

OIL SPILL PUBLIC INFO. CENTER



3 6653 00006396 0

EVOS
GC
1552
.P75
S42
1991
v.4

[Shoreline evaluations, 1991].

Kenai NK-05 to PY-02

Title supplied by cataloger. This title page is supplied by Alaska Resources Library and Information Services (ARLIS).

ARLIS
Alaska Resources Library & Information Services
Library Building, Suite 111
3211 Providence Drive
Anchorage, AK 99508-4614

REGION: KENAI

SEGMENT: ST/NK-05

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ NK-05 SUBDIVISION A (1 OF 1) DATE 4/23/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
4GG Alaska State Park
5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to 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 8861 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

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

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

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

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / NK 005

SUBDIVISION: A

DATE 4/22/90

NK 005
005

NAME Donald A. MacDonnell

SIGNATURE Donald A. MacDonnell

☐ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

Most of the segment consisted of bedrock faces which were viewed from the cliff. Large quantities of *Nereocystis* was present and sea otters and sea lions were seen in the water. In addition, possible river otter tracks of at least 3 animals were found on the beach at the back of the segment cove. At the south southeast end of the beach is an anadromous stream. The beach was fairly thoroughly surveyed and no signs of oiling were seen. White offshore rocks and boulder beds have restricted viewing of the bedrock faces. These areas are subject to moderate to high wave action and would be expected to be cleaned by nature.

ADEC

NAME JOHN R. REED

SIGNATURE John R. Reed

☒ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

NK-05 consists of bedrock cliffs on East and West shores with a long sand beach making up the majority of the north shore. There is an anadromous stream on the eastern end of the sand beach. No oil was observed in this segment. I agree with information on SSAT forms.

LAND MANAGER

NAME SHARIE Methven

SIGNATURE Sharie Methven-Joney

☒ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

Nuka Island Segment 5 Northend has numerous catchment beaches, exposed to high wave action, no oil was observed. To the east is a long black sand beach, the southern end is an anadromous stream, at this time no oil was observed and it gets high wave action. The beach can be accessible for landing planes. The area offers hiking, camping, fishing and clam digging. Wildlife in the area: stellar sea lions, harbor seals, harlequin ducks, scoters, wills, merganser, buffle head, oyster catcher, cormorants, sea otters and bald eagles. At this time no treatment is recommended; would recommend a helicopter scout in May and June to survey the beach area near the anadromous stream. In May-July 1989 the southern end of the beach received mousse patties.

SHORELINE OILING SUMMARY

REVISION NO. 04/13/90

OG T. Sawyer NOAA USCG Mac Donald SEGMENT ST/NK-5
 BIO M. Carr LAND REP Mathven-Toney DNR SUBDIVISION A (1 OF 1)
 EXXON R. Boyer ADEC R. Reed TIME 06:45 to 09:30
 TEAM NO. 18 TIDE LEVEL +1.0 → +6.0 DATE Apr 122 /90
 EST. SUBDIVISION LENGTH: 15666 m ☐ Sun ☒ Clouds ☐ Fog ☒ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: N to S
 SURFACE SEDIMENTS: R 75 % B 10 % C 5 % P 0 % G 0 % S 10 % M 0 % V 0 %
 SLOPE: Lang 15 % Hang 5 % Vert 80 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 0 m NO 15666 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	10	15	17	18	20	25	30	35	40	45	50	55	SU	U	M	U
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT																
STAIN																
MOUSSE																
PATTIES																
TARBALLS																
FILM																
NO OIL																

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

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS?

YES ☒ NO ☐TYPE buoy & plastic containers#BAGS 2*Collected*

Photographs:

Roll No. ST-18-8Frames 10 to 12

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	UC	20	25	30	35	40	45	50	55	SU	U	M	U				
1	30																								S-C, S
2	40																								S-S
3	35																								S-S
4	40																								S-S
5	35																								S-S
6	45																								S-S

COMMENTS ST/NK-5: Is a large embayment with one large beach at the eas. end and several small "pocket" beaches on either side. There is an anadromous stream at the southern end of the large beach. No oil was observed in this segment.

REVIEWED

BATDATE 23 APR 90

SEGMENT ST/ NK-5 SUBDIVISION A (1 OF 1)

REVISION 04/13/73

[illegible]

COMMENTS

REVIEWED BAL DATE 23 APR 90

SHORELINE ECOLOGICAL SUMMARY

REVISION: 02/22/90

Segment ST / NK-5 Subdivision A Date (mo / day / yr) 4-22-90Time (24 hr) 0647 Biologist MARK CARR

(A) Substrate type and % of segments:

(1) Bedrock 75 (2) Boulder 10 (3) Cobble 5 (4) Pebble 0 (5) Sand 10 (6) Silt 0(B) Overall % cover of biota (% of 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-18-8Frames 10 TO 12

BARNACLES

	Dense			Moderate			Sparse			Rare			
BED	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
Bould	2	2	X	2	2	2	2	2	2	2	2	2	
Cobb	3	3	X	3	3	3	3	3	3	3	3	3	
	4	4	4	4	4	4	4	4	4	4	4	4	NOT PRESENT
SAND	5	5	5	5	5	5	5	5	5	5	5	5	NOT PRESENT AT ANY TIDAL ZONE.
	6	6	6	6	6	6	6	6	6	6	6	6	

MYTILUS

	Dense			Moderate			Sparse			Rare			
BED	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
Bould	2	2	2	2	2	2	2	2	2	2	2	2	
Cobb	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	NOT PRESENT AT ANY TIDAL ZONE.
SAND	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			
BED	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
Bould	2	2	2	2	2	2	2	2	X	2	2	2	
Cobb	3	3	3	3	3	3	3	3	X	3	3	3	NOT PRESENT
	4	4	4	4	4	4	4	4	4	4	4	4	NOT PRESENT AT ANY TIDAL ZONE.
SAND	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			
BED	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
Bould	2	2	2	2	2	2	2	2	2	2	2	2	
Cobb	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	NOT PRESENT IN ANY TIDAL ZONE.
SAND	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 sea lions (3), suter (34), harbor seal (4), harlequin duck (5), glaucous-winged gulls (20), sea otter (2), bufflehead (3), merganser (3),

Ecological Considerations: Bald eagle (1), immature, oyster catcher (2), cormorant (1)

Dense *Nereocystis* beds in shallow subtidal zone.

Sensitivity codes: unavailable ST, 1A, 1B, 4GG, 6U, 6V, 6NN

SHORELINE EVALUATION

SEGMENT ST/ NK-05 SUBDIVISION A (1 OF 1) DATE 4/23/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
4GG Alaska State Park
5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: J. Daniel McMahon

DATE: 5/1/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 8861 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

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

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 4/28/90

ADEC ART WILSON
EXXON AMY TET
NOAA Gary Petrac
USCG KEANE, KENNETH

FOSC:

DATE: 5-6-90

OG T. S. ...

SEGMENT STATION 5

SUBDIVISION A

DATE Apr 1 22 90

CHECKLIST

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

LEGEND

1 Δ

PH - No Subsurface Oil

2 Δ

PH - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

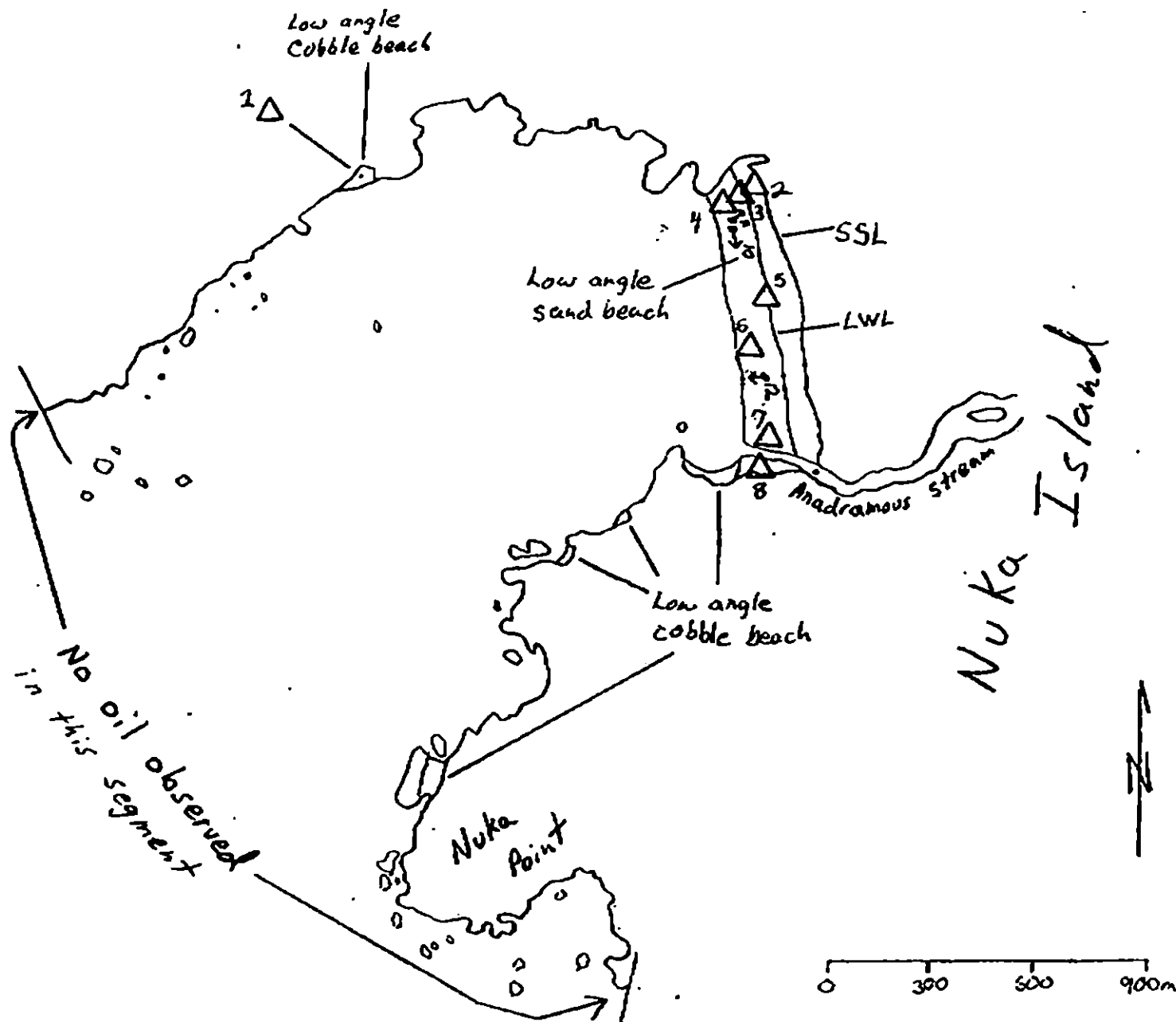
eee

Oiled Vegetation

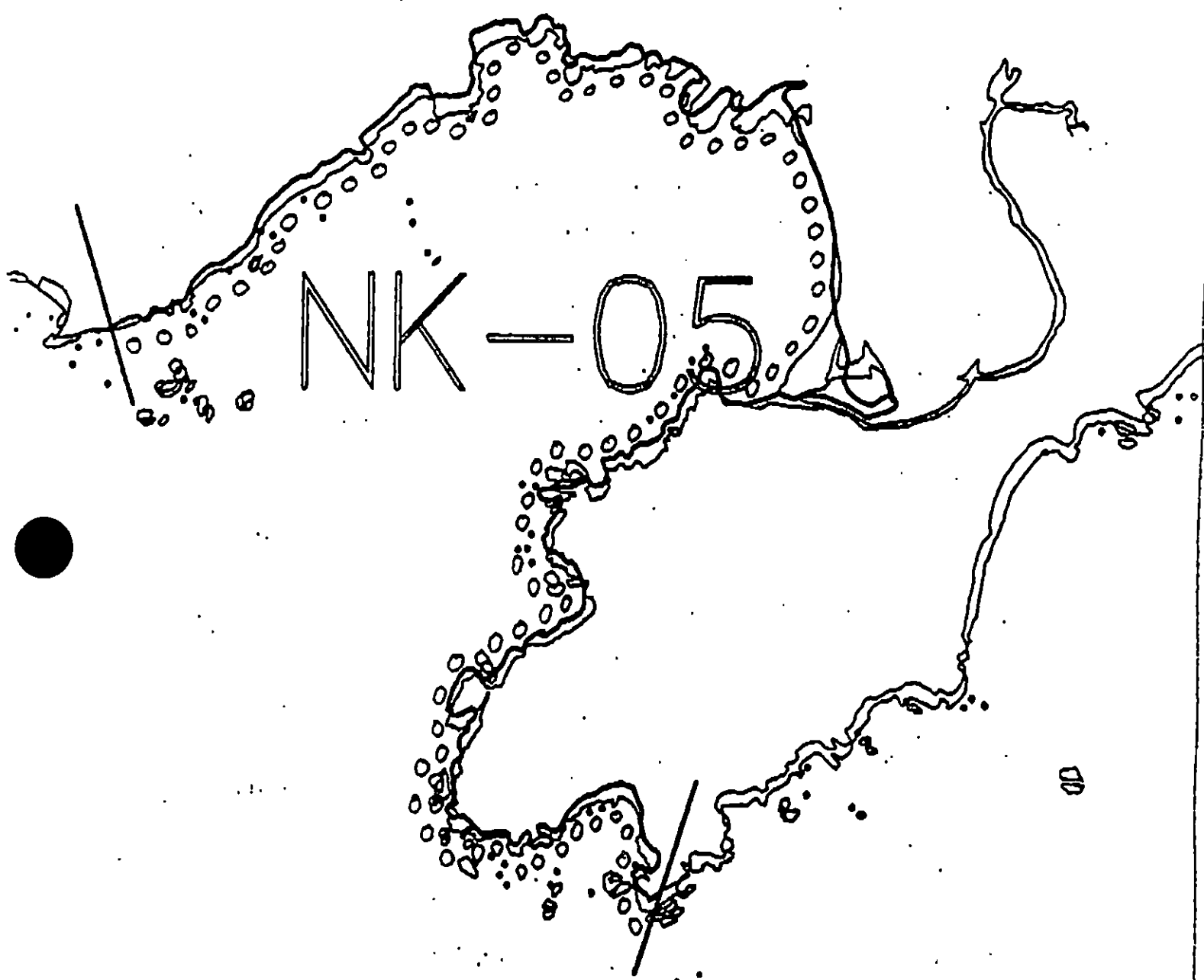
1 $\Rightarrow$

Photo location, direction, and number

SKETCH MAP



Oil Character Length (m): AP 0 PO 0 CV 0 CT 0 ST 0 MS 0 PT 0 TR 0 FI 0 No 15666



0

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

NK-5

ADEC Segment Length: 8861m

0 100 200 300 400 500 600 700 800 900 1000



Map Key: KEN-70
Name: T. Sawyer
Date: Apr. 22, 1990

REGION: KENAI

SEGMENT: ST/PD-001

SUBDIVISIONS: A (1 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ PD-001 SUBDIVISION A (1 OF 2) DATE 4/21/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1J Purse seine area (7/20 to 9/30)
4GG State Marine Park Alaska State Parks
6U Recreation: Tent sites (6/1 to 9/15)
6W Recreation: Forest Service cabins (6/1 to 9/15)
6Y Recreation: Special use destination
6NN Recreation: Sportfishing
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 27 m: Medium 21 m: Narrow 90 m: V.Light 209 m: No Oil 0 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 16cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes: 1) manual removal of pavement, mousse accumulations and patties in areas indicated, 2) spot wash pooled oil or mousse in areas not accessible for manual pick up. and 3) bioremediate areas indicated on attached sketch map. Work should be conducted before 7/20 due to purse seine constraints.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

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

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

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

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

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

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

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

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

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

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

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

1H Remote release site

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

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

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

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

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

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

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

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

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

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

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

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

3N 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 Subistence 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

8

SEGMENT ST PD-01 SUBDIVISION: A DATE 4/21/90NAME Miles O. Hayes SIGNATURE M O Hayes☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS This complex area, which we mapped in detail, was one of the more heavily oiled areas that our group surveyed. The buried oil layer and asphalt pavement areas pose two different problems. I agree with Kunibe (see his comments below) that the asphalt pavement and scattered mouse patches should be removed manually. The buried mouse is a tougher problem. An alternative to Kunibe's suggestion would be to leave it alone and let wave erosion remove it naturally. Otherwise, I favor Kunibe's alternative no. 1.

NAME Russell Kunibe SIGNATURE Russell Kunibe☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

Please see attached 2 pages.

LAND MANAGER

NAME _____ SIGNATURE _____

☐ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

Land Manager is unavailable for comment at this time - is attending meeting in Seldotna - NB

SEGMENT: PD-1

SUBDIVISION: A

DATE: 4/20/90

ADEC COMMENTS:

Russell Kunibe, EFOII ADEC

Russell Kunibe

In this subdivision there were scattered mousse asphalt patties from the UITZ to the LITZ. There were some larger mousse asphalt mats on the surface. There were areas of subsurface mousse saturated pebbles around the larger mousse asphalt mats and in an area approximately 5 M. X 80 M. immediately to the west of the larger mousse asphalt mats. The mousse layer started 5 cm. below the surface and was up to 7 cm. thick. From 15 cm. to 25 cm. below the surface the sediments were a hard soil.

Recommended treatment:

Manual pick up of the surface patties and mats.

For the subsurface layer of mousse I feel that there are three alternatives.

1. Agitation of the subsurface layer of mousse with large rakes and shovels to break up the moussy layer followed with bioremediation. Snare booms should be deployed if sheens development during treatment.

2. The use of 2" cold water fire hoses to agitate the pebbles and break up the layer of moussy sediments. Initially this would cause more of the oil to be released where pom-poms could be used to pick up the oil. This would also be better than raking for breaking up the clumps of mousse and making the remaining oiling more suitable for bioremediation. The layer of hard soil below the mousse layer would prevent the oil from being driven deeper into the sediments. A header flood should be made available during the cold water agitation with sufficient volume to flood over the soil and provide a way to float the oil out to the pom-poms for recovery.

3. Rakes and shovels should be used to remove the clean layer of sediments to remove the moussy sediment layer. This should be followed by replacing the clean sediments. This method would create a large amount of oily waste and a small amount of additional erosion but would remove more of the oil.

Of the three treatment methods outlined above #3 is the preferred method. This is because low tide mouth to the anadromous Slide Creek is located only 200 M. to the west and the strong currents which run in this area pose a threat to carry any mousse or sheen released during treatment up either Slide Creek or Port Dick Creek.

With any agitation of this area care should be taken not to trench in to the soil layer and provide a space for the oil to pool deeper in the sediments. Because this layer of mousse is close to the surface this oil should be treated this season. The thickness of the subsurface mousse in its present condition far exceeds the recommended thickness for bioremediation and therefore bioremediation alone is not recommendation. Failure to take

measures to remove this oil now would leave a possible source of sheens and mousse which could threaten the Port Dick salmon fisheries for years to come.

Russell Hunter

SHORELINE OILING SUMMARY

REVISION NO. 30

OG GLENN HEYMAN NOAA MILOS HAYES SEGMENT ST/ PD-001
 BIO DANIEL RAIDER ADNR LAND REP ROGER MACLENN SUBDIVISION A (1 OF 2)
 EXXON JOHN DEAN ADEC RUSSEL KUMIRE
 TEAM NO. 12 TIDE LEVEL +1 to +5 DATE 4/20/90 TIME 12:45:00
 EST SUBDIVISION LENGTH: 375 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 5 % B 10 % C 55 % P 30 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 90 % Hang 5 % Vert 5 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W 27 m M 12 m N 13 m VL 323 m NO 0

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	10	15	20	25	30	35	40	45	50	55	60	65	BU	U	M	U
ASPHALT PAVEMENT	X	X							X				X	X		
POOLED				X					X				X	X		
COVER																
COAT			X	✓		X							X	X		
STAIN																
MOUSSE	X	X	X	✓					X				X	X		
PATTIES			X	✓		X							X	X	✓	
TARBALLS																
FILM																
NO OIL													X			

PAVEMENT H F 150 sq. m by 3

PATTIES TARBALLS 30 BAG

NEAR SHORE SHEEN? NO BR RW SL T

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS?

YES ☐ NO ☒

TYPE

#BAGS

Photographs:

Roll No. 3

Frames 4-6

SUBSURFACE OIL

PIT NO	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL	BELOW		OIL / FILM COLOR								PIT ZONE	A N A	SHEEN (Y/N)	SURFACE SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	30	35	40	45	50	55	60	65				
1	15					X	.	X										X	N	-	GP/P-C-G
2	10	X					0-3	X				X						X	N	-	C/C-P-G
3	35					X	.	X										X	N	-	P/P
4	30					X	.	X										X	N	-	P/PLPS
5	16	X					8-15	X				X						X	N	-	GP/PGS
6	20					X	.	X										X	N	-	C/C-P-G

COMMENTS

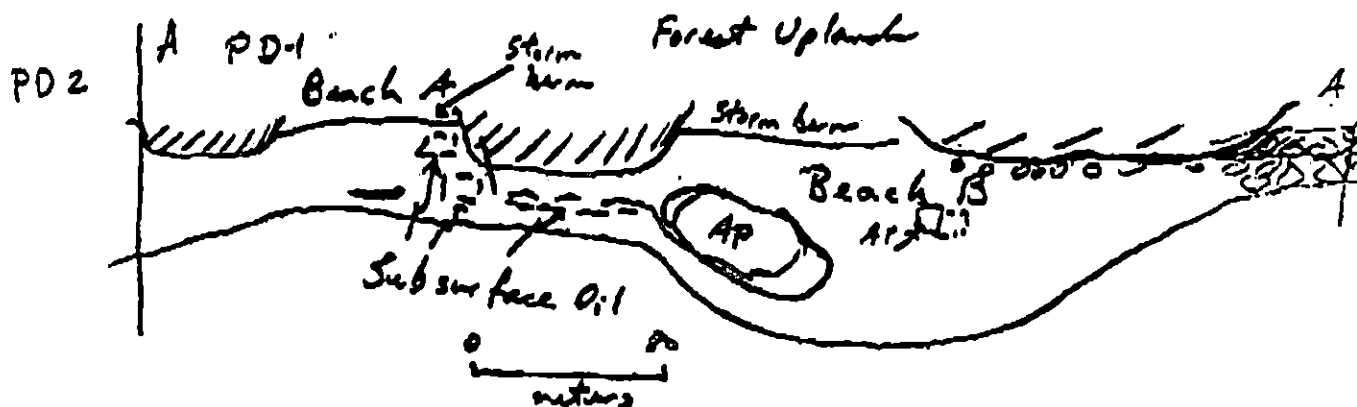
- * Oil has DBR moussey appearance
- ** Pit 3 @ base of storm berm
- X Pits 4 & 5 bottom in paleosol

(see attached pages for additional comments)
 REVIEWED BAT DATE 30 Apr 90

SUBSURFACE OIL (CONTINUED)

PIT NO	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-DM)	BELOW		OIL / FILM COLOR								PIT ZONE				A N A	SHEER (Y/N)	!	SURFACE SUBSURFACE SEDIMENT
		OF	OR	OL	OF	NO		VO	UC	SP	FO	PO	DO	LO	BL	LE		SU	U	M	U				
7	16		X				5-13		X					X						X		N	-	-	C/PGS
8	20	X					5-7		X					X				X				N	-	-	P-B/PGS
9	20		X				5-10		X					X				X				N	-	-	P/PG
10	25					X	.		X									X				N	-	-	P-C/PG
11	20		X				8-14		X					X				X				N	-	-	C/PG
12	14		X				4-10		X					X				X				N	-	-	C/PG
13	20					X	.		X									X				N	-	-	C/PG
14	15		X				6-12		X					X				X				N	-	-	C/PG
15	13		X				5-12		X					X				X				N	-	-	C/PG
16	20			X			5-15		X			X						X				N	-	-	C/CYG
17	25					X	.		X									X				N	-	-	C/PG
18	10					X	.		X									X				N	-	-	C/P-G
19	20		X				7-15		X					X				X				N	-	-	C/P-G
20	15					X	.		X									X				N	-	-	C/PG

COMMENTS



Subdivision PD-001-A consists of 2 beaches (labeled A & B) with rock outcrops between them and on either end. Both surface and subsurface oil were observed along the subdivision, with highest concentrations on the east end of Beach A, west end of Beach B, and on the

SUBSURFACE OIL (CONTINUED)

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		UO	UC	SP	BP	GT	ST	LT	LR	SU	U	M	U				
23	15			X			12-14		X					X		X				N	-	-	CP/PC
24	15					X	.		X							X				N	-	-	C-P/C-P
21	17			X			13-16		X					X		X				N			C-P/PT
22	15					X	.		X							X				N			C-P, PT
							.																
							.																
							.																
							.																
							.																

narrow beach segment connecting A & B.

Surface oiling is concentrated on the west end of Beach B, where a large layer of AP with lesser MS, CT & PO can be seen even from a far distance due to the green algal growth over the oil. The AP is very soft and is sticky and sometimes mobil immediately beneath the surface. The AP with a DBR mossy appearance. The "AP layer" extends into the subsurface, but is confined above a fine grained palaeosol which was observed in nearly every pit dug w/in this subdivision. The palaeosol is typically 10-25 cm beneath the cobble/pebble surface. Other surface oil noted on the attached sketch map as AP & PT has a similar appearance, w/ the PT as small patches.

SEGMENT S-1 D-001

ETCH MAP

SUBDIVISION *A*

DATE 4 12 / 90

CHECKLIST

- ___ N Area
 ___ Approx. Scale
 ___ Sep/60 Entry
 ___ Oil Dist.
 ___ Width
 ___ Length
 ___ % Cover
 ___ Substrate Character
 ___ Est. HUMULIN
 ___ SSL
 ___ Profile Location(s)
 ___ Profile(s)
 ___ Pit Location(s)
 ___ Photo Location(s)

LEGEND

- 1 A
File - No Submarine Oil

- 2 ▲
PM - Surface Oil

- CT/C**
Continued Distribution

- C7/B**
Broken Distribution

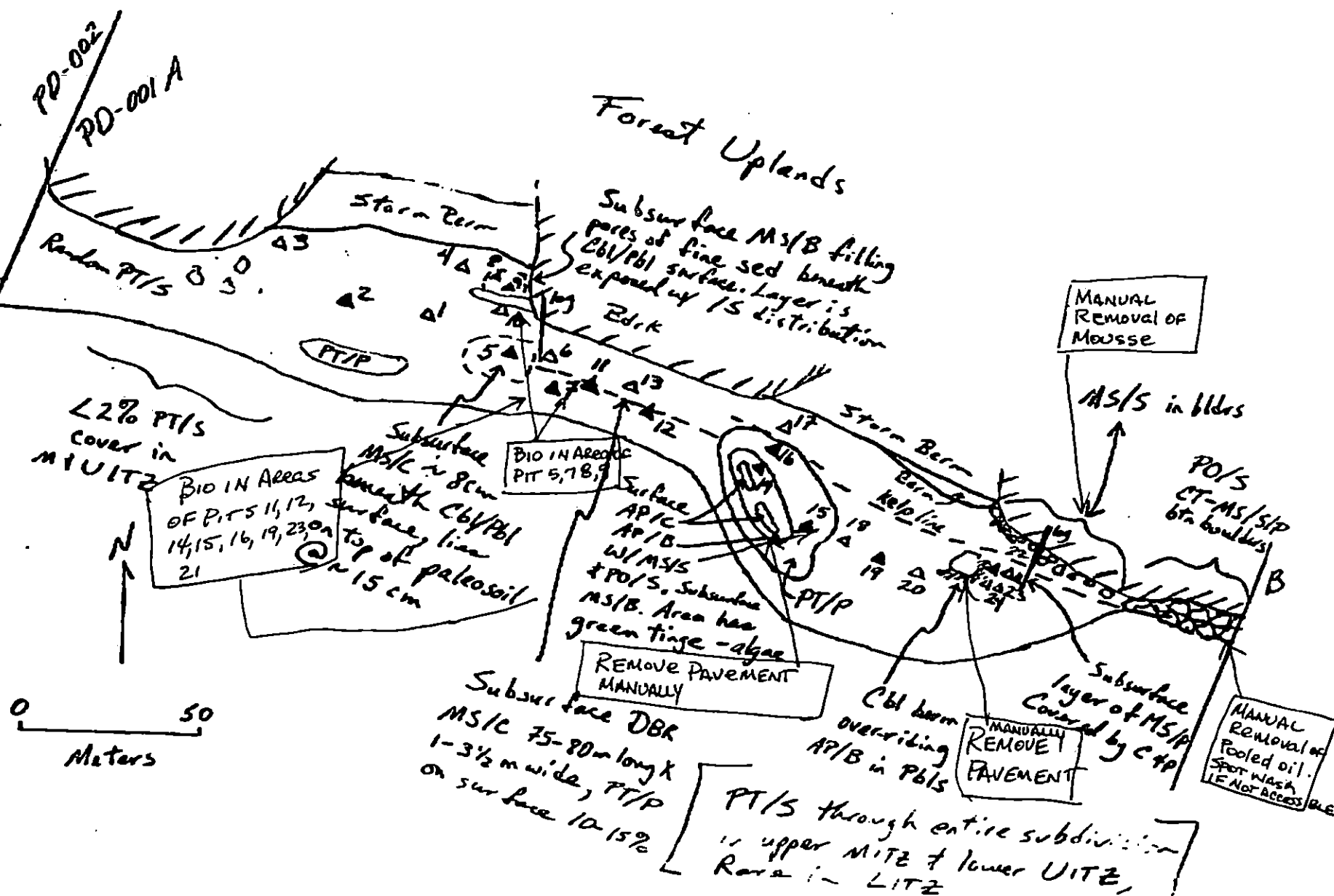
- CT/P

- ### Punchy Distribution

- [CT/S]**
Scheduled Disk Backup

222.
Oiled Vegetation

- Photo location, direction,
and number



Character Length (m). AP ____ PO 3 CV ____ CT 50 ST 60 MS 20 PT 300 TB ____ FL ____ NO 0

THE VERIFICATION CHALLENGE

SHORELINE ECOLOGICAL SUMMARY

Segment ST-10001 Subdivision A Date (mo / day / yr) 4/20/10
 Time (24 hr) 18:45 Biologist DANIEL RAIDER

- (A) Substrate type and % of segments:
 (1) Bedrock 5 (2) Boulder 10 (3) Cobble 55 (4) Pebble 30 (5) Sand 0 (6) Silt 0
 (B) Overall % cover of biota (% of segment): Dense 10 Moderate 10 Low 80
 (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: 10 none
 Roll No. ST-10001

BARNACLES

Frames 5, 6, 7

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

NOT PRESENT

MYTILUS

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

NOT PRESENT

GASTROPODS

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

NOT PRESENT

FUCUS

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

NOT PRESENT

Wildlife Observations/ General Comments:

See attached "wildlife sightings" List
 many dense mussel beds - often in close proximity to oil; example
 low mat (see map) when just 5 meters distance and located two mytilus colonies.
 Ecological Considerations: bed - care should be taken during clean up not to
 the

1/1

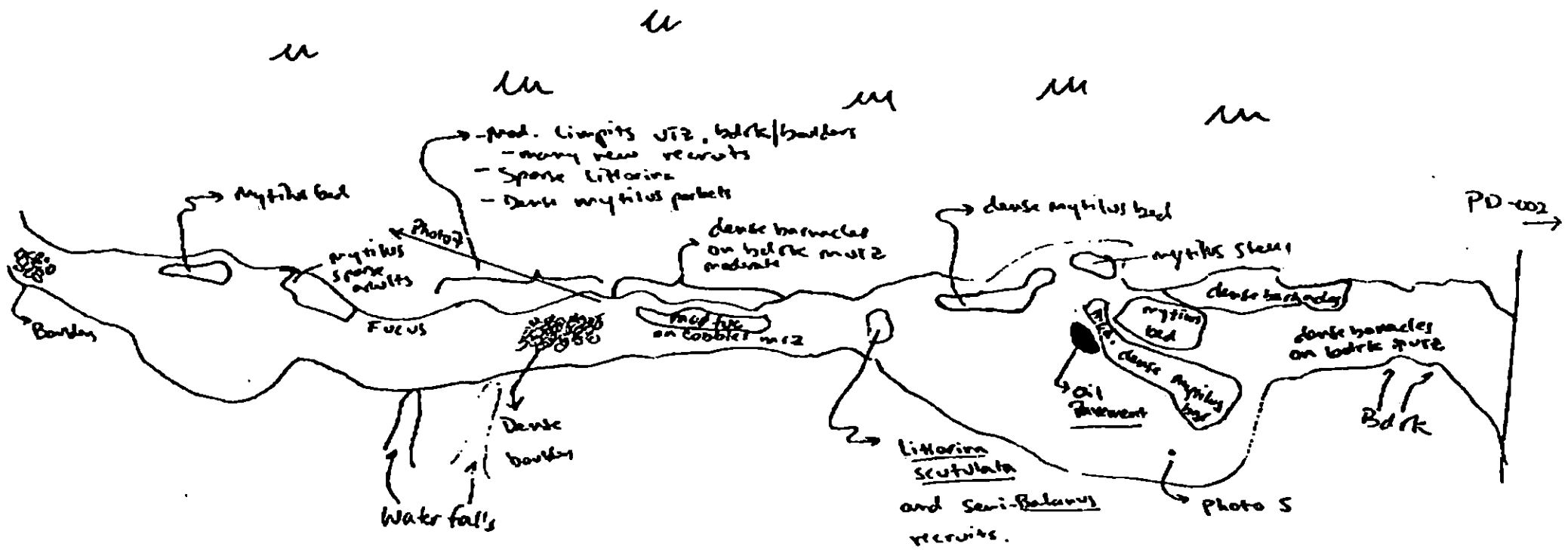
1/16/10
 W, Y, NN

Comments - PD-001-A (concluded) O. G. Heyman.

Subsurface oil is generally DBR and occurs as a pore filled (COB) or nearly pore filled layer beneath the cobble-pebble and occasional boulder surface and above the finer paleosoil. The oil in the layer is sticky and locally "runny" with a mouse appearance. DBR MS was also common on the base of surface cobbles and boulders within the mapped subsurface oil areas. The subsurface layer "surfaced" with an appearance of tar patties generally less than 1 ft in diameter.

PD 1A 2. APR. 1963
 BIO SKETCH
 TEAM 12

N
 ↑
 2



20 APRIL 1990

This segment has a pretty extensive band of vegetation and fauna; there are very few areas without some type of growth in a dense state.

Special attention should be given to the mytilus (mussel) beds located throughout the segment in dense to moderate to sparse clusters of mussels. Many of these occur close to the heaviest oilings in the segment and could be potentially damaged severely during clean up practice.

The interesting feature of PD001A is the constant fauna & flora appearing in dense clusters one after the next. They do not alternate in any one particular pattern. Dense mussels may give way to large barnacles, then taken over by dense littorina. This does not show through too well on the BIO form as it demands that we average data for throughout the segment.

Special consideration should be given to this fact of alternating densities especially when deciding what clean up will take place and how much traffic will be created.

An interesting note:

On many of the heavily oiled areas, with pavement especially, I have seen often green filamentous algae growing profusely on the rocks just around the oil and even on the oil itself, although less dense than on the rocks sticking from the pavement. This may possibly be a reaction to the bioremediation that took place or that the algae actually thrives well on the oil. On the oiled section the algae is much less profuse or nonexistent.

Wildlife Sightings - PD 001 A + B

20/21 APRIL 1974

<u>Name</u>	<u>amount</u>
1) Harlequin Duck	23
2) Double-Crested Cormorant	2
3) Red-Necked Grebe	3
4) Bald Eagle	1
5) Rough-legged Hawk	1
6) Glaucous-winged Gull	6

Comments

Thimature
far off; hard to be
positive

A hand-drawn map of a coastline, oriented vertically. The map features a large, irregularly shaped landmass with a jagged, irregular coastline. A prominent, straight line runs vertically through the center of the landmass, possibly representing a river or a road. To the left of the landmass, there are several small, irregular shapes that could represent islands or smaller land parcels. A solid black circle is located on the left side of the map, near the top. In the upper right corner, there is a small rectangular box containing the text "PD-2" and "PD-1A" stacked vertically. In the lower right corner, the text "KEN 72B" is written, followed by an arrow pointing to the right. At the very bottom of the page, there is a row of small, repeating symbols that look like "V V V V V V V V V V".

LEN
72B →

PD-21A

ADEC Segment Length: 1603m

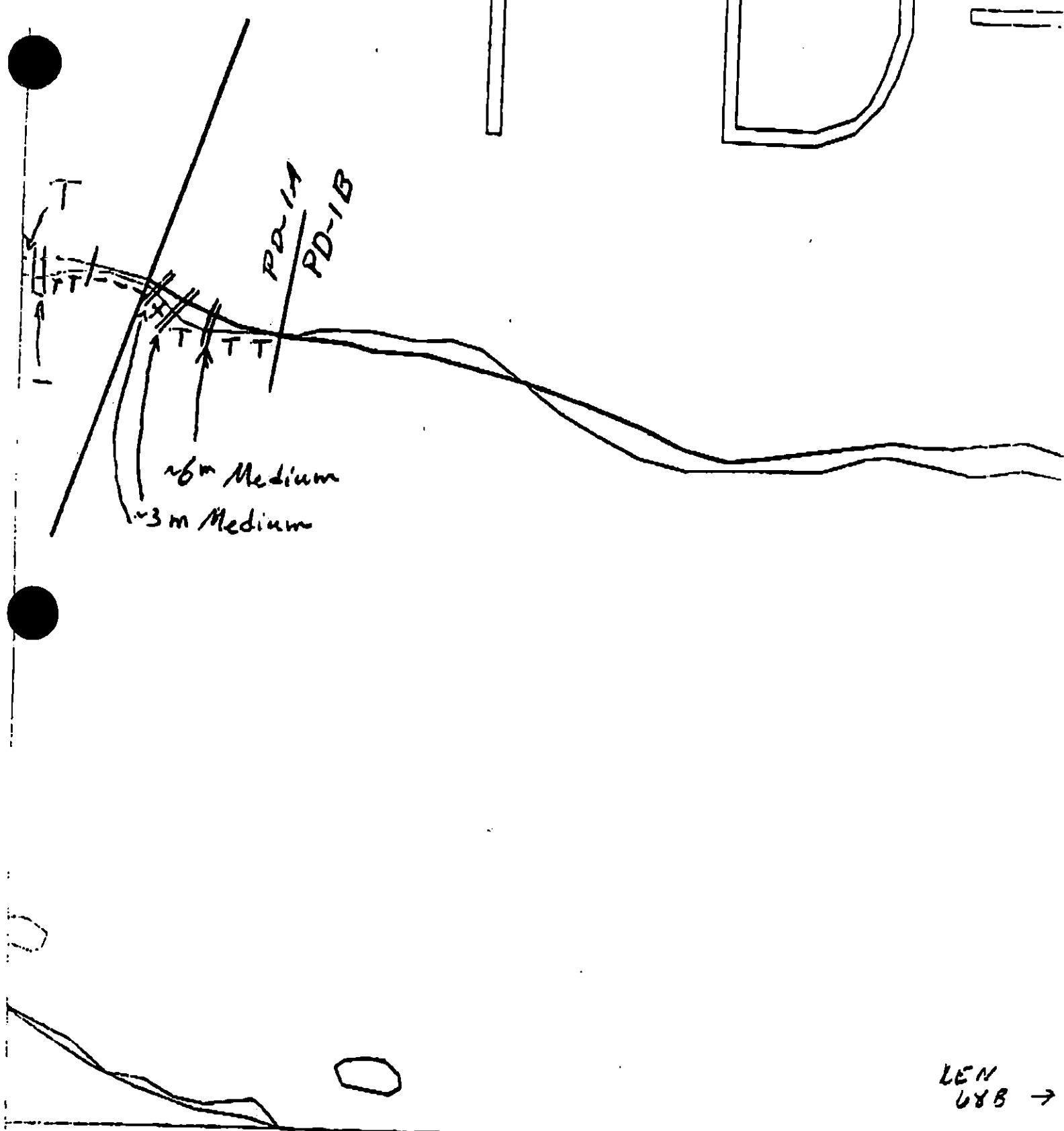
TTTT Very Light

0000 No Oil



Date: 4-21-90

Redden, P. J. et al.



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

PD-1A

ADEC Segment Length: 1874m

0 100 200 300

Map Key: KEN-68c
Name: G. Heymen
Date: 4-21-90

LEN
688 →

REGION: KENAI

SEGMENT: ST/PD-001

SUBDIVISIONS: B (2 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ PD-001 SUBDIVISION B (2 OF 2) DATE 4/21/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

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

4GG State Marine Park Alaska State Parks

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

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

6Y Recreation: Special use destination

6NN Recreation: Sportfishing

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact Exxon's Cultural Resource Program immediately (564-3274 (Anchorage) or 229-1508 (24 hrs.)).

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 47 m: V.Light 1537 m: No Oil 132 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 18cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes: 1) manual removal of mousse or 2) spot wash where mousse not accessible, and 3) bioremediation of areas shown on attached sketch maps. Work should be conducted before 7/20 due to purse seine constraints.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

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
- 1J Gill net area (6/7 to 8/31)
 1K Purse seine area (7/20 to 9/30)
 1L Purse seine hook-off (7/20 to 9/30)
 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, 3O Harbor seal and sea lion pupping (5/15 to 7/1)
 Harbor seal and sea lion molting (8/15 to 9/15)
 Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts. No application of Inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31).
 Contact ADF&G and USFWS prior to treatment for confirmation.
 AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 586-7235
 ADF&G Don Calkins 267-2403
- 5R Seabird colony (5/1 to 9/1)
 Restrict air and boat traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from colony. Contact USFWS prior to treatment.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 5S Shorebird/waterfowl concentration (4/1 to 5/15)
 Restrict all activity to essential minimum, especially air traffic. Contact USFWS and ADF&G for confirmation.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
 ADF&G Tom Rothy 267-2206
- 5T All Bald Eagle nests (3/1 to 6/1)
 Active Bald Eagle nests (3/1 to 9/1)
 Restrict air traffic and all disturbance to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 6U Recreation: Tent sites (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)
 7H 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

(8)

SEGMENT ST/ PD-01 SUBDIVISION: B DATE 4/21/90

USCG - NOAA

NAME Miles O. Hayes SIGNATURE Miles O. Hayes☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

This is a long and narrow, generally steep beach segment composed mostly of coarse sediments up to boulder size. Several slides and fans furnish coarse material on the beach.

The remaining oil is scattered mouse paths, or cells as some mouse at base of boulders and widely separated layers. It is in deep. No major treatment is required, only manual pickup of the mouse.

ADEC

NAME Russell Kuribe SIGNATURE Russell Kuribe☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

The oiling in this segment was confined to small patches of mouse around the base of boulders, some small isolated areas of subsurface mouse and scattered mouse paths. Recommended treatment:

The amount of recoverable oil will be minimal. This area is in the Kachemak Bay State Wilderness Park and manual pickup of the mouse and mouse paths is recommended.

LAND MANAGER

NAME _____ SIGNATURE _____

☐ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

Land Manager unavailable for comment at time of permittee attending meeting in Soldotna

SHORELINE OILING SUMMARY

REVISION NO 3413 28

OG GLENN HEYMAN NOAA USEC MILES HAYES SEGMENT ST/ PD 001
 BIO DANIEL RAIDER ADW LAND REP ROGER MAC CAMPBELL SUBDIVISION B (2 OF 2)
 EXXON JOHN DEAN ADEC RUSSELL KUNIB TIME 19:15 to 20:30 #
 TEAM NO. 17 TIDE LEVEL +2 - +6.5 DATE 4/21/92 90/615-1810
 EST SUBDIVISION LENGTH: 17.95 m ☒ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☐ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: E to W
 SURFACE SEDIMENTS: R 10 % B 20 % C 30 % P 40 % G 0 % S 0 % M 0 % V 0 %
 SLOPE Lang 90 % Hang 0 % Vert 10 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 45 m VL 1650 m NO 100 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	C	B	P	R	1	2	3	4	5	6	7	8	SU	U	M	U
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT			✓	X											X	
STAIN																
MOUSSE		Y	X	✓									Y	X	✓	
PATTIES				X		X	X						X	X		
TARBALLS				X		X									X	
LM																
NO OIL													X			X

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

OILED DEBRIS	AMOUNT			DID YOU COLLECT DEBRIS?
	SM	MD	LG	
Logs				YES ☐ NO ☒
Vegetation				
Trash				
Debris				
				TYPE _____
				#BAGS _____

Photographs:

Roll No. 4Frames 6-11

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		UO	VO	1	2	3	4	5	6	7	8	SU	U	M	U				
1	25					X	.		X									X				N	-	-	PG/PG
* 2	20		X				14-17		X				X					X				N	-	-	C/CSV
3	20					X	.		X									X				N	-	-	C/CPGW/V
4	20					X	.		X									X				N	-	-	C/PGW/V
5	30					X	.		X									X				N	-	-	P/C/P.C
6	23					X	.		X									X				N	-	-	P/PG

COMMENTS

* Very faint organic-H₂S odor from below oiled layer

This is a long segment w/ very narrow shoreline and shallow pocket beaches on the west end. Oil generally occurs as a binding for fine sediments between boulders or as patties on the snow covered sand to the east. In the →

REVIEWED DA DATE 3 May 90

SHORELINE OILING SUMMARY (PAGE 2)

REVISION 04/13/90

SEGMENT ST/ PD-01 SUBDIVISION B (2 OF 2)

SUBSURFACE OIL (CONTINUED)

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CH)	BELOW		OIL / FILM COLOR						PIT ZONE				A	N	A	SPRINK (Y/N)	▼	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	BR	BL	GR	GL	TR	TL	SU	U	M	L						
8	23					Y	.		X									X		N	N		22		P-C/PG
9	40					X	.		X								X			N	-		-		P-C/PG
10	25					X	.		X								X			N	-		-		P/PG
* 11	25					X	.		X								X			N	-		-		P/PG
12	35					X	.		X									Y		N	-		-		P-C/PG
13	40					X	.		X								X			N	-		-		P/PG
* 14	13					X	.		X								X			N	-		-		P/PG
15	17		X				14-17	X									X			N	-		-		P/P.B
16	20					X	.		X								Y			N	-		-		P/BP
17	22			X			13-18		X								X			N	-		-		P-C/PG
18	22					X	.		X								X			N	-		-		P/PS
7	15					X	.		X								X			N	-		-		C PG

COMMENTS

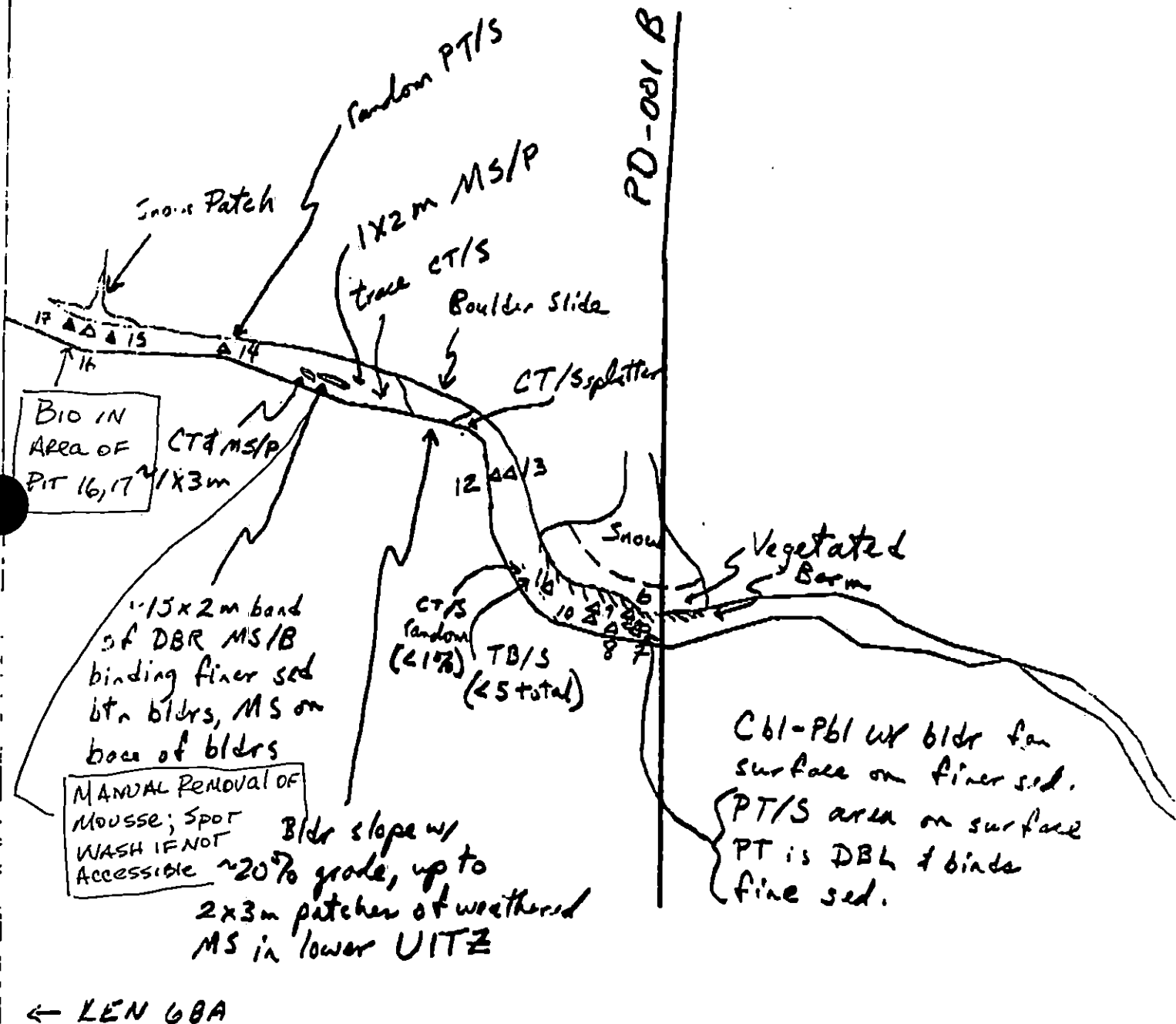
* 1 ~~rock~~ found @ ~15cm w/ CT/S
pbl.

