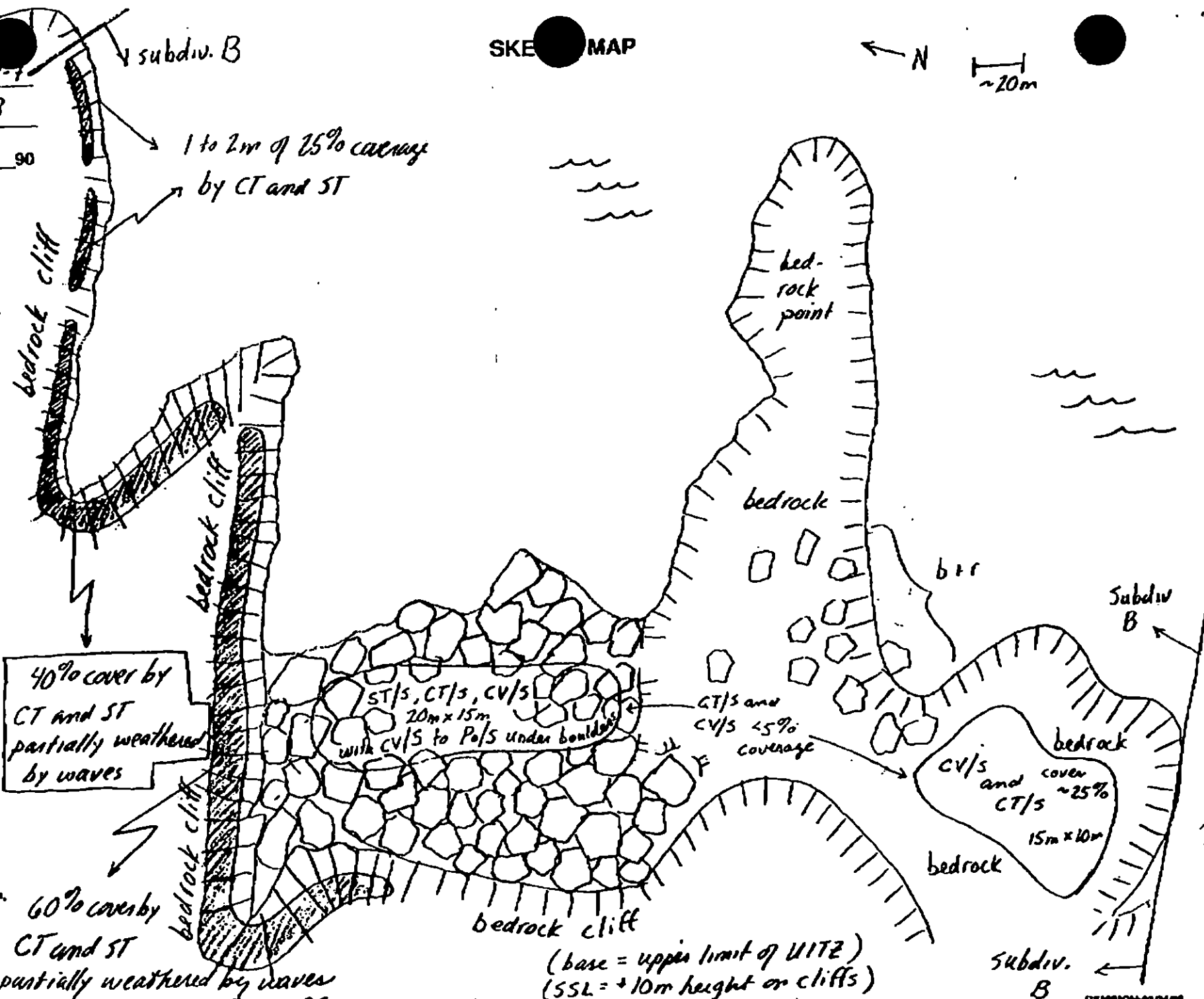
CT/S
splashed Distribution

Med Vegetation

Med Vegetation

1 →
photo location, direction,
and number

Character Length (m): AP 0 PO 20 CV 35 CT 35 ST 35 MS 0 PT 0 TB 0 FL 0 NO 10



SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/23/90

Segment ST/ PY-7 Subdivision B (of A-C) Date (mo / day / yr) 4 / 1 / 90Time (24 hr) 1433 Biologist M. CARR(A) Substrate type and % of segments:
(1) Bedrock 5 (2) Boulder 95 (3) Cobble — (4) Pebble — (5) Sand — (6) Silt —(B) Overall % cover of biota (% of segment): 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. —Frames NONE

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 ANYWHERE

Wildlife Observations/ General Comments:

NONE!

Ecological Considerations:

Sensitivity codes: see PY-7-A sheet

ST
422

PY-8

and 345 PM 4/1/90

PY-7

v. light
NVO
Narrow
v. light

start 205 PM 4/1/90

30 in of
v. light

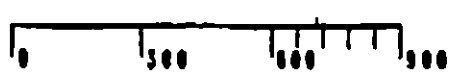
subdiv. C
subdiv. B
subdiv. A
Subdiv. A

NVO = No visible
oil

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

PY-7

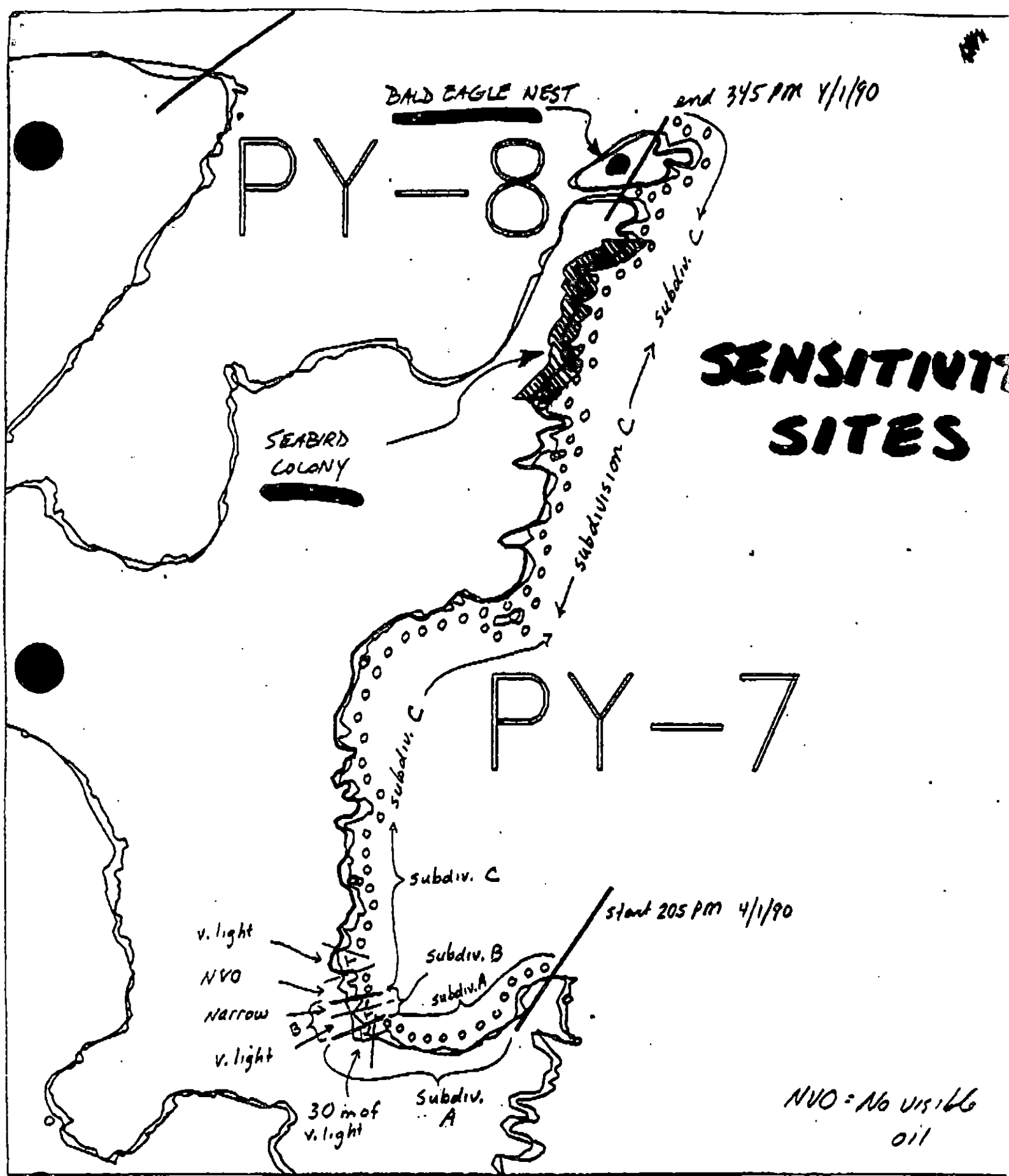
ADEC Segment Length: 512m



Map Key: KEN-102

Name: Mann

Date: 4/1/90



● XXX Wide

//// Medium

--- Narrow

TTTT Very Light

PY-7

ADEC Segment Length: 5121m

Map Key: KEN-102

Name: Mann

Date: 4/1/90

REGION: KENAI

SEGMENT: PY-07

SUBDIVISIONS: C (3 OF 3)

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG MANN USCG/NOAA MICHEL SEGMENT STI PY-7
 BIO CARR LAND REP PORTNER - PWS SUBDIVISION C
 XON BOYER ADEC REED TIME 14:05 to 14:20
 TEAM NO.: 18 TIDE LEVEL: +1.2 to +4.1 DATE 4/1/90
 EST. SUBDIVISION LENGTH: 5400 m 5919 ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☐ Foot ☒ Boat ☐ Helo WORKING DIRECTION: SOUTH to NORTH
 SURFACE SEDIMENTS: R 90 % B 10 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Lang 5 % Hang 35 % Vert 60 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 130 m NO 5250 m
5769

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	IC	IS	IP	IS	SP	SM	SI	SL	ST	TL	TR	TS	SU	UI	MI	U
ASPHALT PAVEMENT																
POOLED																
COVER				✓									✓	✓		
COAT				✓									✓	✓		
STAIN																
MOUSSE																
PATTIES																
TARBALLS																
FILM																
NO OIL															✓	✓

PAVEMENT: H F S N/A sq. m by N/A cmPATTIES / TARBALLS N/A 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. NoneFrames NoneSUBSURFACE OIL No pits because of inaccessible bedrock

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	SP	SM	SI	SL	ST	TL	TR	TS	SU	UI	MI	U		
<u>C</u>							.																
							.																
							.																
							.																
							.																
							.																
							.																

COMMENTS

This is a high wave-energy shoreline of spectacular granite cliffs and irregular coves. Calm seas, dry rocks, and a close inspection by boat makes me confident that no oil exists here.

 REVIEWED PAF DATE 5/1/90

SKETCH MAP

G MANNA
 ELEMENT ST/ PY-7
 SUBDIVISION C
 DATE 4.1.1 90

CHECKLIST

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

LEGEND

1 ▲

1 - No Subsurface Oil

2 ▲

2 - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Stashed Distribution

Red Vegetation

1 ➡➡

Note location, direction,
and number

No sketch provided.

Character Length (m): AP 0 PO 0 CV 150 CT 150 ST 0 MS 0 PT 0 TB 0 FL 0 NO 5164
~~5250~~

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST/ PY-7 Subdivision C (of A-C) Date (mo/day/yr) 4/1/90
 Time (24 hr) 1405 Biologist M. LARR

- (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 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	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
→ 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	NOT PRESENT
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	

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	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	NOT PRESENT
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	

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	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	NOT PRESENT
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	

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	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	NOT PRESENT IN VAPOR
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	NOT PRESENT

Wildlife Observations/ General Comments:

Ecological Considerations:

Sensitivity codes: Same as PY-7-A

EAGLE NESTS (ST)
 NATIONAL WILDLIFE REFUGE (422)

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ PY-7 SUBDIVISION: C DATE 4/1/90

USCG/NOAA

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

The v. light oil on this exposed rocky shore does
not warrant further treatment.

ADEC

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

Very light splashes on bedrock and large boulders.
I have read and agree with all information on SSAT Form

LAND MANAGER -USFWS

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

Due to the amount and location of the oil in this
subdivision treatment would be difficult.

PY-8

end 345 PM 1/1/90

PY-7

v. light

NVO

Narrow

v. light

30 m of
v. light

subdiv. C

subdiv. B

subdiv. A

Subdiv.
A

start 205 PM 4/1/90

NVO = No visible
oil

XXXX Wide

/// Medium

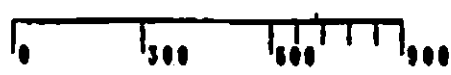
--- Narrow

TTTT Very Light

OOOO No Oil

PY-7

ADEC Segment Length: 512m



Map Key: KEN-102

Name: Manx

Date: 4/1/90

Date Entered:

BALD EAGLE NEST

end 345 PM 4/1/90

PY-8

SEABIRD COLONY

SENSITIVE SITES

PY-7

start 205 PM 4/1/90

v. light

NVO

Narrow

v. light

30 m of
v. light

subdiv. C

subdiv. B

subdiv. A

Subdiv. A

NVO = No visible
oil

PY-7

XXX Wide

/// Medium

--- Narrow

TTTT Very Light

ADEC Segment Length: 512m



Map Key: KEN-102

Name: Marr

Date: 4/1/90

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT PY-07 SUBDIVISION B (2 of 3)

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 Subdivisions A & C are more than 400m from work area.

5R Seabird Colony

NO CONSTRAINT. Seabird Colony is located in adjacent Subdivision C and is more than 800m from work area.

OTHER ECOLOGICAL CONSIDERATIONS

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

TAG ADDENDUM DATE

5/21/90.

ADEC

AET WENGER

AET WENGER

EXXON

AMY TGM

AMY TGM

NOAA

JOSEPH TULLOCH

JOSEPH TULLOCH

USCG

MR. J. HALL

MR. J. HALL

FOSC

WY L

DATE

5-21-90

Prepared by:

ANDREW MAYER

Date:

5/20/90

DIV 1

PY-8

PY-7

TREATMENT
AREA

PY-05

PY-06



Exxon Company, USA
Map Key: KEN-PY-7



ECOLOGY MAP
SEGMENT PY-7

SUBDIVISION 2 (2 of 3)
METERS

- | | |
|---|----------------|
| ★ | Seabird Colony |
| ▲ | Eagle Nest |

SHORELINE EVALUATION

SEGMENT ST/ PY-07 SUBDIVISION B (2 OF 3) DATE 4/5/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Bald eagle nest (5T) - 3/1 to 7/1; Seabird colony (5R) - 5/1 to 9/1; National Wildlife Refuge (4QQ).

SUBDIVISION ECOLOGICAL CONSTRAINTS: Restrict air traffic to essential minimum. Air approach from and to seaward only. Contact USFWS prior to treatment for confirmation of dates and avoidance minimums.

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 Z. Himes DATE: 4/17/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 63 m: V. Light 60 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 oiled trash and debris. Work done ASAP before 5/1 weather and safe access permitting.

SEE ADDENDUM DATED 5/20/90
Rex C.

TAG COMMENTS:

TAG APPROVAL DATE: 4/17/90

ADEC Art Weiler
EXXON ANDY TEAL
NOAA Bull Weisheit
USCG KENNETH KEONE

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

SHORELINE EVALUATION

SEGMENT ST/ PY-07 SUBDIVISION A (1 OF 3) DATE 4/5/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Bald eagle nest (5T) - 3/1 to 7/1; Seabird colony (5R) - 5/1 to 9/1; National Wildlife Refuge (40Q).

SUBDIVISION ECOLOGICAL CONSTRAINTS: Restrict air traffic to essential minimum. Air approach from and to seaward only. Contact USFWS prior to treatment for confirmation of dates and avoidance minimums.

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

SHPO SIGNATURE: [Signature] DATE: 4/17/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 82 m: No Oil 810 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: MONITORS TO ASSESS SUIZ DURING TREATMENT
OF ADJACENT SEGMENTS TO CONFIRM OBSERVATIONS
SNOW COVER RESTRICTED COMPLETE OBSERVATIONS DURING
SOFT.

TAG APPROVAL DATE: 4/17/90.
ADEC ART WEINER
EXXON ANDY TATZ
NOAA Bull Wescott
USCG KENNETH KEANE

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

6

PY-8

end 345 PM 4/1/90

PY-7

v. light

NVO

Narrow

v. light

30 m of
v. light

Subdiv.
A

subdiv. B

subdiv. A

subdiv. C

start 205 PM 4/1/90

NVO = 116 VIS 1/6
oil

XXX Wide

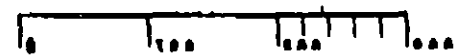
//// Medium

--- Narrow

TTTT Very Light

PY-7

ADEC Segment Length: 5121m



Map Key: KEM-102

Name: Mann

Date: 4/1/90



BALD EAGLE NEST

end 345 PM 4/1/90

PY-8

SEABIRD COLONY

SENSITIVE SITES

PY-7

start 205 PM 4/1/90

v. light

NVO

narrow

v. light

30 m of v. light

Subdiv. A

Subdiv. B

subdiv. A

subdiv. C

subdiv. C

subdiv. C

subdiv. C

NVO = No visible oil

PY-7

XXX Wide

//// Medium

--- Narrow

TTTT Very Light

ADEC Segment Length: 512m

Map Key: KEN-102

Name: Marr

Date: 4/1/90

SHORELINE EVALUATION

SEGMENT ST/ PY-07 SUBDIVISION B (2 OF 3) DATE 4/5/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Bald eagle nest (5T) - 3/1 to 7/1; Seabird colony (5R) - 5/1 to 9/1; National Wildlife Refuge (4QQ).

SUBDIVISION ECOLOGICAL CONSTRAINTS: Restrict air traffic to essential minimum. Air approach from and to seaward only. Contact USFWS prior to treatment for confirmation of dates and avoidance minimums.

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: 4/17/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 63 m: V.Light 60 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> </u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u> </u> Tarmat: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> <u> </u> Removal	<u> </u> Other (see comments)

COMMENTS: Manual removal of oiled trash and debris. Work done ASAP before 5/1 weather and safe access permitting.

TAG COMMENTS:

TAG APPROVAL DATE: 4/17/90.
ADEC Art Weirer
EXXON ANDY TSAL
NOAA Burt Wescott
USCG KENNETH KEANE

FOSC:

DATE: 4-22-90

PY-8

end 345 PM 7/1/90

PY-7

start 205 PM 4/1/90

v. light

NVO

Narrow

v. light

30 m of
v. light

subdiv. C

subdiv. C

subdiv. B

subdiv. A

Subdiv.
A

subdiv. C

subdivision C

NVO = No visible
oil

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

PY-7

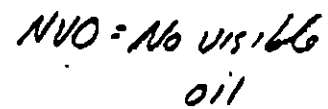
ADEC Segment Length: 5121m



Map Key: KEN-102

Name: Manx

Date: 4/1/90



Date: 4/1/90

SHORELINE EVALUATION

SEGMENT ST/ PY-07 SUBDIVISION C (3 OF 3) DATE 4/5/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Bald eagle nest (5T) - 3/1 to 7/1; Seabird colony (5R) - 5/1 to 9/1; National Wildlife Refuge (400).

SUBDIVISION ECOLOGICAL CONSTRAINTS: Restrict air traffic to essential minimum. Air approach from and to seaward only. Contact USFWS prior to treatment for confirmation of dates and avoidance minimums.

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

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

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 126 m: No Oil 5071 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: <u> </u> Wands
☐ Tarmat: <u> </u> Breakup	☐ Beach Cleaner
☐ Removal	☐ Other (see comments)

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 4/17/90
ADEC Art Weiner
EXXON Andy Teal
NOAA Burl Wescott
USCG Kenneth Keane

FOSC: DEL DATE: 4-22-90

PY-8

and 345 PM 4/1/90

PY-7

v. light
NVO
narrow
v. light

start 205 PM 4/1/90

30 m of
v. light

subdiv. C
subdiv. B
subdiv. A
Subdiv. A

NVO = No visible
oil

XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

PY-7

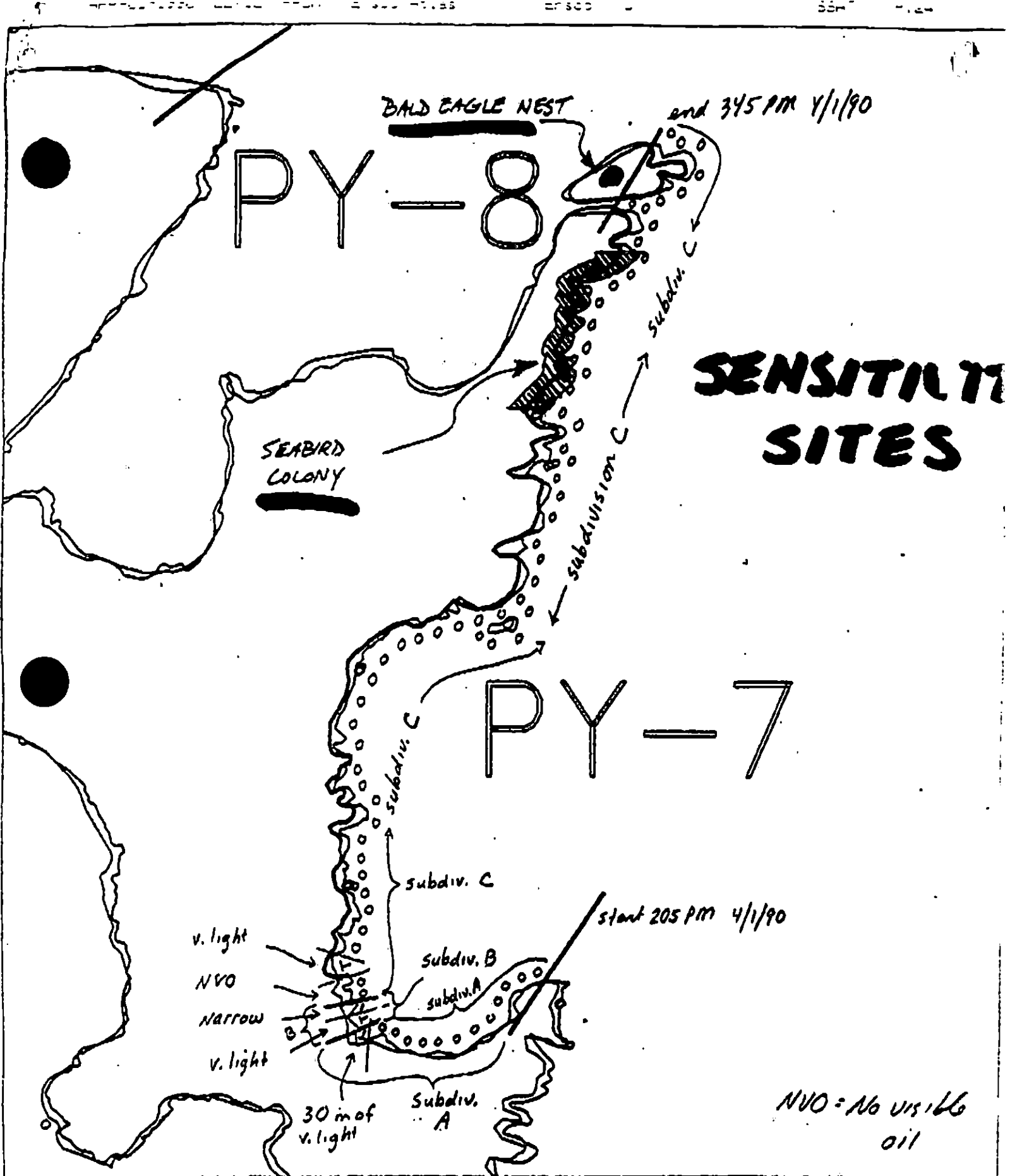
ADEC Segment Length: 5121m



Map Key: KEN-102

Name: Manx

Date: 4/1/90



XXX Wide

/// Medium

--- Narrow

TTTT Very Light

PY-7

ADEC Segment Length: 512m

Map Key: KEN-102

Name: Mann

Date: 4/1/90

1991 MAYSAP EVALUATION

SEGMENT: PY 007 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: 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

FOSC APPROVAL DATE: 6/8/91

ADEC [Signature]

FOSC [Signature]

EXXON [Signature]

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

USCG [Signature]

NOAA [Signature]

MAYSAP FIELD SHORELINE COMMENT SHEET

19

TEAM NO. 4 SEGMENT P4. 007 SUBDIVISION B DATE May 15 / 91

ADEC

NAME Clara S. Crosby SIGNATURE Clara S. Crosby☒ NTR

— High Energy area —
 Past oiling data indicated pooled oil present in this subdivision in a splash to patchy distribution - I would probably not recommend oiling cleanup in this sub-seg due to its limited access & safety hazard - in any case.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/17/91☒ NTR

High energy beach. I do not recommend cleaning this segment due to the safety hazard of getting to and from. ~~the beach~~ Note it can not be worked from Helo.

LANDMANAGER

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

While landing was not attempted on this high energy, small beach, the likelihood of being oil is extremely small.

USCG/NOAA

NAME CWO2 J. McINTOSH SIGNATURE Joe McIntosh☒ NTR

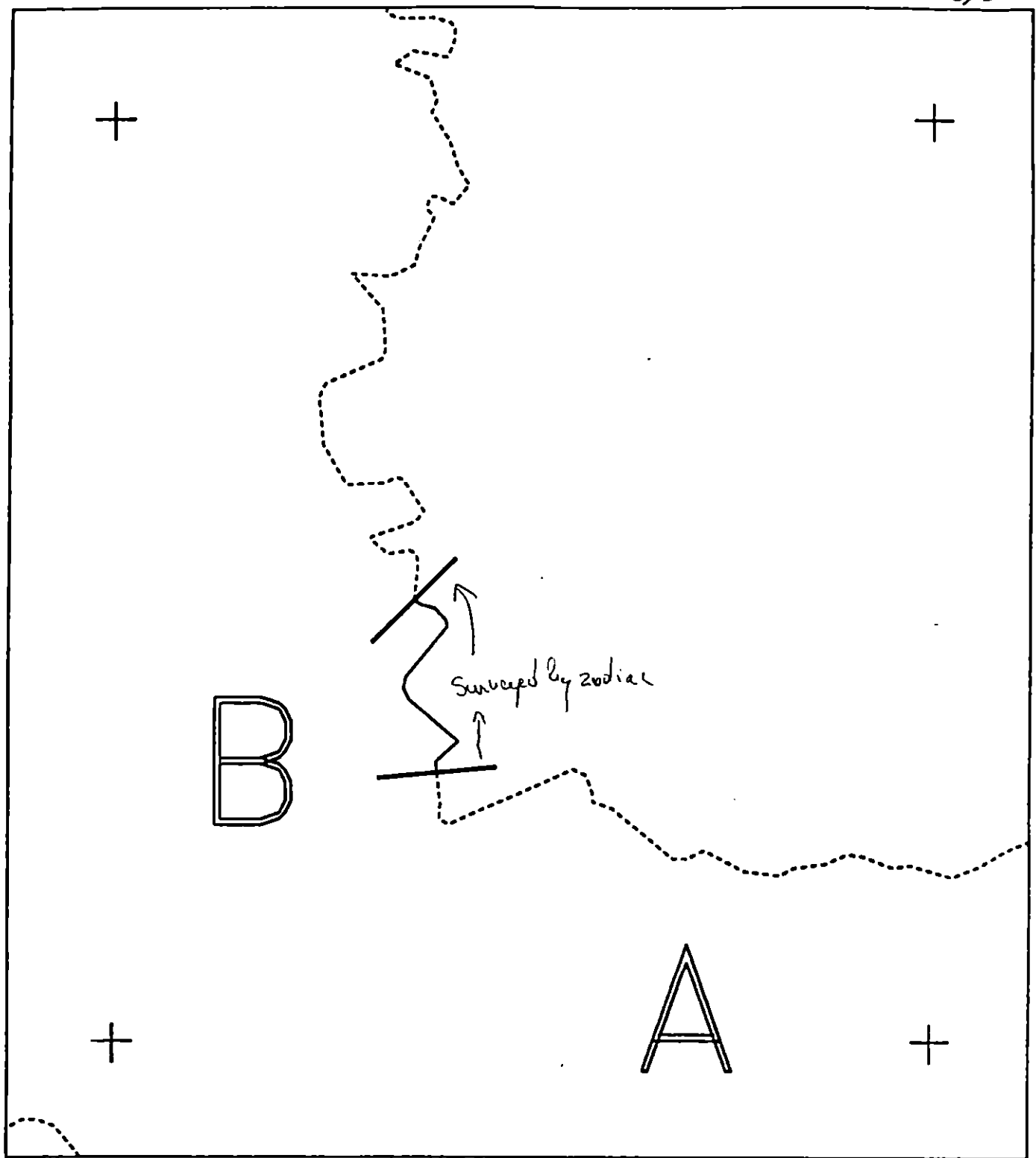
Limited access by boat/helo, safety problems with high energy beach, no helo landing site (as seen off shore).

NOAA / DENNIS J. MACINTOSH

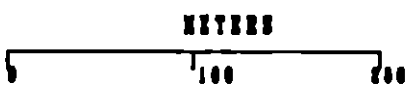
Dennis J. MacIntosh

PAGE 2 OF 6

Reviewed: 5/21/90 me
reviewed 5.20 94



PY007 B



AK State Plans, Zone 4
09700760

Subdivision Field Map

Map Key: KBNPY0070a

Name: JM Simpson

Date: MAY 15/91

Reviewed: 5/21/91 me
reviewed 5.20 91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 15, 1991 1105 - 1210
SEGMENT #	PY007	TIDAL HEIGHT (Range)	+0.5 => +3.7
SUBDIVISION	B	BIOLOGIST	JIM BARRY
SEA STATE	3 Ft swell	WIND SPEED/DIRECTION	Variable 0-10 kt, rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

General Features of PY007-B

This subdivision is a pocket beach along a high exposure coast. Logs prevented our landing at the shore. However, the beach is composed of large cobble and boulders rounded by wave scour. Log debris is abundant. Evidence of oiling was not visible from the skiff and, if present on the shore, the negative impacts to the biota were likely ameliorated by the strong reworking of the beach cobble by storms. Biota on the beach are likely limited to ephemeral species and those that can withstand the wave-induced disturbance. The shore appears to have black lichen and filamentous green algae above the cobble on the bedrock cliffs, with clean cobble below. It is likely that sparse small barnacles, moderate to dense abundances of limpets and littorine snails, and high densities of amphipods and isopods occur on this beach. The lowest zone have a moderate cover of filamentous algae and larger macroalgae are present on the headlands bordering the beach. This appears to be a healthy, high exposure beach.

A seabird colony is located in the adjacent segment (PY006), and many marine birds were observed along the segment, including marbled murrelets, red faced cormorants, pelagic cormorants, common murres, tufted puffins, horned puffins, red necked phalaropes, glaucous-winged gulls, black-legged kittiwakes, fork tailed petrels, harlequin ducks, common mergansers, rhinoceros auklets, pigeon guillemots, boneparte's gull, aleutian tern, arctic tern, and others? Two eagle nests were sighted at the locations marked on the ecology map near the northern and southern ends of the segment. We were unable to identify whether the nests were active, but did observe one adult eagle near each nest.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	2	
Seabirds	many		
Waterfowl			
Gulls/Kittiwakes			
Shorebirds			
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.

PY007-B Biology Report, continued

List of Species Expected along PY007-B

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Acrosiphonia sp., Cladophora sp., Enteromorpha sp., Prasiola meridionalis,
Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Ralfsia
sp.
4. Red Algae - Rhodophyta
Endocladia muricata, Halosaccion glandiforme, Lithothamnion sp., Palmaria
palmata, Petrocelis sp., Porphyra sp.

II. Marine Animals

2. Anemones - Anthopleura artemesia, E. prolifera, Epizoanthus scotinus
5. Flatworms - Platyhelminthes - Polyclads
8. Polychaete Worms
Nereidae - Nereis spp.
Spriorbidae - Spirorbis sp.
10. Crustaceans
 - a. Amphipods - Orchestia sp.?, Traskorchestia traskiana
 - b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs - Paguridae (hermit crabs)
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma
oregonensis
11. Molluscs
 - b. Snails - Gastropods - Littorina sitkana, L. keenae, Nucella lamellosa,
N. lima
 - c. Limpets - Lottia digitalis, L. persona, Tectura fenestrata, T.
persona, T. scutum
 - e. Bivalves - Mytilus edulis
12. Echinoderms
 - b. Sea stars - Pisaster ochraceus, Pycnopoda helianthoides
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
13. Bryozoans - Membranipora sp., Schizoporella sp.
15. Fishes - Stichaeidae - Xiphister atropurpureus, X. mucosus

4/6

B

A

XXXX
////

TTTT
0000

Wide
Medium
Narrow
Very Light
No Oil

PY007 B

ADEC Subsegment Length: 123m
METERS

0 100 200
AK State Plane Zone 4
np907b



Subdivision Field Map

Map Key: KENPY007B

Name: J. Samples

Date: MAY 5 '91

Date Entered:

REVIEWED: MC 5/24/91
reviewed 5.20 91

1991 MAYSAP EVALUATION

SEGMENT: PY 007 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: [Signature] Date: 5/30/91

RECOMMENDATIONS:

INITIAL**TAG****FOSC**

TREATMENT REQUIRED (Y or N)

N

N



Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Custombien

Other

Other

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: MAY 29 1991

FOSC APPROVAL DATE: 6/8/41

ADEC

FOSC

EXXON

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

USCG

NOAA

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT PY. 007 SUBDIVISION D DATE May 15, 1991

ADEC

NAME Clara S. Crosby SIGNATURE Clara S. Crosby☒ NTR

High Energy headland - cliffs -
while the survey crew was not able to access
shoreline, I would not recommend treatment due
to the exposure of this segment & element of danger
present to work crews.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/17/91☒ NTR

High energy beach, I would not recommend
cleanup on this segment due to the safety
hazard of getting to and from. Note it can
not be worked from Helo.

LANDMANAGER

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

High energy headland. No oil observed from boat. Could not
land. This high energy headland would not likely be oiled.

USCG/NOAA

NAME JOHN J. Mc NATHON SIGNATURE John J. Mc Nathon☒ NTR

Same as PY 007 A!

NOAA / DONALD A. MACDONALD

PAGE 2 OF 7

SEGMENT py. 007. A
SUBDIVISION A
DATE MAY 15 191

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 m NO 892 m US m

FRAMES

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

Because contrary to modernizing to step by step. But it
we were unable to turn it into a well too. Surveyed the
ground and found it was not suitable for the purpose.
Accordingly, it was decided to build a new one.

Reviewed 5:20 9/7

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 15, 1991 1105 - 1210
SEGMENT #	PY007	TIDAL HEIGHT (Range)	+0.5 => +3.7
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	3 Ft swell	WIND SPEED/DIRECTION	Variable 0-10 kt, rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

General Features of PY007-A

This segment was surveyed by skiff. The shores are mostly moderately to highly exposed sloping bedrock. Little oil was reported from the subdivision and no oil was observed. The biota on the shore appeared very healthy, with no evidence of oil, or oil-related impacts. Black lichen is visible in the supratidal zone, with green and red filamentous algae abundant in the upper to middle zone, moderate to dense cover of Fucus below, and patchy, but generally continuous cover of Mytilus along sections of the subdivision. Brown algae cover the lowest zones and subtidal. Cleanup will probably not be required, but would probably not impact the biota, unless hot water cleaning was performed.

A seabird colony is located in the adjacent segment (PY006), and many marine birds were observed along the segment, including marbled murrelets, red faced cormorants, pelagic cormorants, common murre, tufted puffins, horned puffins, red necked phalaropes, glaucous-winged gulls, black-legged kittiwakes, fork tailed petrels, harlequin ducks, common mergansers, rhinoceros auklets, pigeon guillemots, boneparte's gull, aleutian tern, arctic tern, and others? Two eagle nests were sighted at the locations marked on the ecology map near the northern and southern ends of the segment. We were unable to identify whether the nests were active, but did observe one adult eagle near each nest.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	2	
Seabirds	many	11	
Waterfowl	2	} 300 ±	
Gulls/Kittiwakes/Terns	5		
Shorebirds	1		
Corvids	1		
Other Birds		2	

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

Shoreline subdivision map showing important biological features attached.

Reviewed F.W. 5/20/91
M.B. 5/20/91

PY007-A Biology Report, continued

List of Species Expected along PY007-A

A. Marine Plants

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

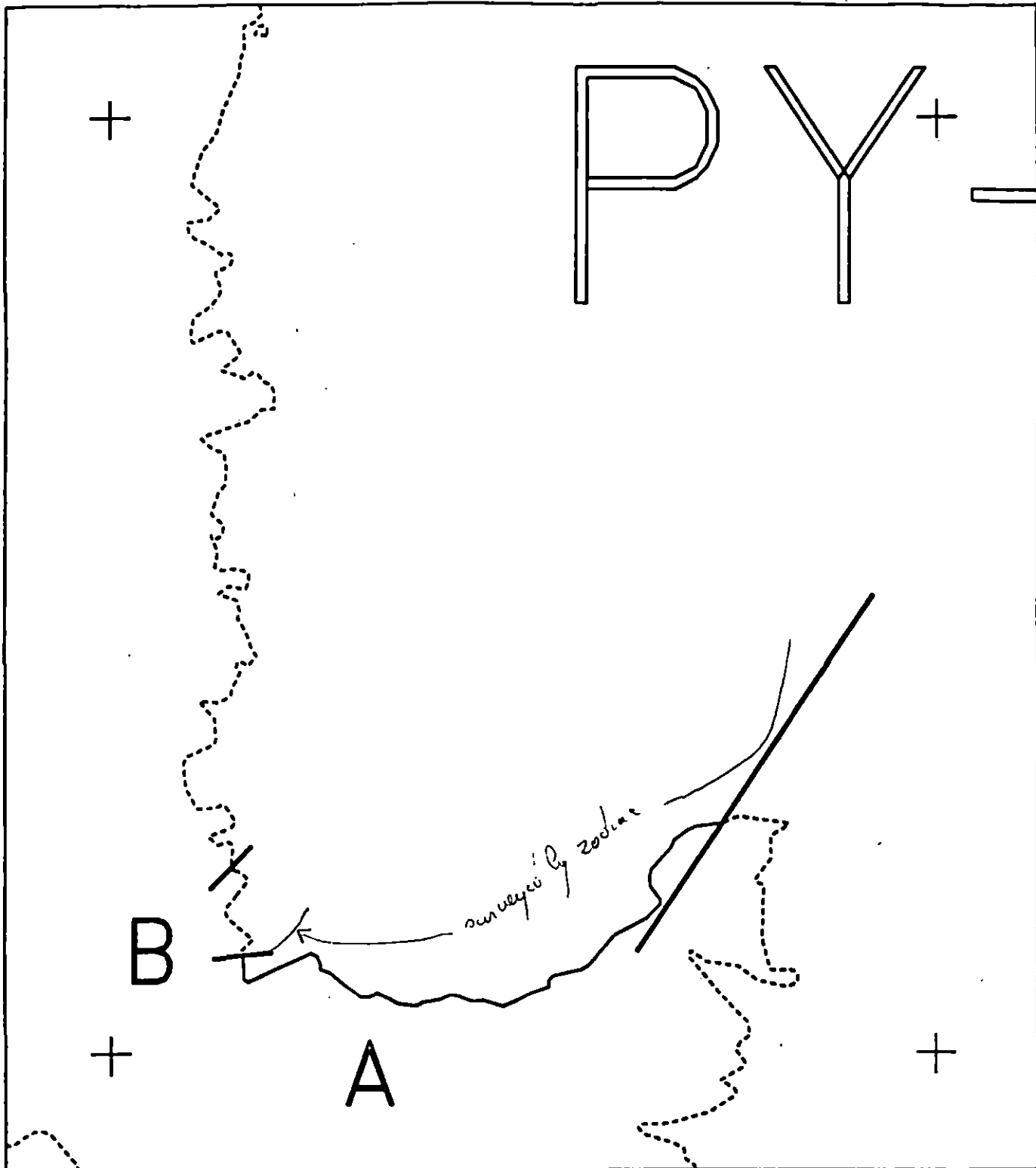
II. Marine Animals

1. Sponges - Porifera
Halichondria sp., Halichondria panicea, Ophlitaspongia pennata, Tethys sp.
2. Anemones - Anthopleura artemesia, A. elegantissima, A. xanthogrammica,
Epiactis ritteri, E. prolifera?, Metridium senile, Urticina
crassicornis, Epizoanthus scotinus
3. Hydroids - Sertularidae - Sertularella?, Abietinaria sp.
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms
Emplectonema gracile, Tubulanus polymorphus
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.?, Traskorchestia traskiana
 - b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs
Acantholithodes hispidus, Haplogaster sp., Paguridae (hermit crabs),
Oregonia gracilis, Pugettia sp.,
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma
oregonensis

F.W. 5/20/91
Reviewed M.B. 5/20/91

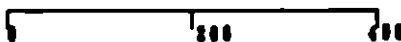
PY007-A Biology Summary, continued

11. Mollusca
 - a. Chitons - *Cryptochiton stelleri*, *Mopalia* sp., *M. mucosa*, *Katharina tunicata*, *Tonicella lineata*,
 - b. Snails - Gastropods
Amphissa columbiana, *Fusitriton oregonensis*, *Littorina scutulata*, *L. sitkana*, *L. keenae*, *Nucella lamellosa*, *N. lima*, *Tachyrhynchus* sp.
 - c. Limpets - *Acmaea mitra*, *Diadora aspera*, *Lottia digitalis*, *L. persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
 - d. Nudibranches - *Lamellidoris fusca*, *Onchidela* sp.
 - e. Bivalves - *Mytilus edulis*, *Pododesmus cepio*
 - 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
Cucumaria miniata, *C. vegae*, *Eupentacta* sp., *Leptosynapta* sp.
 - d. Urchins - *Strongylocentrotus droebachiensis*
13. Bryozoans - *Carbasea carbasea*, *Eucratea loricata*, *Membranipora* sp., *Microporina borealis*, *Phidolopora pacifica*, *Schizoporella* sp.
15. Fishes
 - Cottidae - *Artedius harringtoni*, *Oligocottus* sp. (bright green), *Rhanphocottus richardsonii*
 - Liparidae - *Liparis callyodon*
 - Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*



PY007 A

METERS



AK State Plane Zone 4
spy007a

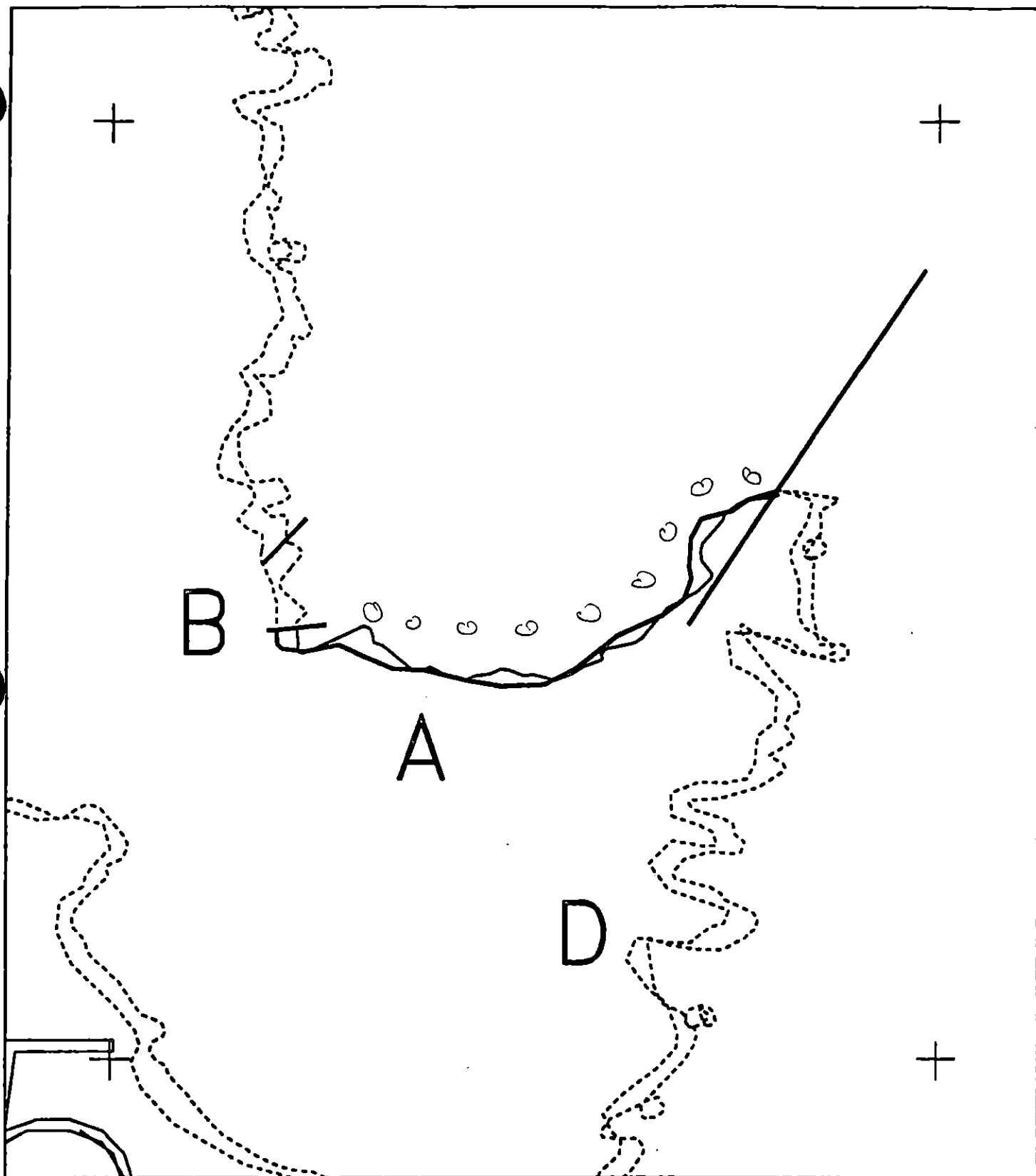
Subdivision Field Map

Map Key: KKNPY007Aa

Name: JM Sempin

Date: May 1972

reviewed 5.20 by
5/20/71 F.W.



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

PY007 A

ADEC Subsegment Length: 892m

METERS

0 200 400

AK State Plane Zone 4
ap007a



Subdivision Field Map

Map Key: KENPY007A

Name: JM Simpson

Date: May 15/91

Date Entered:

reviewed 5-20-94

1991 MAYSAP EVALUATION

SEGMENT: PY 007 SUB: A REGION: KEN SURVEY DATE: 5/15/91ENVIRONMENTAL 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

High Energy headland - cliffs - while the Survey crew was not able to access shoreline, I would not recommend treatment due to the exposure of this segment & element of danger present to work crews.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/17/91

☒ NTR

High energy beach, I would not recommend cleanup on this segment due to the safety hazard of getting to and from. Note it can not be worked from Helo.

LANDMANAGER

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

☒ NTR

High energy headland. No oil observed from boat. Could not land. This high energy headland would not likely be oiled.

USCG/NOAA

NAME LTJG J. Mc NATION SIGNATURE J. Mc N

☒ NTR

Same as P4007 A!

NOAA / DONALD H. Mc NATION

PAGE 2 OF 1

SEGMENT 04-007-A

SUBDIVISION A

DATE MAY / 15 / 91

ENERGY LEVEL: ☒ H ☐ M ☐ L

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

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

EST. OIL CATEGORY LENGTH: W m M m N m VL m NO 892 m US m

DISTRIBUTION: C = 91-100%; 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

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

reviewed 5.20 44
5/20/91 fwt

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 15, 1991 1105 - 1210
SEGMENT #	PY007	TIDAL HEIGHT (Range)	+0.5 => +3.7
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	3 Ft swell	WIND SPEED/DIRECTION	Variable 0-10 kt, rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

General Features of PY007-A

This segment was surveyed by skiff. The shores are mostly moderately to highly exposed sloping bedrock. Little oil was reported from the subdivision and no oil was observed. The biota on the shore appeared very healthy, with no evidence of oil, or oil-related impacts. Black lichen is visible in the supratidal zone, with green and red filamentous algae abundant in the upper to middle zone, moderate to dense cover of Fucus below, and patchy, but generally continuous cover of Mytilus along sections of the subdivision. Brown algae cover the lowest zones and subtidal. Cleanup will probably not be required, but would probably not impact the biota, unless hot water cleaning was performed.

A seabird colony is located in the adjacent segment (PY006), and many marine birds were observed along the segment, including marbled murrelets, red faced cormorants, pelagic cormorants, common murres, tufted puffins, horned puffins, red necked phalaropes, glaucous-winged gulls, black-legged kittiwakes, fork tailed petrels, harlequin ducks, common mergansers, rhinoceros auklets, pigeon guillemots, boneparte's gull, aleutian tern, arctic tern, and others? Two eagle nests were sighted at the locations marked on the ecology map near the northern and southern ends of the segment. We were unable to identify whether the nests were active, but did observe one adult eagle near each nest.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	2	
Seabirds	many 11	} 300 ± 2	
Waterfowl	2		
Gulls/Kittiwakes/Loons	5		
Shorebirds	1		
Corvids	1		
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

Reviewed F.W. 5/20/91
M.B. 5/20/91

List of Species Expected along PY007-A

A. Marine Plants

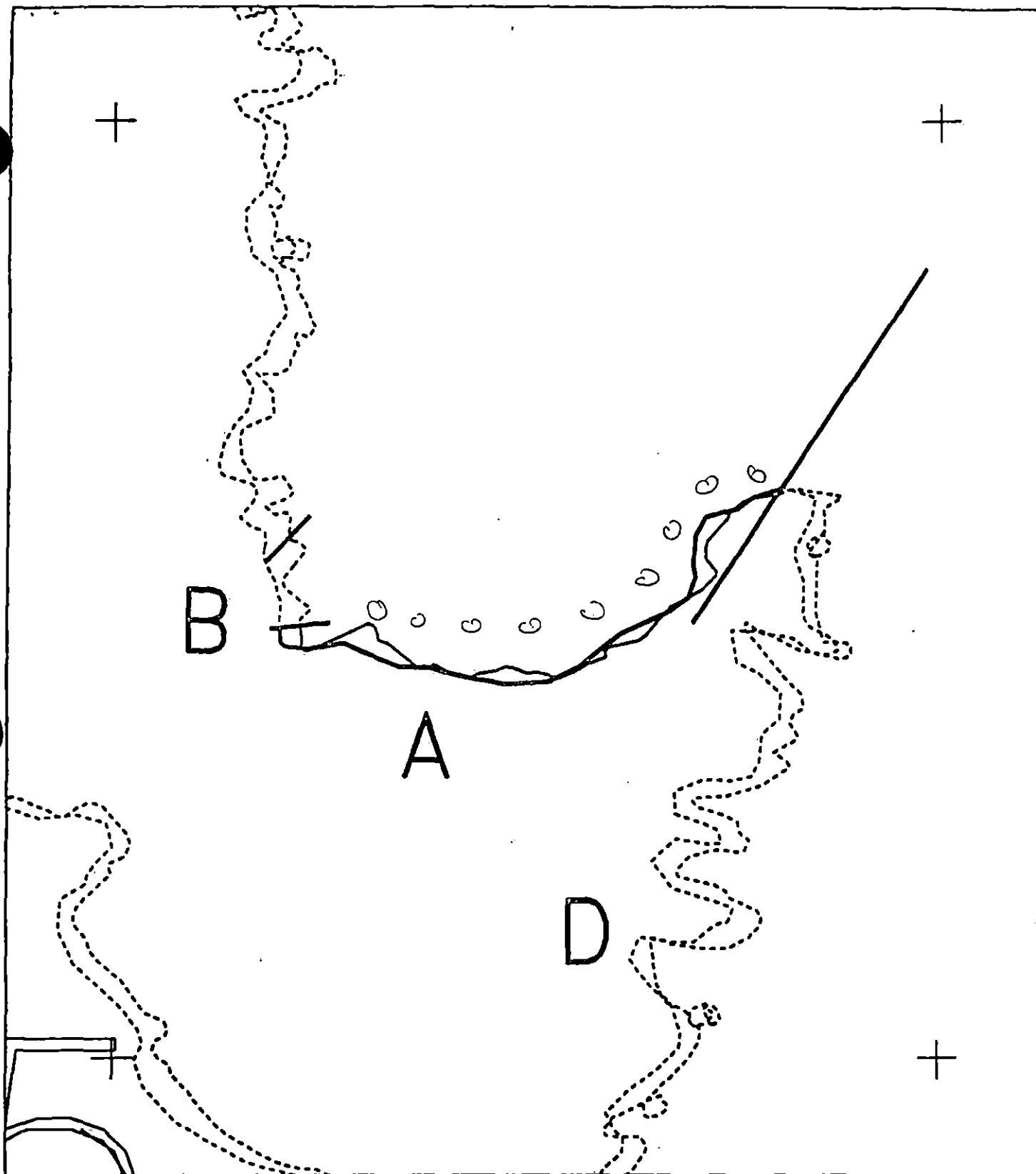
1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Acrosiphonia sp., Cladophora sp., Enteromorpha sp., Prasiola meridionalis,
Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Ectocarpus spp., Fucus distichus, Hedophyllum sessile,
Hildenbrandia sp., Laminaria groenlandica, Nereocystis leutkeana, Ralfsia sp.,
Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Anfelia plicata, Bossiella sp., Calliarthron sp., Corallina sp.,
Cryptosiphonia woodii, Cumagloia andersonii, Endocladia muricata, Halosaccion
glandiforme, Iridaea sp., Lithothamnion sp., Membranoptera dimorpha, 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, Ophlitaspongia pennata, Tethys sp.
2. Anemones - Anthopleura artemesia, A. elegantissima, A. xanthogrammica,
Epiactis ritteri, E. prolifera?, Metridium senile, Urticina
crassicornis, Epizoanthus scotinus
3. Hydroids - Sertularidae - Sertularella?, Abietinaria sp.
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms
Emplectonema gracile, Tubulanus polymorphus
8. Polychaete Worms
Glyceridae
Nepthyidae
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.?, Traskorchestia traskiana
 - b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs
Acantholithodes hispidus, Haplogaster sp., Paguridae (hermit crabs),
Oregonia gracilis, Pugettia sp.,
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma
oregonensis

11. Mollusca
 - a. Chitons - *Cryptochiton stelleri*, *Mopalia* sp., *M. mucosa*, *Katharina tunicata*, *Tonicella lineata*,
 - b. Snails - Gastropods
Amphissa columbiana, *Fusitriton oregonensis*, *Littorina scutulata*, *L. sitkana*, *L. keenae*, *Nucella lamellosa*, *N. lima*, *Tachyrhynchus* sp.
 - c. Limpets - *Acmaea mitra*, *Diadora aspera*, *Lottia digitalis*, *L. persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
 - d. Nudibranches - *Lamellidoris fusca*, *Onchidela* sp.
 - e. Bivalves - *Mytilus edulis*, *Pododesmus cepio*
 - 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
Cucumaria miniata, *C. vegae*, *Eupentacta* sp., *Leptosynapta* sp.
 - d. Urchins - *Strongylocentrotus droebachiensis*
13. Bryozoans - *Carbasea carbasea*, *Eucratea loricata*, *Membranipora* sp., *Microporina borealis*, *Phidolopora pacifica*, *Schizoporella* sp.
15. Fishes
 - Cottidae - *Artedius harringtoni*, *Oligocottus* sp. (bright green), *Rhanphocottus richardsonii*
 - Liparidae - *Liparis callyodon*
 - Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*

reviewed 5.20 Qy
5/20/91 F.W.



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

PY007 A

ADEC Subsegment Length: 892m

METERS

200 400
 AK State Plane Zone 4
 sp007a



Subdivision Field Map

Map Key: KENPY007A

Name: J. M. Campbell

Date: May 15/91

Date Entered:

reviewed 5.20 94
 5/20/91 F.W.

1991 MAYSAP EVALUATION

SEGMENT: PY 007 **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 _____

TEAM NO. 4 SEGMENT P4. 007 SUBDIVISION B DATE May 15/91

ADEC

NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☒ NTR

— High Energy area —
Past oiling data indicated pooled oil present in this subdivision in a splash to patchy distribution - I would probably not recommend oiling cleanup in this subseg - due to its limited access & safety hazard - in any case.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/17/91

☒ NTR

High energy beach. I do not recommend cleaning this segment due to the safety hazard of getting to and from. ~~the beach~~ Note it can not be worked from Helo.

LANDMANAGER

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

☒ NTR

While landing was not attempted on this high energy, small beach, the likelihood of being oil is extremely small.

USCG/NOAA

NAME CWO2 J. Mc MATTON SIGNATURE Joe McMatton

☒ NTR

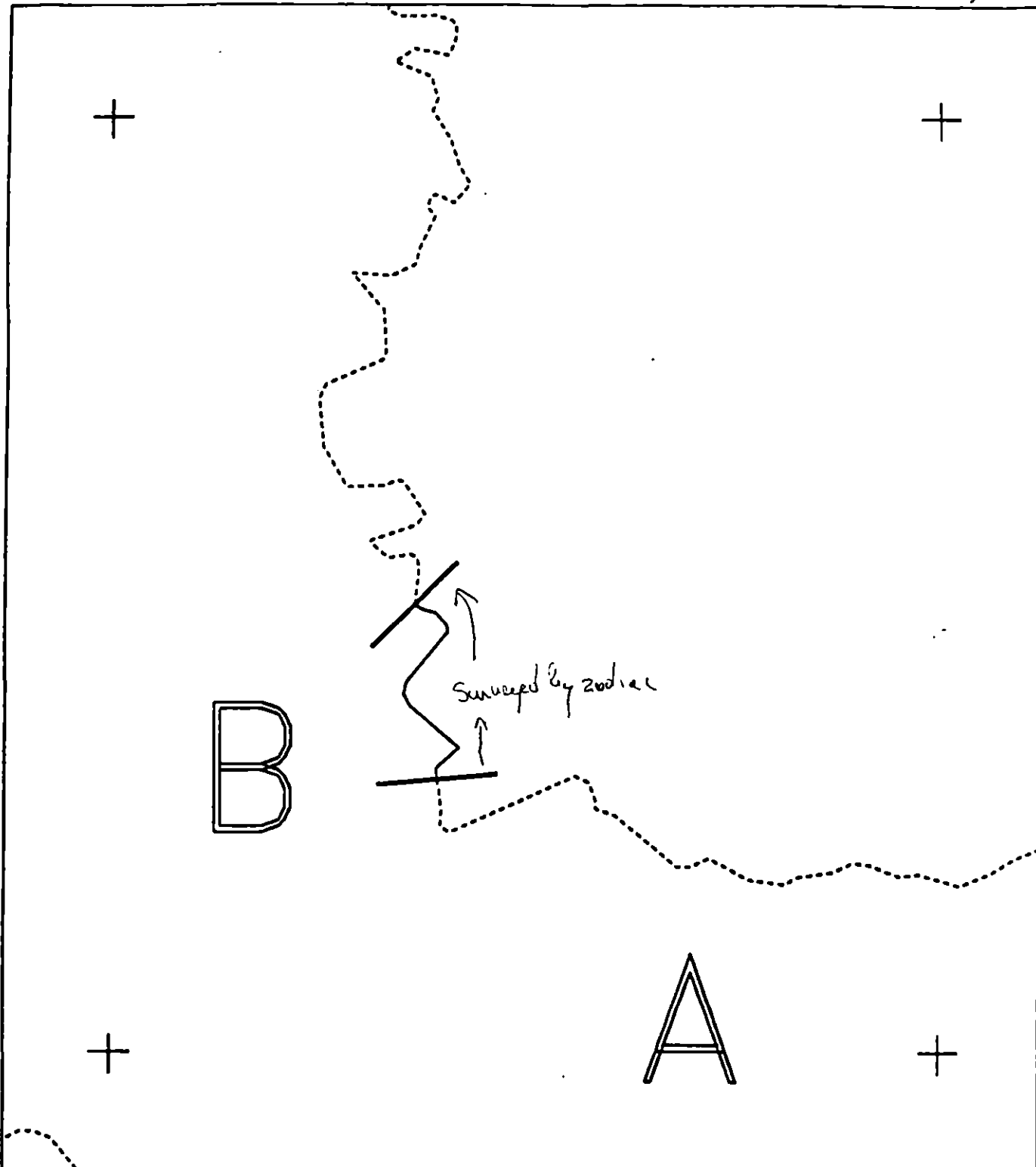
Limited access by boat/helo, safety problems with high energy beach, no helo landing site (as seen off shore).

N 1A A / D. H. P. MAC MATTON

[Signature]

PAGE 2 OF 6

Reviewed: 5/21/90 me
reviewed 5.20 94



	PY007 B	Subdivision Field Map Map Key: KENPY007Ba Name: <u>JM Simpson</u> Date: <u>MAY 15/91</u>
	METERS AS State Plane Zone 4 897007Ba	

Reviewed: 5/21/91 me
 reviewed 5.20 91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 15, 1991 1105 - 1210
SEGMENT #	PY007	TIDAL HEIGHT (Range)	+0.5 => +3.7
SUBDIVISION	B	BIOLOGIST	JIM BARRY
SEA STATE	3 Ft swell	WIND SPEED/DIRECTION	Variable 0-10 kt, rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

General Features of PY007-B

This subdivision is a pocket beach along a high exposure coast. Logs prevented our landing at the shore. However, the beach is composed of large cobble and boulders rounded by wave scour. Log debris is abundant. Evidence of oiling was not visible from the skiff and, if present on the shore, the negative impacts to the biota were likely ameliorated by the strong reworking of the beach cobble by storms. Biota on the beach are likely limited to ephemeral species and those that can withstand the wave-induced disturbance. The shore appears to have black lichen and filamentous green algae above the cobble on the bedrock cliffs, with clean cobble below. It is likely that sparse small barnacles, moderate to dense abundances of limpets and littorine snails, and high densities of amphipods and isopods occur on this beach. The lowest zone have a moderate cover of filamentous algae and larger macroalgae are present on the headlands bordering the beach. This appears to be a healthy, high exposure beach.

A seabird colony is located in the adjacent segment (PY006), and many marine birds were observed along the segment, including marbled murrelets, red faced cormorants, pelagic cormorants, common murre, tufted puffins, horned puffins, red necked phalaropes, glaucous-winged gulls, black-legged kittiwakes, fork tailed petrels, harlequin ducks, common mergansers, rhinoceros auklets, pigeon guillemots, bonaparte's gull, aleutian tern, arctic tern, and others? Two eagle nests were sighted at the locations marked on the ecology map near the northern and southern ends of the segment. We were unable to identify whether the nests were active, but did observe one adult eagle near each nest.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	2	
Seabirds	many		
Waterfowl			
Gulls/Kittiwakes			
Shorebirds			
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.