1 * pit in pbl area btm bldrs ~ 30% bldrs, 60 pbl

2 - brown mousse texture

REVIEWED BAT DATE 3 May 90

R



XXXX Wide

//// Medium

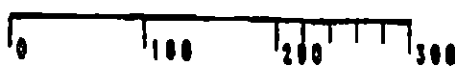
--- Narrow

TTTT Very Light

OOOO No Oil

PD-1B

ADEC Segment Length: 1874m

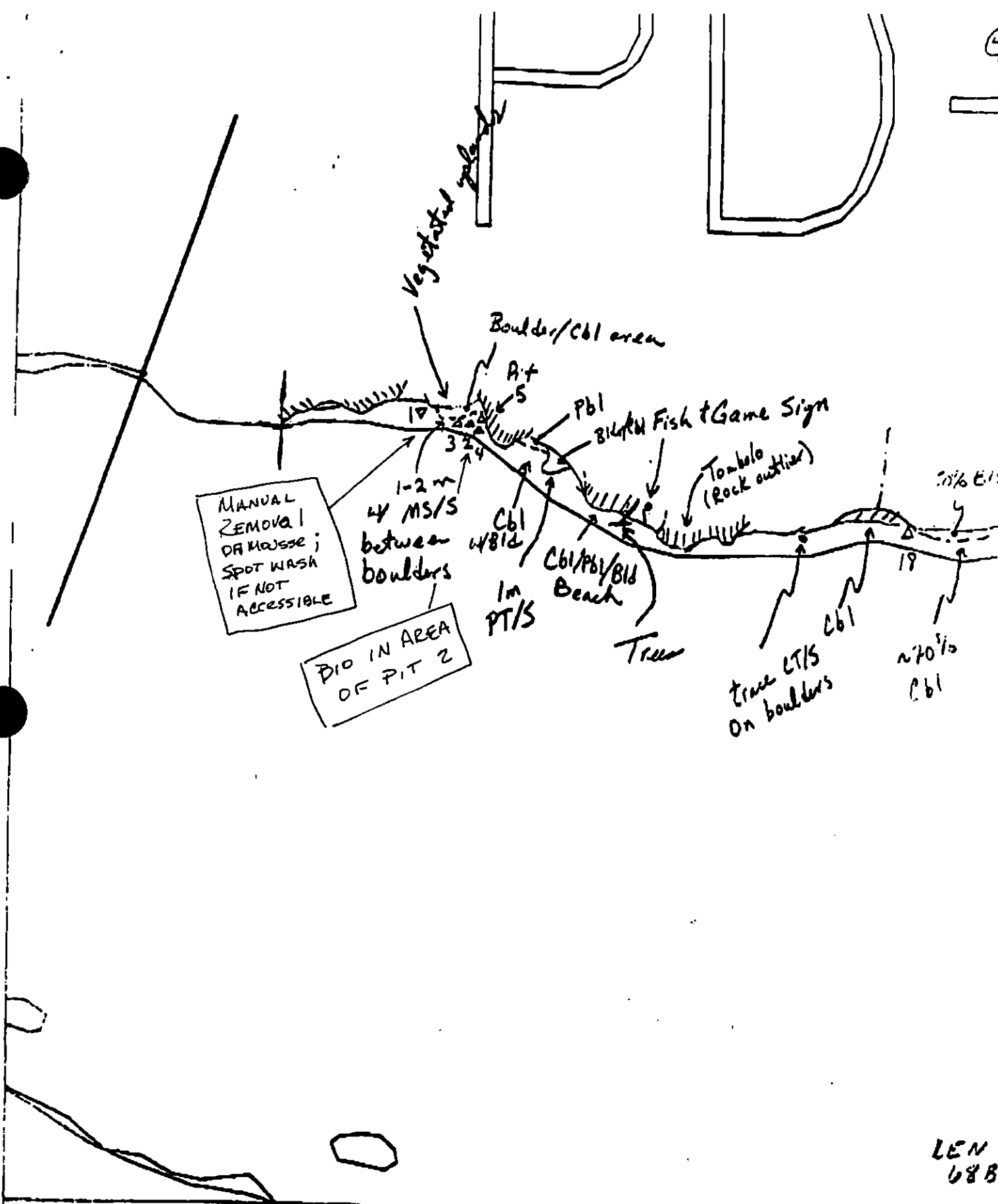


Map Key: KEN-68b

Name: Gutheyman

Date: 4-23

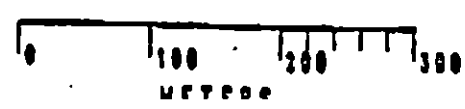
Map Key: KEN-68b



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

PD-1B

ADEC Segment Length: 1874m



Map Key: KEH-68a
Name: G. Heyman
Date: 4-23
Data Entered:

LEN
68B

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90 (9)

Segment ST / PD001 Subdivision R Date (mo / day / yr) 7/2/90

Time (24 hr) _____ Biologist DANIEL RAIDER

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

(B) Overall % cover of biota (% of segment): Dense 15 Moderate 15 Low 70
↳ to none

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

Photographs: 4
Roll No. _____

Frames 6-11

BARNACLES

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

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

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

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

NOT PRESENT

MYTILUS

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

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

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

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

NOT PRESENT

GASTROPODS

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

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

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

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

NOT PRESENT

FUCUS

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

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

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

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

NOT PRESENT

Wildlife Observations/ General Comments:

- See attached "wildlife survey" sheet

- Many small mussel beds; bands of dense flora + fauna in groupings

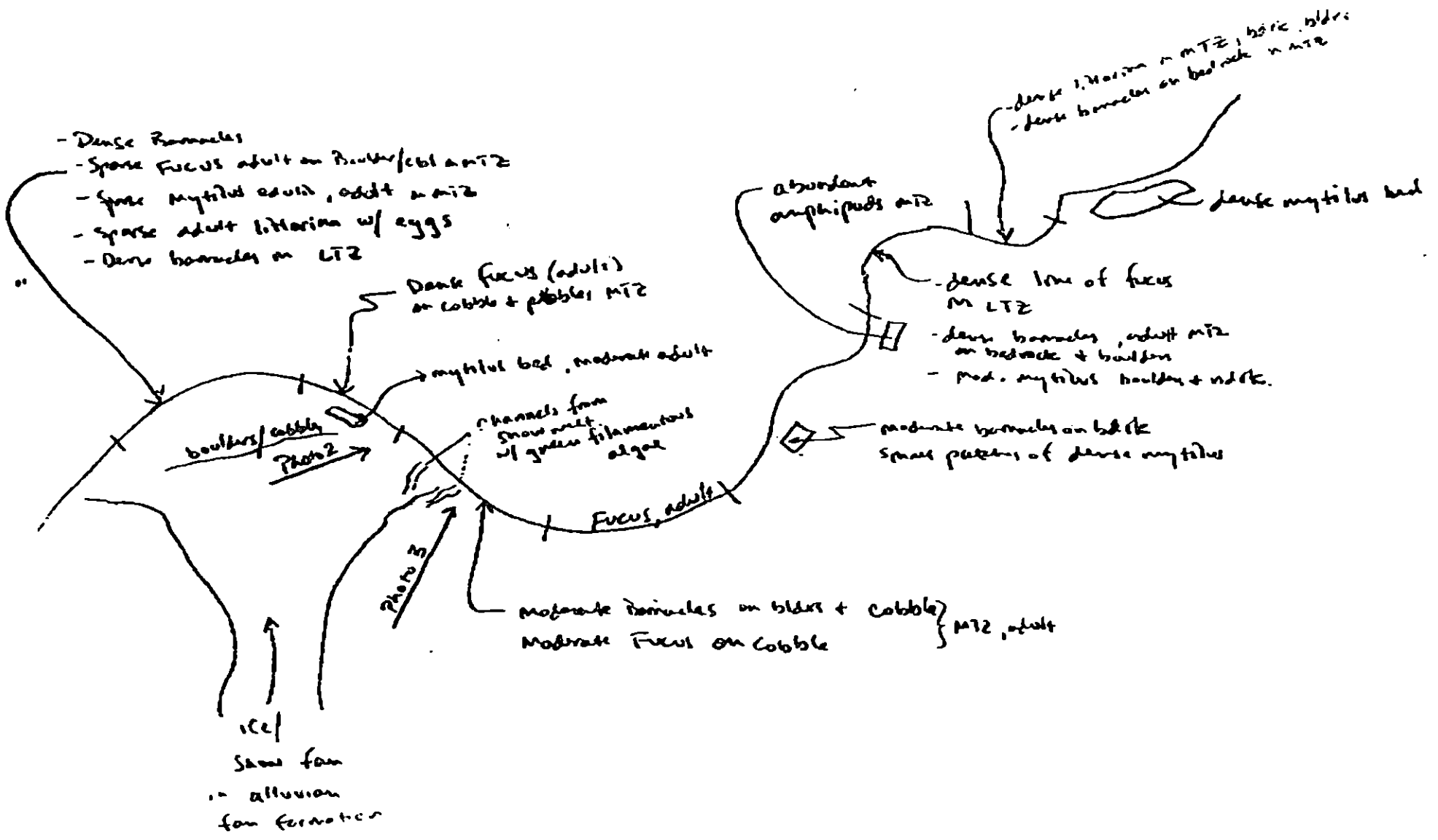
Ecological Considerations:

1J

AGG

6U, W, Y, NN

22 APR 1991
 22 APR 1991
 22 APR 1991

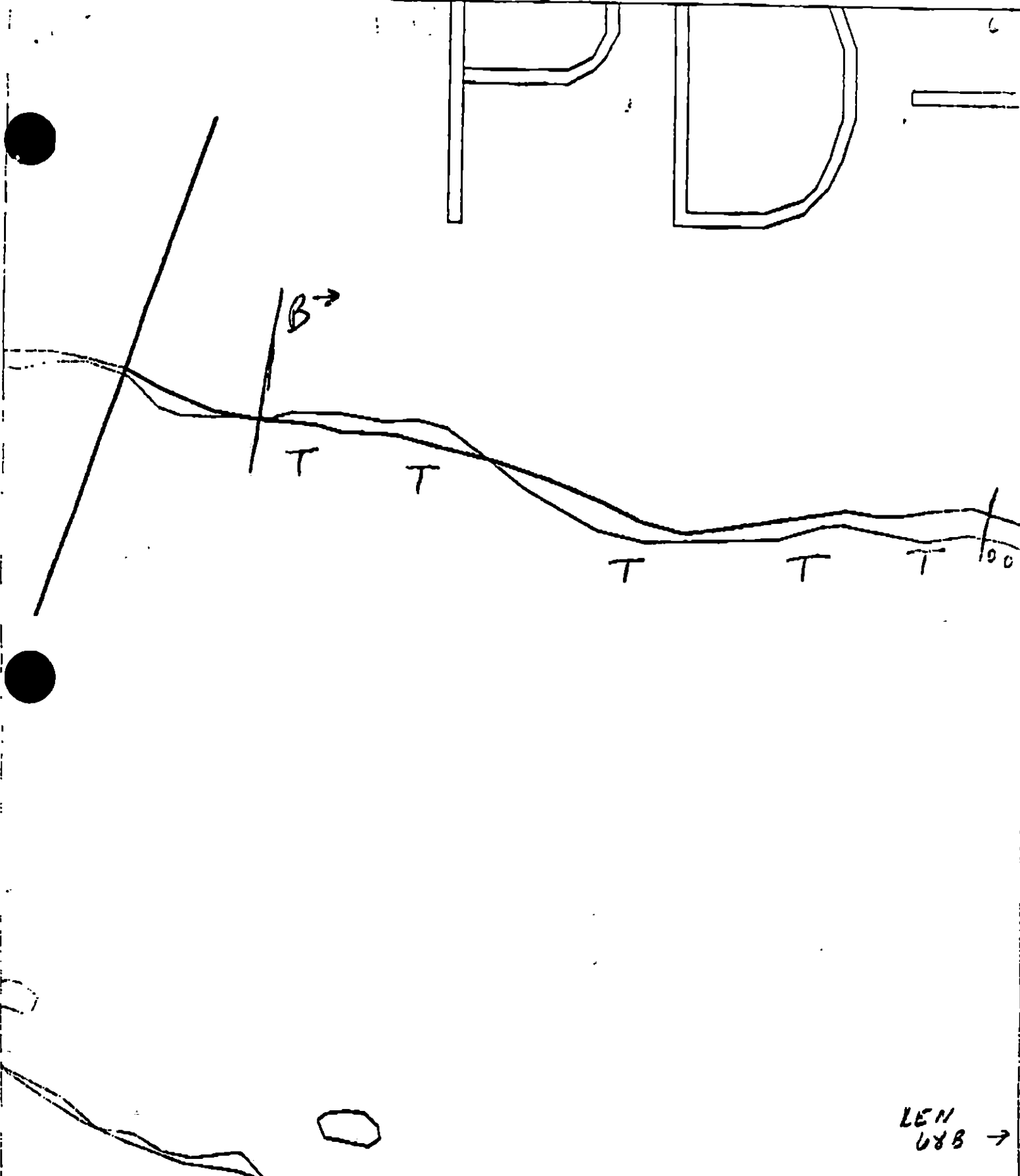


(11)

Wildlife Sightings - P0001 B

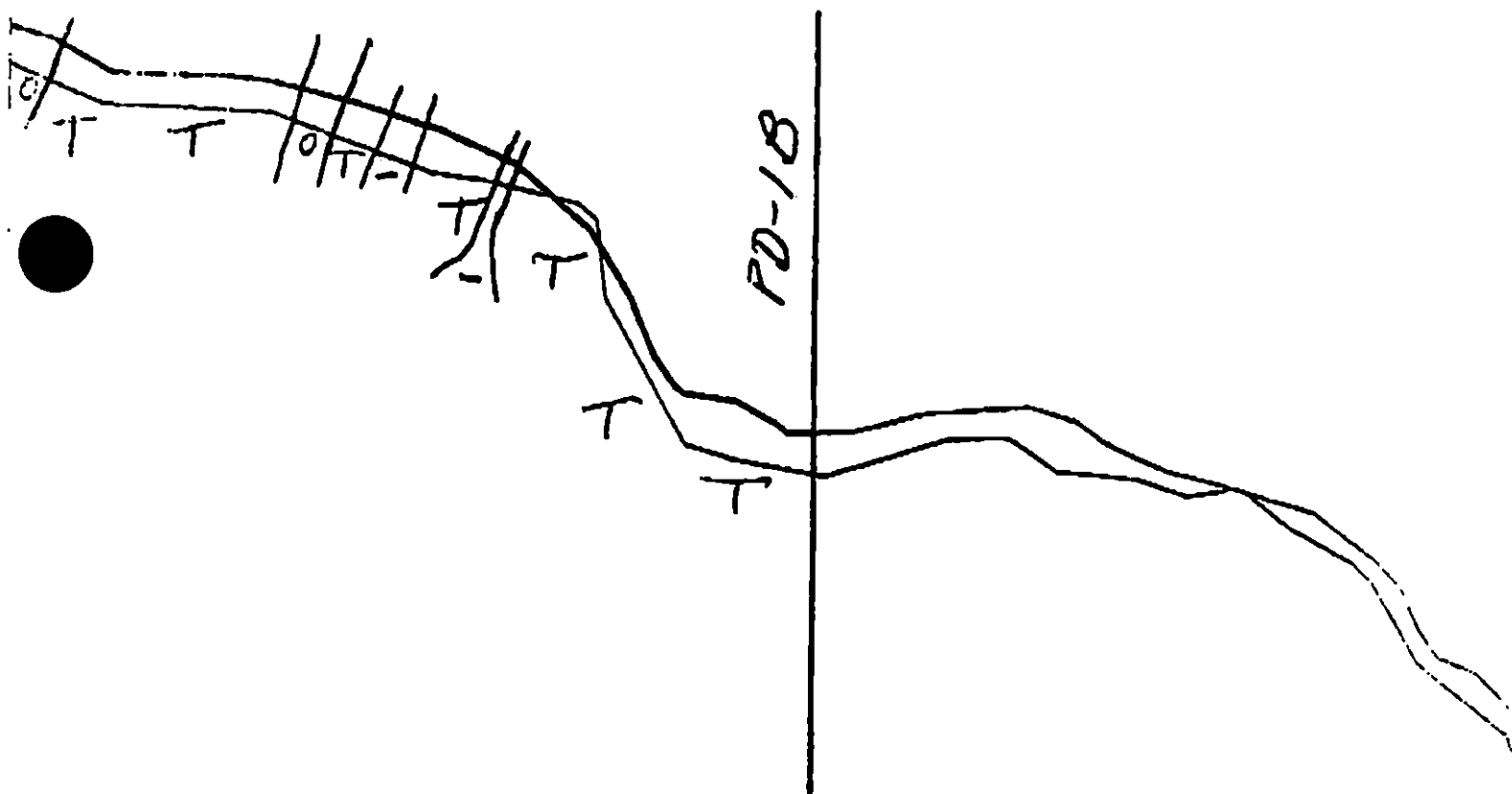
22 APRIL 1990

<u>Name</u>	<u>amount</u>	<u>Comment</u>
1) Forlegum Duck	23	
2) Double-Crested Cormorant	2	
3) Red-Necked Grebe Grebe	3	
4) Bald Eagle	1	
5) Rough-legged Hawk	1	(not positive I.D.)
6) Glaucous-winged Gull	6	
7) Mountain Goats	7	on hillside
8) All Others (seen)	2	off-shore



XXXX Wide	PD-1B	Map Key: KEN-68a
/// Medium		Name: <u>G. Heyman</u>
--- Narrow	ADEC Segment Length: 1874m	Date: <u>4-23-70</u>
TTTT Very Light		Data Entered:
OOOO No Oil		

(7)



KEN GBA

PD-18

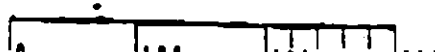
XXX Wide

/// Medium

--- Narrow

TTTT Very Light

ADEC Segment Length: 1874m



Map Key: KEN-68b

Name: G. HeymanDate: 4-23-90

1991 MAYSAP EVALUATION

SEGMENT: PD 001 SUB: A REGION: KEN SURVEY DATE: 5/21/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) Fish harvest area

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. PHONE 564-3276; 564-3657; (Anchorage) or 229-1514 (24 hrs.).

RECOMMENDATIONS:

INITIAL**TAG****FOSC**

TREATMENT REQUIRED (Y or N)

N

Y

Y

Manual Pickup (Check as Req.)

X

Spot Washing

X

Bio-Customblen Only

Bio-Inipol/Custombien

Other

Other

COMMENTS:

INITIAL:

TAG: MANUAL P/U OF AP/H50R (EASILY ACCESSIBLE)
A₂ A₅ + A₆ FOLLOWING BY CUSTOMER APPLICATION.

FOSC:

TAG APPROVAL DATE: June 4 1991 FOSC APPROVAL DATE:

ADEC

FOSC

EXXON

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

USCG

NOAA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT PD-001 SUBDIVISION A DATE 5/2/91

ADEC

NAME Clara Crosby SIGNATURE Clara S. Crosby

☐ NTR ☒ Treatment Recommended - flat

This segment is located next to an anadromous stream. An addendum was submitted by the Helo Bio team in 1990 and was never addressed. I am recommending manual removal of HSOR/MSOR - B/C ^{when possible} ~~it~~ should be rolled ~~up~~ access oiling. This segment is located within Kachemak Bay State Wilderness Park - Agua

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/21/91

☐ NTR Several large areas of surface and subsurface HSOR exist that were worked manually in 1990. The amount was too much for the survey to pickup so it was left. A different method may be needed here.

LANDMANAGER

NAME Jeff Johnson OF ADNR

SIGNATURE Jeff Johnson

☐ NTR ☒ Treatment Recommended

- Manual pickup of exposed A/P- HSOR recommended; Perhaps TAG group can offer alternatives for the remainder. This is obvious, gross oiling of sediments, and is within Kachemak Bay State Wilderness Park, in an area with high recreational values. The survey team would definitely have picked this up but it was too large to handle.

USCG/NOAA

NAME Donald B. [unclear] SIGNATURE Donald B. [unclear]

The 5 meter square area of soft sediment has a thin coat of weathered oil, once this is punctured the oil below the coat flows readily. The majority of the rest of the oil is located in a triangular area in the gravel to sand layer just below the cobble. Removal of these two oiled areas would require a minimum effort and would have little impact on the local environment.

I concur Jeff Johnson

MAYSAP SHORELINE OILING SUMMARY

PAGE 2 OF 10

TEAM NO. 4OG J. M. SempleBIO J. BarrySEGMENT PD-001ADEC CrosbyLANDMANAGER Johnson for ADNRSUBDIVISION AXON StilesUSCG/NOAA McMahon/McDonaldDATE May 12, 1991TIME 12:22 to 14:42TIDE LEVEL +3.8 ft. to +5.1 ft.ENERGY LEVEL: ☐ H ☒ M ☐ LSURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELOWEATHER: ☒ SUN ☐ CLOUDS ☐ FOG ☐ RAIN ☐ SNOWTOTAL LENGTH SHORELINE SURVEYED: 346 mNEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONEEST. OIL CATEGORY LENGTH: W — m M 17 m N — m VL 71 m NO 258 m US — m

L O C	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE VHML	AREA		ZONE				NOTES
	AP	MS	TB	SOF	CV	CT	ST	FL	DB	NO			WIDTH m	LENGTH m	S	UI	MI	LI	
A1				S							B/C		1	3		X			Subsurface 70R 1% cov.
A2				P							P/C		5	12		X			" " 20% cov
A3				S							C/P		5	22		X			" " 10% cov
A4				S							C/P		1	3		X			Sub. 70R <10%
A5	T										C/P		10	25		X			picked up
A6				P							C/B/P		5	5					"
A6b	T										C/B/P		5	50		X			

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

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

PHOTO ROLL # MAYSAP-

MAYSAP 4

11-15

FRAMES

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR BR&N	PIT ZONE				SURFACE- SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
1	35							X	-	Y	-	-					ph 1/2 ch	
2	30							X	-	Y	-	-					ph 1/2 ch	
3	35							X	-	Y	-	-					ph 1/2 ch	See map
4	30							X	-	Y	-	-					ph 1/2 ch	
5	30							X	-	Y	-	-					ph 1/2 ch	
6	30							X	-	Y	6	-					ph 1/2 ch	
7	35							X	-	Y	-	-					ph 1/2 ch	
8	35							X	-	Y	-	-					ph 1/2 ch	
9	30							X	-	Y	-	-					ph 1/2 ch	

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

OG COMMENTS:

Relatively uniform beach of boulder/cobble
or rubble / pebble sediments. Subsurface oil present in the
western part. surface Ap & MSON present in the west.

Revised: MC 5/26/91

revised 5.25 94

PAGE 3 OF 10

SEGMENT PD. 001

SUBDIVISION A

DATE MAY 131 / 91

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

45 CM DEEP DOES NOT CONSTITUTE SURFACE OIL

OG COMMENTS:

Revised: MC 5/26/91

og sketcher map

PD 001-A

7 Samples

MAY 31/91

1992-1442

Legend

- Bedrock
- Boulder/cobble
- Cubble/pebble
- Pebble/granule

MAYSAP 4. . 11

General view down beach

A1

MOR, 1x3,
1%, around base
of boulders,
typically 2 to 4 cm
deep

A2

MOR, 5x12,
20%, typically
2 to 4 cm deep

A3

MOR, 3x20
<10%, typically
10 to 12 cm deep

A4

MOR 1x3
<10%
2 to 4 deep.

A5

Ap, 6 small remnant
Areas, all < 30m dia
< 8m thick in
10 x 25 area, <1%

P. LI | MAYSAP-4. . 14

A6

a) 5x5 MOR 50%
b) 5x50 <1% runny soft AP
under and around ed.

MAYSAP-4. . 15

Storm berm lots of
clean logs
base of storm berm.

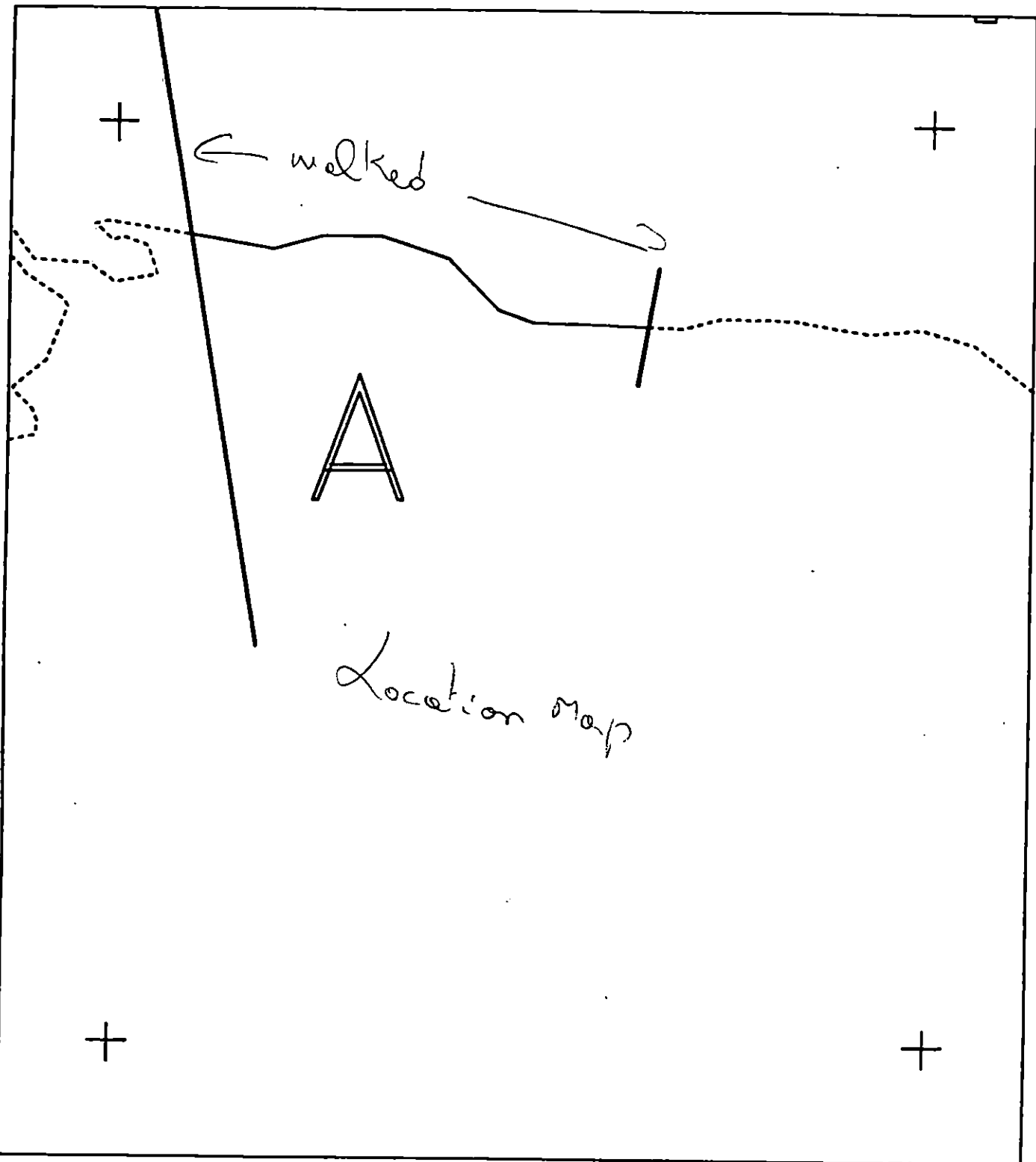
Meters

0 50

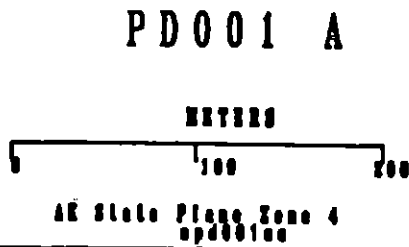
Z

REVIEWED: MC 5/20/91

revised 5.25 94



Location map



Subdivision Field Map
Map Key: KENPD001Aa
Name: for Sample
Date: May 21/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 21, 1991 1217 - 1339
SEGMENT #	PD001	TIDAL HEIGHT (Range)	+3.8 => +5.1
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	NW 5-10 kt., clear

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil Related Comments

- A1 Mouse patches were found in the upper zone bedrock/cobble outcrop. Very few biota were found at this site. A few scattered barnacles and littorine snails, and a very sparse film of green filamentous algae on some cobble or bedrock.
- A2 Pooled oil was present in the upper zone of a cobble/pebble beach near the upper berm. The only apparent live organism was a thin film of green filamentous algae on some cobble. Some organic debris was present as well. Very little biota is present in the upper zones of the beach. The lower zone has a sparse to moderately abundant bed or rockweed (Fucus), where several other species are common.
- A3,A4 Small patches of MOR are present in the beach cobble/pebbles, near the upper part of the beach. Biota are sparse or completely absent, as in A1, above.
- A5,A6 Asphalt pavement or MSOR in the upper zone cobble. Littorines and limpets are fairly common at this location, and are in close proximity to the oil (often within 1-5 mm), but are rarely found alive in the most heavily oiled sediments. Barnacles are found under most cobble, where they are denser than on the upper side of the cobble.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

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

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

Shoreline subdivision map showing important biological features attached.

 REVIEWED: MC 5/26/91
 0 1 1 1

Lower in the intertidal the abundance of barnacles increases, as does the cover of Fucus, mussels, and the densities of several invertebrates (littorines, limpets, isopods, oligochaete, hermit crabs, amphipods).

Cleanup Considerations

Manual cleanup activities were performed on the oil during the survey. Additional cleanup, if necessary, will not cause adverse affect to the biota.

General Characteristics of PD001-A

This section of beach is generally straight, with a moderate to high sloping shoreline of cobbles or pebbles or both. The abundance of most species is very low on these beaches, except for the very low zone where Fucus, molluscan invertebrates, and red, green, and brown algae are found. Mussels are sparse to moderate in the middle zone and low zone amongst beach cobble.

General Zonation Pattern

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal

Oil Distribution		- - -				
Bare Rock		- - - - -				
Green Filamentous Algae		- - - - + + + + -				
Rockweed (Fucus)				- - - - + + + + -		
Barnacles (Balanus)		- - - - -	+ + + + -			
Littorine Snails		- - - - -	- + - + - + - + -			
Limpets		- - - - -	- + + + + + + - -			
Red Algae				- - - + * * + - + * * *		
Green Algae (Ulva/other)				- - - - -	- + + - -	
Mussels (Mytilus)				- - + + - - -	- + - - -	
Upright Brown Algae (not Fucus)				- - - - -	- - - - -	

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

Common Species on PD001-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Cumagloia andersonii, Endocladia muricata, Halosaccion glandiforme, sp., Mastocarpus 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, Urticina crassicornis,
5. Flatworms - Platyhelminthes - Polyclads

6. Nemertean Worms - Ribbon Worms - *Emplectonema gracile*, *Tubulanus polymorphus*
8. Polychaete Worms
 - Nereidae - *Nereis* spp.
 - Spirorbidae - *Spirorbis* sp.
9. Peanut worms - Sipunculids - *Phascolosoma agassizii*
10. Crustaceans
 - a. Amphipods - *Traskorchestia* sp.?
 - b. Barnacles - *Balanus glandula*
 - c. Crabs - *Haplogaster* sp., Paguridae (hermit crabs)
 - d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimorsphaeroma oregonensis*
11. Mollusca
 - a. Chitons - *Mopalia mucosa*, *Tonicella lineata*,
 - b. Snails - Gastropods
 - Amphissa columbiana*, *Littorina sitkana*, *L. keenae*, *Natica clausa*, *Nucella lamellosa*, *N. lima*, *Searlesia dira*, *Tachyrhynchus* sp.
 - c. Limpets - *Lottia digitalis*, *L. persona*, *L. limatula*, *T. persona*, *T. scutum*
 - e. Bivalves - *Clinocardium* sp., *C. nuttalli*, *Macoma nasuta*, *Modiolus modiolus*, *Mytilus edulis*, *Pododesmus cepio*, *Prototheca staminea*, *Saxidomus giganteus*
12. Echinoderms
 - a. Brittle Stars - *Ophiolus aculeatus*?, *Ophiothrix spiculata*?, *Amphipholis*?
 - b. Sea stars - *Dermasterias imbricata*, *Evasterias truscheli*, *Leptasterias hexactis*, *Pycnopoda helianthoides*, *Solaster dawsoni*
 - c. Sea Cucumbers - Holothurians *Eupentacta* sp.,
 - d. Urchins - *Strongylocentrotus droebachiensis*
13. Bryozoans - *Membranipora* sp., *Schizoporella* sp.
15. Fishes
 - Cottidae -
 - Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*

III. Birds - Glaucous-winged Gull (5), Harlequin Duck (2)

BIO SKETCH MAP

P0001-A

J P BARRY

21 MAY 1991

1222-M42

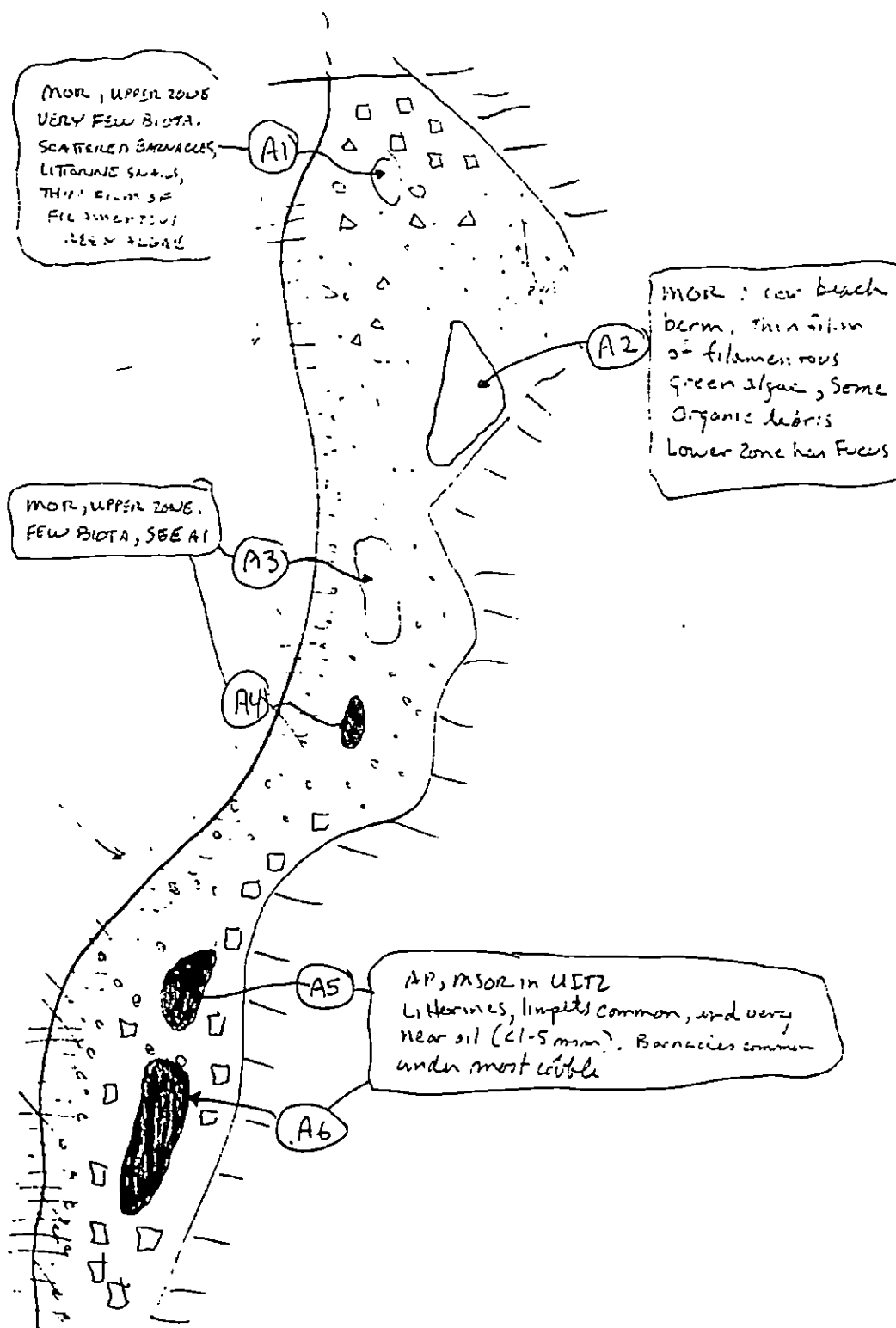
Legend

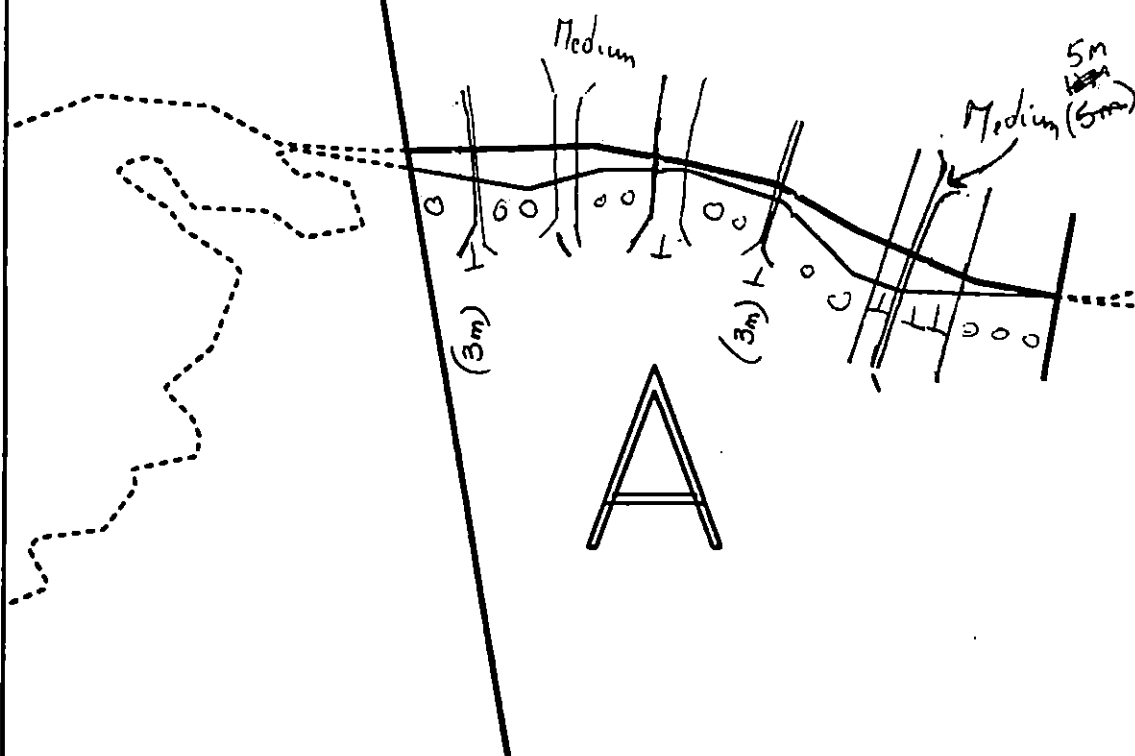
□ Wet rock

□ Patches/cobble

□ Corals/algae

□ Pebble granite

■ Fucus/mussels
(moderate)



XXXX
////

TTTT
0000

Wide
Medium
Narrow
Very Light
No Oil

PD001 A

ADEC Subsegment Length: 348m

METERS

0 100 200

AK State Plane Zone 4
apd001a



Subdivision Field Map

Map Key: KENPD001A

Name: JM Semple

Date: May 21/91

Date Entered:

REVISIONS: me 5/26/91
revised 5.25 91

1991 MAYSAP EVALUATION

SEGMENT: PD 001 SUB: B REGION: KEN SURVEY DATE: 5/21/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) Fish harvest area

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: _____ Date: _____

RECOMMENDATIONS:	INITIAL	TAG	FOSC
TREATMENT REQUIRED (Y or N)	<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**

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

ADEC

NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☒ NTR

Oiling occurred in a splash distribution little would be recovered or is considered treatable

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles

☒ NTR

Overall no significant oiling found.

LANDMANAGER

NAME Jeff Johnson OF ADNR SIGNATURE Jeff Johnson

☒ NTR

Concur with other rps. Scattered tar - A/P in small amounts would take a lot of time to locate, and would be impractical to remove

USCG/NOAA

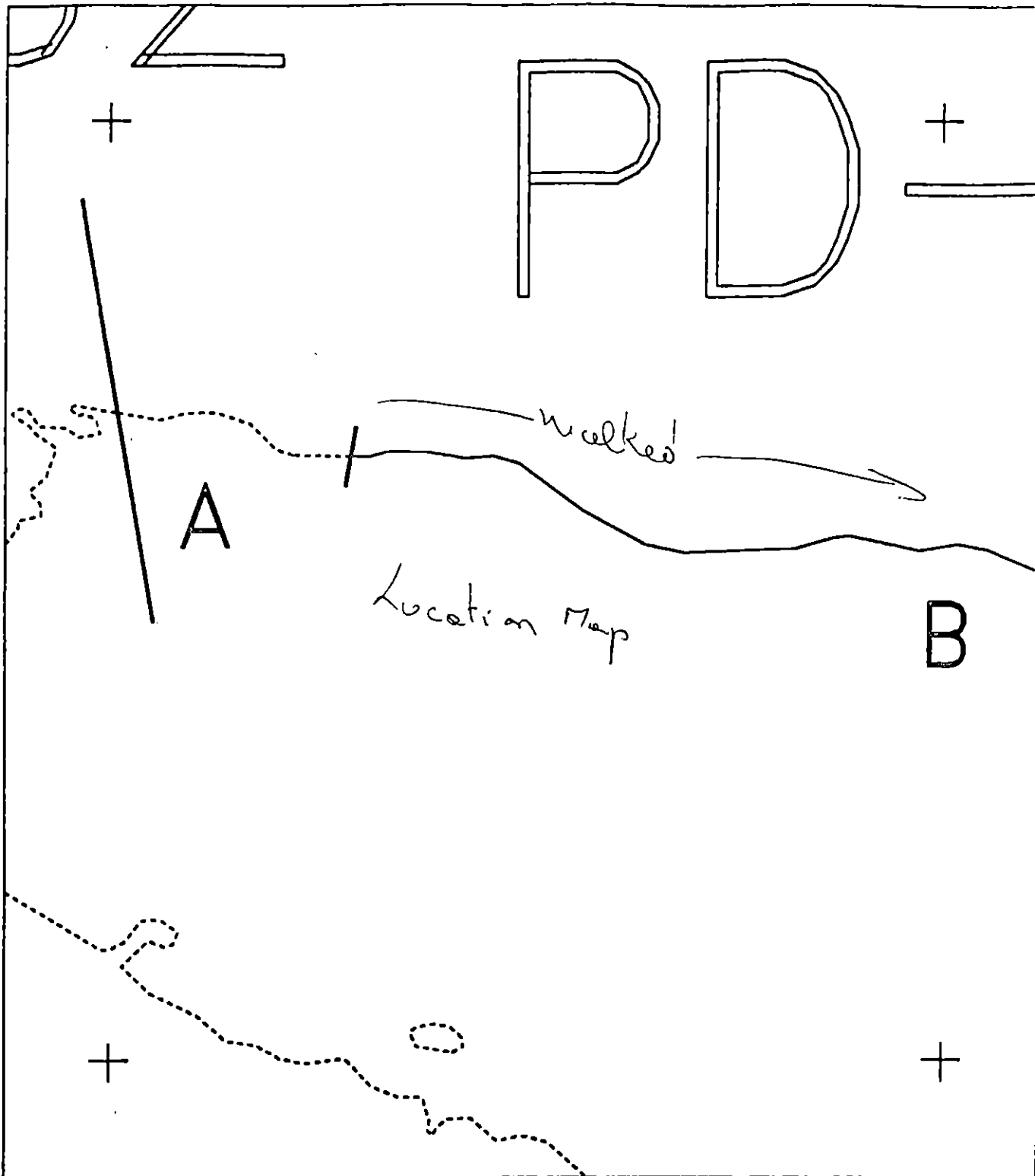
NAME John McDonald SIGNATURE John McDonald

☒ NTR

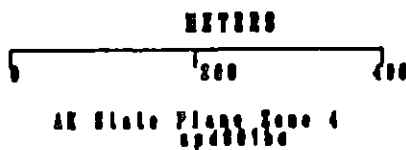
Small amounts of weathered mussels, very spread out which were picked up on scene when applicable.

John McDonald

REVIEWED: F.W. 5/25/91



PD001 B



Subdivision Field Map

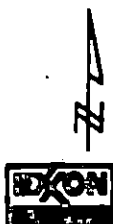
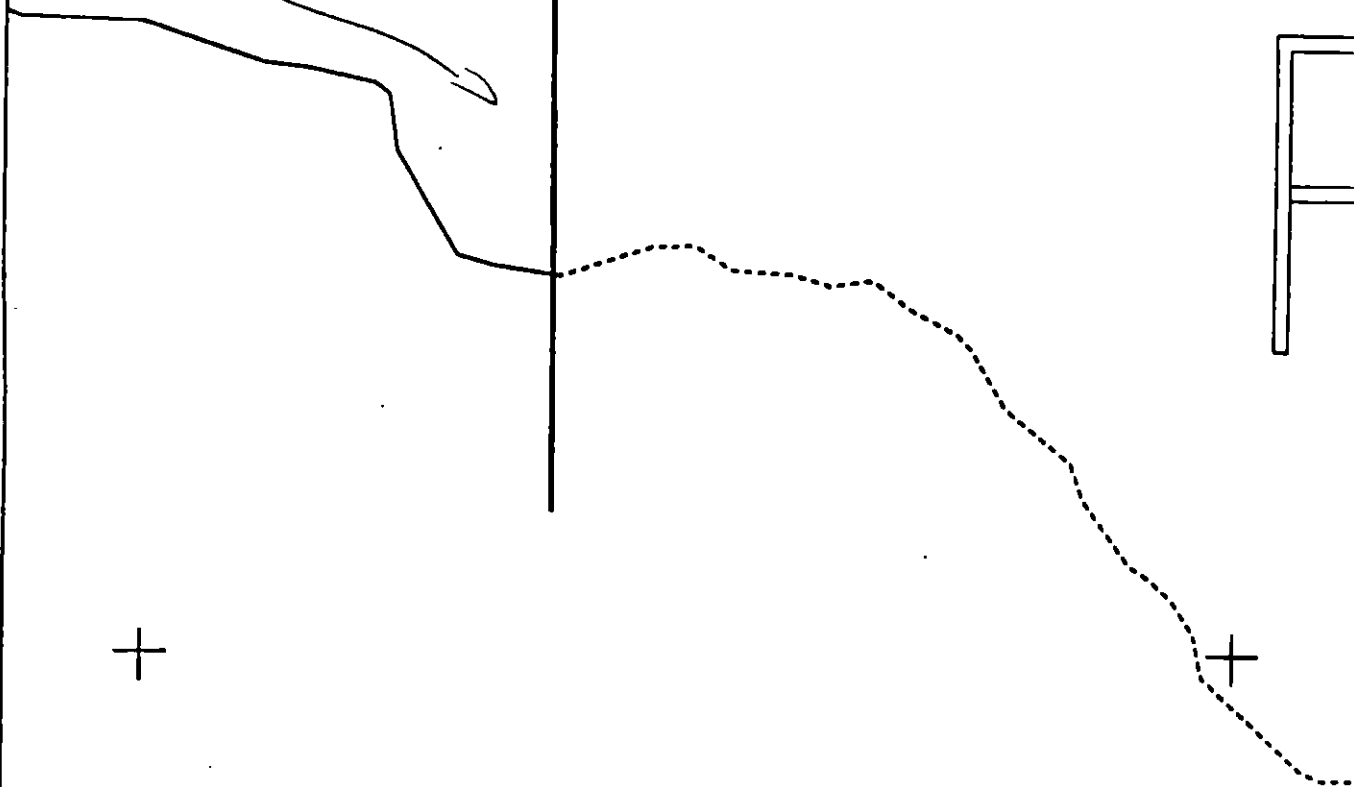
Map Key: KENPD001Ba

Name: J.M. Semper

Date: May 21/91

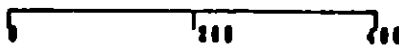
REVIEWED: F.W. 5/25/91

val 201



P D 0 0 1 B

MIYI28



AK State Plane Zone 4.
apd00155

Subdivision Field Map

Map Key: KENP000126

Name: My School

Date: MAY 21/91

REVIEWED: F.W. 5/25/91

Og Sket & Map

PD 001-B.