RW-4 9/20/91 ML

PY007-B Biology Report, continued

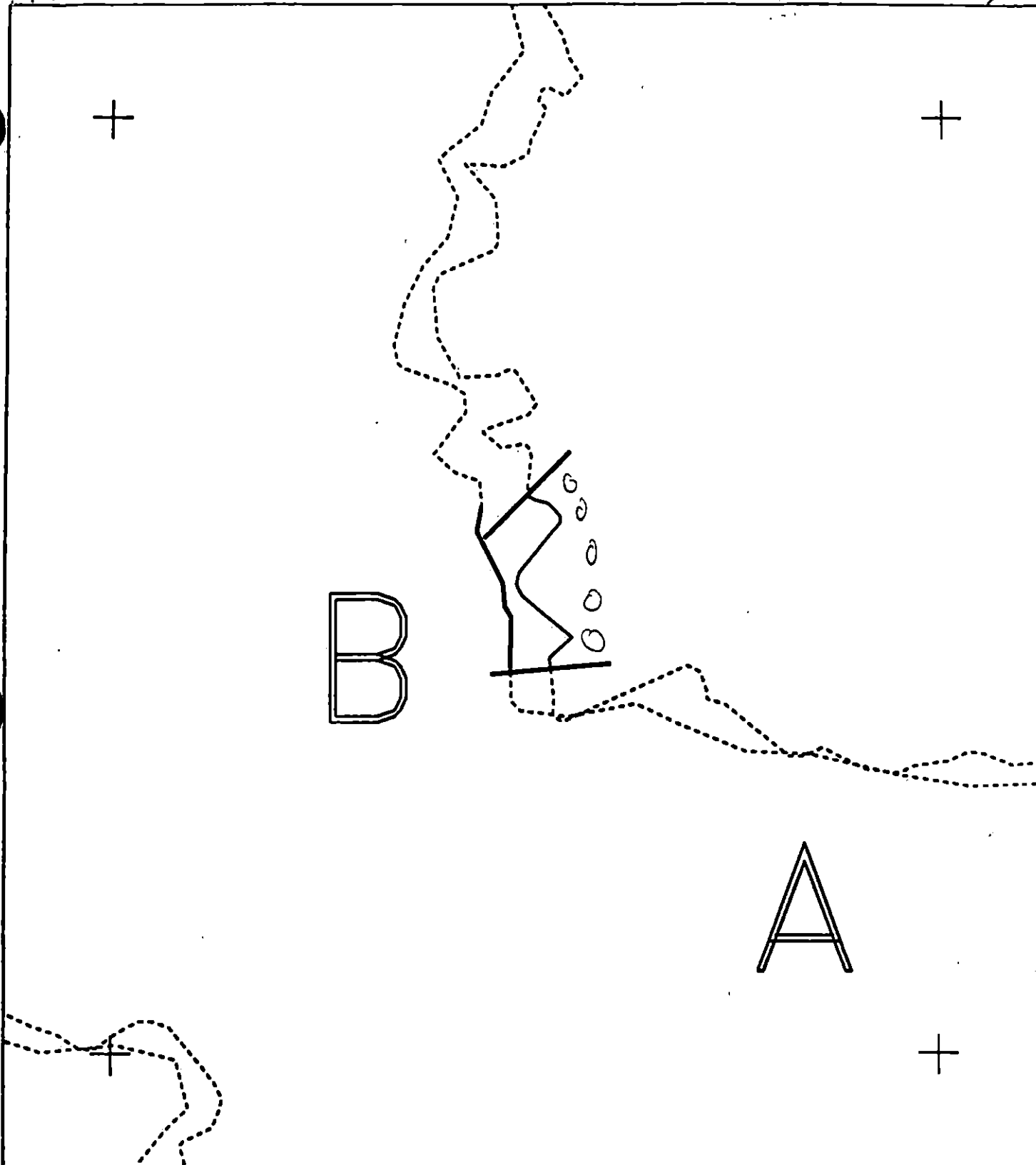
List of Species Expected along PY007-B

A. Marine Plants

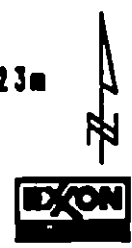
1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Acrosiphonia sp., Cladophora sp., Enteromorpha sp., Prasiola meridionalis,
Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Ralfsia
sp.
4. Red Algae - Rhodophyta
Endocladia muricata, Halosaccion glandiforme, Lithothamnion sp., Palmaria
palmata, Petrocelis sp., Porphyra sp.

II. Marine Animals

2. Anemones - Anthopleura artemesia, E. prolifera, Epizoanthus scotinus
5. Flatworms - Platyhelminthes - Polyclads
8. Polychaete Worms
Nereidae - Nereis spp.
Spiorbidae - Spirorbis sp.
10. Crustaceans
 - a. Amphipods - Orchestia sp.?, Traskorchestia traskiana
 - b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs - Paguridae (hermit crabs)
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma
oregonensis
11. Molluscs
 - b. Snails - Gastropods - Littorina sitkana, L. keenae, Nucella lamellosa,
N. lima
 - c. Limpets - Lottia digitalis, L. persona, Tectura fenestrata, T.
persona, T. scutum
 - e. Bivalves - Mytilus edulis
12. Echinoderms
 - b. Sea stars - Pisaster ochraceus, Pycnopoda helianthoides
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
13. Bryozoans - Membranipora sp., Schizoporella sp.
15. Fishes - Stichaeidae - Xiphister atropurpureus, X. mucosus



XXXX	Wide	PY007 B	Subdivision Field Map
////	Medium	ADEC Subsegment Length: 123m	Map Key: KENPY007B
----	Narrow	METERS	Name: <u>McSample</u>
TTTT	Very Light	0 100 200	Date: <u>MAY 20 94</u>
0000	No Oil	AK State Plane Zone 4 upy007b	Data Entered:



Reviewed: MC 5/24/94
Reviewed 5.20 94

1991 MAYSAP EVALUATION

SEGMENT: PY 007 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:

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: Subdivision surveyed by skiff. No oil observed.

TAG:

FOSC:

TAG APPROVAL DATE:

FOSC APPROVAL DATE:

ADEC

FOSC

EXXON

USCG

NOAA

TEAM NO. 4 SEGMENT P4.007 SUBDIVISION C DATE MAY 15 1991

ADEC

NAME Clara S. Crosby

SIGNATURE

Clara S. Crosby☒ NTR

This is a high energy segment. Access is limited & was impossible on the day of survey. Due to this, I would not recommend treatment.

EXXON

NAME George P. Sklar

SIGNATURE

George P. Sklar 5/18/91☒ NTR

Very high energy beach. No treatment would be worth the safety risk.

LANDMANAGER

NAME John P. Hardister OF USFWS

SIGNATURE

John P. Hardister☒ NTR

No treatment recommended for this high safety risk, high energy beach.

USCG/NOAA

NAME John McMahon/Don McDonald

SIGNATURE

John McMahon☒ NTR

Safety hazard due to inaccessibility to beach.

Donald A. MacDonald

Unable to land due to swell and logs in the water segment surveyed from the ship. No per ADEC or Exxon segment is high energy.

PAGE 2 OF 5

C.D.

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 15, 1991	1205-1210 1205-1210
SEGMENT #	PY007	TIDAL HEIGHT (Range)	2.7 +3.7 - 3.7	
SUBDIVISION	C	BIOLOGIST	JIM BARRY	
SEA STATE	3 Ft swell	WIND SPEED/DIRECTION	Variable 0-10 kt, rain	

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

General Features of PY007-C

This segment was surveyed by skiff from 100 or more meters distance. The shores are mostly moderately to highly exposed sloping bedrock. Little oil was reported from the subdivision. Observable areas on the subdivision appear to have floral and faunal assemblages typical of exposed coasts. Black lichen is visible in the supratidal zone, with green and red filamentous algae abundant in the upper to middle zone, moderate to dense cover of Fucus below, and patchy, but generally continuous cover of Mytilus along sections of the subdivision. Brown algae cover the lowest zones and subtidal. Cleanup will probably not be required, but would probably not impact the biota, unless hot water cleaning was performed.

A seabird colony is located in the adjacent segment (PY006), and many marine birds were observed along the segment, including marbled murrelets, red faced cormorants, pelagic cormorants, common murres, tufted puffins, horned puffins, red necked phalaropes, glaucous-winged gulls, black-legged kittiwakes, fork tailed petrels, harlequin ducks, common mergansers, rhinoceros auklets, pigeon guillemots, boneparte's gull, aleutian tern, arctic tern, and others? Two eagle nests were sighted at the locations marked on the ecology map near the northern and southern ends of the segment. We were unable to identify whether the nests were active, but did observe one adult eagle near each nest.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	2	
Seabirds	many		
Waterfowl			
Gulls/Kittiwakes			
Shorebirds			
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

List of Species Expected along PY007-C

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Acrosiphonia sp., Cladophora sp., Enteromorpha sp., Prasiola meridionalis,
Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Ectocarpus spp., Fucus distichus, Hedophyllum sessile,
Hildenbrandia sp., Laminaria groenlandica, Nereocystis leutkeana, Ralfsia sp.
Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Anfelia plicata, Bossiella sp., Calliarthron sp., Corallina sp.,
Cryptosiphonia woodii, Cumagloia andersonii, Endocladia muricata, Halosaccia
glandiforme, Iridaea sp., Lithothamnion sp., Membranoptera dimorpha, 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, Ophlitaspongia pennata, Tethys sp.
2. Anemones - Anthopleura artemesia, A. elegantissima, A. xanthogrammica,
Epiactis ritteri, E. prolifera?, Metridium senile, Urticina
crassicornis, Epizoanthus scotinus
3. Hydroids - Sertularidae - Sertularella?, Abietinaria sp.
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms
Emplectonema gracile, Tubulanus polymorphus
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.?, Traskorchestia traskiana
 - b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs
Acantholithodes hispidus, Haplogaster sp., Paguridae (hermit crabs),
Oregonia gracilis, Pugettia sp.,
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma
oregonensis

11. Mollusca

- a. Chitons - *Cryptochiton stelleri*, *Mopalia* sp., *M. mucosa*, *Katharina tunicata*, *Tonicella lineata*,
- b. Snails - Gastropods
Amphissa columbiana, *Fusitriton oregonensis*, *Littorina scutulata*, *L. sitkana*, *L. keenae*, *Nucella lamellosa*, *N. lima*, *Tachyrhynchus* sp.
- c. Limpets - *Acmaea mitra*, *Diadora aspera*, *Lottia digitalis*, *L. persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
- d. Nudibranches - *Lamellidoris fusca*, *Onchidella* sp.
- e. Bivalves - *Mytilus edulis*, *Pododesmus cepio*
- f. Cephalopods - *Octopus dofleini*

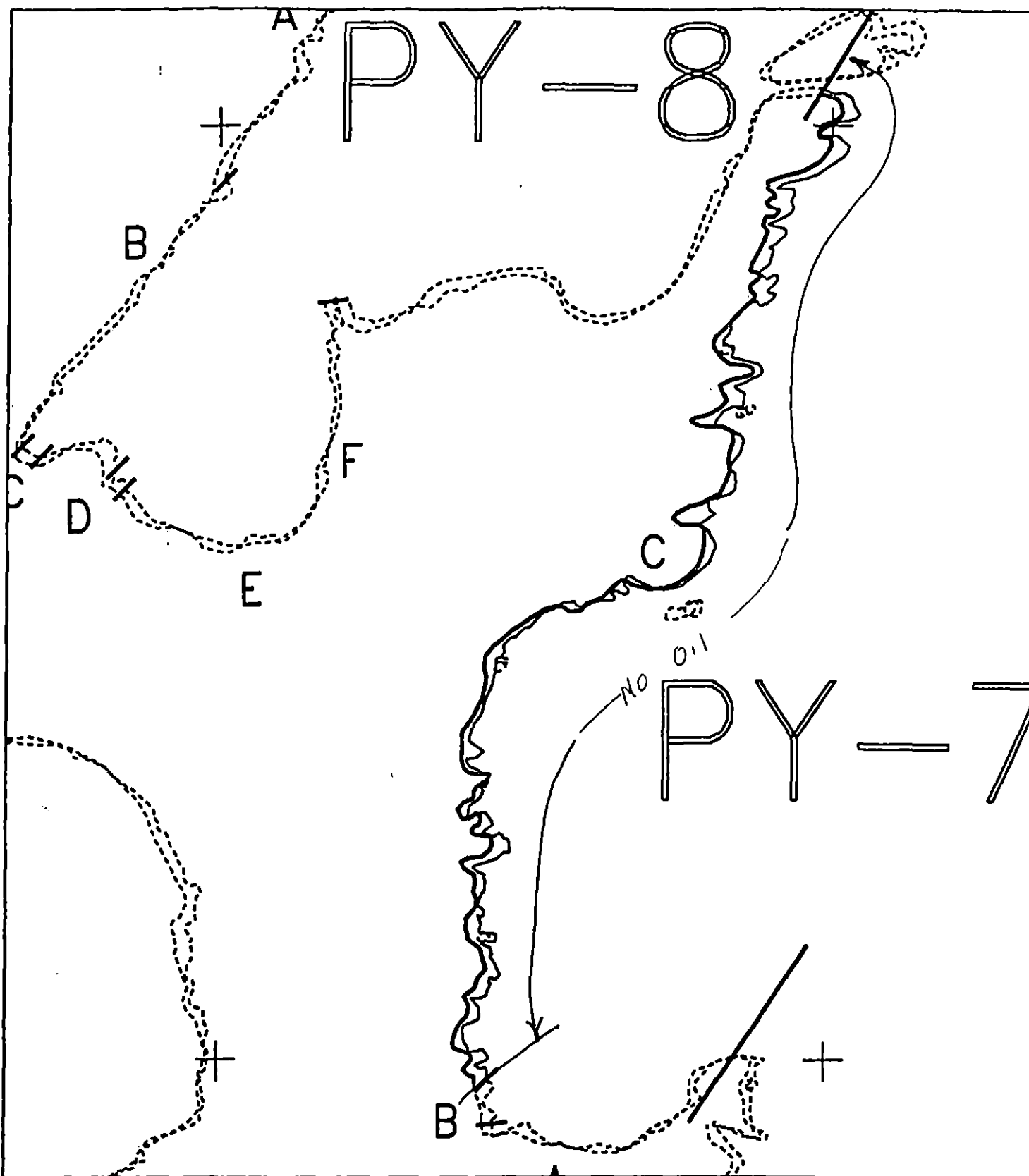
12. Echinoderms

- 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
Cucumaria miniata, *C. vegae*, *Eupentacta* sp., *Leptosynapta* sp.
- d. Urchins - *Strongylocentrotus droebachiensis*

13. Bryozoans - *Carbasea carbasea*, *Eucratea loricata*, *Membranipora* sp.,
Microporina borealis, *Phidolopora pacifica*, *Schizoporella* sp.

15. Fishes

- Cottidae - *Artedius harringtoni*, *Oligocottus* sp. (bright green),
Rhanphocottus richardsonii
- Liparidae - *Liparis callyodon*
- Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*



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

PY007 C
 ADEC Subsegment Length: 4638m
 METERS
 0 400 800
 AK State Plane Zone 4
 apy007ca



Subdivision Field Map
 Map Key: KENPY007Ca
 Name: Sempels
 Date: 5/15/91
 Data Entered:

REVISED: M.C. 5/28/91 PM C.D. REVISED: F.W. 5/26/91

1991 MAYSAP EVALUATION

SEGMENT: PY 007 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: *Tammy D. 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: Subdivision surveyed by skiff. No oil observed.

TAG:

FOSC:

TAG APPROVAL DATE: June 4 1991

FOSC APPROVAL DATE: 6/6/91

ADEC

FOSC

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

EXXON

USCG

NOAA

TEAM NO. 4 SEGMENT P4-007 SUBDIVISION C DATE MAY 15 1981

ADEC
NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☒ NTR

This is a high energy segment. Access is limited & was impossible on the day of survey. Due to this, I would not recommend treatment.

EXXON
NAME George P. Stiles SIGNATURE George P. Stiles 5/10/81

☒ NTR

Very high energy beach. No treatment would be worth the safety risk.

LANDMANAGER
NAME John P. Hardister OF USFWS SIGNATURE John P. Hardister

☒ NTR

No treatment recommended for this high safety risk, high energy beach.

USCG/NOAA
NAME John M. Mahon/Don McDonald SIGNATURE John M. Mahon

☒ NTR

Safety hazard due to inaccessibility to beach.

Donald A. MacDonald

Unable to land due to swell and logs in the water. Segment surveyed from the skiffs. As per ADEC & EXXON segment is high energy.

PAGE 2 OF 5

SEGMENT P4.007.C

SUBDIVISION C

DATE MAY 15 1911

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

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

W m M m N m VL m NO 4.638 m US 4638 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

ITS: Unable to read segment because of light
small waves. No maps available for
this subdivision at time of survey.

Revised: F.W. 5/26/91

REVISED: MC. 5/28/91 PR2

C.A.

PY007-C Biology Report, continued

List of Species Expected along PY007-C

A. Marine Plants

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

II. Marine Animals

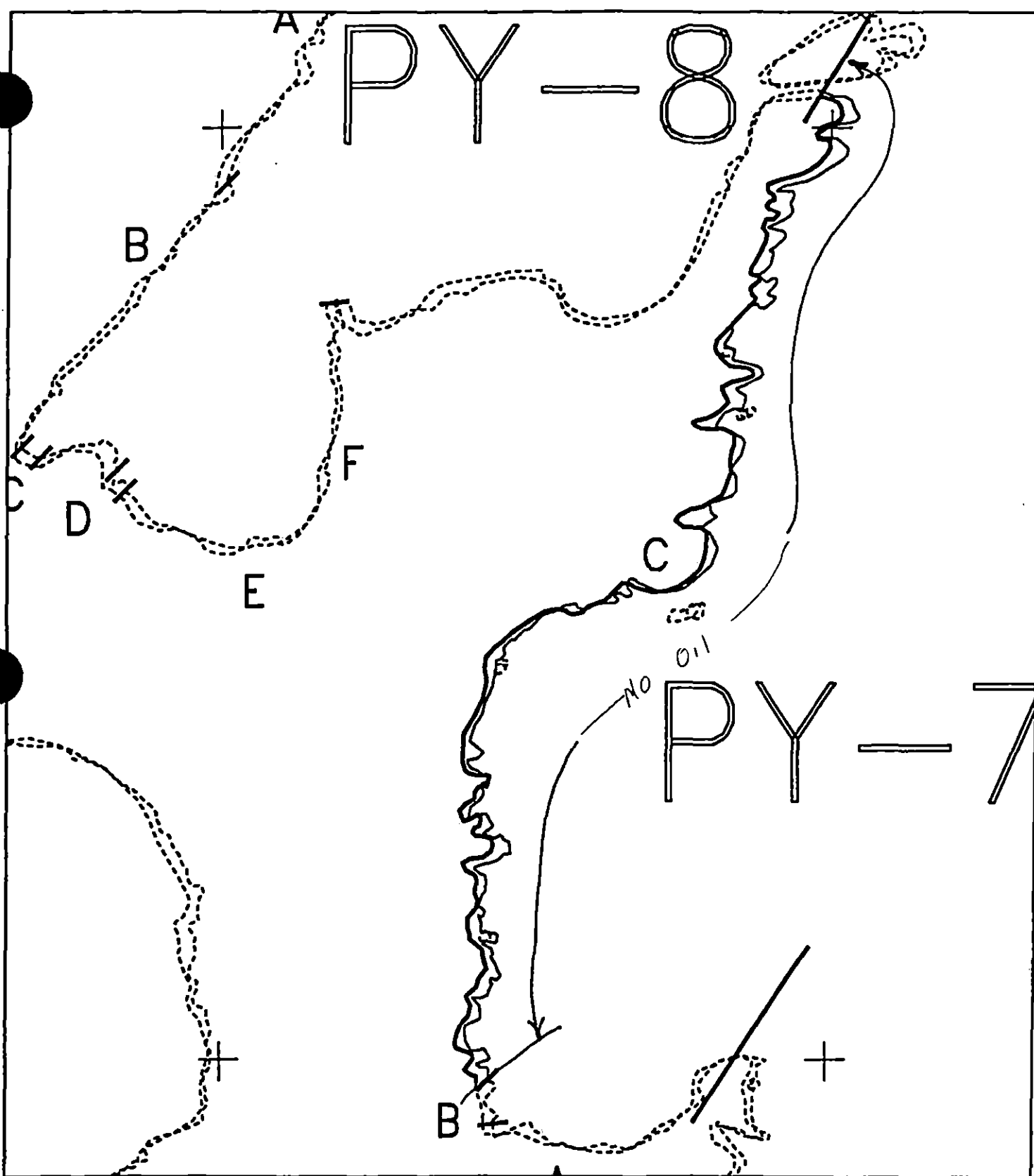
1. Sponges - Porifera
Halichondria sp., Halichondria panicea, Ophlitaspongia pennata, Tethys sp.
2. Anemones - Anthopleura artemesia, A. elegantissima, A. xanthogrammica,
Epiactis ritteri, E. prolifera?, Metridium senile, Urticina
crassicornis, Epizoanthus scotinus
3. Hydroids - Sertularidae - Sertularella?, Abietinaria sp.
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms
Emplectonema gracile, Tubulanus polymorphus
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.?, Traskorchestia traskiana
 - b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs
Acantholithodes hispidus, Haplogaster sp., Paguridae (hermit crabs),
Oregonia gracilis, Pugettia sp.,
 - d. Isopods - Cirdana harfordi, Idotea vosnesenskii, Gnorimorsphaeroma
oregonensis

PY007-C Biology Summary, continued

11. Mollusca
 - a. Chitons - *Cryptochiton stelleri*, *Mopalia* sp., *M. mucosa*, *Katharina tunicata*, *Tonicella lineata*,
 - b. Snails - Gastropods
Amphissa columbiana, *Fusitriton oregonensis*, *Littorina scutulata*, *L. sitkana*, *L. keenae*, *Nucella lamellosa*, *N. lima*, *Tachyrhynchus* sp.
 - c. Limpets - *Acmaea mitra*, *Diadora aspera*, *Lottia digitalis*, *L. persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
 - d. Nudibranches - *Lamellidoris fusca*, *Onchidela* sp.
 - e. Bivalves - *Mytilus edulis*, *Pododesmus cepio*
 - 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
Cucumaria miniata, *C. vegae*, *Eupentacta* sp., *Leptosynapta* sp.
 - d. Urchins - *Strongylocentrotus droebachiensis*
13. Bryozoans - *Carbasea carbasea*, *Eucratea loricata*, *Membranipora* sp., *Microporina borealis*, *Phidolopora pacifica*, *Schizoporella* sp.
15. Fishes
 - Cottidae - *Artedius harringtoni*, *Oligocottus* sp. (bright green), *Rhanphocottus richardsonii*
 - Liparidae - *Liparis callyodon*
 - Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*

PY-8

PY-7



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

PY007 C
 ADEC Subsegment Length: 4638m
 METERS
 0 1000 2000
 AK State Plane Zone 4
 apy007ca

Subdivision Field Map
 Map Key: KENPY007Ca
 Name: Sempels
 Date: 5/15/91
 Data Entered:

REGION: KENAI

SEGMENT: ST/PY-008

SUBDIVISIONS: A (1 OF 6)

SHORELINE EVALUATION

SEGMENT ST/ PY-008 SUBDIVISION A (1 OF 6) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T Bald eagle nest (3/1 to 9/1)

4QQ National Wildlife Refuge.

See attached Ecological Constraint Sheet for specific constraints and contacts.

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 735 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: _____

KODIAK ECOLOGICAL CONSTRAINTS

- 1A Salmon stream mouth - fry outmigration (4/15 to 7/31)
 1B 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 Kotot 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 uncoiled 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 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 (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.

FIELD SHORELINE COMMENT SHEET

MENT ST/ PY-8 SUBDIVISION: A DATE 3/30/90

USCG/NOAA

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

NO OIL FOUND.

ADEC

NAME JOHN R REED SIGNATURE John R. Reed☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTEDNO OIL SPOTTED. I have read and agree with all
information on S.S.A.T. Form.

LAND MANAGER - USFWS

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

no oil observed.

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ PY 08 SUBDIVISION: A Through F DATE 30 MAR 90~~USEG~~ NOAANAME JACQUI MICHELSIGNATURE J. Michel☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

The mousse patches can be readily removed manually. Some are quite thick (>10 cm), especially under large boulders/cobbles. Bioremediation should be considered for the subdivisions C and E, pocket beaches which have the heaviest oiling. However, manual removal will have to be conducted to the point that bioremediation would work, i.e., removal of mousse to a coat/cover.

ADEC

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

COMMENTS

I Am recommending some type of manual removal for subdivisions A.-F, such as shore hand + rowel. Boulders and cobbles should be turned over and the thick mousse scraped off. I tested this treatment in the field and feel that it is a viable form of removing the thick mousse patches found on subdivisions C and E. Subdivisions C and E could also be candidates for bioremediation if the thick mousse is removed to a coat or cover. I would like to add that I concur with all the information on the SSAT forms. A GOOD SURVEY!

LAND MANAGER - USFWS

NAME Mary PortnerSIGNATURE Mary Portner☐ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

Extensive patches of mousse remain in subdivisions C and E. It appears to be recoverable using hand trowels, pumps etc. Under the cobbles and boulders the mousse is thick, sometimes penetrating to 10 cm. It may be beneficial to turn many of the cobbles and small boulders and remove the mousse. The remaining subdivisions with oil could also benefit from small scale manual removal. This was a good survey and

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

G Mann USCG Michel SEGMENT ST/ PY-8
 O Carr LAND REP Partner SUBDIVISION A 1046
 EXXON Boyer ADEC Reed TIME 6:45 to 7:00
 TEAM NO.: 18 TIDE LEVEL: 14 to 12 DATE 3/30/90
 EST. SUBDIVISION LENGTH: 750 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☒ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☐ Foot ☒ Boat ☐ Helo WORKING DIRECTION: E to W
 SURFACE SEDIMENTS: R 70 % B 30 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Lang 30 % Hang 30 % Vert 40 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 0 m NO 750 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	C	B	P	S	SL BR	OR RW	GY SL	DBR TL	LSR	SU	UI	M	L			
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT																
STAIN																
MOUSSE																
PATTIES																
TARBALLS																
FILM																
NO OIL										SN	✓	✓	✓			

 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 (C)

 #BAGS 0

Photographs:

 Roll No. 18-1

 Frames 1-2

 SUBSURFACE OIL * NO PITS NO LANDING

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	OR	RW	GY	SL	DBR	TL	LSR	SU	UI	M	U	
1																							

 COMMENTS * No pits dug.

We inspected this shoreline by small boat. I have no reason to suspect the presence of subsurface oil.

JW 4/5/90

OG MANA

SEARCH MAP

SEGMENT ST/ PYKEE

SUBDIVISION A

DATE 30 MAR 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)
- ☐ Pft Location(s)
- ☐ Photo Location(s)

LEGEND

1 

Pft - No Subsurface Oil

2 

Pft - 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

Oil Character Length (m): AP 0 PO 0 CV 0 CT 0 ST 0 MS 0 PT 0 TB 0 FL 0 NO 750

REVISION: 03/24/90

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / PY08 Subdivision A (OF A-F) Date (mo / day / yr) 3 / 30 / 90

Time (24 hr) 0645 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 30 Moderate 60 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: 1
 Roll No. 1

Frames 52

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	
→ 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	
→ 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	

FUCUS

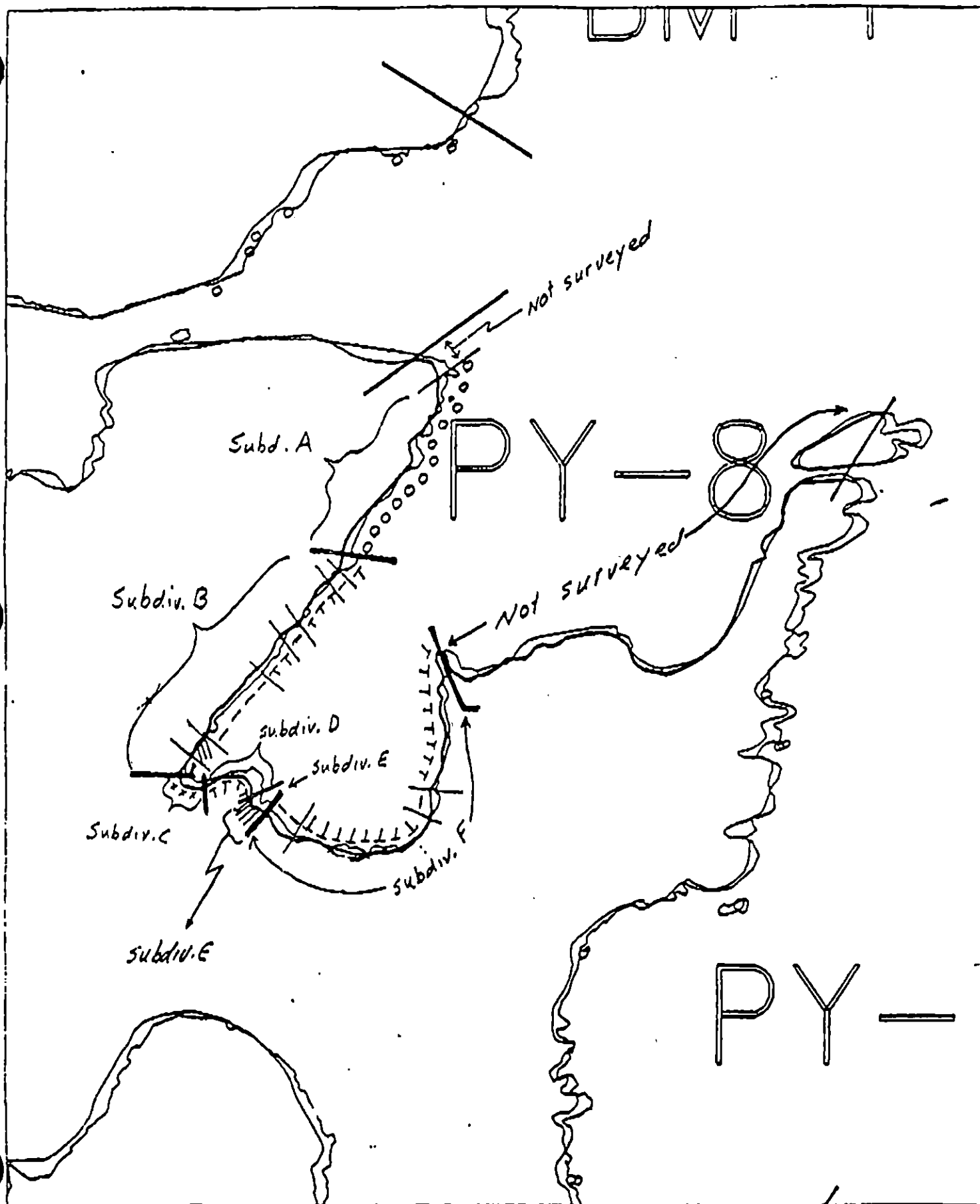
	Dense		Moderate		Sparse		Rare		
→ 1U	1M	1L	1U	1M	1L	1U	1M	1L	
→ 2	2	2	2	2	2	2	2	2	(2) U = NOT PRES.
→ 3	3	3	3	3	3	3	3	3	NOT PRESENT
→ 4	4	4	4	4	4	4	4	4	
→ 5	5	5	5	5	5	5	5	5	
→ 6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments:

White-winged scoter (2) Glaucous-winged gull (0)
 Bald eagle (2 adlt + 2 imm.) Harlequin duck (10)
 Red-tailed cormorant (1) } For entire PY08 Segment

Ecological Considerations:

(1) Dense cover of other algae in low intertidal includes: Alaria,
 crustose coralline,
 "Rhodomenia"
 "Plocamium"
 "Halosaccus"



XXXX Wide

//// Medium

PY-8

ADEC Segment Length: 5970m

Map Key: KEX-96

Name: Manr

REGION: KENAI

SEGMENT: ST/PY-008

SUBDIVISIONS: B (2 OF 6)

SHORELINE EVALUATION

SEGMENT ST/ PY-008 SUBDIVISION B (2 OF 6) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T Bald eagle nest (3/1 to 9/1)

4QQ National Wildlife Refuge.

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 97 m: Narrow 479 m: V.Light 391 m: No Oil 0 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 15 cm

RECOMMENDATIONS:

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

COMMENTS: Recommend manual pick up of mousse and removal of tarmat in area shown on attached sketch map. Conduct treatment activities after 6/1 per above eagle constraints and obtain approval from ADF&G and USFWS.

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

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.

FIELD SHORELINE COMMENT SHEET

MENT ST / PY-8 SUBDIVISION: B DATE 3/30/90

USCG/NOAA

NAME JACQUI MICHEL SIGNATURE Michel

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

Removal of pavement and mousse patches in areas marked medium and narrow.

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

Manual Removal of asphalt and mousse patches will be possible with a shovel or hand trowel. Pom Poms could also be helpful on mousse between boulders. I have Read and agree with all information on S.S.A.T. Form.

LAND MANAGER - USFWS

NAME Mary Porter SIGNATURE Mary Porter

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

Asphalt pavement (see map) should be removed. Mousse/patches should be removed using hand trowels, shovels, pom poms.

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ PY 08 SUBDIVISION: A Through F DATE 30 MAR 90~~USCG~~ NOAANAME JACQUI MICHEL SIGNATURE J. Michel☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

The mousse patches can be readily removed manually. Some are quite thick (>10 cm), especially under large boulders/cobbles. Bioremediation should be considered for the subdivisions C and E, pocket beaches which have the heaviest oiling. However, manual removal will have to be conducted to the point that bioremediation would work, i.e., removal of mousse to a coat/cover.

ADEC

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

COMMENTS

I Am recommending some type of manual removal for subdivisions A.-F, such as shore hand trowel. Boulders and cobbles should be turned over and the thick mousse scraped off. I tested this treatment in the field and feel that it is a viable form of removing the thick mousse patches found on subdivisions C and E. Subdivisions C and E could also be candidates for bioremediation if the thick mousse is removed to a coat or cover. I would like to add that I concur with all the information on the SSAT forms. A GOOD SURVEY!

LAND MANAGER - USFWS

NAME Mary Porter SIGNATURE Mary Porter☐ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

Extensive patches of mousse remain in subdivisions C and E. It appears to be recoverable using hand trowels, pangrams etc. Under the cobbles and boulders the mousse is thick, sometimes penetrating to 10 cm. It may be beneficial to turn many of the cobbles and small boulders and remove the mousse. The remaining subdivisions with oil could also benefit from small scale manual removal. A good survey and

SHORELINE OILING SUMMARY

corrected oil car weight
REVISION NO. 03/22/90

OG Mann USCG Michel SEGMENT ST/ PY-8
 BIO Carr LAND REP Portner - FWS SUBDIVISION B
 XON Boyer ADEC Reed TIME 7:00 to 7:30
 TEAM NO.: 18 TIDE LEVEL: +2 to +1 DATE 3/30/90
 EST. SUBDIVISION LENGTH: 990 m ☐ Sun ☒ Clouds ☐ Fog ☒ Rain ☒ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: E to W
 SURFACE SEDIMENTS: R 70 % B 30 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 30 % Hang 50 % Vert 20 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 90 m N 486 m VL 414 m NO 0 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	NO	NR	PR	PS	SN	BR	BL	FW	GY	SL	TL	LR	SU	U	M	U
ASPHALT PAVEMENT				☒							☒			☒		
POOLED																
COVER				☒							☒			☒		
COAT			☒								☒			☒		
STAIN			☒								☒			☒		
MOUSSE			☒								☒			☒		
PATTIES																
TARBALLS																
FILM			☒								☒			☒		
NO OIL													SN		☒	☒

PAVEMENT: H (F) S 5 sq. m by 8 cmPATTIES / TARBALLS 30 30 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 —#BAGS —

Photographs:

Roll No. 18-1Frames 3-6

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		UD	UC	SN	BR	BL	FW	GY	SL	TL	LR	SU	U	M	U		
1	20		☒				0-10		☒							☒			☒			NO	BC
2	15		☒				0-15		☒							☒			☒			NO	BC

COMMENTS

This is a steep, rocky coast with 2 areas of 1m wide x 10m long CT to CV by dark brown mousse set within an otherwise narrow to very light stretch of oil character. The NE part of this shoreline has no visible oil. There is a virtual absence of debris (oiled or clean). Pit locations shown on segment map at 1 and 2

Page 1 of 1

REVIEWED BAT DATE 16 Apr 90

OG MA
SEGMENT ST/ A-8
SUBDIVISION B
DATE 3 / 30 90

SKETCH MAP

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Bndry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HW/LW
- ☐ 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

Splashed Distribution

Oiled Vegetation



Photo location, direction,
and number

NO-OIL.

No sketch map.

See attached oil
categorization map for

oil distribution.

revised by
Dave Mann

4/10/90

Oil Character Length (m): AP 5 PO 0 CV 110 CT 350 ST 350 MS 100 PT 0 TB 0 FL 0 NO 350

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/23/90

Segment ST / PY08 Subdivision B Date (mo / day / yr) 3/30/90Time (24 hr) 0700 Biologist M. CMR

- (A) Substrate type and % of segments:
 (1) Bedrock 70 (2) Boulder 30 (3) Cobble 0 (4) Pebble 0 (5) Sand 0 (6) Silt 0
- (B) Overall % cover of biota (% of segment): Dense 30 Moderate 60 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: 1
Roll No. 1Frames 3-6

BARNACLES

	Dense		Moderate			Sparse			Rare			
→ 1U	<u>2</u>	1L	<u>2</u>	1M	1L	1U	1M	<u>2</u>	1U	1M	1L	
→ 2	2	2	<u>2</u>	<u>2</u>	2	2	2	<u>2</u>	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	

MYTILUS

	Dense		Moderate			Sparse			Rare			
→ 1U	<u>2</u>	1L	<u>2</u>	1M	1L	1U	1M	<u>2</u>	1U	1M	1L	
→ 2	2	2	<u>2</u>	<u>2</u>	2	2	<u>2</u>	2	<u>2</u>	2	<u>2</u>	
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	

GASTROPODS

	Dense		Moderate			Sparse			Rare			
→ 1U	<u>2</u>	1L	<u>2</u>	1M	1L	1U	1M	<u>2</u>	1U	1M	1L	
→ 2	2	2	<u>2</u>	<u>2</u>	2	<u>2</u>	<u>2</u>	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	<u>2</u>	1L	<u>2</u>	1M	1L	1U	1M	<u>2</u>	1U	1M	1L	
→ 2	2	<u>2</u>	<u>2</u>	<u>2</u>	2	2	2	2	2	2	2	(2) U = NOT PRES.
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	

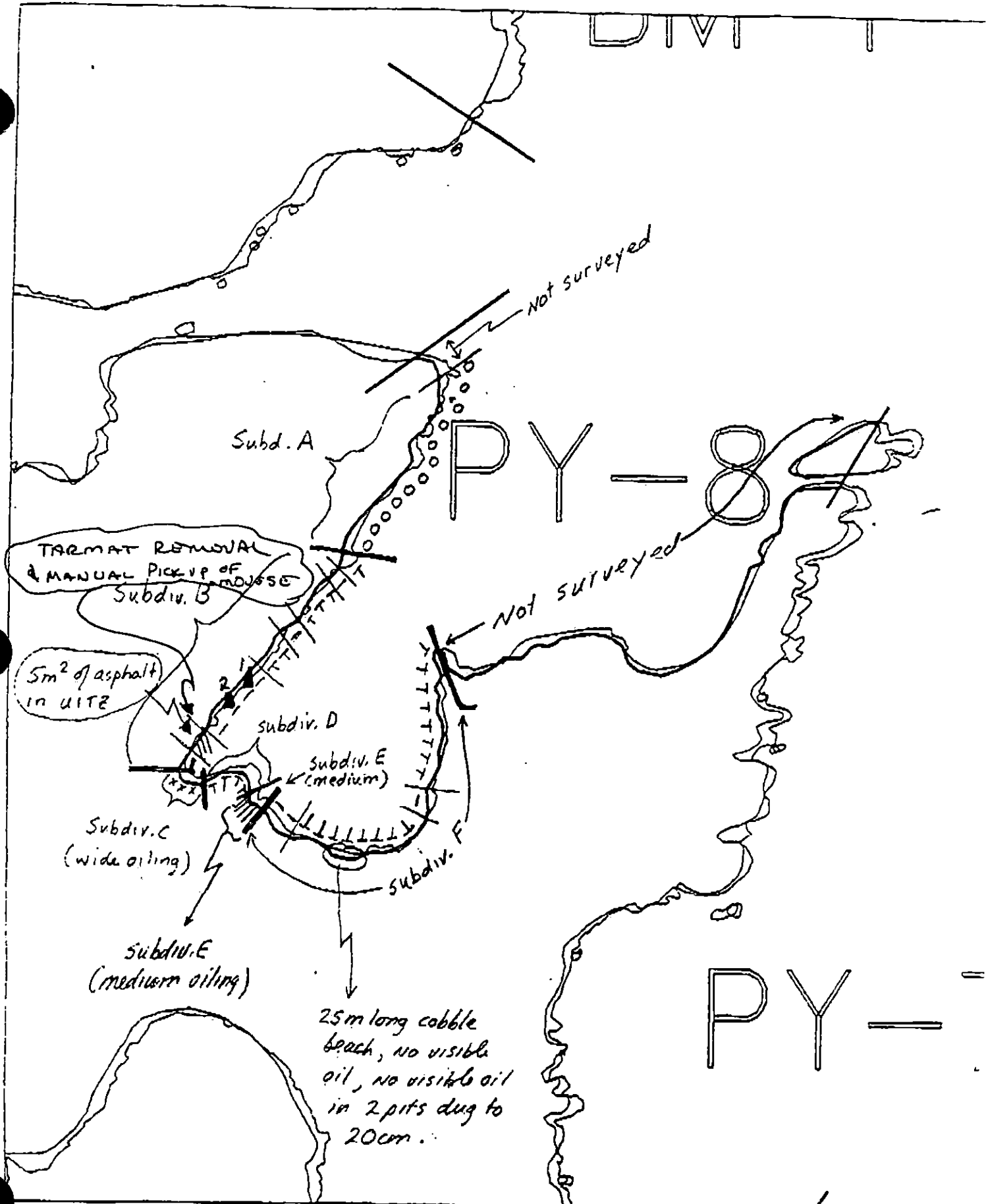
Wildlife Observations/ General Comments:

Included in subdivision A sheet.

Ecological Considerations:

① Same as subdivision A sheet
 Sensitivity codes: 5T

DIVI I



XXXX Wide

//// Medium

--- Narrow

TTTT

PY-8

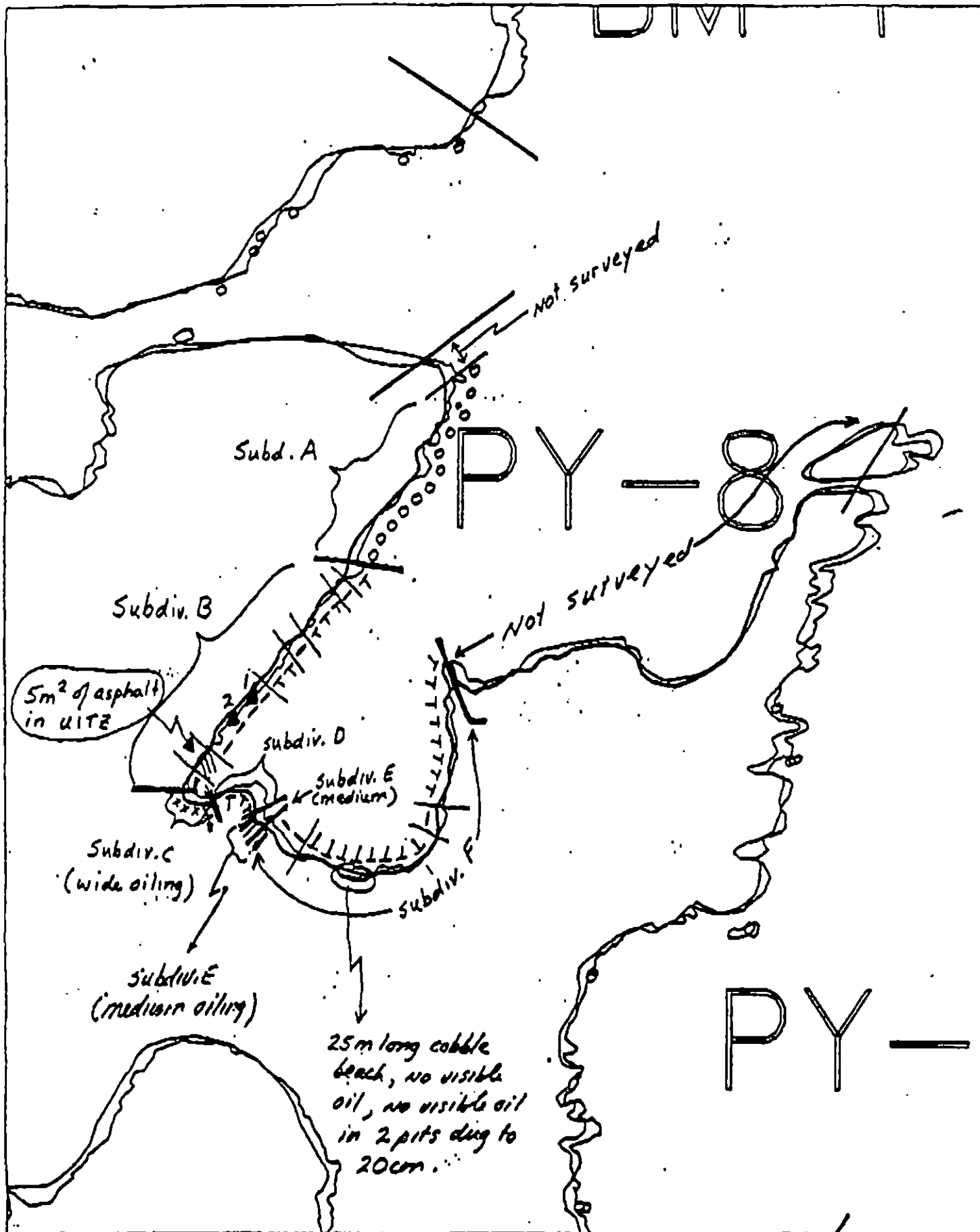
ADEC Segment Length: 5970m

450 60

Map Key: KEN-96

Name: Mamr

2/2/1990



XXXX Wide

//// Medium

--- Narrow

TTTT Very light

PY-8

ADEC Segment Length: 5970m

450 60 1:18,000

Map Key: KEN-96

Name: Marr

Date: 3/30/90

REGION: KENAI

SEGMENT: ST/PY-008

SUBDIVISIONS: C (3 OF 6)

SHORELINE EVALUATION

SEGMENT ST/ PY-008 SUBDIVISION C (3 OF 6) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T Bald eagle nest (3/1 to 9/1)

4QQ National Wildlife Refuge.

See attached Ecological Constraint Sheet for specific constraints and contacts.

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: _____ DATE: _____

OILING CATEGORIZATION:

Wide 110m: Medium 0 m: Narrow 0 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: Recommend manual pick up of mousse and bioremediation of broken cover. Conduct treatment activities after 6/1 per above eagle constraints and obtain approval from ADF&G and USFWS.

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

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 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 / PY-8 SUBDIVISION: C DATE 3/30/90

USCG/NOAA

NAME JACQUI MICHEL SIGNATURE _____☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

Manual removal of mousse/patties on this pocket beach is highly recommended. Bioremediation should be considered, but only after manual removal of the thick oil deposits. But, manual removal will have to be conducted to the point where bioremediation would be effective, i.e., removal of the mousse to a coat/cover.

ADEC

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

COMMENTS

Manual Removal of mousse with shovel or hand trowel. Cobbles and boulders could be turned over and scraped without causing any erosion. I tested this method in the field and feel that it is a viable form of cleanup. This site could also be considered for bio remediation after manual cleanup. I have read and agree with all information on S.S.A.T. Forms

LAND MANAGER - USFWS

NAME Mary Porter SIGNATURE Mary Porter☐ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

I recommend manual removal of the mousse/patties using trowels, pompons etc. Under the cobbles and boulders the mousse is thick, sometimes penetrating to > 10cm. It would be beneficial to turn many of the cobbles and small boulders and remove the mousse on the underside of the rocks and down to clean substrate. I feel this was a good survey and concur with the information on the

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ PY 08 SUBDIVISION: A Through F DATE 30 MAR 90

~~SEG~~ NOAA

NAME JACQUI MICHEL

SIGNATURE J. Michel

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

The mousse patches can be readily removed manually. Some are quite thick (>10 cm), especially under large boulders/cobbles. Bioremediation should be considered for the subdivisions C and E, pocket beaches which have the heaviest oiling. However, manual removal will have to be conducted in the event that bioremediation would work, i.e., removal of mousse to a coat/cover.

ADEC

NAME JOHN R. REED

SIGNATURE John R. Reed

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

I am recommending some type of manual removal for subdivisions A-F such as shore. hand & shovel. Boulders and cobbles should be turned over and the thick mousse scraped off. I tested this treatment in the field and feel that it is a viable form of removing the thick mousse patches found on subdivisions C and E. Subdivisions C and E could also be candidates for bioremediation if the thick mousse is removed to a coat or cover. I would like to add that I concur with all the information on the SSAT forms. A GOOD SURVEY!

LAND MANAGER - USFWS

NAME Mary Portner

SIGNATURE Mary Portner

☐ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

Extensive patches of mousse remain in subdivisions C and E. It appears to be recoverable using hand tools, pompoms etc. Under the cobbles and boulders the mousse is thick, sometimes penetrating to 10 cm. It may be beneficial to turn many of the cobbles and small boulders and remove the mousse. The remaining subdivisions with oil could also benefit from small scale manual removal of mousse patches. I feel this was a good survey and I concur with the information on the SSAT forms.

SHORELINE OILING SUMMARY

REVISION NO. 00/22/00

OG MANN USCG/NOAA MICHEL SEGMENT STI PY-8
BIO CARR LAND REP PORTNER-PUS SUBDIVISION C
YXON BOYER ADEC REED TIME 7:30 to 9:30
TEAM NO.: 18 TIDE LEVEL: +2 to -2 DATE 3/30/90
EST. SUBDIVISION LENGTH: 130 m ☐ Sun ☒ Clouds ☐ Fog ☒ Rain ☒ Snow
UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: N to S
SURFACE SEDIMENTS: R 10 % B 70 % C 20 % P 0 % G 0 % S 0 % M 0 % V 0 %
SLOPE: Lang 95 % Hang 5 % Vert 0 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
OIL CATEGORY LENGTH: W 20 m M 200 m N 0 m VL 0.32 m NO 0 m
me *me* *me*

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	IC	IS	IP	IS	SH SN	OR RW	OY SL	DE TL	LR LR	SU	U	M	U
ASPHALT PAVEMENT POOLED													
COVER		✓						✓			✓	✓	
COAT			✓					✓			✓	✓	
STAIN			✓					✓			✓	✓	
MOUSSE		✓	X						✓ X		✓	X	
PATTIES				X					X				X
ARBALLS													
FILM			✓				✓				✓		
NO OIL										SH			

*SN: SNOW

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

total mousse
PATTIES/TARBALLS 2000 BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL.

OILED DEBRIS	NO	AMOUNT		
		SM	MD	LG
Logs				
Vegetation				
Trash				
Debris				

oiled
DEBRIS COLLECTED
☒ YES ☐ NO

TYPE *Mousse*

#BAGS 2

Photographs:

Roll No. 18-1

Frames 6-14

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-IN)	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		VO	VC	20/20	10/10	5/5	2.5/2.5	1.25/1.25	SU	U	M	U			
1	15		✓				0-10		✓						✓		✓			NO (CPG) throughout	
2	10	✓					0-5		✓						✓			✓		" "	
3	40					✓	0-0	-	-						-			✓		" "	
4	30		✓				0-3		✓						✓				✓	" "	
5	15	✓					0-6		✓						✓		✓			" "	
6	20	✓					0-5		✓						✓			✓		" "	

COMMENTS

The winter storm berm is surprisingly clean. Abrasion by moving cobbles has cleaned most of the stones in this low berm. Seaward erosion of last year's oiled surface has transferred material into this berm. Bedrock and sediments are granitic so oil shows up well.

SHORELINE OILING SUMMARY (PAGE 2 of 2)

REVISION 03/22/90

SEGMENT ST/ PY-8 SUBDIVISION C

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		VO	UC	SL	GR	DB	RW	GY	BL	DBL	TL	LR	SU	UI	MI	LI	
7	20					✓	- - -	-	-												✓		NO (BC) throughout
8	10		✓				0-3		✓									✓				✓	NO " "
9	35					✓	- - -												✓				NO " "
10	20	✓					0-5		✓									✓	✓				NO (CPG) throughout
11	15					✓	- - -												✓				NO (CB) throughout
12	20				✓		0-20	✓					SL						✓				NO (CG) throughout
							.																
							.																
							.																
							.																
							.																
							.																
							.																
							.																
							.																

COMMENTS

Regarding pits:

- #1 boulder armor, pit at upslope edge of surface oiling
- #4 a single patty, 10cm², underlies surface boulders here
- #9 dug in 1989/90 winter storm berm
- #10 ends on top of boulder or bedrock
- #11 dug in 1989/90 winter storm berm
- #12 silver sheen in water, dug in 1989/90 winter storm berm

REVIEWED

7W

DATE

4/9/90

OG an
 SEGMENT STI PY-8
 SUBDIVISION C
 DATE 3, 30 90

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)
- SEE NOTES

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

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

SKETCH MAP

inner Morning Cove

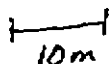
KEY



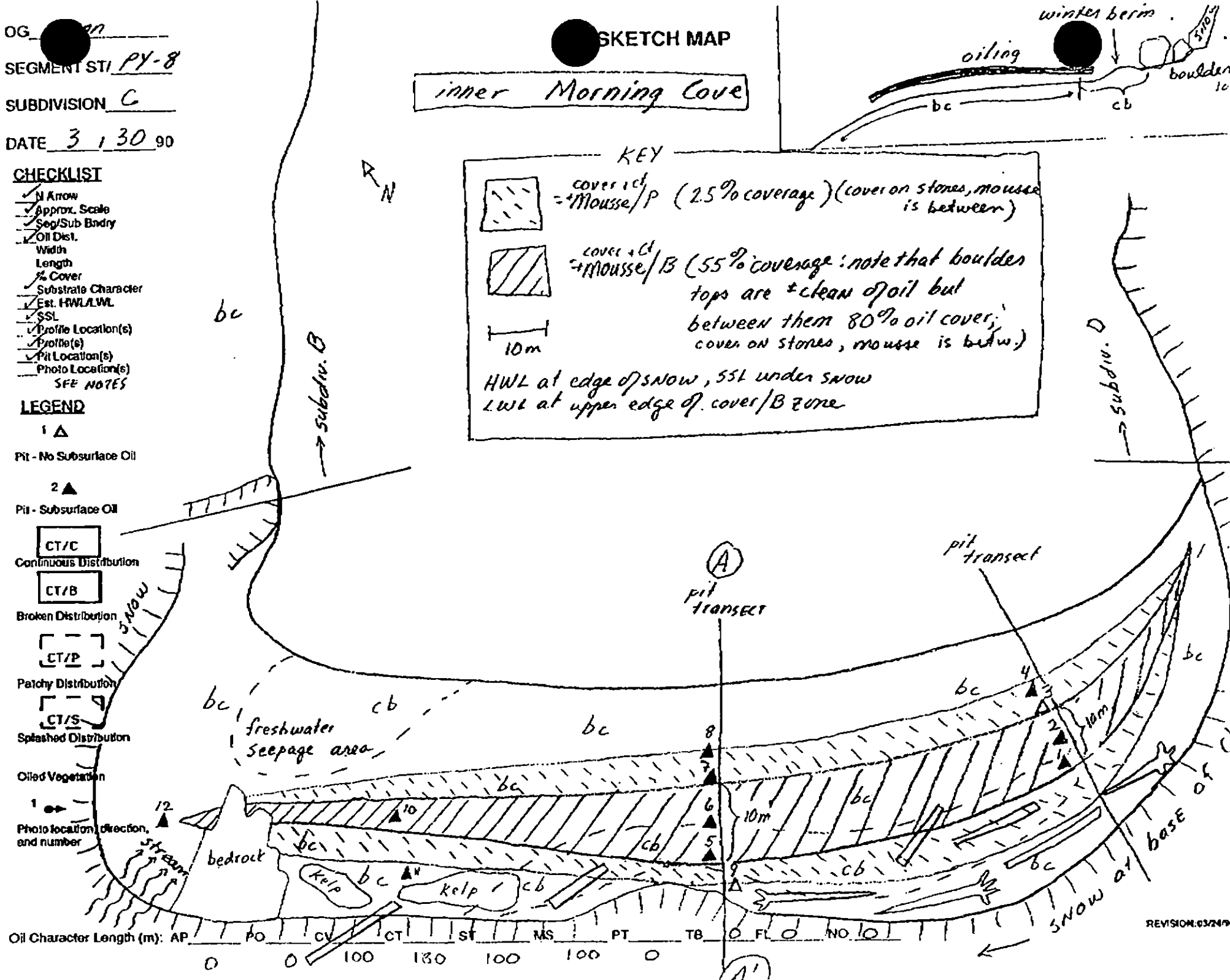
cover 1st = Mousse/P (2.5% coverage) (cover on stones, mousse is between)



cover 1st + Mousse/B (55% coverage: note that boulder tops are *clean of oil but between them 80% oil cover; cover on stones, mousse is betw.)



HWL at edge of snow, SSL under snow
 LWL at upper edge of cover/B zone



SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / PY08 Subdivision C Date (mo / day / yr) 3/30/90
Time (24 hr) 0800 Biologist M. LARR

- (A) Substrate type and % of segments: ^{SUBDIVISION}
(1) Bedrock 10 (2) Boulder 70 (3) Cobble 20 (4) Pebble — (5) Sand — (6) Silt —
(B) Overall % cover of biota (% of segment): ^{SUBDIVISION} Dense 10 Moderate 40 Low 50
(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: 1
Roll No. 1

Frames 7-14

BARNACLES

Dense			Moderate			Sparse			Rare			
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
→ 1	2	2	→ 1	2	2	→ 1	2	2	→ 1	2	2	LOW ZONE w/ NO BEDROCK
→ 2	2	2	→ 2	2	2	→ 2	2	2	→ 2	2	2	NOT PRESENT (all 3 zones)
→ 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	
→ 1	2	2	→ 1	2	2	→ 1	2	2	→ 1	2	2	N. Present in upper zone
→ 2	2	2	→ 2	2	2	→ 2	2	2	→ 2	2	2	Low zone w/ no bedrock
→ 3	3	3	→ 3	3	3	→ 3	3	3	→ 3	3	3	all 3 zones
→ 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	1U	1M	1L	1U	1M	1L	1U	1M	1L	
→ 1	2	2	→ 1	2	2	→ 1	2	2	→ 1	2	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	NOT PRESENT (all 3 zones)
→ 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	
→ 1	2	2	→ 1	2	2	→ 1	2	2	→ 1	2	2	1L - NOT PRES. U, M; Lower w/ bedrock
→ 2	2	2	→ 2	2	2	→ 2	2	2	→ 2	2	2	2 - 1 4 Upper
→ 3	3	3	→ 3	3	3	→ 3	3	3	→ 3	3	3	NOT PRESENT (all 3 zones)
→ 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	

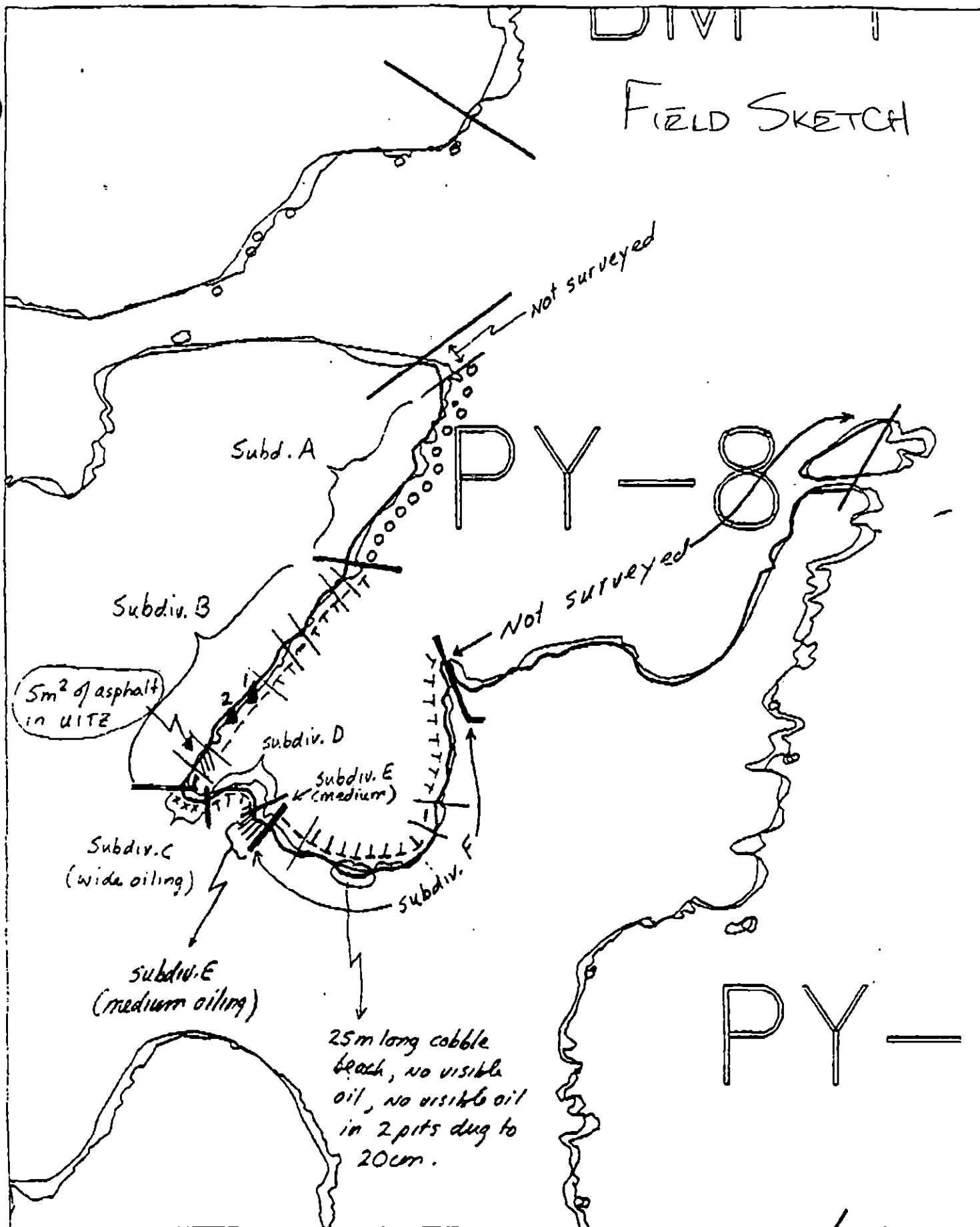
Wildlife Observations/ General Comments:

Summarized on subdivision A sheet.

Ecological Considerations:

① Same as subdivision A data sheet.
Sensitivity codes: 5T

FIELD SKETCH



XXXX Wide
 //// Medium
 --- Narrow

PY-8

ADEC Segment Length: 5970m

Map Key: KEN-96

Name: Mann
 2/2/1987

REGION: KENAI

SEGMENT: ST/PY-008

SUBDIVISIONS: D (4 OF 6)

SHORELINE EVALUATION

SEGMENT ST/ PY-008 SUBDIVISION D (4 OF 6) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T Bald eagle nest (3/1 to 9/1)

4QQ National Wildlife Refuge.

See attached Ecological Constraint Sheet for specific constraints and contacts.

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 234 m: No Oil 0 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 8 SUBDIVISION: D DATE 3/30/90

USCG /NOAA

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

MOSTLY ROCKY HEADLAND - NO TREATMENT WARRANTED ON
ROCK FACE OILING

ADEC

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

VERY Light oiling on bedrock outcrop. No treatment
Required. I have Read and agree with all information
On S. S. A. T. Form.

LAND MANAGER

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

Very light oiling was noted on this bedrock proposition. Due to
the character and amount of oil, available treatment methods
would be ineffective and may not be warranted.

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ PY 08 SUBDIVISION: A Through F DATE 30 MAR 90

~~NOAA~~

NAME JACQUI MICHEL

SIGNATURE J. Michel

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

The mousse patches can be readily removed manually. Some are quite thick (>10 cm), especially under large boulders/cobbles. Bioremediation should be considered for the subdivisions C and E, pocket beaches which have the heaviest oiling. However, manual removal will have to be conducted in the print that bioremediation would work, i.e., removal of mousse to a coat/cover.

ADEC

NAME JOHN R. REED

SIGNATURE John R. Reed

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

I am recommending some type of manual removal for subdivisions A-F such as shovel and trowel. Boulders and cobbles should be turned over and the thick mousse scraped off. I tested this treatment in the field and feel that it is a viable form of removing the thick mousse patches found on subdivisions C and E. Subdivisions C and E could also be candidates for bioremediation if the thick mousse is removed to a coat or cover. I would like to add that I concur with all the information on the SSAT forms. A GOOD SURVEY!

LAND MANAGER - USFWS

NAME Mary Portner

SIGNATURE Mary Portner

☐ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

Extensive patches of mousse remain in subdivisions C and E. It appears to be recoverable using hand trowels, pumps etc. Under the cobbles and boulders the mousse is thick, sometimes penetrating to 10 cm. It may be beneficial to turn many of the cobbles and small boulders and remove the mousse. The remaining subdivisions with oil could also benefit from small scale manual removal of mousse patches. I feel this was a good survey and concur with the information on the SSAT forms.

SHORELINE OILING SUMMARY

REVISION NO. 03/23/88

OG Mann USCG Michel SEGMENT ST/ PY 8
 BIO Carr LAND REP Porter (USFWS) SUBDIVISION D
 EXXON Boyer ADEC Reed TIME 9:30 to 9:50
 TEAM NO.: 19 TIDE LEVEL: -2 to -2 DATE 3/30/90
 EST. SUBDIVISION LENGTH: 180 m ☐ Sun ☐ Clouds ☐ Fog ☒ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☐ Foot ☒ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 80 % B 20 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 0 % Hang 60 % Vert 40 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 180 m NO 0 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	N	S	P	R	SP	OP	OL	OF	NO	SU	U	M	U
ASPHALT PAVEMENT													
POOLED													
COVER													
COAT													
STAIN													
MOUSSE													
PATTIES													
TARBALLS													
FILM													
NO OIL										SN			

PAVEMENT: H F S 00 sq. m by 00 cmPATTIES / TARBALLS 0 BAGSNEAR SHORE SHEEN? (NO) BR RW SL TL

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

DEBRIS COLLECTED
☐ YES ☒ NOTYPE 0#BAGS 0

Photographs:

Roll No. noneFrames noneSUBSURFACE OIL None

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-DM)	BELOW		OIL / FILM COLOR					PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	SP	OP	OL	OF	NO	SU	U	M	U		

COMMENTS

No pits dug because bedrock at surface. Oiling is in the form of patches, 1-2m wide and 2-4m long, coat to cover w/ compass needles, mostly on lee faces of rock. These patches have oil cover of about 60%. Oil cover of entire subdivision is ~10%.

DATE 3 / 30 90

SKETCH MAP

CHECKLIST

- _____ N Area
 _____ 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

3 Δ

Fig. - No Subsurface Oil

2A

Fig - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Scheduled Distribution

Old Vegetation

**Photo location, direction,
and number**

no map drawn

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / PY08 Subdivision D Date (mo / day / yr) 3/30/90Time (24 hr) 0930 Biologist M. CARR(A) Substrate type and % of ^{SUBDIVISION} segments:
(1) Bedrock 100 (2) Boulder 0 (3) Cobble 0 (4) Pebble 0 (5) Sand 0 (6) Silt 0(B) Overall % cover of biota (% of ^{SUBDIVISION} segment): 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: 1
Roll No. 1Frames NONE

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
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
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:

Summarized on subdivision A sheet.

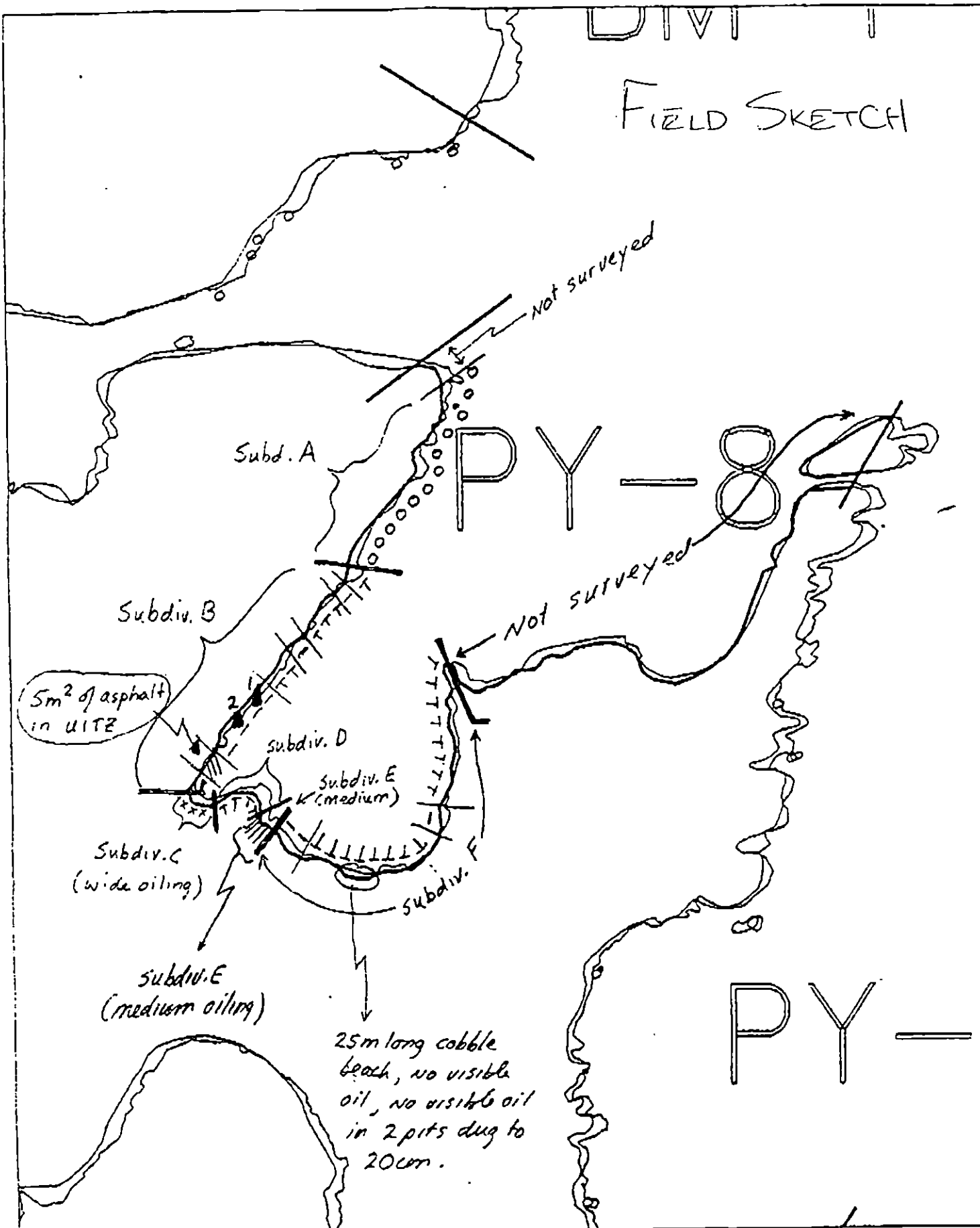
Ecological Considerations:

① Same as subdivision A sheet.Sensitivity codes: STUPPER ZONE w/ FUCUS. (MODERATE COVER)
LOWER ZONE w/ DENSE COVER OF ALGAE.

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 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 SKETCH



XXXX Wide
 /// Medium
 --- Narrow

P Y - 8

ADEC Segment Length: 5970m

Map Key: KEN-96

Name: Mann

3/30/90

REGION: KENAI

SEGMENT: ST/PY-08

SUBDIVISIONS: E (5 OF 6)

SHORELINE EVALUATION

SEGMENT ST/ PY-08 SUBDIVISION E (5 OF 6) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T Active eagle nest (3/1 to 6/1)

4QQ National Wildlife Refuge

Takeoff from and to seaward only. Contact USFWS prior to cleanup.

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 99 m: Narrow 0 m: V.Light 0 m: No Oil 0 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: _____ Wands
☐ Tarmat: _____ Breakup	☐ Beach Cleaner
☐ Removal	☐ Other (see comments)

COMMENTS: Recommend manual pick up of mousse and bioremediate coat areas as shown on attached sketch map. Work should be conducted after 6/1 with approval from ADF&G and USFWS based on above eagle constraints.

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ TY 8 SUBDIVISION: E DATE 3/30/90USCG/NOAANAME JACQUI MICHEL SIGNATURE J. Michel☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

Manual removal of mousse/patties is highly recommended on this pocket beach. Bioremediation should also be considered, but only after manual removal of the mousse to a coat/cover thickness so that bioremediation is most likely to be effective.

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

COMMENTS

Manual Removal of mousse from substrate with shovel or hand trowel. This site could also be considered for bio remediation after manual cleanup. I have Read and agree with all information on S.S.A.T. Forms

LAND MANAGER - USFWSNAME Mary Partner SIGNATURE Mary Partner☐ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

I recommend manual removal of the mousse/patties using trowels, pom poms etc. Under the cobbles and boulders the mousse is thick, sometimes penetrating to >10 cm. Cobbles and small boulders should be turned and the mousse on the underside scraped off. Remaining mousse should be removed to clean substrate. I feel this was a good survey and concurs with the SSAT forms.

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / PY 08 SUBDIVISION: A Through F DATE 30 MAR 90

NOAA

NAME JACQUI MICHEL SIGNATURE J. Michel

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

The mousse patches can be readily removed manually. Some are quite thick (>10 cm), especially under large boulders/cobbles. Bioremediation should be considered for the subdivisions C and E, pocket beaches which have the heaviest oiling. However, manual removal will have to be conducted in the event that bioremediation would work, i.e., removal of mousse to a coat/cover.

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

I am recommending some type of manual removal for subdivisions A-F such as shore hand trowel. Boulders and cobbles should be turned over and the thick mousse scraped off. I tested this treatment in the field and feel that it is a viable form of removing the thick mousse patches found on subdivisions C and E. Subdivisions C and E could also be candidates for bioremediation if the thick mousse is removed to a coat or cover. I would like to add that I concur with all the information on the SSAT forms. A GOOD SURVEY!

LAND MANAGER - USFWS

NAME Mary Portner SIGNATURE Mary Portner

☐ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

Extensive patches of mounds remain in subdivisions C and E. It appears to be recoverable using hand trowels, pumps etc. Under the cobbles and boulders the mousse is thick, sometimes penetrating to 10 cm. It may be beneficial to turn many of the cobbles and small boulders and remove the mounds. The remaining subdivisions with oil could also benefit from small scale manual removal of mounds patches. I feel this was a good survey and with the information on the SSAT forms.

SHORELINE OILING SUMMARY

REVISION NO. 06/22/90

OG Mann USCG Michel SEGMENT ST/ PY-8
 BIO can LAND REP Portner (USEFWS) SUBDIVISION E
 EXXON Boyer ADEC Reed TIME 9:50 to 11:15
 TEAM NO.: 18 TIDE LEVEL: -2 to 0 DATE 3/4/90
 EST. SUBDIVISION LENGTH: 40 m ☐ Sun ☒ Clouds ☐ Fog ☒ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: N to S
 SURFACE SEDIMENTS: R 20 % B 70 % 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 40 m N 0 m VL 0 m NO 0 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	IC	IS	IP	IR	100%	75%	50%	25%	10%	5%	1%	0%	SU	U	M	U
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT		X	✓					✓					✓		X	
STAIN			✓					✓					✓		✓	
MOUSSE		✓	X	TI				✓					✓		✓	
PATTIES				✓				✓								✓
TARBALLS																
FILM																
NO OIL													SM			

PAVEMENT: H F S 0 sq. m by 0 cmPATTIES / ~~TARBALLS~~ ~ 200 BAGSNEAR SHORE SHEEN? NO BR RW SL TL

OILED DEBRIS	AMOUNT		
	NO	SM	MD LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☐ YES ☒ NOTYPE 0#BAGS 0

Photographs:

Roll No. 18-1Frames 15-21

SUBSURFACE OIL

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	UG	50%	25%	10%	5%	1%	SU	U	M	L			
1	25				✓		0-25	✓						✓		✓			NO	BCPG throughout		
2	20		✓				0-5		✓					✓		✓			NO	CPG "		
3	30		✓				0-10		✓				✓			✓			NO	CPG "		
4	20		✓				0-20	✓					✓			✓			NO	BCPG "		
5	10	✓					0-5		✓				✓				✓		NO	CG "		
6	10	✓					0-5		✓				✓				✓		"	CG "		

COMMENTS

Two bands of oiling - one in MITZ and lower UITE, the other in UITE.

Pit #3: well-developed cobble armor

Pit #4: couldn't dig further. Oil is in form of balls of oiled granules

Pit #5: 1/2 pit clear, 1/2 through moussé patch

This is a narrow bc beach between two bedrock points.

SHORELINE OILING SUMMARY (PAGE 2 of 2)

REVISION 03/22/90

SEGMENT ST/ PY 8 SUBDIVISION E

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	SL BR	DBL RW	GY SL	DBR TL	LBR	SU	UI	MI	U					
6	5	✓					0-3		✓							✓				NO	CPG throughout		
7	10				✓		0-10	✓				✓				✓				NO	BCG "		
8	15				✓		0-15	✓		✓						✓				NO	BCG "		
							.																
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COMMENTS

7W

4/9/90

853 000 101-007-0200

SHORELINE ECOLOGICAL SUMMARY

REVISION: 02/28/90

Segment ST / PY08 Subdivision E Date (mo / day / yr) 3/30/90
 Time (24 hr) 1108 Biologist M. CARR

- (A) Substrate type and % of ^{subdivision} segments:
 (1) Bedrock 100 (2) Boulder 100 (3) Cobble 0 (4) Pebble 0 (5) Sand 0 (6) Silt 0
- (B) Overall % cover of biota (% of ^{subdivision} segment): Dense 30 Moderate 30 Low 40
- (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: 1
 Roll No. 1
 Frames 15-21

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 UPPER 10)
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)
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	

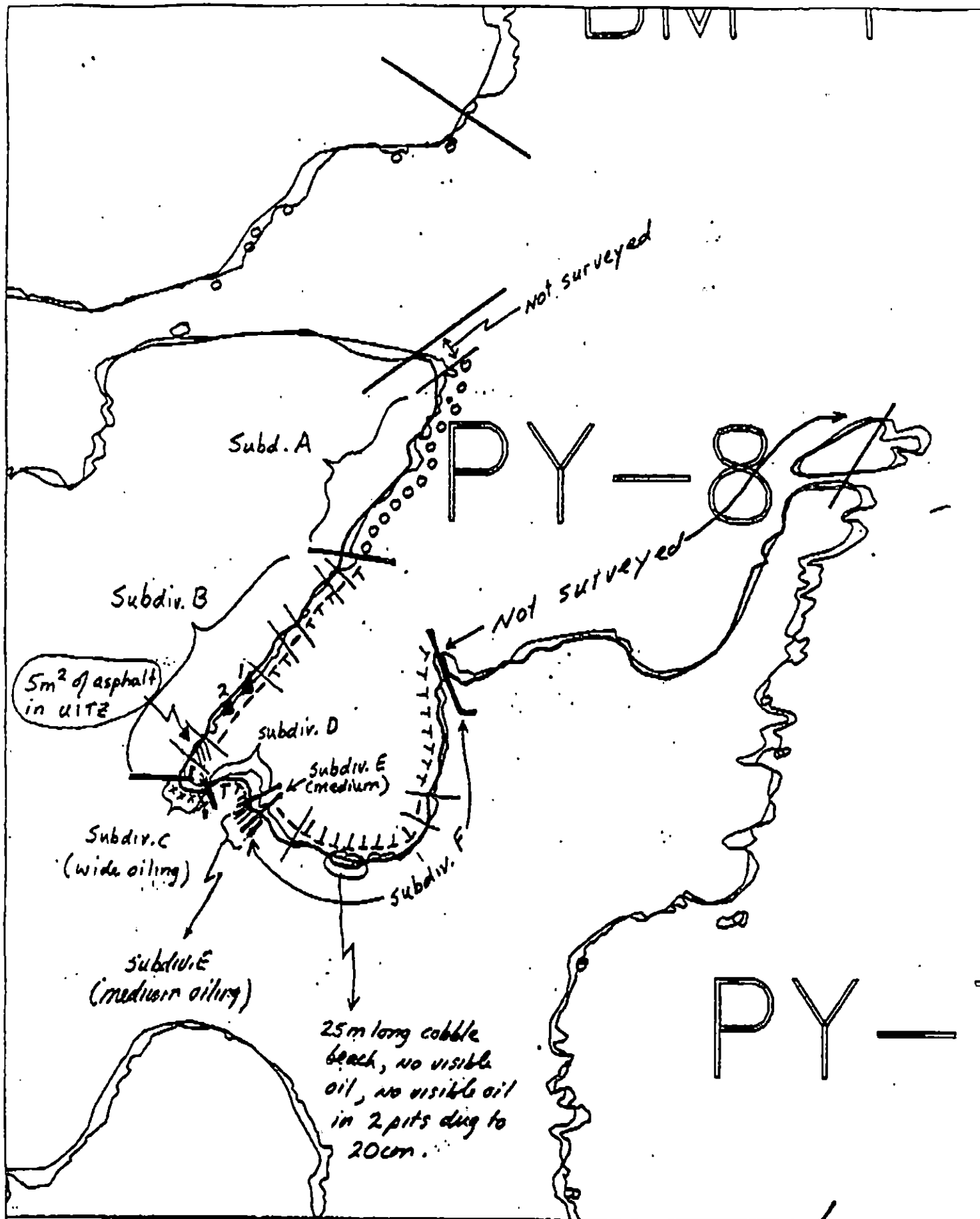
Wildlife Observations/ General Comments:

Summarized on subdiv. sheet A.

Ecological Considerations:

① Same as subdivision A sheet.

Sensitivity codes: 5T



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

PY-8

ADEC Segment Length: 5970m

1:18,000

Map Key: KEN-96

Name: Mann

Date: 3/30/90

REGION: KENAI

SEGMENT: ST/PY-08

SUBDIVISIONS: F (6 OF 6)

SHORELINE EVALUATION

SEGMENT ST/ PY-08 SUBDIVISION F (6 OF 6) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T Active eagle nest (3/1 to 9/1)

4QQ National Wildlife Refuge

Takeoff from and to seaward only. Contact USFWS prior to cleanup.

See attached Ecological Constraints Sheet for specific constraints and contacts.

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 255 m: V.Light 1067m: No Oil 0 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-8 SUBDIVISION: F DATE 3/30/90USCG / NOAANAME JACQUI MICHEL SIGNATURE [Signature]☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

Manual removal of mousse accumulations in areas marked as narrow on map.

ADECNAME JOHN R. REED SIGNATURE [Signature]☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

Manual Removal of mousse between boulders with shovel, hand trowel, or pom poms. I have read and agree with all information on S.S.A.T. Forms.

LAND MANAGER - USFWSNAME Mary Portner SIGNATURE [Signature]☐ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

Manual removal of mousse between boulders using trowels, shovels, pom poms especially in area marked narrow on PY-8 map.

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ PY 08 SUBDIVISION: A Through F DATE 30 MAR 90~~USCG~~ NOAANAME JACQUI MICHELSIGNATURE J. Michel☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

The mousse patches can be readily removed manually. Some are quite thick (>10 cm), especially under large boulders/cobbles. Bioremediation should be considered for the subdivisions C and E, pocket beaches which have the heaviest oiling. However, manual removal will have to be conducted to the point that bioremediation would work, i.e., removal of mousse to a coat/cover.

ADEC

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

COMMENTS

I Am recommending some type of manual removal for subdivisions A.-F, such as shovel and trowel. Boulders and cobbles should be turned over and the thick mousse scraped off. I tested this treatment in the field and feel that it is a viable form of removing the thick mousse patches found on subdivisions C and E. Subdivisions C and E could also be candidates for bioremediation if the thick mousse is removed to a coat or cover. I would like to add that I concur with all the information on the SSAT FORMS. A GOOD SURVEY!

LAND MANAGER - USFWS

NAME Mary PortnerSIGNATURE Mary Portner☐ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

Extensive patches of mousse remain in subdivisions C and E. It appears to be recoverable using hand trowels, pumps etc. Under the cobbles and boulders the mousse is thick, sometimes penetrating to 10 cm. It may be beneficial to turn many of the cobbles and small boulders and remove the mousse. The remaining subdivisions with oil could also benefit from small scale manual removal. I feel this was a good survey and

SHORELINE OILING SUMMARY

REVISION NO. 03/28/90

OG Mann USCG Michel SEGMENT ST/ PY-8
 BIO Carr LAND REP Partner - FWS SUBDIVISION F
 EXXON Boyer ADEC Reed TIME 11:20 to 12:15
 TEAM NO.: 18 TIDE LEVEL: +1 to +6 DATE 3/30/90
 EST. SUBDIVISION LENGTH: 1260 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 70 % B 30 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 60 % Hang 30 % Vert 10 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 270 m VL 990 m NO 0 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR				IMPACTED ZONES			
	IC	IB	IP	IS	1	2	3	4	SU	U	ME	LI
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 * TR#BAGS 2

Photographs:

Roll No. 18-1Frames 22-26

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm-000)	BELOW		OIL / FILM COLOR				PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	1	2	3	4	SU	U	ME	LI		

COMMENTS

*5 hardhats and face shields + 2 ponchos + oiled bags. No pits due to lack of places to dig the 2 areas of narrow oiling shown on map, cover and mousse exist in 1 to 2 m wide band in UITE. These are well-hidden under/behind large boulders. Splashes of ST and CT are scattered along the shoreline in the UITE. No sketch map is provided because this additional detail would provide no further useful information.

OG MAN
SEGMENT ST/ PY8
SUBDIVISION F
DATE 3 / 30 90

NO SKETCH MAP

CHECKLIST

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

No sketch map provided per
Oiling
Comments on Shoreline, Summary ~~Stand~~

LEGEND

1 ▲

Pfl - No Subsurface Oil

2 ▲

Pfl - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

Oiled Vegetation



Photo location, direction,
and number

Character Length (m): AP 0 PO 0 CV 0 CT 300 ST 250 MS 300 PT 0 TB 0 FL 0 NO 700

REVISION: 00/24/90

APR-03-1990 22:38 FROM Ensco Atlas

Ensco TO

SSAT P.22

SHORELINE ECOLOGICAL SUMMARY

REVISION: 08/22/90

Segment ST / PY08 Subdivision F Date (mo / day / yr) 3 / 30 / 90Time (24 hr) 1145 Biologist M. CARR(A) Substrate type and % of ^{sub div.} segments:
(1) Bedrock 30 (2) Boulder 30 (3) Cobble (4) Pebble (5) Sand (6) Silt (B) Overall % cover of biota (% of ^{sub div.} segments): Dense 50 Moderate 50 Low

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

Photographs: 1
Roll No. Frames 22-26

BARNACLES

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

NOT PRESENT

Wildlife Observations/ General Comments:

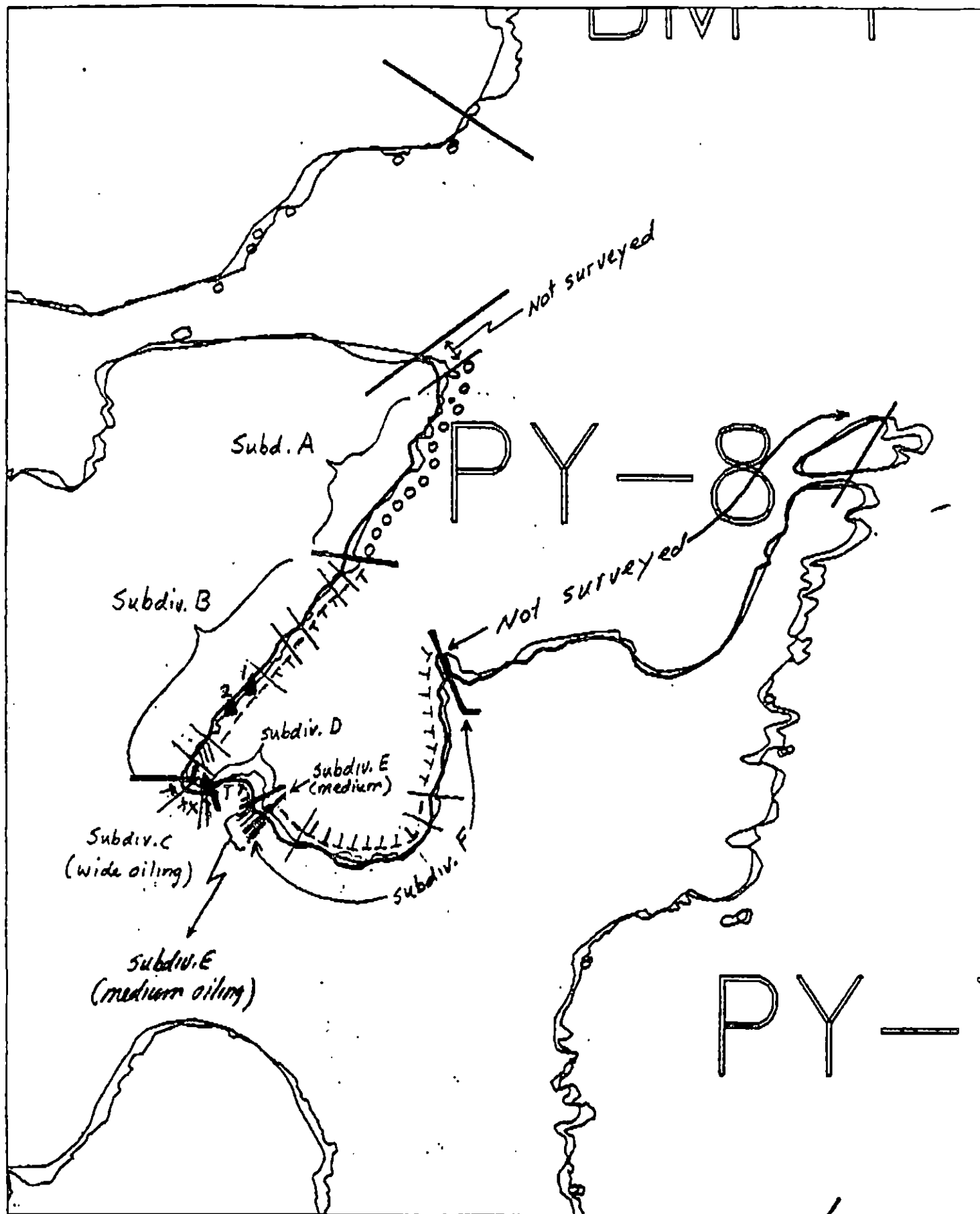
Summarized on subdivision A sheet

Ecological Considerations:

*① Same as subdivision A sheet plus "Rhodymenia" w/ Fucus in mid-inter**Sensitivity codes: ST**GASTROPODS INCLUDE: LIMPETS & KATHARINA tunicata*

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.



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

PY-8

ADEC Segment Length: 5970m

450 60 1:18,000

Map Key: KEN-96

Name: ManrDate: 3/30/90

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT PY-8 SUBDIVISION C (3 of 6)

WORK WINDOW	
Manual Pickup	OPEN
Bioremediation Hand Tools & Mechanical Equipment	OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

5T Bald Eagle Nest

NO CONSTRAINT. Bald eagle nest is outside Subdivision C of Segment PY-8 and more than 400m from work site.

OTHER ECOLOGICAL CONSIDERATIONS

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

FOSC

Date

6-10-90

Prepared by

Date

6-10-90
6/10/90

BM-1

PY-8

PY-7

Work Area

ECOLOGY MAP

SEGMENT PY-8

SUBDIVISION C (3 of 4)

METERS



Exxon Company, USA



Seabird Colony



Eagle Nest

SHORELINE EVALUATION

SEGMENT ST/ PY-008 SUBDIVISION C (3 OF 6) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T Bald eagle nest (3/1 to 9/1)

4QQ National Wildlife Refuge.

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. Shine

DATE: 4/17/90

SPILLING CATEGORIZATION:

Wide 110m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 0 m
Subsurface Oil Observed: Yes X No Maximum Depth 20+ cm

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: Recommend manual pick up of mousse and bioremediation of broken cover. Conduct treatment activities after 6/1 per above eagle constraints and obtain approval from ADF&G and USFWS.

USE HAND TOOLS TO REMOVE MOUSSE AMONGST BOULDERS. MECHANICAL EQUIPMENT MAY BE APPROPRIATE TO ACCESS MOUSSE. FEASIBILITY OF BACKHOE USE

TAG COMMENTS: MUST BE DETERMINED BY OPERATIONS + MONITORS PRIOR TO MOBILIZATION.

SEE CONSTRAINTS ADDENDUM dated
6/10/90 PPP

TAG APPROVAL DATE: 4/17/90

DEC Art Weir

EXXON ANDY TEAR

NOAA Bruce Warrick

USCG KENNETH KETNER

FOSC: H L

DATE: 5-3-90

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT PY-8 SUBDIVISION E (5 of 6)

WORK WINDOW	
Manual Pickup	OPEN
Bioremediation	OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

5T Bald Eagle Nest

NO CONSTRAINT. Bald eagle nest is outside Subdivision E of Segment PY-8 and more than 400m from work site.

OTHER ECOLOGICAL CONSIDERATIONS

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

FOSC

Date

6-10-90

Prepared by

6-10-90

Date

6/10/90

BM-1

PY-8

PY-7

Work
Area



Exxon Company, USA

ECOLOGY MAP
SEGMENT PY-8

SUBDIVISION E (5 of 6)

METERS

- | | |
|---|----------------|
| ★ | Seabird Colony |
| ▲ | Eagle Nest |

SHORELINE EVALUATION

SEGMENT ST/ PY-08 SUBDIVISION E (5 OF 6) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T Active eagle nest (3/1 to 6/1)

4QQ National Wildlife Refuge

Takeoff from and to seaward only. Contact USFWS prior to cleanup.

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 J. Hines DATE: 4/17/90

OILING CATEGORIZATION:

Wide 0 m: Medium 99 m: Narrow 0 m: V.Light 0 m: No Oil 0 m
Subsurface Oil Observed: Yes X No Maximum Depth 25 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: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> Removal	<u> </u> Other (see comments)

COMMENTS: Recommend manual pick up of mousse and bioremediate coat areas as shown on attached sketch map. Work should be conducted after 6/1 with approval from ADF&G and USFWS based on above eagle constraints.

^{CONSTRAINTS}
SEE ADDENDUM dated 6/10/90 JPP

TAG COMMENTS:

TAG APPROVAL DATE: 4/17/90
ADEC Art Weiner
EXXON Andy Lee
NOAA Burt Wescott
USCG Kenneth Keane

FOSC: W/L DATE: 5-3-90

SHORELINE EVALUATION

SEGMENT ST/ PY-008 SUBDIVISION D (4 OF 6) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T Bald eagle nest (3/1 to 9/1)

4QQ National Wildlife Refuge.

See attached Ecological Constraint Sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/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. Adams DATE: 4/17/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 234 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)

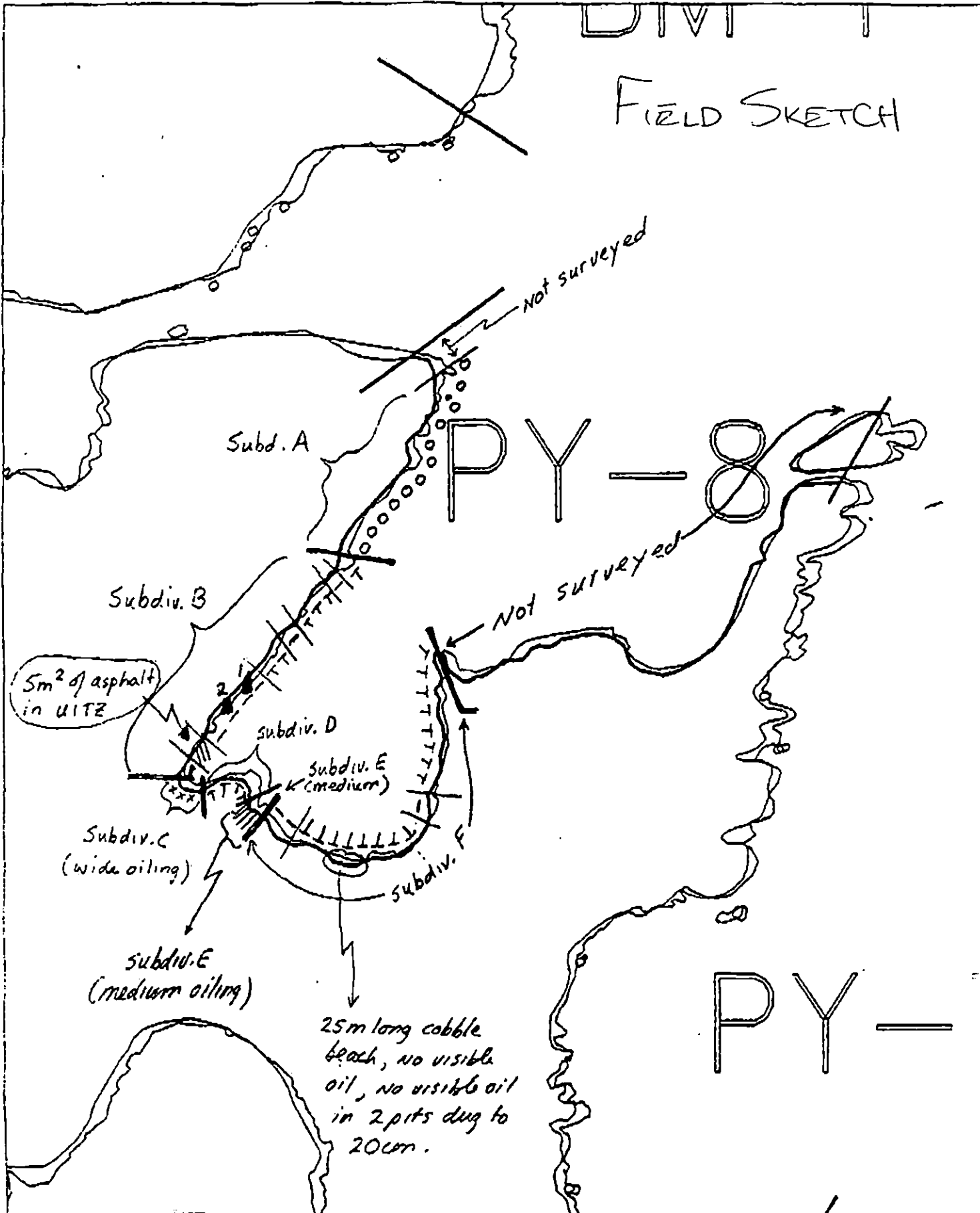
COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 4/17/90

ADEC Art Wernon Art Wernon
EXXON ANDY GAT Andy GAT FOSC: DATE: 4-22-90
NOAA Burt Wernon Burt Wernon
USCG KENNETH KEENE Kenneth Keene

FIELD SKETCH



XXXX Wide
 /// Medium
 --- Narrow

PY-8

ADEC Segment Length: 5970m

Map Key: KEN-96

Name: Mann
 217/160

SHORELINE EVALUATION

SEGMENT ST/ PY-008 SUBDIVISION A (1 OF 6) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T Bald eagle nest (3/1 to 9/1)

4QQ National Wildlife Refuge.

See attached Ecological Constraint Sheet for specific constraints and contacts.

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. Holmes DATE: 4/17/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 735 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

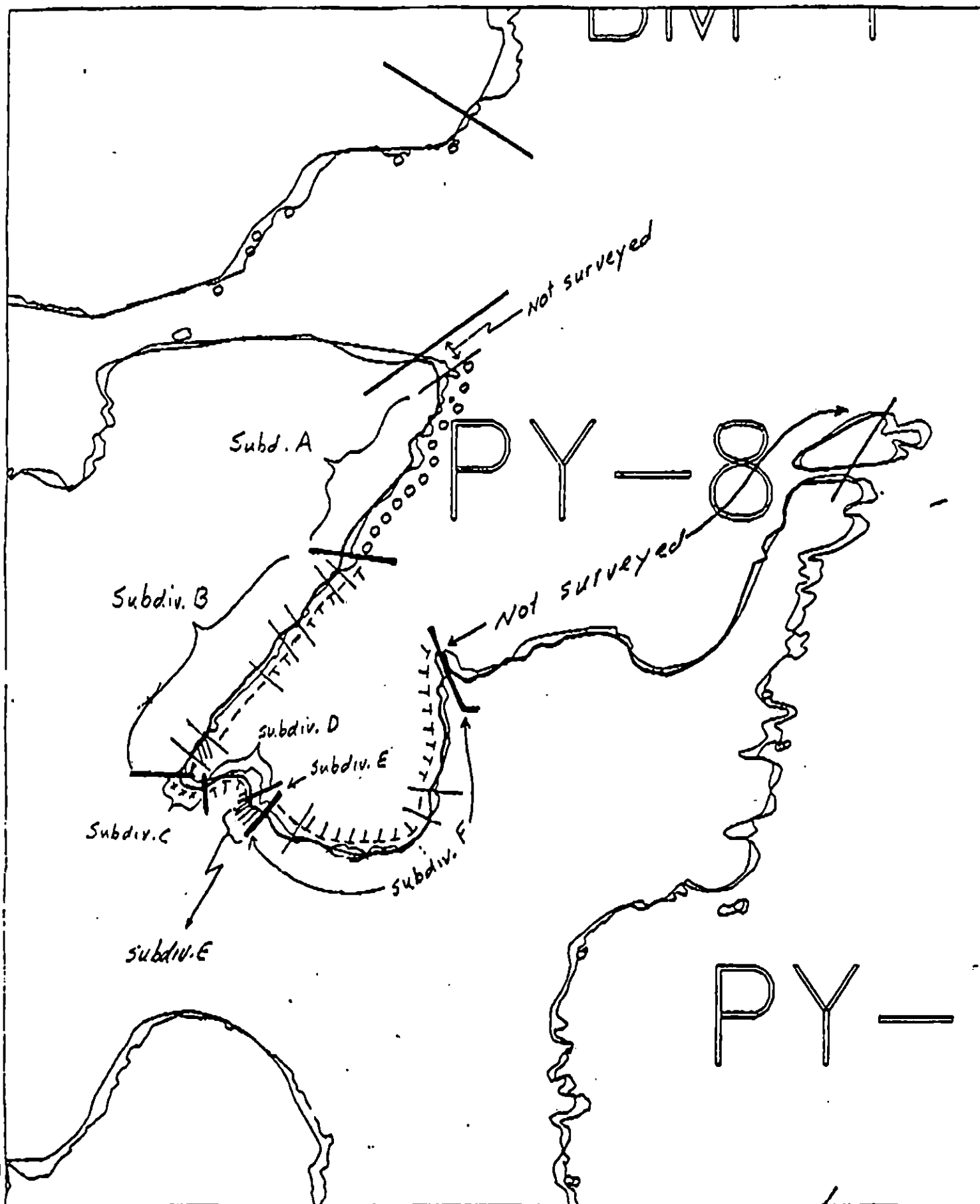
ADEC Art Wanner Drt Wanner

EXXON Arroyo Tera Reg

NOAA Bur I Werroft Bur I Werroft

USCG Kenneth Keane Kenneth Keane

FOSC: My L DATE: 4-22-90



XXXX Wide

//// Medium

--- Narrow

PY-8

ADEC Segment Length: 5970m

Map Key: KEN-96

Name: Manr

WORK PLAN ADDENDUM

Segment PY-008

Subdivision C

Dated 5/16/90

MODIFICATION

1. REASON FOR MODIFICATION

- Admirals' requirement.
- Landowner recommendation.

2. ADJUSTMENT TO WORK PLAN

- Note eagle nest restrictions; 2 nests in cove will be assessed around 6/1 for activity. Contact USFWS before proceeding.
- A USFWS representative must be onsite for treatment.
- Customblen may be used in the ITZ only, after manual removal of mousse, patties, etc.

SHPO APPROVAL NEEDED YES NO X

SHPO SIGNATURE _____

TAG APPROVAL DATE 5/18/90

ADEC Art Weiner Art Weiner

EXXON Andy Taz Andy Taz

NOAA Gary Peters Gary Peters

USCG G.A. Dieter G.A. Dieter

FOSC W L DATE 5-18-90

WORK PLAN ADDENDUM

Segment PY-008

Subdivision E

Dated 5/16/90

MODIFICATION

1. REASON FOR MODIFICATION

- FOSC requirement.
- Landowner recommendation.

2. ADJUSTMENT TO WORK PLAN

- Note eagle nest restrictions; 2 nests in cove will be assessed around 6/1 for activity. Contact USFWS before proceeding.
- A USFWS representative must be onsite for treatment.
- Customblen may be used in the ITZ only, after manual removal of mousse, patties, etc.

SHPO APPROVAL NEEDED YES
NO X

SHPO SIGNATURE _____

TAG APPROVAL DATE 5/18/20.

ADEC Art Weiner Art Weiner

EXXON Amby T642 Deal

NOAA Gary Petrac Louise

USCG G.A. REITER B.A. Th...

FOSC ✓ 1 DATE 5-18-20

FOSC DATE 5-18-90

WORK PLAN ADDENDUM

Segment PY-008

Subdivision B

Dated 5/16/90

MODIFICATION

1. REASON FOR MODIFICATION

- FOSC requirement.
- Landowner recommendation.

2. ADJUSTMENT TO WORK PLAN

- Note eagle nest restrictions: nest in cove will be assessed around 6/1 for activity. Contact USFWS before proceeding.
- Customblen may be used in the ITZ area only, near Pits 1 and 2 after manual removal of mousse.
- 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 Art Weiner

EXXON Andy TGA Real

NOAA Gary Petras

SCG G. A. BEITER G. A.

FOSC h L DATE 5-18-90

SHORELINE EVALUATION

SEGMENT ST/ PY-008 SUBDIVISION B (2 OF 6) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T Bald eagle nest (3/1 to 9/1)

4QQ National Wildlife Refuge.

See attached Ecological Constraint Sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to unopened 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 J. Holmes

DATE: 4/12/90

OILING CATEGORIZATION:

Wide 0 m: Medium 97 m: Narrow 479 m: V.Light 391 m: No Oil 0 m
Subsurface Oil Observed: Yes X No Maximum Depth 15 cm

RECOMMENDATIONS:

 No Treatment Recommended
X Treatment Recommended
X Manual Pickup
X 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 manual pick up of mousse and removal of tarmat in area shown on attached sketch map. Conduct treatment activities after 6/1 per above eagle constraints and obtain approval from ADF&G and USFWS.

BIOREMEDIATE AS INDICATED ON SKETCH FOLLOWING MANUAL REMOVAL

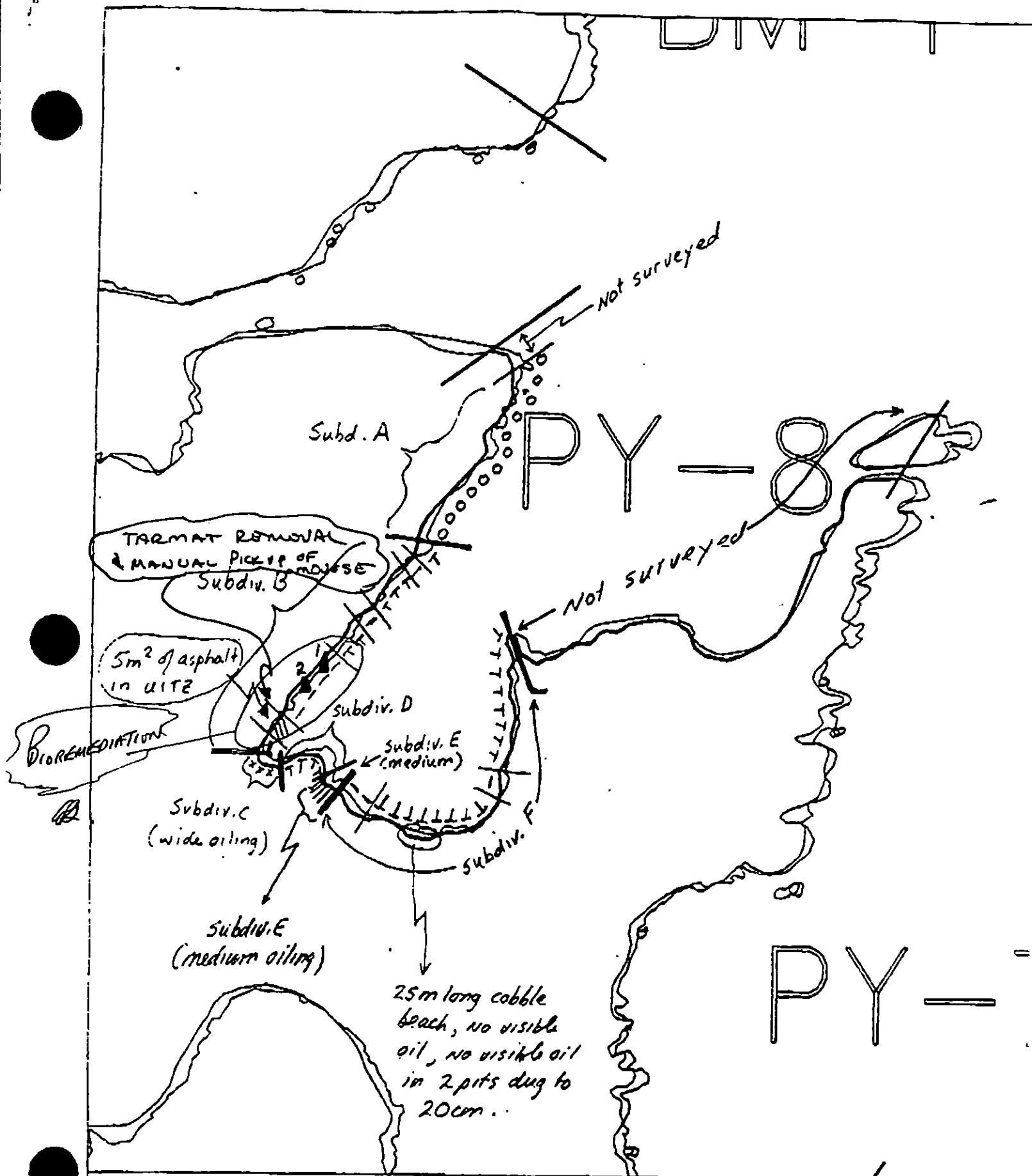
TAG COMMENTS:

TAG APPROVAL DATE: 4/17/90

ADEC Art Weiner Art Weiner
EXXON Andy Teal Andy Teal
NOAA Burt Wescott Burt Wescott
USCG Kenneth Kettner Kenneth Kettner

FOSC: ML

DATE: 5-3-90



XXXX Wide

//// Medium

--- Narrow

TTTT

PY-8

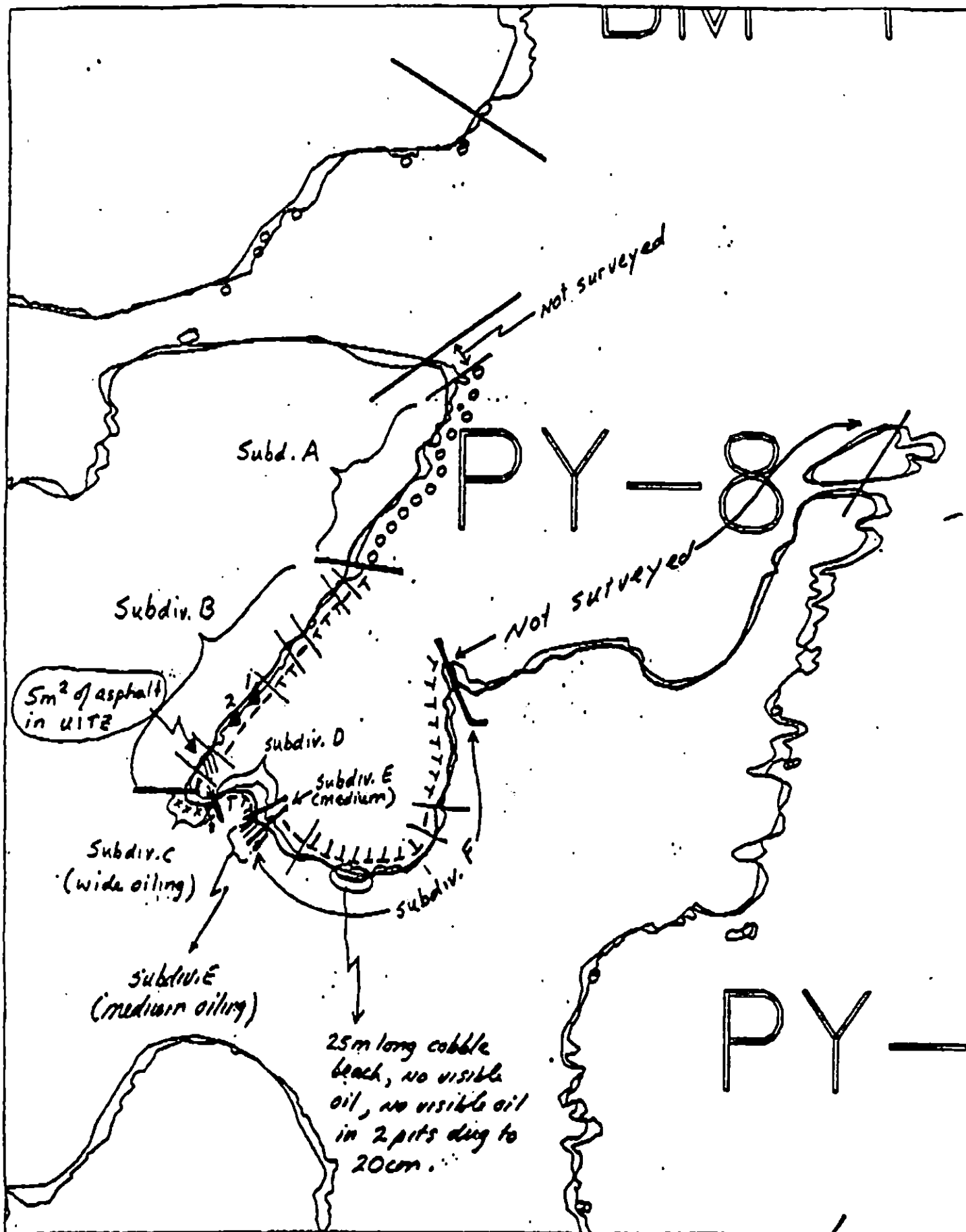
ADEC Segment Length: 5970m

450 60

Map Key: KEN-96

Name: Momr

3/30/90



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

PY-8

ADEC Segment Length: 5970m

45° to 1:18,000

Map Key: KEN-95

Name: Mann

Date: 3/30/9:

SHORELINE EVALUATION

SEGMENT ST/ PY-008 SUBDIVISION C (3 OF 6) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T Bald eagle nest (3/1 to 9/1)

4QQ National Wildlife Refuge.

See attached Ecological Constraint Sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to unoiiled 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. Hume

DATE: 4/17/90

OILING CATEGORIZATION:

Wide 110m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 0 m
Subsurface Oil Observed: Yes X No Maximum Depth 20+ cm

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: Recommend manual pick up of mousse and bioremediation of broken cover. Conduct treatment activities after 6/1 per above eagle constraints and obtain approval from ADF&G and USFWS.

USE HAND TOOLS TO REMOVE MOUSSE AMONGST BOULDERS. MECHANICAL EQUIPMENT MAY BE APPROPRIATE TO ACCESS MOUSSE. FEASIBILITY OF BACKHOE USE

TAG COMMENTS: MUST BE DETERMINED BY OPERATIONS + MONITORS PRIOR TO MOBILIZATION.

TAG APPROVAL DATE: 4/17/90

ADEC Art Weiner

EXXON ANDY TATE

NOAA Burl Warratt

USCG KENNETH KEANE

FOSC: H L

DATE: 5-3-90

OG

SEGMENT STI PY-8

SUBDIVISION C

DATE 3, 30 90

CHECKLIST

- ☒ Arrow
- ☒ Approx. Scale
- ☒ Sep/Sub Bdry
- ☒ Oil Dist.
- ☒ Width
- ☒ Length
- ☒ % Cover
- ☒ Substrate Character
- ☒ Est. HWL/LWL
- ☒ SSL
- ☒ Profile Location(s)
- ☒ Profile(s)
- ☒ Pit Location(s)
- ☒ Photo Location(s)
- ☒ SEE NOTES

LEGEND

1 Δ
Pit - No Subsurface Oil

2 Δ
Pit - Subsurface Oil

CT/C
Continuous Distribution

CT/B
Broken Distribution

CT/P
Patchy Distribution

CT/S
Splashed Distribution

Oiled Vegetation

1 Δ
Photo location, direction, and number

12 Δ

bedrock

kelp

stream

freshwater seepage area

100 130 100 100 0

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

0 100 130 100 100 0

0 100 130 100 100 0

0 100 130 100 100 0

0 100 130 100 100 0

0 100 130 100 100 0

SKETCH MAP

inner Morning Cove

KEY



cover 1C/Mousse/P (25% coverage) (cover on stones, mousse is between)



cover 1C/Mousse/B (55% coverage: note that boulders tops are *clean of oil but between them 80% oil cover; cover on stones, mousse is below)



HWL at edge of snow, SSL under snow
LWL at upper edge of cover/B zone

winter berm
oiling
bc
cb
boulders 10.

subdiv. D

(A)
pit transect

pit transect

8

7

6

5

4

3

2

1

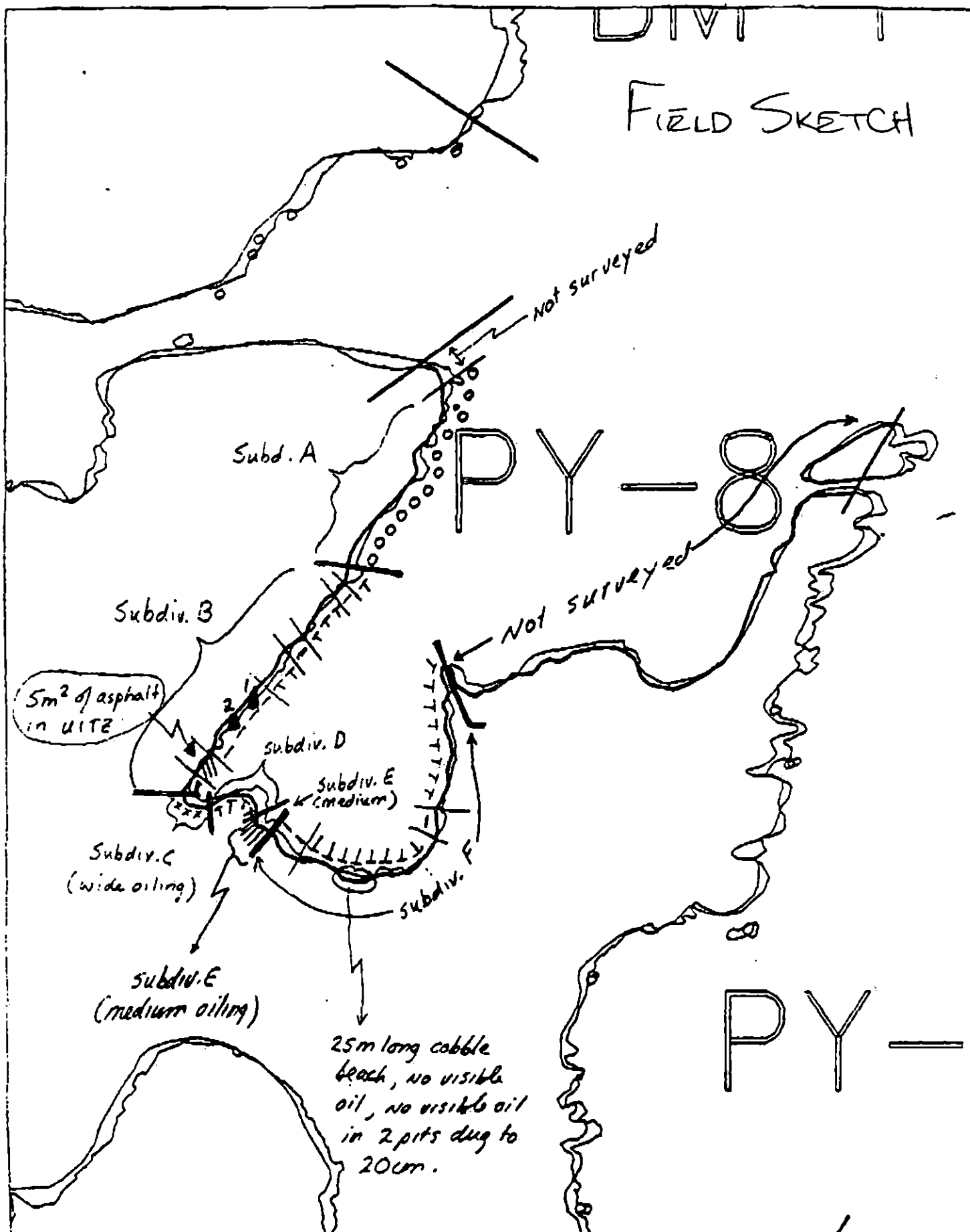
0

0

0

REVISION 05/90

FIELD SKETCH



XXXX Wide
 /// Medium
 --- Narrow

PY-8

ADEC Segment Length: 5970m

Map Key: KEN-96

Name: Mamr

2/20/91

SHORELINE EVALUATION

SEGMENT ST/ PY-08 SUBDIVISION E (5 OF 6) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T Active eagle nest (3/1 to 6/1)

4QQ National Wildlife Refuge

Takeoff from and to seaward only. Contact USFWS prior to cleanup.

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 Z. Johnson DATE: 4/17/90

OILING CATEGORIZATION:

Wide 0 m: Medium 99 m: Narrow 0 m: V.Light 0 m: No Oil 0 m
Subsurface Oil Observed: Yes X No Maximum Depth 25 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: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> Removal	<u> </u> Other (see comments)

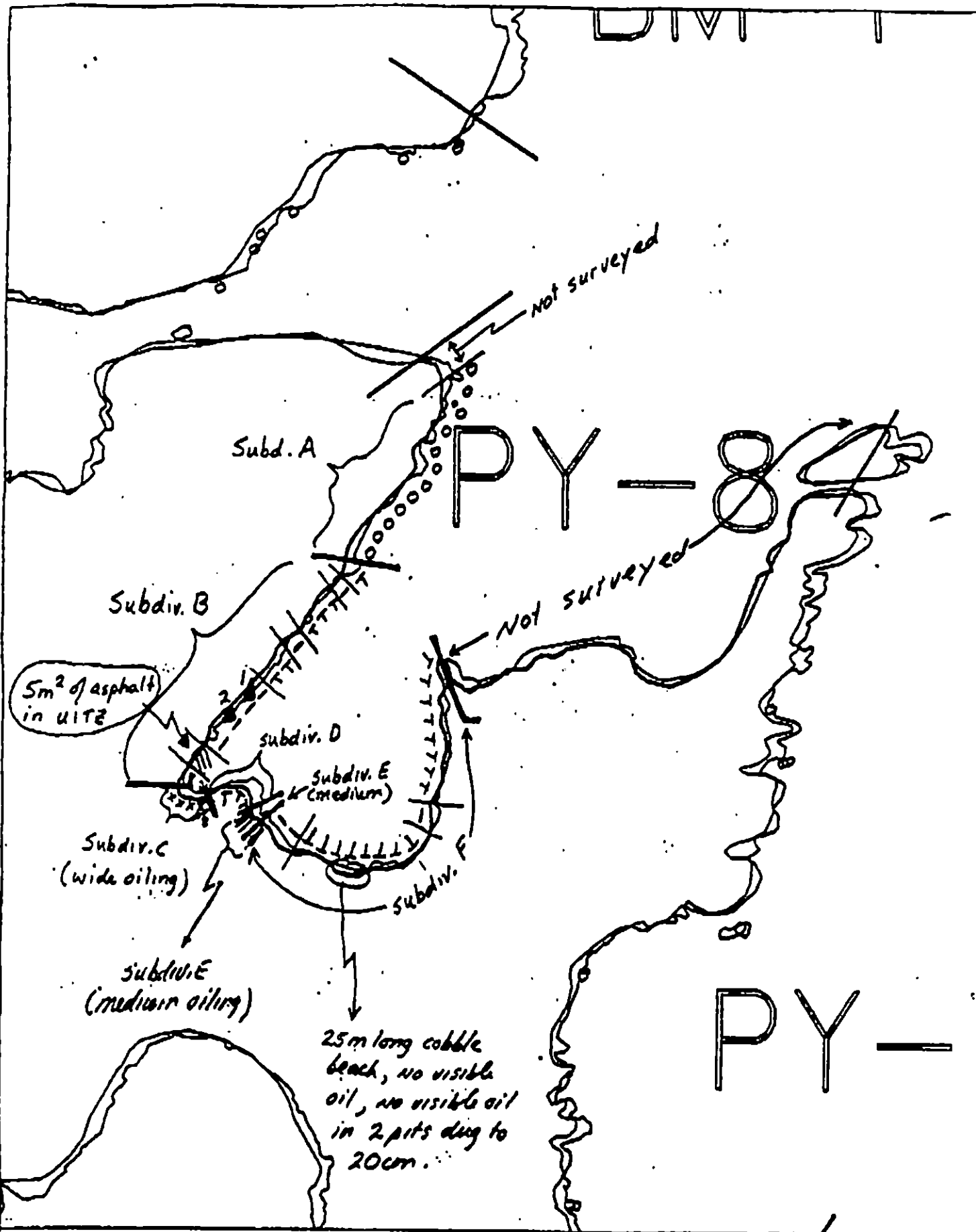
COMMENTS: Recommend manual pick up of mousse and bioremediate coat areas as shown on attached sketch map. Work should be conducted after 6/1 with approval from ADF&G and USFWS based on above eagle constraints.

TAG COMMENTS:

TAG APPROVAL DATE: 4/17/90
ADEC Art Weiner
EXXON ANDY GOR
NOAA Bruce Wescott
USCG KENNETH KEANE

FOSC: WJL DATE: 5-3-90

[illegible]



XXXX Wide

//// Medium

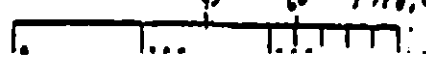
--- Narrow

TTTT Very Light

PY-8

ADEC Segment Length: 5970m

450 60 1:18,000



Map Key: KEN-96

Name: Mann

Date: 3/30/90

SHORELINE EVALUATION

SEGMENT ST/ PY-08 SUBDIVISION F (6 OF 6) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T Active eagle nest (3/1 to 9/1)

4QQ National Wildlife Refuge

Takeoff from and to seaward only. Contact USFWS prior to cleanup.

See attached Ecological Constraints 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). *celt*

SHPO SIGNATURE: *Charles J. Adams* DATE: 5/3/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 255 m: V.Light 1067m: 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: <u> </u> Wands
☐ Tarmat: <u> </u> Breakup	☐ <u> </u> Beach Cleaner
☐ <u> </u> Removal	☐ Other (see comments)

COMMENTS:

MANUAL PICKUP OF MOUSSE AS INDICATED ON MAP.