JMSempels

MAY 21, 91

1442-1530

Legend

[] Boulders

[] cb / pe

[] pe / cb

[] Sloping bedrock /
unconsolidated
material.

A1
3 tar splatters
< 20cm dia around
base of boulders

A2
2 Tar cl
< 20cm
dia on
boulder

A3

worked on
ET, MSOR
5x15, < 1%
< 1m², max 5cm
thick under
veneer of cob / pe
WITZ

A4

4 App patches < 1m²
in WITZ P.L.

MAYSAP 4. : . 16

MAYSAP 4. : . 17

→ Z →

Meters
0 200

REVIEWED: F.W. 5/25/

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 21, 1991 1403 - 1514
SEGMENT #	PD001	TIDAL HEIGHT (Range)	+1.1 => +1.3
SUBDIVISION	B	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	NW 5-10 kt., clear

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil Related Comments

- A1 Tar splatters were found in the upper zone bedrock/boulder outcrop. Limpets are rare on bedrock outcrops and boulders. Barnacles are sparse, and present on boulders, bedrock and under cobble.
- A2 A few tar CT spatters were present on the upper zone boulders. Barnacles (sparse) were the only species found at the site.
- A3 Oil (CT, MSOR) was present in a patch in the upper zone of the cobble/boulder beach. Barnacles (Balanus) were the most common species, and were sparse to moderately abundant, particularly under cobble. A few littorine snails and limpets were present. Slightly below the oiled zone, the cobble leads to a dense zone of barnacles and mussels, with Fucus moderately abundant in the mid-to-low zone.
- A4 A few small patches of asphalt pavement was removed from the upper zone of the pebble/cobble beach. Barnacles were the most prominent species on this beach. The lower zones had a sparse mussel bed and moderately dense cover of Fucus.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl	3	343	
Gulls/Kittiwakes	1	203	
Shorebirds			
Corvids			
Other Birds	1	5	

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

Shoreline subdivision map showing important biological features attached.

9. Peanut worms - Sipunculids - *Phascolosoma agassizii*
 10. Crustaceans
 - a. Amphipods - *Traskorchestia* sp.?
 - b. Barnacles - *Balanus glandula*
 - c. Crabs - *Haplogaster* sp., Paguridae (hermit crabs)
 - d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimorsphaeroma oregonensis*
 11. Mollusca
 - a. Chitons - *Mopalia mucosa*, *Tonicella lineata*,
 - b. Snails - Gastropods
Amphissa columbiana, *Littorina sitkana*, *L. keenae*, *Natica clausa*, *Nucella lamellosa*, *N. lima*, *Searlesia dira*, *Tachyrhynchus* sp.
 - c. Limpets - *Lottia digitalis*, *L. persona*, *L. limatula*, *T. persona*, *T. scutum*
 - e. Bivalves - *Clinocardium* sp., *C. nuttalli*, *Macoma nasuta*, *Modiolus modiolus*, *Mytilus edulis*, *Pododesmus cepio*, *Prototheca staminea*, *Saxidomus giganteus*
 12. Echinoderms
 - a. Brittle Stars - *Ophiolus aculeatus*?, *Ophiothrix spiculata*?, *Amphipholis*?
 - b. Sea stars - *Dermasterias imbricata*, *Evasterias truscheli*, *Leptasterias hexactis*, *Pycnopoda helianthoides*, *Solaster dawsoni*
 - c. Sea Cucumbers - Holothurians *Eupentacta* sp.,
 - d. Urchins - *Strongylocentrotus droebachiensis*
 13. Bryozoans - *Membranipora* sp., *Schizoporella* sp.
 15. Fishes
 - Cottidae -
 - Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*
- III. Birds - *Glaucous-winged Gull* (3), *Harlequin Duck* (2), *Lesser Scaup* (30), *Common Merganser* (1), *Fox Sparrow* (5), *Pacific Loon* (1 dead on beach)

BIO SKETCH MAP

P0001-B

J. BARKLEY

July 21, 1991

2-2-550

TAIL SPLATTERS WITH
BARNAICLES, LITTLE
BOTH SPARSE

A1

CT, splatters
mussels

A2

CT, mussels - with
BARNAICLES, SPARSE
LITTLE - common
MUSSEL, BARNAICLE
BOTH LOCATED
IN COBBLE BEDS

A3

MUSSELS/BARNAICLES
FOCUS

A4

AP - BARNAICLES, LITTLE ELSE

METERS

0 200

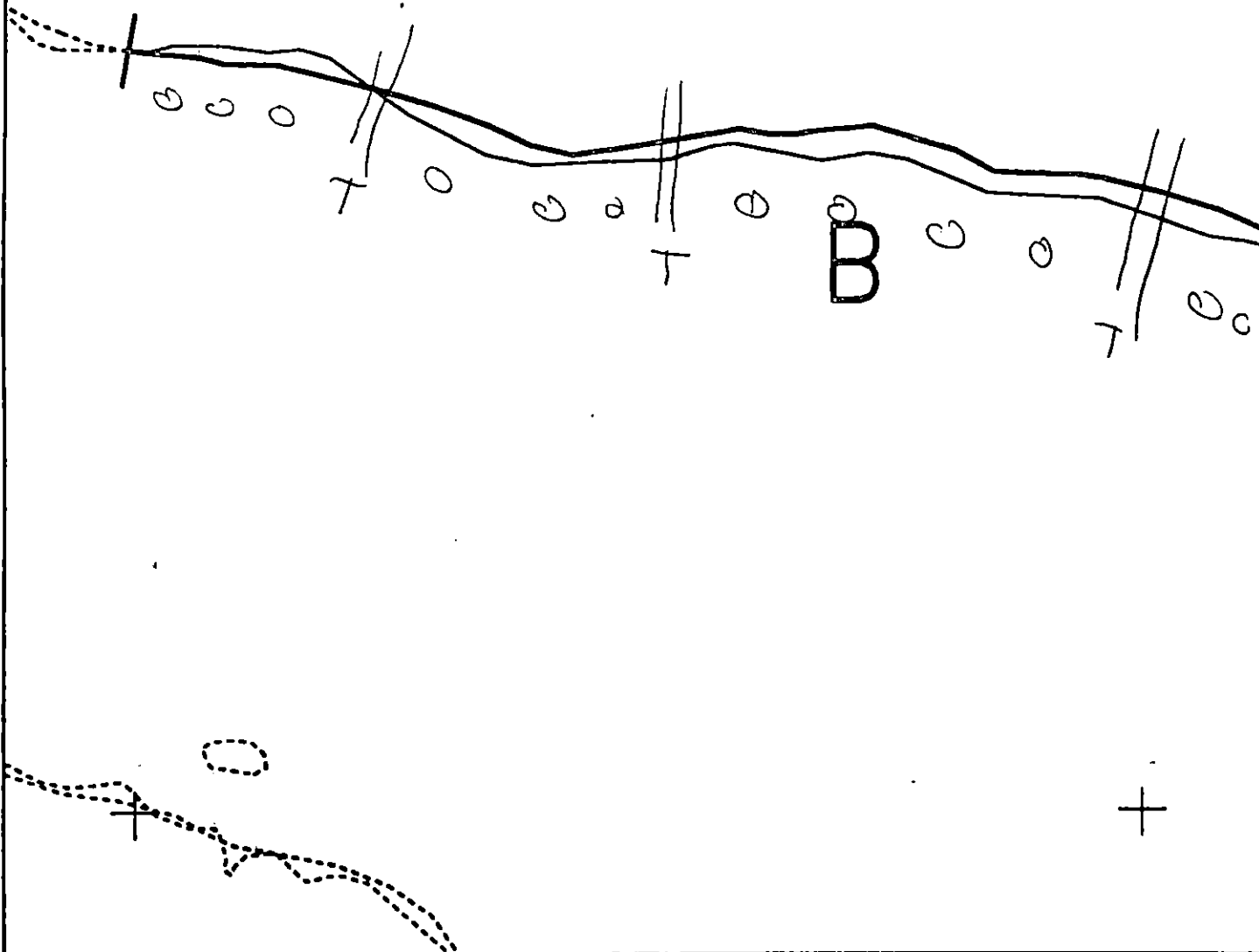
N

+

PD

—

O+



XXXX

Wide

////

Medium

Narrow

TTTT

Very Light

0000

No Oil

PD001 B

ADEC Subsegment Length: 1710m

METERS

0 200 400

AK State Plane Zone 4
apd001ba

Subdivision Field Map

Map Key: KENPD001Ba

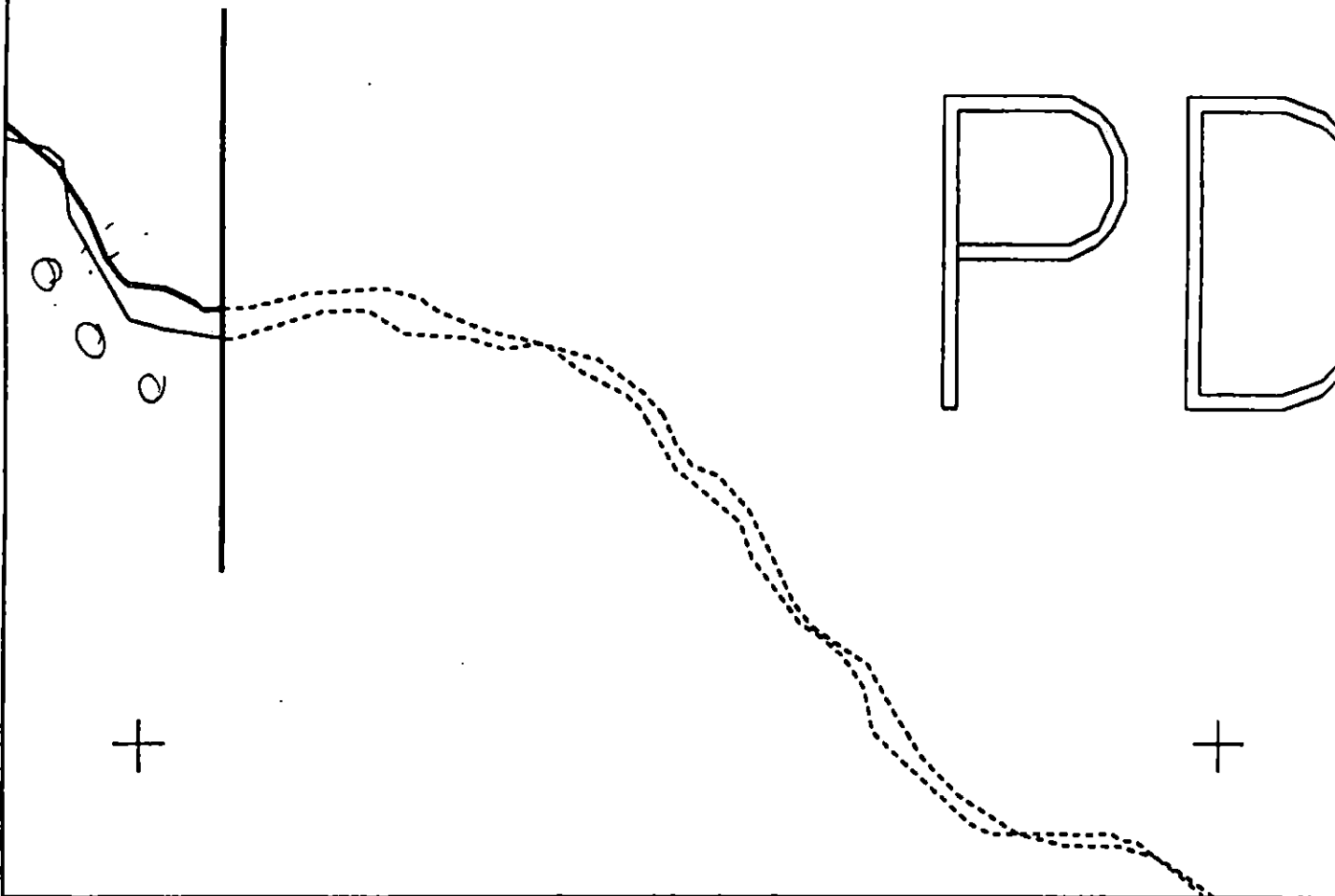
Name: J. M. SamplesDate: May 21/91

Date Entered:

REVIEWED: F.W. 5/25/91

1

+



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

PD001 B

ADEC Subsegment Length: 1716m
 METERS

0 200 400

AK State Plane Zone 4
 sp4001bb



Subdivision Field Map

Map Key: KENPD0001BB

Name: J. Sempala

Date: May 21 / 91

Date Entered:

REVIEWED: P.W. S/25/

1991 MAYSAP EVALUATION

SEGMENT: PD 001 SUB: A REGION: KEN SURVEY DATE: 5/21/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) Fish harvest area

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: _____ Date: _____

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____

FOSC APPROVAL DATE: _____

ADEC _____

FOSC _____

EXXON _____

USCG _____

NOAA _____

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

ADEC

NAME Clara Crosby SIGNATURE Clara S. Crosby

☐ NTR ☒ Treatment Recommended -

This segment is located next to an anadromous stream. An addendum was submitted by the Helo Bio team in 1990 & was never addressed. I am recommending manual removal of HSOR/MSOR - B/C ^{when possible} ~~it~~ should be rolled. ~~to~~ access oiling. This segment is located within Kachemak Bay State Wilderness Park - Alga

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/21/91

☐ NTR

Several large areas of surface and subsurface HSOR exist that were worked manually in 1990. The amount was too much for the survey to pickup so it was left. A different method may be needed here.

LANDMANAGER

NAME Teff Johnson OF ADNR SIGNATURE [Signature]

☐ NTR

☒ Treatment Recommended

- Manual pickup of exposed A/P. HSOR recommended; Perhaps TAG group can offer alternatives for the remainder. This is obvious, gross oiling of sediments, and is within Kachemak Bay State Wilderness Park, in an area with high recreational values. The survey team would definitely have picked this up but it was too large to handle.

USCG/NOAA

NAME [Signature] SIGNATURE [Signature]

The 5 meter square area of asphalt ~~has~~ has a thin coat of weathered oil, once this is punctured the oil below the coat flows readily. The majority of the rest of the oil is located in a triangular area in the gravel to sand layer, just below the cobble. Removal of those two oiled areas would require a minimum effort and would have little impact on the local environment.

I concur [Signature]

SEGMENT FD-001
SUBDIVISION A
DATE MAY 12 191

TIME 12:59 to 14:42

TIDE LEVEL ⁺ 3.8 ft. to ⁺ 5.1 ft.

ENERGY LEVEL: ☐ H ☒ M ☐ L

SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO

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

TOTAL LENGTH SHORELINE SURVEYED: 346 m

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

EST. OIL CATEGORY LENGTH: W m M 17 m N m VL 71 m NO 258 m US m

[illegible]

DISTRIBUTION: C = 91-100%; B = 61-80%; P = 11-50%; S = 1-10%; T = <1%

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

PHOTO ROLL # MAYSAP-1 MAYSAP 4. 11-15 FRAMES

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R G N	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
1	35							X	-	Y	-	-						
2	30							X	-	Y	-	-		*				
3	35							X	-	Y	-	-		*				
4	30							X	-	Y	-	-		*				
5	30							X	-	Y	-	-		*				
6	30							X	-	Y	6	-		*				
7	35							X	-	Y	-	-		*				
8	35							X	-	Y	-	-		*				
9	30							X	-	Y	-	-		*				

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

OG COMMENTS:

COMMENTS: Relatively uniform beach of boulder/cobble or pebble / pebble sediments. Subsurface oil present in the western part. surface $\pm$ MSON present in the west.

Revised: MC 5/26/91

revised 5.25 qy

[illegible]

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

< 5 cm DEEP DOES NOT CONSTITUTE SURFACE OIL

OG COMMENTS:

Revised: MC 5/26/91

OG sketch map.

PD 001-A

JM Samples

MAY 31/91

1992-1442

MAYSAP 4 . . 11

A1

MOR, 1x3,
1%, around base
of boulders,
typically 2 to 4 cm
deep

A2

MOR, 5x12,
20%, typically
2 to 4 cm deep

A3

MOR, 2x20
<10%, typically
10 to 12 cm deep

MAYSAP 4 . . 12-13 . A4

MOR 1x3
<10%
2 to 4 deep.

A5

Ap, 6 small remnant
areas, all < 30 cm dia
< 8 cm thick in
10 x 25 area, <1%

P. 4 MAYSAP 4 . . 14

A6

a) 5x5 MOR 50%
b) 5x50 <1% runny soft AP
under and around ed.

MAYSAP 4 . . 15

General view down beach

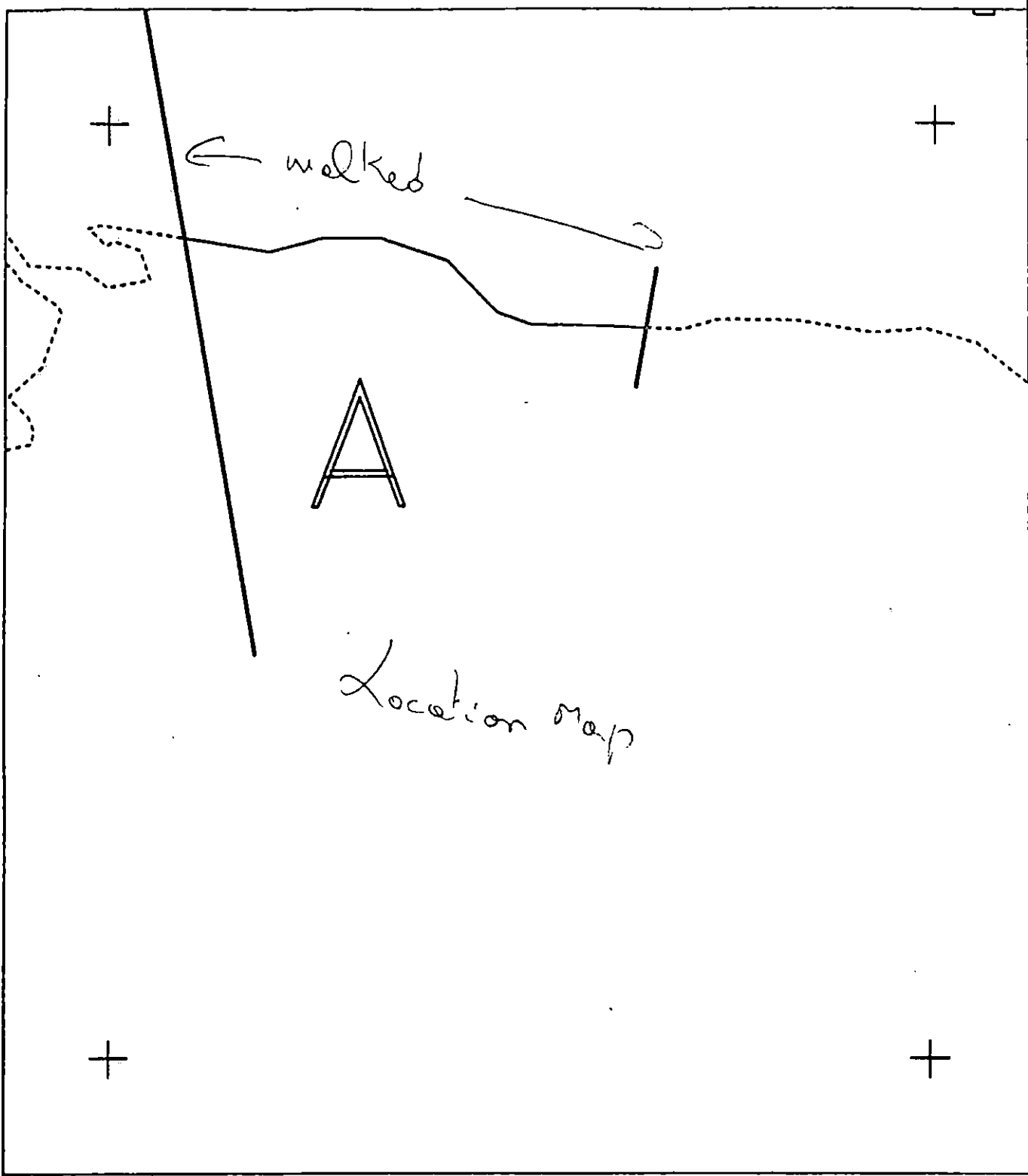
Storm berm (old)
clean logs
base of storm berm.

- Legend
- 1 Bedrock
 - 2 Boulder / cobble
 - 3 Cobble / pebble
 - 4 Pebble / granule

Z

Meters
0 50

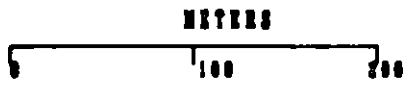
Reviewed: MC 5/20/01
revised 5-25-94



Location map



PD001 A



AK State Plane Zone 4
sp000100

Subdivision Field Map
Map Key: KENPD001Aa
Name: for Sample
Date: MAY 21/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 21, 1991 1217 - 1339
SEGMENT #	PD001	TIDAL HEIGHT (Range)	+3.8 => +5.1
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	NW 5-10 kt., clear

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil Related Comments

- A1 Mouse patches were found in the upper zone bedrock/cobble outcrop. Very few biota were found at this site. A few scattered barnacles and littorine snails, and a very sparse film of green filamentous algae on some cobble or bedrock.
- A2 Pooled oil was present in the upper zone of a cobble/pebble beach near the upper berm. The only apparent live organism was a thin film of green filamentous algae on some cobble. Some organic debris was present as well. Very little biota is present in the upper zones of the beach. The lower zone has a sparse to moderately abundant bed or rockweed (Fucus), where several other species are common.
- A3,A4 Small patches of MOR are present in the beach cobble/pebbles, near the upper part of the beach. Biota are sparse or completely absent, as in A1, above.
- A5,A6 Asphalt pavement or MSOR in the upper zone cobble. Littorines and limpets are fairly common at this location, and are in close proximity to the oil (often within 1-5 mm), but are rarely found alive in the most heavily oiled sediments. Barnacles are found under most cobble, where they are denser than on the upper side of the cobble.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

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

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

Shoreline subdivision map showing important biological features attached.

REVIEWED: MC 5/26/91
 Rev'd 5/25/91 DAL

Lower in the intertidal the abundance of barnacles increases, as does the cover of *Fucus*, mussels, and the densities of several invertebrates (littorines, limpets, isopods, oligochaete, hermit crabs, amphipods).

Cleanup Considerations

Manual cleanup activities were performed on the oil during the survey. Additional cleanup, if necessary, will not cause adverse affect to the biota.

General Characteristics of PD001-A

This section of beach is generally straight, with a moderate to high sloping shoreline of cobbles or pebbles or both. The abundance of most species is very low on these beaches, except for the very low zone where *Fucus*, molluscan invertebrates, and red, green, and brown algae are found. Mussels are sparse to moderate in the middle zone and low zone amongst beach cobble.

General Zonation Pattern

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal

Oil Distribution			- - -			
Bare Rock		--	- - - - -	- - - - -		
Green Filamentous Algae			- - - +++++	- - - - -	- - - - -	- -
Rockweed (<i>Fucus</i>)					-----+ + + + +	-
Barnacles (<i>Balanus</i>)			- - - - -	+++--	++--	- - -
Littorine Snails			- - - - -	- - -	++--	++--
Limpets			- - - - -	++	++	++
Red Algae					-----+ + + + +	- - -
Green Algae (<i>Ulva</i> /other)					-----+ + + + +	- - -
Mussels (<i>Mytilus</i>)				- - -	++--	++--
Upright Brown Algae (not <i>Fucus</i>)					-----	

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

Common Species on PD001-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., *Ulva* sp., *Urospora* sp.
3. Brown Algae - Phaeophyta
Alaria marginata, *Ectocarpus* spp., *Fucus distichus*, *Hildenbrandia* sp., *Ralfsia* sp., *Syctosiphon lomentaria*
4. Red Algae - Rhodophyta
Cumagloia andersonii, *Endocladia muricata*, *Halosaccion glandiforme*, sp., *Mastocarpus* 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*, *Urticina crassicornis*,
5. Flatworms - *Platyhelminthes* - Polyclads

REVIEWED: MC 5/26/91

6. Nemertean Worms - Ribbon Worms - *Emplectonema gracile*, *Tubulanus polymorphus*
8. Polychaete Worms
 - Nereidae* - *Nereis* spp.
 - Spirorbidae* - *Spirorbis* sp.
9. Peanut worms - Sipunculids - *Phascolosoma agassizii*
10. Crustaceans
 - a. Amphipods - *Traskorchestia* sp.?
 - b. Barnacles - *Balanus glandula*
 - c. Crabs - *Haplogaster* sp., *Paguridae* (hermit crabs)
 - d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimorsphaeroma oregonensis*
11. Mollusca
 - a. Chitons - *Mopalia mucosa*, *Tonicella lineata*,
 - b. Snails - Gastropods
 - Amphissa columbiana*, *Littorina sitkana*, *L. keenae*, *Natica clausa*, *Nucella lamellosa*, *N. lima*, *Searlesia dira*, *Tachyrhynchus* sp.
 - c. Limpets - *Lottia digitalis*, *L. persona*, *L. limatula*, *T. persona*, *T. scutum*
 - e. Bivalves - *Clinocardium* sp., *C. nuttalli*, *Macoma nasuta*, *Modiolus modiolus*, *Mytilus edulis*, *Pododesmus cepio*, *Prototheca staminea*, *Saxidomus giganteus*
12. Echinoderms
 - a. Brittle Stars - *Ophiolus aculeatus*?, *Ophiothrix spiculata*?, *Amphipholis*?
 - b. Sea stars - *Dermasterias imbricata*, *Evasterias truscheli*, *Leptasterias hexactis*, *Pycnopoda helianthoides*, *Solaster dawsoni*
 - c. Sea Cucumbers - *Holothurians Eupentacta* sp.,
 - d. Urchins - *Strongylocentrotus droebachiensis*
13. Bryozoans - *Membranipora* sp., *Schizoporella* sp.
15. Fishes
 - Cottidae* -
 - Stichaeidae* - *Xiphister atropurpureus*, *X. mucosus*

III. Birds - Glaucous-winged Gull (5), Harlequin Duck (2)

BIO SKETCH MAP

P0001-A

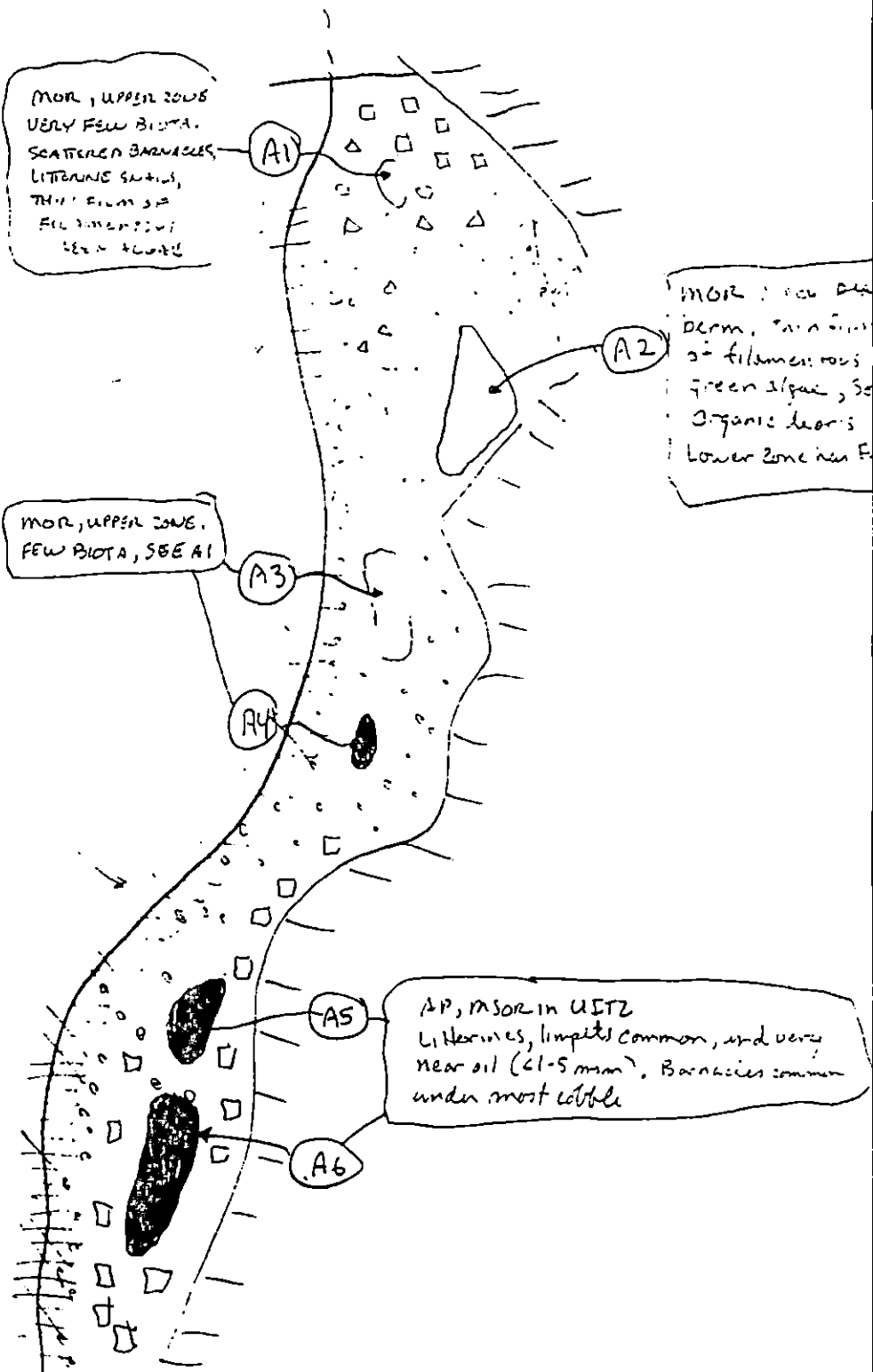
J P BARRY

21 MAY 1991

1222-M42

Legend

- () Bare rock
- (□) Por. def. zone
- (□) Cope/Pitt x
- (□) Pebble Gravel
- (□) Fucus/mussels (moderate)



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

PD001 A
 ADEC Subsegment Length: 348m
 METERS
 0 100 200
 AK State Plane Zone 4
 upd001a

Subdivision Field Map
 Map Key: KENPD001A
 Name: JM Semple
 Date: May 21/91
 Date Entered:

Reviewed: 5/26/91
 revised 5-25-91

1991 MAYSAP EVALUATION

SEGMENT: PD 001 SUB: B REGION: KEN SURVEY DATE: 5/21/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) Fish harvest area

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: Timothy A Smith Date: 6/04/91

RECOMMENDATIONS:

	INITIAL	TAG	FOSC
TREATMENT REQUIRED (Y or N)	<u>N</u>	<u>N</u>	<u>N</u>
Manual Pickup (Check as Req.)	<u> </u>	<u> </u>	<u> </u>
Spot Washing	<u> </u>	<u> </u>	<u> </u>
Bio-Customblen Only	<u> </u>	<u> </u>	<u> </u>
Bio-Inipol/Customblen	<u> </u>	<u> </u>	<u> </u>
Other	<u> </u>	<u> </u>	<u> </u>
Other	<u> </u>	<u> </u>	<u> </u>

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: June 4 1991

FOSC APPROVAL DATE: 6/7/91

ADEC John Bann

FOSC

EXXON Beal

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

USCG Ed Mallon

NOAA John Bann

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT PD-001 SUBDIVISION 8 DATE 5/21/91

ADEC

NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☒ NTR

Oiling occurred in a splash distribution little would be recovered or is considered treatable

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles

☒ NTR

Overall no significant oiling found.

LANDMANAGER

NAME Jeff Johnson OF ADNR SIGNATURE Jeff Johnson

☒ NTR

Concur with other reps. Scattered tar - A/P in small amounts would take a lot of time to locate, and would be impractical to remove

USCG/NOAA

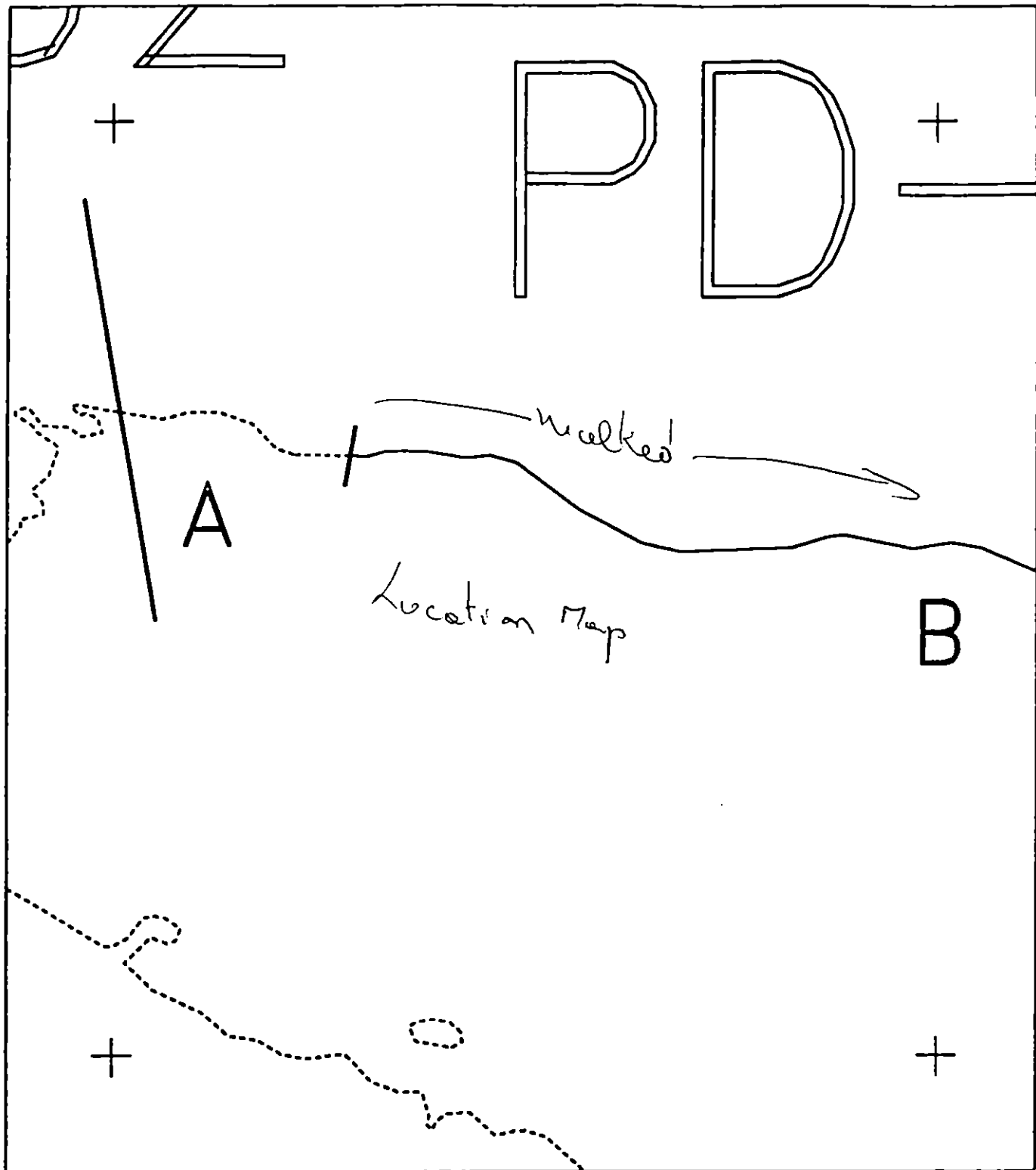
NAME John McDonald SIGNATURE John McDonald

☒ NTR

Small amounts of weathered material very spread out which were picked up on scene when applicable.

John McDonald

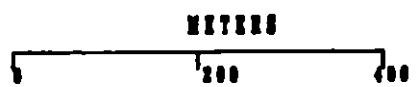
REVIEWED: F.W. 5/25/91



Location Map



PD001 B



AK State Plane Zone 4
NAD83

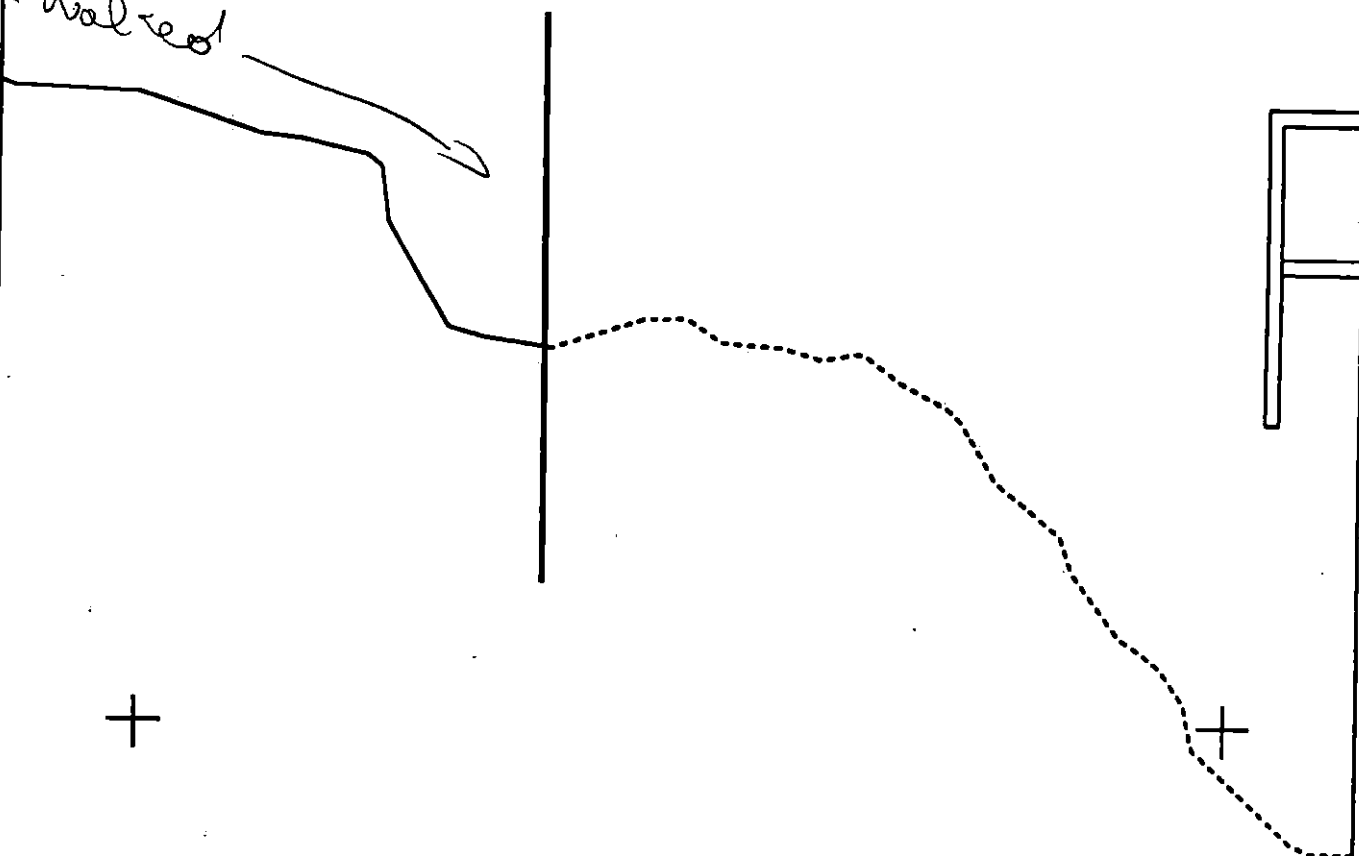
Subdivision Field Map
Map Key: KENPD001Ba
Name: J. M. Semple
Date: MAY 21/91

REVIEWED: F.W. 5/25/91

01

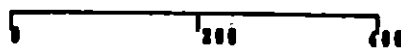
Location map.

Walled



PD001 B

METERS



AK State Plane Zone 4.
sp2001b5

Subdivision Field Map

Map Key: KENPD001Bb

Name: J. M. Sengul

Date: May 21/91

REVIEWED: F.W. 5/25/91

Og Sket & Map

PD 001-B

JMSamps

May 21, 91

1442-1530

Legend

□ Boulders

□ ch / pb

□ pb / ch

▨ Sloping bedrock /
unconsolidated
material.A1
3 tar splatters
< 20cm dia around
base of bouldersA2
2 Tar ct
< 20cm
dia on
boulder

A3

worked on
ET, MSOR
5x15, < 1%
< 1m², max 5cm
thick under
veneer of cob / pb

WITZ

A4

4 App patches < 1m²
in WITZ P.L.

MAYSAp 4. : 0.16

MAYSNIP 4. : 0.17

Metres
0 200

→ Z →

REVIEWED: F.W. 5/25/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 21, 1991 1403 - 1514
SEGMENT #	PD001	TIDAL HEIGHT (Range)	+1.1 => +1.3
SUBDIVISION	B	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	NW 5-10 kt., clear

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil Related Comments

- A1 Tar splatters were found in the upper zone bedrock/boulder outcrop. Limpets are rare on bedrock outcrops and boulders. Barnacles are sparse, and present on boulders, bedrock and under cobble.
- A2 A few tar CT spatters were present on the upper zone boulders. Barnacles (sparse) were the only species found at the site.
- A3 Oil (CT, MSOR) was present in a patch in the upper zone of the cobble/boulder beach. Barnacles (Balanus) were the most common species, and were sparse to moderately abundant, particularly under cobble. A few littorine snails and limpets were present. Slightly below the oiled zone, the cobble leads to a dense zone of barnacles and mussels, with Fucus moderately abundant in the mid-to-low zone.
- A4 A few small patches of asphalt pavement was removed from the upper zone of the pebble/cobble beach. Barnacles were the most prominent species on this beach. The lower zones had a sparse mussel bed and moderately dense cover of Fucus.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl	3	343	
Gulls/Kittiwakes	1	203	
Shorebirds			
Corvids			
Other Birds	1	5	

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

Shoreline subdivision map showing important biological features attached.

Cleanup Considerations

Manual cleanup activities were performed on the oil during the survey. Additional cleanup, if necessary, will not cause adverse affect to the biota.

General Characteristics of PD001-B

This beach is nearly identical to PD001-A, with a long beach with sediments varying from pebbles to boulder, and mostly cobble. The shore is moderate to high sloping. The abundance of most species is very low on these beaches, except for the very low zone where *Fucus*, molluscan invertebrates, and red, green, and brown algae are found. Mussels are sparse to moderate in the middle zone and low zone amongst beach cobble.

General Zonation Pattern

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal

Oil Distribution		- - -				
Bare Rock		--	- - - - -	- - - - -		
Green Filamentous Algae			- - - +++++	- - - - -	- - - - -	- - -
Rockweed (<i>Fucus</i>)					- + + + + + + +	-
Barnacles (<i>Balanus</i>)			- - - - -	+++*	+ - - - -	- - -
Littorine Snails			- - - - -	- + - - -	+ - - - -	+ - - - -
Limpets			- - - - -	- + + + + + + +	- - - - -	- - -
Red Algae					- - + + + + + + + +	- - -
Mussels (<i>Mytilus</i>)				- - + + + + + + + +	- - - - -	- - -

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

Common Species on PD001-B

A. Marine Plants

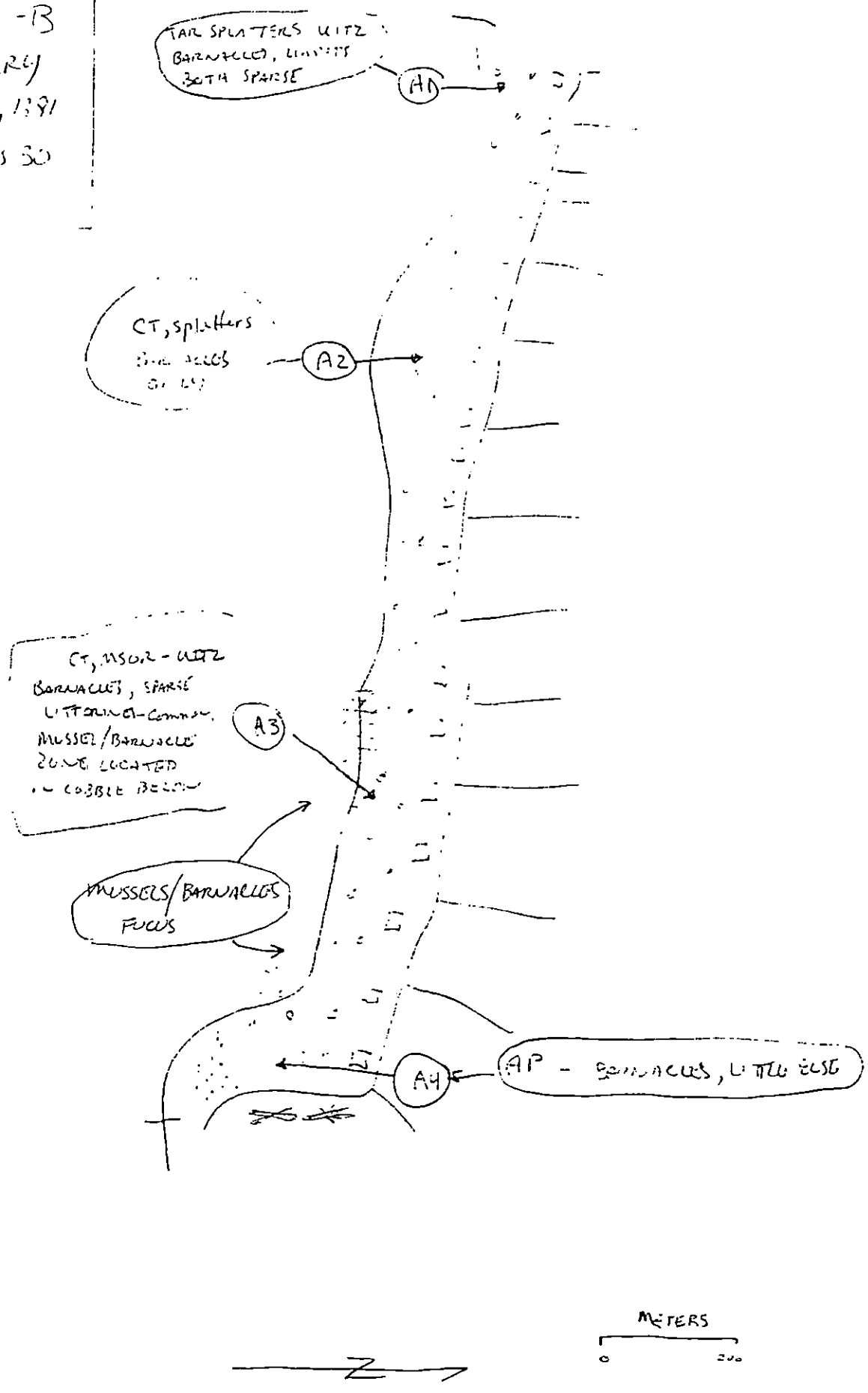
1. Diatoms. Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., *Ulva* sp., *Urospora* sp.
3. Brown Algae - Phaeophyta
Alaria marginata, *Ectocarpus* spp., *Fucus distichus*, *Hildenbrandia* sp., *Ralfsia* sp., *Syctosiphon lomentaria*
4. Red Algae - Rhodophyta
Cumagloia andersonii, *Endocladia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

II. Marine Animals

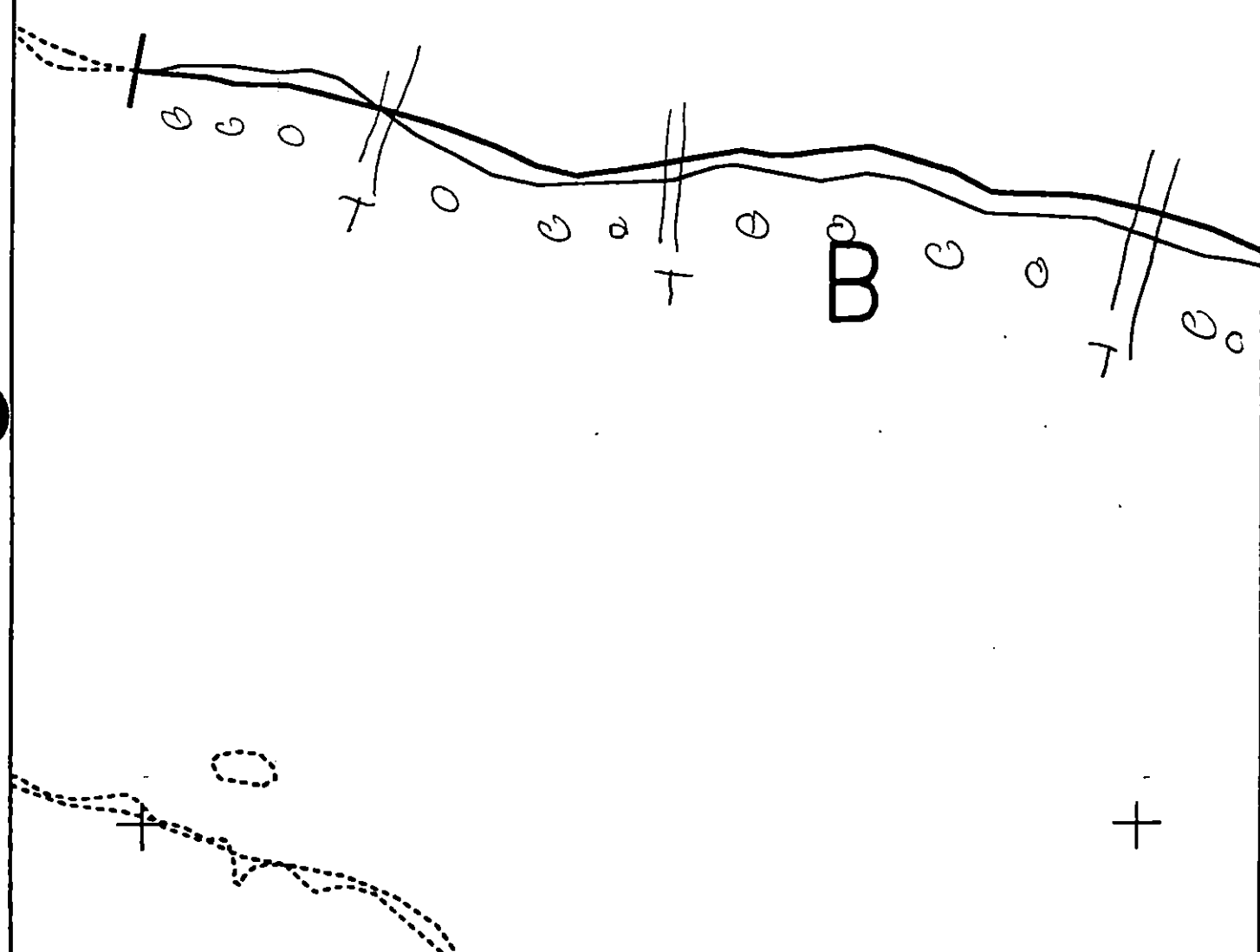
1. Sponges - Porifera - *Halichondria bowerbanki*?
2. Anemones - *Anthopleura artemesia*, *Urticina crassicornis*,
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - *Emplectonema gracile*, *Tubulanus polymorphus*
8. Polychaete Worms
Nereidae - *Nereis* spp.
Spirorbidae - *Spirorbis* sp.