TAG COMMENTS:

TAG APPROVAL DATE: 4/17/90.

ADEC ART WENDEL *Dgt Weller*

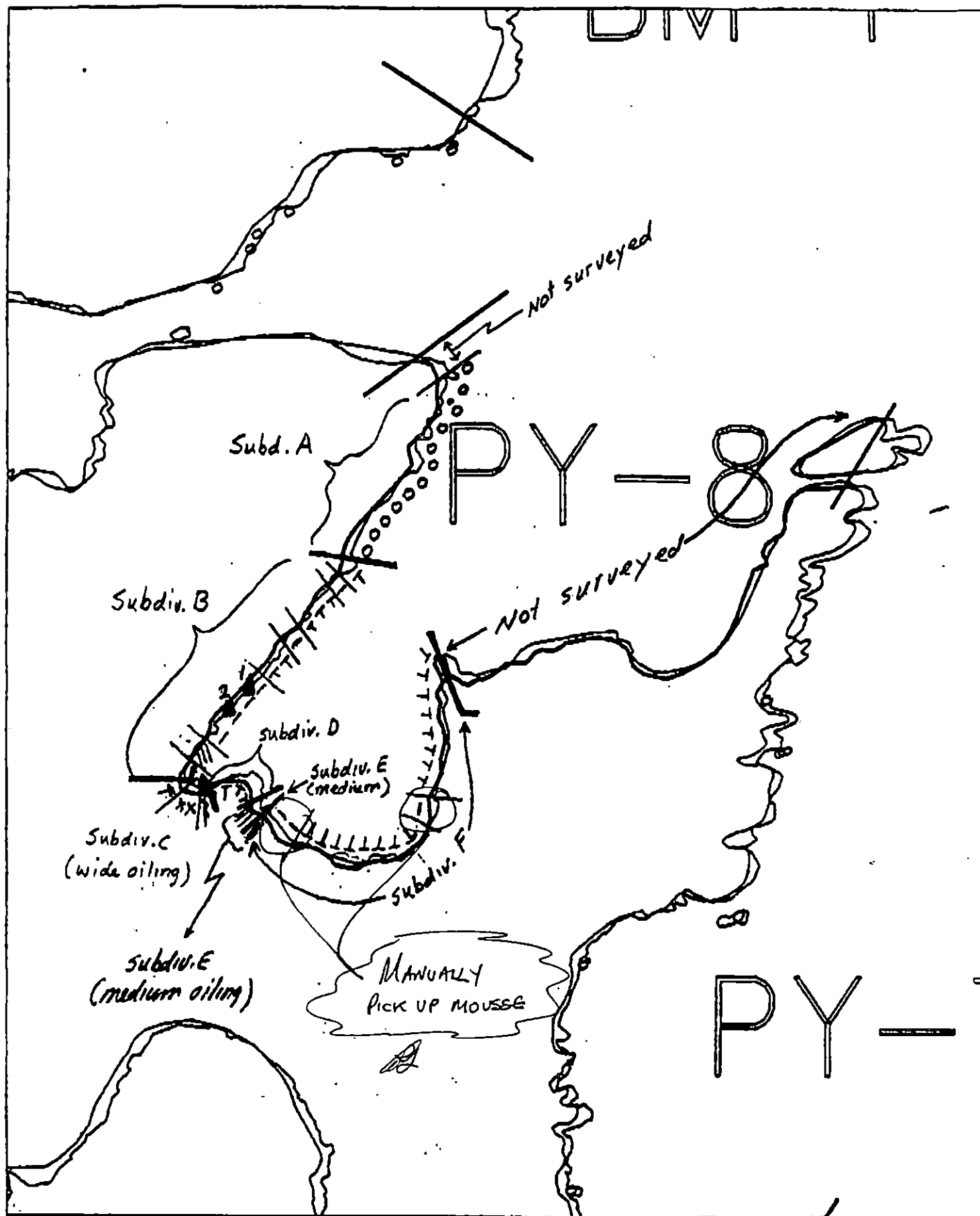
EXXON ANDY TEAL *Andy Teal*

NOAA Burl Wescott *Burl Wescott*

USCG KENNETH KEANE *Kenneth Keane*

FOSC: *W L* DATE: 5-12-90

USFWS Rep to be on scene.



XXXX Wide
 //// Medium
 --- Narrow

PY-8

ADEC Segment Length: 5970m

450 20 1:18,000

Map Key: KEN-96

Name: Mann

2/21/90

1991 MAYSAP EVALUATION

SEGMENT: PY 008 SUB: C REGION: KEN SURVEY DATE: 5/16/91

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

AM NO. 4 SEGMENT PY.008 SUBDIVISION C DATE MAY 16/91

ADEC

NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☐ NTR ☒ Treatment Recommended - John Hardister informed me of the condition of this beach in '89 - 4 weeks of washing occurred here on subseg C & E. In contrast, the current condition of the beach looks good - However, in areas A2 & A3, manual removal can be conducted to finish up accessible surface oiling. (Area A2 was not fully addressed to the point of inaccessibility. A2 - coverage was more sporadic - The 25% coverage in A3 included concentrated areas of MS & HSOR up to 1m. in dia. between boulders -) This subdivision should be worked in conjunction w/ subseg. B & E - less than one day est. w/ a crew of 8. (12 hr.) for all - B, C, E

EXXON

NAME George P. Stiles SIGNATURE _____

☒ NTR The ms remaining is very patchy scattered around the edges of the large boulders. Very little oil would be recovered if worked.

LANDMANAGER

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

☒ NTR I was on this beach segment during the mechanical and washing operations that occurred in July '89. Cleanup has been effective. Some patches of ms remain between the cobbles and boulders; some of which was removed during the survey. For further cleanup recommendations... this was a tough call to make. On balance, a relatively little amount remain that could be mechanically removed because of the nature of the terrain, thus I believe the scale could be tipped toward NTR. I have seen this beach when it was coated with oil. It was dirty!

USCG/NOAA

NAME Mo Mahon/McDonald SIGNATURE Mo Mahon

☒ NTR sporadic oiling did exist, TP & mouse between large boulders, however, recovery of any product between / under such rock is not economically feasible and wouldn't contribute to minimizing the threat to public health or environment

DATE MAY / 16 / 91

DATE MAY 16 / 91

ENERGY LEVEL: ☐ H ☒ M ☐ L

EST. OIL CATEGORY LENGTH: W m M m N m VL 42 m NO 68 m 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

OG COMMENTS: Short core of cl/bd on bd/cl and bedrock outcrops. Deline an indicated on map. A1 was picked up but A2, A3 were worked on but not completed because of size of boulders and lack of time.

revised 5.21 g/y
REVIEWED: F.W. 5/22/91

Og sketch Map.

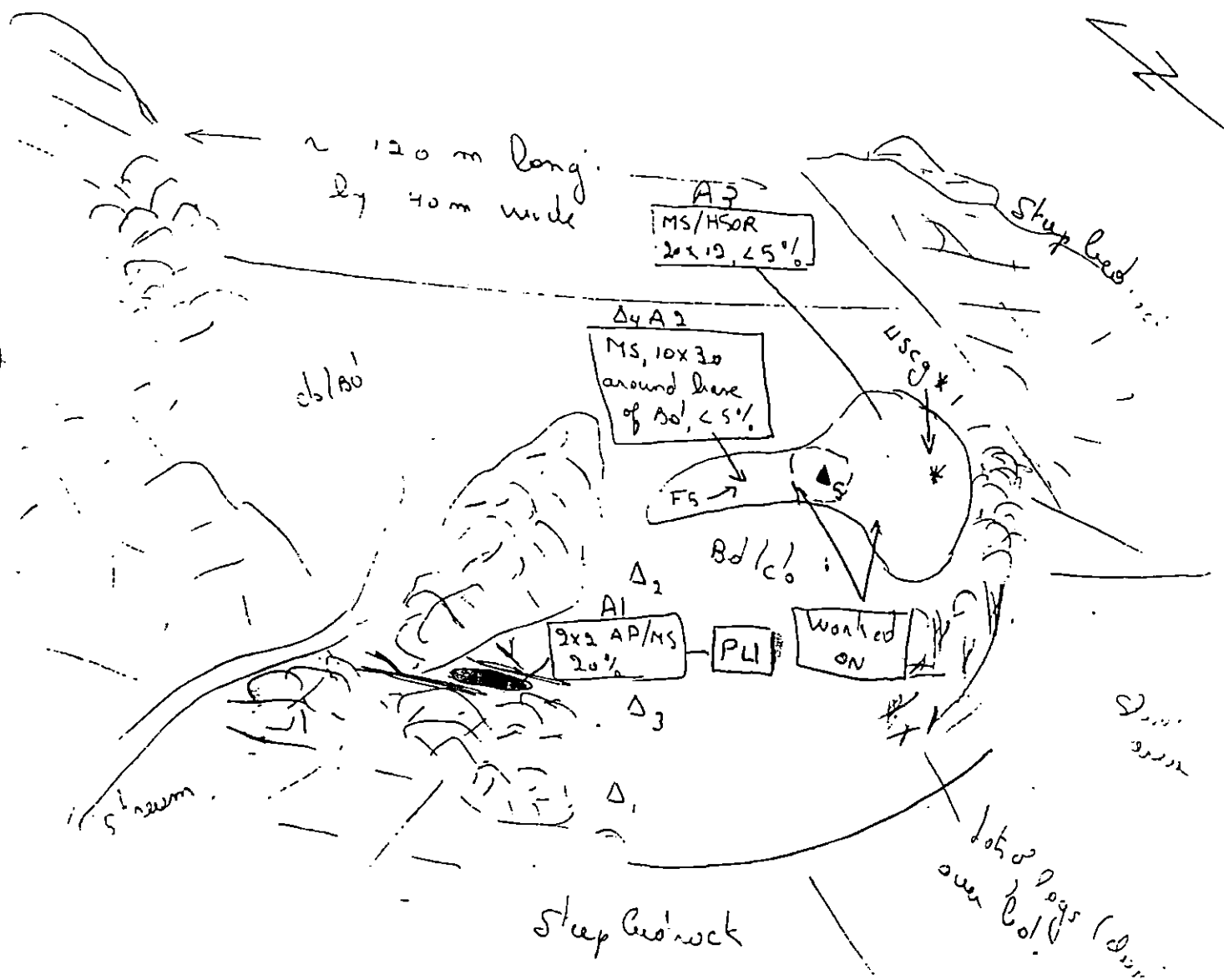
Py. 008. C

4M Samples

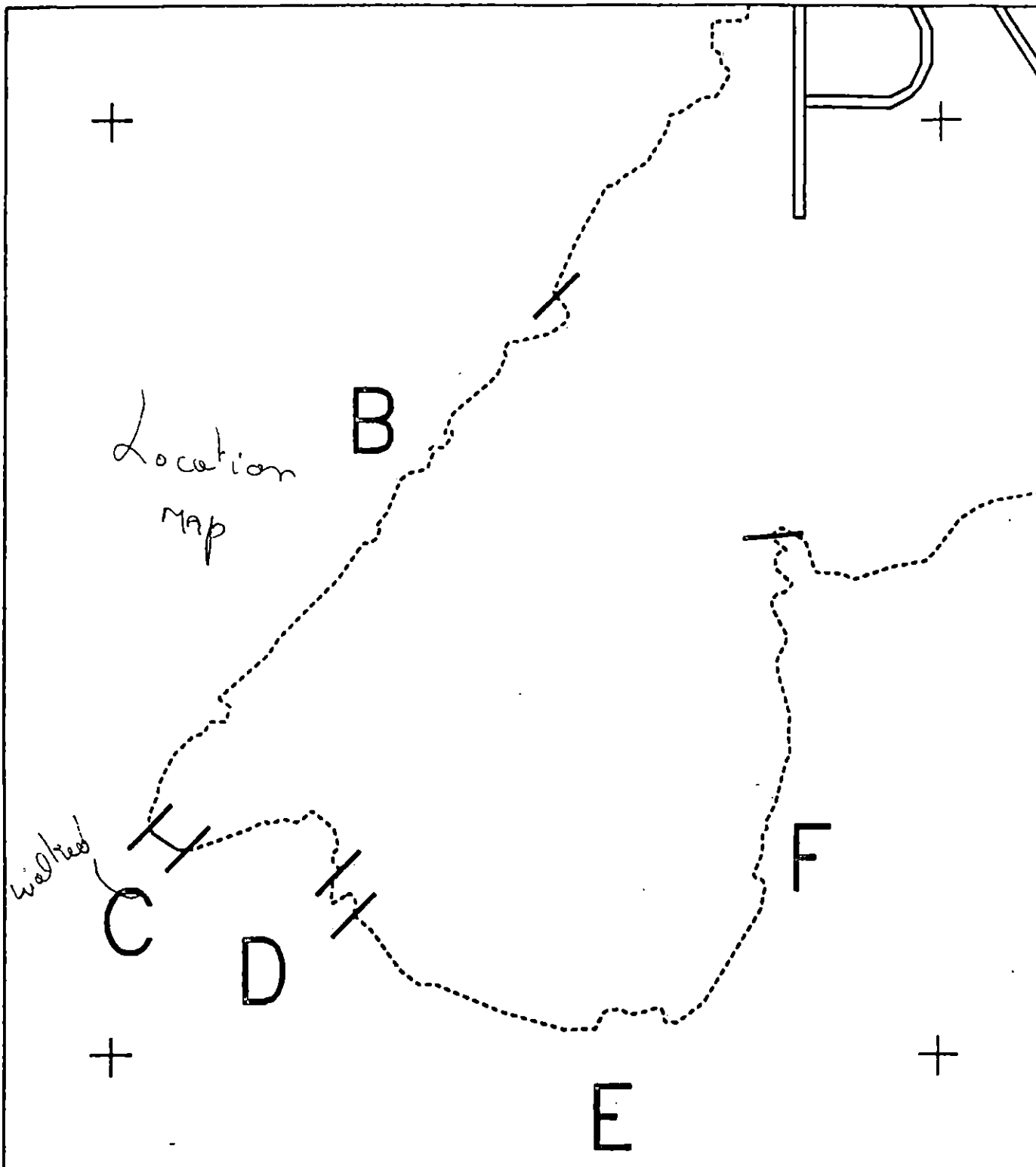
May 13/91

0220 - 0900.

Miles
0 20

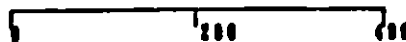


Reviewed S.21 94
Reviewed: F.W. 5/22/91



PY008 C

METERS



AK State Plane Zone 4
sp7888d

Subdivision Field Map

Map Key: KENPY008Ca

Name: John F. Jensen

Date: May 16/91

REVIEWED: P.W. 5/22/94

NAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 16, 1991 0821 - 0921
SEGMENT #	PY008	TIDAL HEIGHT (Range)	-1.0 => -3.0
SUBDIVISION	C	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm, cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A1 Oil (AP,MS) is in the high intertidal zone. Littorine snails are moderately abundant as adults, juveniles, and eggs, even directly on the remaining oil. Amphipods are sparse in this area. Green filamentous algae is present, but not densely abundant as it is on the SW corner of the beach. This cobble beach has only sparse cover of invertebrates and algae, except in the low zone or on the bedrock outcrops, which have moderately dense patches of mussels and barnacles.

Manual cleanup was performed at this site. Additional cleanup will not adversely affect the beach biota, so long as the bedrock mussels beds are protected from disturbance.

A2,A3 Oil (MS, HSOR) is present in an area of the cobble beach in the high to medium intertidal zone. Green filamentous algae is sparse on the cobble in this area. Fucus is present on some of the cobble, as are barnacles, littorine snails, and limpets. Amphipods are abundant under some cobble. Below this area, the intertidal flora is much richer, with dense coverage of red and brown algae. Invertebrates, such as urchins, bryozoans, various worms, and snails are abundant under the beach cobble of the low zone.

Manual pickup was performed at this site during the survey. Additional manual pickup will not harm the biota at the site.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

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

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

Shoreline subdivision map showing important biological features attached.

REVIEWED: EW. 5/22/91
P. 13 5/22/91

4. Red Algae - Rhodophyta
Bangia fuscopurpurea, *Endocladia muricata*, *Halosaccion glandiforme*,
Lithothamnion sp., *Membranoptera dimorpha*, *Odonthalia floccosa*, *Palmaria*
palata, *Petrocelis* sp., *Porphyra* sp., *Rhodomela larix*
5. Higher Plants - *Leymus mollis* (beach rye grass)

II. Marine Animals

1. Sponges - Porifera - *Halichondria bowerbanki*?
2. Anemones - *Anthopleura artemesia*, *Epiactis prolifera*?, *Metridium senile*,
Urticina crassicornis,
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.?, *Traskorchestia traskiana*
 - 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 - *Cryptochiton stelleri*, *Mopalia* sp., *M. mucosa*, *Katharina tunicata*, *Tonicella lineata*,
 - b. Snails - Gastropods
Littorina sitkana, *L. keenae*, *Nucella lamellosa*, *N. lima*,
Searlesia dira
 - c. Limpets - *Lottia digitalis*, *L. persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
 - e. Bivalves - *Chlamys hastata*, *Mytilus edulis*, *Pododesmus cepio*
12. Echinoderms
 - a. Brittle Stars - *Ophiolus aculeatus*?, *Ophiothrix spiculata*?,
Amphipholis?
 - b. Sea stars - *Crossaster papposus*, *Dermasterias imbricata*, *Henricia leviuscula*, *Leptasterias hexactis*, *Orthasterias keohleri*,
Pisaster ochraceus, *Pycnopoda helianthoides*, *Solaster dawsoni*,
 - c. Sea Cucumbers - Holothurians - *Eupentacta* sp.
 - d. Urchins - *Strongylocentrotus droebachiensis*
13. Bryozoans - *Membranipora* sp., *Microporina borealis*, *Schizoporella* sp.
14. Ascidians - *Synocium*? sp., *Aplidium*?
15. Fishes
Cottidae -
Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*

- IV. Birds - *Bald Eagle* (1), *Glaucous-winged Gull* (5), *Black-legged Kittiwake* (3)
Western Sandpiper (3) *Fox Sparrow* (1), *Crow* (1)

PY008-C Biology Summary, continued

General Features of PY008-C

This is a cobble beach at the inner portion of a small cove. The beach was heavily oiled and has experienced extensive cleanup efforts. The moderately rounded cobble suggest that medium sized waves occasionally or frequently scour the shore. The high to middle zone cobble have only sparse to moderate coverage or density of biota. The low zone has thick red and brown algal cover.

Littorine snail densities are patchy and often dense in the cobble beach. Recruitment of littorines, amphipods, mussels, barnacles, and several species of algae is evident.

Miscellaneous Observations

An adult bald eagle picked a dead kittiwake from the water and ate it in a nearby tree. Two other dead gulls were seen on the water.

General Zonation Pattern along PY008-C

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal
Oil Spatters		- - -	+++	+++	- - -	-
Black Lichen		----*				
Barnacles (Balanus)			- - -	+ + +	- - -	++ - -
Limpets/Littorines			- - -	+ + +	- - -	++ - -
Crustose Red Algae (Hildenbrandia)			+++	***	+++	
Rockweed (Fucus)			- - -	+ + +	+ + +	- - -
Red Algae (Endocladia/other)			- + +	- + +	- - -	
Mussels (Mytilus)			- - -	+ + +	* * *	- - -
Green Algae (Ulva/other)		- - -	+++++	- - -	+++	+++
Palmaria and other red algae				- - -	+++	+++
Other Red Algae				- - -	+++	+++
Upright Brown Algae (not Fucus)				- - -	+++	*****
Encrusting bryozoans				- - -	+++	*****

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

List of Species from PY008-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
 - Alaria marginata, Ectocarpus sp., Fucus distichus, Hildenbrandia sp., Laminaria groenlandica, Ralfsia sp., Syctosiphon lomentaria

BIO SKETCH MAP

P4008-C

16 MAY 1991

821 - 921 AM

JP BARRY

A2, A3

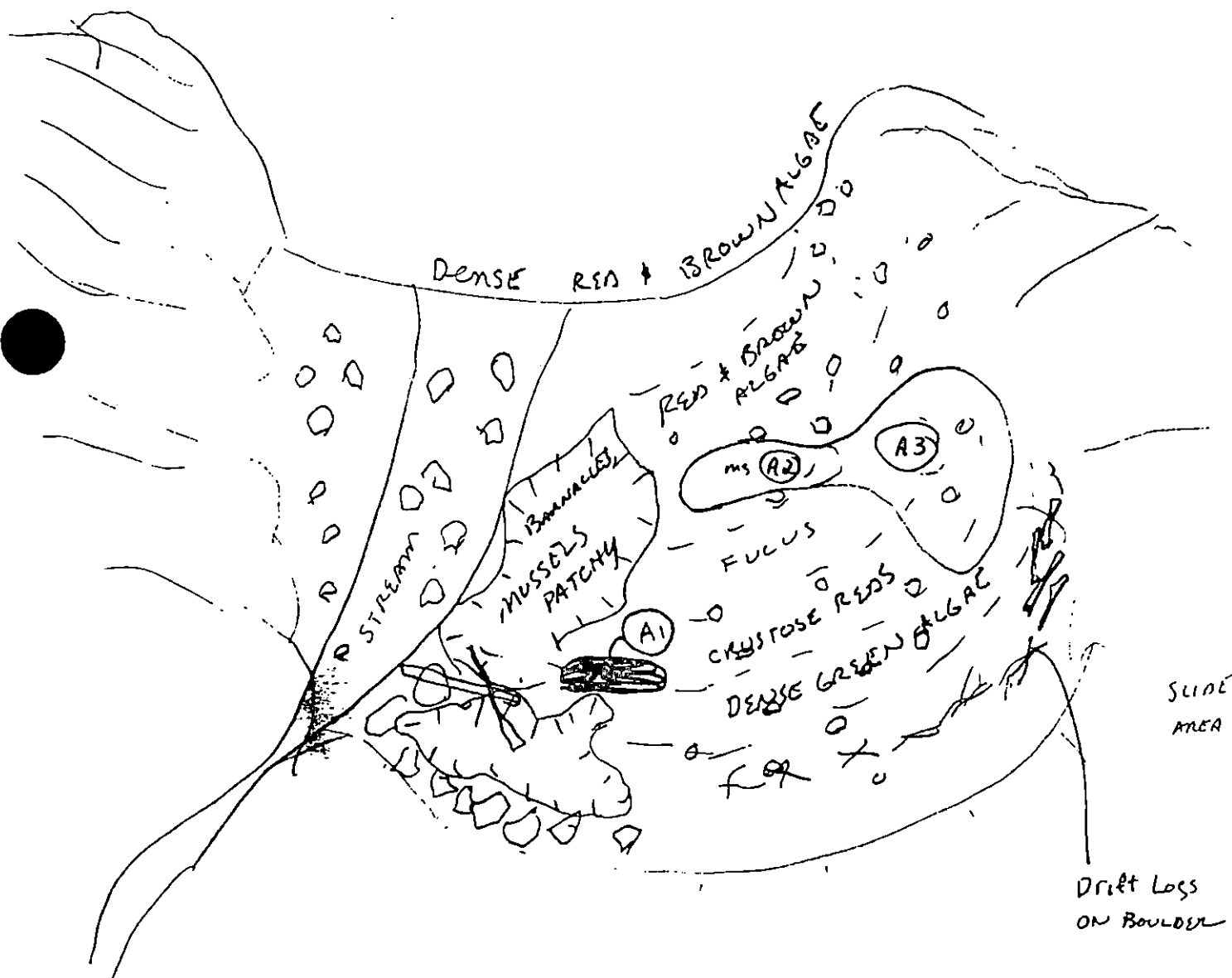
SPARSE BARNACLES
GREEN FILAMENTOUS ALGAE SPARSE
SPARSE FULUS, RED ALGAE, SOME
BROWN ALGAE, AMPHIPODS

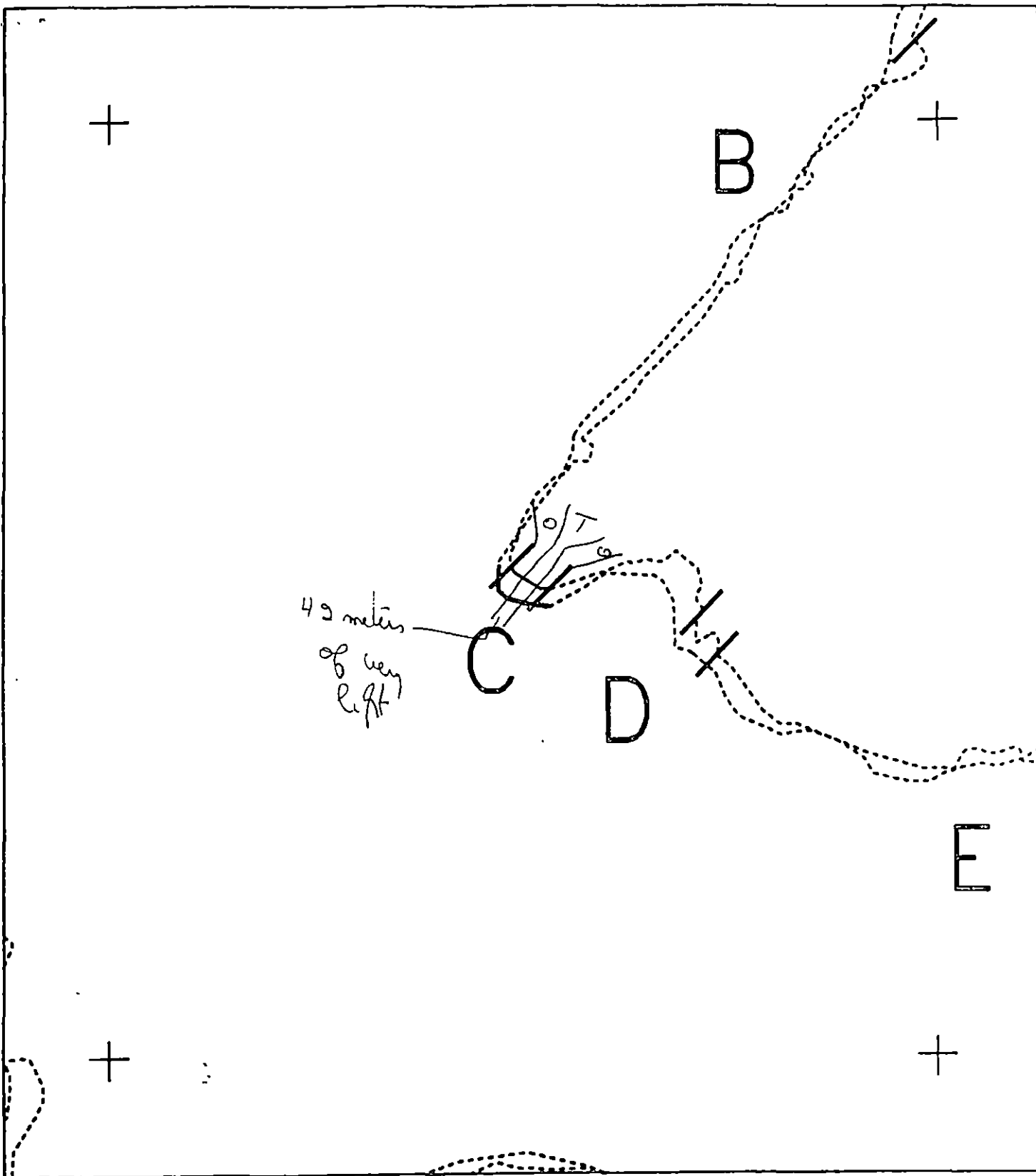
A1

MODERATE AMPHIPODS
MODERATE LITORINES W/ EGGS ON OIL
SPARSE BARNACLES, GREEN FILAMENTOUS
ALGAE. PATCHY MUSSELS BELOW OR
BSP ROCK, LOW INTERTIDAL ZONE
WITH RICH RED & BROWN ALGAL
COMMUNITY.

Meters

0 20





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

PY008 C
 ADEC Subsegment Length: 110m
 METERS
 0 200 400
 AK State Plane Zone 4
 apy008c



Subdivision Field Map
 Map Key: KENPY008C
 Name: Jim Sanyin
 Date: May 16/91
 Data Entered:

reviewed 5.21 9y
 REVIEWED: F.W. 5/22/91

1991 MAYSAP EVALUATION

SEGMENT: PY 008 SUB: C REGION: KEN SURVEY DATE: 5/16/91

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: 6/15/91

ADEC

EXXON

USCG

NOAA

FOSC

E. E. PAGE, CDR, USCG

CHIEF OF STAFF FOSC

→ The state will evaluate the need for further treatment.

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT PY.008 SUBDIVISION C DATE MAY 16 1991

ADEC

NAME Clara S. Crosby

SIGNATURE Clara S. Crosby

☐ NTR ☒ Treatment Recommended - John Hardister informed me of the condition of this beach in 1989 - 4 weeks of washing occurred here on Subseg C & E. In contrast, the current condition of the beach looks good - However, in areas A2 & A3, manual removal can be conducted to finish up accessible surface oiling. (Area A2 was not fully addressed to the point of inaccessibility. A2 - coverage was more sporadic - The 25% coverage in A3 included concentrated areas of MS & HSOR up to 1m. in dia. between boulders -) This subdivision should be worked in conjunction w/ Subseg. D & E - less than one day est. w/ a crew of 8. (12 hr.) for all - D & E

EXXON

NAME George P. Stiles

SIGNATURE

☒ NTR The MS remaining is very patchy scattered around the edges of the large boulders. Very little oil would be recovered if worked.

LANDMANAGER

NAME JOHN P. HARDISTER OF USFWS

SIGNATURE John P. Hardister 5/16/91

☒ NTR I was on this beach segment during the mechanical and washing operations that occurred in July '89. Cleanup has been effective. Some patches of msn remain between the cobble and boulders; some of which was removed during the survey. For further cleanup recommendations... this was a tough call to make. On balance, a relatively little amount remain that could be mechanically removed because of the nature of the terrain, thus I believe the scale could be tipped toward NTR. I have seen this beach when it was coated with oil. It was dirty!

USCG/NOAA

NAME Mo Mahon/McDonald

SIGNATURE Mo Mahon/McDonald

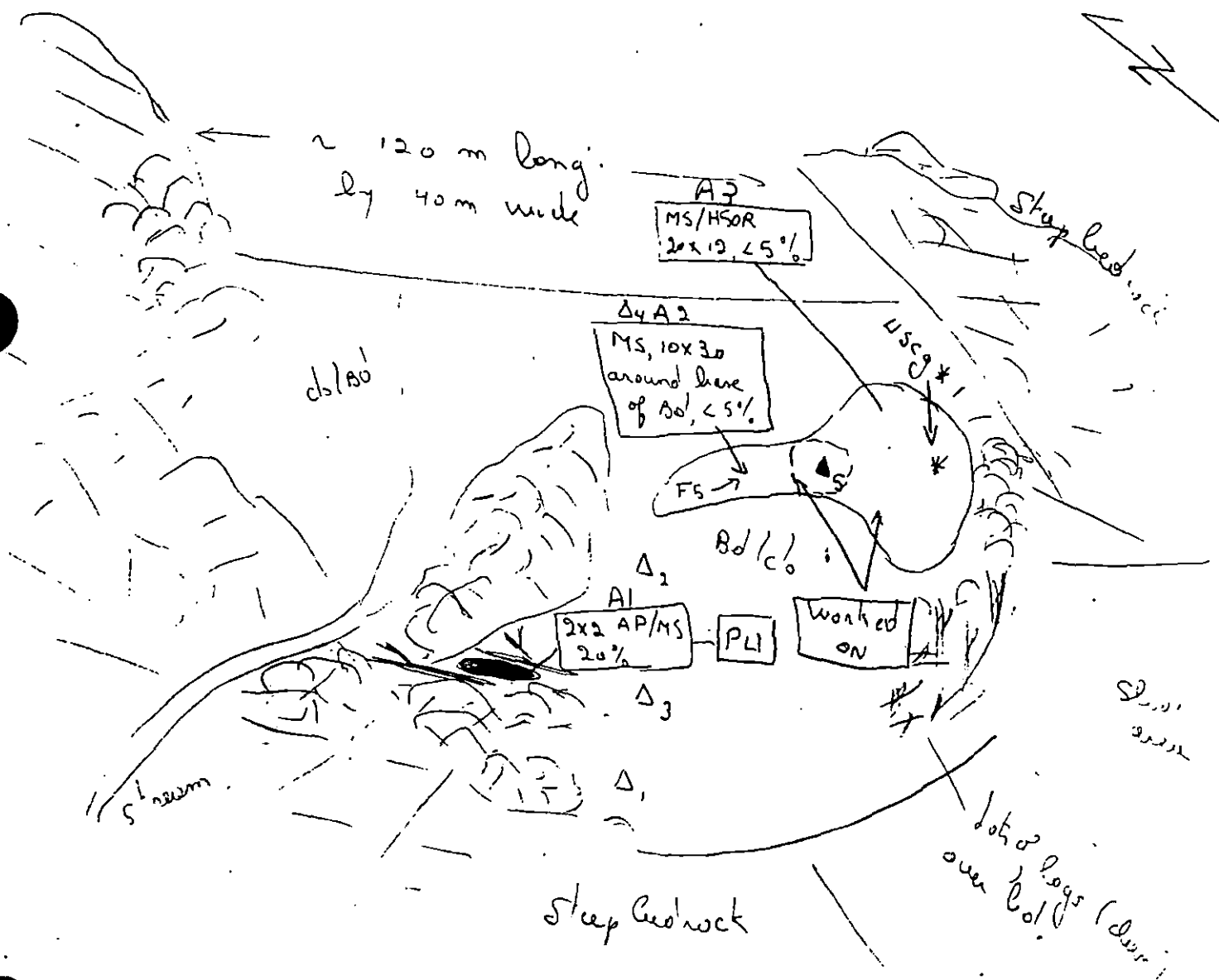
☒ NTR sporadic oiling did exist. TP & msn between large boulders, however, recovery of any product between/under such rock is not economically feasible and wouldn't contribute to minimizing the threat to public health or environment

PAGE 2 OF 9

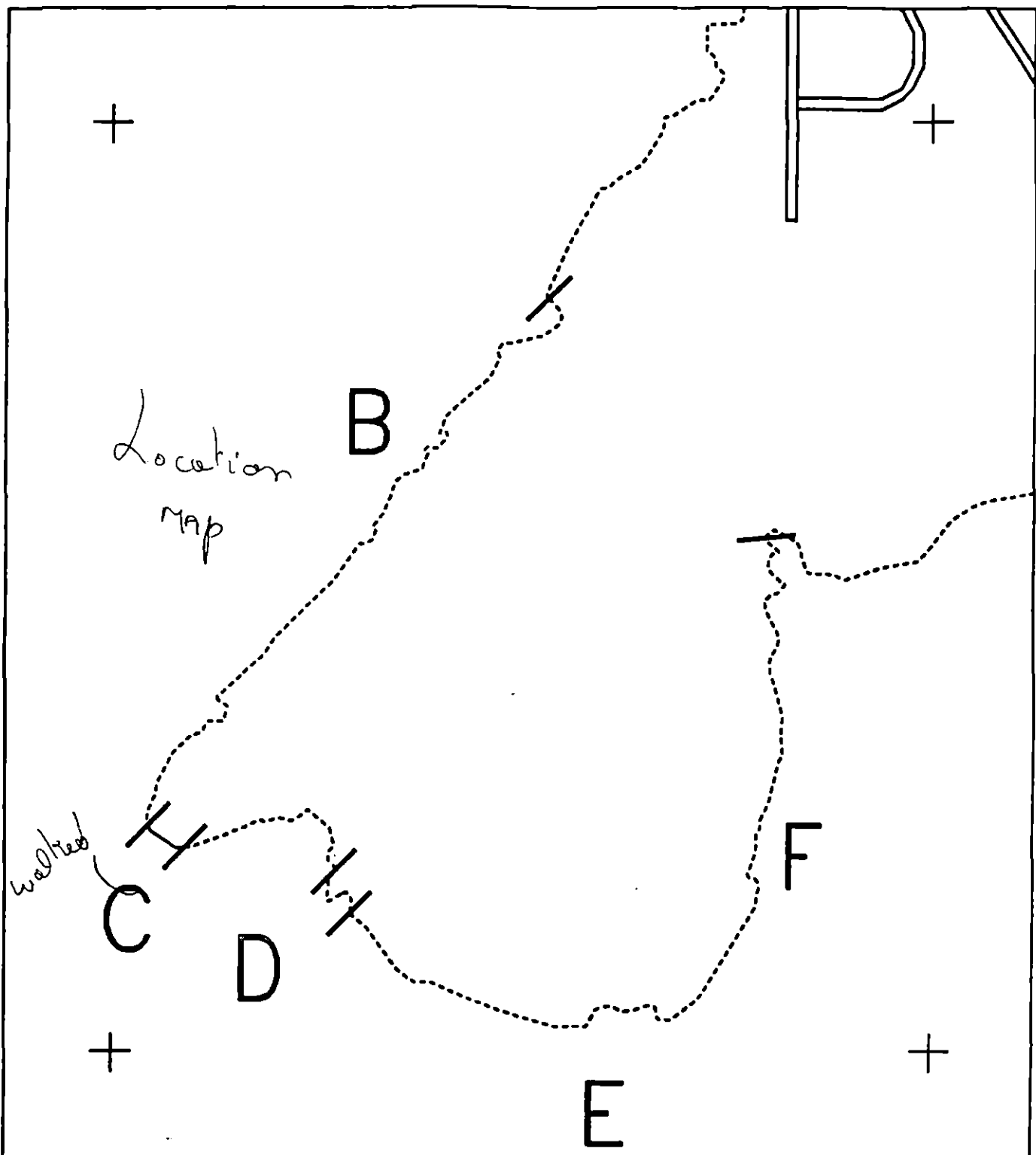
revised 5.21 g/y
REVIEWED: F.W. 5/22/91

Og sketch map.
 Py. 008. C
 dM Samples
 May 16/91
 0820 - 0900.

Meters
 0 20



reviewed S.21 94
 Reviewed: F.W. 5/22/91



 	PY008 C	Subdivision Field Map
	METERS	Map Key: KENPY008Ca
	0 100 200	Name: <u>Jean-Francois</u>
	AK State Plane Zone 4 NAD83	Date: <u>May 16/91</u>

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 16, 1991 0821 - 0921
SEGMENT #	PY008	TIDAL HEIGHT (Range)	-1.0 => -3.0
SUBDIVISION	C	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm, cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A1 Oil (AP,MS) is in the high intertidal zone. Littorine snails are moderately abundant as adults, juveniles, and eggs, even directly on the remaining oil. Amphipods are sparse in this area. Green filamentous algae is present, but not densely abundant as it is on the SW corner of the beach. This cobble beach has only sparse cover of invertebrates and algae, except in the low zone or on the bedrock outcrops, which have moderately dense patches of mussels and barnacles.

Manual cleanup was performed at this site. Additional cleanup will not adversely affect the beach biota, so long as the bedrock mussels beds are protected from disturbance.

A2,A3 Oil (MS, HSOR) is present in an area of the cobble beach in the high to medium intertidal zone. Green filamentous algae is sparse on the cobble in this area. Fucus is present on some of the cobble, as are barnacles, littorine snails, and limpets. Amphipods are abundant under some cobble. Below this area, the intertidal flora is much richer, with dense coverage of red and brown algae. Invertebrates, such as urchins, bryozoans, various worms, and snails are abundant under the beach cobble of the low zone.

Manual pickup was performed at this site during the survey. Additional manual pickup will not harm the biota at the site.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

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

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

Shoreline subdivision map showing important biological features attached.

REVIEWED: CW 5/22/91
P. J. 6/21/91

PY008-C Biology Summary, continued

4. Red Algae - Rhodophyta
Bangia fuscopurpurea, Endocladia muricata, Halosaccion glandiforme, Lithothamnion sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria palmata, Petrocelis sp., Porphyra sp., Rhodomela larix
5. Higher Plants - Leymus mollis (beach rye grass)

II. Marine Animals

1. Sponges - Porifera - Halichondria bowerbanki?
2. Anemones - Anthopleura artemesia, Epiactis prolifera?, Metridium senile, Urticina crassicornis,
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.?, Traskorchestia traskiana
b. Barnacles - Balanus glandula, Semibalanus cariosus
c. Crabs - Haplogaster sp., Paguridae (hermit crabs)
d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
11. Mollusca
a. Chitons - Cryptochiton stelleri, Mopalia sp., M. mucosa, Katharina tunicata, Tonicella lineata,
b. Snails - Gastropods
Littorina sitkana, L. keenae, Nucella lamellosa, N. lima, Searlesia dira
c. Limpets - Lottia digitalis, L. persona, Tectura fenestrata, T. persona, T. scutum, Siphonaria thersites
e. Bivalves - Chlamys hastata, Mytilus edulis, Pododesmus cepio
12. Echinoderms
a. Brittle Stars - Ophiolus aculeatus?, Ophiothrix spiculata?, Amphipholis?
b. Sea stars - Crossaster papposus, Dermasterias imbricata, Henricia leviuscula, Leptasterias hexactis, Orthasterias keohleri, Pisaster ochraceus, Pycnopoda helianthoides, Solaster dawsoni,
c. Sea Cucumbers - Holothurians - Eupentacta sp.
d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Microporina borealis, Schizoporella sp.
14. Ascidians - Synoicum? sp., Aplidium?
15. Fishes
Cottidae -
Stichaeidae - Xiphister atropurpureus, X. mucosus

- IV. Birds - Bald Eagle (1), Glaucous-winged Gull (5), Black-legged Kittiwake (3)
Western Sandpiper (3) Fox Sparrow (1), Crow (1)

PY008-C Biology Summary, continued

General Features of PY008-C

This is a cobble beach at the inner portion of a small cove. The beach was heavily oiled and has experienced extensive cleanup efforts. The moderately rounded cobble suggest that medium sized waves occasionally or frequently scour the shore. The high to middle zone cobble have only sparse to moderate coverage or density of biota. The low zone has thick red and brown algal cover.

Littorine snail densities are patchy and often dense in the cobble beach. Recruitment of littorines, amphipods, mussels, barnacles, and several species of algae is evident.

Miscellaneous Observations

An adult bald eagle picked a dead kittiwake from the water and ate it in a nearby tree. Two other dead gulls were seen on the water.

General Zonation Pattern along PY008-C

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal
Oil Spatters		- - -	+++	+++	- - -	- - -
Black Lichen		----	+++*			
Barnacles (Balanus)			- - -	- +	++	- - -
Limpets/Littorines			- - -	+ + +	- - -	- - -
Crustose Red Algae (Hildenbrandia)			+	+	+	- - -
Rockweed (Fucus)			+	+	+	- - -
Red Algae (Endocladia/other)			+	+	+	- - -
Mussels (Mytilus)			-	+	+	- - -
Green Algae (Ulva/other)		-	-	+	+	+
Palmaria and other red algae				+	+	+
Other Red Algae				+	+	+
Upright Brown Algae (not Fucus)				+	+	+
Encrusting bryozoans				+	+	+

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

List of Species from PY008-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
 - Alaria marginata, Ectocarpus sp., Fucus distichus, Hildenbrandia sp.,
 - Laminaria groenlandica, Ralfsia sp., Syctosiphon lomentaria

BIO SKETCH MAP
P4008-C
16 MAY 1991
821 - 921 AM
JP BARRY

A2, A3

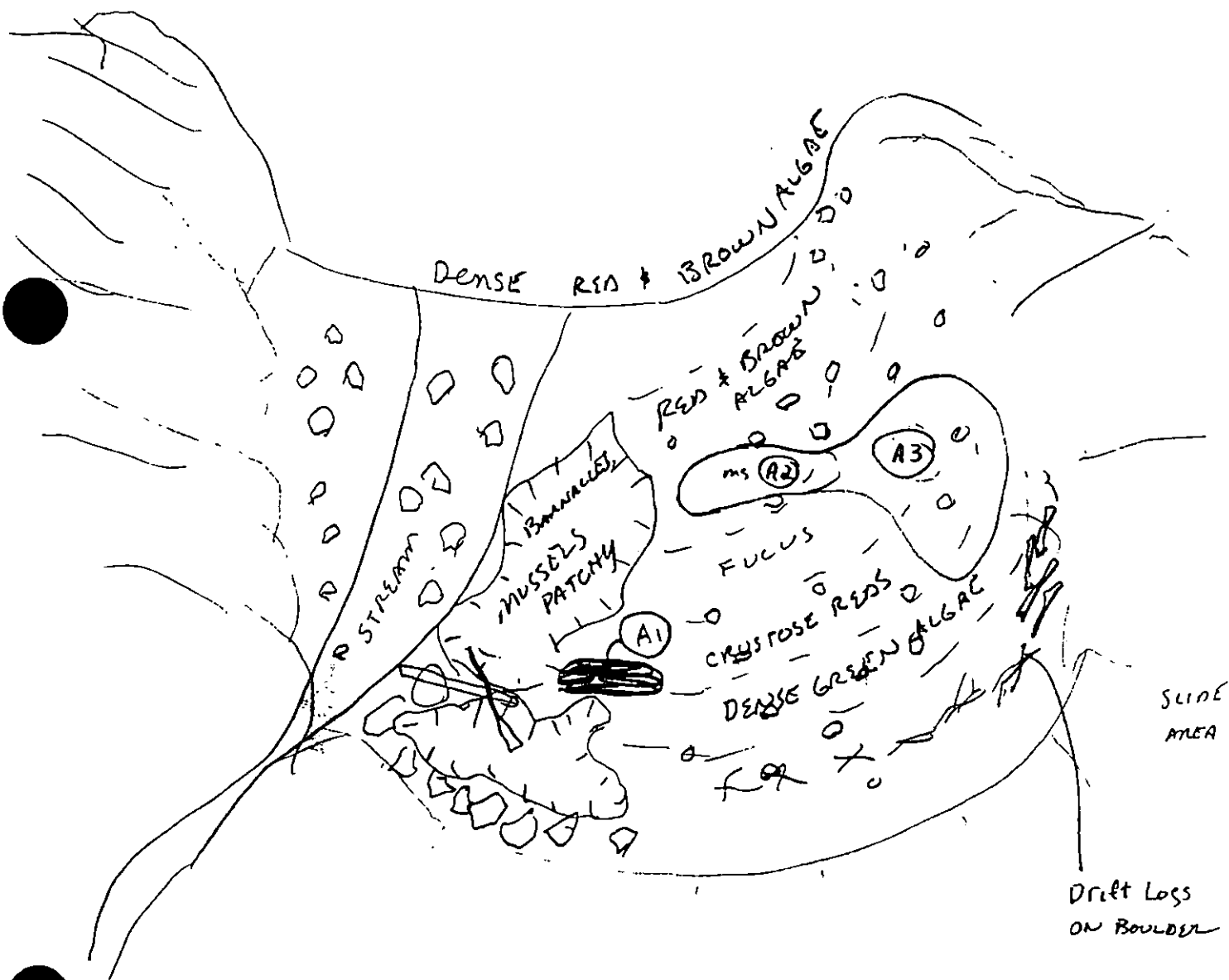
SPARSE BARNACLES
GREEN FILAMENTOUS ALGAE SPARSE
SPARSE FULUS, RED ALGAE, SOME
BROWN ALGAE, AMPHIPODS

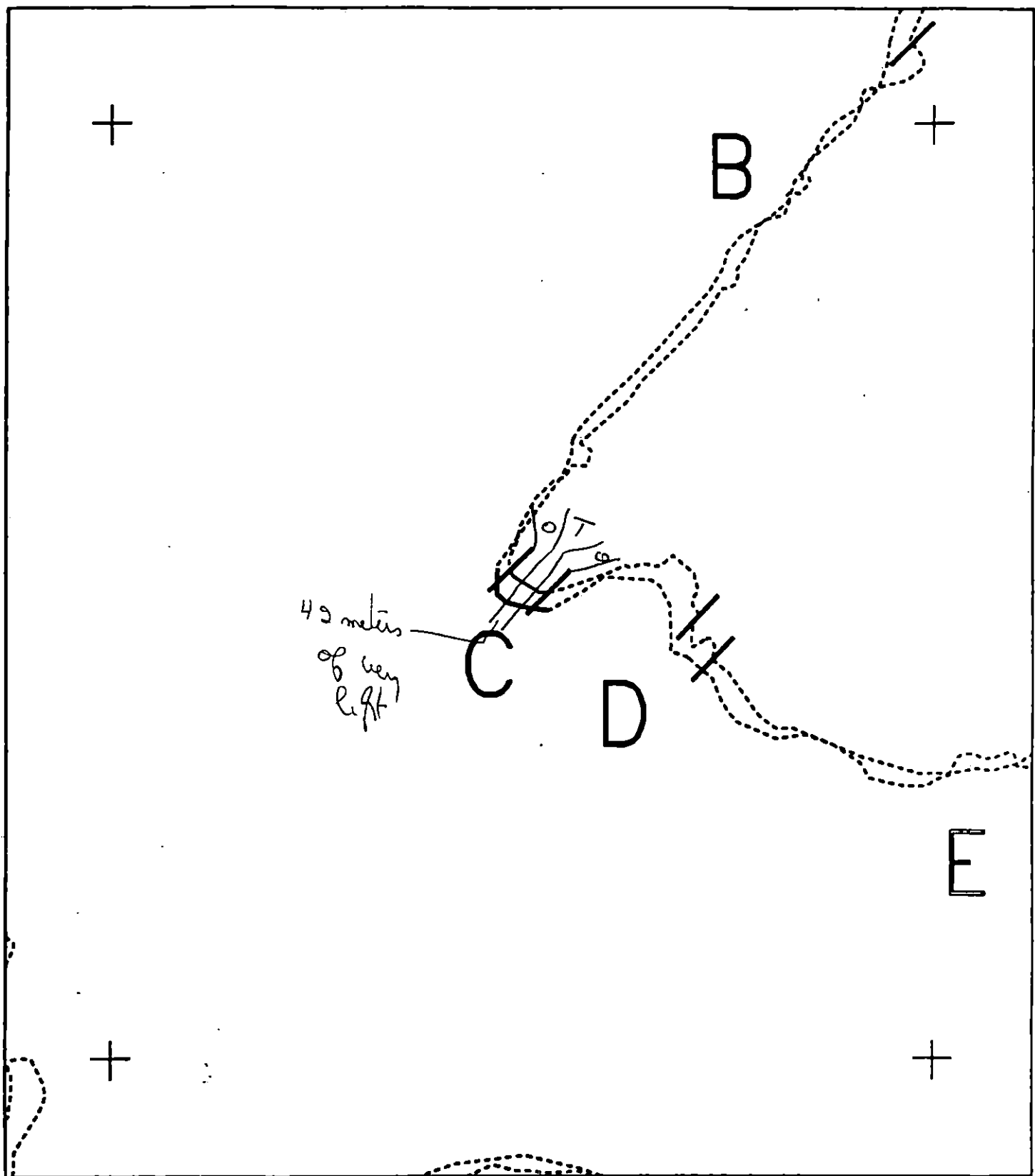
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MODERATE AMPHIPODS
MODERATE LITTORINES W/ EGGS ON OIL
SPARSE BARNACLES, GREEN FILAMENTOUS
ALGAE. PATCHY MUSSELS BELOW OR
BED ROCK, LOW INTERTIDAL ZONE
WITH RICH RED & BROWN ALGAL
COMMUNITY.

Meters

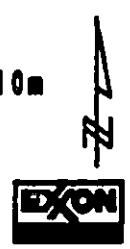
0 20





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

PY008 C
ADEC Subsegment Length: 110m
METERS
AK State Plane Zone 4
ap008c



Subdivision Field Map
Map Key: KENPY008C
Name: JM Semple
Date: May 16/91
Date Entered:

reviewed 5.21.94
REVIEWED: F.W. 5/22/91

1991 MAYSAP EVALUATION

SEGMENT: PY 008 SUB: D REGION: KEN SURVEY DATE: 5/16/91

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: 6/03/91

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 31 1991

ADEC John Bane

EXXON Beal

USCG Edmar

NOAA Henry

FOSC APPROVAL DATE: 6/5/91

FOSC E. E. PAGE

CDR, USCG
CHIEF OF STAFF, FOSC

TEAM NO. 4 SEGMENT P4-008 SUBDIVISION D DATE May 16, 1991

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara S. Crosby☒ NTRVery lt. oiling within subdivision

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles 5/20/91☒ NTRConcern with ADEC very small amount of oil seen.

NDMANAGER

NAME

JOHN P. HARDISTER OF USFWS

SIGNATURE

John P. Hardister 5/14/91☒ NTRLittle oil remains on this subsection. Cleanup not recommended.

USCG/NOAA

NAME

6202 J. MC MAHON

SIGNATURE

J. McMahon☒ NTRThere did exist some TB which was cleaned by the VECO crew - little or no oil remains to warrant further clean-up.NOAA / Donald A. MacDonaldDonald A. MacDonald

PAGE 2 OF 7

SEGMENT P4.008

SUBDIVISION D

DATE MAY 116 191

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____m NO 234 m US____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

OG COMMENTS: Shoreline consists of rounded sloping bedrock, large angular boulders are locally associated with fault in the bedrock. One small cu splinter was found.

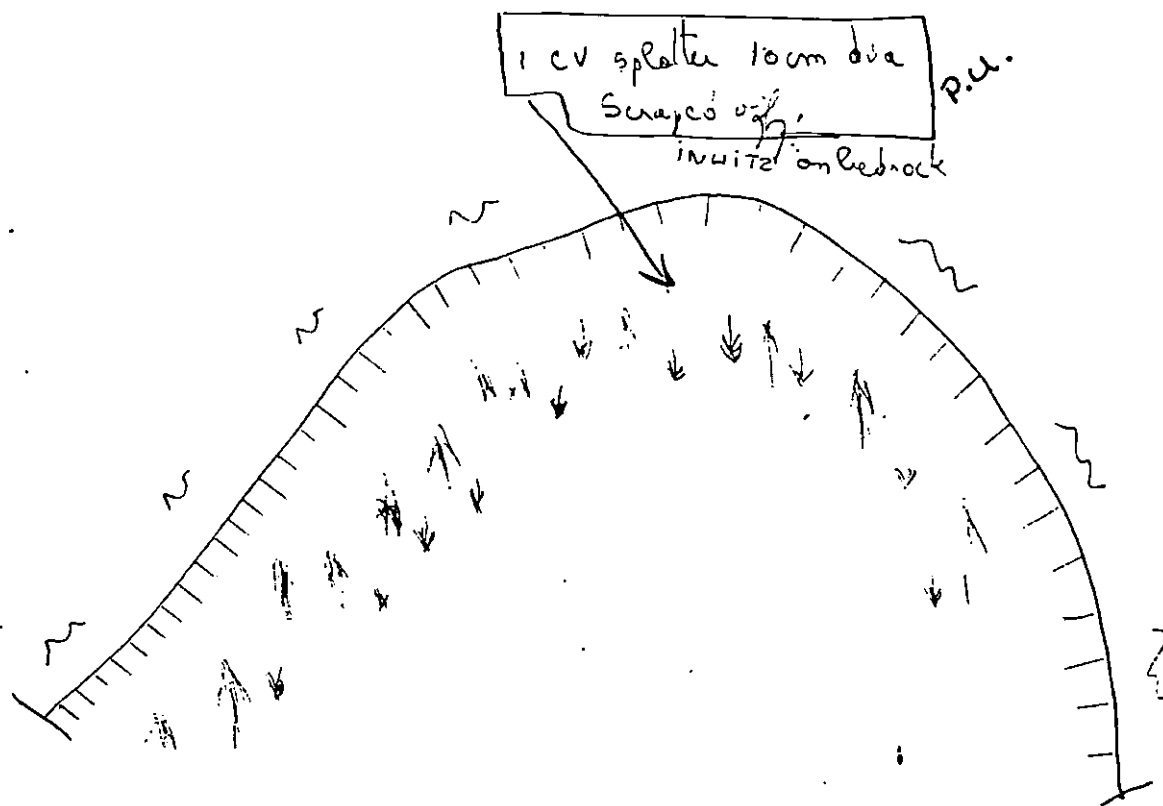
Reviewed 5.21.94
REVIEWED: F.W. 5/21/94

Fig Sketch Map

Py. 008. D
J M Sempels
May 16 / 91
0900 - 0930

Legend

-  Rounded
Sloping bedrock
-  Vegetated
Hinterland



Meters
0 50

reviewed S.21 94
REVIEWED: F.W. 5/21/91

REVIEWED: F.W. 5/24/91

+

+

B

C

D

E

+

+

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

PY008 D

ADEC Subsegment Length: 234m

METERS

0 200 400
AK State Plane Zone 4
ap008d



Subdivision Field Map

Map Key: KENPY008D

Name: 17 SamplesDate: MAY 16/91

Date Entered:

reviewed S.21 gy
REVIEWED: F.W. 5/21/91

NAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 16, 1991 0920 - 0921
SEGMENT #	PY008	TIDAL HEIGHT (Range)	-3.0 => -3.0
SUBDIVISION	D	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm, cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil-related Comments

No oil was found on PY008-D

General Features of PY008-D

This short segment is a headland between two small coves PY008-C, PY008-E. The shore is nearly entirely bedrock outcrops and headlands that slope steeply to the subtidal. The shore is exposed to low to moderate waves. The biota have a typical profile for these shores, with black lichen in the high to supratidal zone, and increasing densities of algae and invertebrates towards the low shore. Green algae is very abundant in the high zone, along with scattered limpets, barnacles, littorine snails, and mussels in crevices. Fucus is moderately to densely abundant in the mid-shore. Red algae (mainly Odonthalia, Palmaria, Microcladia), green algae (Ulva), and brown algae dominate the low intertidal and subtidal. Invertebrates are very diverse and abundant in the low shore. Many species of sea stars, crustaceans, sea anemones, and other groups are very common.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

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

Shoreline subdivision map showing important biological features attached.

REVIEWED: F.W. S/21/91
J.D. L.A. L.A. L.A.

PY008-D Biology Summary, continued

List of Species from PY008-D

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., Prasiola meridionalis, Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Agarum fimbriatum, Costaria costata, Ectocarpus spp.,
Fucus distichus, Hildenbrandia sp., Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Endocladia muricata,, Halosaccion glandiforme, Lithothamnion sp.,
Mastocarpus sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria
palmata, Petrocelis sp., Porphyra sp., Ptilota filicina, Rhodomela larix

II. Marine Animals

1. Sponges - Porifera - Halichondria bowerbanki?
2. Anemones - Anthopleura artemesia, E. prolifera?, Metridium senile, Urticina
crassicornis,
3. Hydroids - Sertulariidae, Aglaophenia sp., Abietinaria sp.
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms- Emplectonema gracile
8. Polychaete Worms
Nepthyidae
Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
Spriorbidae - Spirorbis sp.
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs - Paguridae (hermit crabs), Pugettia sp.,
11. Mollusca
 - a. Chitons - Katharina tunicata
 - b. Snails - Gastropods
Fusitriton oregonensis, Littorina sitkana, L. keenae, Nucella
lamellosa, Searlesia dira,
 - c. Limpets - Lottia digitalis, L. persona, Tectura fenestrata, T.
persona, T. scutum, Siphonaria thersites
 - e. Bivalves - Mytilus edulis
12. Echinoderms
 - b. Sea stars - Crossaster papposus, Dermasterias imbricata, Evasterias
truscheli, Henricia leviuscula, Leptasterias hexactis,
Mediaster aequalis?, Orthasterias keohleri, Pisaster
ochraceus, Pycnopoida helianthoides, Solaster dawsoni, S.
stimpsoni,
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Microporina borealis, Phidolopora
pacifica, Schizoporella sp.
14. Ascidians - Synocium? sp., Aplidium?
15. Fishes
Cottidae
Stichaeidae - Xiphister atropurpureus, X. mucosus

1991 MAYSAP EVALUATION

SEGMENT: PY 008 SUB: A REGION: KEN SURVEY DATE: 5/16/91

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 A 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

**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.

TEAM NO. 4 SEGMENT PY-008 SUBDIVISION A DATE May 16 1991

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara S. Crosby☒ NTR

High energy area. No recoverable oil observed.

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles 5/17/91☒ NTR

No recoverable oil located.

LANDMANAGER

NAME

JOHN P. HARDISTER OF USFWS

SIGNATURE

John P. Hardister 5/16/91☒ NTR

No oil located.

USCG/NOAA

NAME

CWO2 J. MC NATION

SIGNATURE

J. Mc Nation☒ NTR

No oil to recover.

NOAA

/ D 314-2

H. MacDonell

John P. Hardister

PAGE 2 OF 10

SEGMENT P4.008.A

LANDMANAGER Haroldster for USFWS

SUBDIVISION A

USCG/NOAA McMahon / McDonald

DATE MAY 15 1911

TIME 06:49 to 07:20

TIDE LEVEL ⁺4.9 ft. to ⁺2.5 ft.

ENERGY LEVEL: ☒ H ☐ M ☐ L

SURVEYED FROM: ☒ FOOT ☒ BOAT ☐ HELO

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

TOTAL LENGTH SHORELINE SURVEYED: 735 m

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

EST. OIL CATEGORY LENGTH: W _____ m M _____ m N _____ m VL 70 m NO 665 m 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

[illegible]

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

OG COMMENTS:

See Map.

REVIEWED: 5/20/91 me
reviewed 5.20 gy

Ogsketch Map	Legend
Py 008 - A	 Steep bedrock
JM Samples	 Boulder talus
May 16/91	
0640-0730	

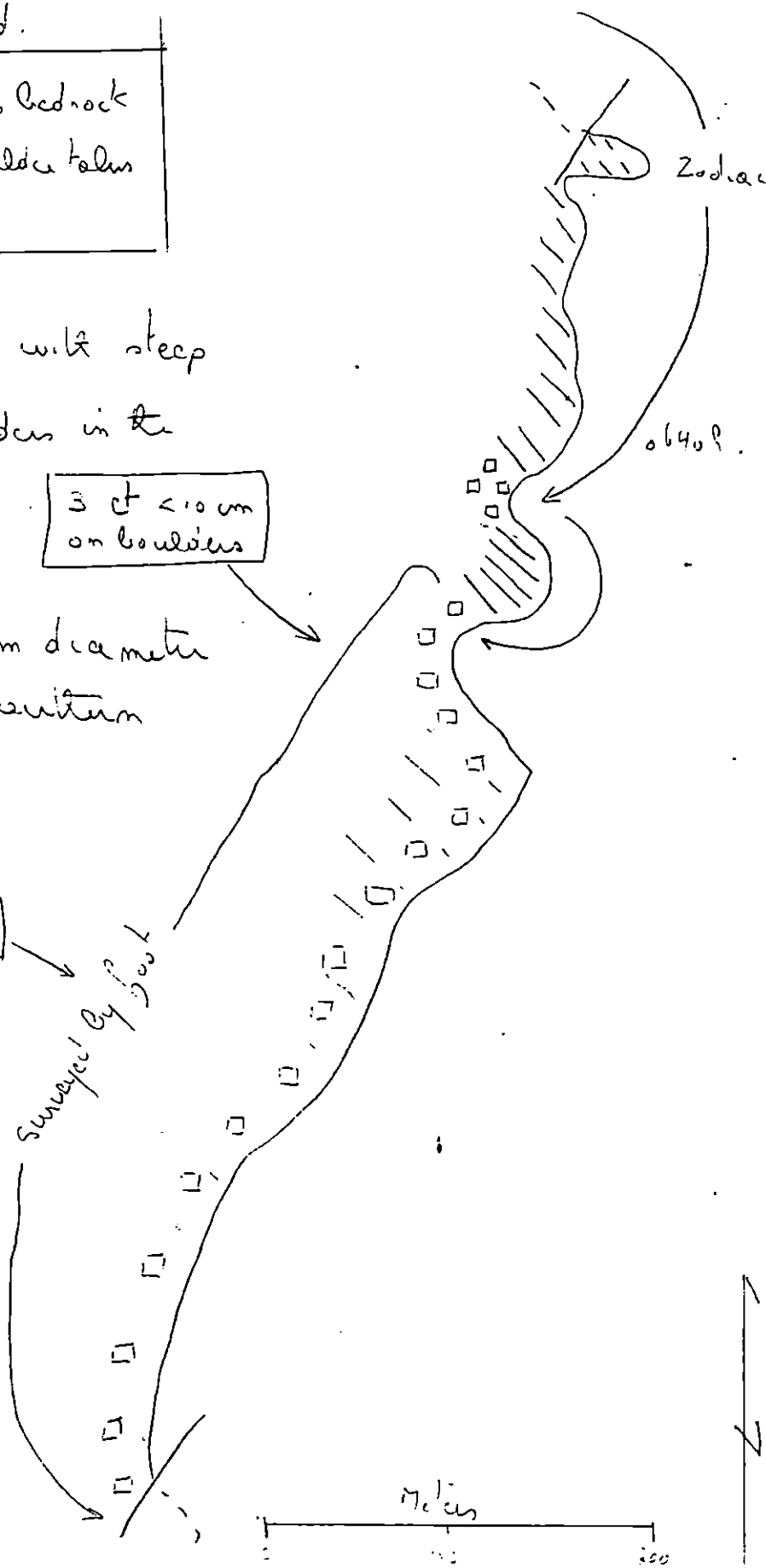
Steep bedrock shoreline with steep talus of angular boulders in the northern part.