- 9. Peanut worms - Sipunculids - *Phascolosoma agassizii*
 - 10. Crustaceans
 - a. Amphipods - *Traskorchestia* sp.?
 - b. Barnacles - *Balanus glandula*
 - c. Crabs - *Haplogaster* sp., Paguridae (hermit crabs)
 - d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimorsphaeroma oregonensis*
 - 11. Mollusca
 - a. Chitons - *Mopalia mucosa*, *Tonicella lineata*,
 - b. Snails - Gastropods
 - Amphissa columbiana*, *Littorina sitkana*, *L. keenae*, *Natica clausa*, *Nucella lamellosa*, *N. lima*, *Searlesia dira*, *Tachyrhynchus* sp.
 - c. Limpets - *Lottia digitalis*, *L. persona*, *L. limatula*, *T. persona*, *T. scutum*
 - e. Bivalves - *Clinocardium* sp., *C. nuttalli*, *Macoma nasuta*, *Modiolus modiolus*, *Mytilus edulis*, *Pododesmus cepio*, *Prototheca staminea*, *Saxidomus giganteus*
 - 12. Echinoderms
 - a. Brittle Stars - *Ophiolus aculeatus*?, *Ophiothrix spiculata*?, *Amphipholis*?
 - b. Sea stars - *Dermasterias imbricata*, *Evasterias truscheli*, *Leptasterias hexactis*, *Pycnopoda helianthoides*, *Solaster dawsoni*
 - c. Sea Cucumbers - Holothurians *Eupentacta* sp.,
 - d. Urchins - *Strongylocentrotus droebachiensis*
 - 13. Bryozoans - *Membranipora* sp., *Schizoporella* sp.
 - 15. Fishes
 - Cottidae -
 - Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*
- III. Birds - Glaucous-winged Gull (3), Harlequin Duck (2), Lesser Scaup (30), Common Merganser (1), Fox Sparrow (5), Pacific Loon (1 dead on beach)

BIO SKETCH MAP
PDO01-B
JP BARRY
May 21, 1991
1442-330



+ P D - O +



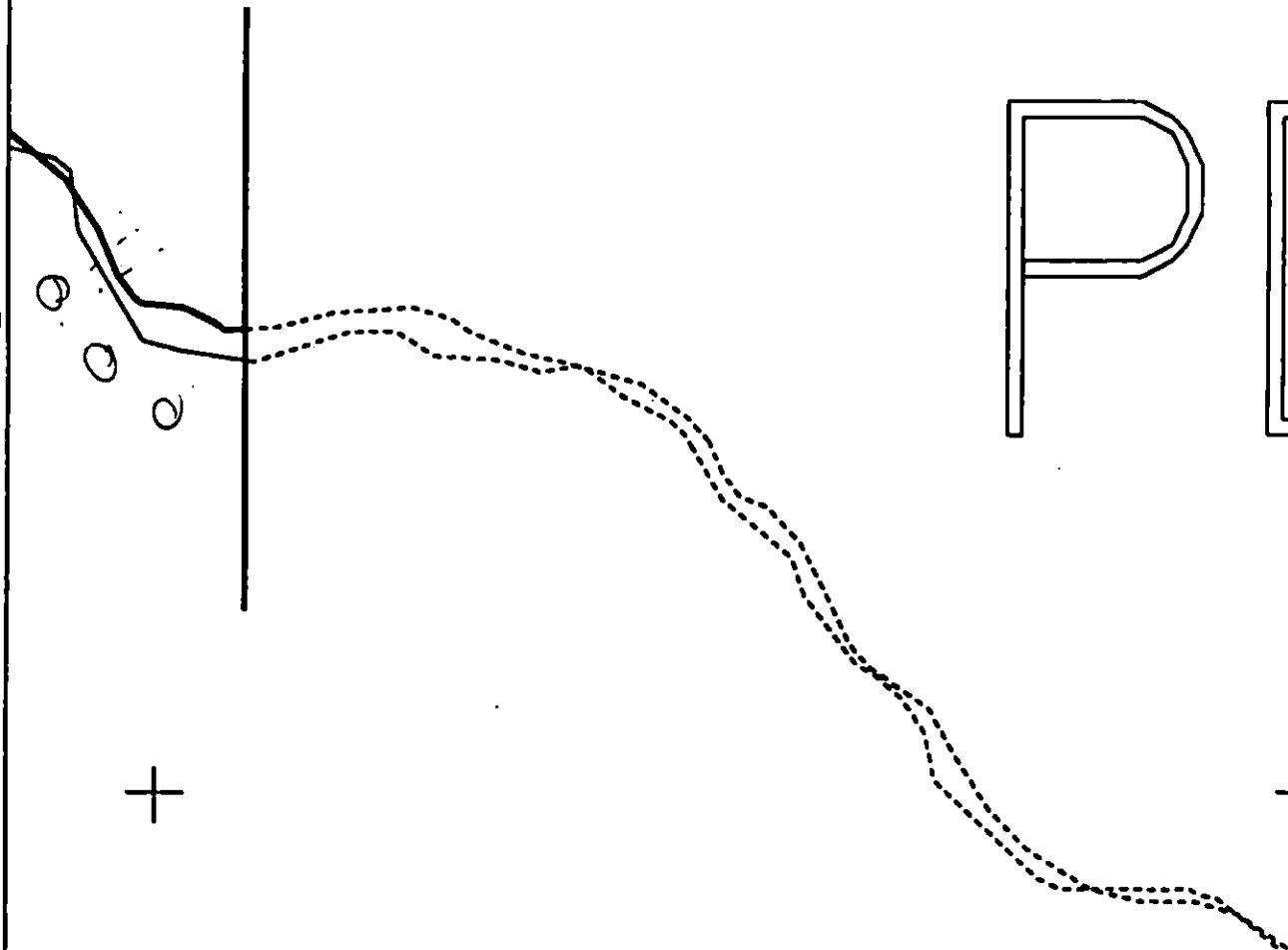
XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

PD001 B
 ADEC Subsegment Length: 1718m
 METERS
 0 200 400
 AK State Plane Zone 4
 apd001ba



Subdivision Field Map
 Map Key: KENPD001Ba
 Name: J. J. Samples
 Date: May 21/91
 Date Entered:

REVIEWED: F.W. 5/25/91



PD

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

PD001 B
ADEC Subsegment Length: 1716m
METERS
0 200 400
AK State Plane Zone 4
sp001bb

Subdivision Field Map
Map Key: KENPD001Bb
Name: J. Sempels
Date: May 21 / 91
Data Entered:


REVIEWED: P.W. 5/25/91

ANADROMOUS FISH STREAM EVALUATION

SEGMENT ST/PD-002 STREAM NO: 242-42-10450 DATE 4/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1J Purse seine area (7/20 to 9/30)
4GA State Marine Park Alaska State Wilderness Park
6NN Recreation: Sportfishing
8AA Sensitive estuary

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Subject stream is located within subdivision A (1 of 1). Avoid landing in mussel beds.

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact Exxon's Cultural Resource Program immediately (564-3276 (Anchorage) or 229-1508 (24 hrs.)).

SHPO SIGNATURE: Rachel Joan Owen DATE: 5/22/90

Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes: 1) manual removal of tarmat, patties and oiled debris, 2) bioremediation of coat and cover areas as indicated on the attached sketch map. Contact ADNR for entry permit. Work from 5/16 to 7/9.

TAG COMMENTS:

TAG APPROVAL DATE: 5/18/90

ADEC Art Weimer
EXXON Andy TGA
NOAA Gary Petros
USCG G.A. REITER

FOSC [Signature]

DATE: MAY 25 1990

SEGMENT ST. 202

SP SH MAP

UBDIVISION A(1041)

SY. W. A. K. L.

242-40

ATE 4/20/90

242-42-10450

CHECKLIST

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

LEGEND

1 Δ
1 - No Subsurface Oil

2 Δ
1 - Subsurface Oil

CT/C
nchous Distribution

CT/B
Aen Distribution

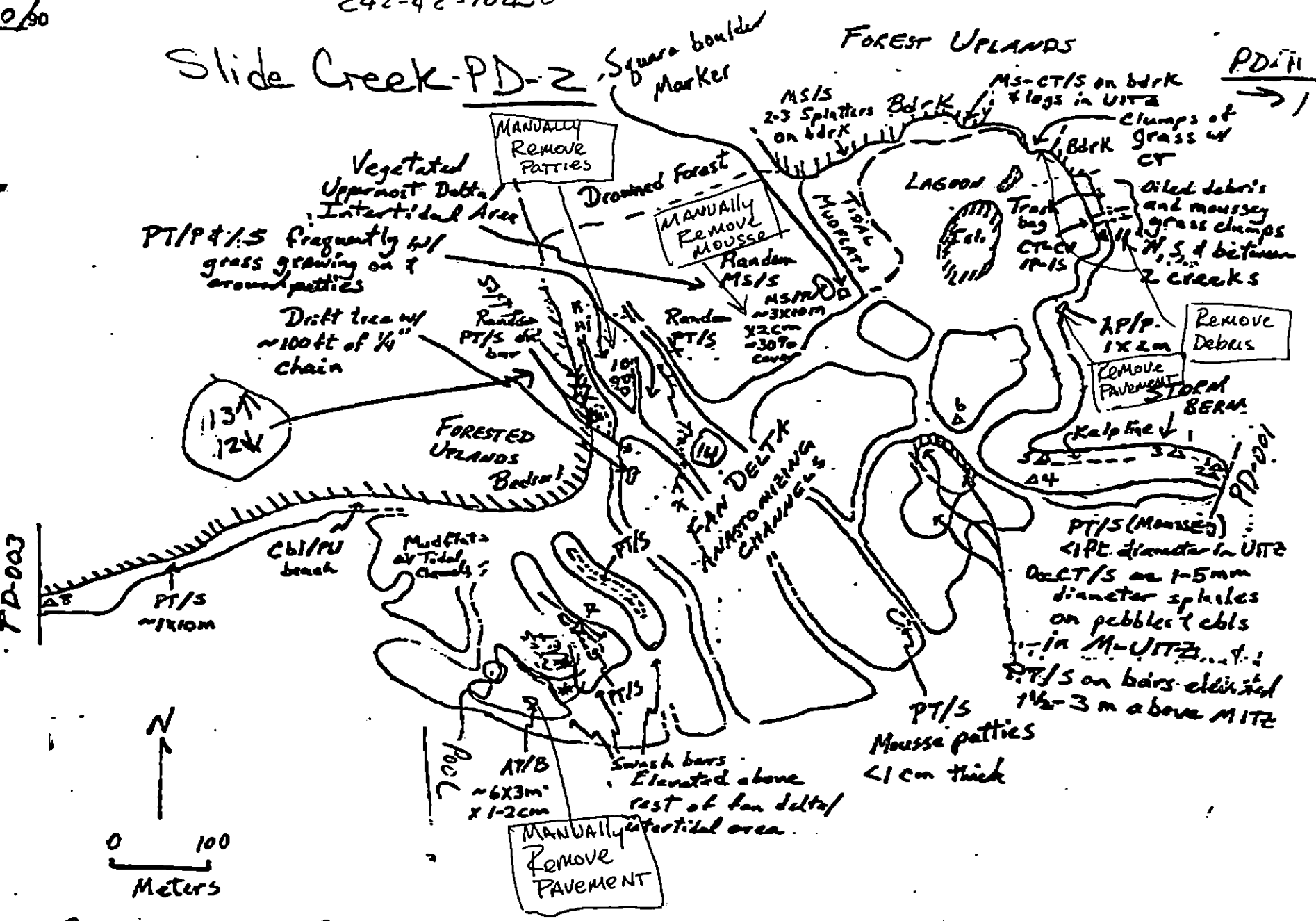
CT/P
chy Distribution

CT/S
ished Distribution

2 e e
d Vegetation

to location, direction, number

Slide Creek-PD-2



Character Length (m): AP 8 PO CV 1 CT 50 ST MS PT 70 TB FL NO

REVISIONS

MENT ST. PD 02
DIVISION A (1041)
TE 4, 20/90

APRIL 26
BY: W. L. A. K. L. E. ?
29 APR 90

SY H MAP

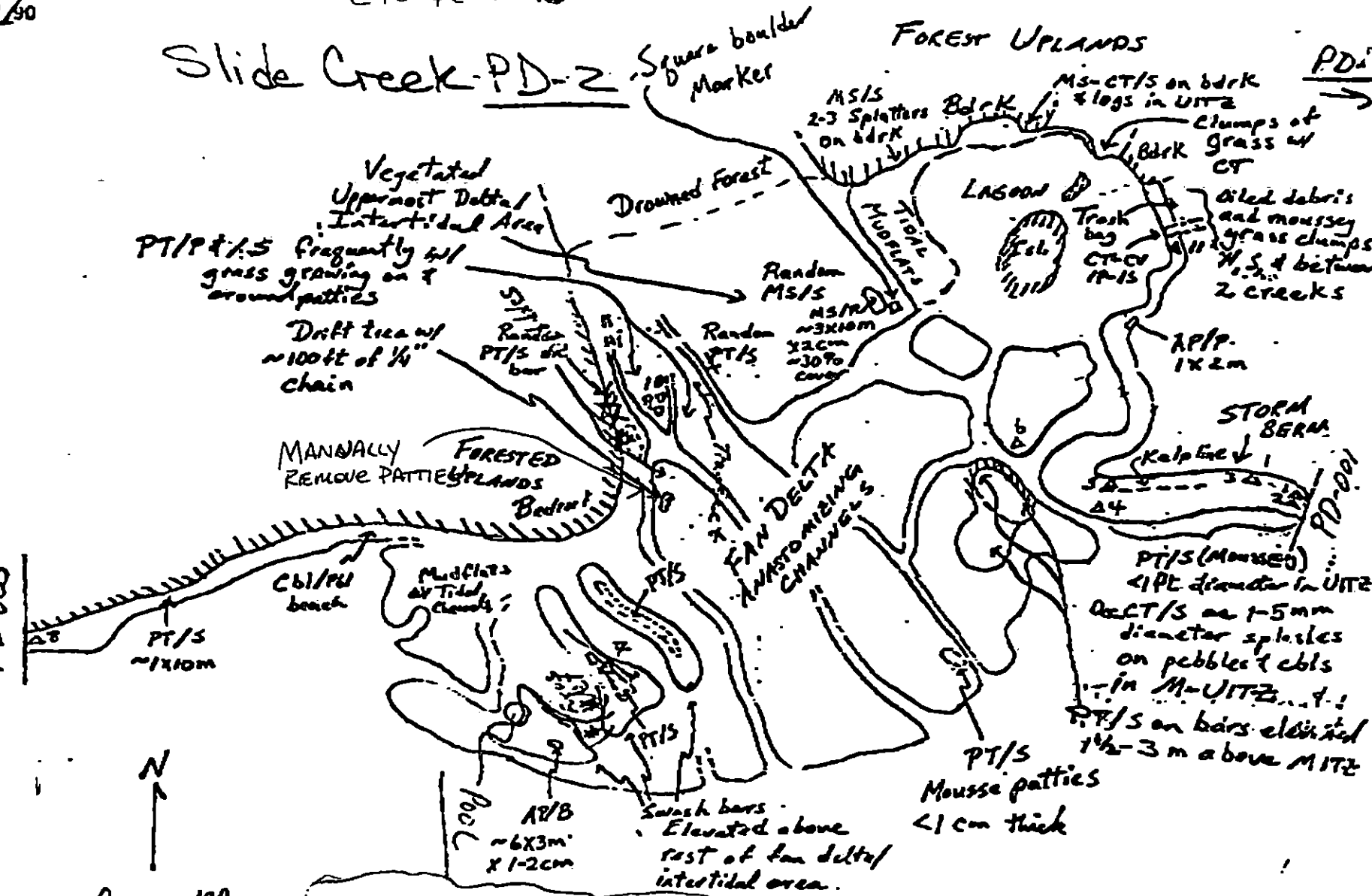
242-42-10460

Slide Creek PD-2

- CHECKLIST**
- N Arrow
 - Approx. Scale
 - Seg/Sub Entry
 - Of Dist
 - Width
 - Length
 - % Cover
 - Substrate Character
 - Est. HWA/LWL
 - SSL
 - Profile Location(s)
 - Profile(s)
 - PR Location(s)
 - Photo Location(s)

- LEGEND**
- 1 Δ
 - No Subsurface Ob
 - 2 Δ
 - Subsurface Ob
 - CT/C
 - nous Distribution
 - CT/B
 - n Distribution
 - CT/P
 - y Distribution
 - CT/S
 - red Distribution
 - RE
 - Vegetation
 - location, direction, order

Tracer Length (m): AP 8 PO CV 1 CT 50 ST MS PT 70 TB FL NO



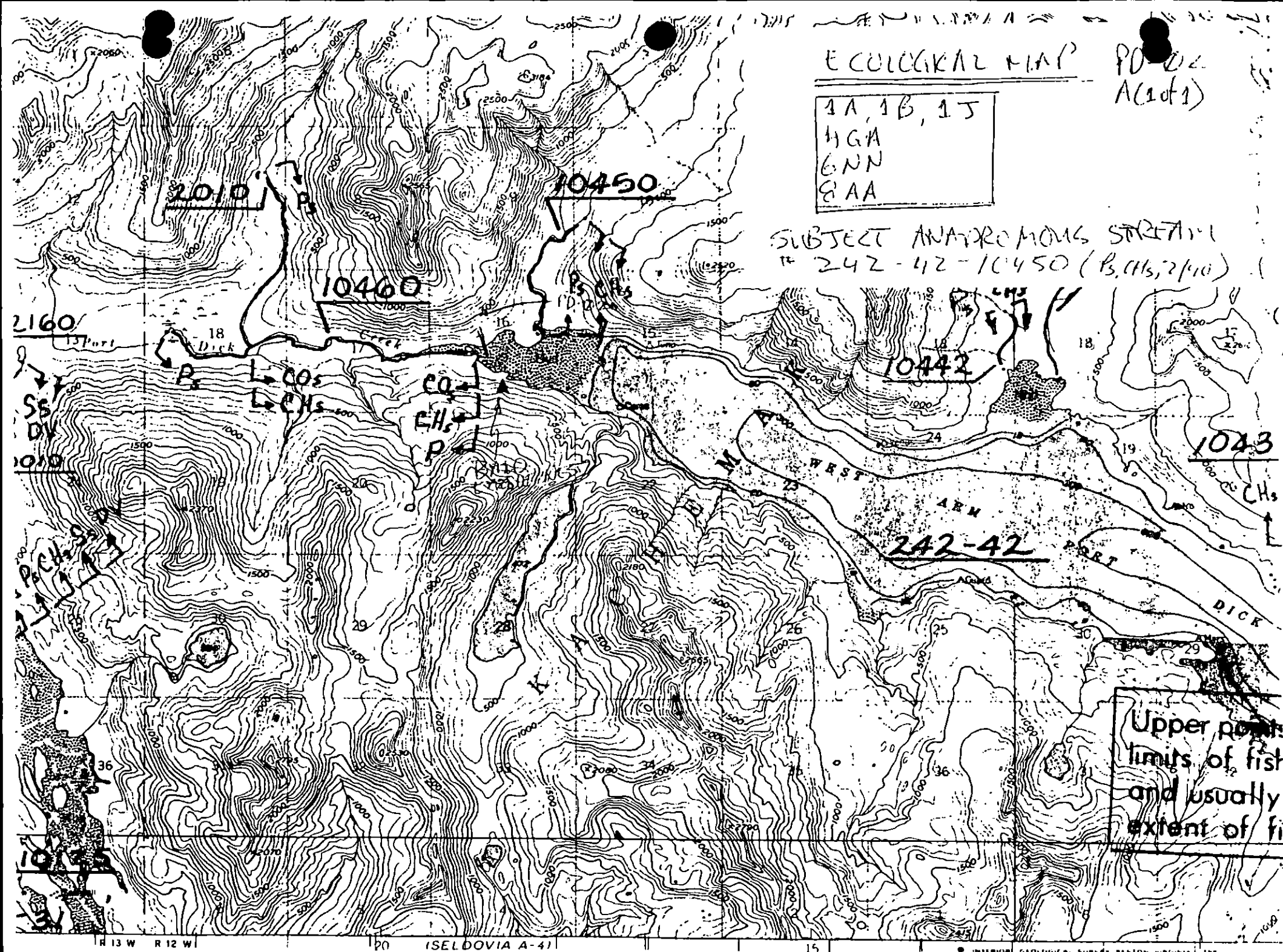
RE-SURVEYED BY ANAD TEAM 15 ON 4/29/90.
WE AGREE WITH ALL THE ABOVE DATA!
Sue Garcia

ECOLOGICAL MAP

PO 242
A(1 of 1)

4A, 1B, 1J
HGA
GNN
8AA

SUBJECT ANATXROMOUS STREAM
242-42-10450 (B, CHS, 2/4/10)



ANADROMOUS FISH STREAM EVALUATION ADDENDUM

CONSTRAINTS FOR STREAM NO. 242-42-10450

SEGMENT PD-002 SUBDIVISION A

WORK WINDOW

Manual Pickup
Tarnat Removal

OPEN

Bioremediation Less Than 100m From Stream

WORK 5/15 to 7/10
(ADF&G MONITOR REQ.)

Bioremediation More Than 100m From Stream

OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B Salmon Stream

ADF&G catalogued anadromous stream (242-42-10450) is in Subdivision A. This subdivision is closed to bioremediation less than 100m from stream 7/10 to 8/31. Before 7/10, bioremediation is permitted less than 100m from stream with on-site ADF&G monitor or ADEC alternate present. No constraint to bioremediation more than 100m from stream. No constraint to manual pickup and tarnat removal.

1J Purse Seine Area

Closed to bioremediation 7/20 to 9/5. No constraint to manual pickup and tarnat removal.

OTHER ECOLOGICAL CONSIDERATIONS

No disturbance to stream bed or banks. No flushing of pollutants or sediments into stream drainage; do not allow Inpol to enter stream flow. On-site examination and consultation by ADF&G monitor is required prior to bioremediation in order to authorize a setback distance from the stream during chemical application; if ADF&G monitor's presence is impossible, authorization may be given by the ADEC monitor. Avoid any unnecessary disturbance or damage to uncoiled biota and substrate. Sensitive estuary.

SEE SUBDIVISION CONSTRAINT ADDENDUM PD-002A
FOR ADDITIONAL CONSTRAINT INFORMATION.

FOSC

Prepared by

Date

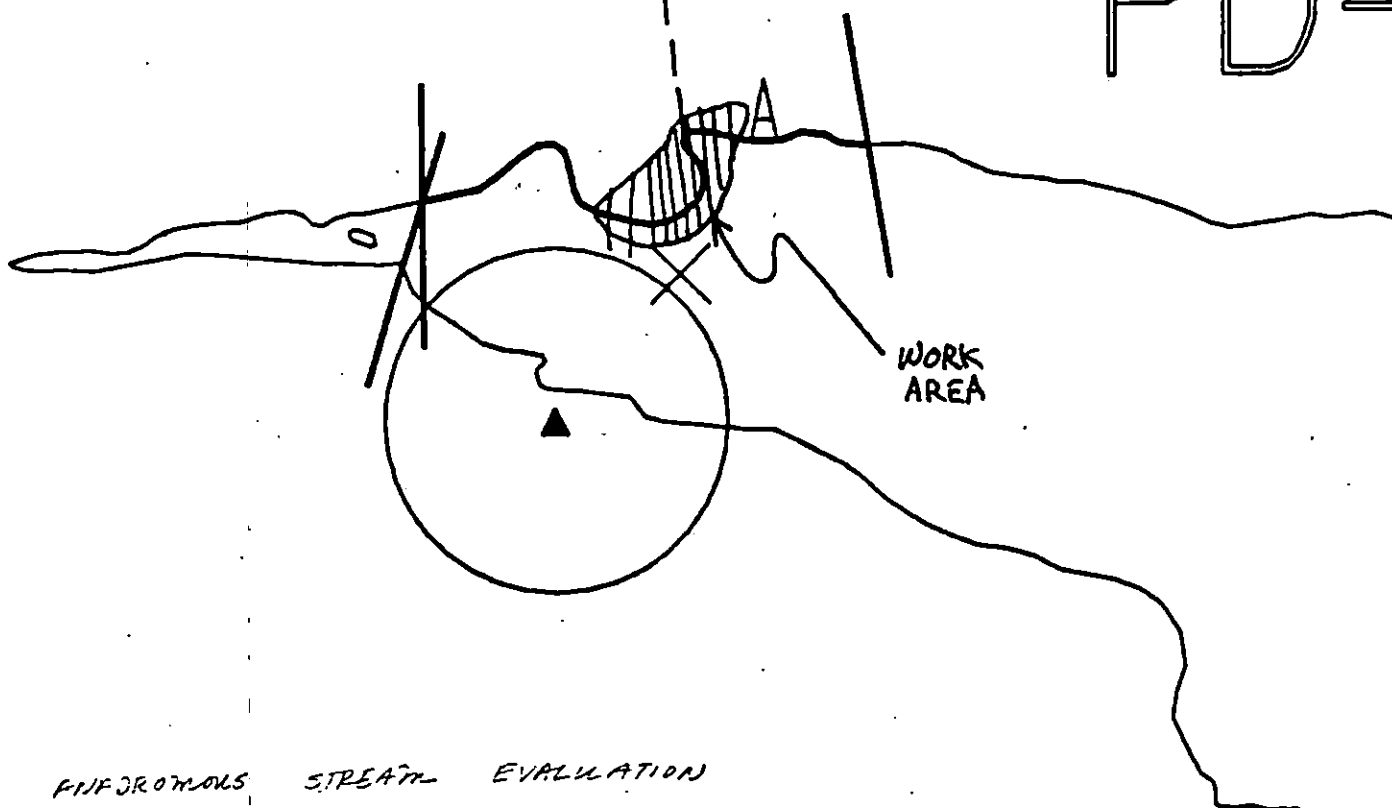
Date

6/24/90

6/14/90

242-42-10450
PD-02

PD-



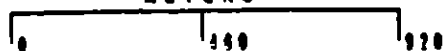
ANFJROMOLS STREAM EVALUATION



Exxon Company, USA
Map Key: KEN-PD-2
Mar. 17, 1990



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



- ★ Seabird Colony
- ▲ Eagle Nest

1 inch = 1509 feet

ANADROMOUS FISH STREAM EVALUATION

SEGMENT ST/PD-002 STREAM NO: 242-42-10450 DATE 4/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1J Purse seine area (7/20 to 9/30)
4GA State Marine Park Alaska State Wilderness Park
6NN Recreation: Sportfishing
8AA Sensitive estuary

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Subject stream is located within subdivision A (1 of 1). Avoid landing in mussel beds.

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact Exxon's Cultural Resource Program immediately (564-3276 (Anchorage) or 229-1508 (24 hrs.)).

SHPO SIGNATURE: Cathy Jean O'Neil DATE: 5/22/90

Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes: 1) manual removal of tarmat, patties and oiled debris. 2) bioremediation of coat and cover areas as indicated on the attached sketch map. Contact ADNR for entry permit. Work from 5/16 to 7/9. SISK CONSTRUCTS ADDENDUM dated 6/14/90

TAG COMMENTS:

TAG APPROVAL DATE: 5/18/90

ADEC Art Wagon
EXXON Andy En
NOAA Gary Pattee
USCG G.A. HEITER

FOSC

DATE: MAY 25 1990

ANADROMOUS FISH STREAM ASSESSMENT

REGION: KENAI

SEGMENT: PD-002

SUBDIVISION: A

STREAM NO: 242-42-10450

ANADROMOUS FISH STREAM EVALUATION

SEGMENT ST/PD-002 STREAM NO: 242-42-10450 DATE 4/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1J Purse seine area (7/20 to 9/30)
4GA State Marine Park Alaska State Wilderness Park
6NN Recreation: Sportfishing
8AA Sensitive estuary

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Subject stream is located within subdivision A (1 of 1). Avoid landing in mussel beds.

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact Exxon's Cultural Resource Program immediately (564-3276 (Anchorage) or 229-1508 (24 hrs.)).

SHPO SIGNATURE: _____ DATE: _____

Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes: 1) manual removal of tarmat, patties and oiled debris, 2) bioremediation of coat and cover areas as indicated on the attached sketch map. Contact ADNR for entry permit. Work from 5/16 to 7/9.

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 Esthler Hatchery release (4/15 to 6/15)
 1E Main Bay Hatchery release (4/20 to 6/15)
 1F Sawmill Bay Hatchery release (4/15 to 6/1)
 1G Cannery Creek Hatchery release (4/21 to 6/1)
 1H Remote release site
 No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G and/or PWS Aquaculture Association. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G or PWS Aquaculture Association for confirmation and authorization.
 AGENCY CONTACT PERSON: 1E ADF&G Larry Peltz 424-3214
 1D 1F 1G PWS Aquaculture Association John McMillan or Bruce Suzumoto 424-7511
- ✓ 1I Gill net area (6/7 to 8/31)
 ✓ 1J Purse seine area (7/20 to 9/30)
 1K Purse seine hook-off (7/20 to 9/30)
 1L Set net sites (6/11 to 7/25)
 Contact ADF&G for specific dates, locations and constraints. Restrict boat and air traffic to essential minimum. When set net sites are present (1L) restrict beach operations to essential minimum as authorized by ADF&G. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G James Brady 424-3212
- 2M Herring spawning (4/1 to 6/15)
 Contact ADF&G for confirmation - dates and locations may vary. Restrict boat traffic to essential minimum. Avoid damage to unopened intertidal and subtidal algae and seagrass. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G Evelyn Biggs 424-3235
- 3N, 3P Harbor seal and sea lion pupping (5/15 to 7/1)
 3O, 3Q Harbor seal and sea lion molting (8/15 to 9/15)
 Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts. No application of Inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31). Contact ADF&G and USFWS prior to treatment for confirmation.
 AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 586-7235
 ADF&G Don Calkins 267-2403
- ✓ 5R Seabird colony (5/1 to 9/1)
 Restrict air and boat traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from colony. Contact USFWS prior to treatment.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 5S Shorebird/waterfowl concentration (4/1 to 5/15)
 Restrict all activity to essential minimum, especially air traffic. Contact USFWS and ADF&G for confirmation.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
 ADF&G Tom Roth 267-2206
- 5T All Bald Eagle nests (3/1 to 6/1)
 Active Bald Eagle nests (3/1 to 9/1)
 Restrict air traffic and all disturbance to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 6U Recreation: Tent sites (6/1 to 9/15)
 6V Anchorages (6/1 to 9/15)
 6W Forest Service cabins (6/1 to 9/15)
 6X Lodge (6/1 to 9/15)
 6Y Special use destination
- ✓ 7 Subistence area: Salmon harvesting (5/1 to 9/30)
 H Finfish harvesting
 J/I 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 / PD-2 SUBDIVISION: _____ DATE 9/27/97

USCG

NAME CYNTHIA HATHORN SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

1. ANNUAL CLEAN-UP; REMOVE TAR + PATCHES

NOTE: LOCAL VEGETATION IS GROWING AT A RAPID RATE AND WILL SOON COVER THE PATCHES + TAR MARKS MAKING CLEAN-UP NEAR IMPOSSIBLE.

ADEC

ADEC

NAME Doug Hill SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

Manual pickup and removal at patches; Rapid rate of vegetation growth requires that this area be cleaned as soon as possible - now!

LAND MANAGER

NAME _____ SIGNATURE _____

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

REVIEWED W DATE 5-30

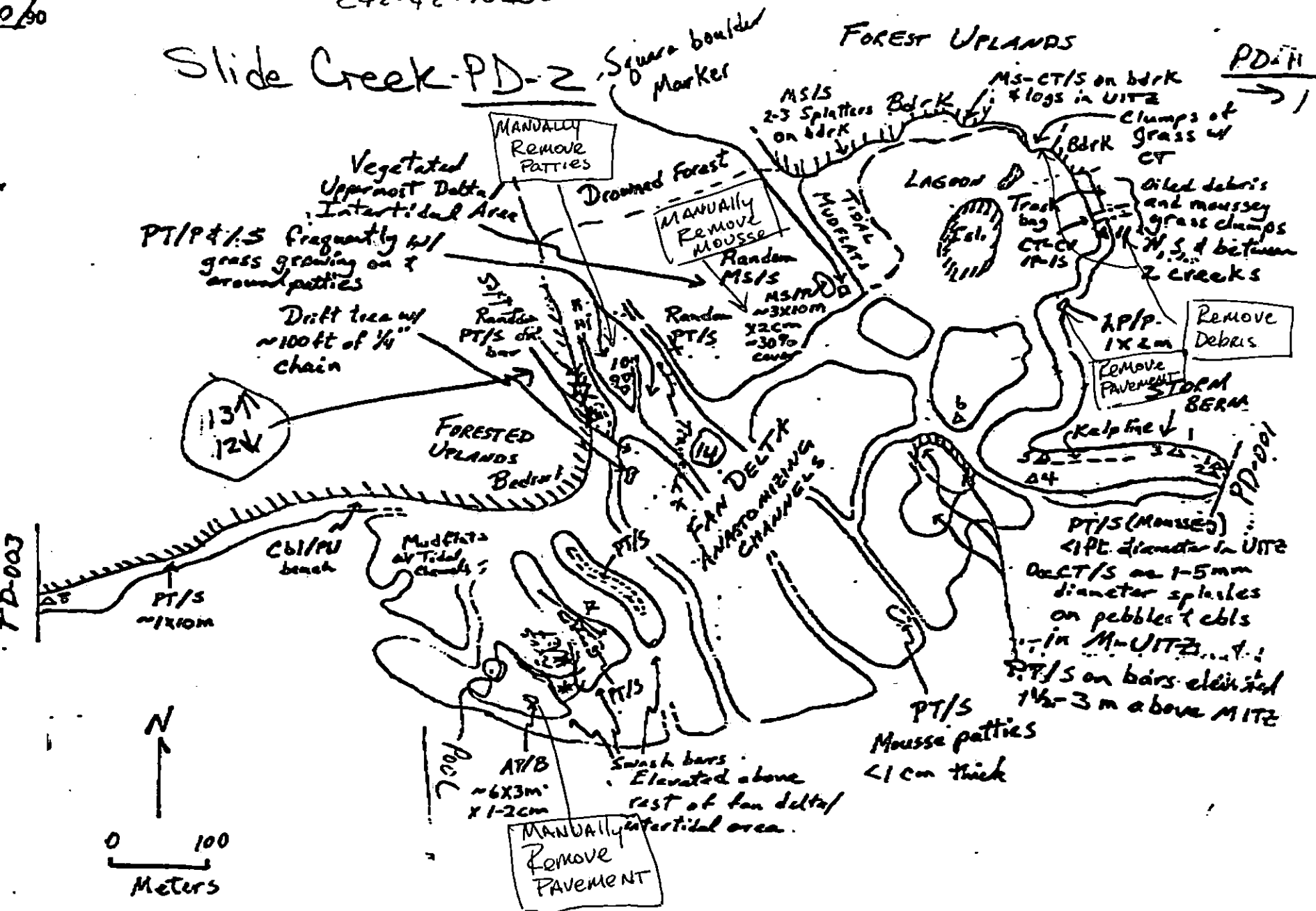
EMENT ST. 102
 DIVISION A(1041)
 TE 4, 20/60

242-42-10450
 Slide Creek-PD-2

- CHECKLIST**
- N Arrow
 - Approx. Scale
 - Seg/Sub Entry
 - Of Dist.
 - Width
 - Length
 - % Cover
 - Substrate Character
 - Est. HWA/LWA
 - SSL
 - Profile Location(s)
 - Profile(s)
 - PH Location(s)
 - Photo Location(s)

- LEGEND**
- 1 Δ No Subsurface Oil
 - 2 Δ Subsurface Oil
 - CT/C Crustous Distribution
 - CT/B on Distribution
 - CT/P by Distribution
 - CT/S shed Distribution
 - Vegetation
 - location, direction, number

Fracture Length (m): AP 8 PO CV 1 CT 50 ST MS PT 70 TB FL NO



ADFG MULTI-ASSESSMENT DATA FORM

ANADSCAT

15/7/91

1 SURVEY TYPE: BS ☒ OS TS AVS SCHM MMS PTA8 REGION: PWS ☒ K, APMETHOD: Aerial ☒ Ground Boats

3 DATE: 4/29/90

16 HIGH TIDE TIMES: 1650

21 TEAM-RECORDER: Gus GABRIEL

4 START TIME: 1155

16 HIGH TIDE HTS: 12.8

22 OBSERVERS: William Reid (w/)

6 STOP TIME: 1332

17 LOW TIDE TIMES: 1140

23 AGENCY: Mike McMahon

8 SEGMENT #: PD-2

18 LOW TIDE HTS: 7.5

24 PHOTOS TAKEN: Y ☒

7 STATION #:

19 TIDE HT AT SURVEY:

Roll #: Frames:

9 K-UNIT:

Ebb ☒ STAG ☒ Flood Slack25 VIDEO TAKEN: Y ☒ TAPES:

9 STAT AREA: 242-42

20 USCG QUAD:

Starts: Ends:

10 LAT: 242-42-10

11 LONG: 151° 18' 03" W

26 SAMPLES TAKEN: Y ☒ Number12 SOURCE: Map ☒ Loran

Oil

13 LOCATION: AFS #242-42-10450

Sediment

14 DESCRIPTION: HEAD of West Arm Port Dick-Grass, Gravel flats and lagoon area (Northwest portion of flats) EXTENT OF OIL

Biological

Water

	SHORELINE				STREAM			
	L	M	H	S	L	M	H	S
27 SURFACE COVERAGE								
28 SURFACE THICKNESS								
29 PENETRATION								
30 OVERALL OIL IMPACT:	M	VL	L	M	M			

36 CATALOGED ANAD. FISH SCAFF ☒ N

37 CATALOG #: 242-42-10450

38 STREAM NAME: Slide Creek

39 OIL IN STREAM BED: Y N

40 OIL ON STREAM BANKS: ☒ N41 OIL ON BEACH ADJACENT TO MOUTH: ☒ N
(within 50 meters)42 OIL WITHIN 1 MILE OF STREAM: ☒ N31 OIL TYPE: Pooled Mousse ☒ Tar Asphalt ☒ Gel ☒ Slush

32 OILED DEBRIS: Y N

Where: PD-001, 002, 003, 004

33 SHORELINE TYPE: Headland Low-lying Rocks Beach Cove
Lagoon Marsh43 ANADROMOUS FISH PRESENT: ☒ ☒34 WAVE EXPOSURE: High Moderate ☒ Low

44 ANADROMOUS FISH OBSERVATION

35 SUBSTRATE TYPE: Bedrock Boulder Cobble
Gravel Sand Mud/silt

Species	Aerial	Ground
Chum		200

COMMENTS: Priority Cleanup Area (ADFG-2-Doug Hill) Recommend that a crew arrive "ASAP" to

manually pick up and remove the "numerous" tar balls and patties in this system (found throughout the grass flats, lagoon area, and on the gravel bars). Rapidly growing vegetation will soon obscure much of the

old like a clean owl

FD-002
242-42-10450

48 PHOTOLOG

Slide Creek

16/71

Homer Zone

FRAME(S)

DESCRIPTION

48 OIL DISTRIBUTION DIAGRAM

- Note the presence of asphalt mats in nearby PD-0. This mat was treated with Inipol in 1989. Oil in PD-001004 also pose a potential threat to the grass flats and lagoon area of PD-002.
- Channels within the "Flats" area are used by Pink and Chum Salmon - As well as the lagoon and Slide Creek itself. Chum fry observed in the channels of the flats
- The flats area is also used heavily by migratory waterfowl
- SEA OTTERS and land otters frequent the area
- Mussel beds are present at the mid to lower intertidal portion of this system.
- BALD EAGLES frequent this area.

I agree with recommendations. Michael H. Fawcett

AN ~~ADEG~~ person will be present during the cleanup operation.

- Sample taken
- Photo frame # and shot direction.

Segment PD002
Stream No. 242-42-10450
Ecological summary

4/29/90
Michael Fawcett

This is a large braided stream with an intertidal delta area at least 400m wide. The lower 200m or so consists of cobble/pebble/gravel channels, berms, and flats with large, dense populations of Fucus and mussels, with infaunal, clams, crustaceans, worms, etc. Two sea otters were seen near the mouth, and craters in gravel flats indicated recent clam-digging by otters. The upper 200m or so of the intertidal area consists of marsh grass-covered flats interspersed with stream channels, and a lagoon in the Northeast corner. The lagoon has mussel beds, eelgrass, infaunal clams, and a soft mud bottom. Remaining oil consists of sporadic small tar mats throughout the MTZ and LTZ. Manual removal is suggested. Considering the large areal extent of the scattered tar mats, manual removal by a crew of 10 people or so can probably be accomplished with minimal damage to the intertidal biota. Skiff operators should be advised to avoid landing in mussel beds.

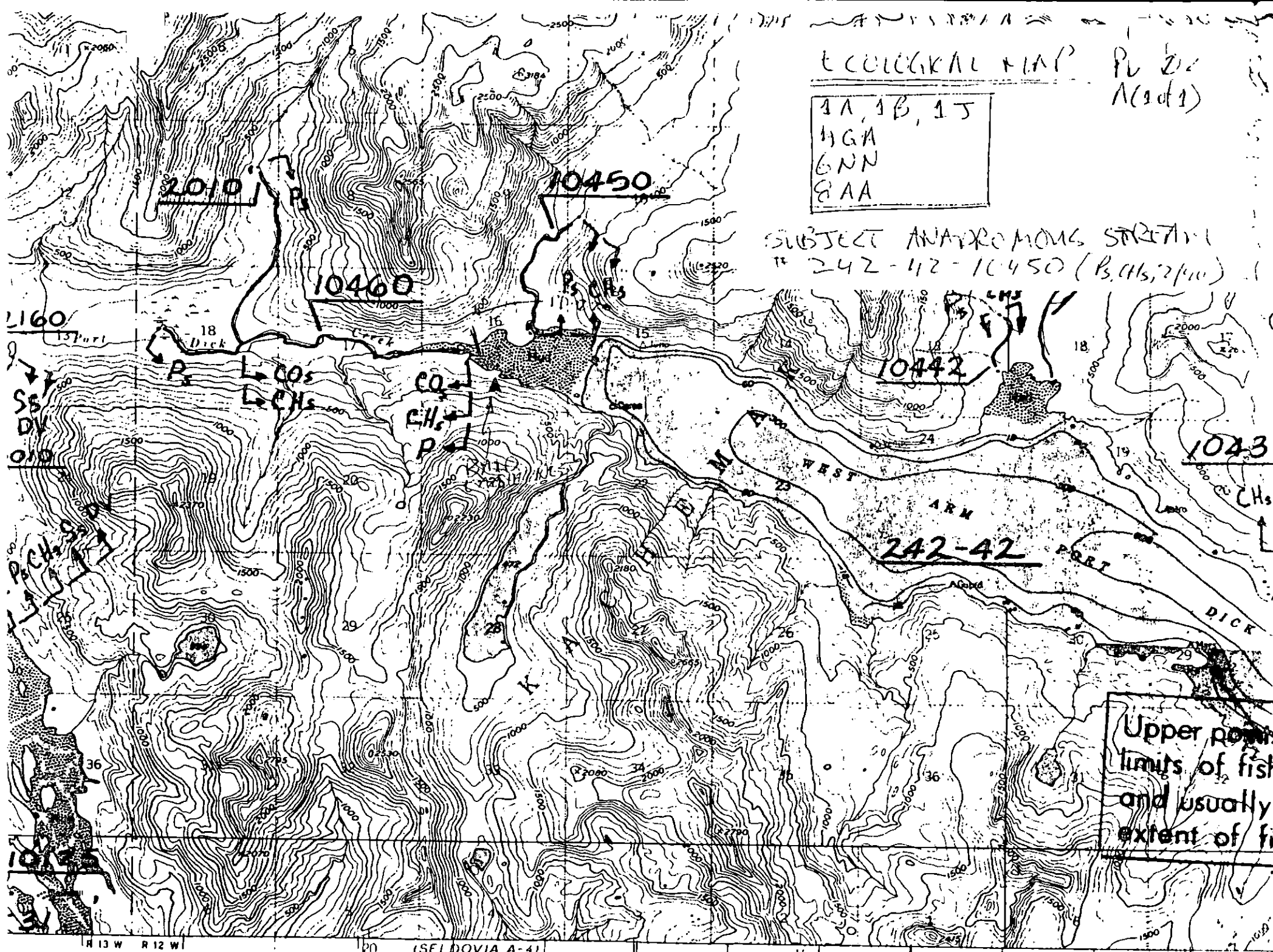
M21 Fawcett

ECOLOGICAL MAP

PL 20
A(1 of 1)

4A, 1B, 1T
HGA
6NN
8AA

SUBJECT ANATXROMOUS STREAM
242-42-10450 (B, CHs, 2/10)



R 13 W R 12 W

pn (SFL DOVIA A-41)

15

INTERIOR DEPARTMENT OF AGRICULTURE
R 12 W R 11 W

SEGMENT: PD 002 SUB: A REGION: KEN SURVEY DATE: 5/14/91

Work Window(s) OPEN 5/1 - 7/10; RESTRICTED 7/10 - 9/15

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

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

SHPO Signature: Rachel Jan Ode Date: 5/24/91

<u>RECOMMENDATIONS:</u>	<u>INITIAL</u>	<u>TAG</u>	<u>FOSC</u>
TREATMENT REQUIRED (Y or N)	<u>N</u>	<u>N</u>	<u>N</u>
Manual Pickup (Check as Req.)	_____	_____	_____
Spot Washing	_____	_____	_____
Bio-Customblen Only	_____	_____	_____
Bio-Inipol/Customblen	_____	_____	_____
Other _____	_____	_____	_____
Other _____	_____	_____	_____

INITIAL: _____

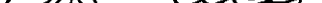
TAG: _____

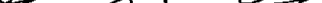
FOSC: _____

TAG APPROVAL DATE: 1 MAY 24 1991 FOSC APPROVAL DATE: 8/29/91

ADEC *[Signature]* FOSC *[Signature]*

EXXON *Beal* E. L. PAGE, CDR, USCG
CHIEF OF STAFF

USCG 

NOAA 

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

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

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

TEAM NO. 6-Helo

SEGMENT

PD-2

SUBDIVISION

ADATE 14/1 MAR 1991

ADEC

NAME D. Hill of ADFG

SIGNATURE

Daughan D. Hill

NTR

ALL oil observed was not picked up. Oil remains on the shore of the lagoon among interstices of cobble and boulder, in the grass and in the mud.

I presume that further exploration would reveal more oil than has been mapped. However the quantity of oil remaining does not warrant trampling the soft lagoon shoreline or more than it has been trampled already.

EXXON

NAME R. Coulter

SIGNATURE

Ray R. Coulter

NTR

AS NOTED BY OTHER REPS VERY LITTLE OILING REMAINS AND WHAT REMAINS IS NOT RECOVERABLE. ANY ADDITIONAL VISITS TO THIS AREA WOULD BE MORE HARMFUL THAN BENEFICIAL. THE SITE LOOKS GOOD AND SHOULD NOT REQUIRE ADDITIONAL CONSIDERATION FOR TREATMENT.

LANDMANAGER

NAME J. JOHNSON

OF

ADNR

SIGNATURE

J. Johnson

NTR

This very large segment has much improved over the last 2 years. I concur with USCG/NOAA comments. Though this segment is within Kachemak Bay State Wilderness park, there is not enough oil to justify further treatment.

USCG/NOAA

NAME Chief Jensen / G. Shigenaka

SIGNATURE

Chief Jensen G. Shigenaka

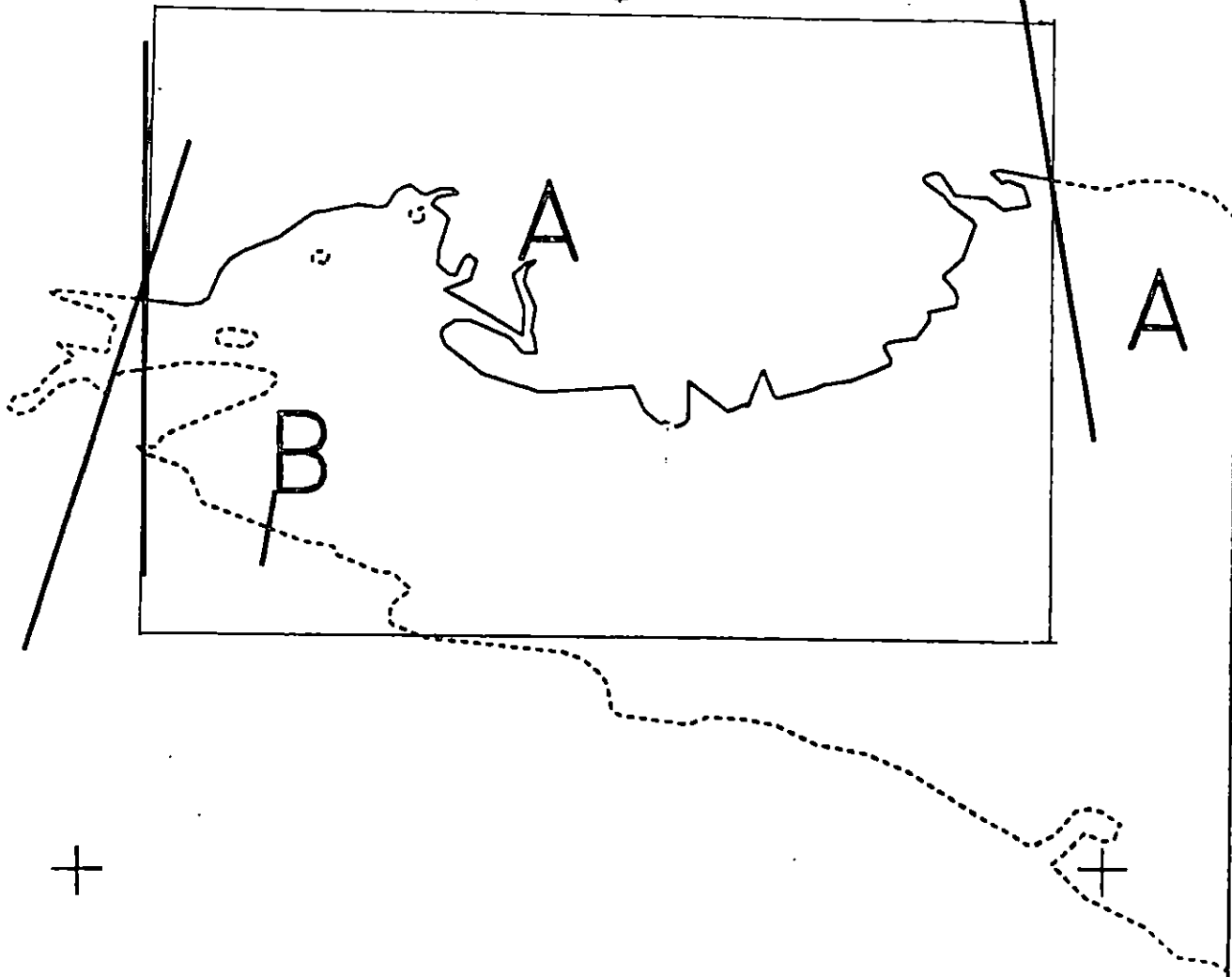
NTR

Picked up 1/2 bag SOR. Most of the observed oil falls under the trace category. Further removal operations would cause more environmental harm than the oil to be removed.

THE SURVEYED PORTION OF THE SEGMENT IS A COMPLEX DELTA AREA FOR AN ANADROMOUS STREAM FEEDING INTO THE WEST ARM OF PORT DICK. MOST OF THE SEGMENT WAS SURVEYED, ALTHOUGH THE WESTERMOST 300-400 M WERE NOT. THE BROAD TIDAL FLAT OF THE DELTA SHOWED HOHEST THOUGH CONSISTENT FOCUS COVER. NO OIL RESIDUES WERE OBSERVED SOUTH OF THE BRAIDED STREAM CHANNELS. MOST OF THE OBSERVED OILING WAS LOCATED IN THE NORTH-EASTERN PORTION OF THE SEGMENT, ON THE SHORELINE OF A FAIRLY LARGE TIDAL LAGOON. MUCH OF THIS OIL WAS VERY HIGH IN THE INTERTIDAL, WITH NEARLY ALL IN THE UPPER OR SUPRATIDAL. WEATHERED MOUSSE WAS FOUND IN THE MARSH GRASS OF THE SUPRA, AND SOME SOR OCCURRED IN COBBLE SUBSTRATE IN THE UPPER INTERTIDAL. THE ONLY OTHER AREA OF THE SEGMENT WHERE OIL WAS FOUND WAS ON THE EASTERN SIDE OF THE EASTERMOST CHANNEL NEAR A VERY HIGH BERM. A FEW PATTIES WERE NOTED AND RECOVERED BY THE VECO CREW.

reviewed 5/17/94
 & reviewed 5/18

MAP #1



PD002 A

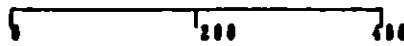
Subdivision Field Map

Map Key: KENPD002A

Name: D. Fitzgerald

Date: 14 MAY 1991

METERS



AK State Plans, Zone 4
apd002a



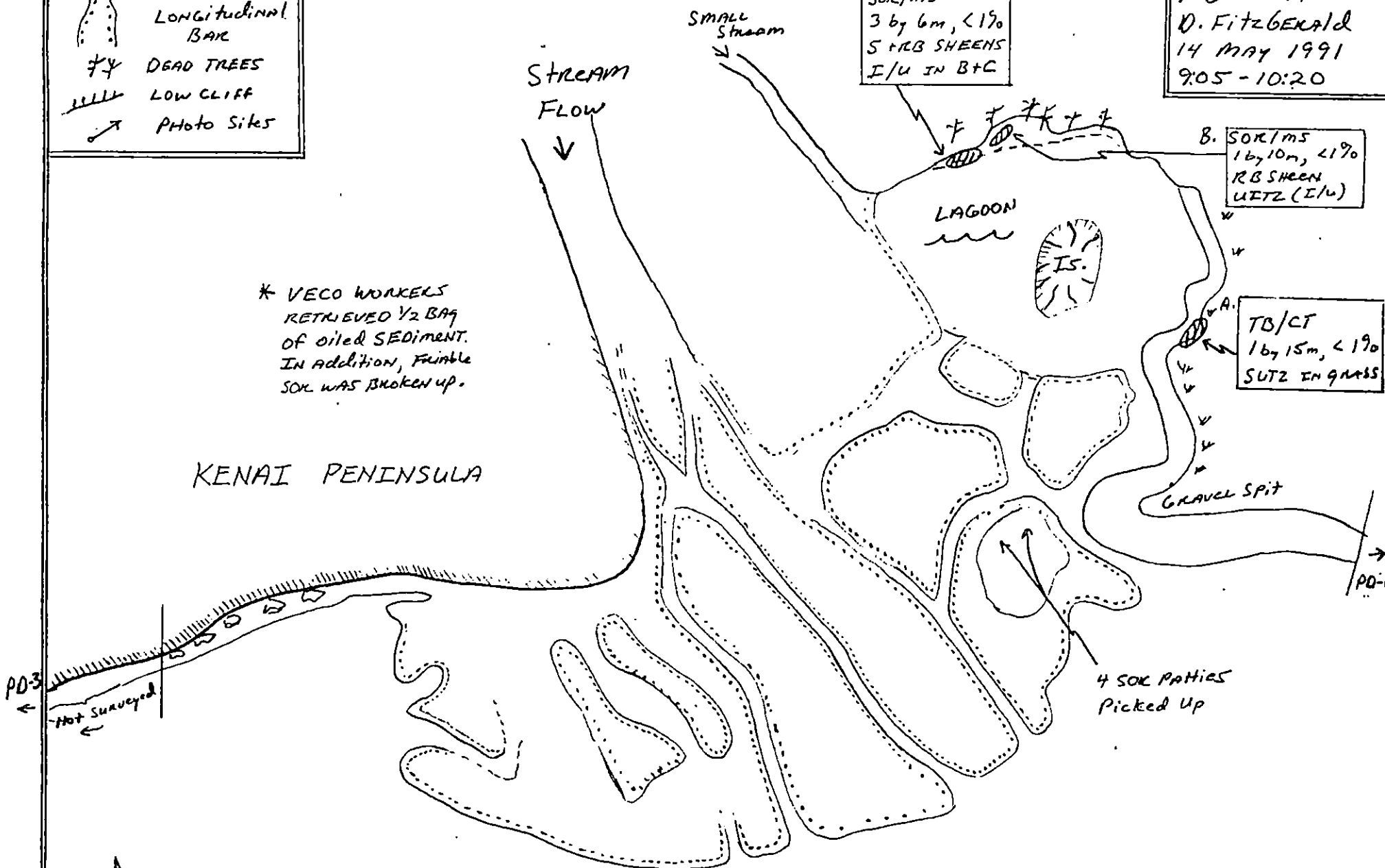
reviewed 5.17.91 94
Reviewed 5/18

Sketch MAP (06)
 PD-2-A
 D. Fitzgerald
 14 May 1991
 9:05-10:20

- ✓ GRASSY AREA
- LONGITUDINAL BAR
- ✕✕ DEAD TREES
- |||| LOW CLIFF
- PHOTO SITES

* VECO WORKERS
 RETRIEVED 1/2 BAG
 OF OILED SEDIMENT.
 IN ADDITION, FRITABLE
 SOX WAS BROKEN UP.

KENAI PENINSULA



WEST ARM OF PORT DICK

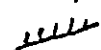
V V GRASSY AREA



LONGITUDINAL
BAR



DEAD TREES



LOW CLIFF



PHOTO SITES

PHOTO SITES, PD-2A
ROLL 6-14, FRAMES 9 THRU 13

SMALL
Stream

STREAM
FLOW

C. SOR/MS
3 by 6m, <1%
5 TRB SHEETS
I/U IN B+C

Sketch MAP (06)
PD-2-A
D. FITZGERALD
14 MAY 1991
9:05-10:20

B. SOR/MS
1 by 10m, <1%
RB SHEET
UETZ (I/U)

A. TB/CT
1 by 15m, <1%
SUTZ EN GRASS

* VECO WORKERS
RETRIEVED 1/2 BAG
OF OILED SEDIMENT.
IN ADDITION, FRIABLE
SOR WAS BROKEN UP.

KENAI PENINSULA

GRAVEL SPIT

4 SOR PATIES
Picked Up

PD-3

Not Surveyed

#9

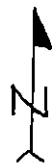
#12

#11

#10

#13

PD-1



0 100

WEST ARM OF PORT DICK

GRASSY AREA



LONGITUDINAL
BAR



DEAD TREES



LOW CLIFF



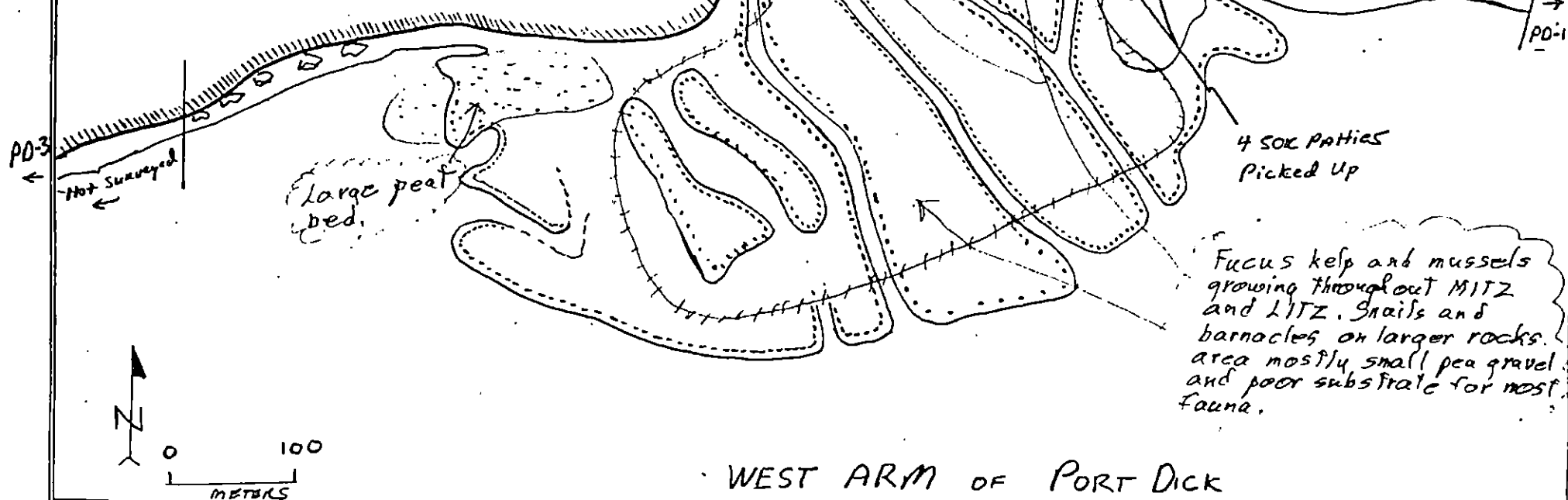
PHOTO SITES



Fucus Bed

* VECO WORKERS
RETRIEVED 1/2 BAG
OF OILED SEDIMENT.
IN ADDITION, FRUITFUL
SOK WAS BROKEN UP.

KENAI PENINSULA



Small Stream

Stream
Flow

LAGOON



B. SOK/MS
1 by 10m, <1%
RB SHEENS
UETZ (LW)

* Abundant decay
organic matter
along shore of
lagoon

A. TB/CT
1 by 15m, <1%
SUTZ IN GRASS

GRAVEL SPIT

4 SOK PATIES
Picked Up

Fucus kelp and mussels
growing throughout MITZ
and LITZ. Snails and
barnacles on larger rocks.
area mostly small pea gravel
and poor substrate for most
fauna.

WEST ARM OF PORT DICK

BIO. Map
T.A. Schroeder
5/14/91

SK. Map (100)
PD-2-A
~~PD-2-B~~
14 MAY 1991
9:05-10:20

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 6

DATE 5/14/91

SEGMENT # PD-002

TIDAL HEIGHT (Range) 0 to -3.5 ft

SUBDIVISION A

BIOLOGIST J.R. Schroeder

SEA STATE calm

WIND SPEED/DIRECTION calm

PHOTOGRAPHS: ROLL #

FRAME #

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

(A) = SOR/MS along back of lagoon, is 300 to 400 yards from the anadromous stream. Large amounts of decaying organic matter present around shore of lagoon creating strong H₂S smell. Lagoon is with mud bottom with very little help of algae growth that could be observed.

Virtually, the entire beach segment is covered with pieces of shell. Algal mussel growth is occurring throughout the pieces and beach gravel areas. The small pea gravel and sand provides a poor substrate for most fauna. Some barnacles and snails were present on the few larger rocks, but were not abundant.

No oil was observed within 400 yds of the anadromous stream. The area looks very good and there appears to be no effect on the stream from the oil oil cleanup activities. The area looks as natural as it did 17 years ago.

WILDLIFE OBSERVATIONS

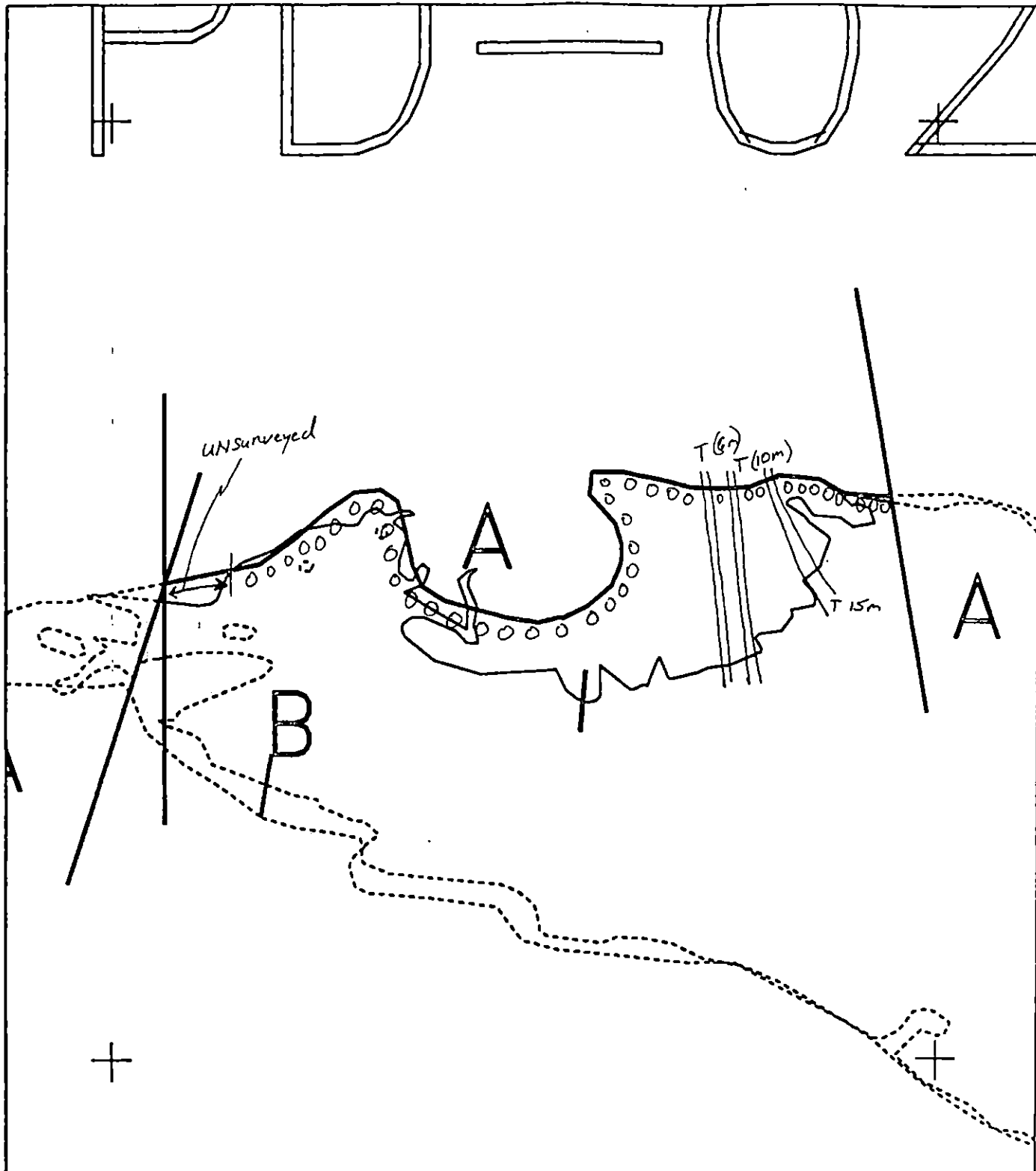
TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1 Bald	3 immature	
Seabirds			
Waterfowl	1 Canada goose	45	
Gulls/Kittiwakes	1 gulls	30	
Shorebirds	1 redpoll	25	
Corvids			
Other Birds	1 Hawk	1	

LAND MAMMALS

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

Shoreline subdivision map showing important biological features attached.



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

PD002 A
 ADEC Subsegment Length: 1416m
 METERS
 0 200 400
 AK State Plane Zone 4
 spd002a



Subdivision Field Map
 Map Key: KENPD002A
 Name: O. Fitzgerald
 Date: 14 May 1991
 Date Entered:

Reviewed 5-17-91
 EC reviewed 5/18

1991 MAYSAP EVALUATION

SEGMENT: PD 002 SUB: A REGION: KEN SURVEY DATE: 5/14/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN 5/1 - 7/10; RESTRICTED 7/10 - 9/15

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: _____ Date: _____

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____

FOSC APPROVAL DATE: _____

ADEC _____

FOSC _____

EXXON _____

USCG _____

NOAA _____

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

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

ADEC

NAME D. Hill of ADFG

SIGNATURE

Douglas D Hill

☒ NTR ALL oil observed was not picked up. Oil remains on the shore of the lagoon among interstices of cobble and boulder, in the grass and in the mud.

I presume that further exploration would reveal more oil than has been mapped. However the quantity of oil remaining does not warrant trampling the soft lagoon shoreline as more than it has been trampled already.

EXXON

NAME R. Coulter

SIGNATURE

Ray R. Coulter

☒ NTR AS NOTED BY OTHER REPS VERY LITTLE OILING REMAINS AND WHAT REMAINS IS NOT RECOVERABLE. ANY ADDITIONAL VISITS TO THIS AREA WOULD BE MORE HARMFUL THAN BENEFICIAL. THE SITE LOOKS GOOD AND SHOULD NOT REQUIRE ADDITIONAL CONSIDERATION FOR TREATMENT.

LANDMANAGER

NAME J. JohnsonOF ADNR

SIGNATURE

J. Johnson☒ NTR

This very large segment has much improved over the last 2 years. I concur with USCG/NOAA comments. Though this segment is within Kachemak Bay State Wilderness park, there is not enough oil to justify further treatment.

USCG/NOAA

NAME Chief Jensen G. Shigenaka

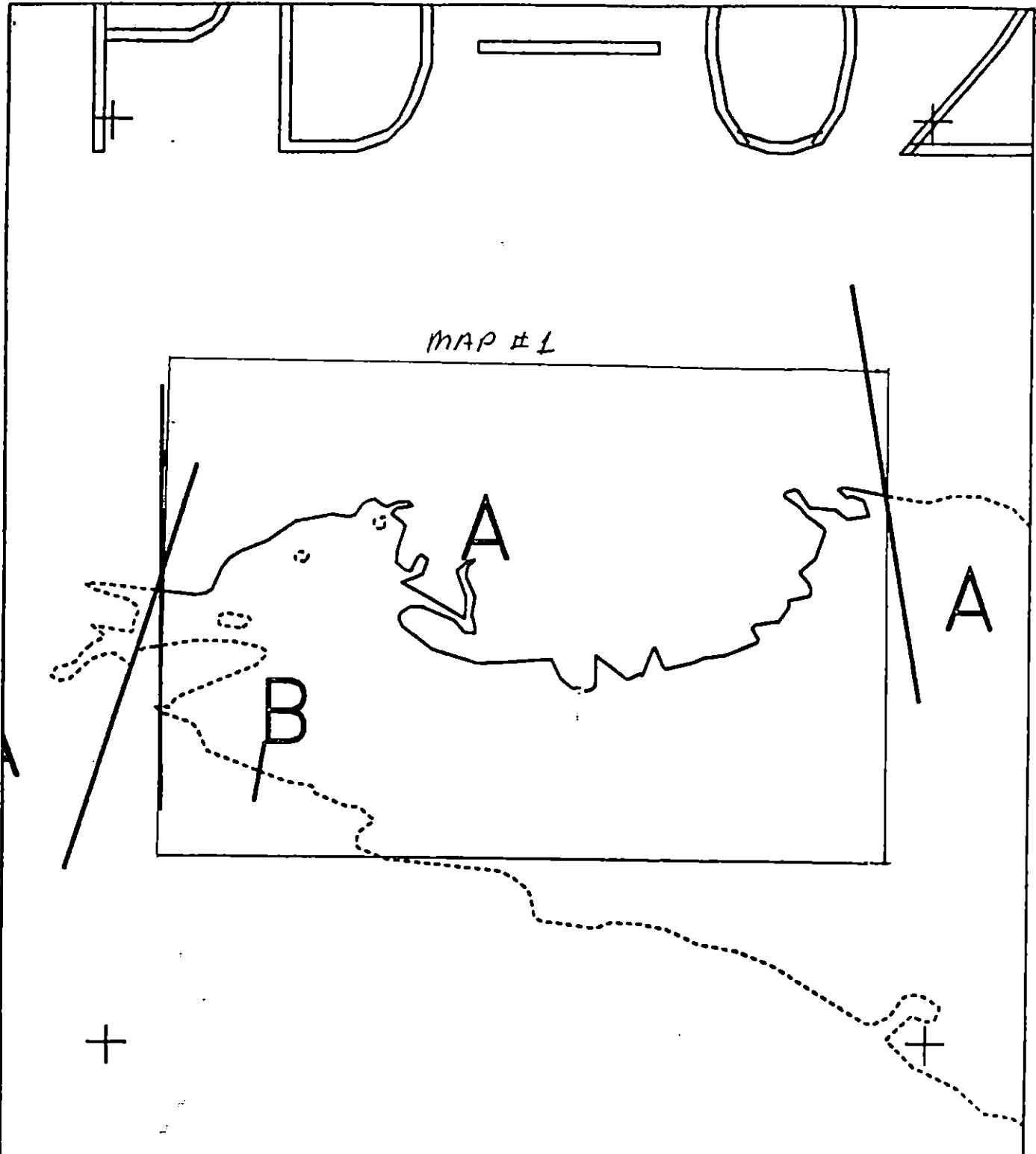
SIGNATURE

Chief Jensen G. Shigenaka

☒ NTR Picked up 1/2 bag SOA. Most of the observed oil falls under the trace category. Further removal operations would cause more environmental harm than the oil to be removed.

THE SURVEYED PORTION OF THE SEGMENT IS A COMPLEX DELTA AREA FOR AN ANADROMOUS STREAM FEEDING INTO THE WEST ARM OF PORT DICK. MOST OF THE SEGMENT WAS SURVEYED, ALTHOUGH THE WESTERNMOST 300-400 M WERE NOT OBSERVED SOUTH OF THE BRAIDED STREAM CHANNELS. MOST OF THE OBSERVED OILING WAS LOCATED IN THE NORTH-EASTERN PORTION OF THE SEGMENT, ON THE SHORELINE OF A FAIRLY LARGE TIDAL LAGOON. MUCH OF THIS OIL WAS VERY HIGH IN THE INTERTIDAL, WITH NEARLY ALL IN THE UPPER OR SUPRATIDAL. WEATHERED MOUSSE WAS FOUND IN THE MARSH GRASS OF THE SUPRA, AND SOME SOA OCCURRED IN COBBLE SUBSTRATE IN THE UPPER INTERTIDAL. THE ONLY OTHER AREA OF THE SEGMENT WHERE OIL WAS FOUND WAS ON THE EASTERN SIDE OF THE EASTERNMOST CHANNEL NEAR A VERY HIGH BERM. A FEW PATTIES WERE NOTED AND RECOVERED BY THE VECO CREW.

reviewed 5.17.91 94
 & reviewed 5/18





PD002 A

METERS

0 100 200

AK State Plans, Zone 4
apd002a

Subdivision Field Map

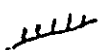
Map Key: KENPD002A

Name: D. Fitzgerald

Date: 14 MAY 1991

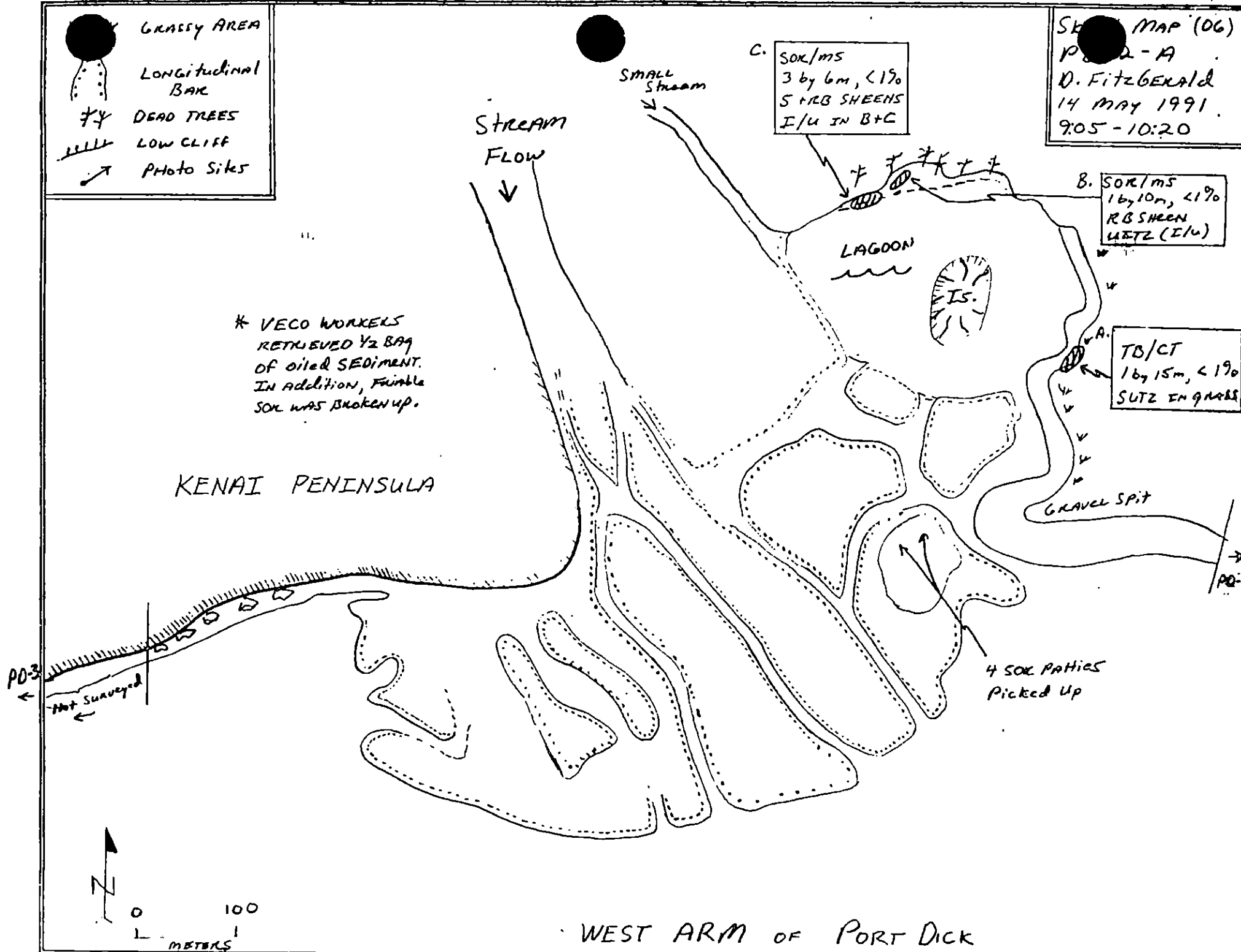
reviewed 5.17.91 gy
re-reviewed 5/18

SK MAP (06)
 P82-A
 D. Fitzgerald
 14 MAY 1991
 9:05-10:20

-  GRASSY AREA
-  LONGITUDINAL BAR
-  DEAD TREES
-  LOW CLIFF
-  PHOTO SITES

* VECO WORKERS
 RETRIEVED 1/2 BAG
 OF OILED SEDIMENT.
 IN ADDITION, FRAGILE
 SOX WAS BROKEN UP.

KENAI PENINSULA



WEST ARM OF PORT DICK

GRASSY AREA

LONGITUDINAL
BAR
DEAD TREES
LOW CLIFF
Photo Sites

PHOTO SITES, PD-2A
ROLL 6-14, FRAMES 9 THRU 13

Sketch Map (06)
PD-2-A
D. Fitzgerald
14 MAY 1991
9:05-10:20

C. SOR/MS
3 by 6m, <1%
S+RB SHEENS
I/U IN B+C

B. SOR/MS
1 by 10m, <1%
RB SHEEN
UTZ (I/U)

A. TB/CT
1 by 15m, <1%
SUTZ EN GRASS

* VECO WORKERS
RETRIEVED 1/2 BAG
OF OIL & SEDIMENT.
IN ADDITION, FRITTLE
SOR WAS BROKEN UP.

KENAI PENINSULA

Stream
Flow

Small
Stream

LAGOON

IS.

GRAVEL SPIT

PD-1

PD-3

Not Surveyed

#9

#13

4 SOR Patties
Picked Up

N

0 100
METERS

WEST ARM OF PORT DICK

- GRASSY AREA
- LONGITUDINAL BAR
- ✕ DEAD TREES
- |||| LOW CLIFF
- PHOTO SITES
- ++++ Fucus Bed

* VECO WORKERS
RETRIEVED Y2 BAG
OF OILED SEDIMENT.
IN ADDITION, FRIBLE
SOX WAS BROKEN UP.

KENAI PENINSULA

SMALL
Stream

STREAM
FLOW

C. SOX/MS
3 by 6m, <1%
S RB SHEENS
I/U IN B+C

BIO. Map
T.A. Schroeder
5/14/91

Sketch Map
P. 2-A
14 MAY 1991.
9:05-10:20

B. SOX/MS
1 by 10m, <1%
RB SHEEN
LITZ (I/U)

* Abundant decay
organic matter
along shore of
Lagoon

A. TB/CT
1 by 15m, <1%
SUTZ IN GRASS

GRAVEL SPIT

4 SOX PATCHES
Picked Up

Fucus kelp and mussels
growing throughout MITZ
and LITZ. Snails and
barnacles on larger rocks.
area mostly small pea gravel
and poor substrate for most
fauna.

P03
Not Surveyed

Large peat
bed.

N

0 100
METERS

WEST ARM OF PORT DICK

HAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 6

DATE 5/14/91

SEGMENT # PD-002

TIDAL HEIGHT (Range) 0 to -3.5 ft

SUBDIVISION A

BIOLOGIST J. R. Schroeder

SEA STATE calm

WIND SPEED/DIRECTION calm

PHOTOGRAPHS: ROLL #

FRAME #

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

(A) = SOR/MS along beach of lagoon is 300 to 400 yards from the anadromous stream. Large amounts of decaying organic matter present around shore of lagoon, creating strong H₂S smell. Lagoon is rather muddy bottom with very little kelp or algae growth that could be observed.

Virtually, the entire beach segment is covered with rocks half a foot in size or smaller. It is occurring throughout the beach, and beach gravel areas. The small sea urchins and sand provides a poor substrate for most faunas. Some barnacles and snails were present on the few larger rocks, but were not abundant.

No oil was observed within 400 yds of the anadromous stream. The area looks very good and there appears to be no effect on the stream from the oil or cleanup activities. The area looks as natural as it did 17 years ago.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1 Bald	2 immature	
Seabirds			
Waterfowl	1 Canada goose	45	
Gulls/Kittiwakes	1 gulls	30	
Shorebirds	1 Merganser	25	
Corvids			
Other Birds	1 Hawk	1	

MARINE MAMMALS

OBSERVED

LAND MAMMALS

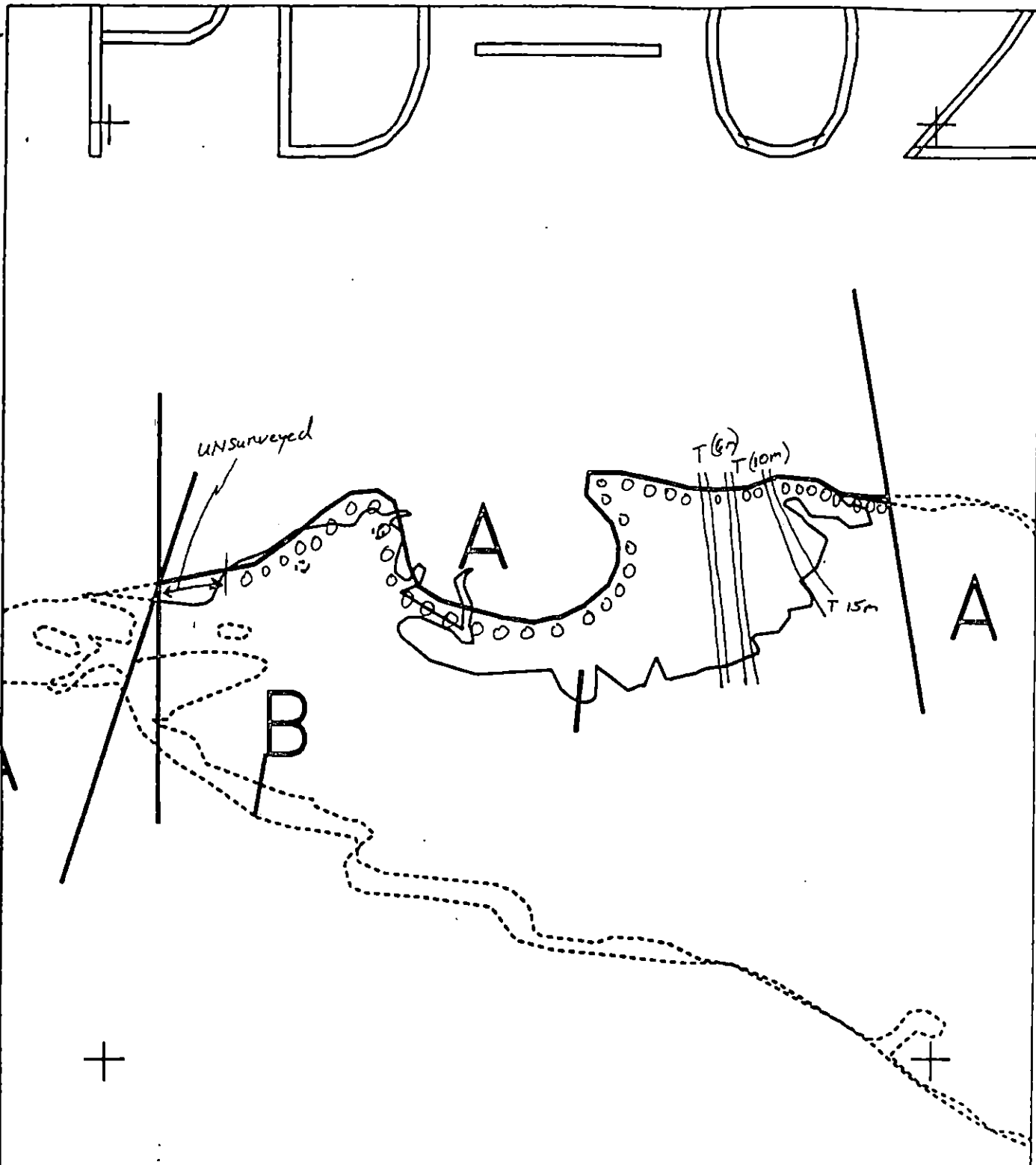
SPECIES

OBSERVED

Sea Otters			
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

Revised 5/17/91 JMS



XXXX	Wide	PD002 A ADEC Subsegment Length: 1416m METERS 0 200 400 AK State Plane Zone 4 sp002a	Subdivision Field Map Map Key: KENPD002A Name: <u>O. Fitzgerald</u> Date: <u>14 May 1991</u> Date Entered:
////	Medium		
----	Narrow		
TTTT	Very Light		
0000	No Oil		

reviewed 5.17.91 g
 ES reviewed 5/18

ANADROMOUS FISH STREAM EVALUATION

SEGMENT ST/PD-003 STREAM NO: 242-42-10460 DATE 4/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1J Purse seine area (7/20 to 9/30)
4GA State Marine Park Alaska State Wilderness Park
6U Recreation: Tent sites (6/1 to 9/15)
6W Recreation: Forest Service cabins (6/1 to 9/15)
6Y Recreation: Special use destination
6NN Recreation: Sportfishing
8AA Sensitive estuary

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Subject stream is located within subdivision A (1 of 1). No additional ecological constraints.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: Rachel Joan Orr DATE: 5/22/90

Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

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

COMMENTS: Recommend manual pick up of patties. Work should be scheduled in conjunction with work in PD002, 5/16 to 7/1.

TAG COMMENTS:

TAG APPROVAL DATE: 5/18/90

ADEC Art Weiner Art Weiner

EXXON ANDY KATZ Andy Katz

NOAA Gary Petros Gary Petros

USCG G.A. REITER G.A. Reiter

FOSC: [Signature] DATE: MAY 25 1990

References

16 EXTRA
Lms 12 1/2

A scale bar with a horizontal line. Above the left end is the number '0' and above the right end is the number '100'. Below the line is the word 'Meters'.

29 APR 70

SR CH MAP

MENT ST/ 11-23

DIVISION A (10 A1) STATION 242 42-10450

4/21/90

CHECKLIST
Arrow
pencil, Scale
top/Sub Study
1 Dist
10th
right
Cover
substrate Character
2 HML/LVL
2
of the Location(s)
of the (s)
Location(s)
of the Location(s)

SURVEYED
BY
WILLIAM RED
29 APR 90

PD-003

END

Subsurface Of

surface Of

T/C
ous Distribution

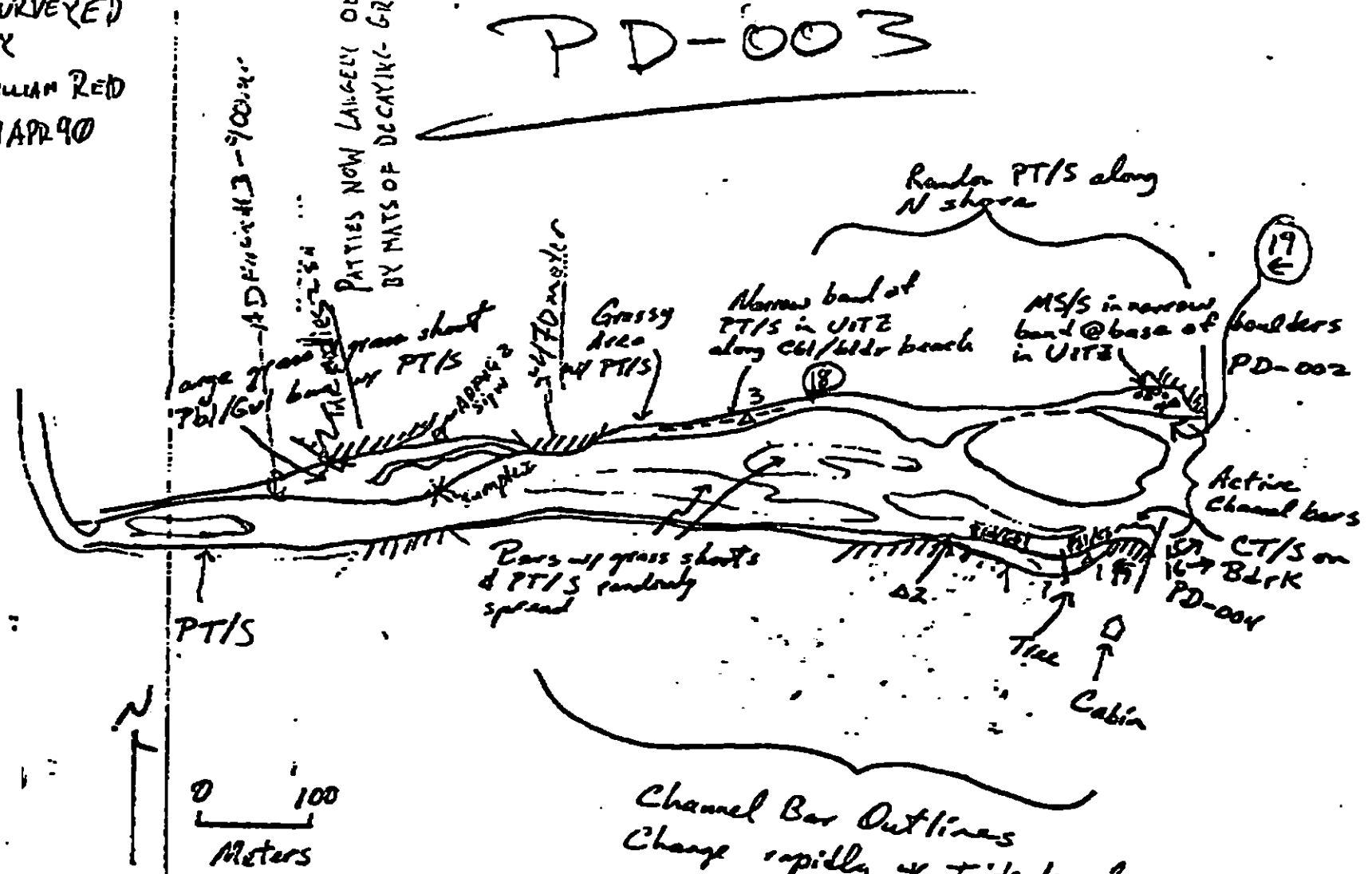
T/B
Distribution

T/P
Distribution

T/S
Distribution

location

ation, direction,
etc.



ter Length (m): AP PO CV CT 151 ST MS 5 PT 700 TB FL NO 900

REVISIONS

ANADROMOUS FISH STREAM EVALUATION ADDENDUM

CONSTRAINTS FOR STREAM NO. 242-42-10460

SEGMENT PD-3 SUBDIVISION A

WORK WINDOW	
Manual Pickup	OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B	Salmon Stream	ADF&G catalogued anadromous stream (242-42-10460) is in Subdivision A. No constraint to manual pickup.
1J	Purse Seine Area	No constraint to manual pickup.

OTHER ECOLOGICAL CONSIDERATIONS

No disturbance to stream bed or banks. Restrict boat and air traffic to essential minimum after 7/20. Avoid any unnecessary disturbance or damage to uncollected biota and substrate. Sensitive estuary.

SEE SUBDIVISION CONSTRAINT ADDENDUM PD-3A
FOR ADDITIONAL CONSTRAINT INFORMATION.

FOSC

Date

6-10-90

Prepared by

Date

6/10/90

PD-02

PD-03

ANAD. STRM
242-4210460

100m buffer
zone

WORK
AREA

ANADROMOUS STREAM

ANADROMOUS STREAM EVAL



Exxon Company, USA
Map Key: KEN-PD-3



ECOLOGY MAP
SEGMENT PD-3
SUBDIVISION A (1 of 1)
METERS



Seabird Colony



Eagle Nest

JE

ANADROMOUS FISH STREAM EVALUATION.