Very few oil splatters
 seen all less than 10cm diameter
 No oil observed on northern part of segment.

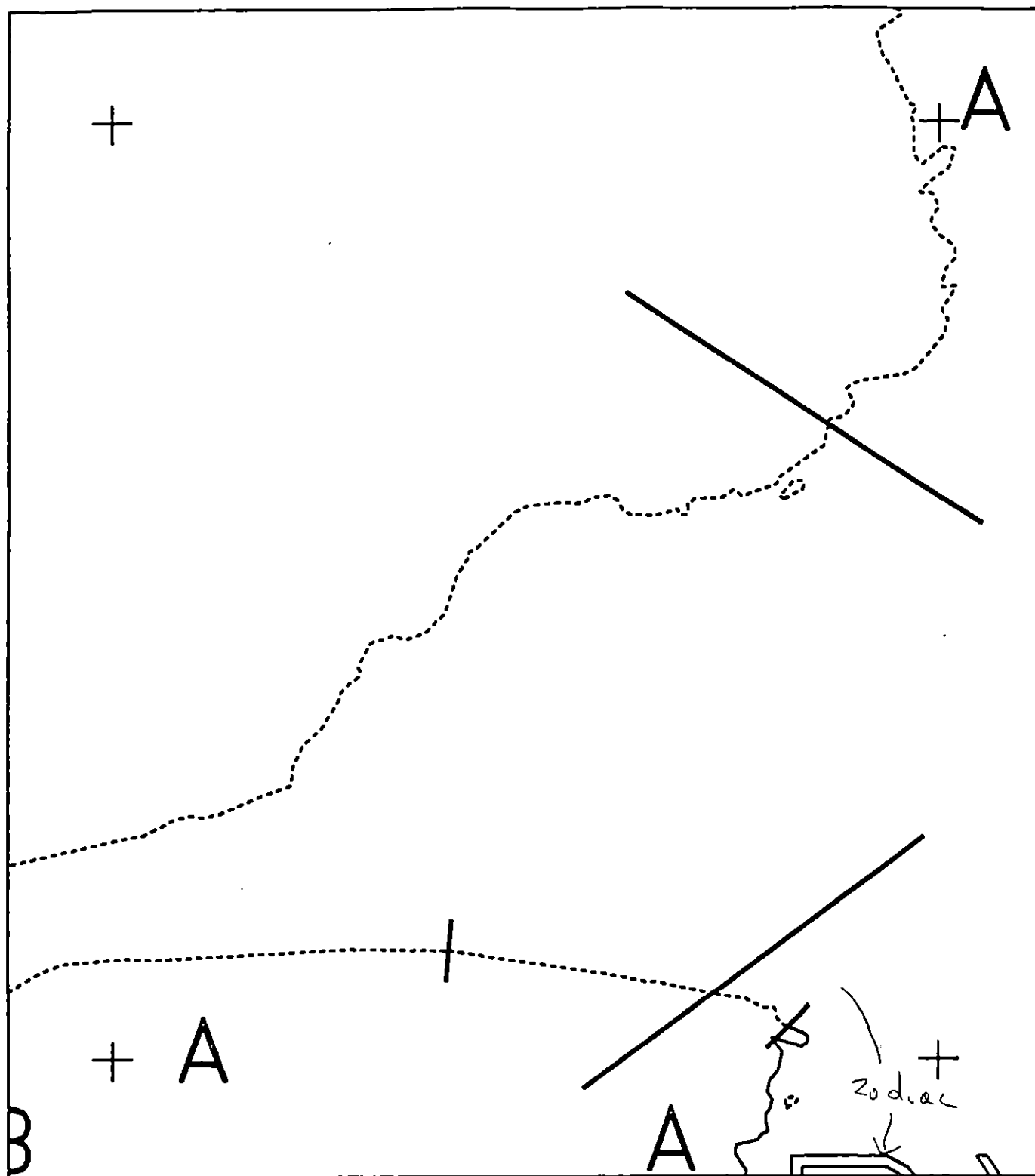
3 ft < 10 cm
 on boulders

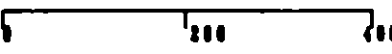
No oil

Surveyed by foot

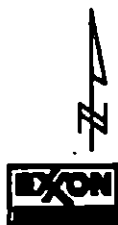
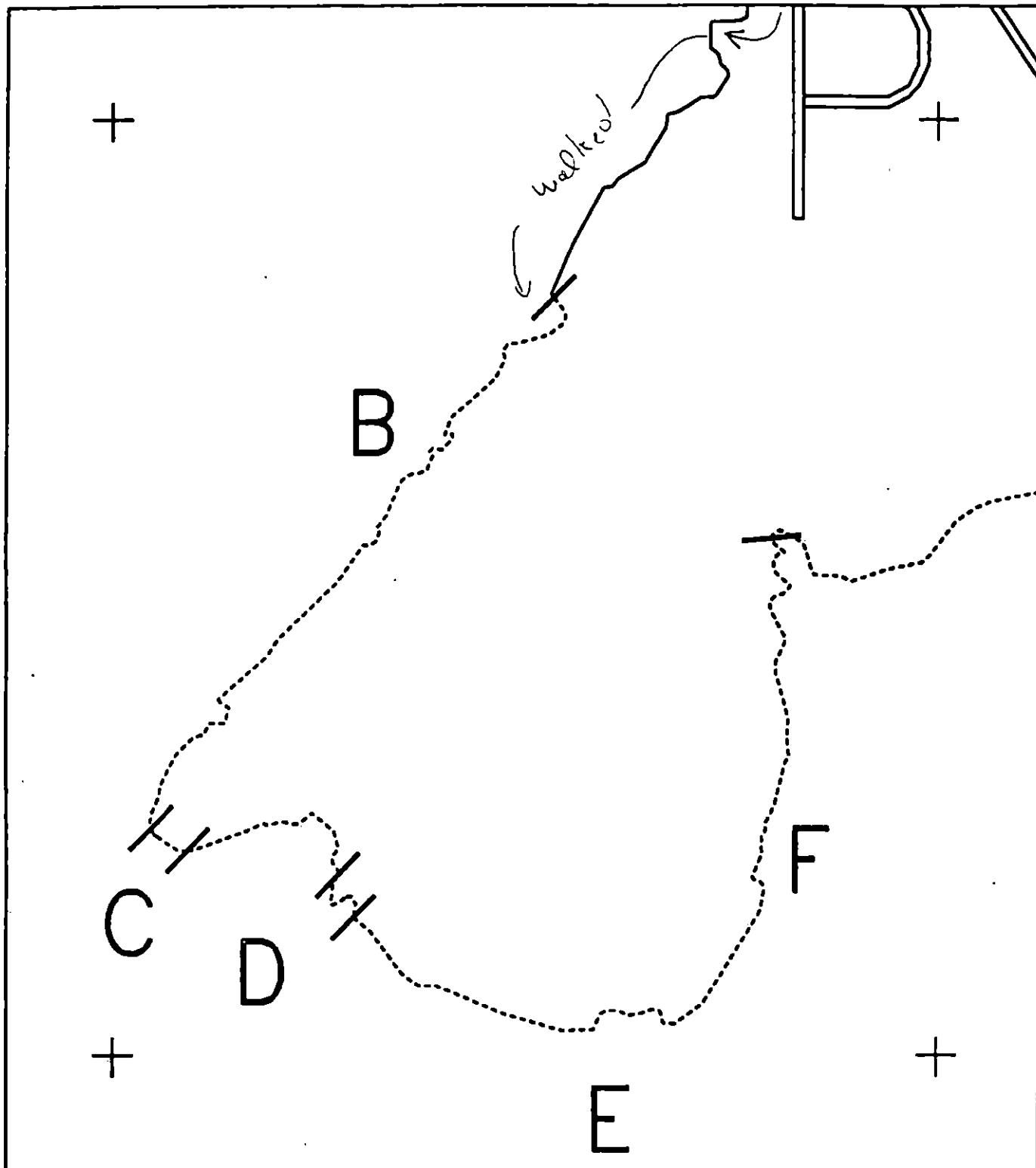


Reviewed: 5/10/91 MC
 reviewed 5.20 94

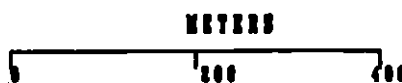


	PY008 A METERS  AK State Plane Zone 4 sp900000	Subdivision Field Map Map Key: KENPY008Ac Name: <u>Jm Semp. Co</u> Date: <u>May 15/91</u>
---	---	---

reviewed 6.20 94



PY008 A



AK State Plane Zone 4
NAD83

Subdivision Field Map

Map Key: KENPY000Aa

Name: JM Semple

Date: MAY 15 / 91

reviewed 5.20 94

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 16, 1991 0643 - 0720
SEGMENT #	PY008	TIDAL HEIGHT (Range)	+4.9 => +2.5
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm, cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

This subdivision encompasses the outer section of a cove and is exposed to moderate surf. The shore is about 1/2 bedrock cliffs and 1/2 high angle talus boulders. The flora and fauna along the subdivision are typical of moderately exposed shores. Near the north (exposed) end of the subdivision, mussels are dense in patches near the middle and upper intertidal zones, while the south end of the segment, which is somewhat more protected, has only scattered patches of mussels. Fucus replaces mussels in the more protected areas. The lowest zones have abundant red and green algae that grade to dense brown algae (Laminaria, Alaria) in the subtidal. Barnacles, limpets, littorines and other invertebrates are generally abundant along this shore. Recruitment is evident for many species throughout the subdivision and the intertidal biota appear healthy.

A1 Oil is restricted to one location in the high zone. At this location black lichen is moderately to sparsely abundant. Barnacles, limpets, and thin red algae (Porphyra sp.) are sparsely distributed near the oil spatters. Below the oiled area, these species are much more abundant. Barnacles (mainly Balanus glandula) form a dense band in the middle zone. Endocladia and similar branched red algae also form a patchy zone in the middle to upper zone, below which mussels, Fucus, filamentous green algae and brown algae are abundant. No particularly sensitive assemblage of species is present near or below the oiled site.

Some manual cleanup was performed along this subdivision. Additional manual removal of oiled sediments will not adversely affect this site.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl			
Gulls/Kittiwakes	2	10	
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

Revisoren M.B. 5/2/10

- c. Crabs - Haplogaster sp., Paguridae (hermit crabs)
- d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
- 11. Mollusca
 - a. Chitons - Cryptochiton stelleri, Mopalia sp., M. mucosa, Katharina tunicata, Tonicella lineata,
 - b. Snails - Gastropods
 - Amphissa columbiana, Littorina sitkana, L. keenae, Nucella lamellosa, N. lima, Searlesia dira
 - c. Limpets - Acmaea mitra, Lottia digitalis, L. persona, Tectura fenestrata, T. persona, T. scutum, Siphonaria thersites
 - d. Nudibranches - Lamellidoris fusca, Onchidella borealis
 - e. Bivalves - Chlamys hastata, Mytilus edulis, Pododesmus cepio
- 12. Echinoderms
 - a. Brittle Stars - Ophiolus aculeatus?, Ophiothrix spiculata?, Amphipholis?
 - b. Sea stars - Crossaster papposus, Dermasterias imbricata, Evasterias truscheli, Henricia leviuscula, H. sanguinolenta, Leptasterias hexactis, Mediaster aequalis?, Orthasterias keohleri, Pisaster ochraceus, Pycnopoda helianthoides, Solaster dawsoni, S. stimpsoni,
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
- 13. Bryozoans - Membranipora sp., Microporina borealis, Phidolopora pacifica, Schizoporella sp.
- 14. Ascidians - Synocium? sp., Aplidium?
- 15. Fishes
 - Cottidae -
 - Stichaeidae - Xiphister atropurpureus, X. mucosus

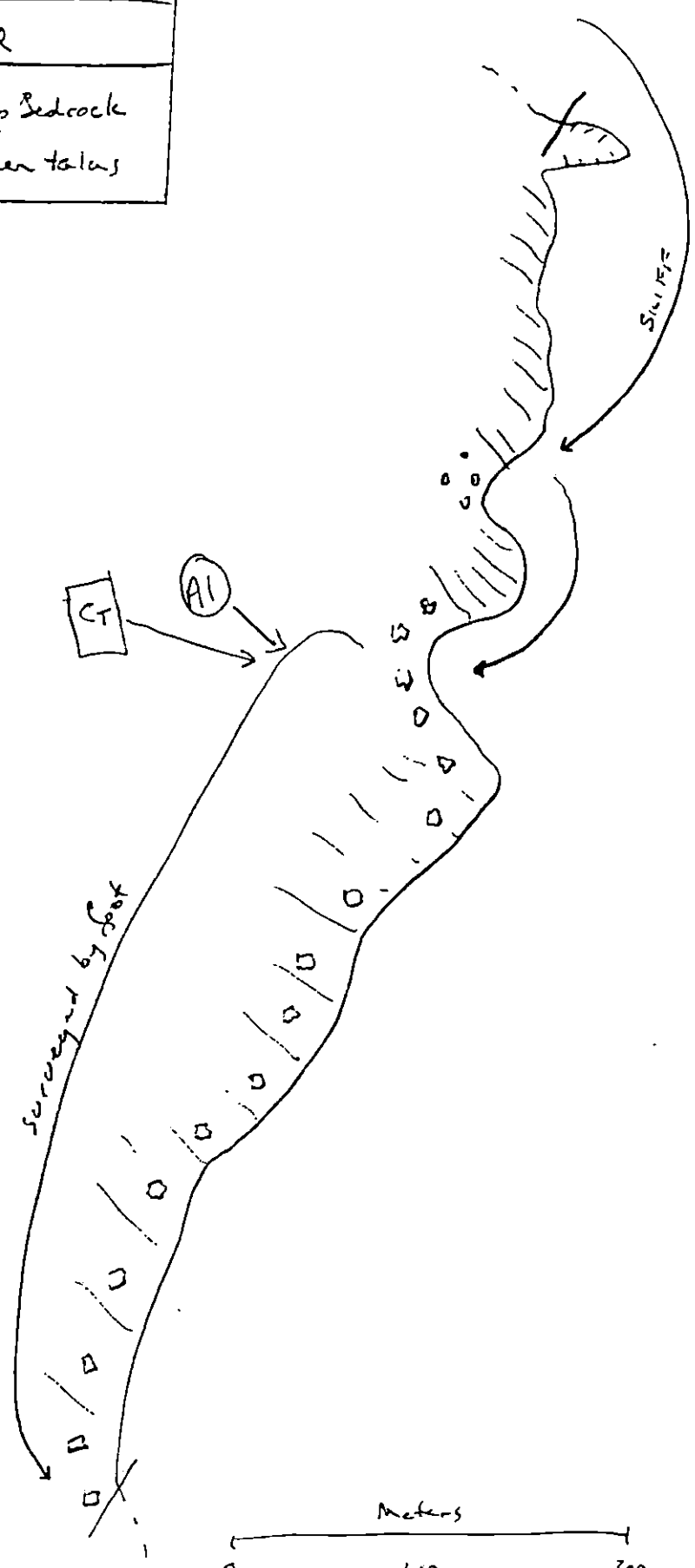
- IV. Birds - Glaucous-winged Gull (5), Black-legged Kittiwake (5), Western Sandpiper (3)

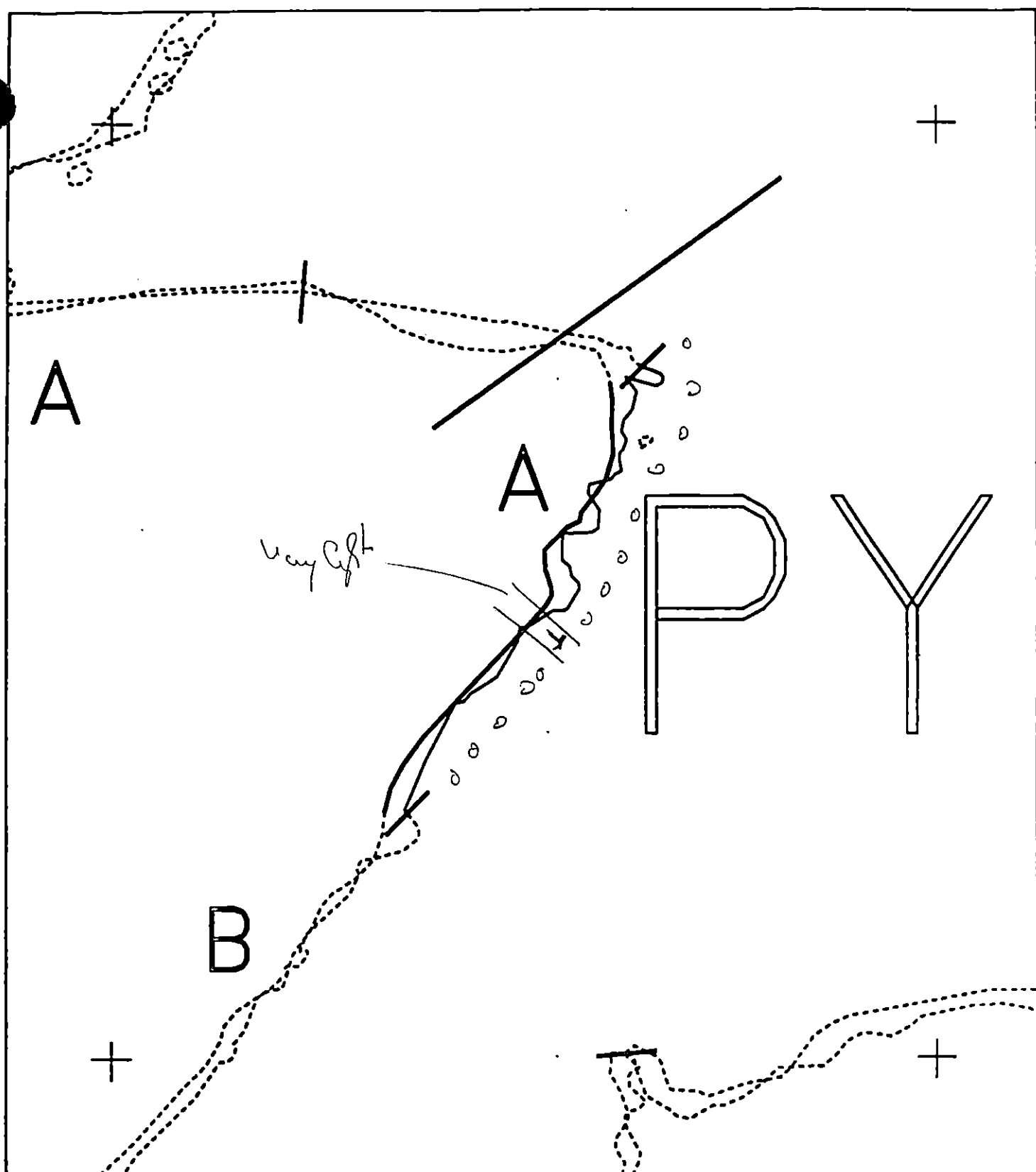
BIO SKETCH MAP

PH008-A
J P BARRY
16 MAY 91
6640-070

Legend

- Steep Bedrock
- Boulder talus





XXXX	Wide	PY008 A		Subdivision Field Map	
////	Medium	ADEC Subsegment Length: 735m		Map Key: KENPY008A	
----	Narrow	METERS		Name: <u>Jim Gentry</u>	
TTTT	Very Light	0 200 400		Date: <u>MAY 15, 90</u>	
0000	No Oil	AK State Plane Zone 4 sp4008a		Data Entered:	



Reviewed: MC 5/20/91
Reviewed 5.20.91

1991 MAYSAP EVALUATION

SEGMENT: PY 008 SUB: B REGION: KEN SURVEY DATE: 5/16/91

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: Tammy A. 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 John Bauer FOSC E. E. PAGE, CDR, USCG

EXXON Edma CHIEF OF STATE FOSC John Bauer

USCG John Bauer

NOAA John Bauer

MAYSAP FIELD SHORELINE COMMENT SHEET

 TEAM NO. 4 SEGMENT P4-008 SUBDIVISION B DATE MAY 16/91

ADEC

NAME Clara S. CrosbySIGNATURE Clara S. Crosby
☐ NTR ☒ TREATMENT RECOMMENDED.

There are 3 subdivisions within this seg. which could be worked on in conjunction with one another to remove 'Hot spots' of surface oiling. These are B, C & E. I have seen crews work on areas ^{COOFA-B} with less accessible oil & recover a significant portion. Recommended treatment is manual removal - hand trowels - All 3 subdiv. should take less than one day.

EXXON

NAME George P. StilesSIGNATURE George P. Stiles

☒ NTR The patches of MS at the southern most end of this segment were partially worked. (18 bags) during the survey. The MS is in the bed rock cracks and around the edges of the large boulders. Further cleanup would be difficult due to the boulder size and would recover a very insignificant amount of weathered oil.

LANDMANAGER

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

☒ NTR Pockets of oil remain from previous cleanup operations. Some of this oil was removed during the survey. The remainder would be difficult to remove and an insufficient amount would be recovered for time expended. Thus, further cleanup is not recommended.

USCG/NOAA

NAME Capt J. Mc KathonSIGNATURE J. Mc Kathon
☒ NTR

What oil remains is highly inaccessible, cleanup measures would be excessively costly in view of the insignificant contribution.

NOAA / DONALD H. MCDONALD

SIGNATURE Donald H. McDonald

The majority of the remaining oil is located deep in cracks and fissures, in deep boulders and beneath and under boulders.

PAGE 2 OF 9

OG for Samples
ADEC Crosby
ON George P. Stiles

BIO J. Berry
LANDMANAGER Hardister for USFWS
USCG/NOAA Mc Mahon/Mc Donald

SEGMENT P4.003
SUBDIVISION B
DATE MAY 116 191

TIDE LEVEL +2.5 ft. to -0.9 ft.

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

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

EST. OIL CATEGORY LENGTH: W m M 8 m N 2 m VL 366 m NO 600 m 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

MAYSAP 4.4.1 to 4/
PHOTO ROLL # MAYSAP- -

FRAMES

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

OG COMMENTS:

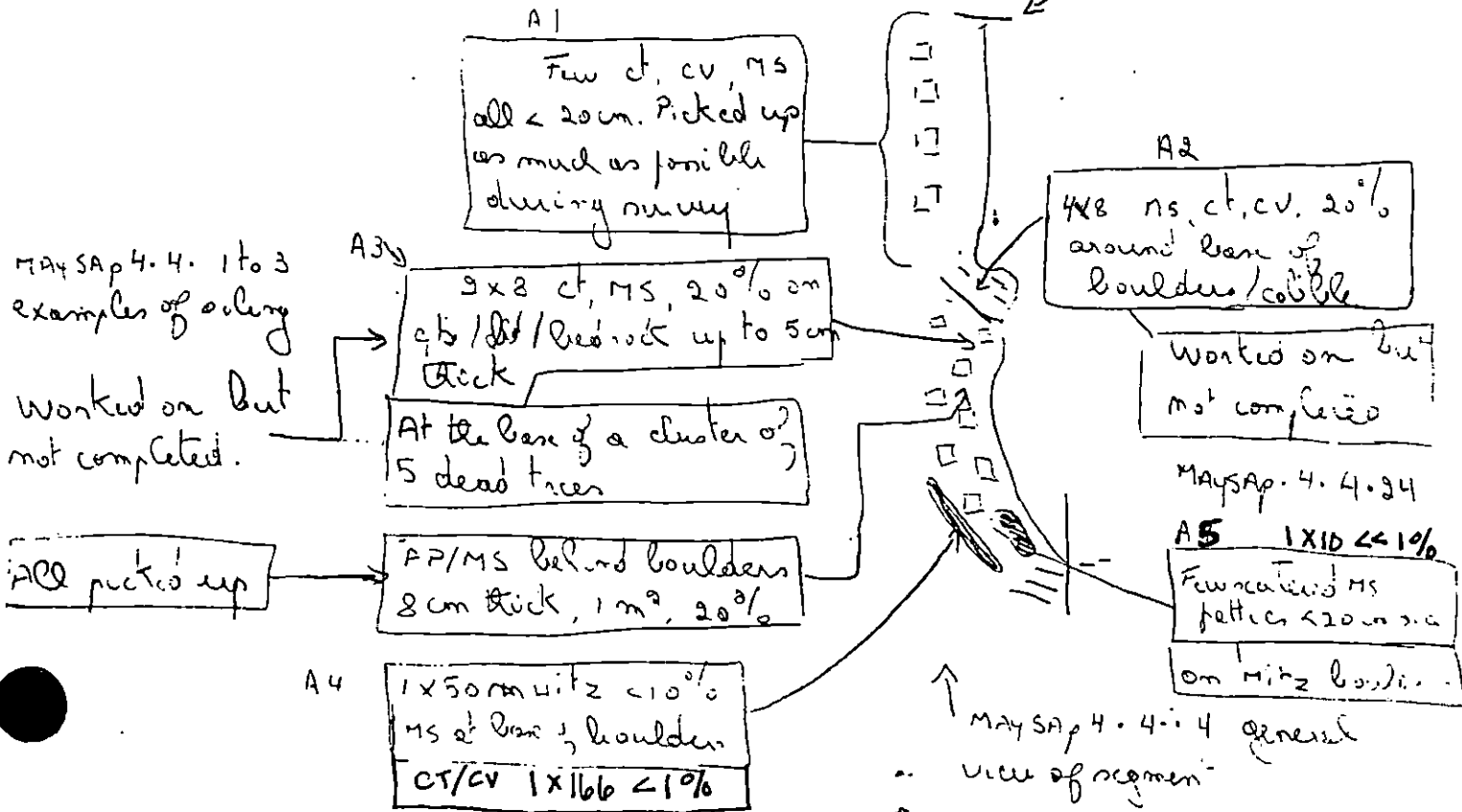
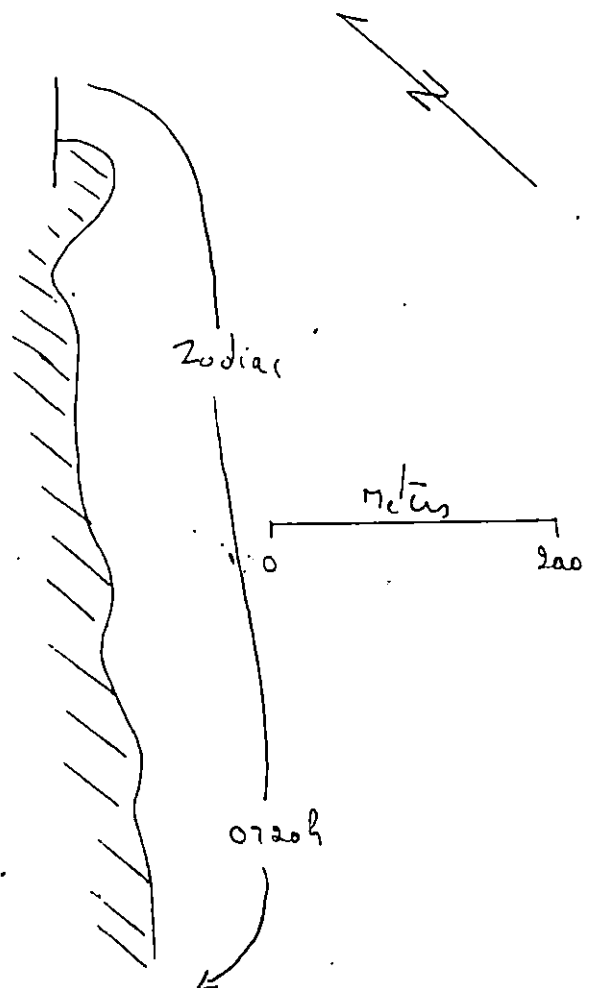
COMMENTS: See map. Long segment of steep bedrock with boulder talus. Dicing confined to the southern end of the segment as patches of ms around base of boulders. Partly picked up as indicated on map. Access difficult due to slope and boulder size.

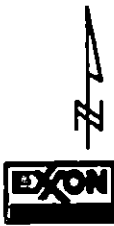
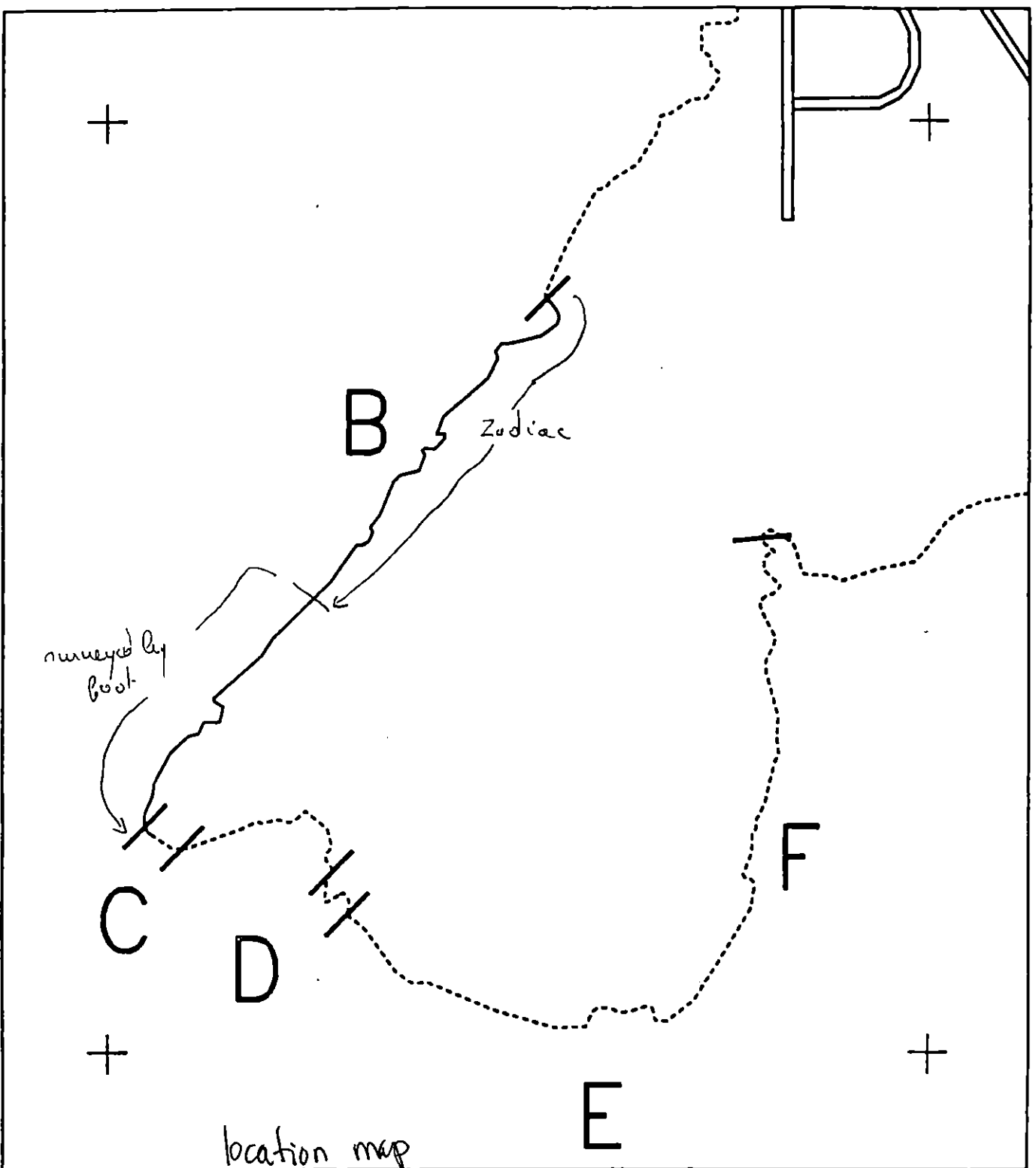
REVIEWED: Gm chkb. revised 5.22 97

Og Sketch Map	Legend
PY.008.B	steep bedrock / talus
7 Samples	large boulders talus / steep bedrock
MAY 16/91	
0720-0820	

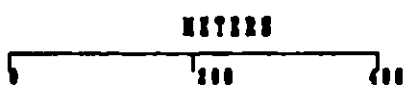
no access in northern part surveyed by zodiac, no oil observed.

Average intertidal width ~ 20-25 m.





PY008 B



AK State Plane Zone 4
NAD83

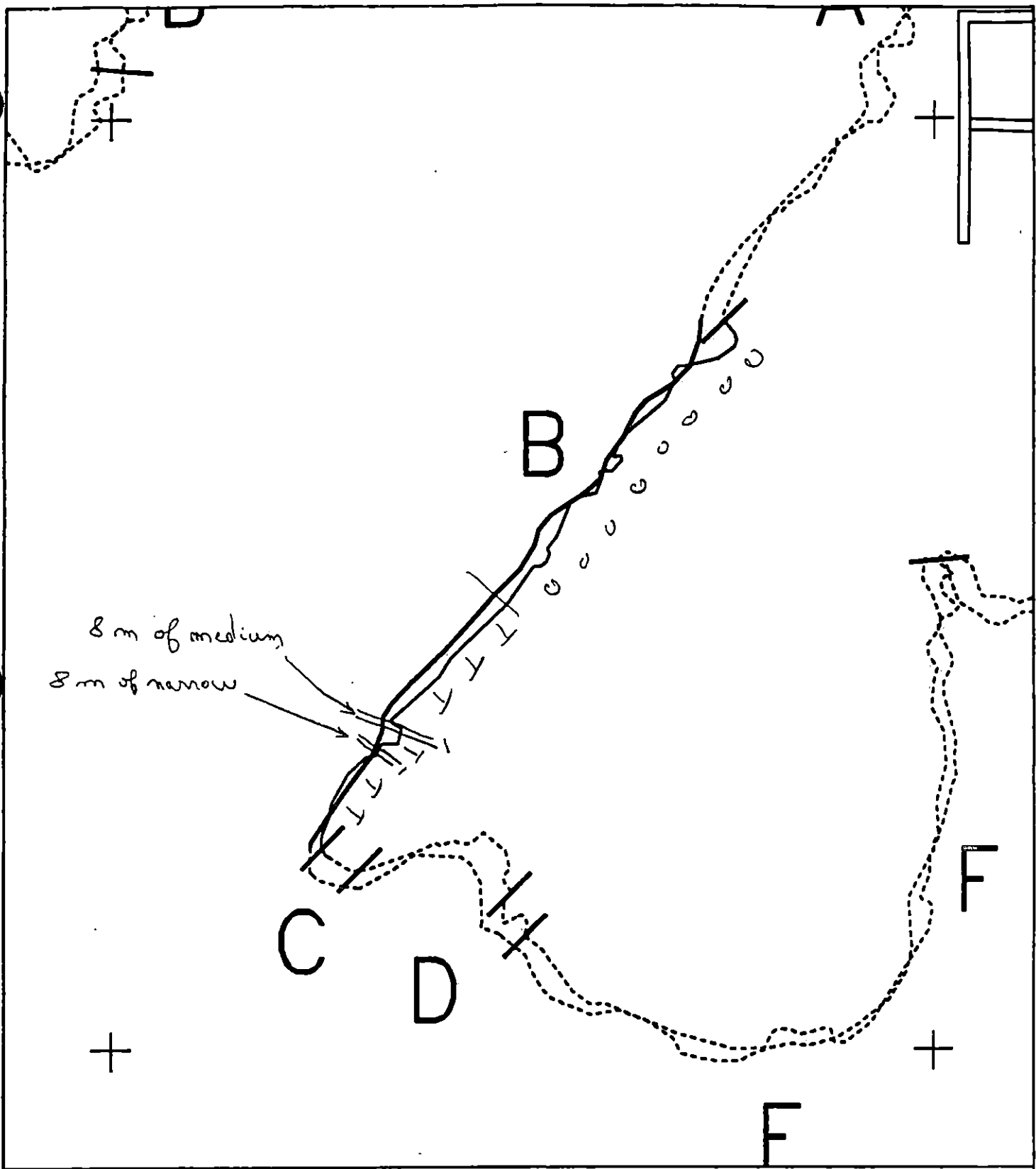
Subdivision Field Map

Map Key: KENPY0008a

Name: J. M. Campbell

Date: May 13/91

reviewed 5.20 91
REVIEWED: R.W. 5/23/91



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

PY008 B
ADEC Subsegment Length: 966m
METERS
AK State Plane Zone 4
np7008b



Subdivision Field Map
Map Key: KENPY008B
Name: IM Semp...
Date: MAY 12 '91
Data Entered:

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 16, 1991 0720 - 0820
SEGMENT #	PY008	TIDAL HEIGHT (Range)	+2.5 => -0.9
SUBDIVISION	B	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm, cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A1 Oil at this location is splatter in the high upper intertidal zone along a boulder talus shore. Black lichen and scattered limpets, as well as a few littorine snails are the only biota very near the oiled area. Barnacles, limpets, littorine snails, and ephemeral red and green algae become abundant slightly below the oiled area (ca 1-2 ft). Fucus is moderately to densely abundant in the mid-to-low shore. Mussels are less abundant in this inner portion of the bay and form patches in crevices from mainly in the middle zone. The low intertidal has abundant red and green algae, with dense brown algae in the subtidal.

Manual pickup was performed (completed?) at this site. Additional manual removal, if performed, would not negatively impact the biota at this location.

A2 Oil (CT,MS) at this location occurs in the upper intertidal zone and extends towards the middle intertidal zone. Black lichen is the most abundant conspicuous species very near the oil on this boulder/cobble talus shore. Limpets and littorine snails are present in sparse to moderate patches, with some individuals found directly on the oil. Small patches of dead mussels are partially to completely buried by the oil, and are likely a remnant of the initial impact of the spill. Live mussels are present in crevices in the boulder talus, with small adults and moderate densities of juveniles, mostly at tidal levels below the oiled area. Fucus is sparsely distributed on boulders near the oiled area, and is more abundant in the middle to lower zone. Red and green algae are dense in the low shore, with dense cover of kelps in the subtidal.

Manual pickup was performed at this site during the survey. Additional manual pickup will not harm the biota at the site.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	
Seabirds			
Waterfowl			
Gulls/Kittiwakes	2	30	
Shorebirds	1	1	
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.

REVIEWED 5/23/91 F.W.
D. 1-177/101 L.M.

- A3,A4 This oiled site (MS) extends occurs in the upper and middle zone. Biota near the oiled area is similar to A2, with black lichen in the highest oiled area, and more typical intertidal species, such as limpets, littorine snails, barnacles, and Fucus, in the middle zone area. Mussels also are sparsely to moderately abundant in the oiled area. Crustose red algae (Hildenbrandia) is abundant on many boulders near the oiled area and is in direct contact with oil. All of these species are found in direct or nearly direct contact with the oiled sediments, though their abundances appear to be slightly greater in adjacent non-oiled areas. Nevertheless, the site appears to be quite 'healthy', in that all of the major species are present in all life stages. The algal community below the oiled area has dense red and green algae, with dense brown algae in the subtidal. Many invertebrates are abundant from the upper to the lower zone. In particular, the bryozoan Schizoporella sp. is very abundant under low zone cobble.

PY008-B Biology Summary, continued

4. Red Algae - Rhodophyta
Bangia fuscopurpurea, Endocladia muricata, Halosaccion glandiforme,
Lithothamnion sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria
palmata, Petrocelis sp., Porphyra sp., Rhodomela larix
5. Higher Plants - Leymus mollis (beach rye grass)

II. Marine Animals

1. Sponges - Porifera - Halichondria bowerbanki?
2. Anemones - Anthopleura artemesia, Epiactis prolifera?, Metridium senile,
Urticina crassicornis,
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.?, Traskorchestia traskiana
b. Barnacles - Balanus glandula, Semibalanus cariosus
c. Crabs - Haplogaster sp., Paguridae (hermit crabs)
d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma
oregonensis
11. Mollusca
a. Chitons - Cryptochiton stelleri, Mopalia sp., M. mucosa, Katharina
tunicata, Tonicella lineata,
b. Snails - Gastropods
Littorina sitkana, L. keenae, Nucella lamellosa, N. lima,
Searlesia dira
c. Limpets - Lottia digitalis, L. persona, Tectura fenestrata, T.
persona, T. scutum, Siphonaria thersites
e. Bivalves - Chlamys hastata, Mytilus edulis, Pododesmus cepio
12. Echinoderms
a. Brittle Stars - Ophiolus aculeatus?, Ophiothrix spiculata?,
Amphipholis?
b. Sea stars - Crossaster papposus, Dermasterias imbricata, Henricia
leviuscula, Leptasterias hexactis, Orthasterias keohleri,
Pisaster ochraceus, Pycnopoda helianthoides, Solaster
dawsoni,
c. Sea Cucumbers - Holothurians - Eupentacta sp.
d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Microporina borealis, Schizoporella sp.
14. Ascidians - Synocium? sp., Aplidium?
15. Fishes
Cottidae -
Stichaeidae - Xiphister atropurpureus, X. mucosus

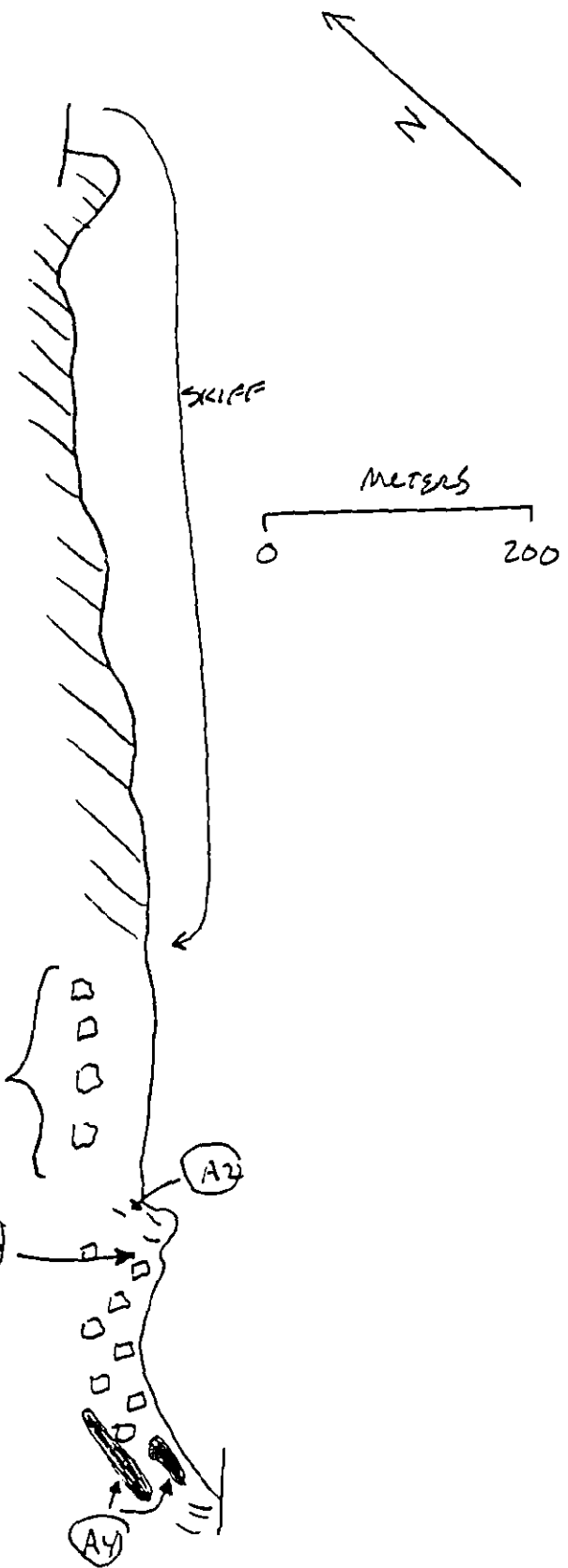
- IV. Birds - Bald Eagle (1), Glaucous-winged Gull (15), Black-legged Kittiwake (15),
Western Sandpiper (5), Fox Sparrow (2), Crow (1)

10 SKETCH MAP P4608-B SP [redacted] MAR 16 1991 720 -0820	Legend [diagonal lines] Steep bedrock / talus [square] LARGE BOULDERS / TALUS / STEEP BEDROCK
---	---

1) [Cf, Cu, Ms]
BLACK LICHEN, SCATTERED LIMPETS & BARNACLES
NEAR OIL. STEEP BOULDER TALUS SHORE
WITH FUCUS, BARNACLES, MODERATE TO SPARSE
PATCHES OF MUSSELS IN CREVICES, DENSE RED
& GREEN ALGAE IN LOW SHORE. BROWN ALGAE
IN SUBTIDAL

2) [Ms, Cf, Cu]
BLACK LICHEN, BARNACLES, LITTORINES,
LIMPETS - ALL SPARSE. SOME OF THESE
FOUND DIRECTLY CONTACTING OIL. SOME
DEAD MUSSELS, PROBABLY FROM THE
TIAL SPILL. JUVENILE MUSSELS,
BARNACLES, LITTORINES, LIMPETS.
LOWER ZONE - DENSE RED, GREEN
ALGAE. BROWN ALGAE IN SUBTIDAL

3) - SIMILAR TO A2 - BLACK LICHEN,
LIMPETS, SNAILS, BARNACLES, SOME IN CONTACT
WITH OIL. MUSSELS ALSO NEAR, AND IN CONTACT
WITH OIL (SPARSE PATCHES). RICHER
INTERIDAL BELOW. FUCUS, RED, GREEN
ALGAE ABUNDANT BELOW.



1991 MAYSAP EVALUATION

SEGMENT: PY 008 **SUB:** E **REGION:** KEN **SURVEY DATE:** 5/16/91

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. 41SEGMENT PY-008SUBDIVISION EDATE MAY 16 191

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara S. Crosby

- ☐ NTR ☒ Recommend Treatment — Treatment (manual removal) is recommended at this Subseg ~~of~~ in conjunction w/ B.C. There is ~~an~~ a band of HOC (approximately 5x40m & 3 to 2cm thick). This subsurface oiling ~~would~~ would be labor intensive to recover manually & there are no options for mechanical due to terrain. Surface oiling within this Subdivision, however, can be recovered using hand tools — The estimated time for manual removal of surface oiling is: 41 twelve hr day w/ an 8 man crew.

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles 5/20/90☒ NTR

Very little oil remains that could be effectively removed due to the large size boulders.

LANDMANAGER

NAME

JOHN P. HARDISTER

OF

USFWS

SIGNATURE

John P. Hardister 5/16/91☒ NTR

Some oil remains from the cleanup operation I observed in July 1989. Part of this oil was removed during the present survey. I do not recommend any further cleanup effort.

USCG/NOAA

NAME

CWO2 J. McShane

SIGNATURE

J. McShane☒ NTR

Some signs of weathered TO remain but not so threaten the biologic, human life as the environment. The crew picked-up a sizeable amount of same.

NOAA/ DONALD A. MACDONALD

Donald A. MacDonald

Most remaining oil was down in crevices and under boulders. Any cleaning would be labor intensive and probably would not reduce significantly reduce the effect of the oil on the environment.

PAGE 2 OF 9

SEGMENT P4 : 001

SUBDIVISION E

DATE 5 / 16 / 91

ENERGY LEVEL: ☐ H ☐ M ☐ L

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

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

EST. OIL CATEGORY LENGTH: W m M m N m VL 55 m NO 44 m 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

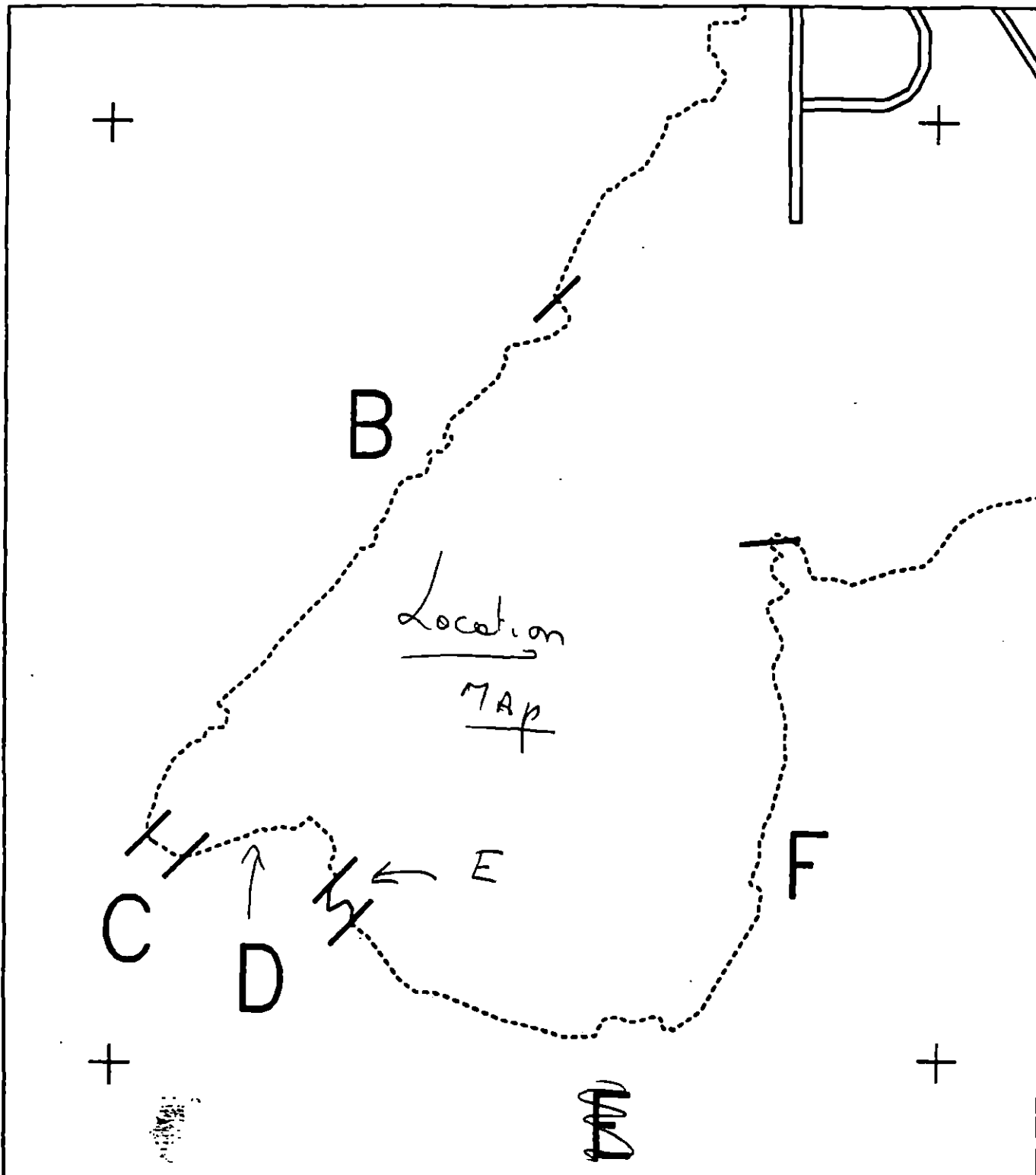
PHOTO ROLL # MAYSAP-

FRAMES

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

See map -

Reviewed S.21 94
REVIEWED: F.W. 5/21/91



 	PY008 E	Subdivision Field Map
	NS7225	Map Key: XNPY008Ea
		Name: <u>Joy Scarpis</u>
	AS State Plane Zone 4 applied	Date: <u>MAY 16/9</u>

REVIEWED: F.W. S/24/91

Qg Sketch Map

P4.008.E

JM Samples

May 16, 91

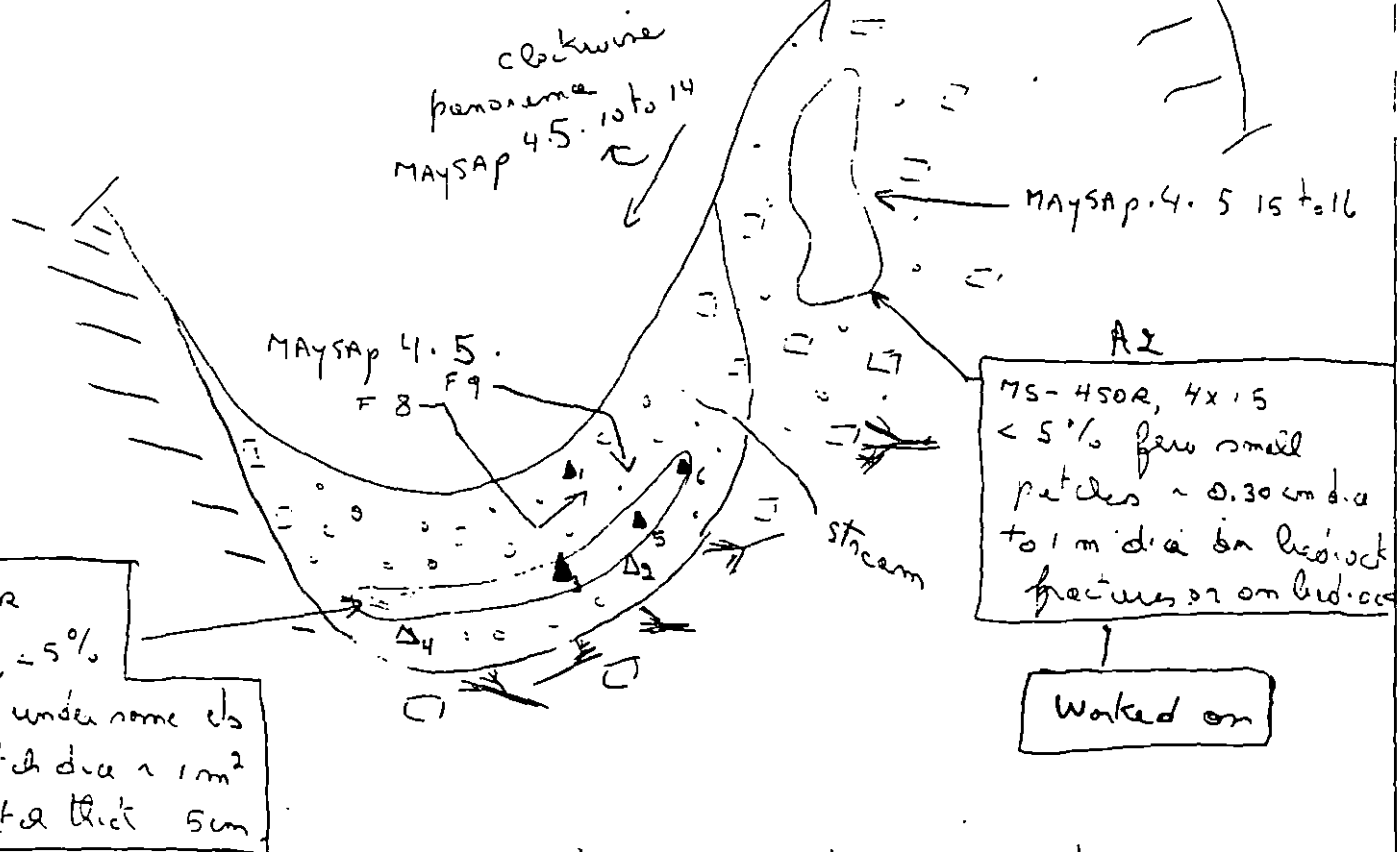
0930-0955

Legend

[Symbol] Sloping bedrock

[Symbol] Coarse angular rubble

[Symbol] ph/cb/so'



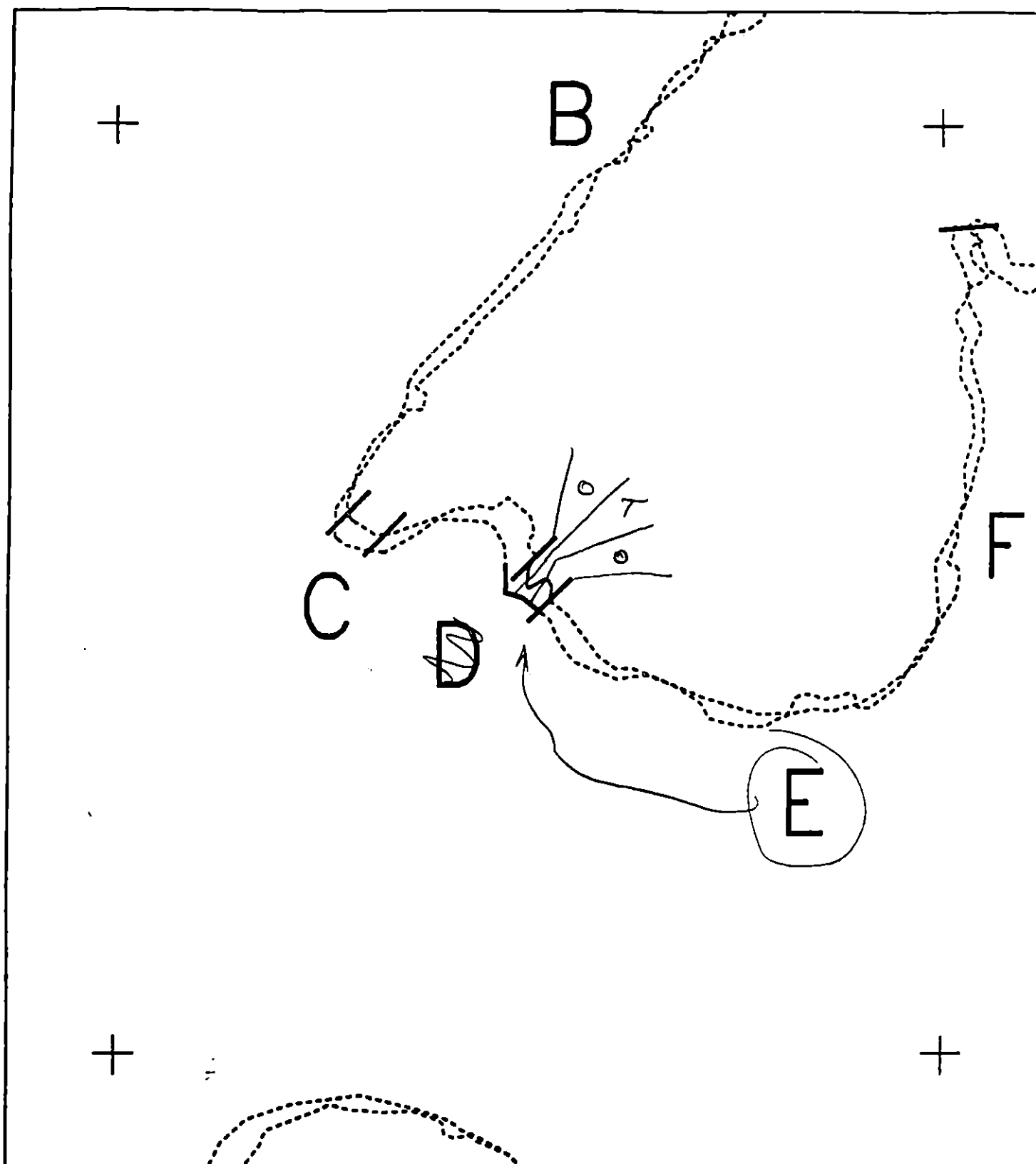
Small pocket accumulation of mixed

sediments over and among bedrock outcrop. Bedrock

ramp on its eastern part of the segment. Boulders near backfire.

Band of scattered manure and HSOR patches in city and on the bedrock ramp. Surface oil present and is associated with the area where patches of surface oil are present.

Reviewed 5.21.94
Reviewed: F.W. 5/21/91



XXXX	Wide	PY008 E	Subdivision Field Map
////	Medium	ADEC Subsegment Length: 99m	Map Key: KENPY008E
----	Narrow	METERS	Name: <i>JM Samp. C</i>
TTTT	Very Light	0 200 400	Date: <i>MAY 16/91</i>
0000	No Oil	AK State Plane Zone 4 ap008a	Data Entered:

Reviewed S.21 *gy*
REVIEWED: SW. 5/21/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 16, 1991 0921 - 1000
SEGMENT #	PY008	TIDAL HEIGHT (Range)	-3.0 => -3.0
SUBDIVISION	E	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm, rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil-related Comments

A1 Oil (MS-HSOR) is present in the cobble of the upper zone. Little biota is present at this location or tidal level. Sparse filamentous green algae are found on the cobble, with scattered sparse barnacles, littorine snails and limpets. Below the oiled area, filamentous green algae are dense on the beach cobble.

A2 This oiled area (MS-HSOR) is in the upper zone and extends lower in that zone towards the middle intertidal zone than A1. Filamentous green algae, along with other film-forming species (brown algae?), are abundant very near the oiled site. Fucus and other red algae (Halosaccion) are sparse at the site. Limpets and littorines are dense in patches under cobble and are present directly on the oiled sediments. Amphipods are moderately abundant, as are oligochaete worms.

The lower intertidal below both A1 and A2 is densely covered with red and brown algae, with a diverse invertebrate community.

Cleanup Recommendations

For both A1 and A2, cleanup activities, if recommended, will have little negative impact on the biota at the site.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	
Seabirds			
Waterfowl			
Gulls/Kittiwakes	2	5	
Shorebirds	1	10	
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.

Reviewed: F.W. 5/21/91
 Cev. d. 5/21/91

General Features of PY008-E

This subdivision is a very small cove with bedrock outcrops, headlands, and a small beach of cobble and boulders, and low to medium exposure. Little biota is present on the cobble and boulders of the upper zone. Barnacles and mussels are present in moderately to high densities on the bedrock outcrops in the middle zone of this site. Dense red and brown algae are abundant in the low zone. Invertebrates are more abundant in the low zone of this subdivision than in most areas surveyed, probably due to the heterogeneous habitat types in that zone.