SEGMENT ST/PD-003 STREAM NO: 242-42-10460 DATE 4/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1J Purse seine area (7/20 to 9/30)
4GA State Marine Park Alaska State Wilderness Park
6U Recreation: Tent sites (6/1 to 9/15)
6W Recreation: Forest Service cabins (6/1 to 9/15)
6Y Recreation: Special use destination
6NN Recreation: Sportfishing
8AA Sensitive estuary

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Subject stream is located within subdivision A (1 of 1). No additional ecological constraints.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: Rachel Doan DATE: 5/22/90

Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

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

COMMENTS: Recommend manual pick up of patties. Work should be scheduled in conjunction with work in PD002, 5/16 to 7/1.

ANAD. FISH

SEE ADDENDUM dated 6/10/90

TAG COMMENTS: _____

TAG APPROVAL DATE: 5/18/90

ADEC Art Wenzel D. H. Wenzel

EXXON Art Wenzel Art Wenzel

NOAA Gary Petre Gary Petre

USCG G.A. MEYER G.A. Meyer

FOSC J. J. J. J.

DATE: MAY 25 1990

ANADROMOUS FISH STREAM ASSESSMENT

REGION: KENAI

SEGMENT: PD-003

SUBDIVISION: A

STREAM NO: 242-42-10460

ANADROMOUS FISH STREAM EVALUATION

SEGMENT ST/PD-003 STREAM NO: 242-42-10460 DATE 4/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1J Purse seine area (7/20 to 9/30)
4GA State Marine Park Alaska State Wilderness Park
6U Recreation: Tent sites (6/1 to 9/15)
6W Recreation: Forest Service cabins (6/1 to 9/15)
6Y Recreation: Special use destination
6NN Recreation: Sportfishing
8AA Sensitive estuary

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Subject stream is located within subdivision A (1 of 1). No additional ecological constraints.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

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

COMMENTS: Recommend manual pick up of patties. Work should be
scheduled in conjunction with work in PD002, 5/16 to 7/1.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

- ✓ 1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
 ✓ 1B Salmon stream mouth - spawning (7/10 to 8/31)
 No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream without authorization from ADF&G. No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G. Treatment which is not intrusive and which will not affect nearshore oil or toxicity levels, such as manual removal, can probably proceed without adherence to time constraints. In any case, contact ADF&G Habitat Division prior to treatment for consultation and/or permit application.
 AGENCY CONTACT PERSON: ADF&G John Morison 267-2324
- 1C Salmon fry nursery area (4/31 to 7/31)
 No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to July 31 unless authorized by ADF&G. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G prior to treatment for confirmation and advice.
 AGENCY CONTACT PERSON: ADF&G Larry Peltz 424-3214
- 1D Esther Hatchery release (4/15 to 6/15)
 1E Main Bay Hatchery release (4/20 to 6/15)
 1F Sawmill Bay Hatchery release (4/15 to 6/1)
 1G Cannery Creek Hatchery release (4/21 to 6/1)
 1H Remote release site
 No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G and/or PWS Aquaculture Association. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G or PWS Aquaculture Association for confirmation and authorization.
 AGENCY CONTACT PERSON: 1E ADF&G Larry Peltz 424-3214
 1D 1F 1G PWS Aquaculture Association John McMillan or Bruce Suzumoto 424-7511
- ✓ 1I Gill net area (6/7 to 8/31)
 ✓ 1J Purse seine area (7/20 to 9/30)
 1K Purse seine hook-off (7/20 to 9/30)
 1L Set net sites (6/11 to 7/25)
 Contact ADF&G for specific dates, locations and constraints. Restrict boat and air traffic to essential minimum. When set net sites are present (1L) restrict beach operations to essential minimum as authorized by ADF&G. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G James Brady 424-3212
- 2M Herring spawning (4/1 to 6/15)
 Contact ADF&G for confirmation - dates and locations may vary. Restrict boat traffic to essential minimum. Avoid damage to unopened intertidal and subtidal algae and seagrass. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G Evelyn Biggs 424-3235
- 3N, 3P Harbor seal and sea lion pupping (5/15 to 7/1)
 3O, 3Q Harbor seal and sea lion molting (8/15 to 9/15)
 Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts. No application of Inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31). Contact ADF&G and USFWS prior to treatment for confirmation.
 AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 586-7235
 ADF&G Don Calkins 267-2403
- ✓ 4.6.4
- 5R Seabird colony (5/1 to 9/1)
 Restrict air and boat traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from colony. Contact USFWS prior to treatment.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 5S Shorebird/waterfowl concentration (4/1 to 5/15)
 Restrict all activity to essential minimum, especially air traffic. Contact USFWS and ADF&G for confirmation.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
 ADF&G Tom Roth 267-2206
- 5T All Bald Eagle nests (3/1 to 6/1)
 Active Bald Eagle nests (3/1 to 9/1)
 Restrict air traffic and all disturbance to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- ✓ 6U Recreation: Tent sites (6/1 to 9/15)
 ✓ 6V Anchorages (6/1 to 9/15)
 ✓ 6W Forest Service cabins (6/1 to 9/15)
 ✓ 6X Lodge (6/1 to 9/15)
 ✓ 6Y Special use destination
- 7Z Subistence area: Salmon harvesting (5/1 to 9/30)
 7.4H Finfish harvesting
 7I 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 / PD-3 SUBDIVISION: _____ DATE 4/29/95

USCG
NAME CWS McNamee SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

1. MANUAL CLEAN-UP; REMOVE TAR
PATTIES

(SEE NOTE PD 2 4/29/95)

~~ADEC~~
NAME Doug Hill SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

Recommend Manual pickup and removal of pollution
found distributed amongst the grass. Plants as
well as the patties found on the north shore (see
Attached maps).

Rapid rate of vegetation growth requires that all
be picked up as soon as possible - now!

LAND MANAGER
NAME _____ SIGNATURE _____

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

SKETCH MAP

AGENT ST/ PD: 23

DIVISION A (10 A1)

4/21/90

CKLIST SURVEYED
BY
WILLIAM REID
29 APR 90

Arrow
prox. Scale
gSub Bndry
Dist.
dth
tgh
Cover
seaside Character
HWA/LWL
the Location(s)
the(s)
Location(s)
the Location(s)

END

Subsurface Oil

surface Oil

7C
us Distribution

10
istribution

1P
istribution

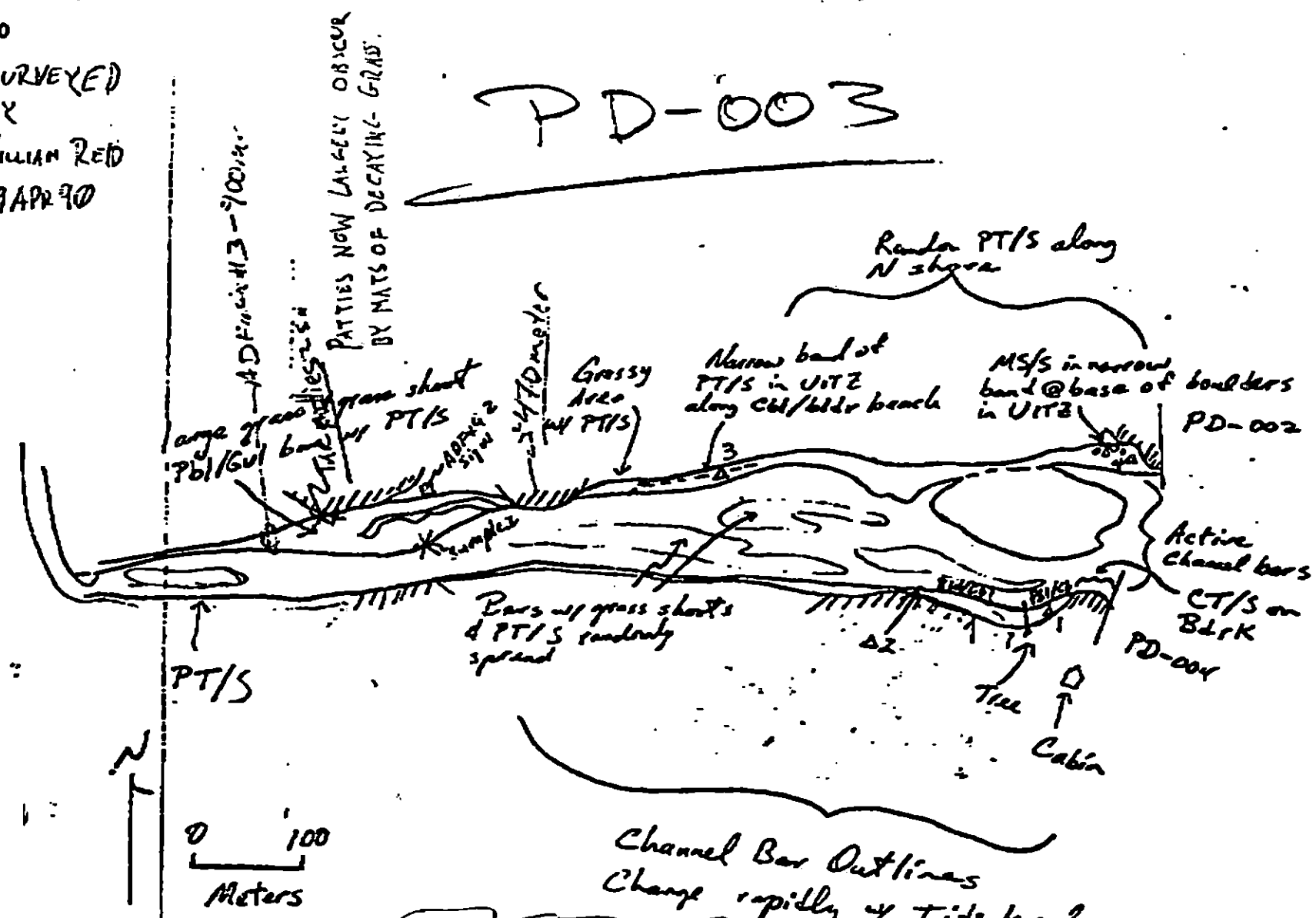
3
Distribution

2
ation

son, direction,
r

or Length (m): AP PO CV CT 151 ST MS 5 PT 700 TB FL NO 900

PD-003



ADF&G MULTI-ASSESSMENT DATA FORM

ANADSCAT

1 SURVEY TYPE: BS DS TS AVS SCH HMS PTA 2 REGION: PYS APC MAP
 METHOD: Aerial Ground Boat
 3 DATE: 4/29/90 15 HIGH TIDE TIMES: 1650
 4 START TIME: 1338 16 HIGH TIDE HTS: 12.0
 5 STOP TIME: 1445 17 LOW TIDE TIMES: 1140 1455
 6 SEGMENT #: PD-003 18 LOW TIDE HTS: -1.5
 7 STATION #: _____ 19 TIDE HT AT SURVEY: _____
 8 K-UNIT: _____ Ebb Stack Flood Slack
 9 STAT AREA: 242-42 20 USCG QUAD: _____ Starts: _____ Ends: _____
 10 LAT: 59°17'06" 11 LONG: 151°16'06"W 28 SAMPLES TAKEN? Y (N) Number _____
 12 SOURCE: Map LEPER 011 _____
 13 LOCATION: AFS# 242-42-10460 Sediment _____
 14 DESCRIPTION: HEAD of Port Dick - Grass + tide flats, stream bank biological
DOH had lagoon area at mouth, west portion of
Crack mouth EXTENT OF OIL _____
 Water _____

27 SURFACE COVERAGE

L	M	H ²	L	M	H ²

 36 CATALOGED ANAD, FISH SRC:WT (N)
 28 SURFACE THICKNESS

--	--	--	--	--	--

 37 CATALOG #: 242-42-10460
 29 PENETRATION

--	--	--	--	--	--

 38 STREAM NAME: Port Dick Cr.
 30 OVERALL OIL IMPACT: N VL L M H 39 OIL IN STREAM BED? (N)
 31 OIL TYPE: Pooled House Tar Asphalt Sticky Stain 40 OIL ON STREAM BANKS? (N)
 32 OILED DEBRIS? Y (N) 41 OIL ON BEACH ADJACENT TO MOUTH? (N)
 33 SHORELINE TYPE: Headland Low-lying Rocks Beach Cove
Lagoon Marsh 42 OIL WITHIN 1 MILE OF STREAM? (N)
 34 WAVE EXPOSURE: High Moderate Low Where: PD#1, 2, 4
 35 SUBSTRATE TYPE: Bedrock Boulder Cobble
Gravel Sand Mud/silt 43 ANADROMOUS FISH PRESENT? Y (N)

44 ANADROMOUS FISH OBSERVATION

Species	Aerial	Ground
<u>Chum</u>		<u>100</u>
<u>Pink</u>		<u>25</u>

PRIORITY Cleanup AREA - ADF&G (Doug Hill)

COMMENTS: Recommendation: Preferable to get a crew into this
Area "As Soon As Possible" due to the growth of vegetation
which will, in a short period of time, greatly impede locating the
numerous footballs and bottles, many of which are already
becoming concealed by grass and beach greens - Oil found.

AGENT ST/ 03

SK: CH MAP

DIVISION AC (A1) STARR 242 42-10450

4/21/90

CKLIST

Urow
prox. Scale
ySub Bndy
Dist
sh
ygh
Cover
substrate Character
HWA/M

SURVEYED

BY

WILLIAM RED

29 APR 90

The Location(s)
Re(s)
Location(s)
to Location(s)

END

Subsurface Of

surface Of

IC
in Distribution

7B
distribution

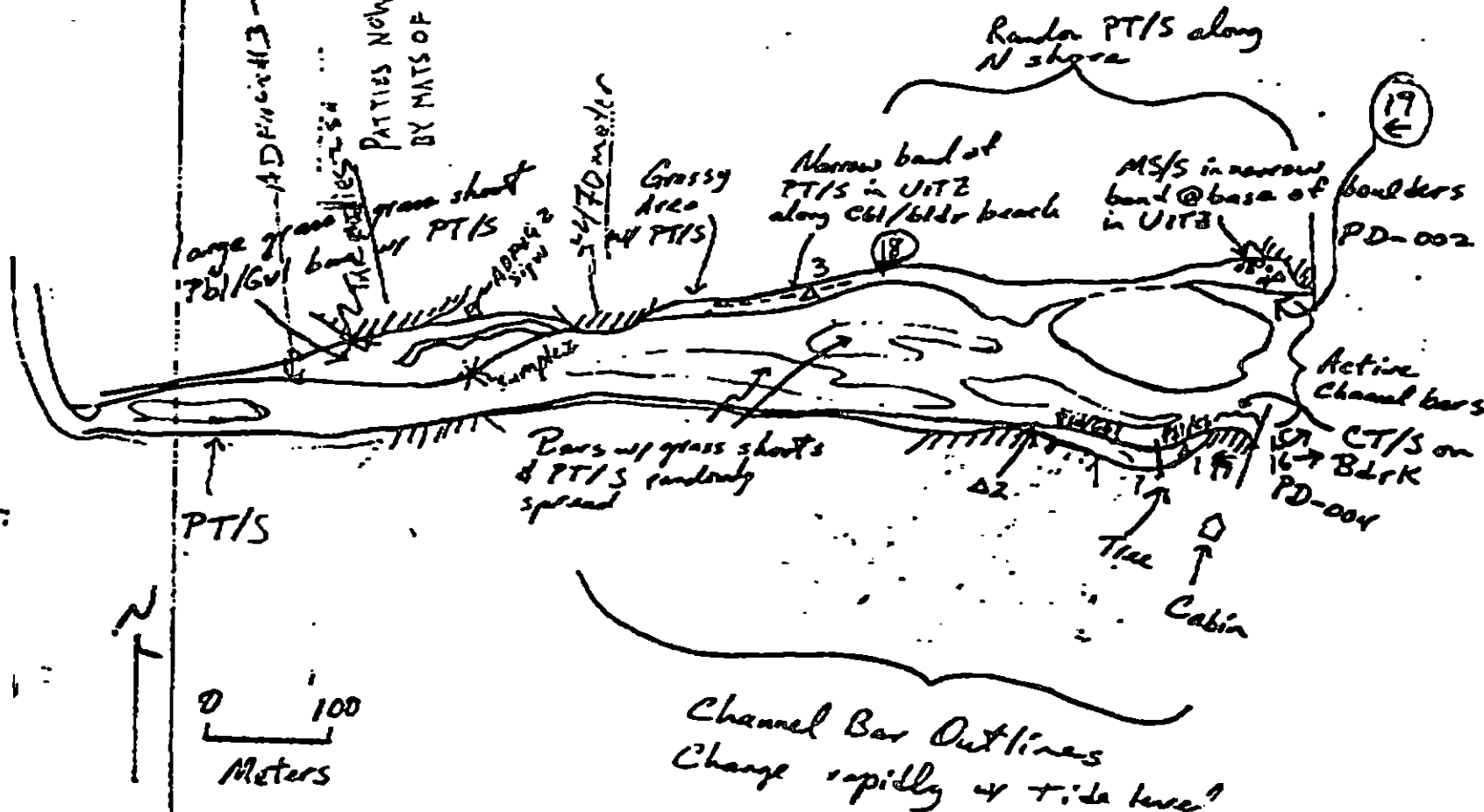
2
distribution

5
Distribution

ation

ion, direction,
x

PD-003



* Length (m): AP _____ PO _____ CV _____ CT 151 ST _____ MS 5 PT 700 TB _____ FL _____ NO 900

REVISED 000000

APR-30-90 MON 10:38

P. 11

Segment PD 003
Stream No. 242-42-10460
Ecological Summary

4/29/90
Michael Faurer

This large braided stream has an intertidal portion nearly 1 km long, consisting of mobile gravel/pebble sediments. A few grassy patches occur along the edges of the flood plain. The banks of the flood plain consist, ^{mostly} of boulders, cobble, and pebbles. Little or no attached marine biota occurs beyond 200 m upstream from the ADFG cabin. Below the cabin there are extensive beds of Fucus, mussels and clams similar to those in the adjacent segment PD 002. Remaining oil consists of sporadic small tar mats and bits of pavement along the north bank, mostly upstream from the cabin. Manual removal is recommended. There are no ecological constraints re. biota.

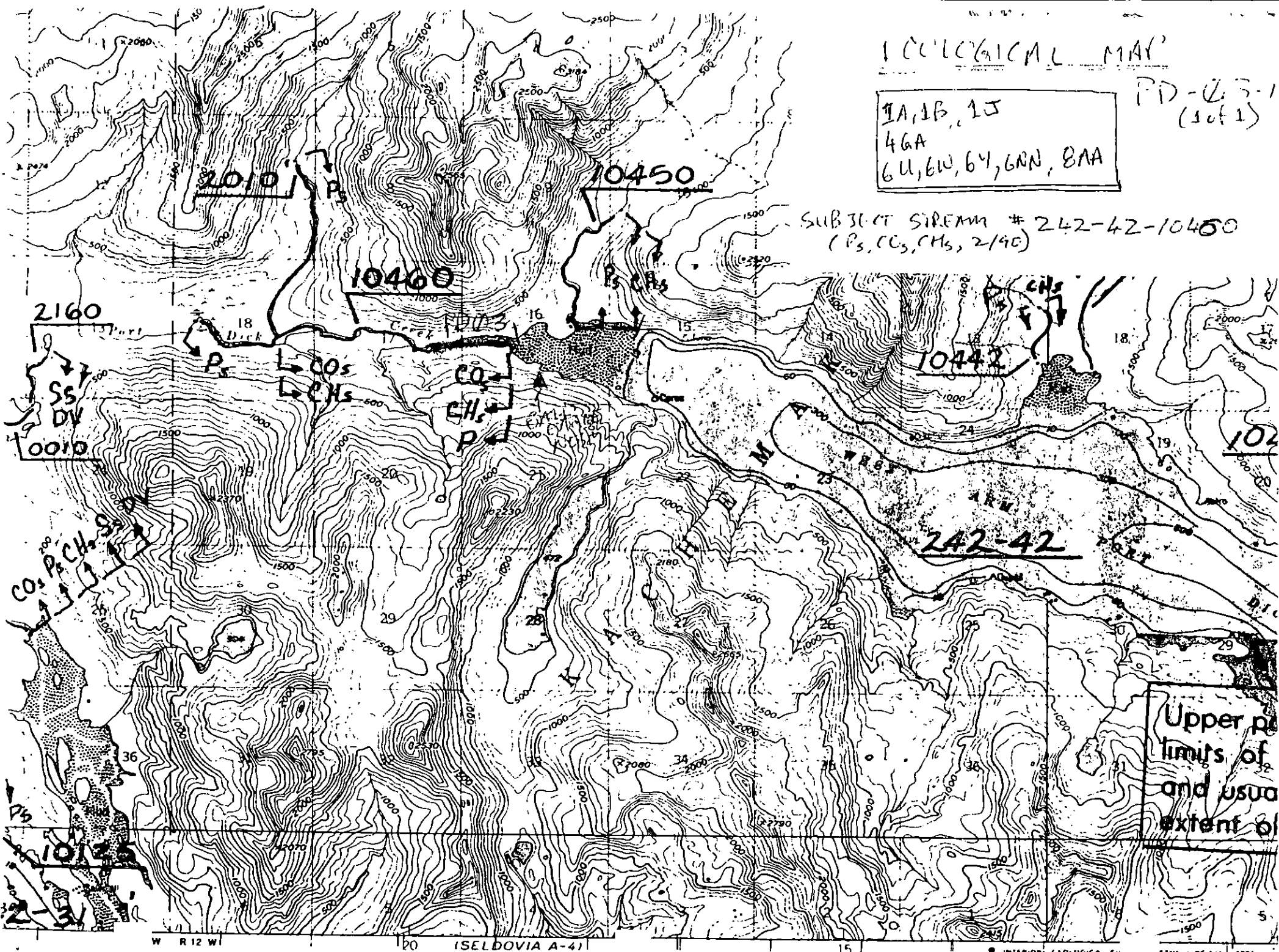
Pink and chum salmon fry were found swimming in small side channels, and a number of dead fry of both species were found stranded in a grassy area and on a pebble bank. These appeared to have died after being stranded by the receding tide.

1:50,000 GEOLOGICAL MAP

PD-03-1
(1 of 1)

1A, 1B, 1J
46A
6U, 6W, 6Y, 6NN, 8AA

SUBJECT STREAM # 242-42-10460
(P_s, CC_s, CH_s, 2/40)



W R 12 W

120 (SELDOVIA A-4)

15

INTERIOR GEOLOGICAL SURVEY
R 12 W P 12 W

STON VIRGINIA

1991 MAYSAP EVALUATION

SEGMENT: PD 003 SUB: A REGION: KEN SURVEY DATE: 5/14/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN 5/1 - 7/10; RESTRICTED 7/10 - 9/15

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: Robert L. Jan One Date: 5/24/91

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

N

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: MAY 24 1991

FOSC APPROVAL DATE: 5/29/91

ADEC

FOSC

EXXON

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

USCG

NOAA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

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

ADEC

NAME D. Hill of ADFG

SIGNATURE

Douglas D. Hill

☒ NTR A trace of oil remains — Looks Good.



EXXON

NAME R. Coulter

SIGNATURE

Ray R. Coulter

☒ NTR I CONCUR WITH COMMENTS OF OTHER REPS. NO FURTHER CONSIDERATION IS NEEDED.

LANDMANAGER

NAME J. Johnson

OF ADNR

SIGNATURE

[Signature]

☒ NTR

Concur with USCG/NOAA comments. Very little oil observed, no sheening observed in Port Dick creek, minor SOR. Though this segment is within Kachumak Bay State Wilderness park, the intrusion of further cleanup activities within this segment would probably not be justified.

USCG/NOAA

NAME Chief Jensen / G. SHIGENAKA

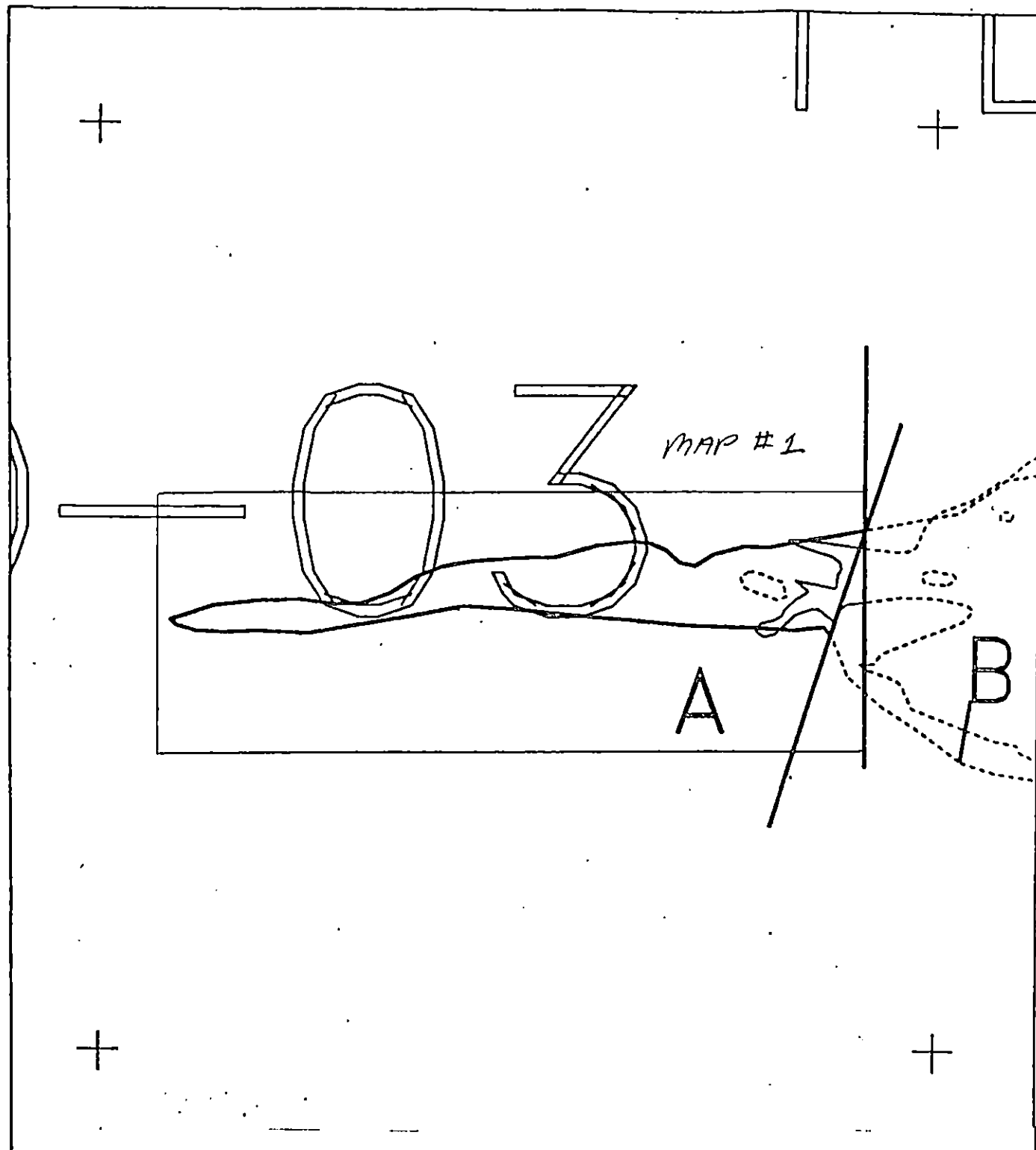
SIGNATURE

Chief Jensen / G. Shigenaka

☒ NTR There is no longer any detectable oil present on the water, adjoining shorelines, or places where it is likely to reach the water again.

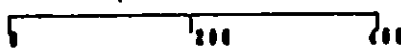
SURVEYED PORTION OF THE SEGMENT WAS THE WESTERN END OF THE WEST ARM OF PORT DICK, AN ANADROMOUS STREAM WHICH EXPERIENCED A NOTABLE DEGREE OF OILING IN 1989. BOTH NORTH AND SOUTH BANKS OF THE STREAM (DICK CREEK) AS WELL AS ANY ISLANDS IN THE STREAM (HEMINGWAY, 1938) WERE ASSESSED. RELATIVELY MINOR AMOUNTS OF SOR WERE OBSERVED ON THE NORTH BANK, AND OILED SUBSTRATE WAS RECOVERED TO THE EXTENT POSSIBLE. ONE MOUSE PATTY WAS FOUND AND RECOVERED ON THE SOUTH BANK. DESPITE WHAT WAS DESCRIBED BY ADFG REPS AS EXTENSIVE OILING IN THE LOWER REACHES OF THE CREEK, STREAMSIDE VEGETATION APPEARED HEALTHY. STRANDED PINK SALMON JUVENILES (LIVE AND DEAD) WERE SEEN ALONG THE CREEK, AND SOME WERE RECOVERED BY ADFG FOR MFD ANALYSIS.

REVIEWED 5.17.91 *Q*
REVIEWED CB 17 MAY



PD003 A

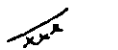
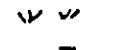
METERS



AK State Plane Zone 4
NAD83

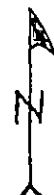
Subdivision Field Map
Map Key: KENPD003A
Name: D. FITZGERALD
Date: 14 MAY 1991

reviewed 5.17.91 g
REVIEWED CD 17 MAY

-  LONGITUDINAL BARS
-  Low Rock Cliff/
High Angle Slope
-  Bedrock outcrop
-  GRASSY AREA
-  PHOTO SITES

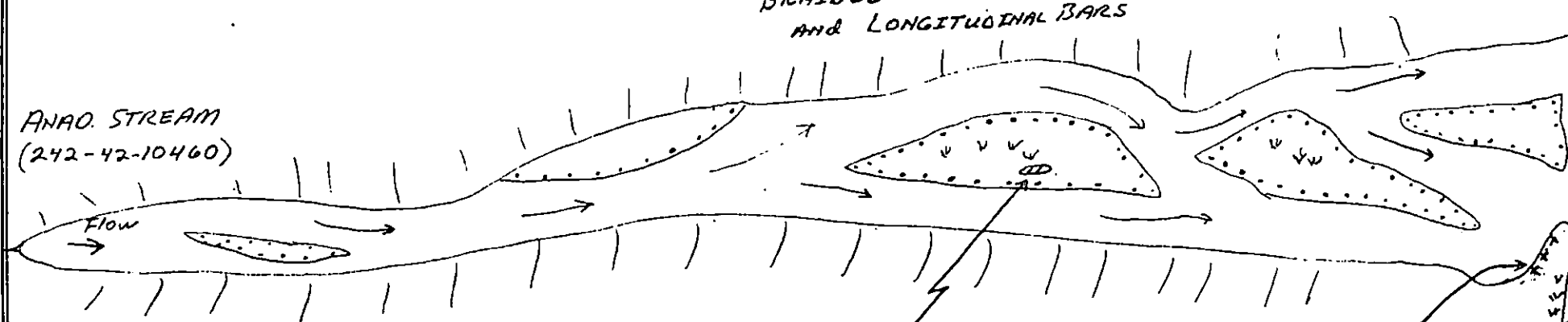
SKED MAP(OG)
PD-3-A
14 MAY 1991
1035 - 1140

0 100
METERS



BRAIDED CHANNELS
AND LONGITUDINAL BARS

ANAO. STREAM
(242-42-10460)



P.U. * A both oiling sites
all oil sediments/MS
that was seen on
accessible was removed
by VECO workers.
1/2 Bag

B. TB
1 by 5m, < 1%
ON LONG. BAR
ALL SEEN WERE
REMOVED

A. .CF-/MS
1m², < 1%
IN CRACKS OF
BEDROCK AT
LITZ



REVIEWED CD 17 MAY

reviewed 5.17.91

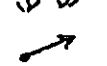
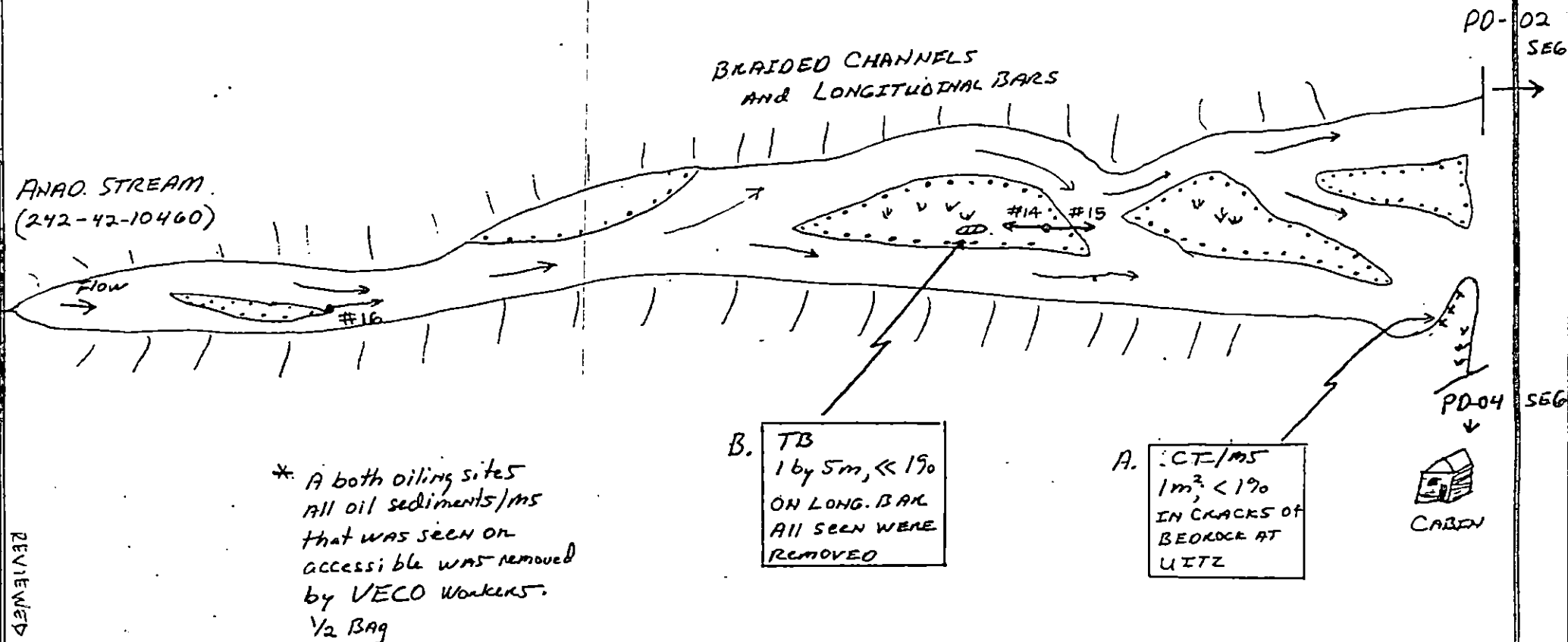
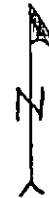
-  LONGITUDINAL BARS
-  Low Rock Cliff/
High Angle Slope
-  Bedrock outcrop
-  GRASSY AREA
-  PHOTO SITES

PHOTO SITES, PV-3A
ROLL 6-14, FRAMES 14 THRU 16

Sketch MAP (OG)
PD-3-A
14 MAY 1991
1035 - 1140

0 100
METERS



NAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 6 DATE 5/14/91
 SEGMENT # PD-003 TIDAL HEIGHT (Range) +3.5 to 0 ft
 SUBDIVISION A BIOLOGIST T.A. Schroeder
 SEA STATE calm WIND SPEED/DIRECTION calm
 PHOTOGRAPHS: ROLL # _____ FRAME # _____

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

This is the most productive spawning stream in the lower Cook Inlet area. No oil was observed in or along the intertidal spawning area. No oil was observed in the beach grass berms adjacent to the stream and the area looks very good. Filamentous algae, sea urchins and beach grasses are lush and thriving in this segment. The only evidence of past cleanup work in the area are some deep holes in the gravel berms adjacent to the stream. Even though large sections of the beach grass root systems have been removed, the grass is regrowing and the intertidal area looks exactly as it did 16 years ago.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			2 pink salmon fry
Seabirds			
Waterfowl			
Gulls/Kittiwakes	1 gull	4	
Shorebirds	3 multipoint ^{terns}	9	
Corvids			
Other Birds			

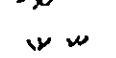
LAND MAMMALS

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

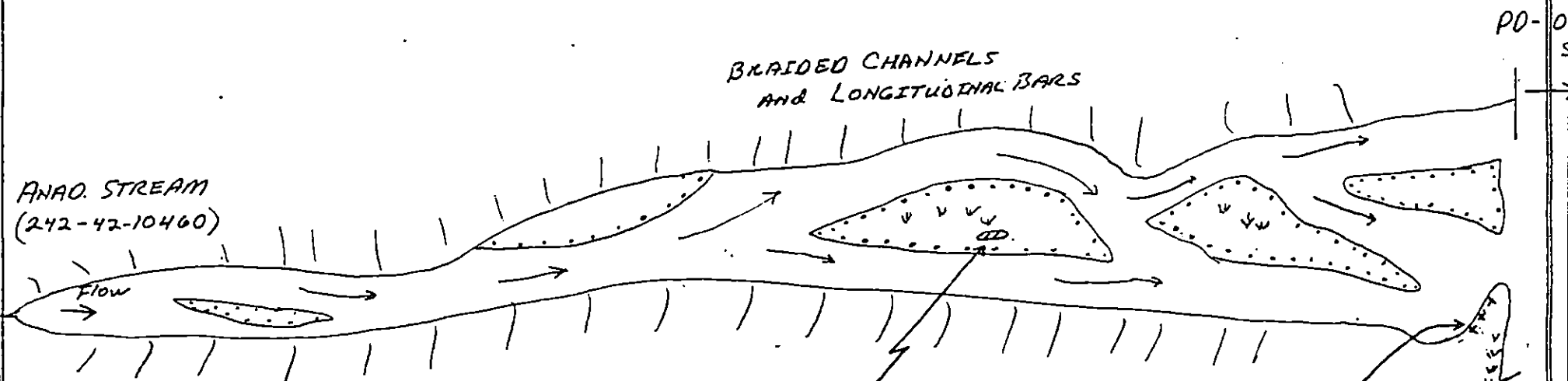
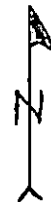
Shoreline subdivision map showing important biological features attached.

Bio. Map PD-3-A
5/14/91

SA 9 MAP (100)
~~PD-3-A~~
14 MAY 1991
1035 - 1140

-  LONGITUDINAL BARS
-  Low Rock Cliff/
High Angle Slope
-  Bedrock outcrop
-  GRASSY AREA
-  PHOTO SITES

0 100
METERS



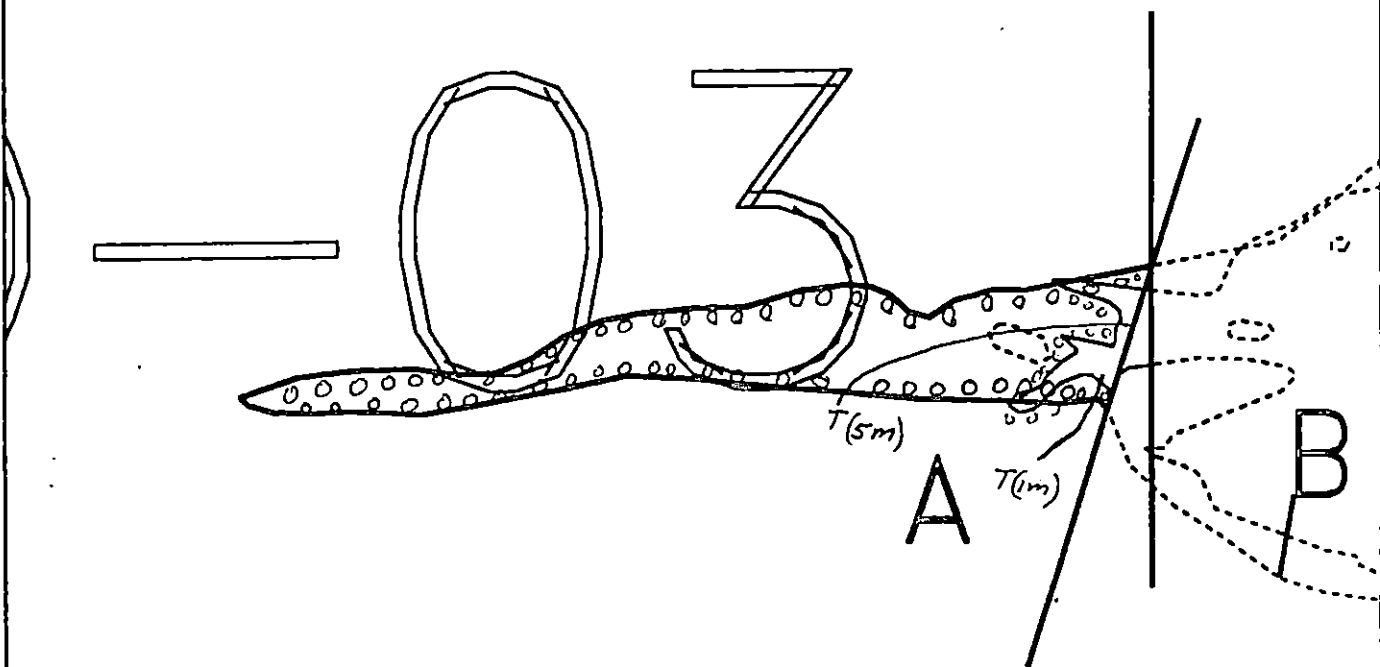
* A both oiling sites
all oil sediments/ms
that was seen on
accessible was removed
by VECO workers.
1/2 Bag

B. TB
1 by 5m, < 1%
ON LONG. BAR
ALL SEEN WERE
REMOVED

A. CT/MS
1m², < 1%
IN CRACKS OF
BEDROCK AT
UITZ



CABIN

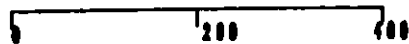


XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

PD003 A

ADEC Subsegment Length: 1964m

METERS



AK State Plane Zone 4
 apd003a



Subdivision Field Map

Map Key: KENPD003A

Name: D. Fitzgerald

Date: PD-3-A

Date Entered:

Reviewed 5.17.91 9
 REVISED CO 17 MAY

1991 MAYSAP EVALUATION

SEGMENT: PD 003 SUB: A REGION: KEN SURVEY DATE: 5/14/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN 5/1 - 7/10; RESTRICTED 7/10 - 9/15

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: _____ Date: _____

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____

FOSC APPROVAL DATE: _____

ADEC

FOSC

EXXON

USCG

NOAA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

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

ADEC

NAME D. Hill of ADFG SIGNATURE Douglas D. Hill

☒ NTR A trace of oil remains — Looks Good.



EXXON

NAME R. Coulter SIGNATURE Ray R. Coulter

☒ NTR I CONCUR WITH COMMENTS OF OTHER REFS. NO FURTHER CONSIDERATION IS NEEDED.

LANDMANAGER

NAME J. Johnson OF AONR SIGNATURE [Signature]

☒ NTR

Concur with USCG/NOAA comments. Very little oil observed, no sheening observed in Port Dick creek, minor SOR. Though this segment is within Kachemak Bay state wilderness park, the intrusion of further cleanup activities within this segment would probably not be justified.

USCG/NOAA

NAME Chief Jensen / SHIGENAKA SIGNATURE Chief Jensen / Gary Shigenaka

☒ NTR There is no longer any detectable oil present on the water, adjoining shorelines, or places where it is likely to reach the water again.

SURVEYED PORTION OF THE SEGMENT WAS THE WESTERN END OF THE WEST ARM OF PORT DICK, AN ANADROMOUS STREAM WHICH EXPERIENCED A NOTABLE DEGREE OF OILING IN 1989. BOTH NORTH AND SOUTH BANKS OF THE STREAM (DICK CREEK) AS WELL AS ANY ISLANDS IN THE STREAM (HEMINGWAY, 1938) WERE ASSESSED. RELATIVELY MINOR AMOUNTS OF SOR WERE OBSERVED ON THE NORTH BANK, AND OILED SUBSTRATE WAS RECOVERED TO THE EXTENT POSSIBLE. ONE MOUSSE PATTY WAS FOUND AND RECOVERED ON THE SOUTH BANK. DESPITE WHAT WAS DESCRIBED BY ADFG REFS AS EXTENSIVE OILING IN THE LOWER REACHES OF THE CREEK, STREAMSIDE VEGETATION APPEARED HEALTHY. STRANDED PINK SALMON JUVENILES (LIVE AND DEAD) WERE SEEN ALONG THE CREEK, AND SOME WERE RECOVERED BY ADFG FOR MFD ANALYSIS.