Generalized Zonation Pattern of PY008-E

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal
Oil			* * - +*			
Black Lichen		---+*-----				
Bare Rock		-- --				
Filamentous Green Algae			-- --	+++*+--	-- --	++ -- -- --
Crustose red and brown Algae				- +++*++*+--	-- -- -- --	-- --
Rockweed (Fucus)				- - ---++-+* +* *+*--++*--	-- --	
Barnacles (Balanus)				- - +++---+*-*+*+--	-- --	
Upright Red Algae					---+*****	
Green Algae (Ulva/other)				- -- -- + + - -	- -++	
Mussels (Mytilus)				- - -++-++ * * - -		
Upright Brown Algae (not Fucus)					-- - -++*****	
Limpet and Littorines				- - -++*+*+*+*--	-- --	++ -- --

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

Common Species on PY008-E

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Acrosiphonia sp., Cladophora sp., Enteromorpha sp., Prasiola meridionalis, Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Agarum fimbriatum, Costaria costata, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Laminaria groenlandica, L. Saccharina, Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Bangia fuscopurpurea, Bossiella sp., Calliarthron sp., Corallina sp., Cryptosiphonia woodii, Endocladia muricata, Halosaccion glandiforme, Iridaea sp., Lithothamnion sp., Mastocarpus sp., Membranoptera dimorpha, Mesophyllum conchatum, 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 bowerbanki?, Ophlitaspongia pennata,
2. Anemones - Anthopleura artemesia, A. elegantissima, Cribinopsis fernaldi, E.

- prolifera?, Metridium senile, Urticina crassicornis,
3. Hydroids - Sertulariidae, Aglaophenia sp., Abietinaria sp.
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile, Tubulanus polymorphus
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.?, 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 - Cryptochiton stelleri, Mopalia sp., M. mucosa, Katharina tunicata, Tonicella lineata,
 - b. Snails - Gastropods
 - Amphissa columbiana, Fusitriton oregonensis, Lirularia sp.,
 - Littorina sitkana, L. keenae, Natica clausa, Nucella lamellosa, N. lima, Searlesia dira
 - c. Limpets - Acmaea mitra, Lottia limatula, L. persona, Tectura fenestrata, T. persona, T. scutum, Siphonaria thersites
 - d. Nudibranches - Lamellidoris fusca, Onchidella borealis
 - e. Bivalves - Clinocardium nuttalli, Modiolus modiolus, Mytilus edulis, Pododesmus cepio, Prototheca staminea
12. Echinoderms
 - a. Brittle Stars - Ophiolus aculeatus?, Ophiothrix spiculata?, Amphipholis?
 - b. Sea stars - Crossaster papposus, Dermasterias imbricata, Evasterias truscheli, Henricia leviuscula, H. sanguinolenta, Leptasterias hexactis, Mediaster aequalis?, Orthasterias keohleri, Pisaster ochraceus, Pycnopoda helianthoides, Solaster dawsoni, S. stimpsoni,
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Eucratea loricata, Membranipora sp., Microporina borealis, Phidolopora pacifica, Schizoporella sp.
14. Ascidians - Synocium? sp., Aplidium?
15. Fish
 - Cottidae -
 - Stichaeidae - Xiphister atropurpureus, X. mucosus
- III. Birds - Black-legged kittiwake (3), glaucous-winged gull (2), western Sandpiper (10), raven (2), Bald eagle (1)

BIO SKETCH MAP

P4008-AE

JP BARRY

0920-0955

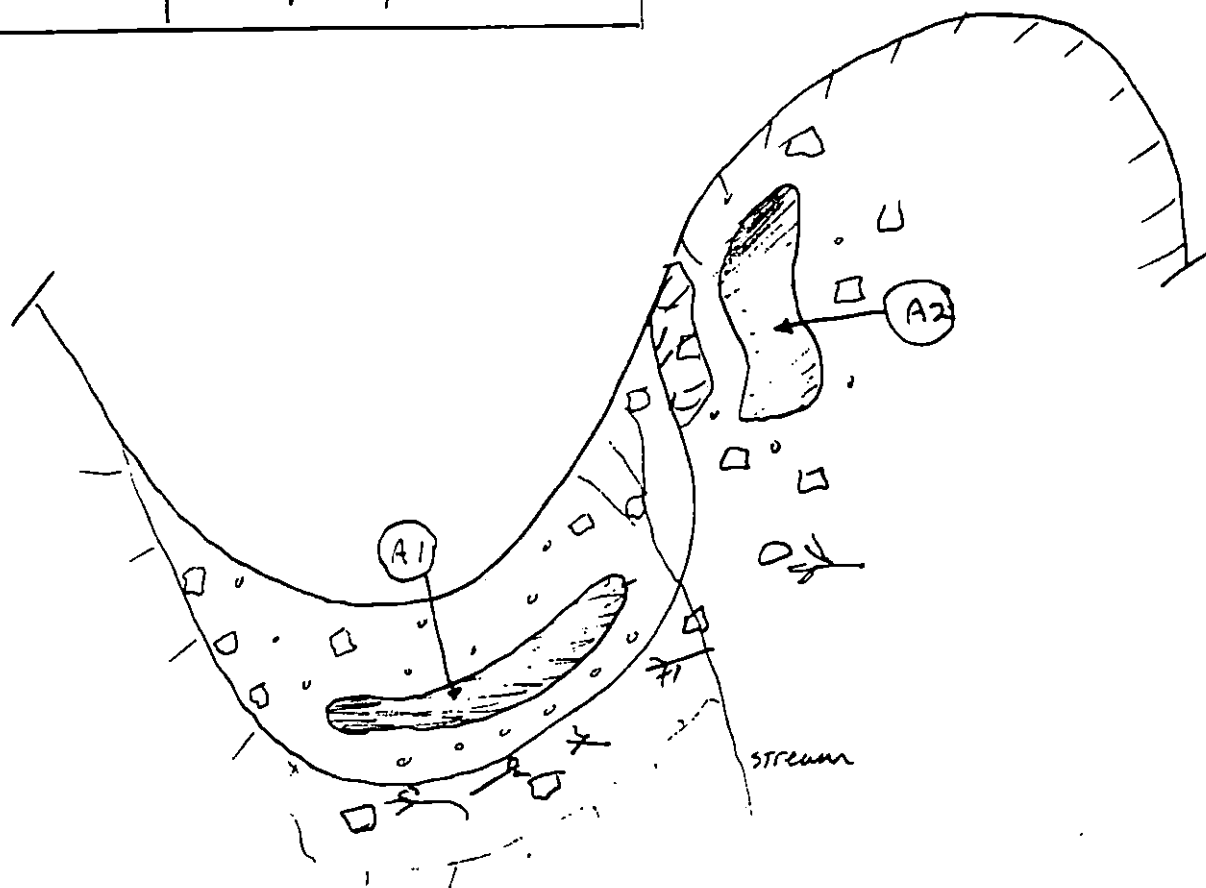
16 MAY 91

Legend

▣ Bedrock

▣ Coarse angular rubble

⊙ pb/cb/sd.



A1

(MS-HSOL) SPARSE FILAMENTOUS GREEN ALGAE. SCATTERED BARNACLES, LIMPET, LITTORINOS. DENSE FILAMENTOUS GREEN ALGAE IN THE MIDDLE TO UPPER ZONE BELOW A1

1991 MAYSAP EVALUATION

SEGMENT: PY 008 SUB: F REGION: KEN SURVEY DATE: 5/16/91

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

(41%)
No oil remains in Subdivision - Survey crew removed as much accessible oil observed - as possible.

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles 5/20/91

☒ NTR

Concur with ADEC little recoverable oil still remains.

LANDMANAGER

NAME

JOHN P. HARDISTER OF USFWS

SIGNATURE

John P. Hardister 5/16/91

☒ NTR

Trace amounts of oil. No cleanup necessary.

USCG/NOAA

NAME

CD02 J. McNamee

SIGNATURE

J. McNamee

☒ NTR

very little oil.

NOAA/DONALD A. McDONALD

Donald A. McDonald

4

OG

7 Samples

BIO

J. Borne

SEGMENT 24-008-1

SUBDIVISION 5

DATE MAY / 16 / 91

ADEC

Crosby

LANDMANAGER

for USFWS

EXXON

George P. Shlos

USCG/NOAA

McMahon/McDonald

TIME 09:55 to 11:31

TIDE LEVEL -3.3 ft. to -1.6 ft.

ENERGY LEVEL: ☒ H ☒ M ☐ L

SURVEYED FROM: ☒ FOOT ☒ BOAT ☐ HELO

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

TOTAL LENGTH SHORELINE SURVEYED: 1322 m

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

EST. OIL CATEGORY LENGTH:

W 0 m M 0 m N 0 m VL 1322 m NO - m US 0 m

DISTRIBUTION: C = 91-100%; B = 81-90%; P = 11-50%; S = 1-10%; T = <1%

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

MAYSAP 04.5.17.24
PHOTO ROLL MAYSAP- - FRAMES

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

OG COMMENTS:

OG COMMENTS: Long segment of sloping bedrock locally with boulder talus or fringe of large angular boulders. Very little oil found scattered throughout segment no assign. it a very light oil condition. Very little oil present.

Reviewed: 5/22/91 MC

revised 5.21.94

Og Sketch Map

Legend

Py. 008 . F
JM Sempels

 Sloping bedrock
locally with boulder talus

MAY 16/91

0955 - 1121

MAY 15 4.5 17:30
Anti Rockview
panorama

Few MS splinters
< 1 cm diameter
in witz bedrock

1 outcrop
~~picked up~~
Few small
splinters

Worked

MS in bedrock
fracture ~5 cm
wide x 30 cm long

MS, ct 3x3 m < 5%
in bedrock fracture
and around bed

Worked on

F30
F33

Zodiac

Zodiac

Leave 1121

Worked on

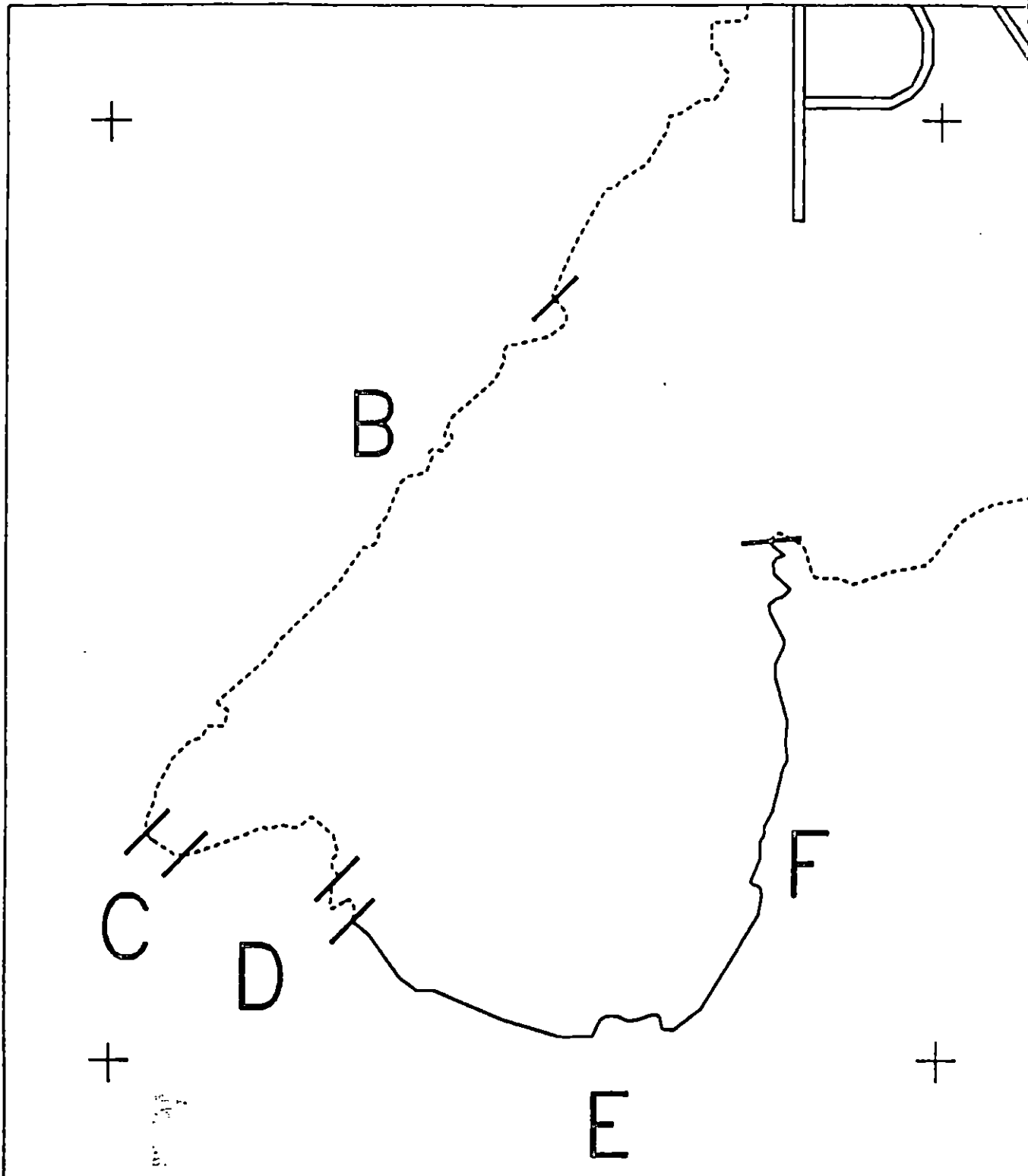
MS, 3x5, < 5%
at base of bed
in boulder talus
in front of
cluster of 46
trees, one with
3 bunch.

CV < 1 m³, 10%
in witz bedrock

Worked on

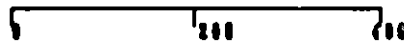
0 100 200

Reviewed: MC 5/22/91
reviewed 5.21 94



PY008 F

METERS



AK State Planning Zone 4
sprt0010

Subdivision Field Map

Map Key: KENPY008F

Name: Jim Semple

Date: May 16/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 19, 1991 0955 - 1125
SEGMENT #	PY008	TIDAL HEIGHT (Range)	-3.3 => -1.6
SUBDIVISION	F	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	0-5 kt., rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil Related Comments

Oil on this subdivision was sparsely distributed as spatters of MS or CT throughout the upper intertidal shore. No specific sites were designated. Few species are found at this level of the intertidal zone and those present are low in abundance. Black lichen is the most abundant species, with scattered patches throughout the upper zone along the subdivision. Filamentous green algae forms a film or sparse cover on cobble and boulders at this level, but is much denser below (ca 1-3 ft) the level of the oiling. Limpets, littorine snails, and barnacles also are scattered on and under the cobble near the oiled site and are much more abundant in lower zones. The surface of the oil is weathered in many cases, and barnacles, limpets, and littorine snails are often found directly in contact with the oil.

Cleanup Recommendations

Some manual cleanup was performed during the survey. Additional manual cleanup, if performed, will not adversely affect the biota along the subdivision.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl			
Gulls/Kittiwakes	1	22	
Shorebirds	1	2	
Corvids	1	3	
Other Birds	1	2	

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters		Black Bear	1 Dead Cub
Pinnipeds (specify)			
Sea Lion	1 (Carcass)		
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

Read stable: gm

General Characteristics of PY008-F

This subdivision has sloping bedrock shores and is fairly well protected from all but small waves. The flora and fauna are typical of similarly protected steep shores, with sparse macroalgae, barnacles and limpets in the upper zones, Fucus, mussels in the mid-shore, and dense red and brown algae in the low zone. No sensitive species assemblages were found on the subdivision. Small patches or zones of mussels are present, but do not constitute a major feature of the subdivision.

General Zonation Pattern

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal
Oil Spatters		- - -				
Black Lichen		---+*-----				
Filamentous Green Algae		- ++**+--- - - - -				
Crustose Red Algae (Hildenbrandia)			-----+**+---+-----			
Bare Rock		-- - -	- - -	- - -	- - -	- - -
Rockweed (Fucus)			- - -+*+*****--+- - -			
Barnacles (Balanus)			- - - -+**+---+*- - - - -			
Odonthalia (Red Alga)			- -+**+--- - -++ -			
Palmaria (Red Alga)			---+*****+---**+--			
Other Red Algae			---+*****+***			
Green Algae (Ulva/other)		- - -++-	-+ + - -	- - -	+++	
Mussels (Mytilus)			- - + - -+ -+ - - -			
Upright Brown Algae (not Fucus)				- - - -+++*****		
Eel Grass						- -
Clams						- - -

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

Common Species on PY008-F

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~~ *Alaria marginata*, *Agarum fimbriatum*, *Costaria costata*, *Ectocarpus* spp., *Fucus distichus*, *Hildenbrandia* sp., *Laminaria saccharina*, *Ralfsia* sp., *Syctosiphon lomentaria*
4. Red Algae - Rhodophyta
 - Bossiella* sp., *Corallina* sp., *Endocladia muricata*, *Halosaccion glandiforme*, *Lithothamnion* sp., *Mastocarpus* sp., *Membranoptera dimorpha*, *Odonthalia floccosa*, *Palmaria palmata*, *Petrocelis* sp., *Porphyra* sp., *Rhodomela larix*
5. Higher Plants - *Zostera marina* (eel grass), *Leymus mollis* (beach rye grass)

II. Marine Animals

1. Sponges - Porifera - *Halichondria bowerbanki*?, *Halichondria panicea*
2. Anemones - *Anthopleura artemesia*, *A. elegantissima*, *Epiactis ritteri*, *E. prolifera*?, *Metridium senile*, *Urticina crassicornis*,
3. Hydroids - *Sertulariidae*, sp., *Abietinaria* sp.

5. Flatworms - Platyhelminthes - Polyclads
 6. Nemertean Worms - Ribbon Worms - Enoletonema 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, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs - Haplogaster sp., Paguridae (hermit crabs), Pugettia sp.,
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
 11. Mollusca
 - a. Chitons - Cryptochiton stelleri, Mopalia sp., M. mucosa, Katharina tunicata, Tonicella lineata,
 - b. Snails - Gastropods
 - Lirularia sp., Littorina sitkana, L. keenae, N. lima, N. emarginata, Searlesia dira
 - c. Limpets - Lottia digitalis, L. limatula, L. persona, Tectura fenestrata, T. persona, Siphonaria thersites
 - d. Nudibranches - Lamellidoris fusca, Melibe leonina, Onchidella borealis
 - e. Bivalves - Clinocardium nuttalli, Macoma nasuta, Modiolus modiolus, My arenaria (soft-shell clam), Mytilus edulis, Pododesmus cepio, Prototheca staminea
 12. Echinoderms
 - a. Brittle Stars - Ophiolus aculeatus?, Ophiothrix spiculata?, Amphipholis?
 - b. Sea stars - Crossaster papposus, Dermasterias imbricata, Evasterias truscheli, Henricia leviuscula, Leptasterias hexactis, Orthasterias keohleri, Pycnopoda helianthoides, Solaster dawsoni,
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
 13. Bryozoans - Membranipora sp., Microporina borealis, Phidolopora pacifica, Schizoporella sp.
 14. Ascidians - Synocium? sp., Aplidium?
 15. Fishes
 - Cottidae -
 - Stichaeidae - Xiphister atropurpureus, X. mucosus
- III. Birds - Fox Sparrow (3), Western Sandpiper (2), Glaucous-winged Gull (22), Raven (3)

BIO SKETCH MAP

PY008-F

JP BARRY

16 MAY 1991

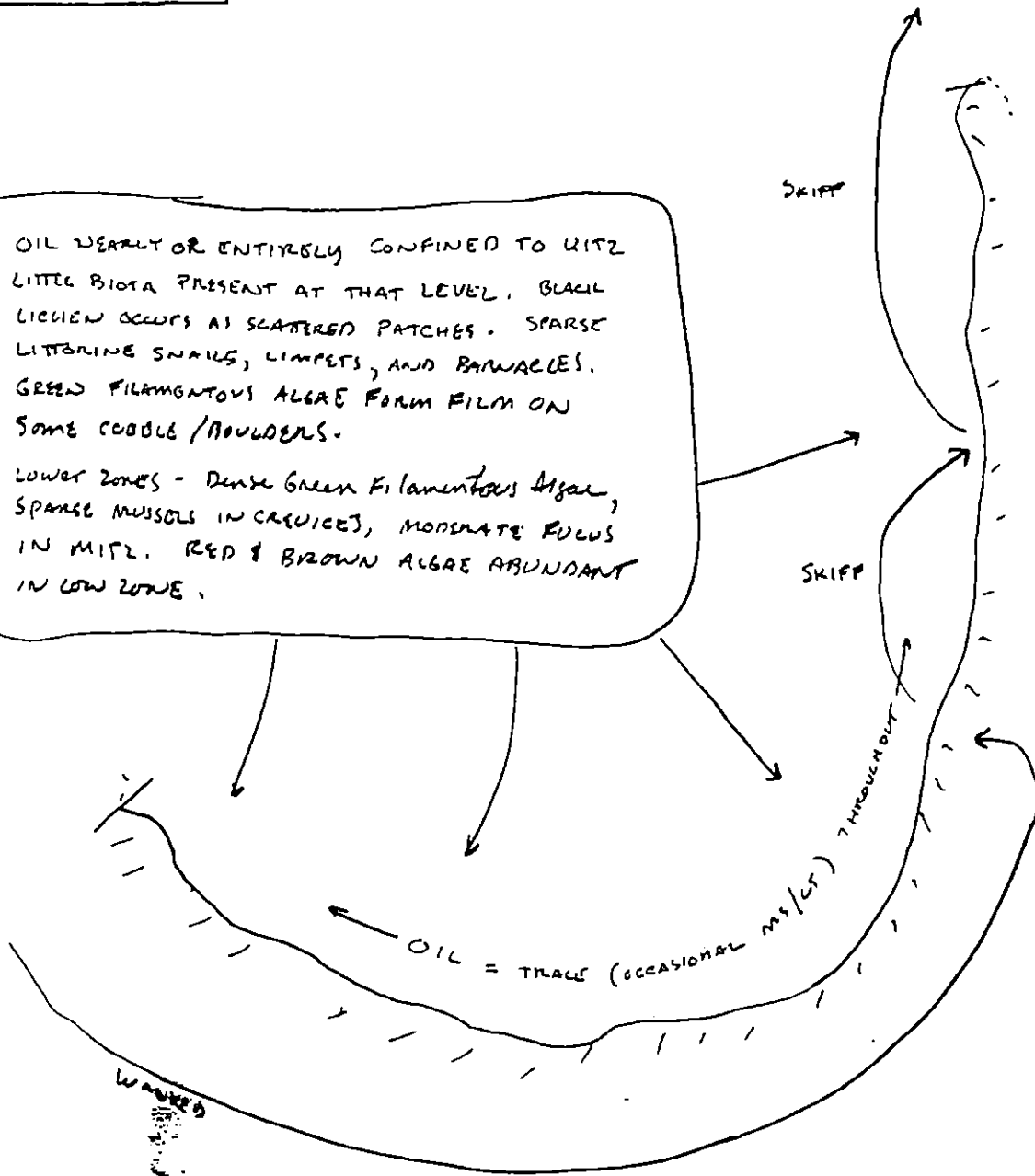
8955-1121

Legend

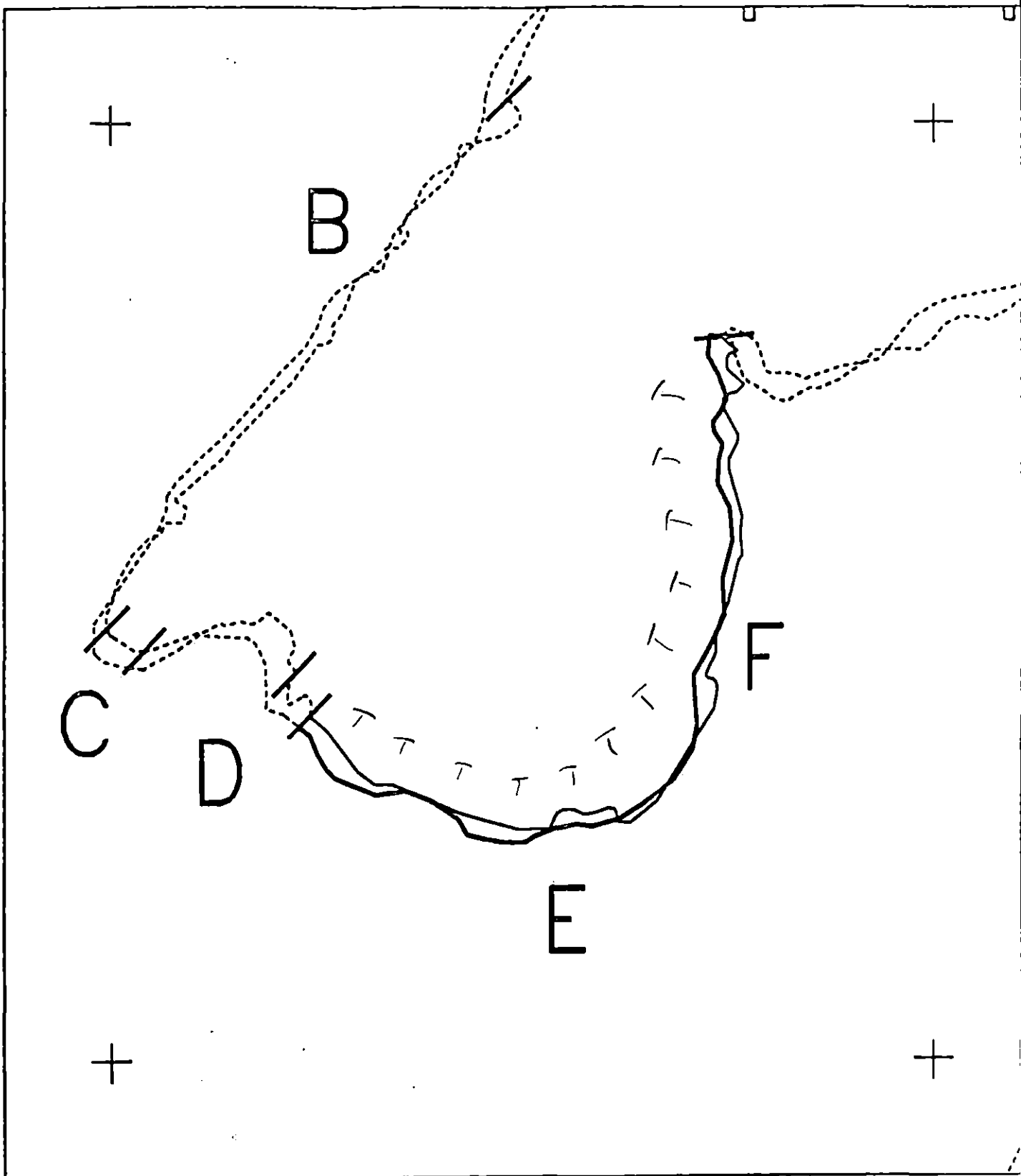
☐ Sloping Bedrock
partial boulder talus

OIL NEARLY OR ENTIRELY CONFINED TO MTLZ
LITTLE BIOTA PRESENT AT THAT LEVEL. BLACK
LICHEN OCCURS AS SCATTERED PATCHES. SPARSE
LITTORINE SNAILS, LIMPETS, AND BARNACLES.
GREEN FILAMENTOUS ALGAE FORM FILM ON
SOME COBBLE/BOULDERS.

LOWER ZONES - DENSE GREEN FILAMENTOUS ALGAE,
SPARSE MUSSELS IN CREVICES, MODERATE FUCUS
IN MTLZ. RED & BROWN ALGAE ABUNDANT
IN LOW ZONE.



0 100 200



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

PY008 F
 ADEC Subsegment Length: 1322m
 METERS
 0 200 400
 AK State Plane Zone 4
 apy008f



Subdivision Field Map
 Map Key: KENPY008F
 Name: *JM Semple*
 Date: *May 16 '99*
 Date Entered:

Reviewed: MC 5/22/99
 reviewed 5.21.99

1991 MAYSAP EVALUATION

SEGMENT: PY 008 SUB: B REGION: KEN SURVEY DATE: 5/16/91

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

MAT SAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT P4 008 SUBDIVISION B DATE May 16, 1991

ADEC

NAME Clara S. Crosby

SIGNATURE Clara S. Crosby

☐ NTR ☒ TREATMENT RECOMMENDED.

There are 3 subdivisions within this seg. which could be worked on in conjunction with one another to remove 'Hot spots' of surface oiling. These are B, C & E. I have seen crews work on areas with less accessible oil & recover a significant portion. Recommended treatment is manual removal - hand rakes - All 3 subdiv. should take less than one day.

EXXON

NAME George P. Stiles

SIGNATURE George P. Stiles

☒ NTR The patches of MS at the southern most end of this segment were partially worked. (18 bags) during the survey. The MS is in the bed rock cracks and around the edges of the large boulders. Further cleanup would be difficult due to the boulder size and would recover a very insignificant amount of weathered oil.

LANDMANAGER

NAME John P. Hardister OF USFWS

SIGNATURE John P. Hardister 5/16/91

☒ NTR Pockets of oil remain from previous cleanup operations. Some of this oil was removed during the survey. The remainder would be difficult to remove and an insufficient amount would be recovered for time expended. Thus, further cleanup is not recommended.

USCG/NOAA

NAME Sub 2 J. Mc Kinnon

SIGNATURE J. Mc Kinnon

☒ NTR What oil remains is highly inaccessible. Cleanup measures would be excessively costly in view of the insignificant contribution.

NOAA / DONALD H. MACDONALD

Don H. Macdonald

The majority of oil remaining is located deep in cracks and crevices of rock boulders and under large boulders. It would be difficult to remove a significant amount.

PAGE 2 OF 9

DATE MAY 16 1911

REVIEWED: F.W. 5/23/91 revised 5.22.91

Og Sketch Map

Legend

P4.008.B

fm Samples

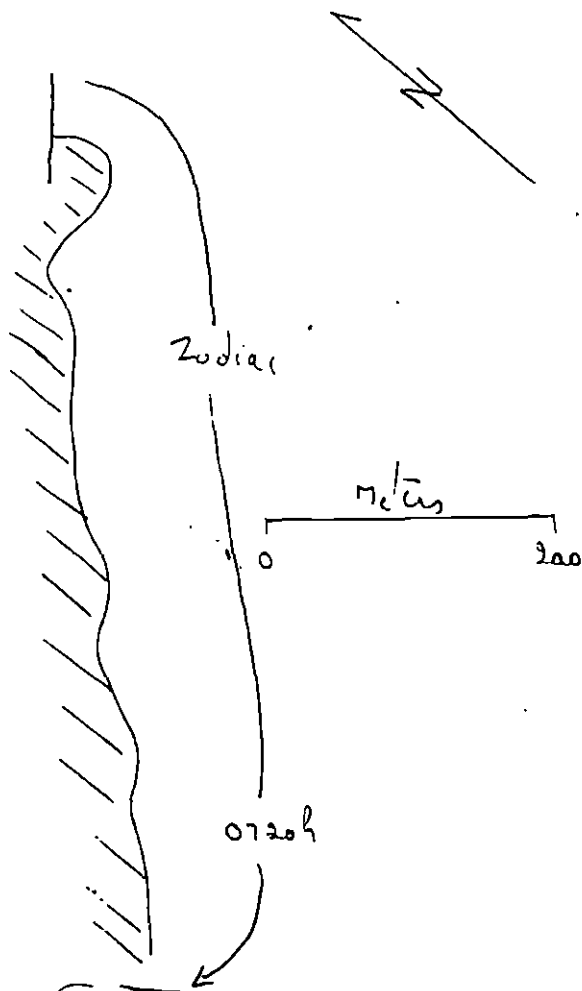
MAY 16/91

0720-0820

-  steep bedrock / talus
-  large boulders talus / steep bedrock

no access in northern part
surveyed by Zodiac, no
out observed.

Average intertidal width $\sim 20-25m$.



MAY SAP 4.4. 1 to 3
examples of sailing

Worked on ~~data~~
not completed.

All picked up

A3

A1
Few ct, cv, ms
all $< 20cm$. Picked up
as much as possible
during survey

2x8 ct, ms, 20% on
ctb / bedrock up to 5cm
thick

At the base of a cluster of
5 dead trees

PP/MS bedrock boulders
8cm thick, 1m², 20%

A4

1x50m with 2 $< 10\%$
ms at base of boulders
CT/CV 1x166 $< 1\%$

A2

4x8 ms, ct, cv, 20%
around base of
boulders / cobbles

Worked on but
not completed

MAY SAP 4.4.24

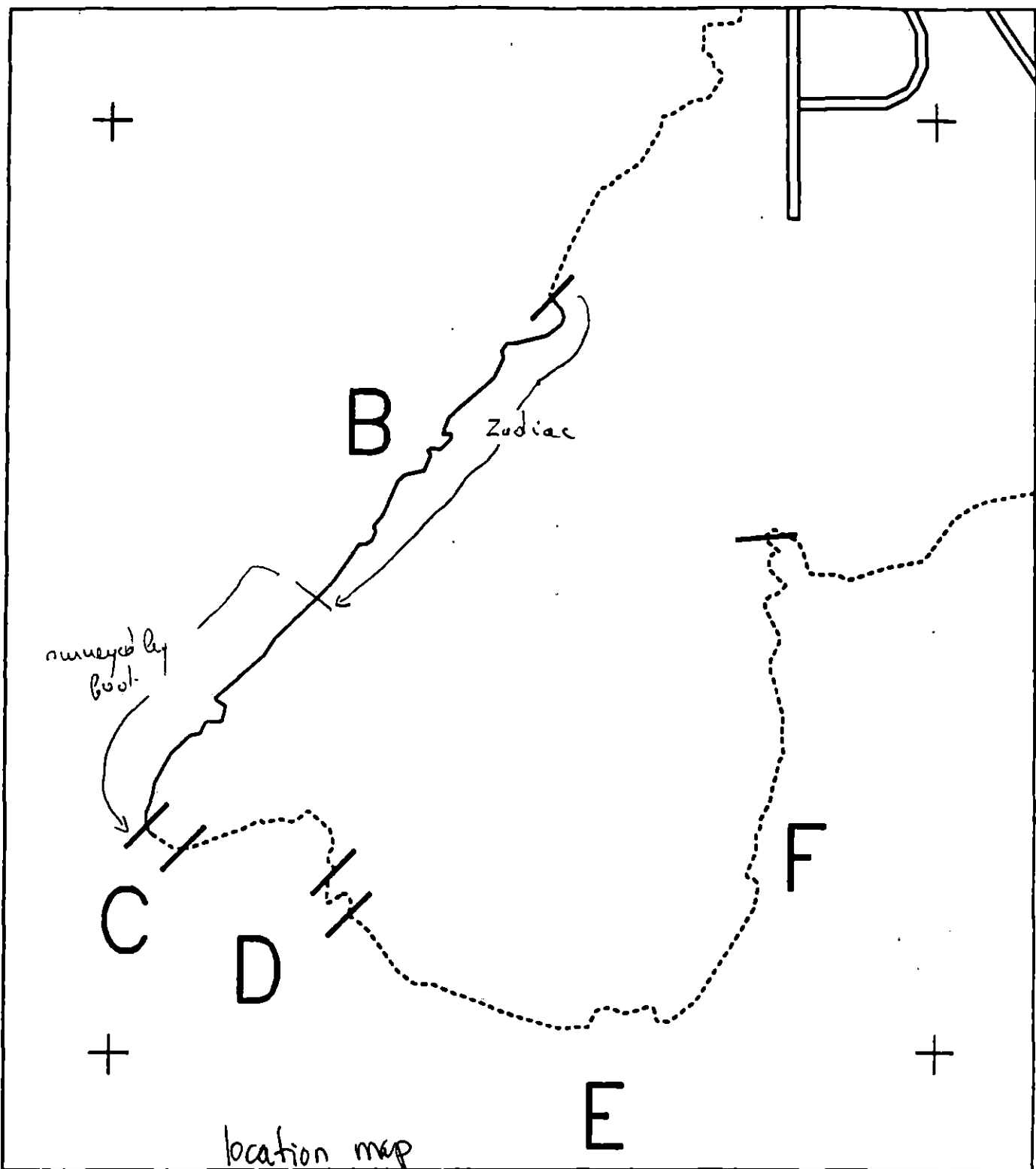
A5 1x10 $< 10\%$

Few scattered ms
petals $< 20cm$

on Mitz boulders

MAY SAP 4.4.4 general
view of region

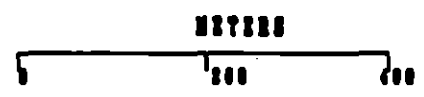
revised 5.22 94
REVIEWED: F.W. 5/23/91



location map



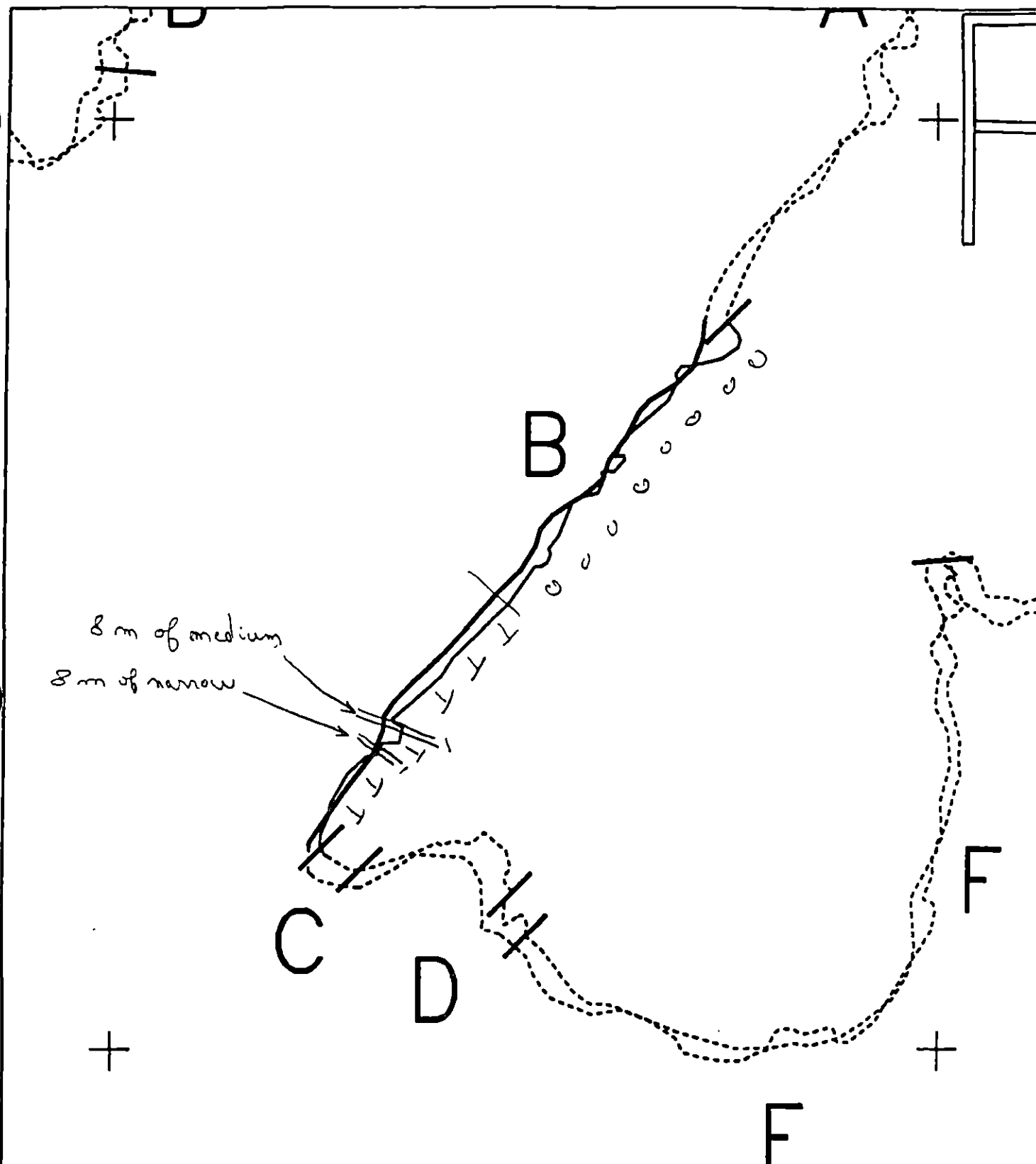
PY008 B



AK State Plane Zone 4
sp700000

Subdivision Field Map
Map Key: KENPY008Ba
Name: J. R. Campbell
Date: May 10 1944

reviewed 5.20 44
REVIEWED: R.W. 5/23/11



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

PY008 B
 ADEC Subsegment Length: 960m
 METERS

0 200 400
 AK State Plane Zone 4
 apy008b



Subdivision Field Map
 Map Key: KENPY0080
 Name: 1M Sample
 Date: May 2 2001
 Date Entered:

REVIEWED: F.W. 5/23/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 16, 1991 0720 - 0820
SEGMENT #	PY008	TIDAL HEIGHT (Range)	+2.5 => -0.9
SUBDIVISION	B	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm, cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A1 Oil at this location is splatter in the high upper intertidal zone along a boulder talus shore. Black lichen and scattered limpets, as well as a few littorine snails are the only biota very near the oiled area. Barnacles, limpets, littorine snails, and ephemeral red and green algae become abundant slightly below the oiled area (ca 1-2 ft). Fucus is moderately to densely abundant in the mid-to-low shore. Mussels are less abundant in this inner portion of the bay and form patches in crevices from mainly in the middle zone. The low intertidal has abundant red and green algae, with dense brown algae in the subtidal.

Manual pickup was performed (completed?) at this site. Additional manual removal, if performed, would not negatively impact the biota at this location.

A2 Oil (CT,MS) at this location occurs in the upper intertidal zone and extends towards the middle intertidal zone. Black lichen is the most abundant conspicuous species very near the oil on this boulder/cobble talus shore. Limpets and littorine snails are present in sparse to moderate patches, with some individuals found directly on the oil. Small patches of dead mussels are partially to completely buried by the oil, and are likely a remnant of the initial impact of the spill. Live mussels are present in crevices in the boulder talus, with small adults and moderate densities of juveniles, mostly at tidal levels below the oiled area. Fucus is sparsely distributed on boulders near the oiled area, and is more abundant in the middle to lower zone. Red and green algae are dense in the low shore, with dense cover of kelps in the subtidal.

Manual pickup was performed at this site during the survey. Additional manual pickup will not harm the biota at the site.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	
Seabirds			
Waterfowl			
Gulls/Kittiwakes	2	30	
Shorebirds	1	1	
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.

REVIEWED 5/23/91 F.W.
Rev'd 5/22/91 J.M.

- 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, Ectocarpus sp., Fucus distichus, Hildenbrandia sp.,
Laminaria groenlandica, Ralfsia sp., Syctosiphon lomentaria

PY008-B Biology Summary, continued

4. Red Algae - Rhodophyta
Bangia fuscopurpurea, Endocladia muricata, Halosaccion glandiforme,
Lithothamnion sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria
palmata, Petrocelis sp., Porphyra sp., Rhodomela larix
5. Higher Plants - Leymus mollis (beach rye grass)

II. Marine Animals

1. Sponges - Porifera - Halichondria bowerbanki?
2. Anemones - Anthopleura artemesia, Epiactis prolifera?, Metridium senile,
Urticina crassicornis,
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.?, Traskorchestia traskiana
 - b. Barnacles - Balanus glandula, Semibalanus cariosus
 - c. Crabs - Haplogaster sp., Paguridae (hermit crabs)
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma
oregonensis
11. Mollusca
 - a. Chitons - Cryptochiton stelleri, Mopalia sp., M. mucosa, Katharina
tunicata, Tonicella lineata,
 - b. Snails - Gastropods
Littorina sitkana, L. keenae, Nucella lamellosa, N. lima,
Searlesia dira
 - c. Limpets - Lottia digitalis, L. persona, Tectura fenestrata, T.
persona, T. scutum, Siphonaria thersites
 - e. Bivalves - Chlamys hastata, Mytilus edulis, Pododesmus cepio
12. Echinoderms
 - a. Brittle Stars - Ophiolus aculeatus?, Ophiothrix spiculata?,
Amphipholis?
 - b. Sea stars - Crossaster papposus, Dermasterias imbricata, Henricia
leviuscula, Leptasterias hexactis, Orthasterias keohleri,
Pisaster ochraceus, Pycnopoda helianthoides, Solaster
dawsoni,
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Microporina borealis, Schizoporella sp.
14. Ascidians - Synoicum? sp., Aplidium?
15. Fishes
Cottidae -
Stichaeidae - Xiphister atropurpureus, X. mucosus

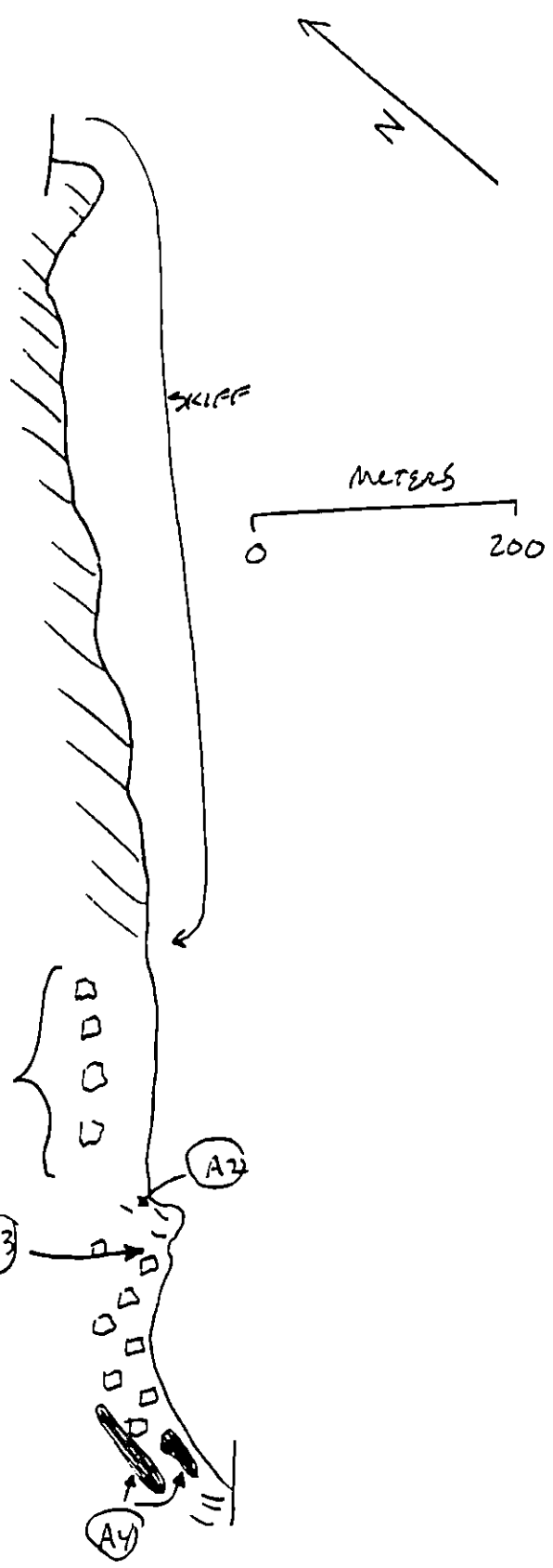
- IV. Birds - Bald Eagle (1), Glaucous-winged Gull (15), Black-legged Kittiwake (15),
Western Sandpiper (5), Fox Sparrow (2), Crow (1)

NO SKETCH MAP P4008-B SPERRY MAY 16 1991 3720 -0820	Legend  Steep bedrock / talus  LARGE Boulders / TALUS / STEEP BEDROCK
---	--

A1 [CT, CU, MS]
BLACK LICHEN, SCATTERED LIMPETS & BARNACLES
NEAR OIL. STEEP BOULDER TALUS SHORE
WITH FUCUS, BARNACLES, MODERATE TO SPARSE
PATCHES OF MUSSELS IN CREVICES, DENSE RED
& GREEN ALGAE IN LOW SHORE. BROWN ALGAE
IN SUBTIDAL

A2 [MS, CT, CU]
BLACK LICHEN, BARNACLES, LITTONINGS,
LIMPETS - ALL SPARSE SOME OF THESE
FOUNDA DIRECTLY CONTACTING OIL. SOME
DEAD MUSSELS, PROBABLY FROM THE
INITIAL SPILL. JUVENILE MUSSELS,
BARNACLES, LITTONINGS, LIMPETS.
LOWER ZONE - DENSE RED, GREEN
ALGAE. BROWN ALGAE IN SUBTIDAL

A4 - SIMILAR TO A2 - BLACK LICHEN,
LIMPETS, SNAILS, BARNACLES, SOME IN CONTACT
WITH OIL. MUSSELS ALSO NEAR, AND IN CONTACT
WITH OIL (SPARSE PATCHES). RICH ET
INTERMEDIAL BELOW. FUCUS, RED, GREEN
ALGAE ABUNDANT BELOW.



1991 MAYSAP EVALUATION

SEGMENT: PY 008 SUB: D REGION: KEN SURVEY DATE: 5/16/91ENVIRONMENTAL 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: _____

<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

Very lt. oiling within subdivision

EXXON
NAME George P. Stiles SIGNATURE George P. Stiles 5/20/91

☒ NTR

Concur with ADEC very small amount of oil seen.

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

☒ NTR

Little oil remains on this subsection. Cleanup not recommended.

USCG/NOAA
NAME QUOZ J. MC MAHON SIGNATURE J. McMahon

☒ NTR

There did exist some TO which was cleaned by the VECO crew - little or no oil remains to warrant further clean-up.

NOAA / Donald A. MacDonald

Donald A. MacDonald

DATE MAY 16 1917

W_____m M_____m N_____m VL_____m NO 234 m 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

OG COMMENTS: Shoreline consists of rounded sloping bedrock. Large angular boulders are locally associated with fault. in the bedrock. One small cu splinter was found.

Reviewed 5.21.94
REVIEWED: F.W. 5/21/94

Og Sketch Map

Legend

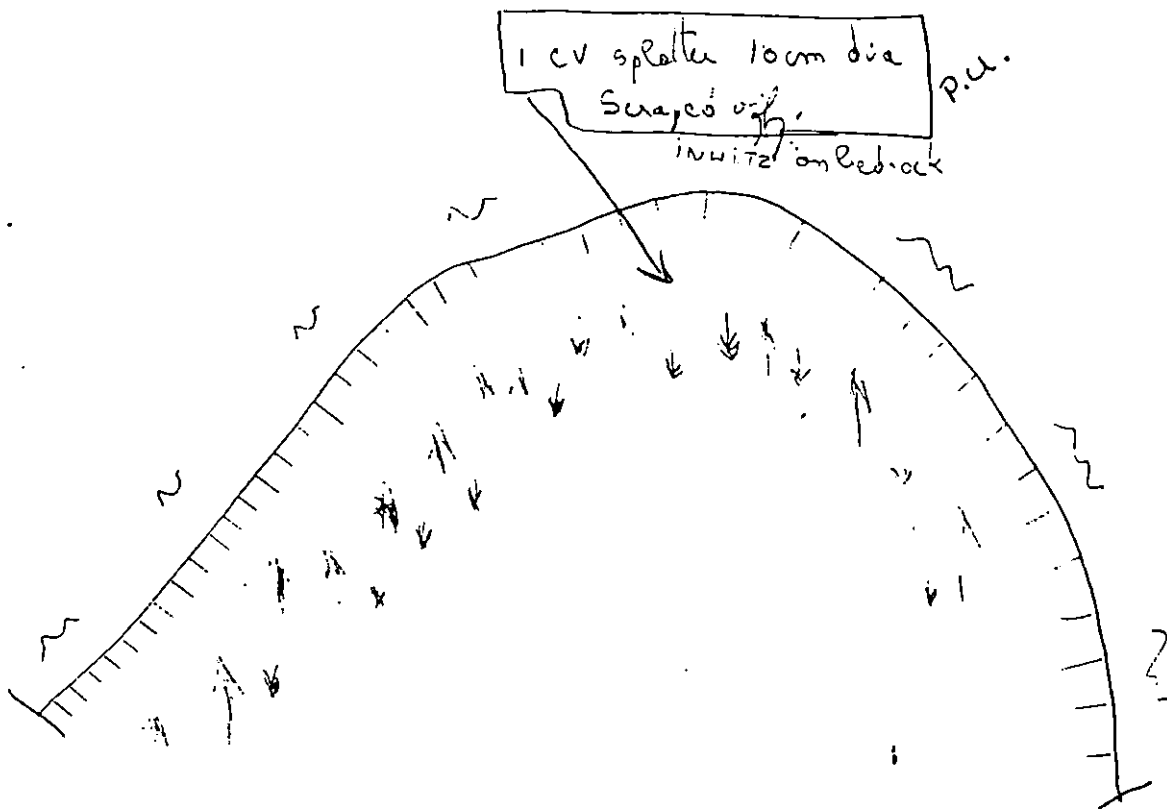
Py. 008. D

JM Sempels

MAY 16 / 91

0900 - 0920

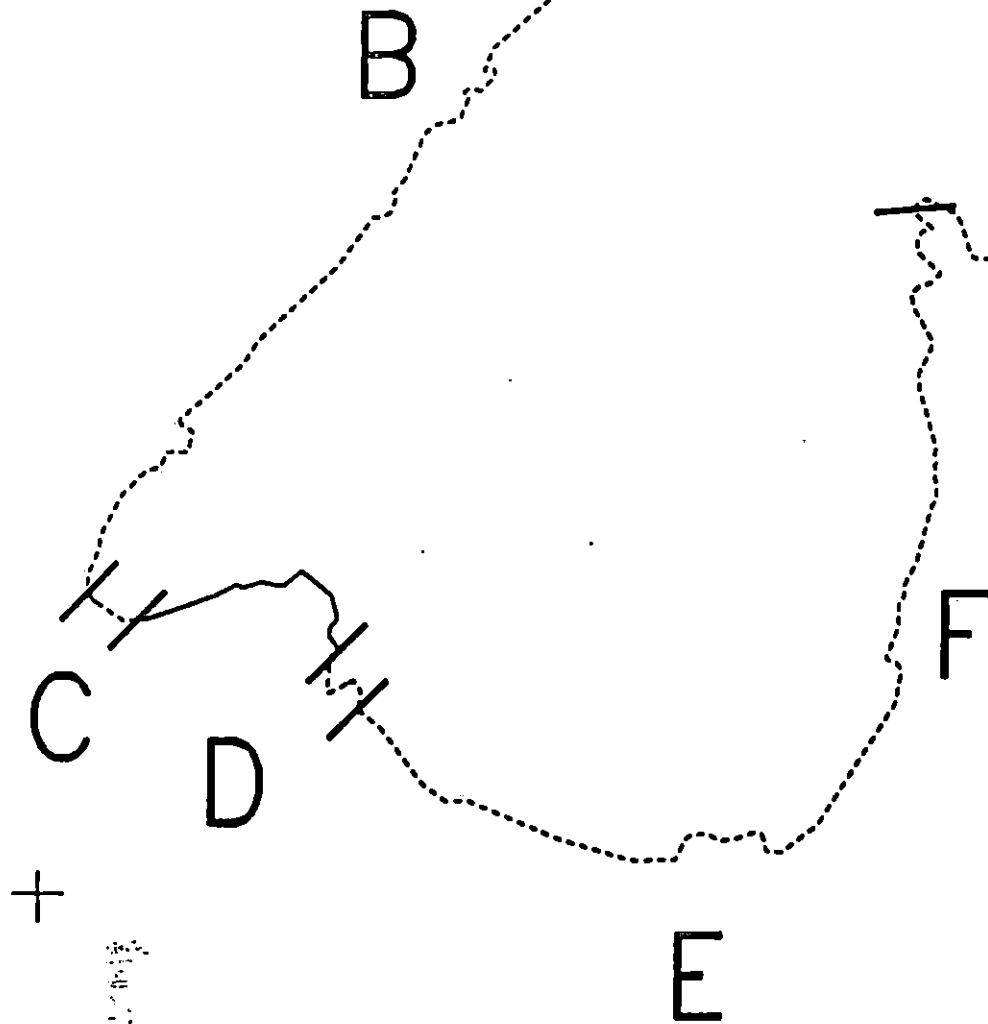
 Rounded
 Sloping Bedrock
 Vegetated
 Hinterberg



Meters
 0 ————— 50

reviewed S.21 9/1/91
 REVIEWED: F.W. 5/21/91

Location map



PY008 D

MEYERS



AK State Planning Zone 4
spys0000

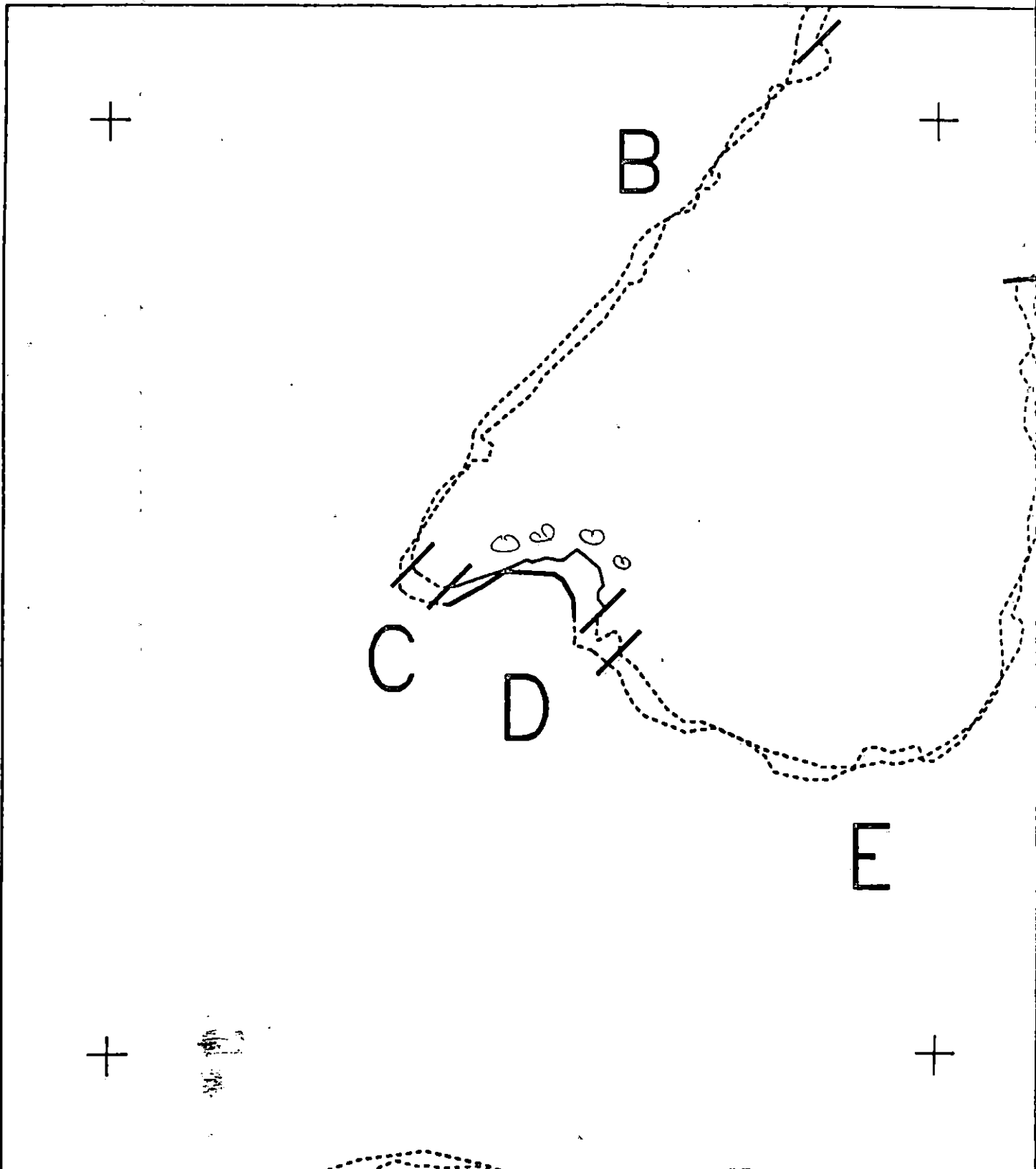
Subdivision Field Map

Map Key: KENPY00000

Name: John Semple

Date: May 16/91

REVIEWED: F.W. 5/24/91



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

PY008 D
 ADEC Subsegment Length: 234m
 METERS

0 200 400
 AK State Plane Zone 4
 apy008d



Subdivision Field Map
 Map Key: KENPY008D
 Name: J. J. Semple
 Date: MAY 16/91
 Date Entered:

reviewed 5.21.94
 REVIEWED: F.W. 5/21/91

NAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 16, 1991 0920 - 0921
SEGMENT #	PY008	TIDAL HEIGHT (Range)	-3.0 => -3.0
SUBDIVISION	D	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm, cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil-related Comments

No oil was found on PY008-D

General Features of PY008-D

This short segment is a headland between two small coves PY008-C, PY008-E. The shore is nearly entirely bedrock outcrops and headlands that slope steeply to the subtidal. The shore is exposed to low to moderate waves. The biota have a typical profile for these shores, with black lichen in the high to supratidal zone, and increasing densities of algae and invertebrates towards the low shore. Green algae is very abundant in the high zone, along with scattered limpets, barnacles, littorine snails, and mussels in crevices. Fucus is moderately to densely abundant in the mid-shore. Red algae (mainly Odonthalia, Palmaria; Microcladia), green algae (Ulva), and brown algae dominate the low intertidal and subtidal. Invertebrates are very diverse and abundant in the low shore. Many species of sea stars, crustaceans, sea anemones, and other groups are very common.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

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

Shoreline subdivision map showing important biological features attached.

REVIEWED: F.W. 5/21/91
Rev'd 5/21/91 dm

List of Species from PY008-D

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., Prasiola meridionalis, Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Agarum fimbriatum, Costaria costata, Ectocarpus spp.
Fucus distichus, Hildenbrandia sp., Ralfsia sp., Syctosiphon lomentari
4. Red Algae - Rhodophyta
Endocladia muricata,, Halosaccion glandiforme, Lithothamnion sp.,
Mastocarpus sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria
palmata, Petrocelis sp., Porphyra sp., Ptilota filicina, Rhodomela lar

II. Marine Animals

1. Sponges - Porifera - Halichondria bowerbanki?
2. Anemones - Anthopleura artemesia, E. prolifera?, Metridium senile, Urticina
crassicornis,
3. Hydroids - Sertulariidae, Aglaophenia sp., Abietinaria sp.
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms- Emplectonema gracile
8. Polychaete Worms
Nepthyidae
Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
Spriorbidae - Spirorbis sp.
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs - Paguridae (hermit crabs), Pugettia sp.,
11. Mollusca
 - a. Chitons - Katharina tunicata
 - b. Snails - Gastropods
Fusitriton oregonensis, Littorina sitkana, L. keenae, Nucella
lamellosa, Searlesia dira,
 - c. Limpets - Lottia digitalis, L. persona, Tectura fenestrata, T.
persona, T. scutum, Siphonaria thersites
 - e. Bivalves - Mytilus edulis
12. Echinoderms
 - b. Sea stars - Crossaster papposus, Dermasterias imbricata, Evasterias
truscheli, Henricia leviuscula, Leptasterias hexactis,
Mediaster aequalis?, Orthasterias keohleri, Pisaster
ochraceus, Pycnopoda helianthoides, Solaster dawsoni, S.
stimpsoni,
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Microporina borealis, Phidolopora
pacifica, Schizoporella sp.
14. Ascidians - Synocium? sp., Aplidium?
15. Fishes
Cottidae
Stichaeidae - Xiphister atropurpureus, X. mucosus

1991 MAYSAP EVALUATION

SEGMENT: PY 008 SUB: F REGION: KEN SURVEY DATE: 5/16/91

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: Anthony J. Smith Date: 6/03/91

RECOMMENDATIONS:

INITIAL**TAG****FOSC**

TREATMENT REQUIRED (Y or N)

N

2

2

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

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

EXXON

USCG

NOAA

TEAM NO. 4 SEGMENT PV-008 SUBDIVISION F DATE May 16, 1991

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara S. Crosby☒ NTR

(41%)
No oil remains in Subdivision - Survey crew removed as much accessible oil observed - as possible.

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles 5/20/91☒ NTR

Concur with ADEC little recoverable oil still remains.

LANDMANAGER

NAME

JOHN P. HARDISTER OF USFWS

SIGNATURE

John P. Hardister 5/16/91☒ NTR

Trace amounts of oil. No cleanup necessary.

USCG/NOAA

NAME

2002 J. Mc Mahon

SIGNATURE

J. Mc Mahon☒ NTR

very little oil.

NOAA/Donna A. McDonald

Donald A. McDonald

PAGE 2 OF 9

DATE MAY / 16 / 91

USCG/NOAA McMahan/McDonald

ENERGY LEVEL: ☒ H ☒ M ☐ L

EST. OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 1322 m NO - m US 0 m

FRAMES

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

OG COMMENTS: Long segment of sloping bedrock locally with boulder talus or fringe of large angular boulders. Very little oil found scattered throughout segment no assign.: it a very light or trace condition. Very little oil present.

Reviewed: 5/27/91 mc
revised: 5/21/91

Og sketch map

Legend

Pj. 008 . F

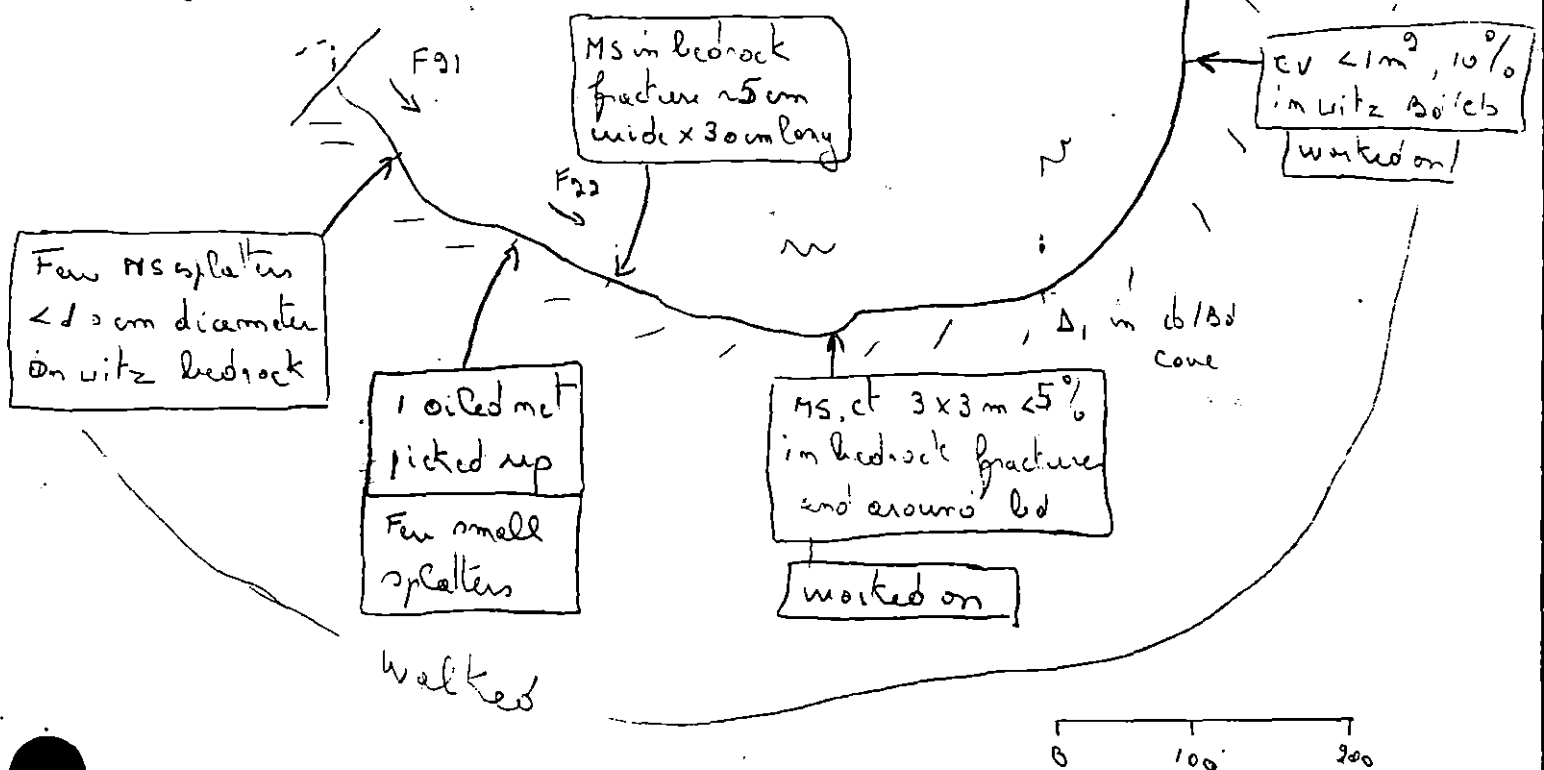
17 Sempels .

MAY 16/91

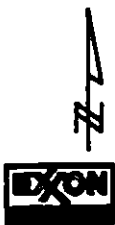
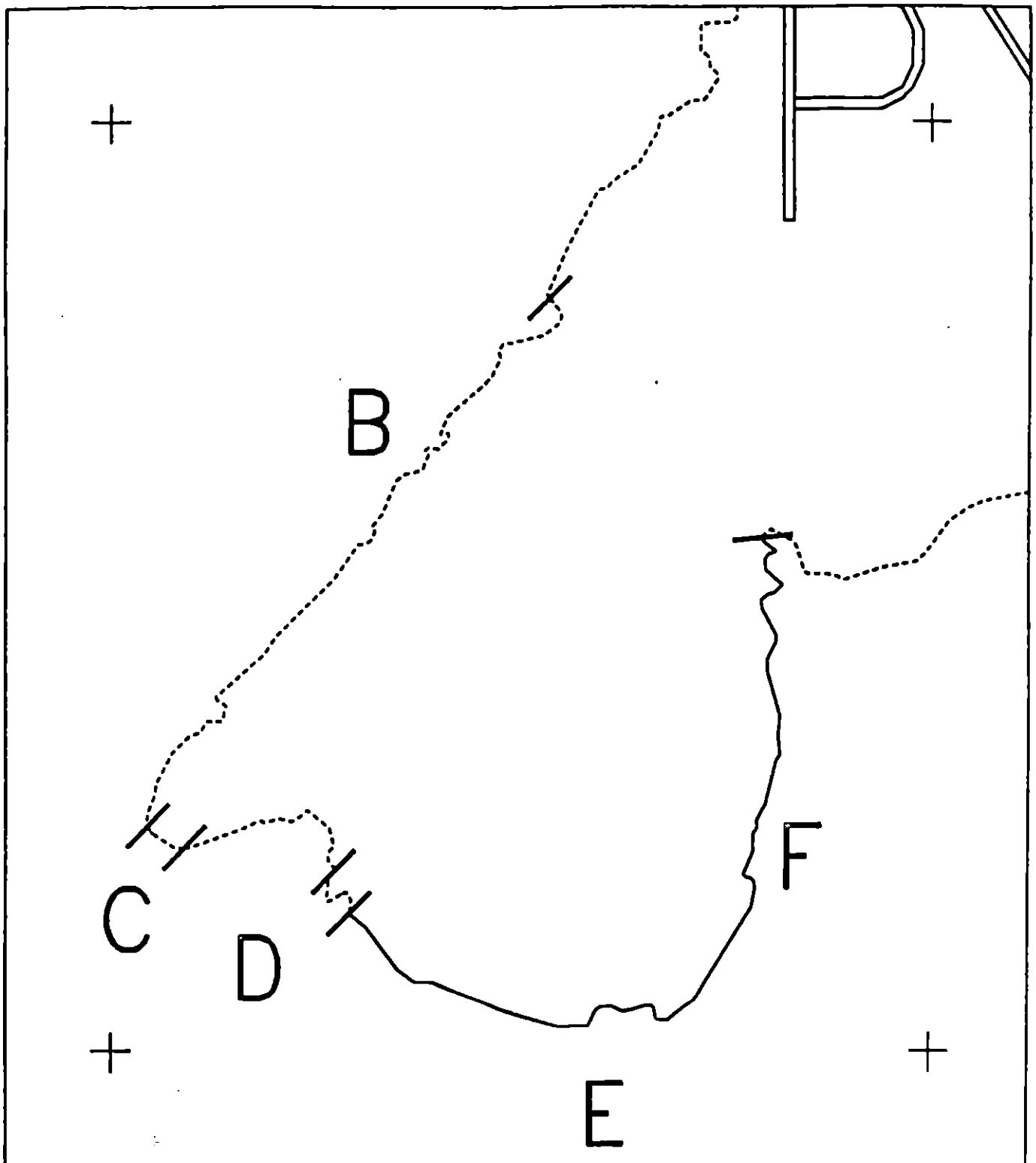
0955 - 1121

 Sloping bedrock
locally with boulder talus

MAYSap 4.5 17 to 20
Rockwise
panorama



REVIEWED: MC 5/22/91
reviewed 5.21 94



PY008 F

METHODS

AK State Plane Zone 4
ap70081a

Subdivision Field Map

Map Key: KENPY0087A

Name: M. Semir

Date: May 16/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 19, 1991 0955 - 1125
SEGMENT #	PY008	TIDAL HEIGHT (Range)	-3.3 => -1.6
SUBDIVISION	F	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	0-5 kt., rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil Related Comments

Oil on this subdivision was sparsely distributed as spatters of MS or CT throughout the upper intertidal shore. No specific sites were designated. Few species are found at this level of the intertidal zone and those present are low in abundance. Black lichen is the most abundant species, with scattered patches throughout the upper zone along the subdivision. Filamentous green algae forms a film or sparse cover on cobble and boulders at this level, but is much denser below (ca 1-3 ft) the level of the oiling. Limpets, littorine snails, and barnacles also are scattered on and under the cobble near the oiled site and are much more abundant in lower zones. The surface of the oil is weathered in many cases, and barnacles, limpets, and littorine snails are often found directly in contact with the oil.

Cleanup Recommendations

Some manual cleanup was performed during the survey. Additional manual cleanup, if performed, will not adversely affect the biota along the subdivision.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl			
Gulls/Kittiwakes	1	22	
Shorebirds	1	2	
Corvids	1	3	
Other Birds	1	2	

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters		Black Bear	1 Dead Cub
Pinnipeds (specify)			
Sea Lion	1 (Carcass)		
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

General Characteristics of PY008-F

This subdivision has sloping bedrock shores and is fairly well protected from all but small waves. The flora and fauna are typical of similarly protected steep shores, with sparse macroalgae, barnacles and limpets in the upper zones, Fucus, mussels in the mid-shore, and dense red and brown algae in the low zone. No sensitive species assemblages were found on the subdivision. Small patches or zones of mussels are present, but do not constitute a major feature of the subdivision.

General Zonation Pattern

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal
Oil Spatters		- - -				
Black Lichen		---+*-----				
Filamentous Green Algae		- ++**++-- - - - - -				
Crustose Red Algae (Hildenbrandia)		-----+**++-+-----				
Bare Rock		-- - - -	-	-	-	
Rockweed (Fucus)			- ---+*+*****--+- - -			
Barnacles (Balanus)			- - - -++**++-+*- - - - -			
Odonthalia (Red Alga)			- -++**++ - -++ -			
Palmaria (Red Alga)			---+*****--***+-			
Other Red Algae			---+*****+***			
Green Algae (Ulva/other)		- - -++- -+ + - - - -++				
Mussels (Mytilus)			- - +- +- +- +- -			
Upright Brown Algae (not Fucus)				-- - -++*****+*****		
Eel Grass						- -
Clams						- - -

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

Common Species on PY008-F

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, Costaria costata, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Laminaria saccharina, Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Bossiella sp., Corallina sp., Endocladia muricata, Halosaccion glandiforme, Lithothamnion sp., Mastocarpus sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria palmata, Petrocelis sp., Porphyra sp., Rhodomela larix
5. Higher Plants - Zostera marina (eel grass), Leymus mollis (beach rye grass)

II. Marine Animals

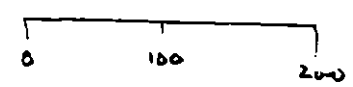
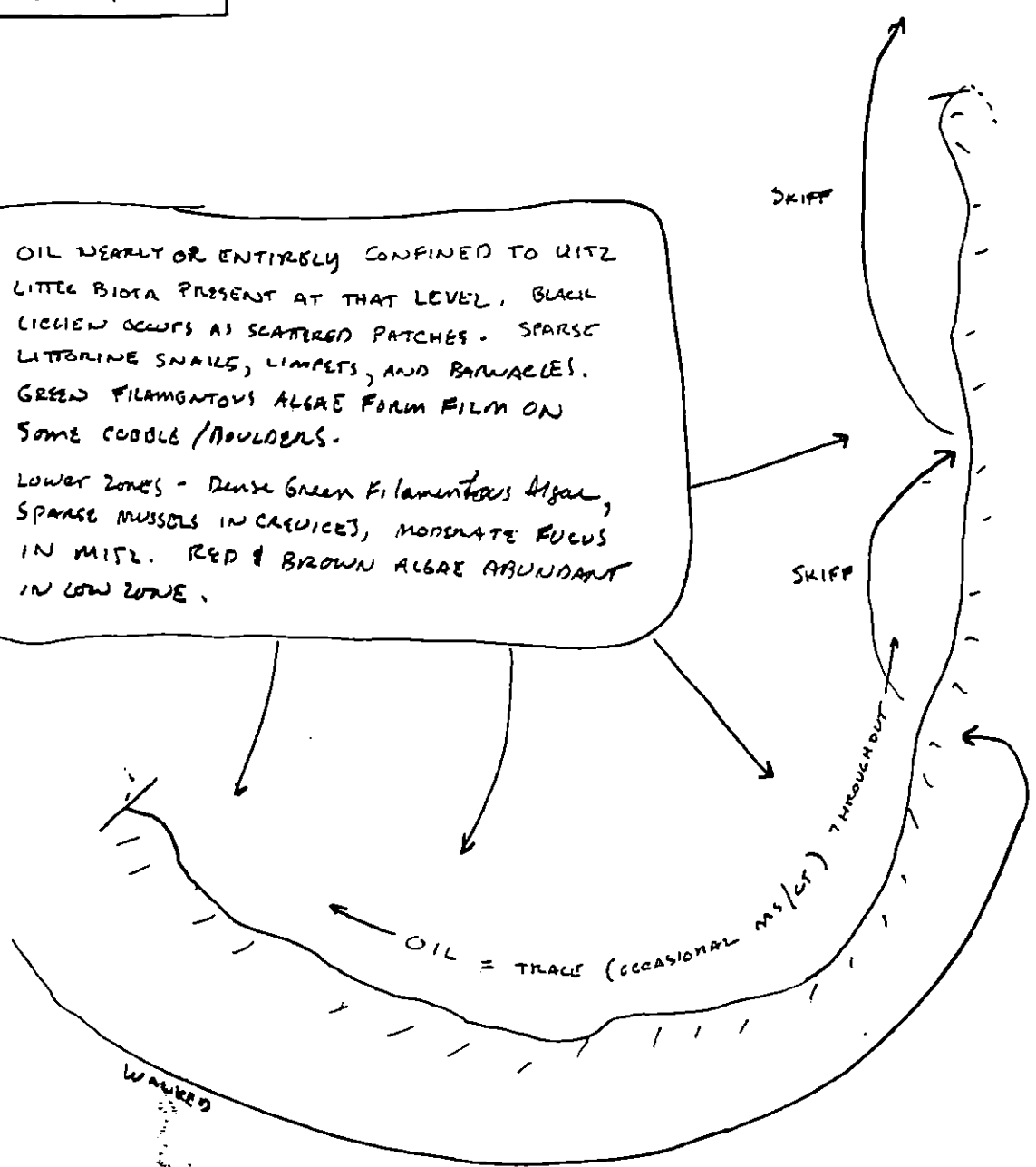
1. Sponges - Porifera - Halichondria bowerbanki?, Halichondria panicea
2. Anemones - Anthopleura artemesia, A. elegantissima, Epiactis ritteri, E. prolifera?, Metridium senile, Urticina crassicornis,
3. Hydroids - Sertulariidae, sp., Abietinaria sp.

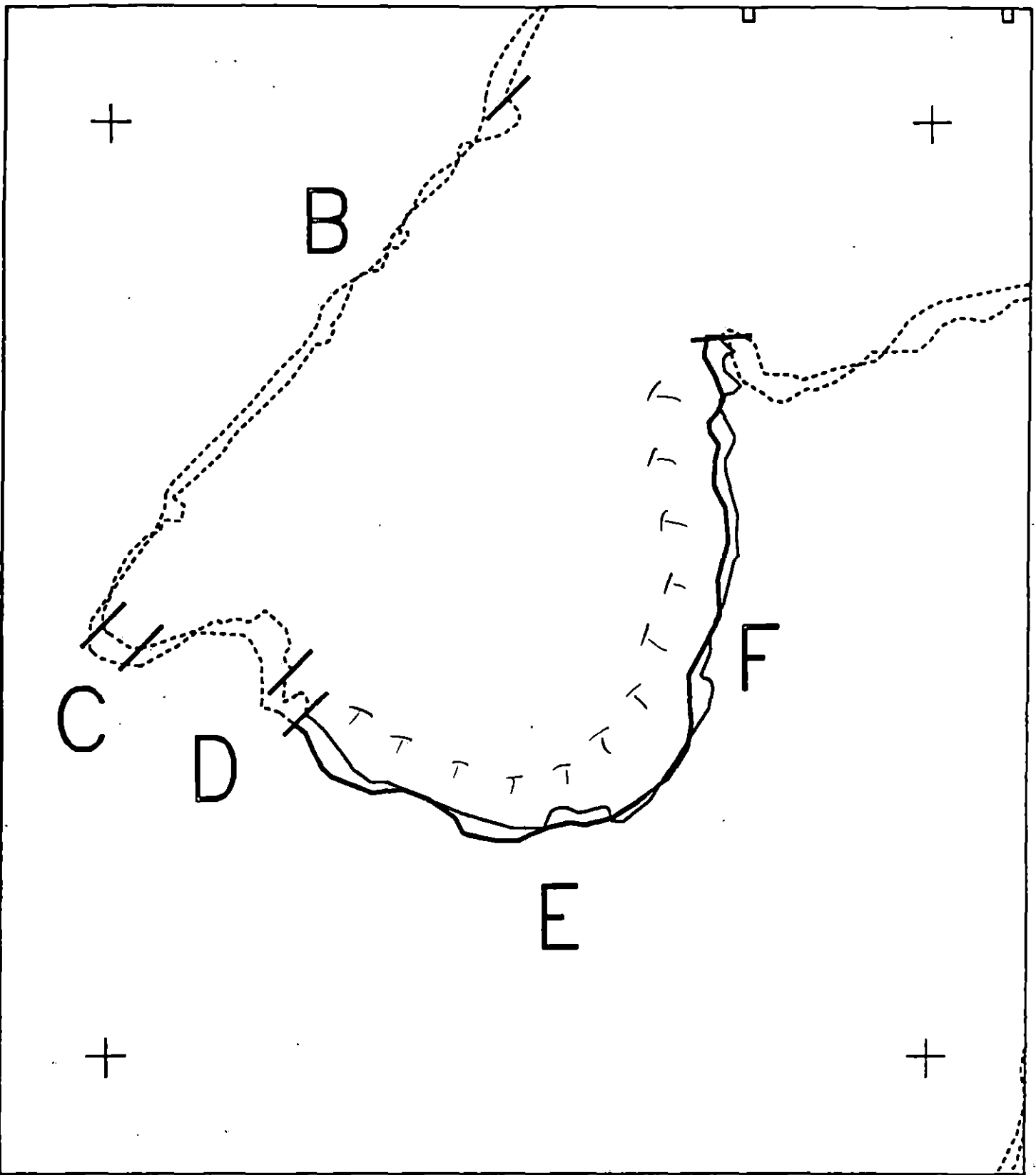
5. Flatworms - Platyhelminthes - Polyclads
 6. Nemertean Worms - Ribbon Worms - *Emplectonema gracile*
 8. Polychaete Worms
 - Glyceridae
 - Nepthyidae
 - Nereidae - *Nereis* spp.
 - Serpulidae - *Serpula* sp., *Crucigera* sp., *Eudistylia polymorpha*
 - Spriorbidae - *Spirorbis* sp.
 9. Peanut worms - Sipunculids - *Phascolosoma agassizii*
 10. Crustaceans
 - a. Amphipods - *Orchestia* sp.?
 - b. Barnacles - *Balanus glandula*, *Chthamalus dalli*, *Semibalanus cariosus*
 - c. Crabs - *Haplogaster* sp., Paguridae (hermit crabs), *Pugettia* sp.,
 - d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimorsphaeroma oregonensis*
 11. Mollusca
 - a. Chitons - *Cryptochiton stelleri*, *Mopalia* sp., *M. mucosa*, *Katharina tunicata*, *Tonicella lineata*,
 - b. Snails - Gastropods
 - Lirularia* sp., *Littorina sitkana*, *L. keenae*, *N. lima*, *N. emarginata*, *Searlesia dira*
 - c. Limpets - *Lottia digitalis*, *L. limatula*, *L. persona*, *Tectura fenestrata*, *T. persona*, *Siphonaria thersites*
 - d. Nudibranches - *Lamellidoris fusca*, *Melibe leonina*, *Onchidella borealis*
 - e. Bivalves - *Clinocardium nuttalli*, *Macoma nasuta*, *Modiolus modiolus*, *Mya arenaria* (soft-shell clam), *Mytilus edulis*, *Pododesmus cepio*, *Prototheca staminea*
 12. Echinoderms
 - a. Brittle Stars - *Ophiolus aculeatus*?, *Ophiothrix spiculata*?, *Amphipholis*?
 - b. Sea stars - *Crossaster papposus*, *Dermasterias imbricata*, *Evasterias truscheli*, *Henricia leviuscula*, *Leptasterias hexactis*, *Orthasterias keohleri*, *Pycnopoda helianthoides*, *Solaster dawsoni*.
 - c. Sea Cucumbers - Holothurians - *Eupentacta* sp.
 - d. Urchins - *Strongylocentrotus droebachiensis*
 13. Bryozoans - *Membranipora* sp., *Microporina borealis*, *Phidolopora pacifica*, *Schizoporella* sp.
 14. Ascidians - *Synocium*? sp., *Aplidium*?
 15. Fishes
 - Cottidae -
 - Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*
- III. Birds - Fox Sparrow (3), Western Sandpiper (2), Glaucous-winged Gull (22), Raven (3)

BIO SKETCH MAP
 P4008-F
 JPBARRY
 16 MAY 1991
 0955-1121

Legend
 [Symbol] Sloping Bedrock
 partial boulder talus

OIL NEARLY OR ENTIRELY CONFINED TO UHZ
 LITTLE BIOTA PRESENT AT THAT LEVEL. BLACK
 LICHEN OCCURS AS SCATTERED PATCHES. SPARSE
 LITTORINE SNAILS, LIMPETS, AND BARNACLES.
 GREEN FILAMENTOUS ALGAE FORM FILM ON
 SOME COBBLE/BOULDERS.
 LOWER ZONES - DENSE GREEN FILAMENTOUS ALGAL,
 SPARSE MUSSELS IN CREVICES, MODERATE FUCUS
 IN MIDL. RED & BROWN ALGAE ABUNDANT
 IN LOW ZONE.





XXXX	Wide	PY008 F ADEC Subsegment Length: 1322m METERS AK State Plane Zone 4 ap0001	Subdivision Field Map
////	Medium		Map Key: KENPY008F
----	Narrow		Name: <i>JM Sempin</i>
TTTT	Very Light		Date: <i>MAY 16/9.</i>
0000	No Oil		Date Entered:



Reviewed: MC 5/22/91
Reviewed 5.21.92

1991 MAYSAP EVALUATION

SEGMENT: PY 008 SUB: A REGION: KEN SURVEY DATE: 5/16/91

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: _____

<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 _____

**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.

TEAM NO. 4 SEGMENT PY-008 SUBDIVISION A DATE MAY 16 1991

ADEC

NAME CLARA S. Crosby SIGNATURE CLARA S. Crosby☒ NTR

High energy area. No recoverable oil observed.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/17/91☒ NTR

No recoverable oil located.

LANDMANAGER

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

No oil located.

USCG/NOAA

NAME CWO2 J. MC NATION SIGNATURE J. Mc Nation☒ NTR

No oil to recover.

N/A / D. Stiles H. Mc Nation

D. Stiles H. Mc Nation

PAGE 2 OF 10

DATE May 15 191

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 7m NO 665m 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

Reviews: 5/20/91 MC
reviewed 5.20 QY

Sketch Map	Legend
Py 008 - A	 Steep bedrock
JM Samples	 Boulder talus
MAY 16/91	
0640-0730	

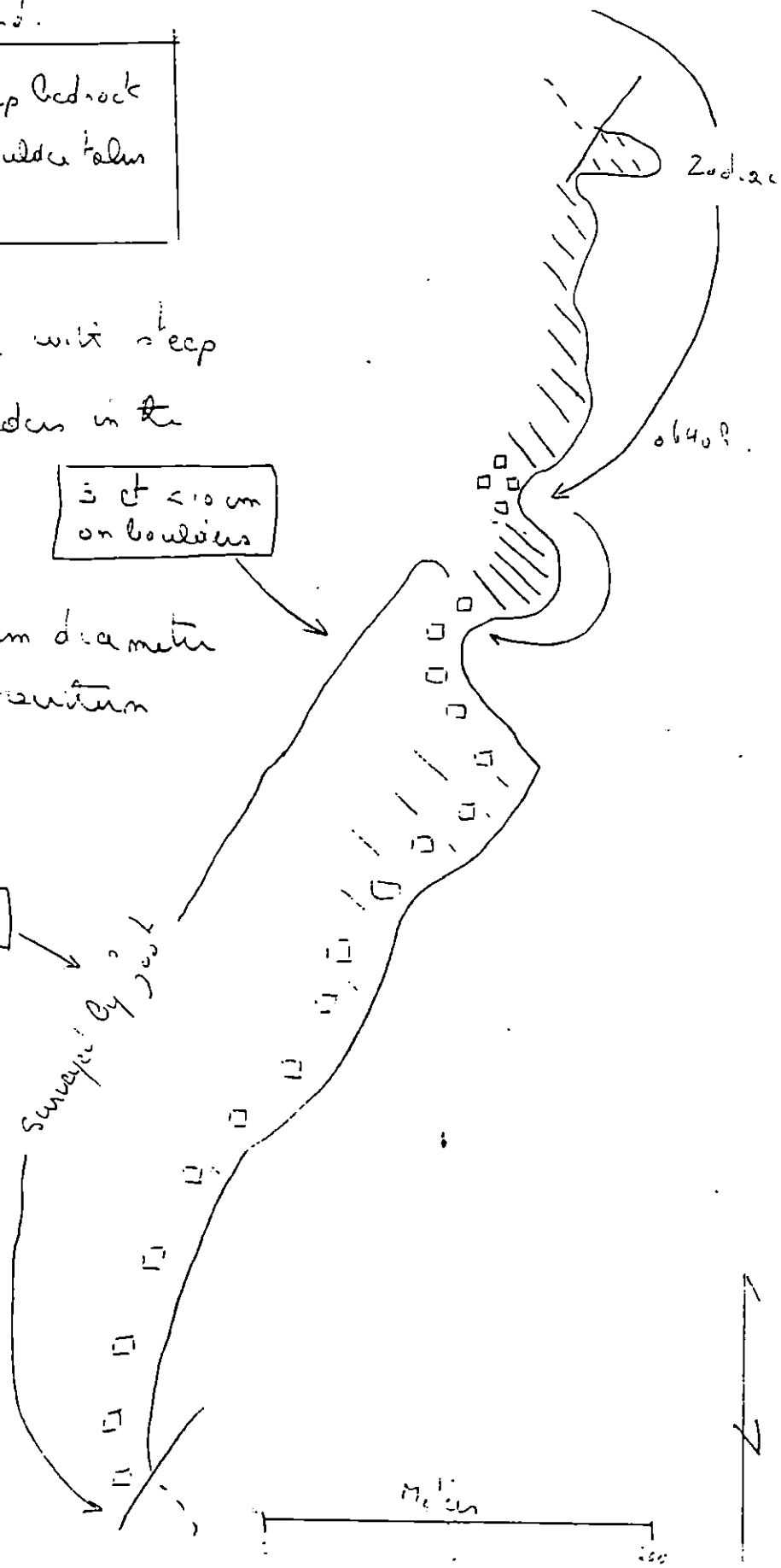
Steep bedrock shoreline with steep talus of smaller boulders in the southern part.

Very few chert spalls seen all less than 10cm diameter
No ore observed on northern part of segment.

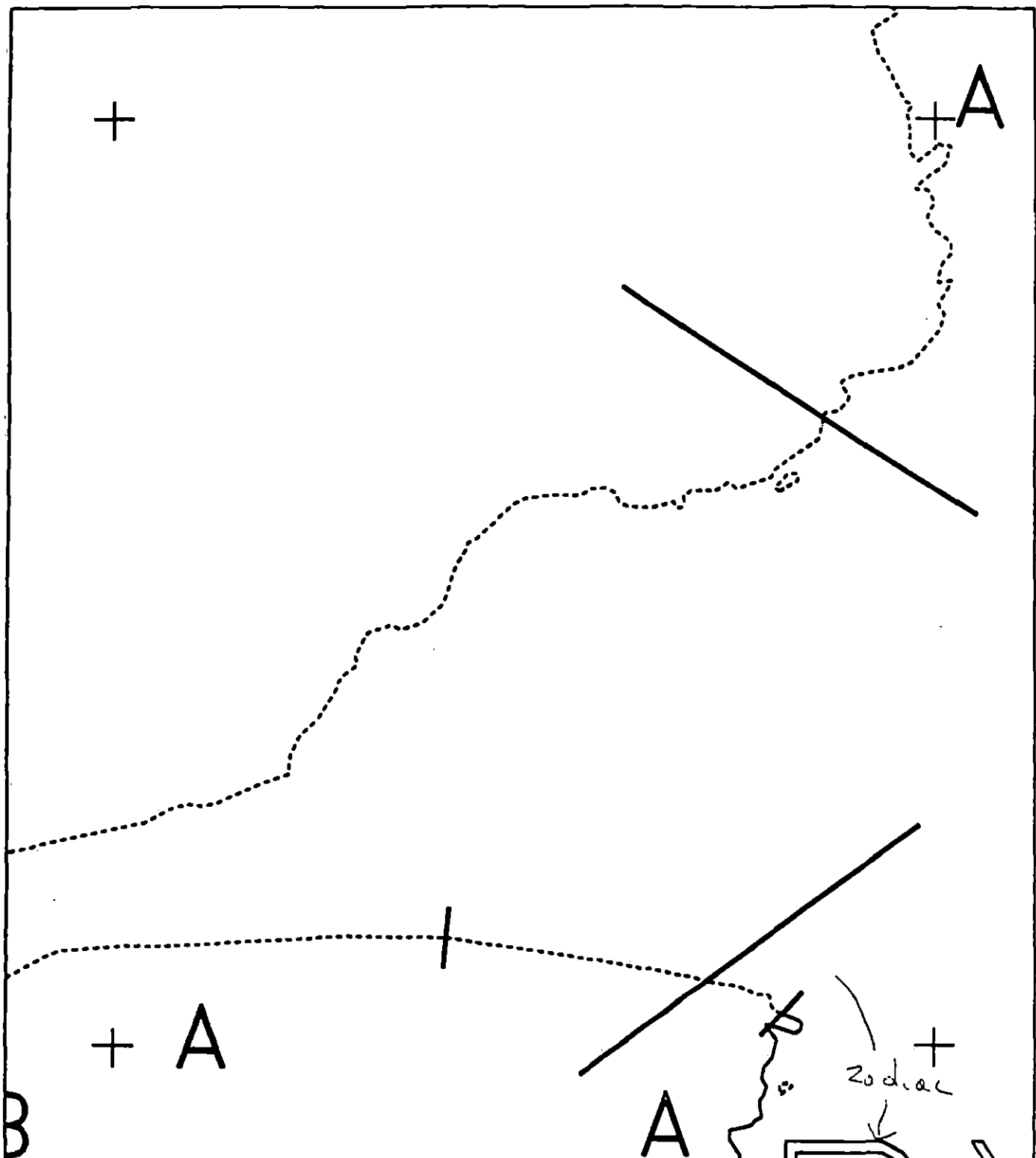
3 chert spalls on boulders

No oil

Surveyed by J.M.



Reviewed: 5/10/91 MC
reviewed 5.20 94






PY008 A

METERS



0 100 200

AK State Plane Zone 4
8970000

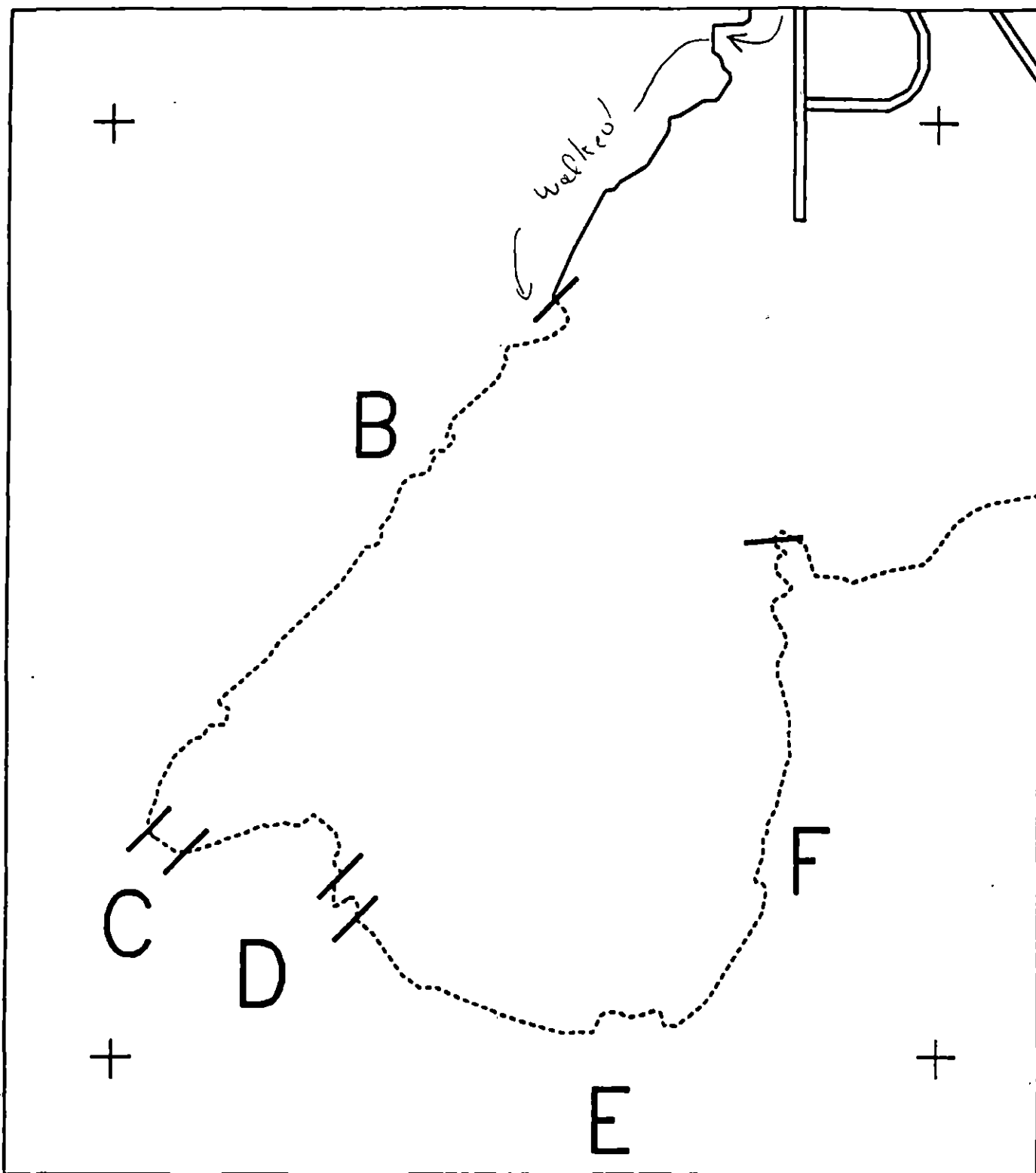
Subdivision Field Map

Map Key: KENPY000Ae

Name: Jm Comp Co

Date: May 15/91

reviewed 5.20 94



PY008 A

METERS

0 100 200

AK State Plane Zone 4
approved

Subdivision Field Map

Map Key: KENPY008Aa

Name: JM SempleDate: MAY 15 12

reviewed 5.20 94

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 16, 1991 0643 - 0720
SEGMENT #	PY008	TIDAL HEIGHT (Range)	+4.9 => +2.5
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm, cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

This subdivision encompasses the outer section of a cove and is exposed to moderate surf. The shore is about 1/2 bedrock cliffs and 1/2 high angle talus boulders. The flora and fauna along the subdivision are typical of moderately exposed shores. Near the north (exposed) end of the subdivision, mussels are dense in patches near the middle and upper intertidal zones, while the south end of the segment, which is somewhat more protected, has only scattered patches of mussels. Fucus replaces mussels in the more protected areas. The lowest zones have abundant red and green algae that grade to dense brown algae (Laminaria, Alaria) in the subtidal. Barnacles, limpets, littorines and other invertebrates are generally abundant along this shore. Recruitment is evident for many species throughout the subdivision and the intertidal biota appear healthy.

A1 Oil is restricted to one location in the high zone. At this location black lichen is moderately to sparsely abundant. Barnacles, limpets, and thin red algae (Porphyra sp.) are sparsely distributed near the oil spatters. Below the oiled area, these species are much more abundant. Barnacles (mainly Balanus glandula) form a dense band in the middle zone. Endocladia and similar branched red algae also form a patchy zone in the middle to upper zone, below which mussels, Fucus, filamentous green algae and brown algae are abundant. No particularly sensitive assemblage of species is present near or below the oiled site.

Some manual cleanup was performed along this subdivision. Additional manual removal of oiled sediments will not adversely affect this site.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl			
Gulls/Kittiwakes	2	10	
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

PY008-A Biology Summary, continued

General Zonation Pattern along PY008-A

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

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

List of Species from PY008-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Acrosiphonia sp., Cladophora sp., Enteromorpha sp., Prasiola meridionalis,
Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Ectocarpus sp., Fucus distichus, Hildenbrandia sp.,
Laminaria groenlandica, Nereocystis leutkeana, Ralfsia sp., Syctosiphon
lomentaria
4. Red Algae - Rhodophyta
Bangia fuscopurpurea, Calliarthron sp., Corallina sp., Endocladia muricata,,
Halosaccion glandiforme, Lithothamnion sp., Mastocarpus sp., Membranoptera
dimorpha, Mesophyllum conchatum, Odonthalia floccosa, Palmaria palmata,
Petrocelis sp., Porphyra sp., Rhodomela larix
5. Higher Plants - Leymus mollis (beach rye grass)

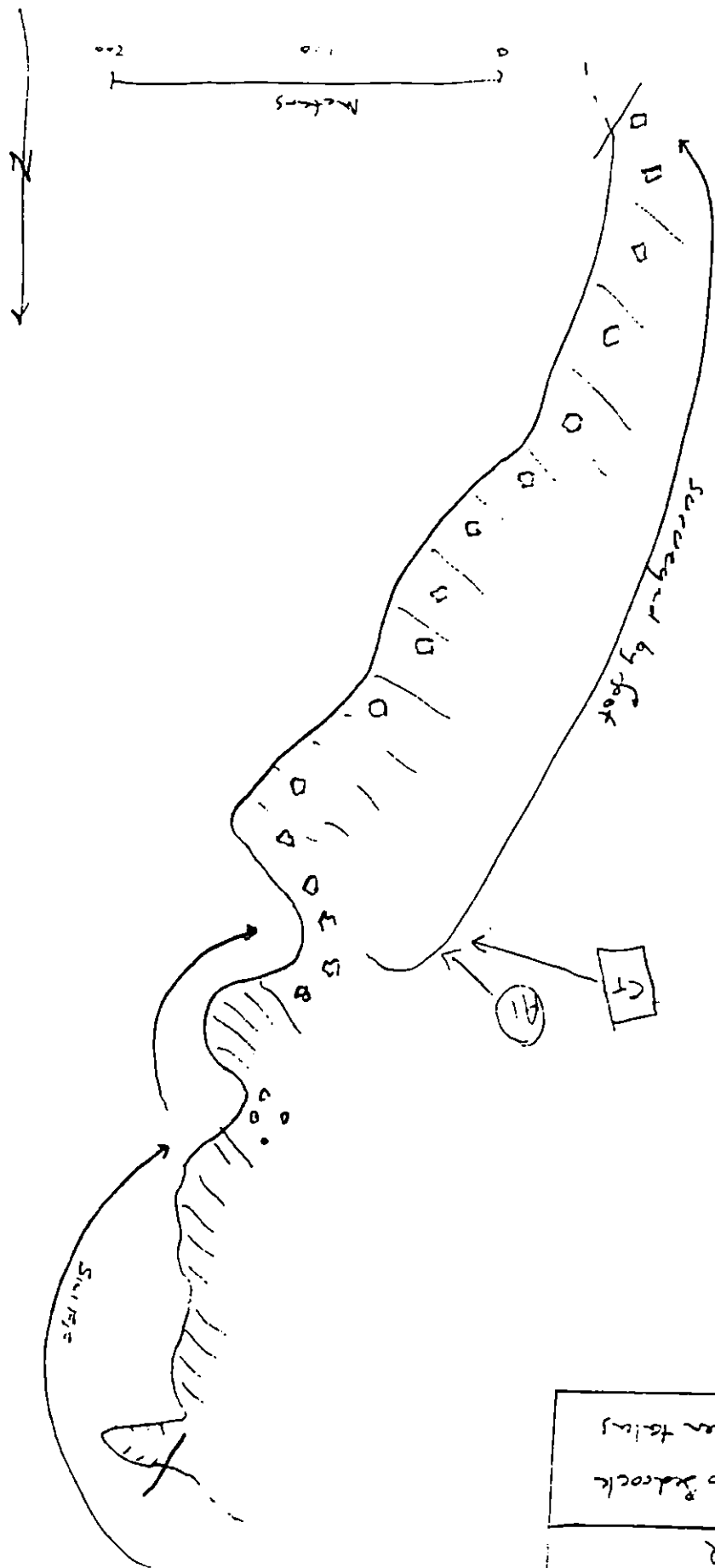
II. Marine Animals

1. Sponges - Porifera - Halichondria bowerbanki?
2. Anemones - Anthopleura artemesia, A. elegantissima, A. xanthogrammica, E.
prolifera?, Metridium senile, Urticina crassicornis,
3. Hydroids - Sertulariidae, Aglaophenia sp., Abietinaria sp.
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, Chthamalus dalli, Semibalanus cariosus

Reviewed M.B. 5/20/94

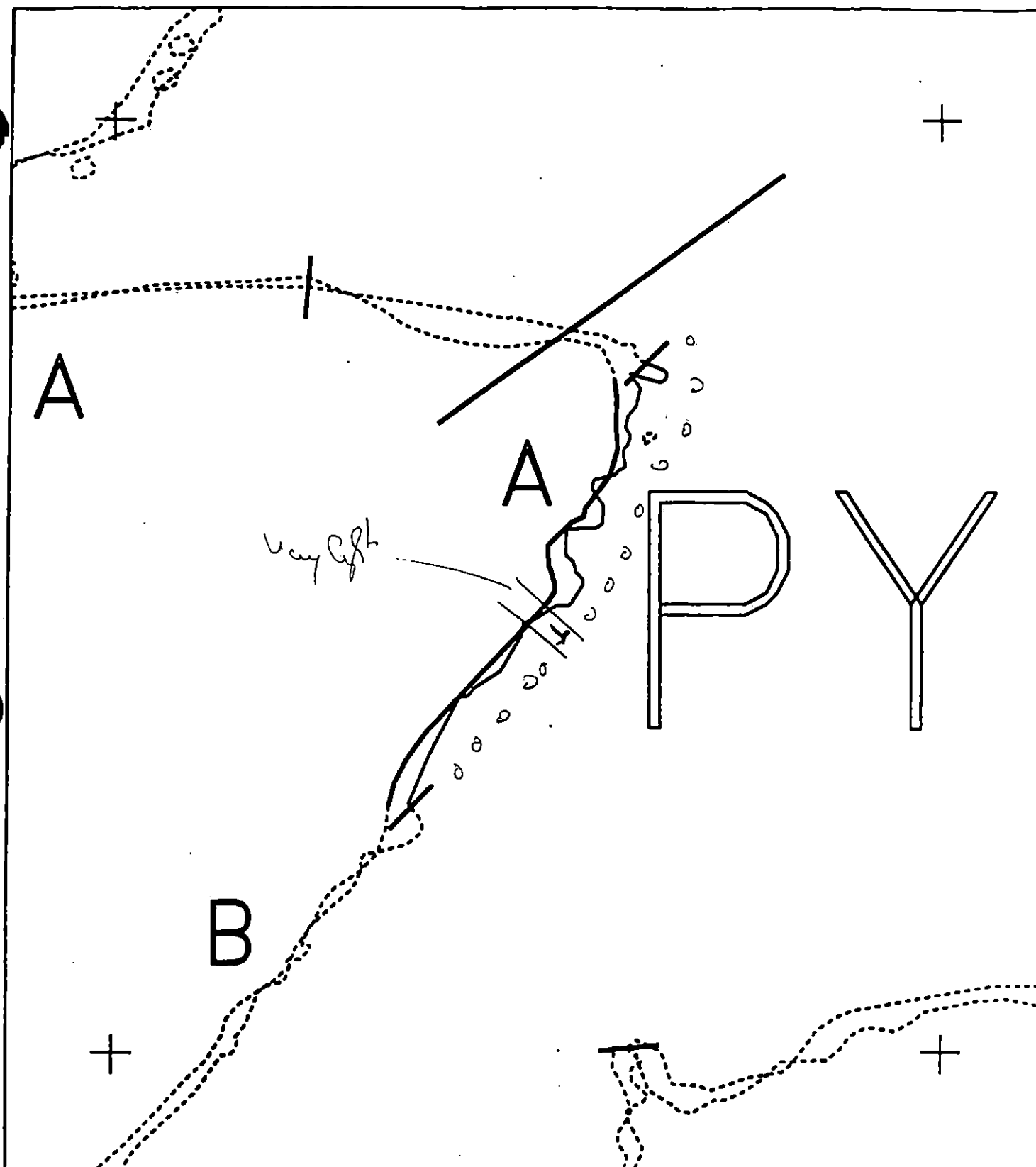
- c. Crabs - Haplogaster sp., Paguridae (hermit crabs)
- d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
- 11. Mollusca
 - a. Chitons - Cryptochiton stelleri, Mopalia sp., M. mucosa, Katharina tunicata, Tonicella lineata,
 - b. Snails - Gastropods
 - Amphissa columbiana, Littorina sitkana, L. keenae, Nucella lamellosa, N. lima, Searlesia dira
 - c. Limpets - Acmaea mitra, Lottia digitalis, L. persona, Tectura fenestrata, T. persona, T. scutum, Siphonaria thersites
 - d. Nudibranches - Lamellidoris fusca, Onchidella borealis
 - e. Bivalves - Chlamys hastata, Mytilus edulis, Pododesmus cepio
- 12. Echinoderms
 - a. Brittle Stars - Ophiolus aculeatus?, Ophiothrix spiculata?, Amphipholis?
 - b. Sea stars - Crossaster papposus, Dermasterias imbricata, Evasterias truscheli, Henricia leviuscula, H. sanguinolenta, Leptasterias hexactis, Mediaster aequalis?, Orthasterias keohleri, Pisaster ochraceus, Pycnopoda helianthoides, Solaster dawsoni, S. stimpsoni,
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
- 13. Bryozoans - Membranipora sp., Microporina borealis, Phidolopora pacifica, Schizoporella sp.
- 14. Ascidians - Synocium? sp., Aplidium?
- 15. Fishes
 - Cottidae -
 - Stichaeidae - Xiphister atropurpureus, X. mucosus

- IV. Birds - Glaucous-winged Gull (5), Black-legged Kittiwake (5), Western Sandpiper (3)



Legend	
☒	Steep & rocky
☐	Boulder fields

Bio sketch map
PHOEB-A
5 P. B. B. B.
16 MAY 91
6440-0720



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

PY008 A
 ADEC Subsegment Length: 735m
 METERS

0 200 400
 AK State Plane Zone 4
 NAD83



Subdivision Field Map
 Map Key: KENPY008A
 Name: McSweeney
 Date: May 15, 2019
 Date Entered:

Reviewed: MC 5/20/19
 Reviewed 5/20/19

1991 MAYSAP EVALUATION

SEGMENT: PY 008 SUB: E REGION: KEN SURVEY DATE: 5/16/91

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: 6/03/91

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

ADEC

EXXON

USCG

NOAA

FOSC APPROVAL DATE: 6/15/91

FOSC

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

TEAM NO. 41 SEGMENT PY-008 SUBDIVISION E DATE MAY 16 1991

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara S. Crosby

☐ NTR ☒ Recommend Treatment — Treatment (manual removal) is recommended at this Subseg ~~in~~ in conjunction w/ B.C. There is a band of HOC (approximately 5x40m & 3 to 2cm thick). This subsurface oiling ~~would~~ would be labor intensive to recover manually & there are no options for mechanical due to terrain. Surface oiling within this Subdivision, however, can be recovered using hand shovels — The estimated time for manual removal of surface oiling is: 41 twelve hr day w/ an 8 man crew.

EXXON

NAME

George P. Styles

SIGNATURE

George P. Styles 5/20/90☒ NTR

Very little oil remains that could be effectively removed due to the large size boulders.

LANDMANAGER

NAME

JOHN P. HARDISTER

OF

USFWS

SIGNATURE

John P. Hardister 5/16/91☒ NTR

Some oil remains from the cleanup operation I observed in July 1989. Part of this oil was removed during the present survey. I do not recommend any further cleanup effort.

USCG/NOAA

NAME

CWO2 A.E. MATSON

SIGNATURE

A.E. Matson☒ NTR

Some signs of weathered oil remain but not so threaten the biology, human life or the environment. The crew picked-up a sizeable amount of same.

NOAA/ DONALD A. MACDONALD

Donald A. MacDonald

Most remaining oil was down in crevices and under boulders. Any cleaning would be labor intensive and probably would not reduce significantly reduce the effects of the oil on the environment.

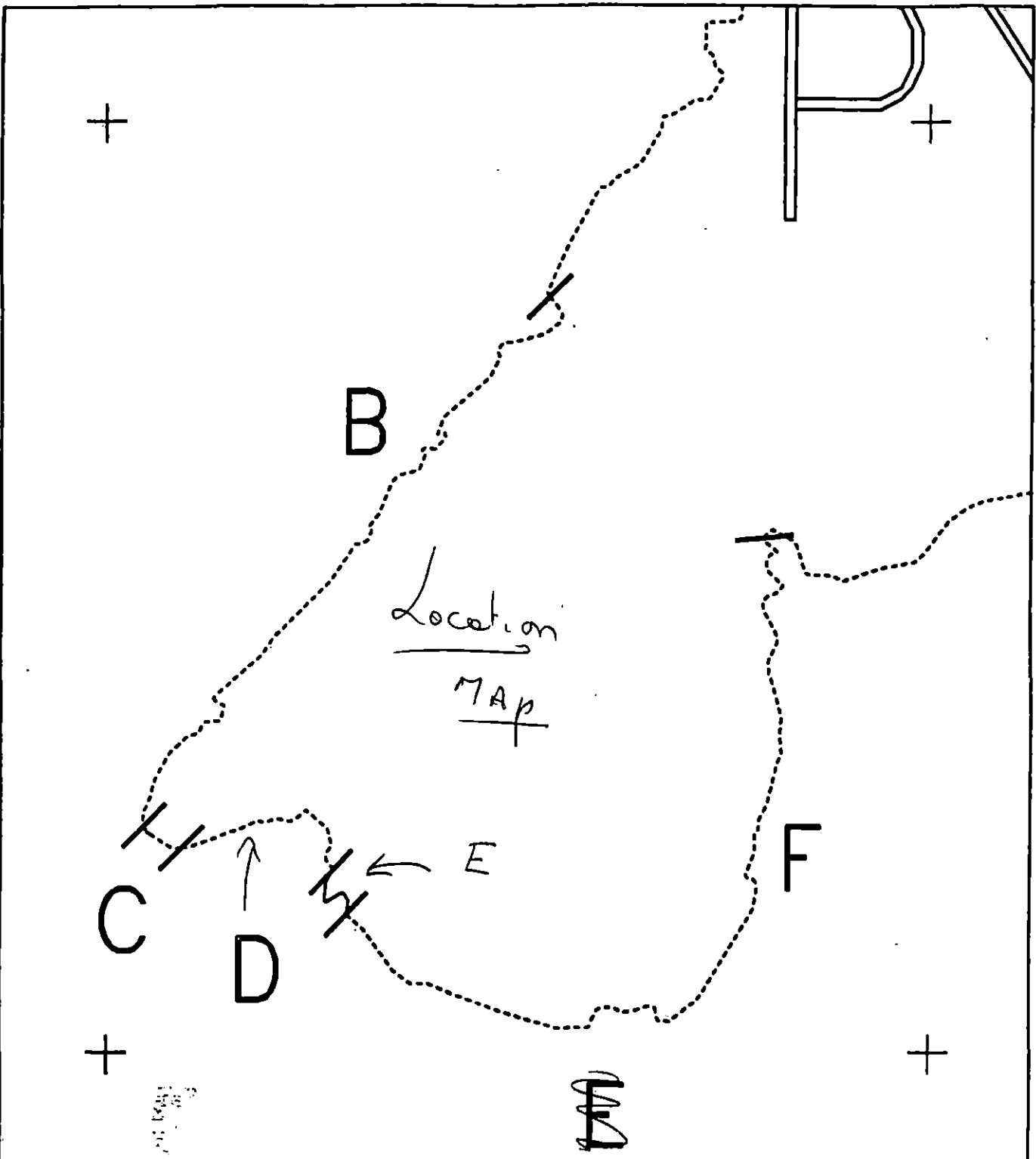
PAGE 2 OF 9

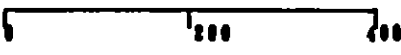
DATE 5 / 16 / 91

ENERGY LEVEL: ☐ H ☐ M ☐ L

EST. OIL CATEGORY LENGTH: W m M m N m VL 55m NO 44m US m

Reviewed S.21 Qy
Reviewed: E.W. S/21/4



 	PY008 E	Subdivision Field Map
	METERS	Map Key: KENPY008E
		Name: Jay Sengier
	ALL State Plane Zone 4 up to 1000'	Date: MAY 16/91

Original Sketch Map

PY. 008. E

17 Samples

May 16, 91

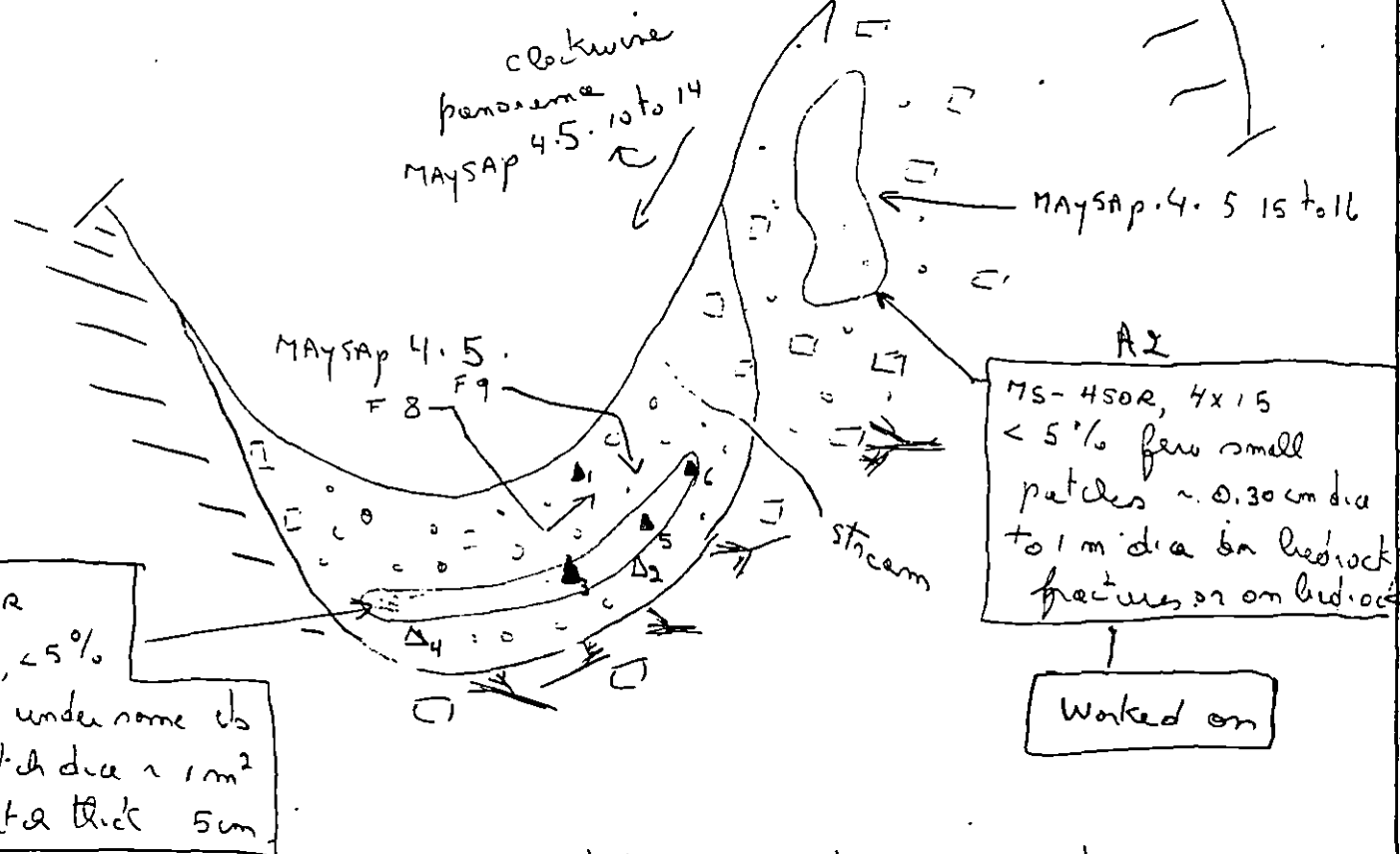
0930-0955

Legend

[Symbol] Sloping bedrock

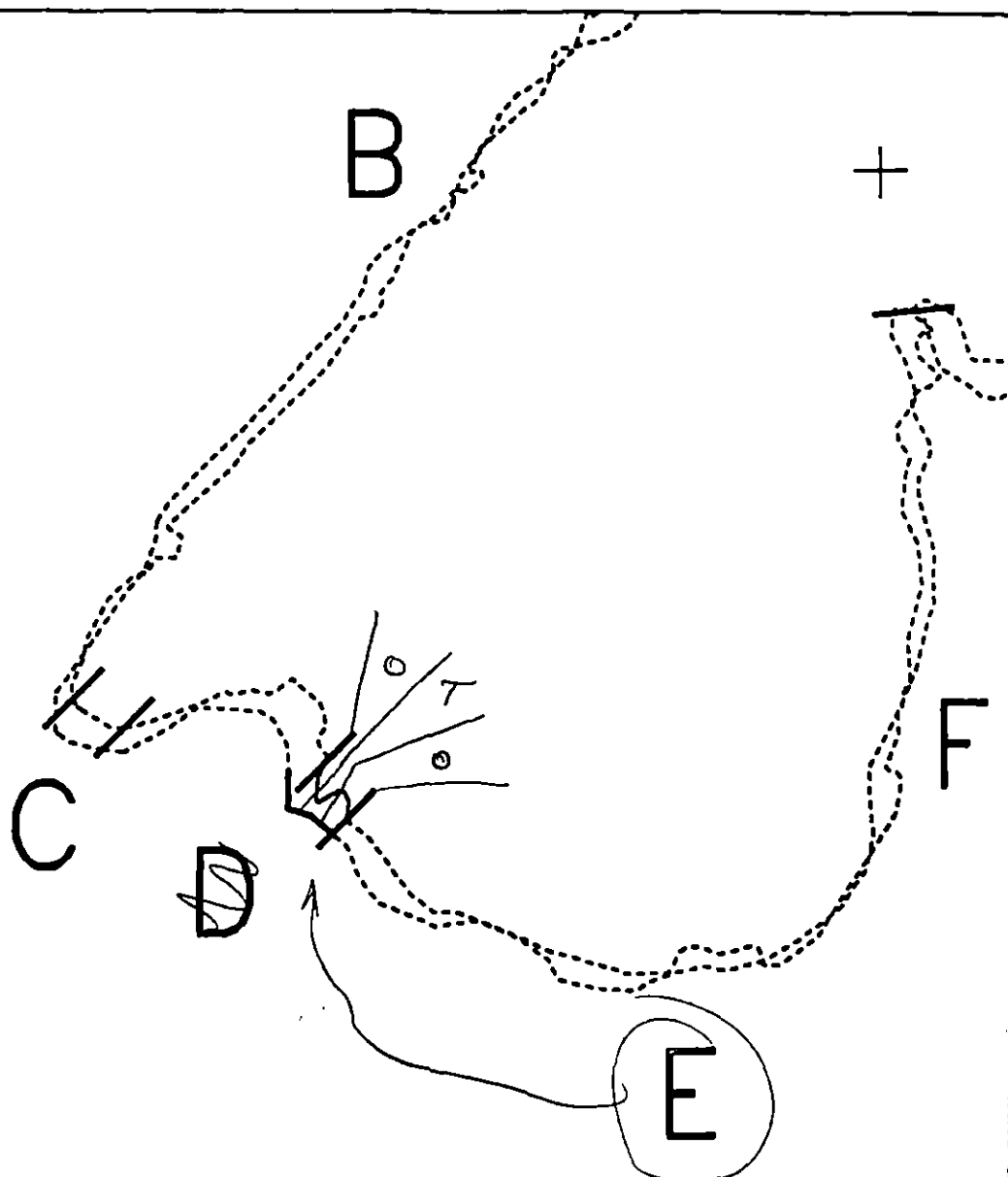
[Symbol] Coarse angular rubble

[Symbol] pb/cb/so



Small pocket accumulation of mixed
sediments over and among bedrock outcrops. Bedrock
ramp on the eastern part of the segment. Boulders near backfire.
Band of scattered massive and H50R patches in city
and on the bedrock ramp. Subsurface oil present
and is associated with the area where patches of
surface oil are present.

Reviewed 5.21.94
Reviewed: F.W. 5/21/94



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

PY008 E
 ADEC Subsegment Length: 99m
 METERS

AK State Plane Zone 4
 4970000



Subdivision Field Map
 Map Key: KENPY008E
 Name: Jim Sempich
 Date: MAY 16/91
 Date Entered:

Reviewed S.21 gy
 REVIEWED: SW. 5/21/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 16, 1991 0921 - 1000
SEGMENT #	PY008	TIDAL HEIGHT (Range)	-3.0 => -3.0
SUBDIVISION	E	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm, rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil-related Comments

A1 Oil (MS-HSOR) is present in the cobble of the upper zone. Little biota is present at this location or tidal level. Sparse filamentous green algae are found on the cobble, with scattered sparse barnacles, littorine snails and limpets. Below the oiled area, filamentous green algae are dense on the beach cobble.