SEGMENT PD-3

SUBDIVISION A

DATE 14 / MAY / 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 6 m NO 1958 m US m

[illegible]

DISTRIBUTION: C = 91-100%; B = 51-60%; P = 11-50%; S = 1-10%; T = <1%

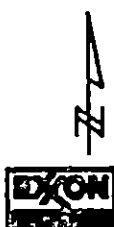
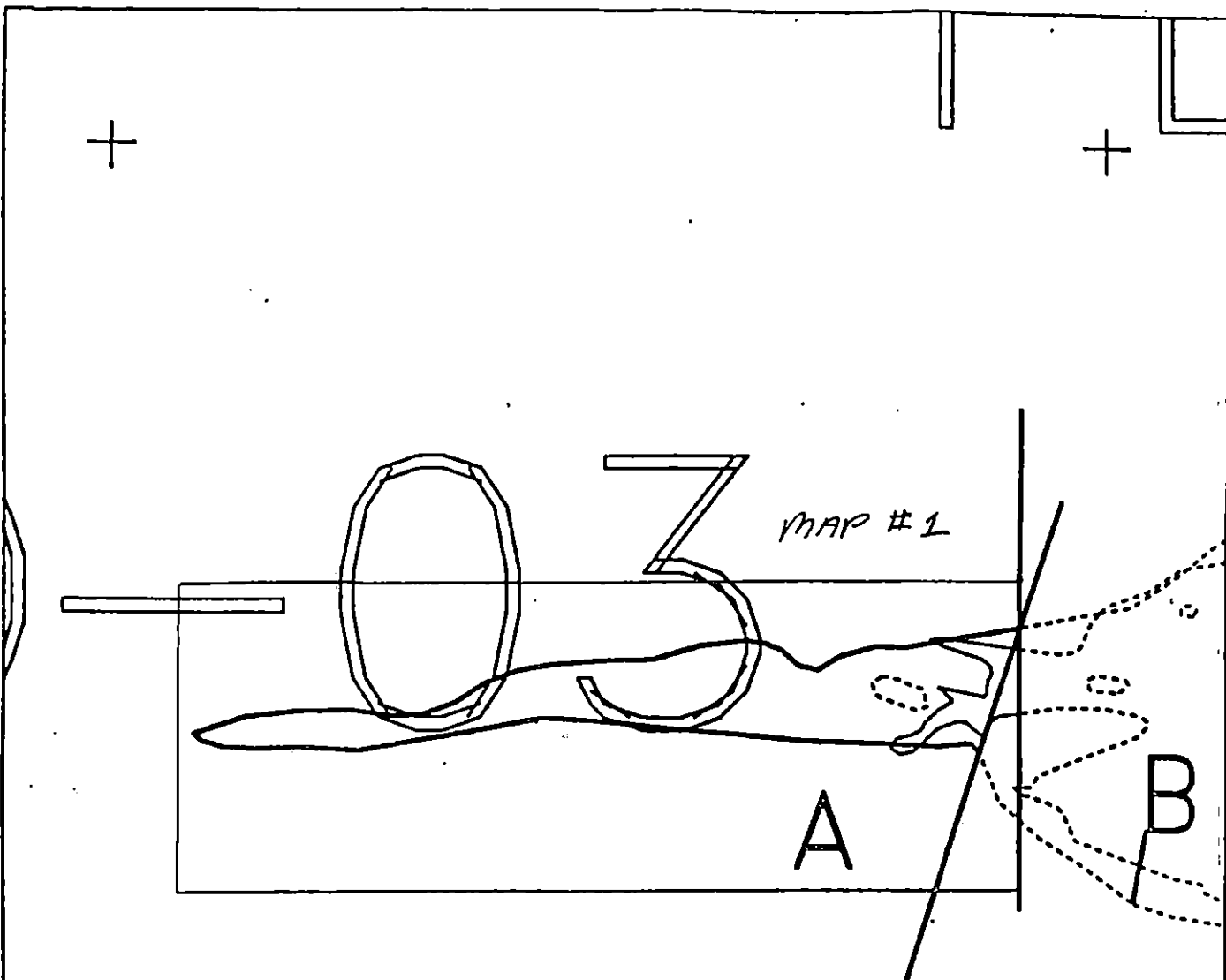
SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE PHOTO ROLL # MAYBAP- 6 - 14 FRAMES 14-16

[illegible]

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

OG COMMENTS: This segment was the seaward, estuarine end of Anad. Stream # 242-42-10. The oiling of this site consisted of small tar patties containing a large percentage of sediment on the longitudinal bars. There was some highly weathered mousse in the cracks of the bedrock outcrop at the mouth of the stream in one small area (1m²). The oil reported by the NOAA representative (G. Shigenaka) was not observed by the OG, but it was in a region where previous oiling was documented.

reviewed 5.17.91 -!
REVIEWED CD 17 MAY



PD003 A

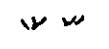
METERS



AK State Platte, Zone 4
200000

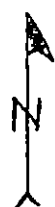
Subdivision Field Map
Map Key: XENPD003A
Name: D. FITZGERALD
Date: 14 MAY 1991

reviewed 5.17.91 +
REVIEWED OF 17 MAY

-  LONGITUDINAL BARS
-  Low Rock Cliff/
High Angle Slope
-  Bedrock outcrop
-  GRASSY AREA
-  PHOTO SITES

SKETCH MAP (OG)
PD A
14 MAY 1991
1035 - 1140

0 100
METERS



BRAIDED CHANNELS
AND LONGITUDINAL BARS

ANAO. STREAM
(242-42-10460)

Flow

P.U. * A both oiling sites
all oil sediments/ms
that was seen on
accessible was removed
by VECO workers.
1/2 Bag

B. TB
1 by 5m, < 190
ON LONG. BAR
ALL SEEN WERE
REMOVED

A. CF-MS
1m² < 190
IN CRACKS OF
BEDROCK AT
UITZ



CABIN

PD-02
SE

PD-04
SE

REVIEWED CG 17 MAY

reviewed S. 17.919

LONGITUDINAL BARS

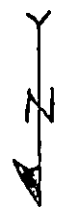
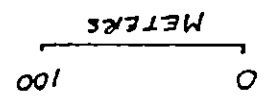
Low Rock cliff/ High Angle Slope

Bedrock outcrop

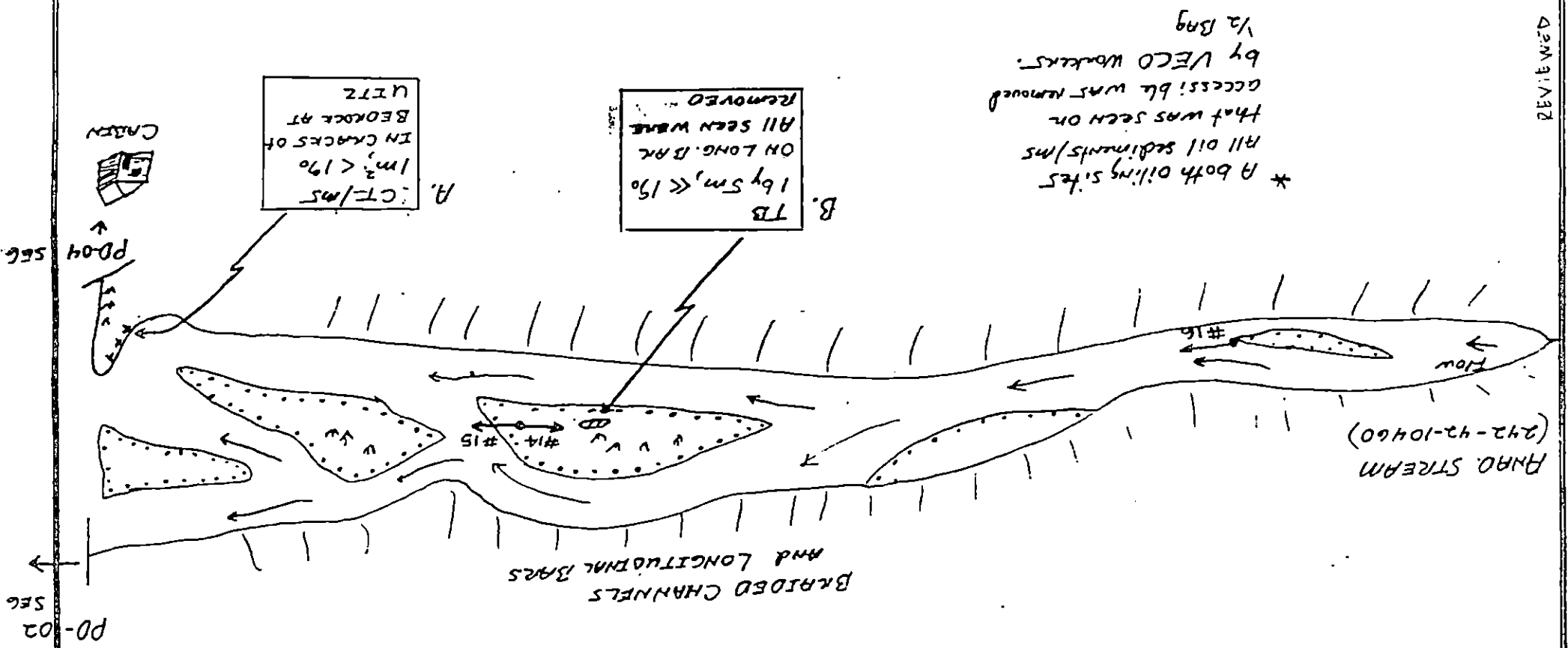
Grassy Area

PHOTO SITES

PHOTO SITES, PV-5 ROLL 6-14, FRAMES 14 THRU 16



Sketch MAP (dc)
PD-5-9
14 MAY 1991
1035 - 1140



MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 6 DATE 5/14/91
 SEGMENT # PD-003 TIDAL HEIGHT(Range) +3.5 to 0 ft
 SUBDIVISION A BIOLOGIST T.A. Schroeder
 SEA STATE calm WIND SPEED/DIRECTION calm
 PHOTOGRAPHS: ROLL # _____ FRAME # _____

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

This is the most productive spawning stream in the lower Cook Inlet area. No oil was observed in or along the intertidal spawning area. No oil was observed in the beach grass dunes adjacent to the stream and the area looks very good. Filamentous algae are common and beach grasses are lush and thriving in this segment. The only evidence of past cleanup work in the area are some deep holes in the gravel dunes adjacent to the stream. Even though large sections of the beach grass root system have been removed, the grass is regrowing and the intertidal area looks exactly as it did 16 years ago.

WILDLIFE OBSERVATIONS

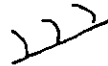
TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			2 pink salmon fry
Seabirds			
Waterfowl			
Gulls/Kittiwakes	1 gull	4	
Shorebirds	3 multipass ^{terns}	9	
Corvids			
Other Birds			

LAND MAMMALS

MARINE MAMMALS	# OBSERVED	SPECIES	# OBSERVED
Sea Otters			
Pinnipeds(specify)			
_____les(specify)			
_____les(specify)			

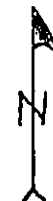
Shoreline subdivision map showing important biological features attached.

-  LONGITUDINAL BARS
-  Low Rock Cliff/
High Angle Slope
-  Bedrock outcrop
-  GRASSY AREA
-  PHOTO SITES

Bio. Map PD-3-A Sketch MAP
5/14/91

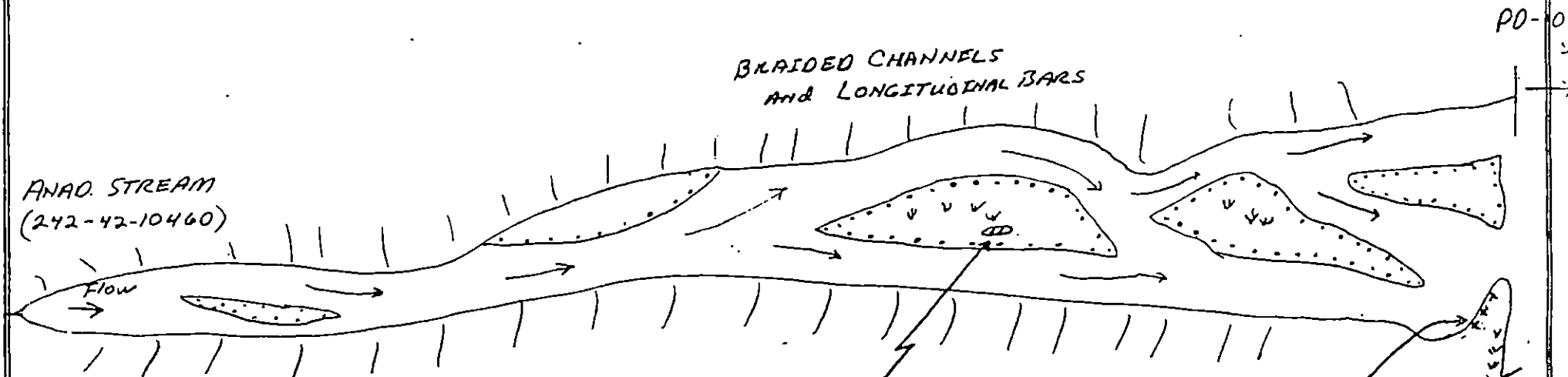
14 MAY 1991
1035 - 1140

0 100
METERS



BRAIDED CHANNELS
AND LONGITUDINAL BARS

ANAO STREAM
(242-42-10460)



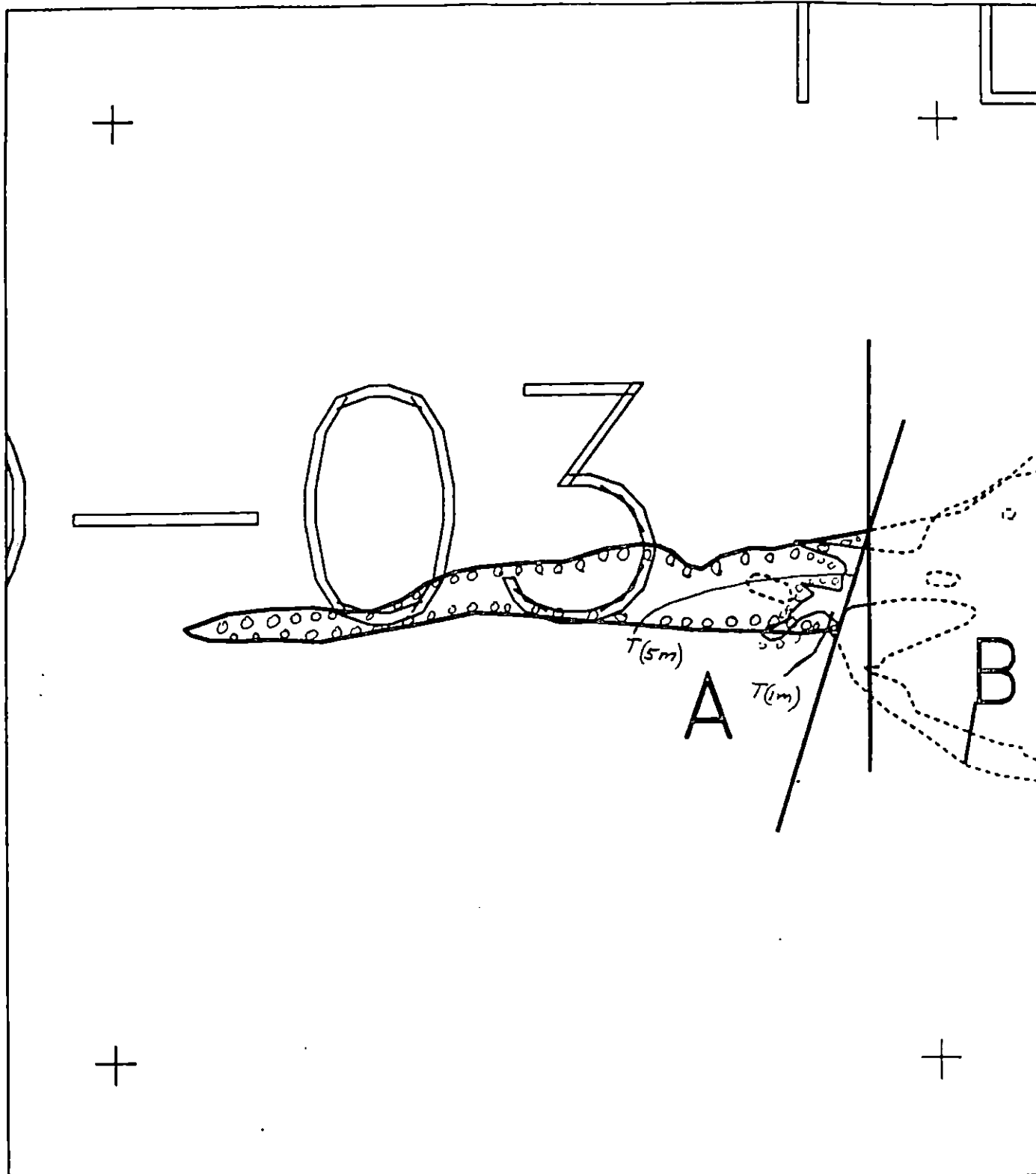
* A both oiling sites
all oil sediments/ms
that was seen on
accessible was removed
by VECO workers.
1/2 Bag

B. TB
1 by 5m, < 190
ON LONG. BAR
ALL SEEN WERE
REMOVED

A. CT/ms
1m² < 190
IN CRACKS OF
BEDROCK AT
LITZ



CABIN



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

PD003 A
 ADEC Subsegment Length: 1984m
 METERS
 0 200 400
 AK State Plane Zone 4
 spd003a



Subdivision Field Map
 Map Key: KENPD003A
 Name: D. Fitzgerald
 Date: PD-3-A
 Date Entered:

Reviewed 5.17.91 -j
 REVISED CD 17 MAY

SHORELINE EVALUATION

SEGMENT ST/ PD-004 SUBDIVISION B (2 OF 2) DATE 6/2/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1J Purse seine area (7/20 to 9/30)
4GA Alaska State Wilderness Park
6NN Recreation: Sportfishing
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact Exxon's Cultural Resource Program immediately (564-3274 (Anchorage) or 229-1508 (24 hrs.)).

SHPO SIGNATURE: Charles E. Hume DATE: June 19, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 271 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 Removal	<u> </u> Beach Cleaner
	<u> </u> Other (see comments)

COMMENTS: Recommended treatment is manual pick up of mousse as annotated on attached sketch map.

TAG COMMENTS:

TAG APPROVAL DATE: 6-16-90

ADEC

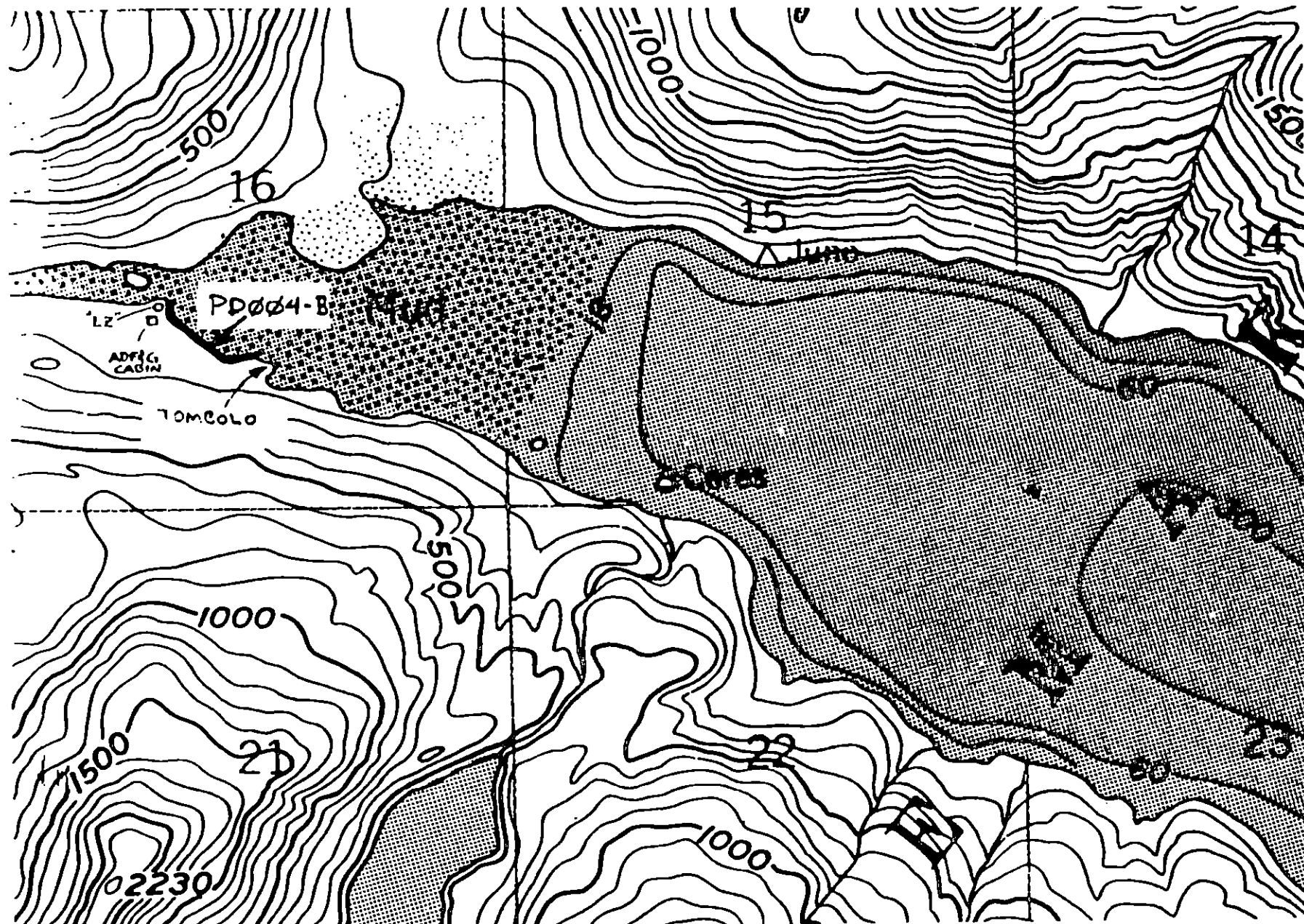
NOAA

Ray Morris
Joseph S. Talbot

FOSC

Date 6-22-90

Exxon



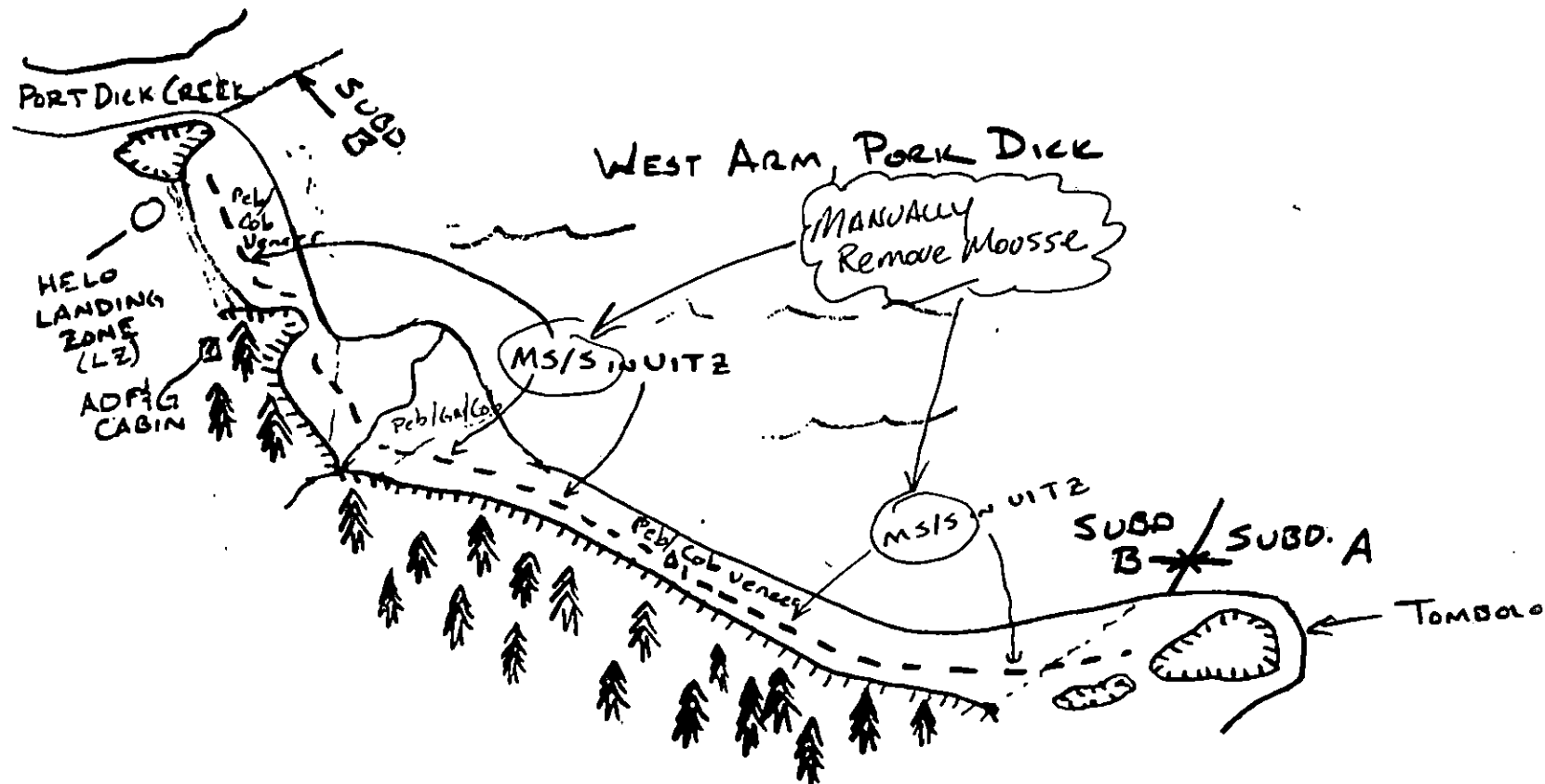
SKETCH MAP



OG: BAYAN TRIN

5T/PD001-B

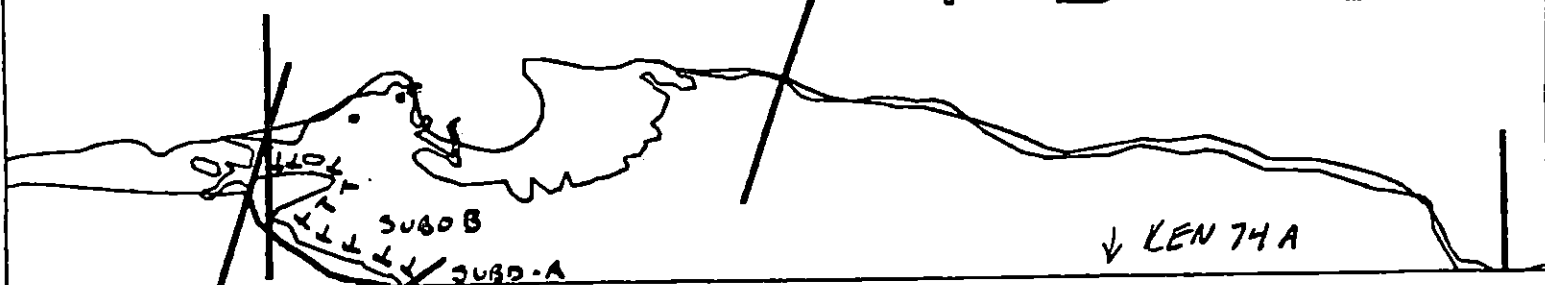
2 JUNE '90



OIL CHARACTER LENGTHS (m) AP-Ø, PO-Ø, CV-Ø, ST-Ø, MS-4Ø, PT-Ø, TB-Ø, FL-Ø, NO-Ø

PD-02

PD-01



XXX Wide

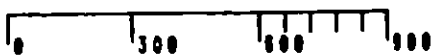
//// Medium

--- Narrow

TTTT Very Light

PD-4-B

ADEC Segment Length: 11307m

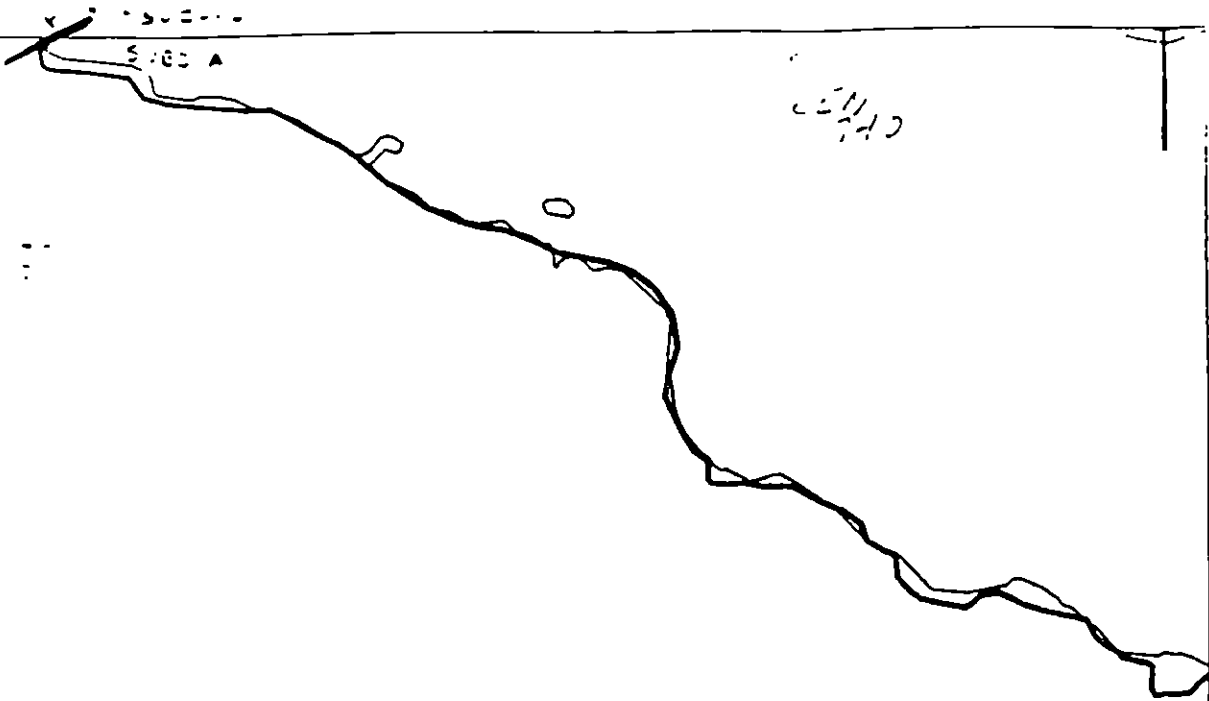


Map Key: KEN-74d

Name: B. TRIMM

Date: 2 JUNE 90

Data Entered:



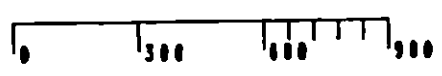
PD-0

KEN
74B →

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

PD-4-"B"

ADEC Segment Length: 11307m



Map Key: KEN-74a

Name: B. Trimm

Date: 2 June 98

Data Entered:

REGION: KENAI

SEGMENT: ST/PD-04

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ PD-04 SUBDIVISION A (1 OF 1) DATE 4/27/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 242-42-10460 plus two possible uncatalogued anadromous streams (see map).

- 1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
- 1B Salmon stream mouth - spawning (7/10 to 8/31)
- 1J Purse seine area (6/25 to 8/31)
- 4GA Alaska State Wilderness Park
- 5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
- 6NN Recreation: Sportfishing

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: DATE:

OILING CATEGORIZATION:

Wide 53 m: Medium 398 m: Narrow 192 m: V.Light 563 m: No Oil 10100 m
Subsurface Oil Observed: Yes X No Maximum Depth 20 cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes manual removal of tarmats and mousse patties in areas indicated on sketch maps. Work should be conducted between 6/1 and 7/10 with approval of USFWS regarding eagle nest constraints.

TAG COMMENTS:

TAG APPROVAL DATE:
ADEC
EXXON
NOAA
USCG

FOSC: DATE:

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

- ✓ 1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
 ✓ 1B Salmon stream mouth - spawning (7/10 to 8/31)
 No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream without authorization from ADF&G. No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G. Treatment which is not intrusive and which will not affect nearshore oil or toxicity levels, such as manual removal, can probably proceed without adherence to time constraints. In any case, contact ADF&G Habitat Division prior to treatment for consultation and/or permit application.
 AGENCY CONTACT PERSON: ADF&G John Morison 267-2324
- 1C Salmon fry nursery area (4/31 to 7/31)
 No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to July 31 unless authorized by ADF&G. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G prior to treatment for confirmation and advice.
 AGENCY CONTACT PERSON: ADF&G Larry Peltz 424-3214
- 1D Esther Hatchery release (4/15 to 6/15)
 1E Main Bay Hatchery release (4/20 to 6/15)
 1F Sawmill Bay Hatchery release (4/15 to 6/1)
 1G Cannery Creek Hatchery release (4/21 to 6/1)
 1H Remote release site
 No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G and/or PWS Aquaculture Association. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G or PWS Aquaculture Association for confirmation and authorization.
 AGENCY CONTACT PERSON: 1E ADF&G Larry Peltz 424-3214
 1D 1F 1G PWS Aquaculture Association John McMillan or Bruce Suzumoto 424-7511
- ✓ 1I Gill net area (6/7 to 8/31)
 ✓ 1J Purse seine area (7/20 to 9/30)
 1K Purse seine hook-off (7/20 to 9/30)
 1L Set net sites (6/11 to 7/25)
 Contact ADF&G for specific dates, locations and constraints. Restrict boat and air traffic to essential minimum. When set net sites are present (1L) restrict beach operations to essential minimum as authorized by ADF&G. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G James Brady 424-3212
- 2M Herring spawning (4/1 to 6/15)
 Contact ADF&G for confirmation - dates and locations may vary. Restrict boat traffic to essential minimum. Avoid damage to 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
- 3A, 3B Harbor seal and sea lion pupping (5/15 to 7/1)
 3C, 3D Harbor seal and sea lion molting (8/15 to 9/15)
 Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts. No application of Inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31). Contact ADF&G and USFWS prior to treatment for confirmation.
 AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 586-7235
 ADF&G Don Calkins 267-2403
- 5R Seabird colony (5/1 to 9/1)
 Restrict air and boat traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from colony. Contact USFWS prior to treatment.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 5S Shorebird/waterfowl concentration (4/1 to 5/15)
 Restrict all activity to essential minimum, especially air traffic. Contact USFWS and ADF&G for confirmation.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
 ADF&G Tom Roth 267-2206
- ✓ 5T All Bald Eagle nests (3/1 to 6/1)
 Active Bald Eagle nests (3/1 to 9/1)
 Restrict air traffic and all disturbance to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 6U Recreation: Tent sites (6/1 to 9/15)
 6V Anchorages (6/1 to 9/15)
 6W Forest Service cabins (6/1 to 9/15)
 6X Lodge (6/1 to 9/15)
 6Y Special use destination
 6AA Sport Fishing
 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 / PD004 SUBDIVISION: A DATE 4/27/1990

NAME DONALD A. MacDONALD SIGNATURE Donald A. MacDonald

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

The eastern end of the segment, Mars Cove had large quantities of mousse and asphalt on both beaches; the rest of the segment only had ~~light~~ scattered patches of oil. Just west of the segment is an anadromous fish stream for pink salmon and in the central portion of the segment is another stream which appears to be possibly anadromous. Several others were observed along the segment. The SSAT forms are fine.

ADEC NAME JOHN R. REED SIGNATURE John R. Reed

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS

The two pocket beaches in Mars Cove, in the eastern end of segment PD-04, are heavily oiled. Manual cleanup using shovels could remove some of the gross contamination. These are the worst beaches in all of Port Dick and should be cleaned. The western end of the segment also has some asphalt patches that could be removed manually. I agree with LAND MANAGER data on SSAT Forms.

NAME SHARIE MATHVEN-TONEY SIGNATURE Sharie Mathven-Toney

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS

PD 4-Port Dick-West Arm is located within Kachemak Bay State Wilderness Park; has high wilderness & recreation values. There are good tent sites and anchorages within the segment area. Popular area with commercial fisherman and pleasure boaters and has high wildlife values. There is an anadromous stream during pink ^{season} to the west of the segment and an archaeology site. Mousse patties found on the western edge of the segment should be picked up manually with shovels. The oil found on the island and the beach located west of Shelter Cove I recommend manual cleanup. Mars Cove in the eastern end of the segment I recommend manual cleanup removal.

SHORELINE OILING SUMMARY

REVISION NO. 04/13/90

OG Sawyer USCG MacDonald SEGMENT ST/ P04
 BIO Carr LAND REP Methven-Taney SUBDIVISION A (1 OF 1)
 EYON Boyer ADEC Reed TIME 08:00 10/13/90
 NO. 18 TIDE LEVEL -0.5 to +5.0 DATE Apr 1 27 1990
 EST. SUBDIVISION LENGTH: 11930 m
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: E to W
 SURFACE SEDIMENTS: R 60 % B 20 % C 10 % P 10 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 35 % Hang 5 % Vert 60 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 56 m M 660 m N 270 m VL 390 m NO 0.554 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	AC	AS	AP	AT	BL	BR	BY	CB	CC	CD	CE	CF	SU	U	M	U
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT																
STAIN																
MOUSSE																
PATTIES																
TARBALLS																
FILM																
NO OIL																

PAVEMENT H 516 → 4
 (F) (S) → 184 sq. m by → 6 cm

PATTIES / TARBALLS 0 BAGS

NEAR SHORE SHEEN? NO BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS?

YES ☒ NO ☐

TYPE hard hat, mousse, canvas bag
 #BAGS 2

Photographs:

Roll No. ST-18-9

Frames 8-18

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM)	BELOW		OIL / FILM COLOR								PIT ZONE				A N A	S W E E N (Y/N)	Y	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UG	BL	BR	BY	CB	CC	CD	CE	CF	SU	U	M	U				
1	20																								
2	20						0-4																SL	7	C-S, C
3	25																								C-G, S
4	20						2-5																		P-S, G
5	25						5-20																		B-P, C, B
6	20																						RW	12	B-S, G
																									C-S, C

COMMENTS

DAP

SHORELINE OILING SUMMARY (PAGE 2)

REVISION 04/13/90

SEGMENT ST/ PDY SUBDIVISION A (1 OF 1)

SUBSURFACE OIL (CONTINUED)

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CH)	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	SHEEN (Y/N)	↓	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		VO	UC	20-30	30-40	40-50	50-60	60-70	70-80	SU	U	M	U				
7	25					/			/														P-S,G
8	45					/			/														P-P
9	35					/			/														P-G,S
10	25		/			/	5-10		/				/				/						P-S,C
11	40					/			/								/						P-G,S
12	30					/			/								/						P-G
13	20		/			/	0-4		/				/				/						C-S,C
14	20		/			/	0-2		/				/				/						C-S,C

COMMENTS

REVIEWED

BAT

DATE

29 Apr 90

OG Sa

SEGMENT ST/PO4

SUBDIVISION A

DATE Apr 27 90

CHECKLIST

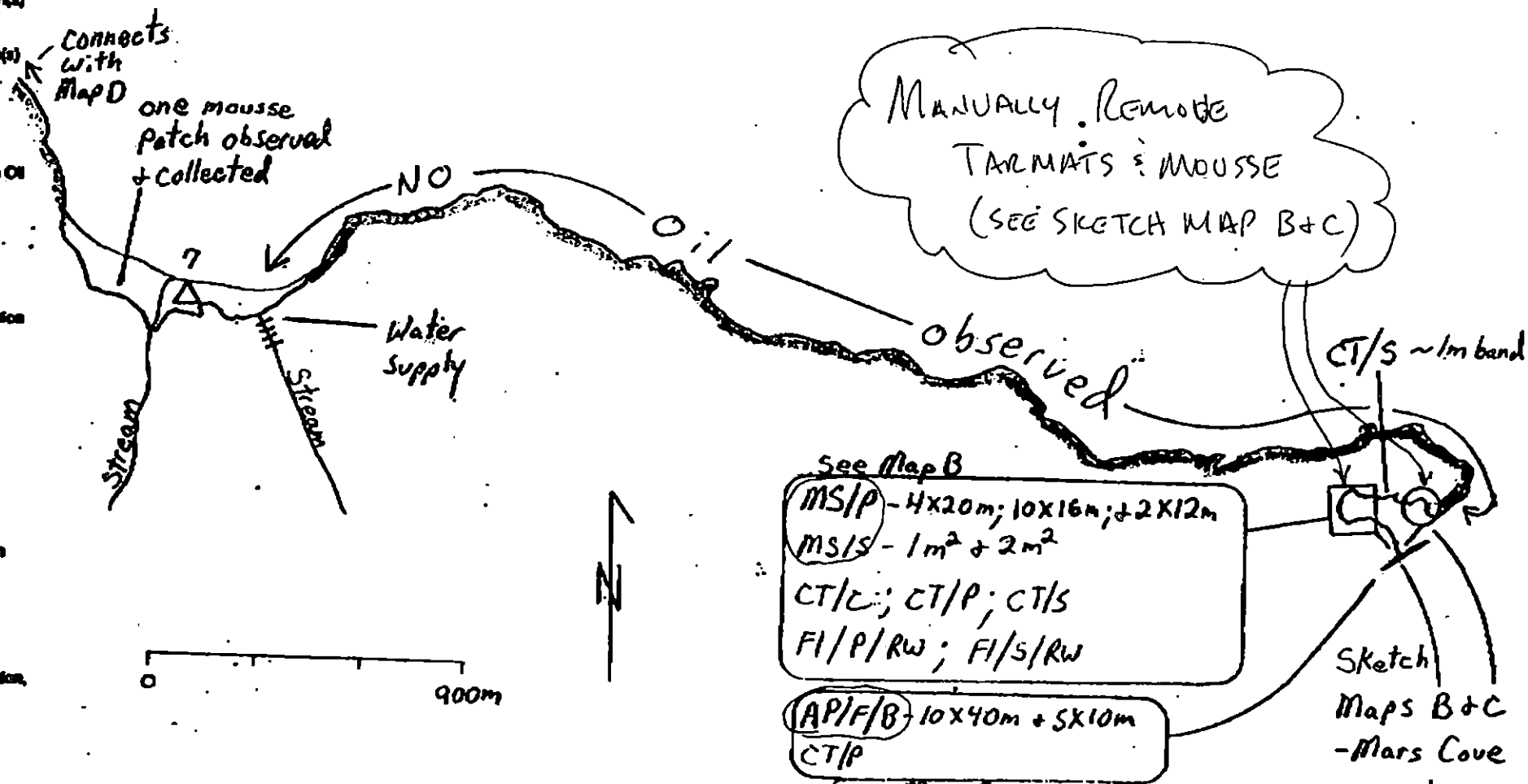
- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Body
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HW/LW
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Pit Location(s)
- ☐ Photo Location(s)

LEGEND

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

SKETCH MAP - A

West Arm Port Dick



Oil Character Length (m): AP 131 PO 0 CV 0 CT 530 ST 0 MS 50 PT 0 TR 0 FL 100 NO 11300

OG Saunders

SEGMENT PD4

SUBDIVISION A

DATE Apr 1 27 90

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Body
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. MW/L/VOL
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Pit Location(s)
- ☐ Photo Location(s)

LEGEND

1 Δ
Pit - No Subsurface Oil

2 Δ
Pit - Subsurface Oil

CT/C
Continuous Distribution

CT/B
Broken Distribution

CT/P
Patchy Distribution

CT/S
Splashed Distribution

eee
Oiled Vegetation

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

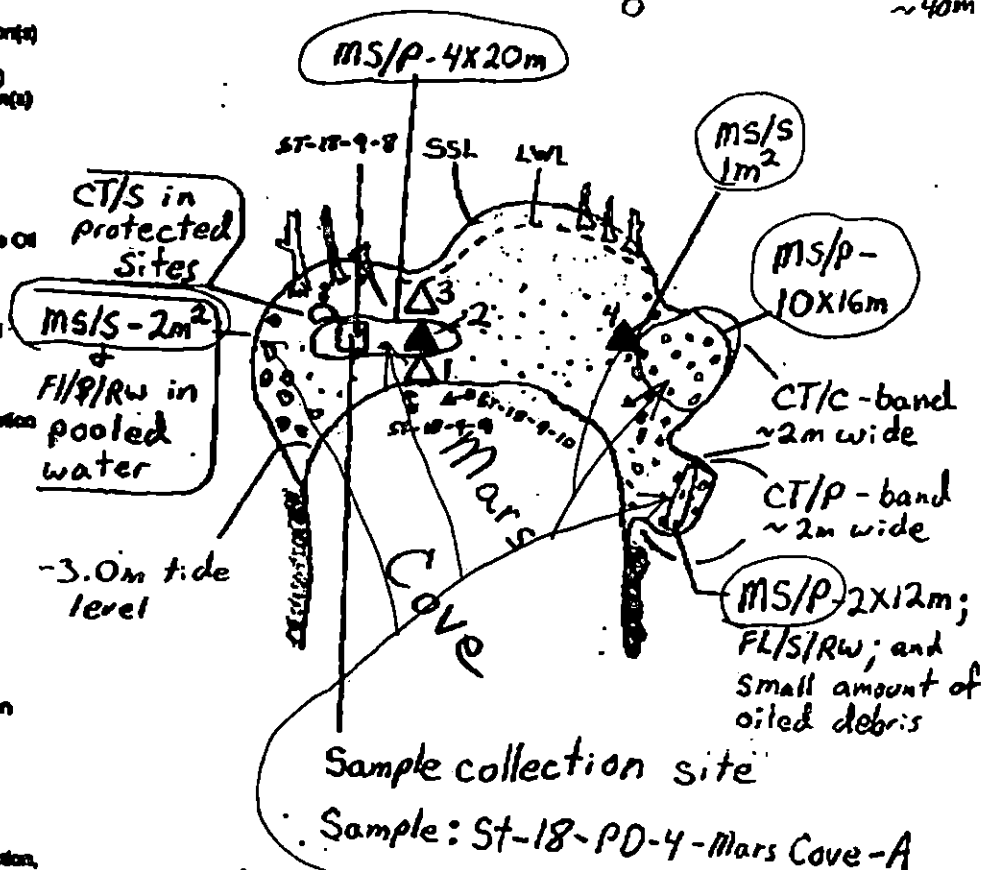
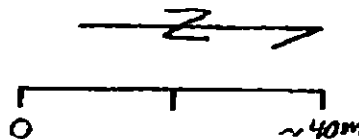
~~Bedrock~~ Bedrock cliffs

$\rightarrow$ See Sketch Map A

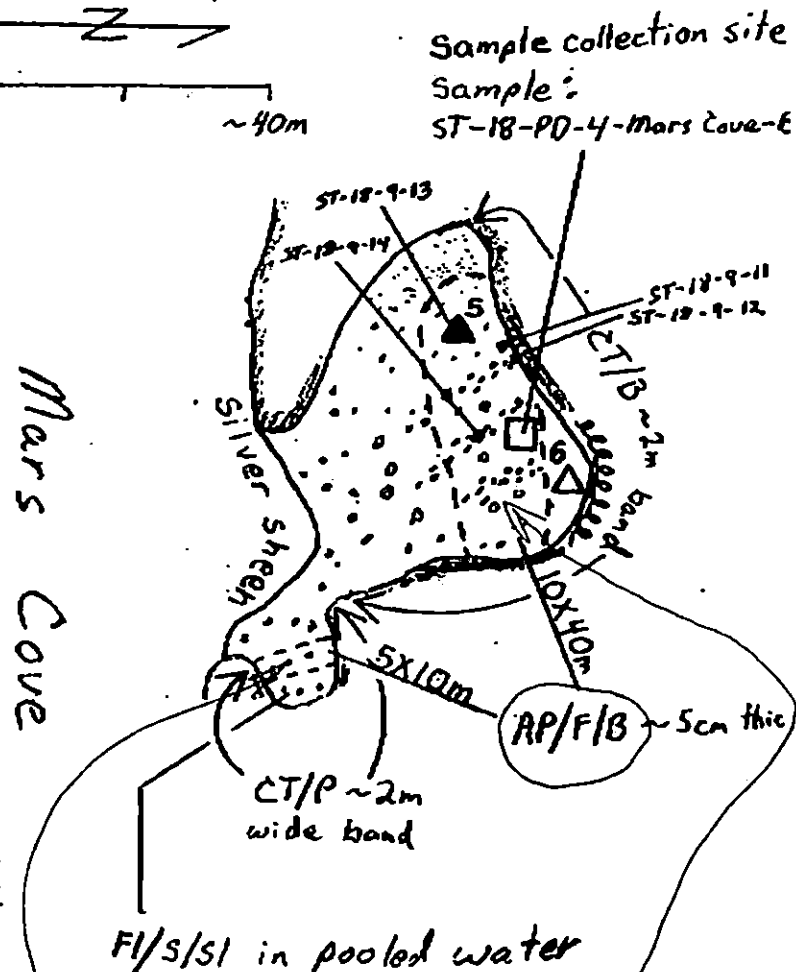
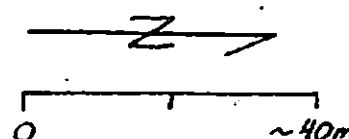
Oil Character Length (m): AP PO CV CT ST MS PT TB FL RO

ETCH MAPS - B+C

Sketch Map B (enlargement)



Sketch Map C (enlargement)



MANUALLY REMOVE TARMATS & MOUSSE PATTIES

OG Saw

SEGMENT ST/ PD4

SUBDIVISION A

DATE Apr 127 90

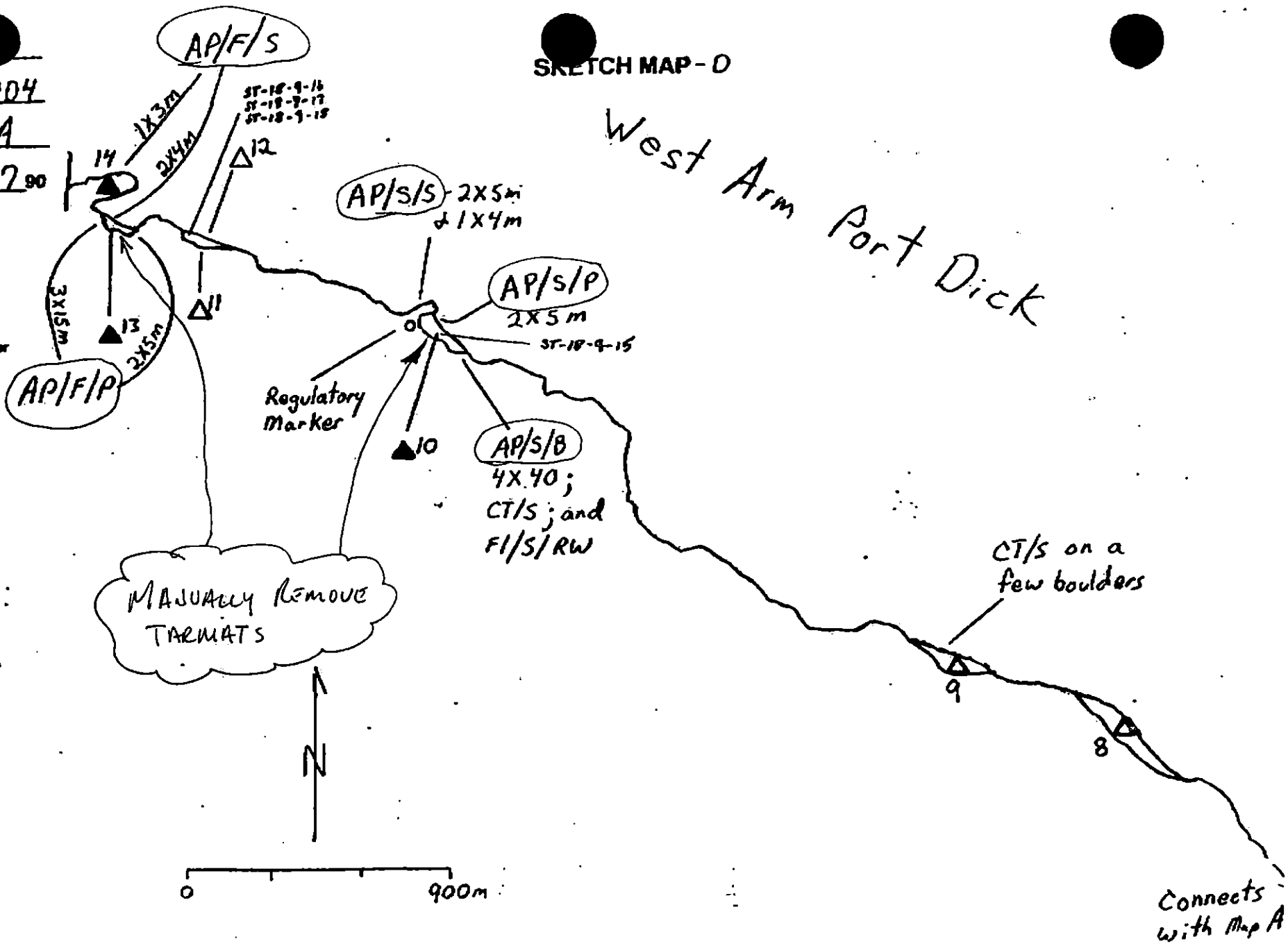
CHECKLIST

- H Arrow
- Approx. Scale
- Seg/Sub Boundary
- Oil Dist.
- Width
- Length
- % Cover
- Substrate Character
- Est. HMLA/WL
- SSL
- Profile Location(s)
- Profile(s)
- Pk Location(s)
- Photo Location(s)

LEGEND

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

SKETCH MAP - D



SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / PD-4 Subdivision A Date (mo / day / yr) 4-27-90

Time (24 hr) 0820 Biologist MARK CARR

(A) Substrate type and % of segments:
(1) Bedrock 60 (2) Boulder 20 (3) Cobble 10 (4) Pebble 10 (5) Sand (6) Silt

(B) Overall % cover of biota (% of segment): Dense 90 Moderate 5 Low 5

(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: ST-18-9
Roll No.