A2 This oiled area (MS-HSOR) is in the upper zone and extends lower in that zone towards the middle intertidal zone than A1. Filamentous green algae, along with other film-forming species (brown algae?), are abundant very near the oiled site. Fucus and other red algae (Halosaccion) are sparse at the site. Limpets and littorines are dense in patches under cobble and are present directly on the oiled sediments. Amphipods are moderately abundant, as are oligochaete worms.

The lower intertidal below both A1 and A2 is densely covered with red and brown algae, with a diverse invertebrate community.

Cleanup Recommendations

For both A1 and A2, cleanup activities, if recommended, will have little negative impact on the biota at the site.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	
Seabirds			
Waterfowl			
Gulls/Kittiwakes	2	5	
Shorebirds	1	10	
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.

Reviewed: F.W. 5/21/91
P. J. [illegible]

General Features of PY008-E

This subdivision is a very small cove with bedrock outcrops, headlands, and a small beach of cobble and boulders, and low to medium exposure. Little biota is present on the cobble and boulders of the upper zone. Barnacles and mussels are present in moderately to high densities on the bedrock outcrops in the middle zone of this site. Dense red and brown algae are abundant in the low zone. Invertebrates are more abundant in the low zone of this subdivision than in most areas surveyed, probably due to the heterogeneous habitat types in that zone.

Generalized Zonation Pattern of PY008-E

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal
Oil			* * - +*			
Black Lichen		---+*-----				
Bare Rock		-----				
Filamentous Green Algae			-- -- -++**+-	-- -- --	+	-- -- --
Crustose red and brown Algae			- +**++**++- - - - -			
Rockweed (Fucus)			- - -++-+* * * *+*--**--			
Barnacles (Balanus)			- - +**++-+* * *+*--			
Upright Red Algae				---+**++**++**++**++**++		
Green Algae (Ulva/other)			- -- - - + + - - - - + - +			
Mussels (Mytilus)			- - -++-++ * * - -			
Upright Brown Algae (not Fucus)				-- - -++**++**++**++**++**++		
Limpet and Littorines			- - -++**++**++*--	-- -- -+	-- -- --	

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

Common Species on PY008-E

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Acrosiphonia sp., Cladophora sp., Enteromorpha sp., Prasiola meridionalis, Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Agarum fimbriatum, Costaria costata, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Laminaria groenlandica, L. saccharina, Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Bangia fuscopurpurea, Bossiella sp., Calliarthron sp., Corallina sp., Cryptosiphonia woodii, Endocladia muricata, Halosaccion glandiforme, Iridaea sp., Lithothamnion sp., Mastocarpus sp., Membranoptera dimorpha, Mesophyllum conchatum, 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 bowerbanki?, Ophlitaspongia pennata,
2. Anemones - Anthopleura artemesia, A. elegantissima, Cribinopsis fernaldi, E.

- prolifera?, Metridium senile, Urticina crassicornis,
3. Hydroids - Sertulariidae, Aglaophenia sp., Abietinaria sp.
 5. Flatworms - Platyhelminthes - Polyclads
 6. Nemertean Worms - Ribbon Worms - Emplectonema gracile, Tubulanus polymorphus
 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.?, 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 - Cryptochiton stelleri, Mopalia sp., M. mucosa, Katharina tunicata, Tonicella lineata,
 - b. Snails - Gastropods
 - Amphissa columbiana, Fusitriton oregonensis, Lirularia sp., Littorina sitkana, L. keenae, Natica clausa, Nucella lamellosa, N. lima, Searlesia dira
 - c. Limpets - Acmaea mitra, Lottia limatula, L. persona, Tectura fenestrata, T. persona, T. scutum, Siphonaria thersites
 - d. Nudibranches - Lamellidoris fusca, Onchidella borealis
 - e. Bivalves - Clinocardium nuttalli, Modiolus modiolus, Mytilus edulis, Pododesmus cepio, Prototheca staminea
 12. Echinoderms
 - a. Brittle Stars - Ophiolus aculeatus?, Ophiothrix spiculata?, Amphipholis?
 - b. Sea stars - Crossaster papposus, Dermasterias imbricata, Evasterias truscheli, Henricia leviuscula, H. sanguinolenta, Leptasterias hexactis, Mediaster aequalis?, Orthasterias keohleri, Pisaster ochraceus, Pycnopoda helianthoides, Solaster dawsoni, S. stimpsoni,
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
 13. Bryozoans - Eucratea loricata, Membranipora sp., Microporina borealis, Phidolopora pacifica, Schizoporella sp.
 14. Ascidians - Synocium? sp., Aplidium?
 15. Fishes
 - Cottidae -
 - Stichaeidae - Xiphister atropurpureus, X. mucosus

III. Birds - Black-legged Kittiwake (3), glaucous-winged gull (2), western Sandpiper (10), raven (2), Bald eagle (1)

BIOSKETCH MAP

P4008-E

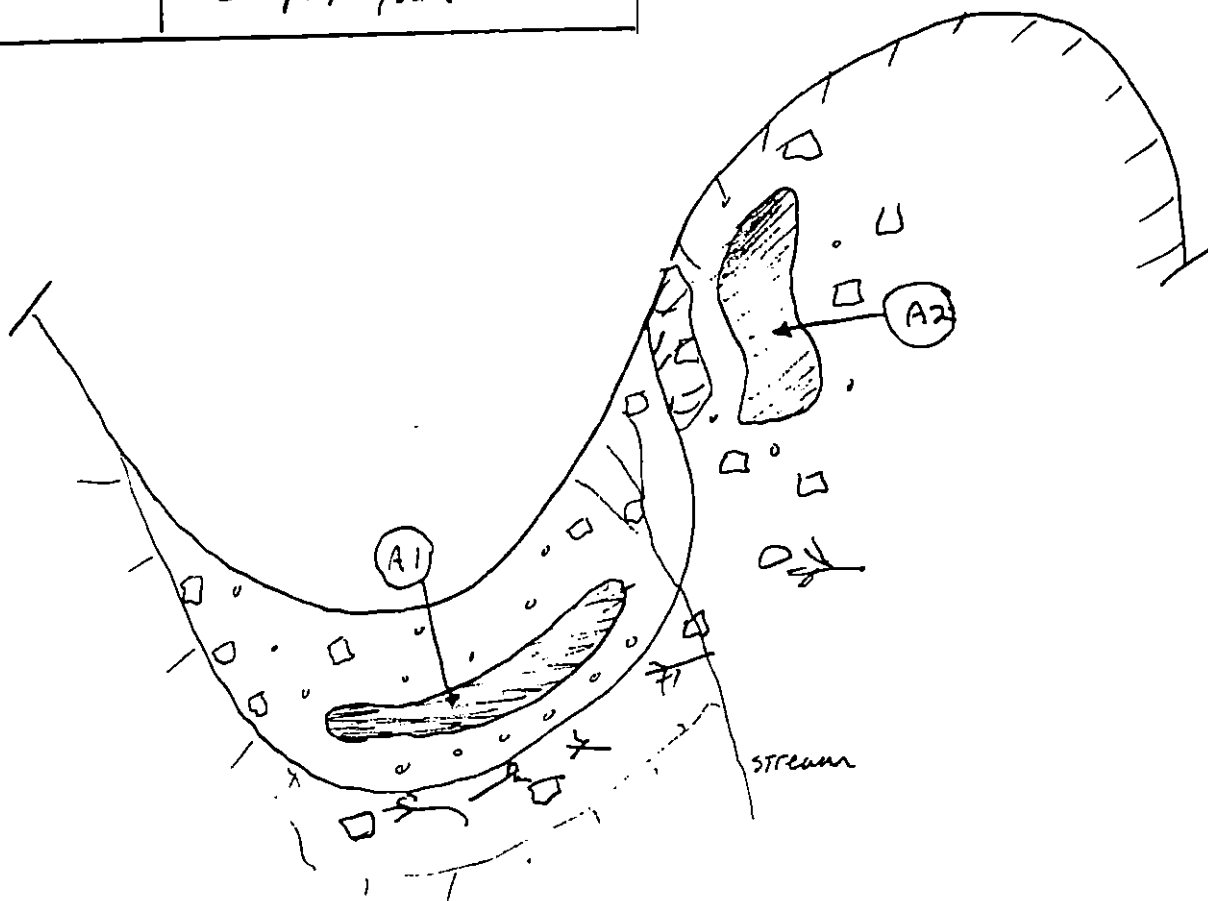
JP BARRY

0920-0955

16 MAY 91

Legend

- ▣ Bedrock
- ▣ Coarse angular rubble
- ▣ pb/cb/sd.



A1 (MS-H50L) SPARSE FILAMENTOUS
GREEN ALGAE. SCATTERED BRACHIOPODS,
LIMPET, LITTORINIDS. DENSE FILAMENTOUS
GREEN ALGAE IN THE MIDDLE TO UPPER
ZONE BELOW A1

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT PY-8 SUBDIVISION B (2 of 6)

WORK WINDOW	
Manual Pickup Tarmat Removal	OPEN
Bioremediation	OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

5T Bald Eagle Nest

NO CONSTRAINT. Bald eagle nest is outside Subdivision B of Segment PY-8 and more than 400m from work site.

OTHER ECOLOGICAL CONSIDERATIONS

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

FOSC

[Signature]

DATE

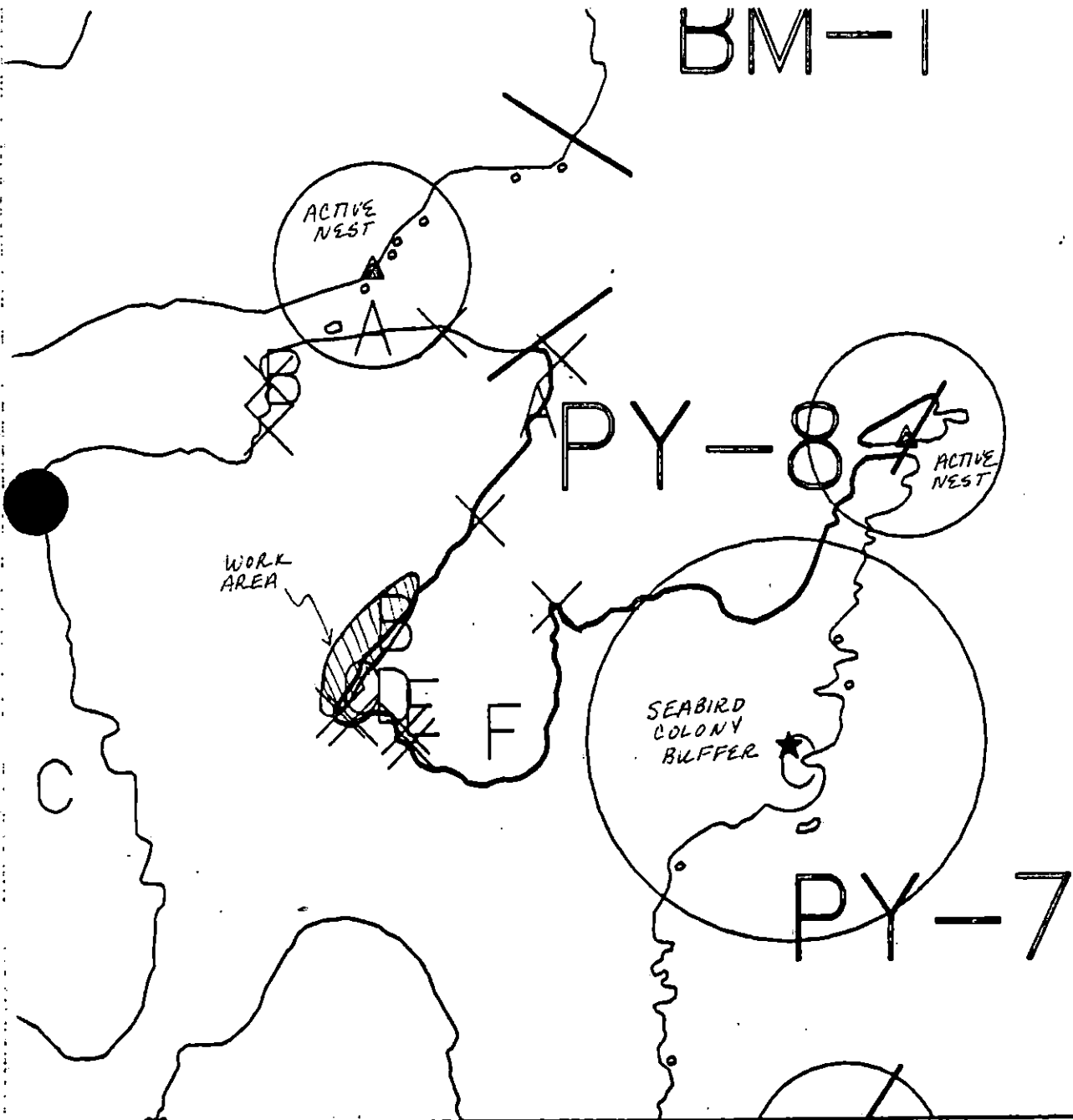
6/13/90

Prepared By:

[Signature]

Date

6/12/90



Exxon Company, USA
Map Key: KEN-PY-8
June 10, 1990

ECOLOGY MAP
SEGMENT PY-8
SUBDIVISION B (2 of 6)
METERS
0 657 1315

- ★ Seabird Colony
- ▲ Active Eagle Nest
- △ Inactive Eagle Nest

1 inch = 2157 feet

SHORELINE EVALUATION

SEGMENT ST/ PY-008 SUBDIVISION B (2 OF 6) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T Bald eagle nest (3/1 to 9/1)

4QQ National Wildlife Refuge.

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 Z. Holmes

DATE: 4/12/90

OILING CATEGORIZATION:

Wide 0 m: Medium 97 m: Narrow 479 m: V. Light 391 m: No Oil 0 m
Subsurface Oil Observed: Yes X No Maximum Depth 15 cm

RECOMMENDATIONS:

 No Treatment Recommended

X Treatment Recommended

X Manual Pickup

X 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 manual pick up of mousse and removal of tarmat in area shown on attached sketch map. Conduct treatment activities after 6/1 per above eagle constraints and obtain approval from ADF&G and USFWS.

BIOREMEDIATE AS INDICATED ON SKETCH FOLLOWING MANUAL REMOVAL

SEE CONSTRAINTS ADDENDUM dated 6/12/90 /JP

TAG COMMENTS:

TAG APPROVAL DATE: 4/17/90

ADEC Art Weiner Art Weiner

EXXON Andy Ten Andy Ten

NOAA Buel Wescott Buel Wescott

USCG KENNETH KOTALE Kenneth Kotale

FOSC: ML

DATE: 5-3-90

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT PY-8 SUBDIVISION F (6 of 6)

WORK WINDOW

Manual Pickup

OPEN
(USFWS REP TO BE ON SCENE)

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

5T Bald Eagle Nest

NO CONSTRAINT Bald eagle nest is outside Subdivision F of Segment PY-8 and more than 400m from work site.

OTHER ECOLOGICAL CONSIDERATIONS

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

FOSC

B. Zampieri

Date

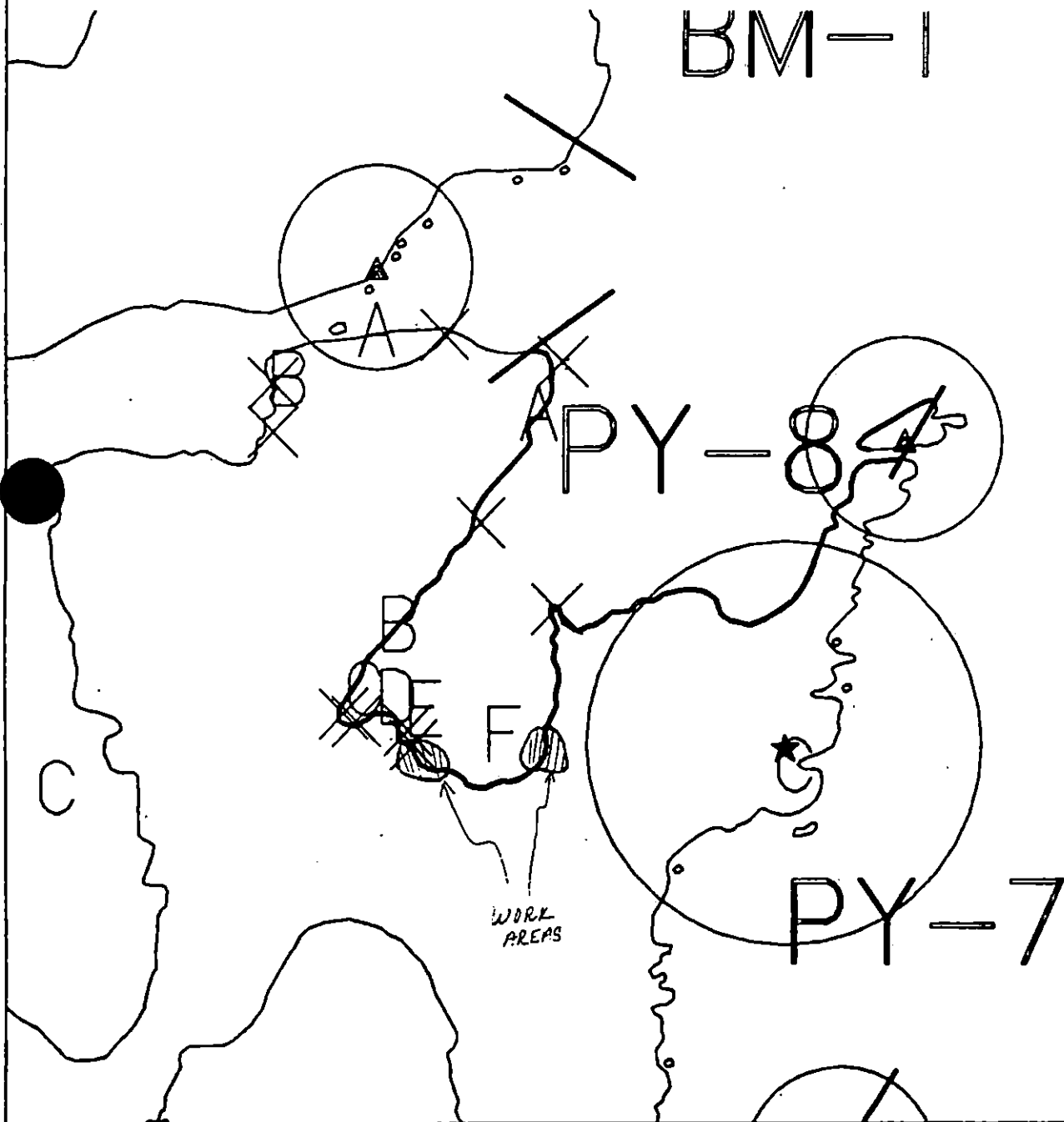
6/14/90

Prepared by

J. Phillips

Date

6/14/90



Exxon Company, USA

Map Key: KEN-PY-8

June 10, 1990



ECOLOGY MAP
SEGMENT PY-8
SUBDIVISION F (6 of 6)
METERS

0 657 1315

- ★ Seabird Colony
- ▲ Active Eagle Nest
- △ Inactive Eagle Nest

1 inch = 2157 feet

SHORELINE EVALUATION

SEGMENT ST/ PY-08 SUBDIVISION F (6 OF 6) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T Active eagle nest (3/1 to 9/1)

4QQ National Wildlife Refuge

Takeoff from and to seaward only. Contact USFWS prior to cleanup.

See attached Ecological Constraints Sheet for specific constraints and contacts.

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). *celt*

SHPO SIGNATURE: *Charles J. Adams* DATE: 5/3/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 255 m: V.Light 1067 m: No Oil 0 m
Subsurface Oil Observed: Yes No X Maximum Depth

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:

MANUAL PICKUP OF MOUSSE AS INDICATED ON MAP.
SEE ADDENDUM dated 6/14/90 *[Signature]*
CONSTRAINTS

TAG COMMENTS:

TAG APPROVAL DATE: 4/17/90

ADEC *Art Wessie* *Dgt Wessie*

EXXON *Andy Tera* *[Signature]*

NOAA *Burt Wessie* *[Signature]*

USCG *Kenneth Kene* *[Signature]*

FOSC: *W L* DATE: 5-12-90

USFOWL Rep to be on scene.

REGION: KENAI

SEGMENT: PY-09

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ PY-09 SUBDIVISION A (1 OF 1) 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 1235m: No Oil 1089 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 20 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/ PY 09 SUBDIVISION: A DATE 4/4/90

USCG/NOAA

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

Even the two areas highlighted on the sketch site maps have very light oil as scattered splatters which do not warrant further treatment.

ADEC

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

Very light and scattered splatters on large boulders. Does not need 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
COMMENTS☐ TREATMENT SUGGESTED

The scattered mousse is located primarily between and under very large boulders in the 2 areas outlined on the map. The oil in this subdivision would be difficult to recover with current treatment technology.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG Mann USCG Michel SEGMENT ST/ PY-9
 CALL Partner USFWS LAND REP Partner USFWS SUBDIVISION A
 BOYER ADEC REED TIME 16:48 to 18:08
 TEAM NO.: 18 TIDE LEVEL: +1 to +2 DATE April 4 1990
 EST. SUBDIVISION LENGTH: 2890 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: NE to SW
 SURFACE SEDIMENTS: R 80 % B 20 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 10 % Hang 70 % Vert 20 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 1390 m NO 1500 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	IC	IS	IP	IR	SB	DB	GB	GBR	GBR	GBR	GBR	GBR	SU	UI	MI	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 0#BAGS 0

Photographs:

Roll No. 18-3Frames #31, 32, 33, 34

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	HO		UO	UO	BL BR	BL BR	GY SL	DR TL	DR BR	SU	U	M	U			
1	20		✓				0-5		✓					✓			✓			NO	Boulders
2	20		✓				0-5		✓					✓			✓			NO	"
3	20		✓				0-20	✓						✓			✓			NO	"
							-														
							-														
							-														

COMMENTS * pits are all at sketch site #1.

typical west side shoreline on the Pye Islands: steep granite bedrock shores with a sprinkling of shattered, angular boulders. A significant reduction in oiling has occurred since 1989 along the south shore of the cove comprising PY-9.

MANN
GMENT ST/ 19
BDIVISION A
TE 4, 4 90

SKETCH MAP

- CHECKLIST
- ☐ N Arrow
 - ☐ Approx. Scale
 - ☐ Seg/Sub Body
 - ☐ Oil Out
 - ☐ Width
 - ☐ Length
 - ☐ % Cover
 - ☐ Substrate Character
 - ☐ Est. HPA/LWL
 - ☐ SSL
 - ☐ Profile Location(s)
 - ☐ Profile(s)
 - ☐ Pit Location(s)
 - ☐ Photo Location(s)

- LEGEND
- 1 ▲
No Subsurface Oil
 - 2 ▲
Subsurface Oil
 - CT/C
Continuous Distribution
 - CT/B
Banded Distribution
 - CT/P
Patchy Distribution
 - CT/S
Spotted Distribution
 - d Vegetation
 - to location, direction, number

No separate sketch map - See oil category length map.

CU/CT/MS/PT lengths are based on an estimated 3% occurrence in the VL Shoreline oiling category.

Character Length (m): AP 0 PO 0 CV 50 CT 50 ST - MS 50 PT 50 TB 0 FL 0 NO 2840

REVISION: 0073000

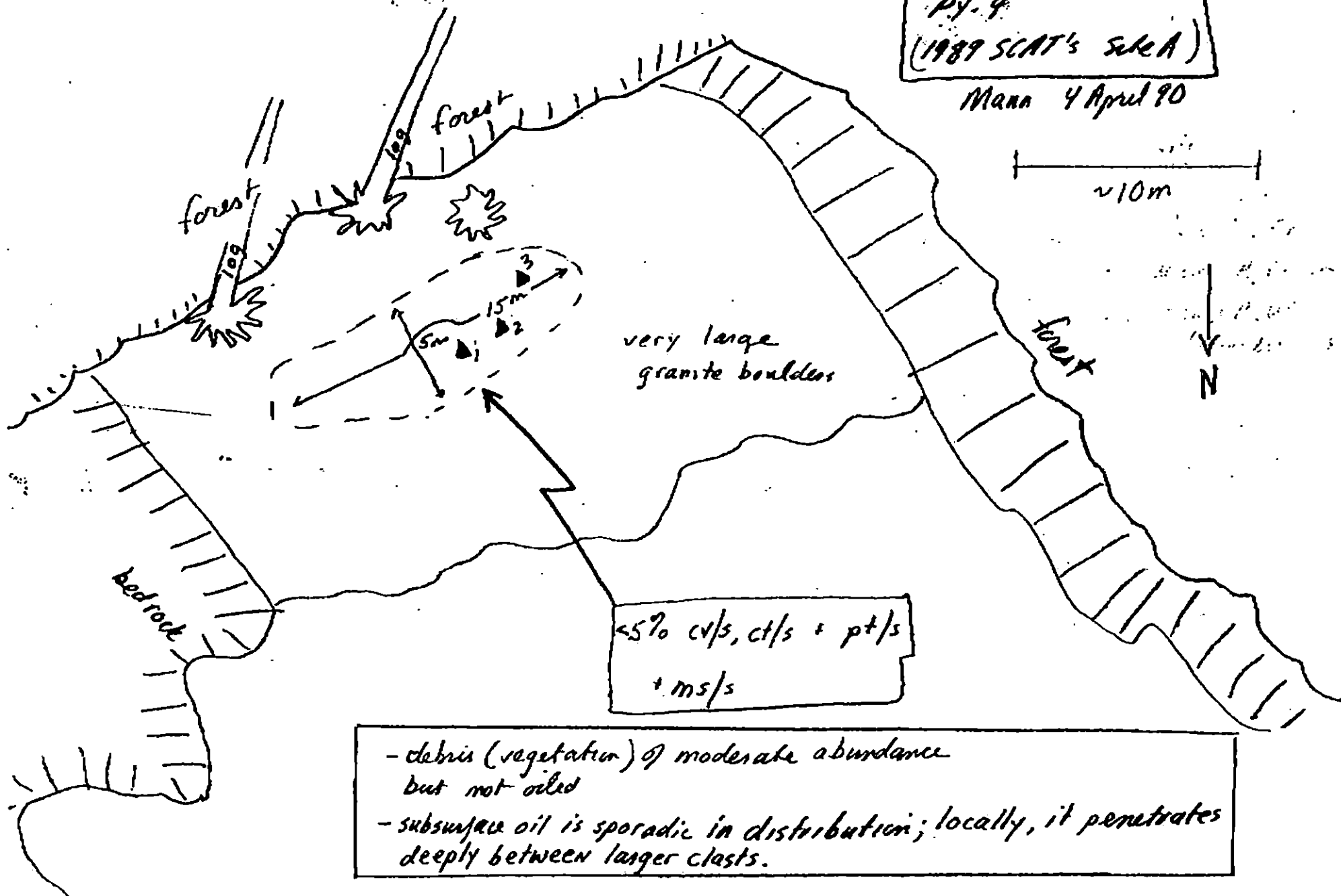
(this is not a subdivision sketch map)

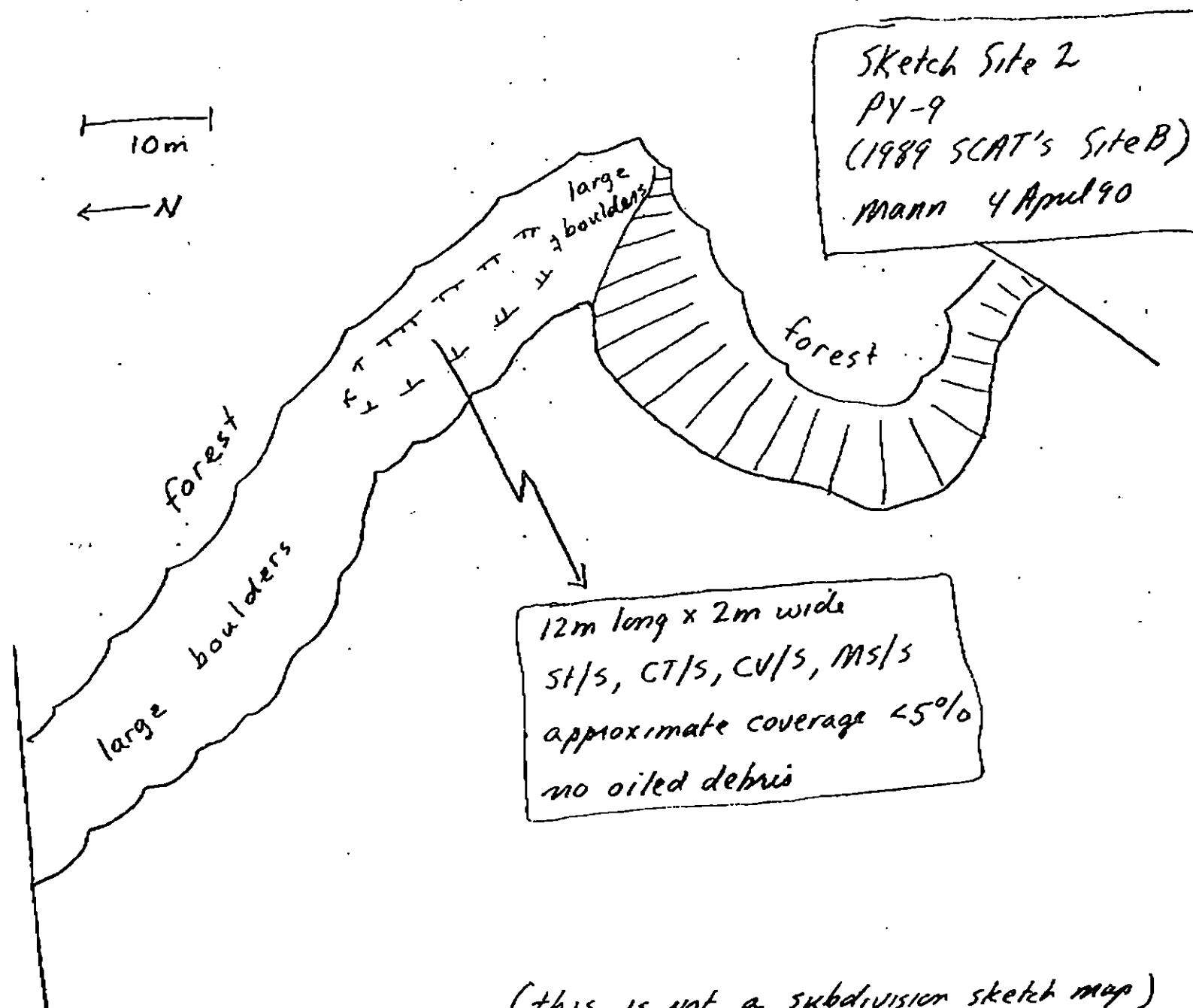
Site sketch #1
Py. 9
(1989 SCAT's site A)

Mann 4 April 90

~10m

N





(this is not a subdivision sketch map)

SHORELINE ECOLOGICAL SUMMARY

REVISION: 02/25/90

Segment ST/ PY 9 Subdivision A (of A) Date (mo / day / yr) 4/4/90
 Time (24 hr) 1640 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 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: 3
 Roll No. 3

Frames 31-34

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	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	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	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	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	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	

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	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	

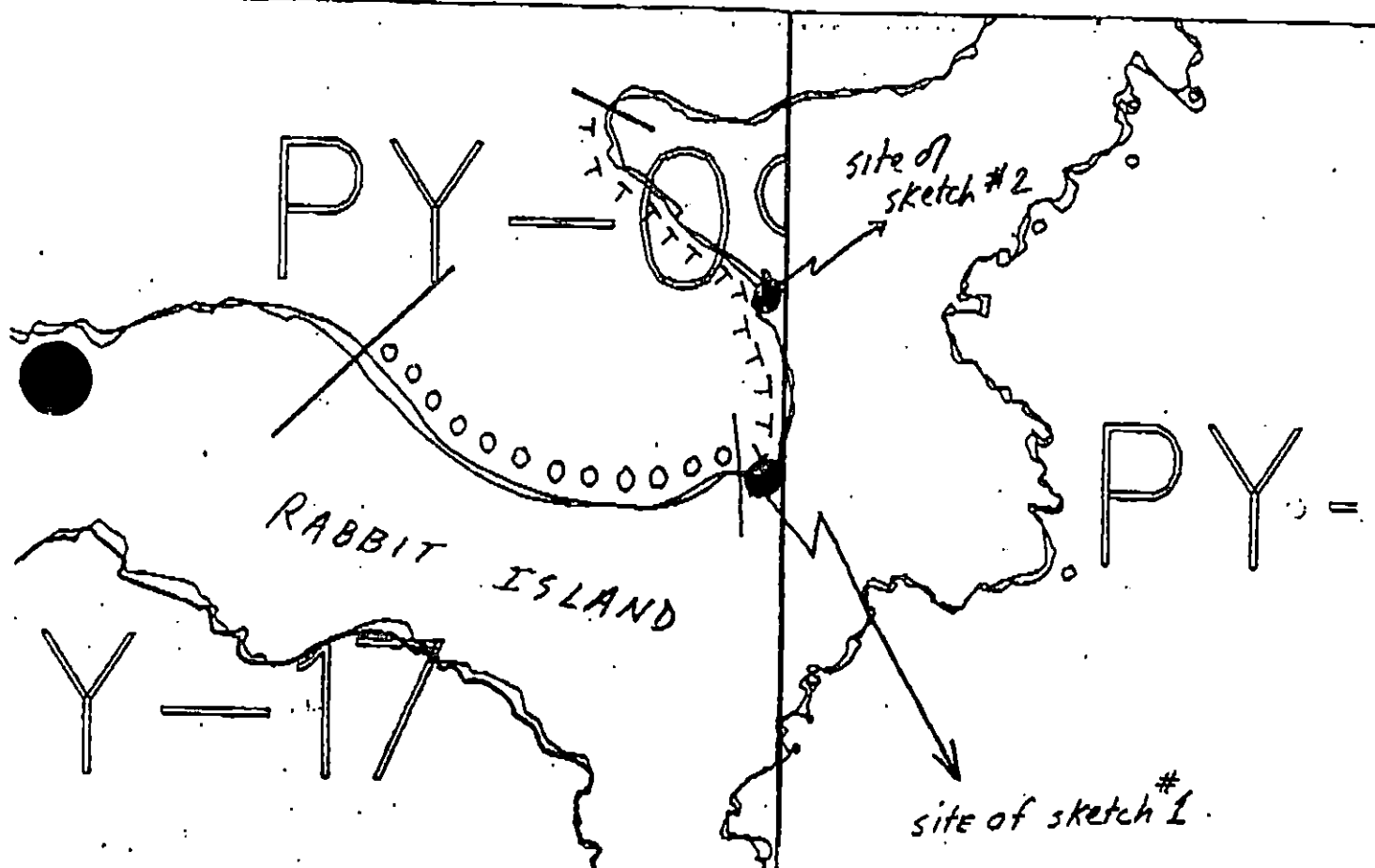
Wildlife Observations/ General Comments:

White-winged scoter (4) Bald eagle (2) (both mature)
 Land otter (1)
 Common Loon (1)

Ecological Considerations:

Sensitivity codes: 4-00 (National Wildlife Refuge)

PY-9



Mann. 4/4/90 PYE ISLANDS

SHORELINE EVALUATION

SEGMENT ST/ PY-09 SUBDIVISION A (1 OF 1) 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 E. Hume DATE: April 14, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 1235m: No Oil 1089 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: <u> </u> Wands
☐ Tarmat: <u> </u> Breakup	☐ <u> </u> Beach Cleaner
☐ <u> </u> Removal	☐ Other (see comments)

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 4/14/90

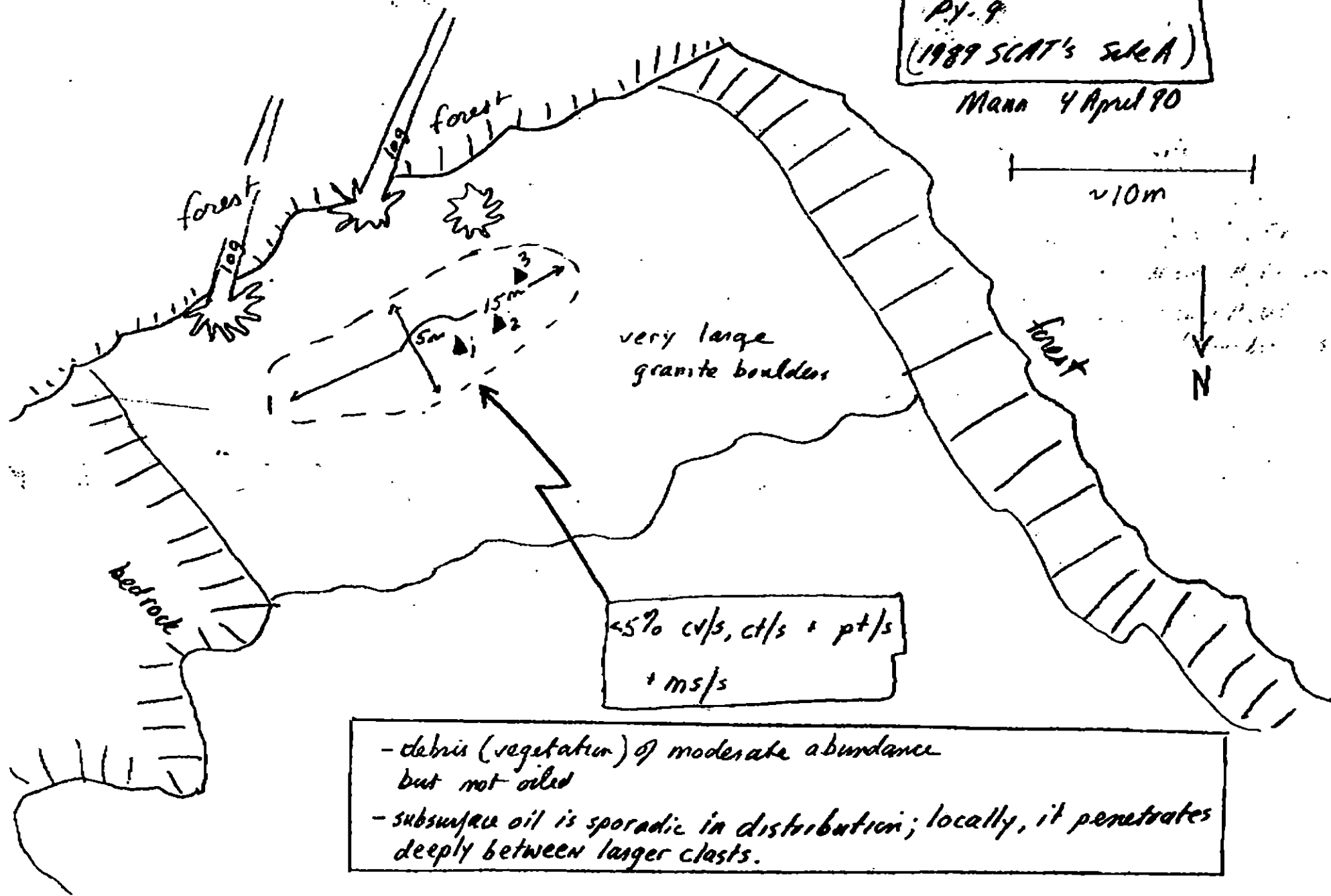
ADEC Aart Weimer D. J. Weimer
EXXON ANDY TEAL Andy Teal
NOAA Burt Wacott Burt Wacott
USCG G.A. REITER G.A. Reiter

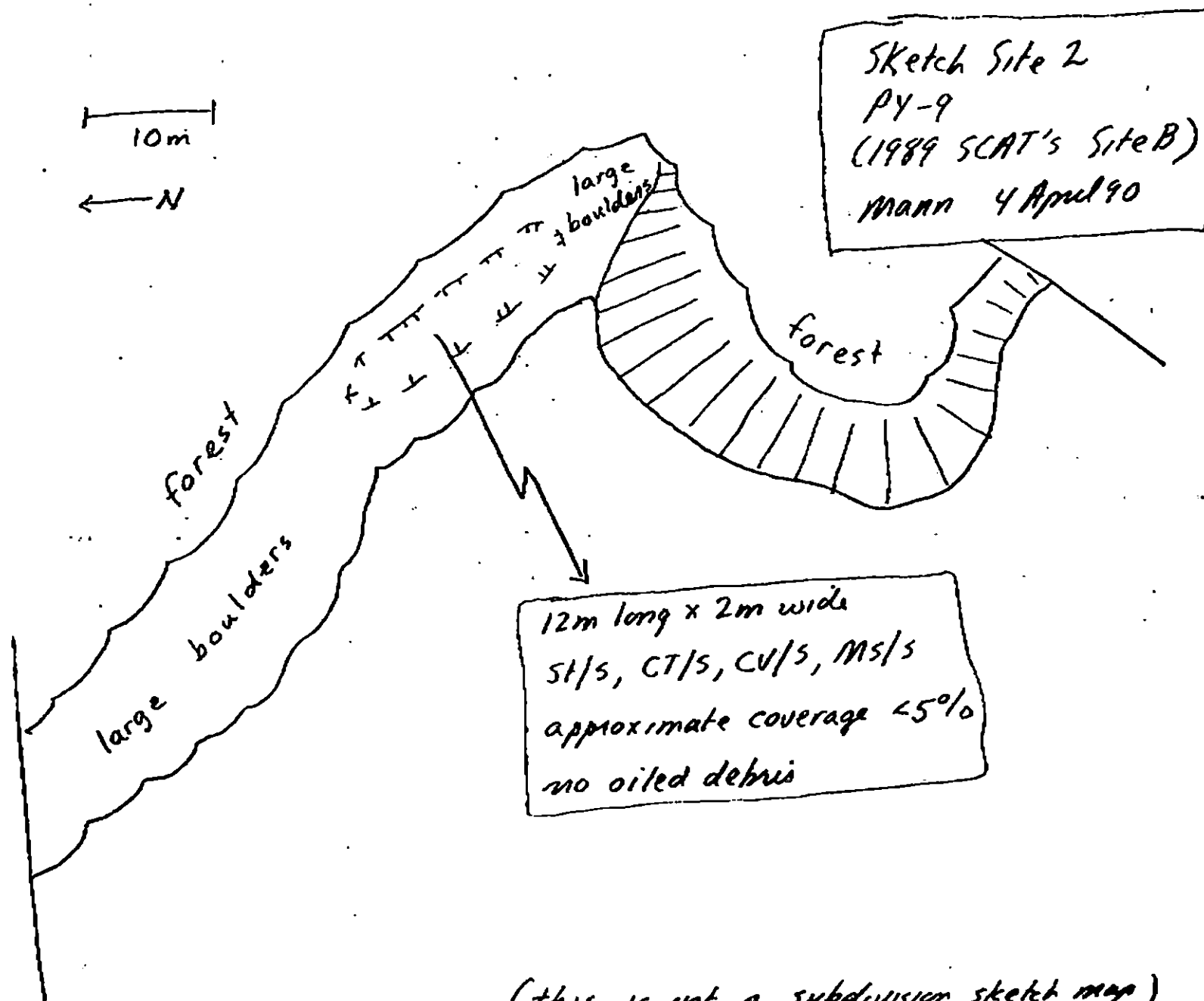
FOSC: DATE: 5-1-90

(this is not a subdivision sketch map)

Site sketch #1
PY-9
(1989 SCAT's site A)

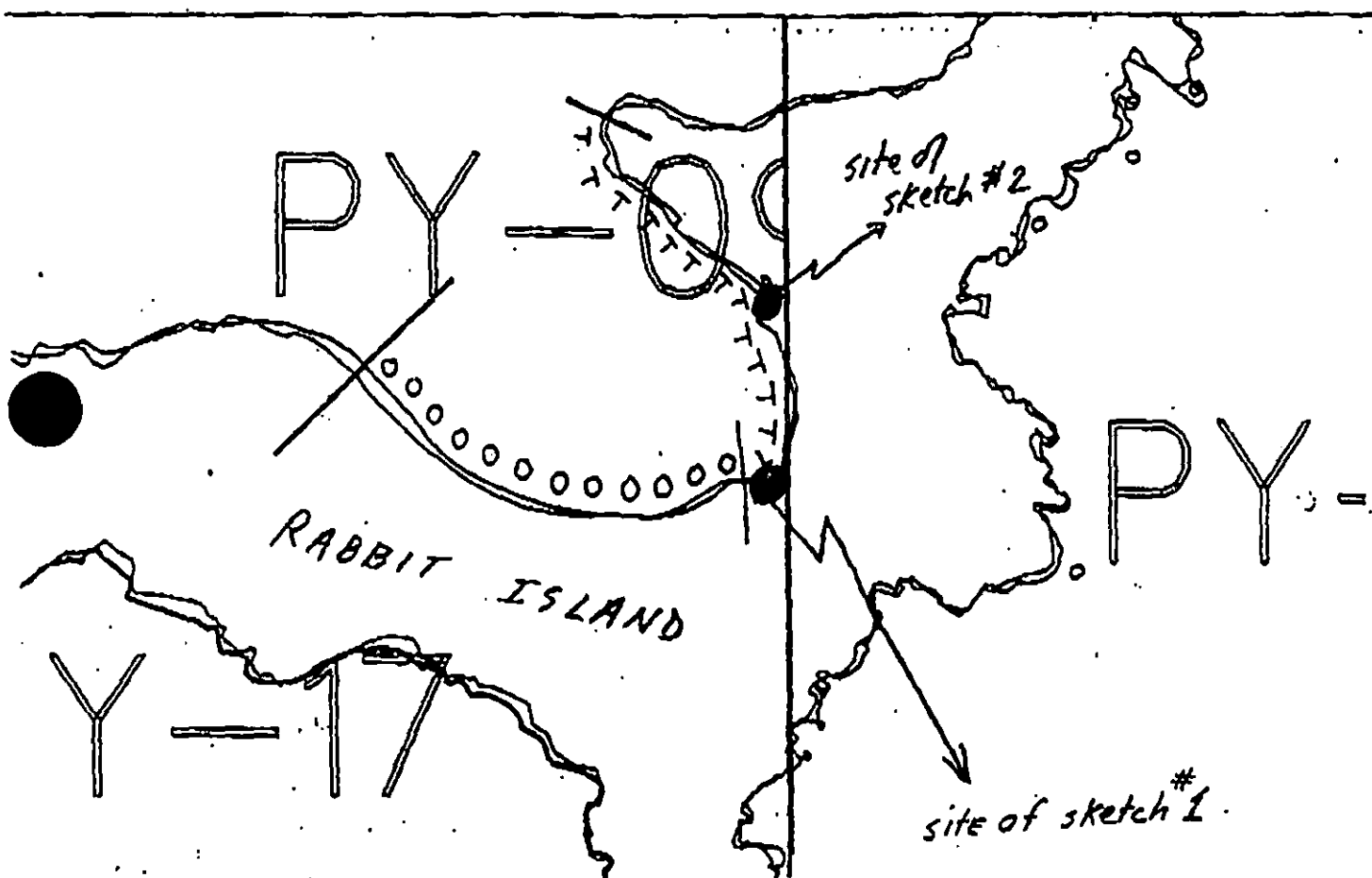
Mann 4 April 90





(this is not a subdivision sketch map)

PY-9



Mann. 4/4/90 PYE ISLANDS

REGION: KENAI

SEGMENT: PY-010

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ PY-010 SUBDIVISION A 1 OF 1 DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

4QQ National Wildlife Refuge (no time constraints given)

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

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 763 m: No Oil 2379 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 10 SUBDIVISION: A DATE 4/6/90

USCG/NOAA

NAME JACQUI MICHEL SIGNATURE Michel

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

The very occasional splatters of oil on this exposed rocky shore and small pocket beaches do not warrant further treatment.

ADEC

NAME JOHN R. REED SIGNATURE John R. Reed

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

Very light splatters on bedrock boulder substrate. No cleanup needed. 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
COMMENTS

☐ TREATMENT SUGGESTED

Oil on this shoreline is very light and exists primarily in the form of weathered splatters and stain. I feel this was good survey and agree w/ the information on the SSAT forms.

SHORELINE OILING SUMMARY

REVISION NO. 03/23/90

OG Mann ^{NOAA} USCG Michel SEGMENT ST/ PY-10
 BIO Carr LAND REP Portner - USFWS SUBDIVISION A
 EXXON Bauer ADEC Reed TIME 18:27 to 18:47
 TEAM NO.: 18 TIDE LEVEL: 0.7 to 0.9 DATE 4/16/90
 EST. SUBDIVISION LENGTH: 3744 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 95 % B 5 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 5 % Hang 50 % Vert 45 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 374 m NO 2870 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	C	B	P	S	SL	BR	FW	GY	BL	OR	TL	LR	SU	U	M	L
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT																
STAIN																
MOUSSE																
PATTIES																
TARBALLS																
FILM																
NO OIL																

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

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☐ YES ☒ NOTYPE NA#BAGS NA

Photographs:

Roll No. ST 18-YFrames 8SUBSURFACE OIL No pits dug due to bedrock and boulder substrate.

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	FW	GY	BL	OR	TL	LR	SU	U	M	L		

COMMENTS

This is a steep and inaccessible shoreline with a wide fringe of kelp. Oiling is sparse and takes the form of widely-separated clusters of splotches and drips.

OG Mann

SEGMENT TY-10

SUBDIVISION A

DATE 4 1 6 90

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Bndry
- ☐ Oil Dst.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. H/W/L/V/L
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Pk Location(s)
- ☐ Photo Location(s)

LEGEND

1 

Pt - No Subsurface Oil

2 

Pt - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Spashed Distribution

Oil'd Vegetation

1 

Photo location, direction,
and number

SKETCH MAP

NO sketch Required

The oil character length was estimated based on an estimated 4% (CT) and 6% (ST) occurrence within the VL oil category.

Oil Character Length (m): AP 0 PO 0 CV 0 CT 40 ST 60 MS 0 PT 0 TB 0 FL 0 NO 3644

REVISIONS 3/24/79

SHORELINE ECOLOGICAL SUMMARY

REVISION: 08/28/90

Segment ST / PY-10 Subdivision A (of A) Date (mo / day / yr) 4 / 6 / 90

Time (24 hr) 1827 Biologist M. CARR

(A) Substrate type and % of segments: ^{SUBDIVISION}
(1) Bedrock 95 (2) Boulder 5 (3) Cobble 5 (4) Pebble (5) Sand (6) Silt

(B) Overall % cover of biota (% of segment): ^{SUBDIVISION} 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 (O)

Photographs: Roll No. 4

Frames 8

BARNACLES

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

MYTILUS

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

GASTROPODS

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

FUCUS

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

Wildlife Observations/ General Comments:

Bald eagle (4) all mature
Sea otter (10)
Surf scoter (8)

Ecological Considerations:

Commerants (23)
Harlequin duck (4)
White-winged scoter (2)
Land otter (2)

Sensitivity codes: 4-00 (National Wildlife Refuge)

↑
KEN 82C

P

Y

—

1

KEN
82B →

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

PY-10

ADEC Segment Length: 3142m

0 100 200 300

Map Key: KEN-82a
Name: Mann-PY-10
Date: 4/6/90



P

Y

-

1



XXXX Wide

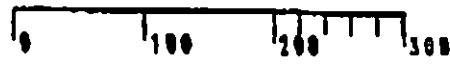
//// Medium

--- Narrow

TTTT Very Light

PY-10

ADEC Segment Length: 3142m

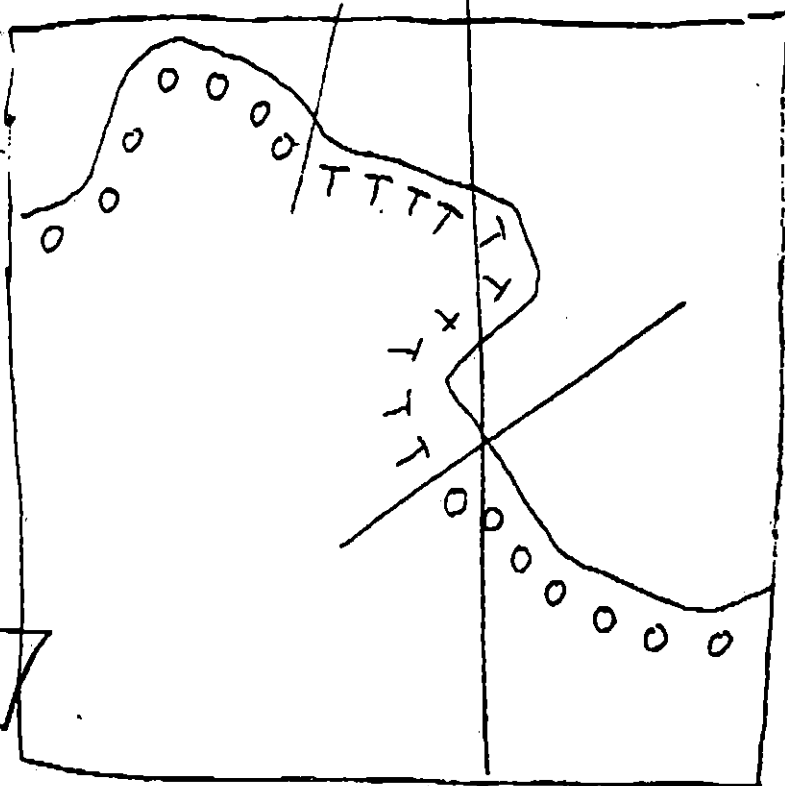


Map Key: KEN-82c

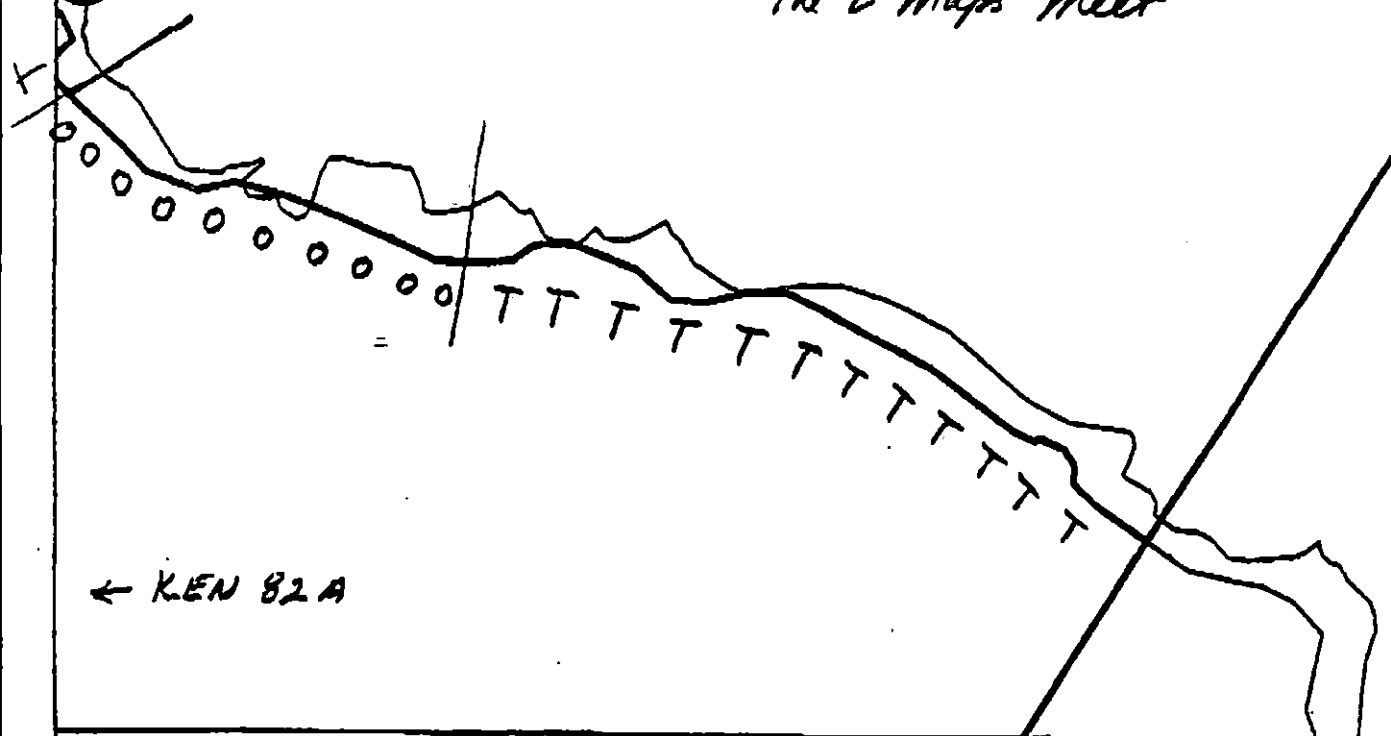
Name: Mann / PY-10

Date: 6 April 90

map edge
E →



blowup to show categories where
the 2 maps meet



← KEN 82A

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

PY-10

ADEC Segment Length: 3142m



Map Key: KEN-82b

Name: PY-10/Mann

Date: 4/6/90

Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ PY-010 SUBDIVISION A 1 OF 1 DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
4QQ National Wildlife Refuge (no time constraints given)

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

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

SHPO SIGNATURE: *Charles E. Homan* DATE: 4/17/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V. Light 763 m: No Oil 2379 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: 4/16/90.
ADEC *A. Heuer*
EXXON *ANDY TAYLOR* FOSC: *[Signature]* DATE: 4-20-90
NOAA *Burt Wescott*
USCG *G.A. REITER* *G.A. Reiter*

↑
KEN 82C

P

Y

—

1

KEN
82B →

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

o o o o " o . i

PY-10

ADEC Segment Length: 3142m

0 100 200 300



Map Key: KEN-82a

Name: Mann-PY-10

Date: 4/6/90

P

Y

-

1



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

PY-10

ADEC Segment Length: 3142m

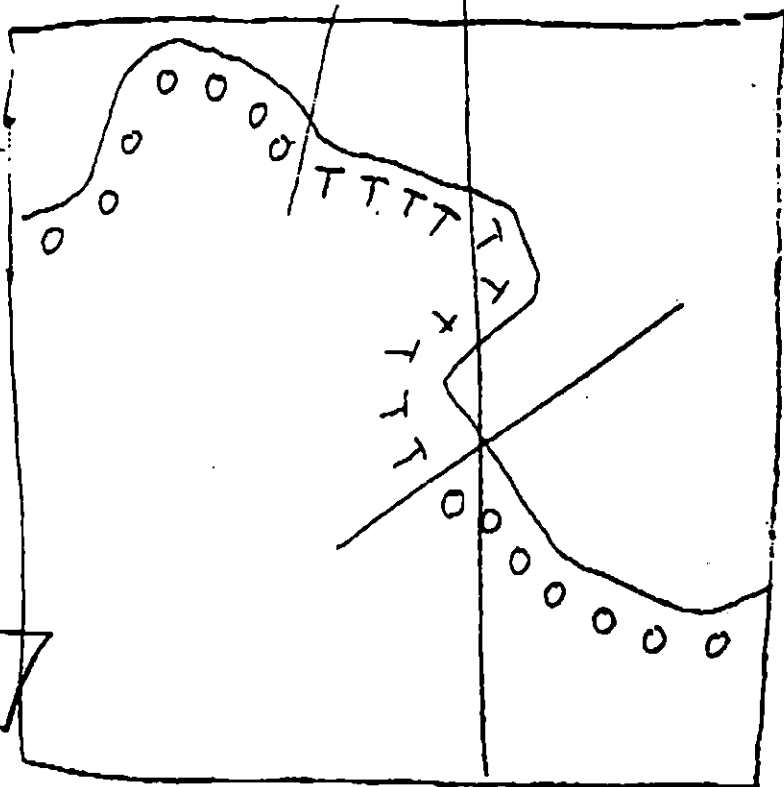


Map Key: KER-82c

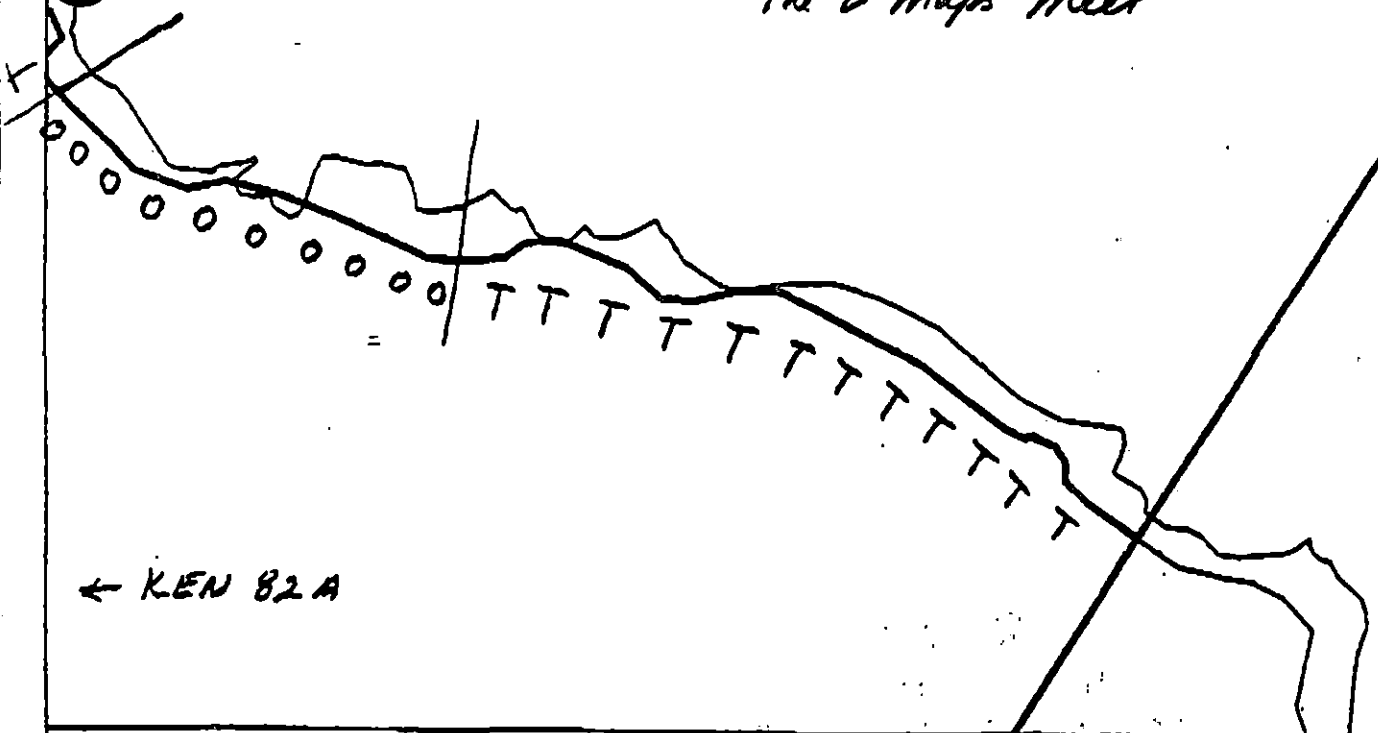
Name: Manna / PY-10

Date: 6 April 90

map edge E →



blowup to show categories where the 2 maps meet



← KEN 82A

XXXX Wide

/// Medium

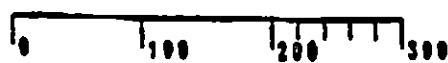
--- Narrow

TTTT Very Light

OOOO No Oil

PY-10

ADEC Segment Length: 3142m



Map Key: KEN-82b

Name: PY-10/Mann

Date: 4/6/90

Data Entered:

ARLIS

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