Frames 8-18

BARNACLES

	Dense	Moderate	Sparse	Rare
	1U 1M 1L	1U 1M 1L	1U 1M 1L	1U 1M 1L
Bed	2	2	2	2
Bould	2	2	2	2
Cobb	3	3	3	3
Pebb	4	4	4	4
Sand	5	5	5	5
Silt	6	6	6	6

NOT PRESENT

NOT PRESENT IN ANY ZONE

MYTILUS

	Dense	Moderate	Sparse	Rare
	1U 1M 1L	1U 1M 1L	1U 1M 1L	1U 1M 1L
Bed	2	2	2	2
Bould	2	2	2	2
Cobb	3	3	3	3
Pebb	4	4	4	4
Sand	5	5	5	5
Silt	6	6	6	6

NOT PRESENT

NOT PRESENT IN UPPER INTERTIDAL ZONE.

GASTROPODS

	Dense	Moderate	Sparse	Rare
	1U 1M 1L	1U 1M 1L	1U 1M 1L	1U 1M 1L
Bed	2	2	2	2
Bould	2	2	2	2
Cobb	3	3	3	3
Pebb	4	4	4	4
Sand	5	5	5	5
Silt	6	6	6	6

NOT PRESENT

NOT PRESENT IN UPPER & LOWER TIDAL ZONE

FUCUS

	Dense	Moderate	Sparse	Rare
	1U 1M 1L	1U 1M 1L	1U 1M 1L	1U 1M 1L
Bed	2	2	2	2
Bould	2	2	2	2
Cobb	3	3	3	3
Pebb	4	4	4	4
Sand	5	5	5	5
Silt	6	6	6	6

NOT PRESENT

NOT PRESENT IN ANY ZONE

Wildlife Observations/ General Comments:

bald eagle (5), 4 native, sea otter (3), loons (5), harlequin duck (33), glaucous-winged gull (8), golden-eyes (7), cormorant (1), N.W. crows (40), Ecological Considerations: pigeon guillemot (1), mallard duck (50), merganser (4)

Head of bay: very dense Mytilus beds in cobble/pebble MTE.

Dense Fostera beds or dense laminarian beds in shallow subtidal.

COOLOGICAL MAP

PD 004-A (1001)

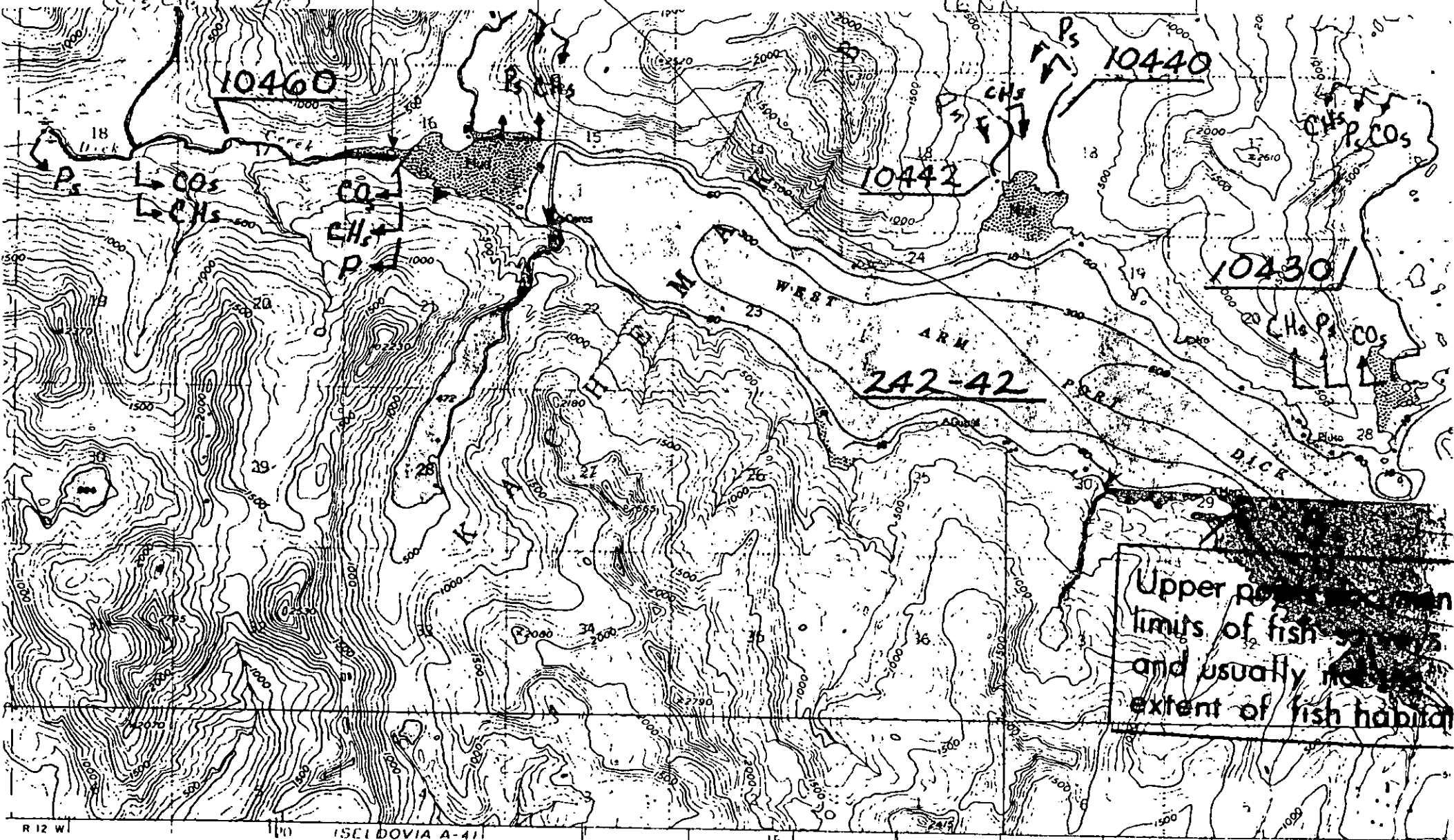
CATALOGUED SALMON
-FISH-

#942-42-10460

(C.C.S., CH., P. 2/7)

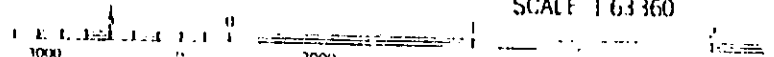
POSSIBLE UNCATALOGUED
ANADROMOUS
SALMONS?

ST-1
1A, 1B, 1S
16A
CNA



Upper portion of main
limits of fish
and usually not
extent of fish habitat

SCALE 1:63360



PD-07

PD

← KEN 74B

XXX Wide

/// Medium

--- Narrow

TTT Very Light

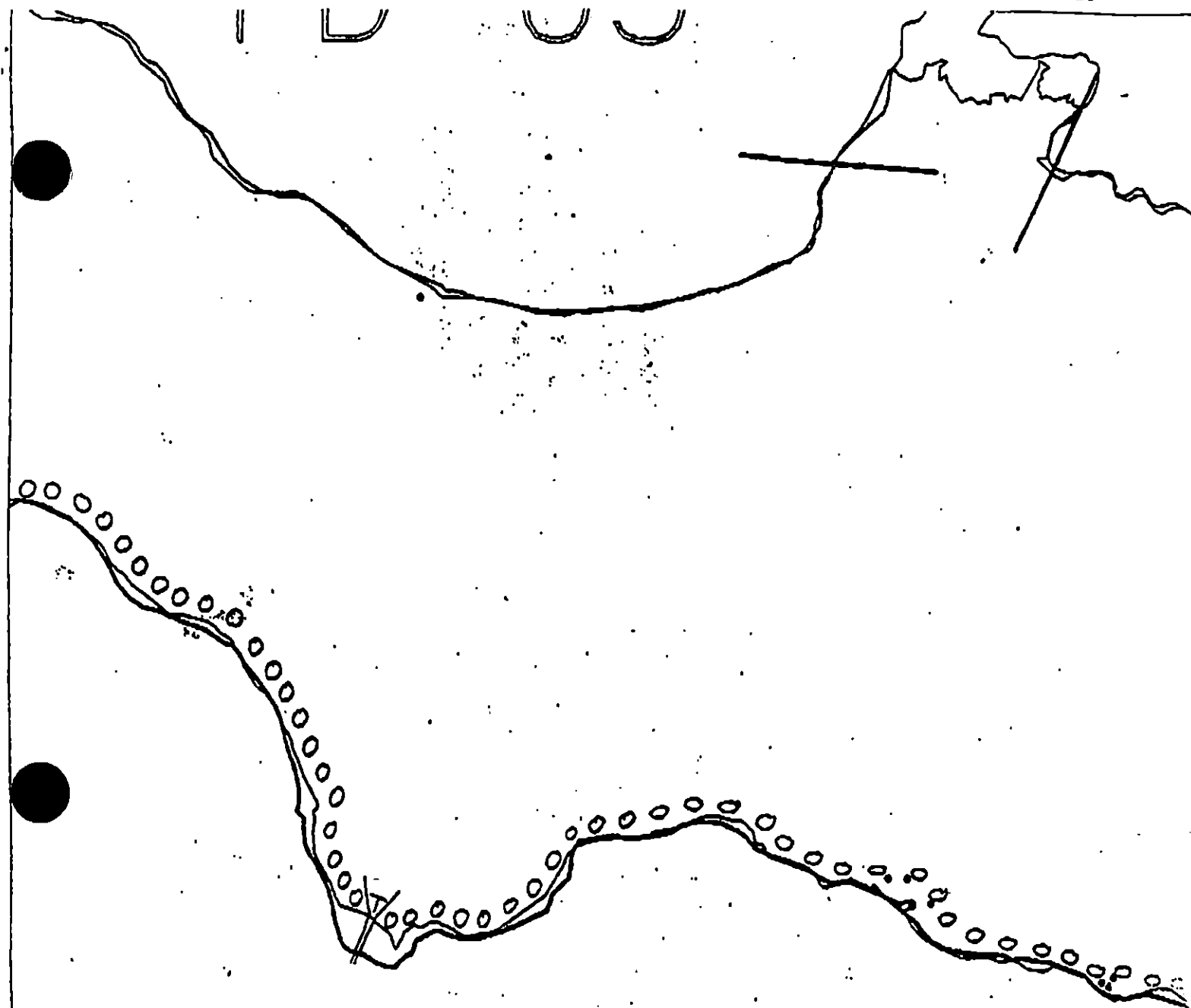
PD-4

ADEC Segment Length: 11307m

0 1,000 2,000 3,000

Map Key: KEN-74c

Name: SawyerDate: 4/27/90



← KEN
74A

KEN
74C →

XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

OOOO No Data

PD-4

ADEC Segment Length: 11307m



Map Key: KEN-74b

Name: Sawyer

Date: 4/27/90

North Arrow

↑ KEN
74D

PD-0

KEN
74B →

XXX Wide

//// Medium

---- Narrow

TTTT Very Light

P.D - 4

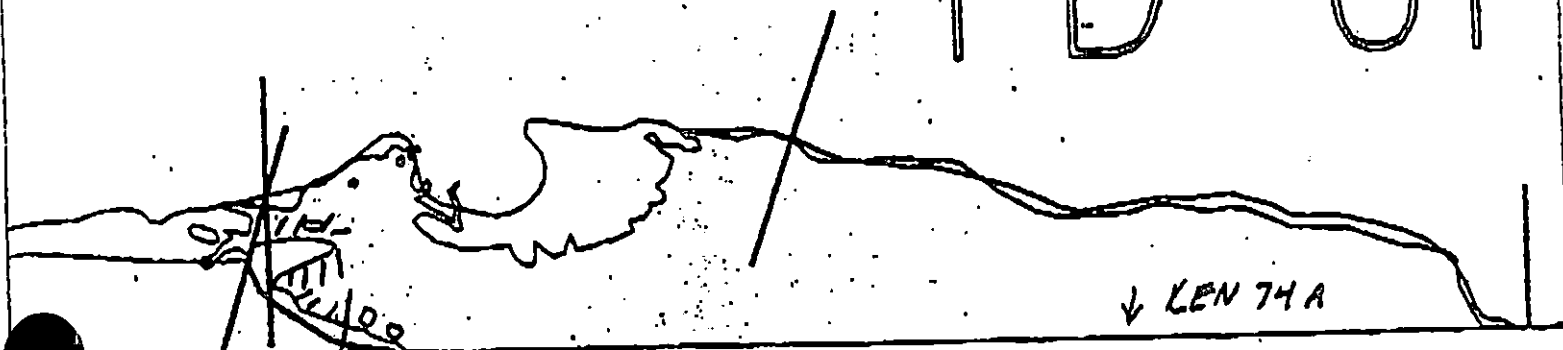
ADEC Segment Length: 11307m

Map Key: KEN-74g

Name: SawyerDate: 4/27/90

PD-02

PD-01



XXXX Wide

//// Medium

--- Narrow

TTTT

PD-4

ADEC Segment Length: 11307m

Map Key: KEN-74d

Name: SawyerDate: 4/27/90

REGION: KENAI

SEGMENT: ST/PD-004

SUBDIVISIONS: B (2 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ PD-004 SUBDIVISION B (2 OF 2) DATE 6/2/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1J Purse seine area (7/20 to 9/30)
4GA Alaska State Wilderness Park
6NN Recreation: Sportfishing
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact Exxon's Cultural Resource Program immediately (564-3274 (Anchorage) or 229-1508 (24 hrs.)).

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 271 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 Removal	☐ Beach Cleaner
	☐ Other (see comments)

COMMENTS: Recommended treatment is manual pick up of mousse as annotated on attached sketch map.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____
ADEC _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / PD004 SUBDIVISION: B DATE 2 JUNE 90

USCG

NAME CWO J. Mc MAHAN SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

1. Manual pick-up, only within subdivision B, approx 400m in length, of tar mats (asphalt).

STIPULATION: THERE WAS CONFUSION IN THE FIELD AS TO THE PRECISE 400M STRETCH WHICH THE HOMER DEC REP. HAD IDENTIFIED TO BE SCAT'D. MY RECOMMENDATIONS ONLY APPLY TO THE AREA I OBSERVED AS CONFIRMED BY THE BELOW DEC REP, DIANE MUNSON. THIS DOES NOT APPLY TO ANY OTHER AREA OF PD. SM

ADEC

NAME Dianne Munson SIGNATURE Dianne Munson

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

- This subdivision is the area of concern that Russell Kunibe CADEC Homer expressed to TAG.
- Oiling consists of sporadic mousse accumulations for approximately 400m. oil penetration was observed at 1.5 cm.
- This subdivision lies within Kachemak Bay State Wilderness Park, contains an anadromous stream which supports a large commercial run for lower Cook Inlet.
- Recommend manual removal of mousse accumulations.

LAND MANAGER

NAME _____ SIGNATURE _____

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

NONE WAS PRESENT DURING SURVEY

SHORELINE OILING SUMMARY

REVISION NO. 06/13/90

OG BRYAN RIMM USCG JOHN McMANON SEGMENT ST/ 1-22
 BIO LAND REP SUBDIVISION 3 (2 OF 2)
 EXXON RICK EICHNER ADEC DIANE MUNSON TIME/5:50 10/7:58
 TAM NO. 00 TIDE LEVEL +3.0 T₀ +4.5 DATE JUNE 2 / 90
 SUBDIVISION LENGTH: 400 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: E to W
 SURFACE SEDIMENTS: R 5 % B 5 % C 30 % P 45 % G 10 % S 5 % M 0 % V 0 %
 SLOPE: Lang 90 % Hang 10 % Vert 0 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 400 m NO 0 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	C	R	P	B	WH	LT	GR	OR	BR	BL	TR	LR	SU	U	M	U
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT																
STAIN																
MOUSSE																
PATTIES																
TARBALLS																
AM																
OIL																

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

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

DID YOU COLLECT DEBRIS?

YES ☐ NO ☒TYPE —#BAGS 0

Photographs:

Roll No. BT-55-01Frames —

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-FEET)	BELOW		OIL / FILM COLOR								PIT ZONE				A N A	SHEEN (Y/N)	↓	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	SEL	DEL	GR	OR	BR	BL	TR	LR	SU	U	M	U				
1	10						0-1.5																N		C/P-S-G-M

COMMENTS (SEE ATTACHED OG COMMENTS) -

REVIEWED BAT DATE 6 Jun 90

OG Comments - PD004-B

The shoreline surveyed extends from the landing zone by the ADF&G cabin (the mouth of Port Dick Creek) approximately 400 m east to a tombolo. This is the area of concern that Russell Kunibe (ADEC-Homer) outlined in the attached memo to TAG.

The boundary between PD004-A and PD004-B is the western-most tombolo described by Tom Sawyer (OG) during the original PD004-A survey of April 27, 1990. The shoreline (supra- to mid-intertidal zones) from the tombolo to the landing zone adjacent to the ADF&G cabin consists of angular cobble, pebble veneer with finer material (sand, granule, and mud) underneath. Tidal (mud) flats associated with Port Dick Creek are found in the lower-intertidal zone of subdivision PD004-B. A small creek outlet dissects the subdivision with angular pebble, granule deposits, and bedrock occasionally outcrops as rocky headlands throughout the subdivision.

Oiling is limited to splattered mousse (MS/S) deposits in the upper-intertidal zone for the length of the subdivision (400 m). Splatters occur with a frequency of 1 to 5 meters in a one meter band. The mousse has a dull black crust with the typical light brown 'moussy' consistency in the middle. The mousse is beginning to 'soak' into the finer sediments underneath the cobble, pebble veneer, thus forming incipient asphalt pavement. Oil penetration is 1.5 cm to date. The mousse is not mobile unless storm activity strips off the beach material, an unlikely event since the oil has been stranded for over one year.

One pit was excavated to 10 cm in the upper-intertidal zone. The cobble, pebble veneer overlays the finer sand, granule and mud substrate. Oil (MS/S) was observed between the veneer material, incorporated into the substrate to a depth of 1.5 cm. The mousse is approximately 0.5 cm thick above the sediment. The veneer shields the surface mousse from wind and wave exposure.

Memo

Date: 5/31/90

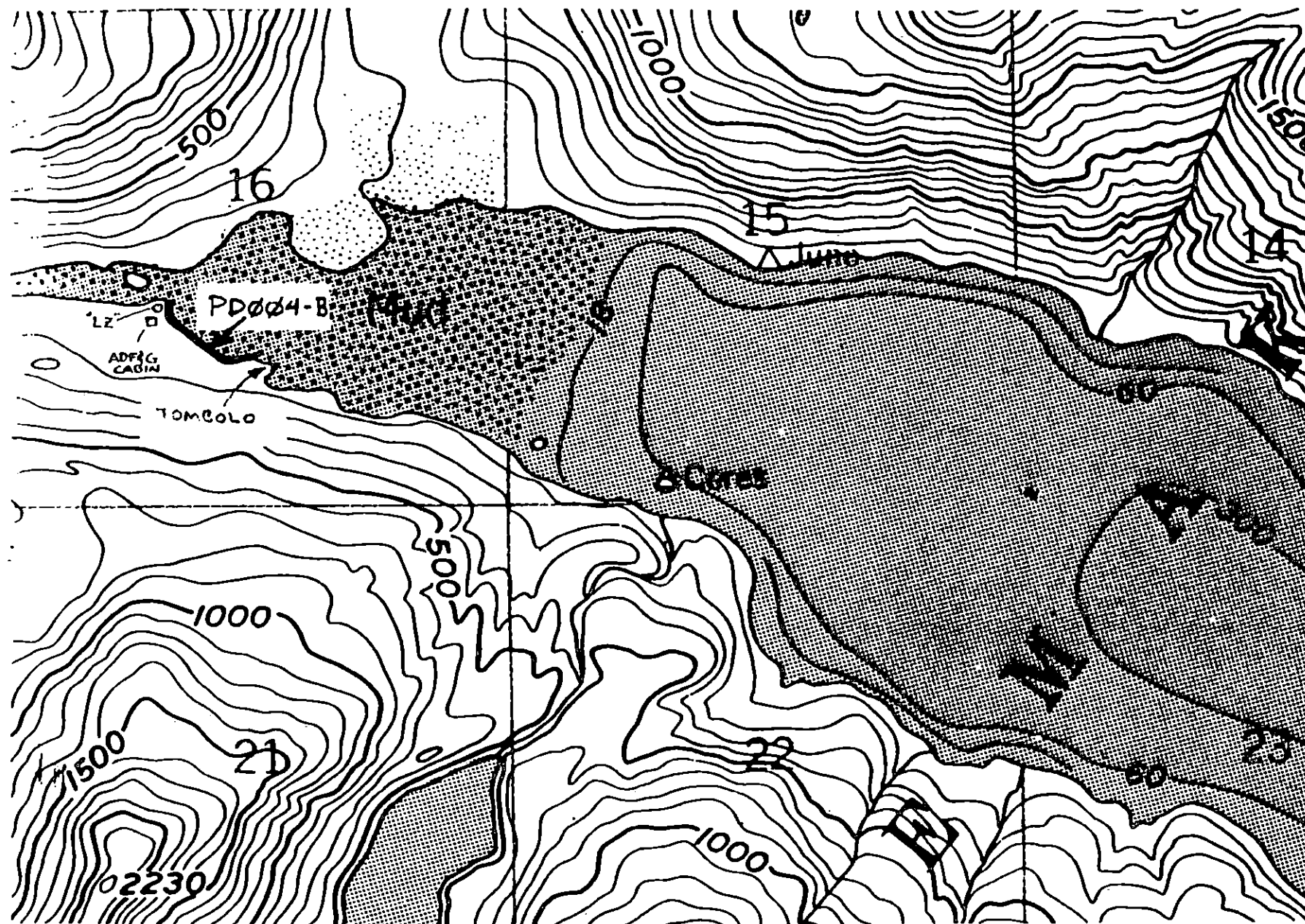
To: John Bauer, ADEC TAG

From: Russell Kunibe *RK*

Subject: A section of PD-4A which was overlooked during the SSAT.

Doug Hill, ADFG, has brought to my attention that there was a section of beach in segment PD-4A which was not looked at by the SSAT. In looking at the sketch maps for the SSAT report on PD-4A it seems that there is a segment of beach approximately 300 M. long from the west end of sketch map D to the end of the segment. This section of beach runs from the point to the north of the Port Dick Cabin and includes the beach in front of the Cabin and to the east of the cabin for about 250 M. There are scattered mousse patties along this beach which need to be picked up. Please address this matter in the TAG so there will not be any confusion when the clean up crews get to this segment.

cc. Doug Lockwood, Gulf of Alaska Operations.
C:\russell\memopd4.530



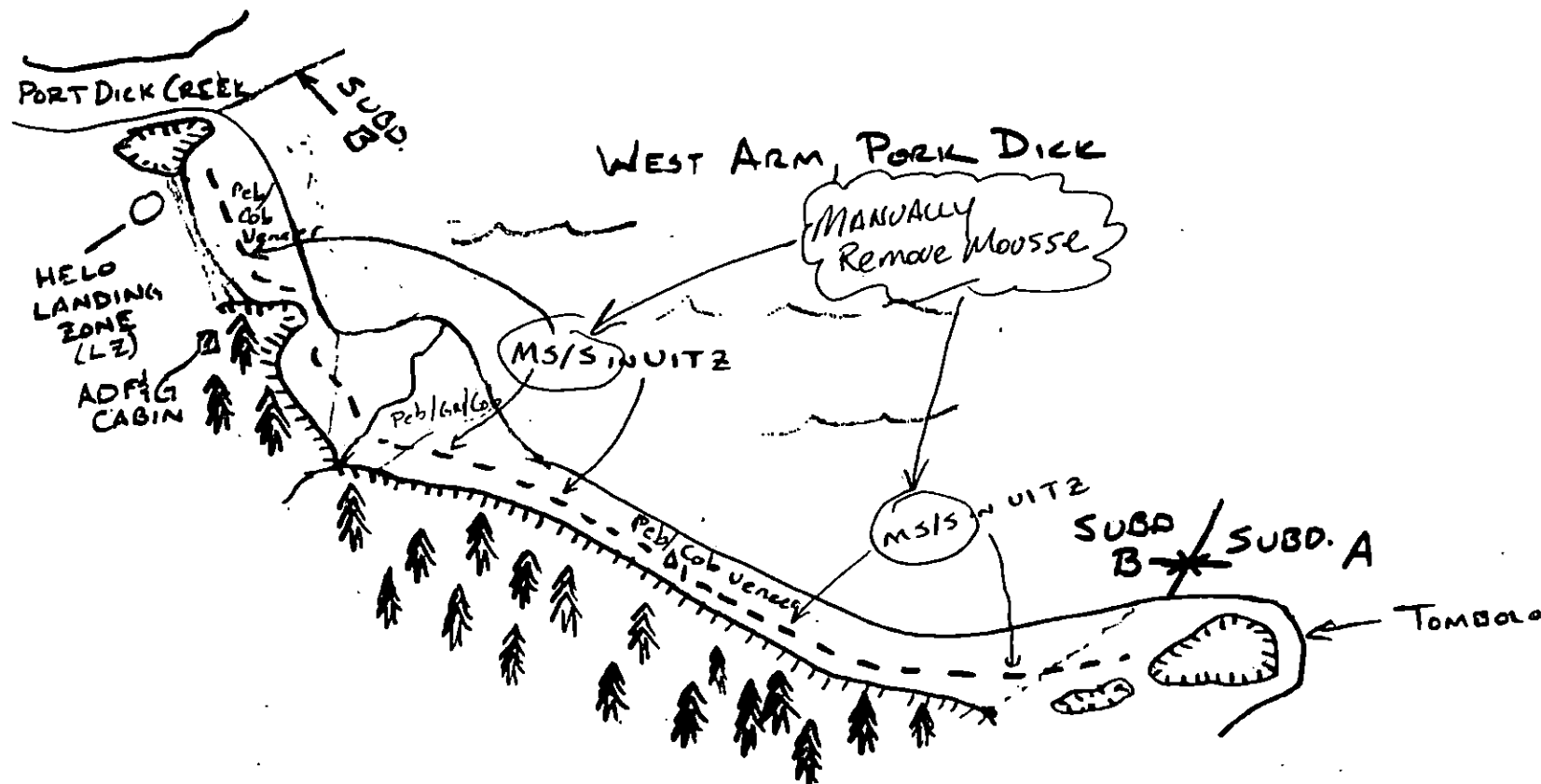
SKETCH MAP



OG: BRYAN TRIMM

5T/PD004-B

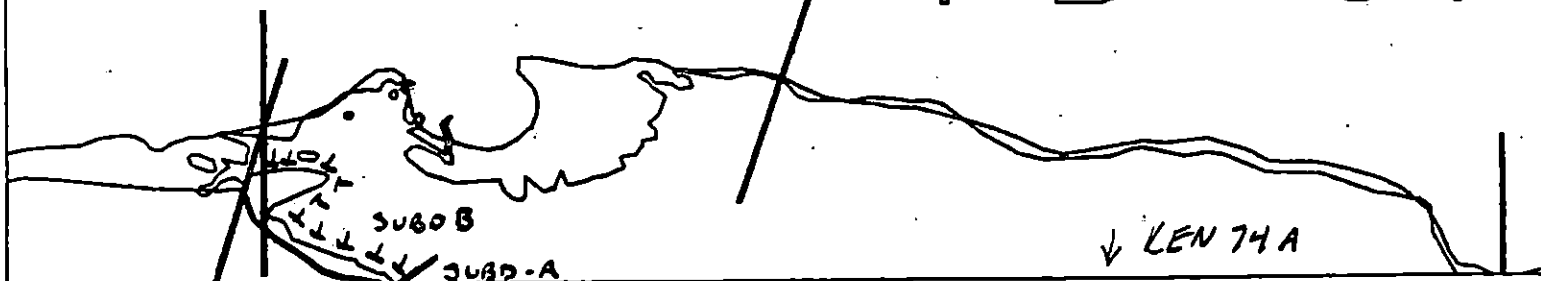
2 JUNE '90



OIL CHARACTER LENGTHS (m) AP-Ø, PD-Ø, CV-Ø, ST-Ø, MS-4Ø, PT-Ø, TB-Ø, FL-Ø, NO-Ø

PD-02

PD-01



XXX Wide

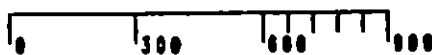
//// Medium

--- Narrow

TTTT Very Light

PD-4-B"

ADEC Segment Length: 11307m

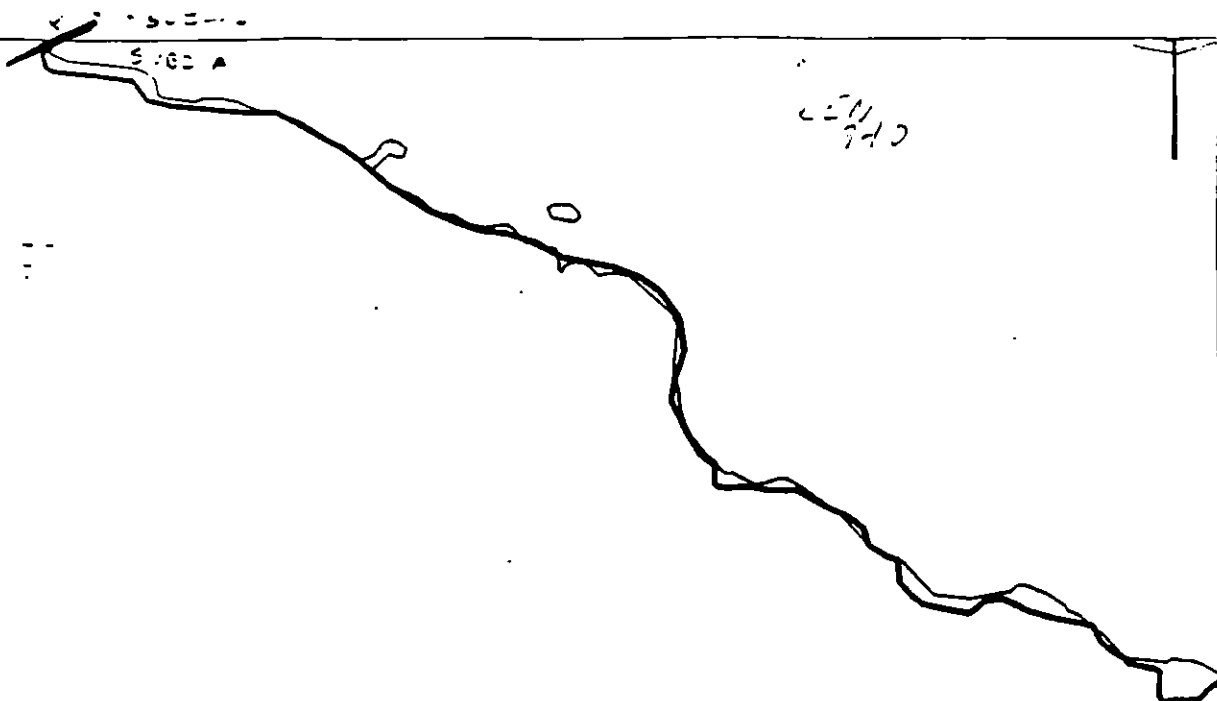


Map Key: KEN-74d

Name: B. Trimm

Date: 2 June 9d

Data Entered:



PD-0

KEN
74B →

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

PD-4-"B"

ADEC Segment Length: 11307m



Map Key: KEN-74a

Name: B. TRIMM

Date: 2 JUNE 98

Date Entered:

SHORELINE EVALUATION

SEGMENT ST/ PD-04 SUBDIVISION A (1 OF 1) DATE 4/27/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 242-42-10460 plus two possible uncatalogued anadromous streams (see map).

- 1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
- 1B Salmon stream mouth - spawning (7/10 to 8/31)
- 1J Purse seine area (6/25 to 8/31)
- 4GA Alaska State Wilderness Park
- 5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
- 6NN Recreation: Sportfishing

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: J. Daniel McManus DATE: 5/9/90

OILING CATEGORIZATION:

Wide 53 m: Medium 398 m: Narrow 192 m: V.Light 563 m: No Oil 10100 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> </u> Manual Pickup | <u> </u> Absorbents (pads, rolls, etc) |
| <u>X</u> Bioremediation | <u>X</u> Spot Washing: <u>X</u> Wands |
| <u>X</u> Tarmat Removal | <u> </u> Beach Cleaner |
| | <u> </u> Other (see comments) |

COMMENTS: Recommended treatment includes manual removal of tarmats and mousse patties in areas indicated on sketch maps. Work should be conducted between 6/1 and 7/10 with approval of USFWS regarding eagle nest constraints.

TAG COMMENTS: Manual Pickup - Followed by Spot Wash and Bioremediation

TAG APPROVAL DATE: 5/8/90

ADEC Art Weingaertner

EXXON Andy Earl

NOAA Gary Petrone

USCG G.A. Reiter

FOSC: ML

DATE: 5-12-90

OG Scor

SEGMENT ST/PO4

SUBDIVISION A

DATE Apr 1 27 90

SKETCH MAP -A

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Body
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HML/LWL
- ☐ 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

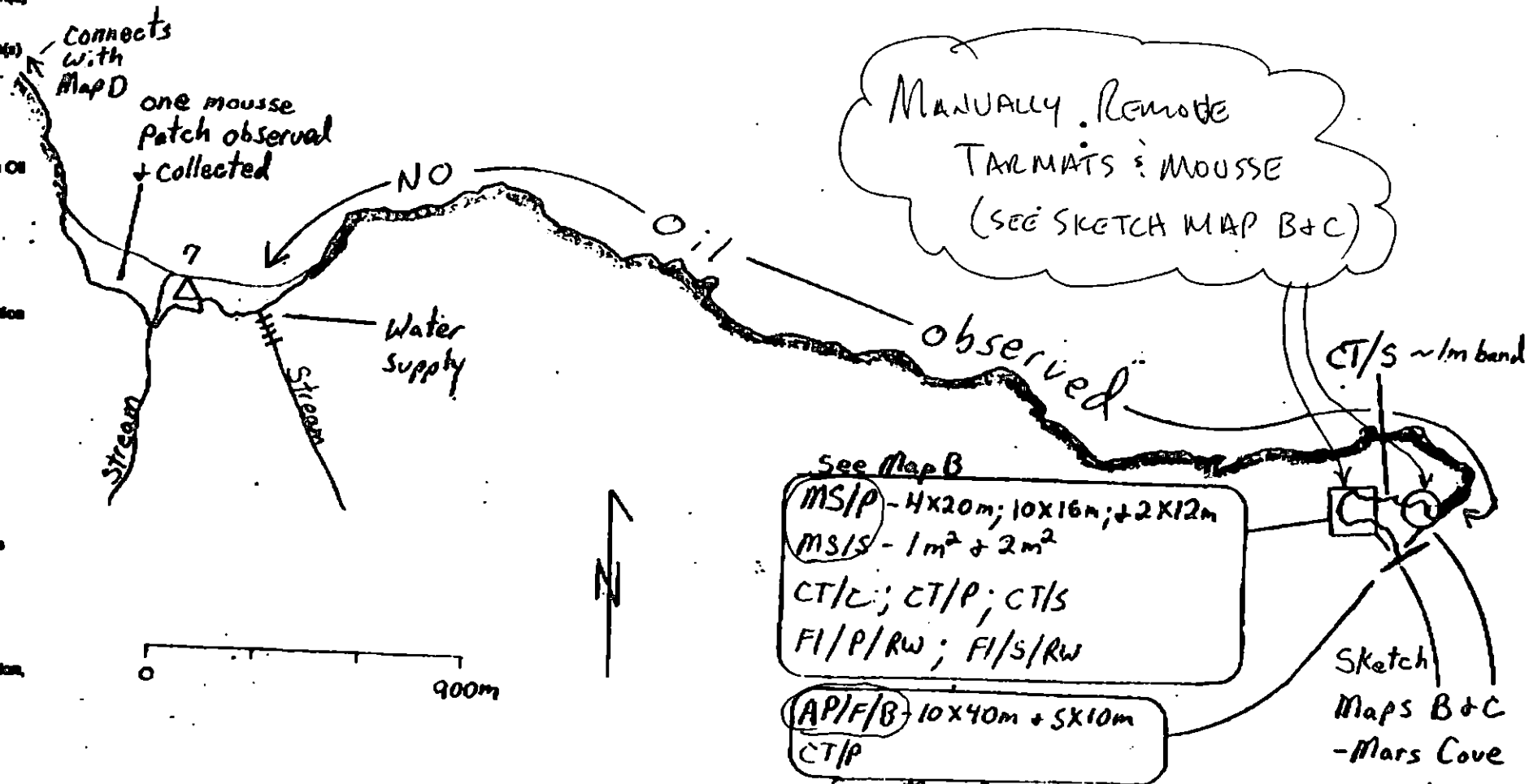
Continuous Distribution
- CT/B

Broken Distribution
- CT/P

Patchy Distribution
- CT/S

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

West Arm Port Dick



Oil Character Length (m): AP 131 PO 0 CV 0 CT 530 ST 0 MS 50 PT 0 TB 0 FL 100 NO 11300

OG Southern

SEGMENT ST-18-PD-4

SUBDIVISION A

DATE Apr 1 27 90

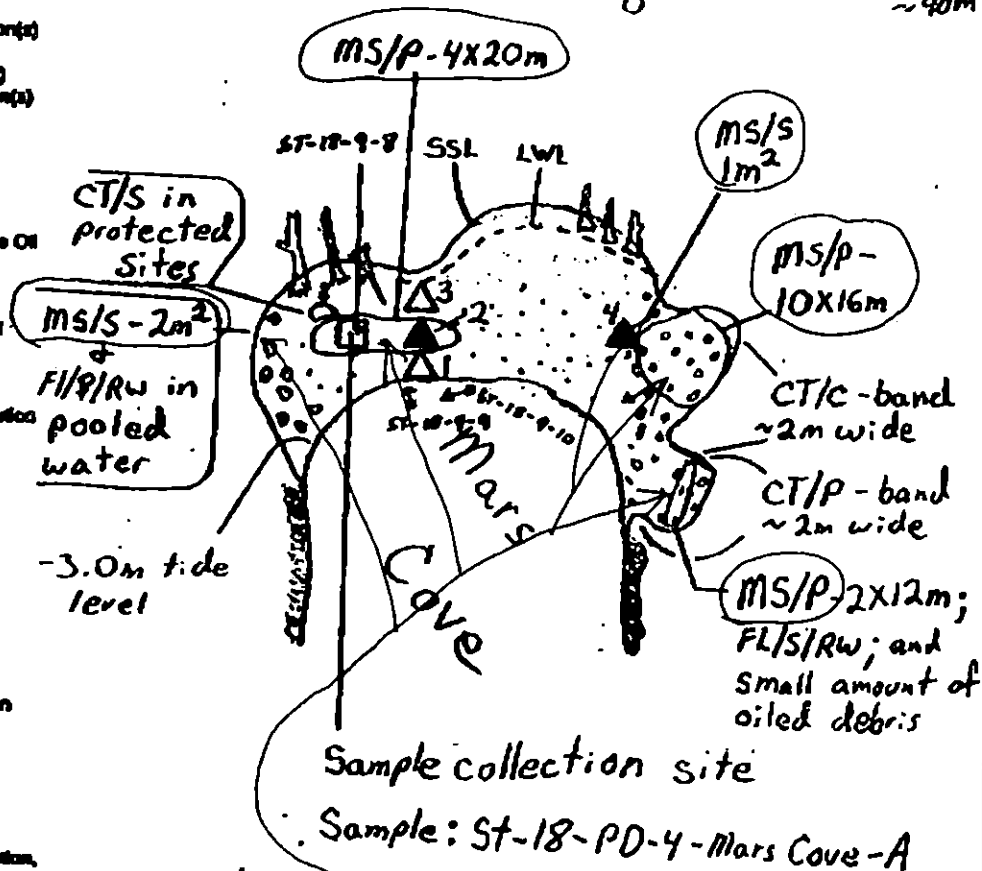
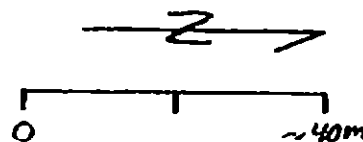
CHECKLIST

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

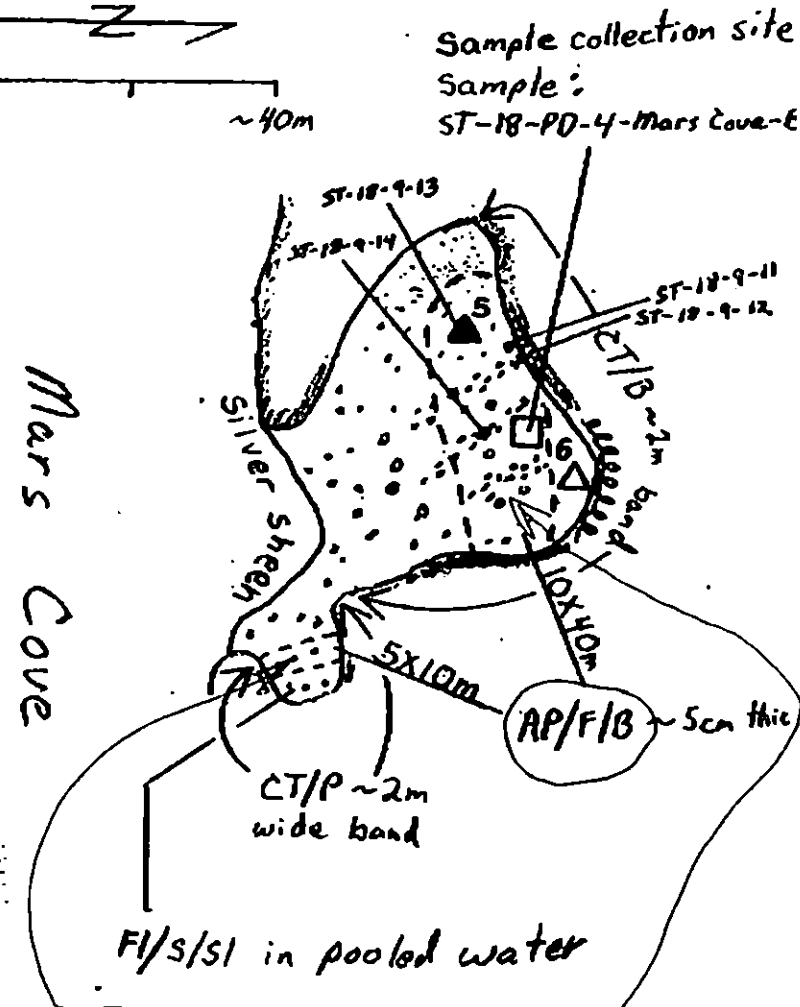
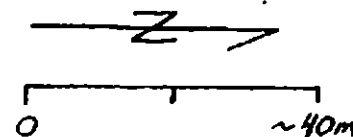
LEGEND

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

Sketch Map B (enlargement)



Sketch Map C (enlargement)



MANUALLY REMOVE TARMATS & MOUSSE PATTIES

Oil Character Length (m): AP PO CV CT ST MS PT TB FL RO

OG Sawyer

SEGMENT ST/ PD4

SUBDIVISION A

DATE Apr 1 27 90

CHECKLIST

- ☐ H Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Entry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HWA/LA/RL
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ PR Location(s)
- ☐ Photo Location(s)

LEGEND

1 Δ

PR - No Subsurface Oil

2 Δ

PR - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

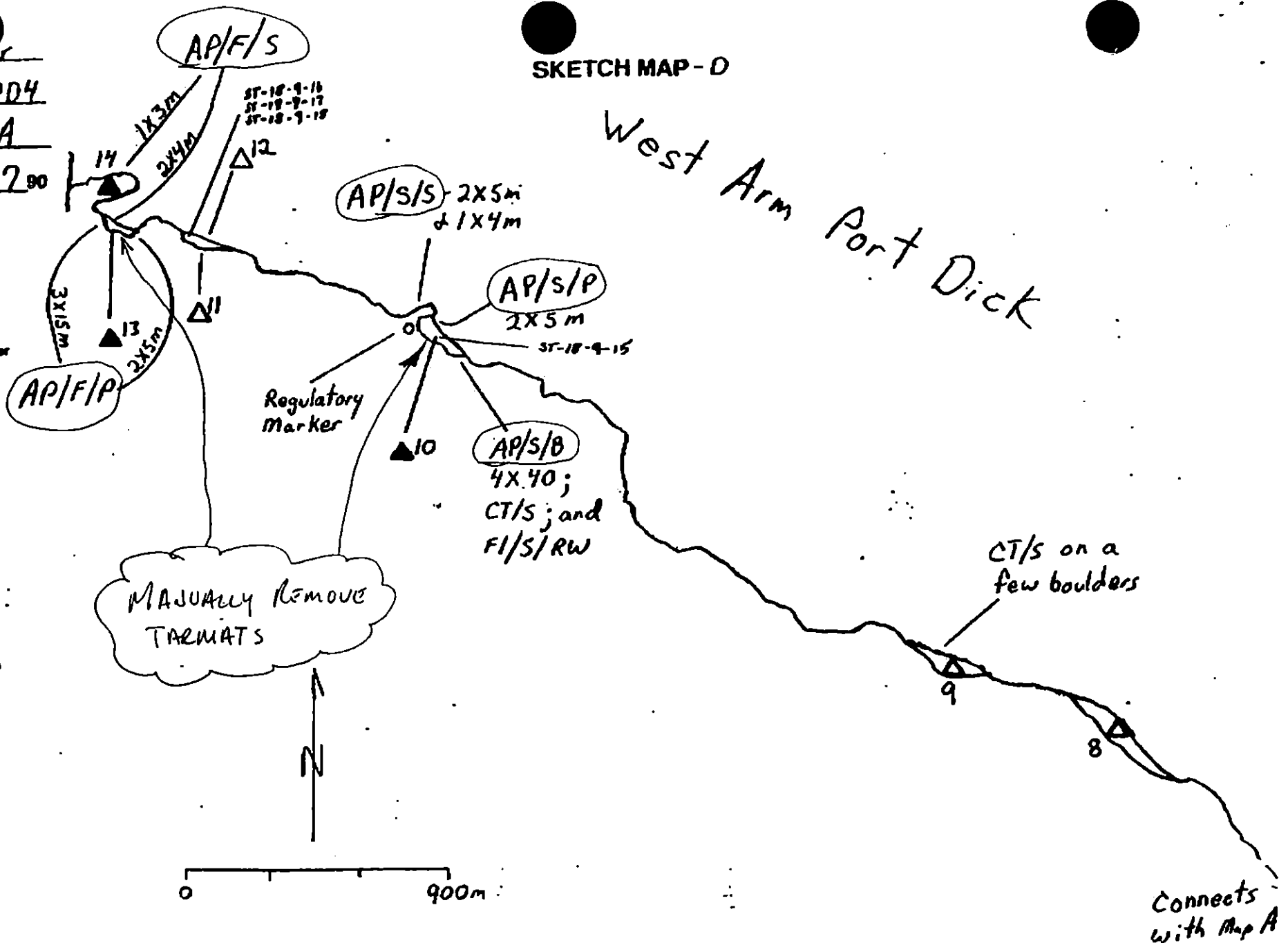
eee
Oiled Vegetation

1 $\Rightarrow$

Photo location, direction,
and number

SKETCH MAP - D

West Arm Port Dick



COLOGICAL MAP

PD 004-A (1 of 1)

CATALOGUED SAMPLE

10460

10460

10460

POSSIBLE UNCATALOGUED

ANALOGOUS

CHANGES?

ST-1

1A, 1B, 1S

116A

CH

10460

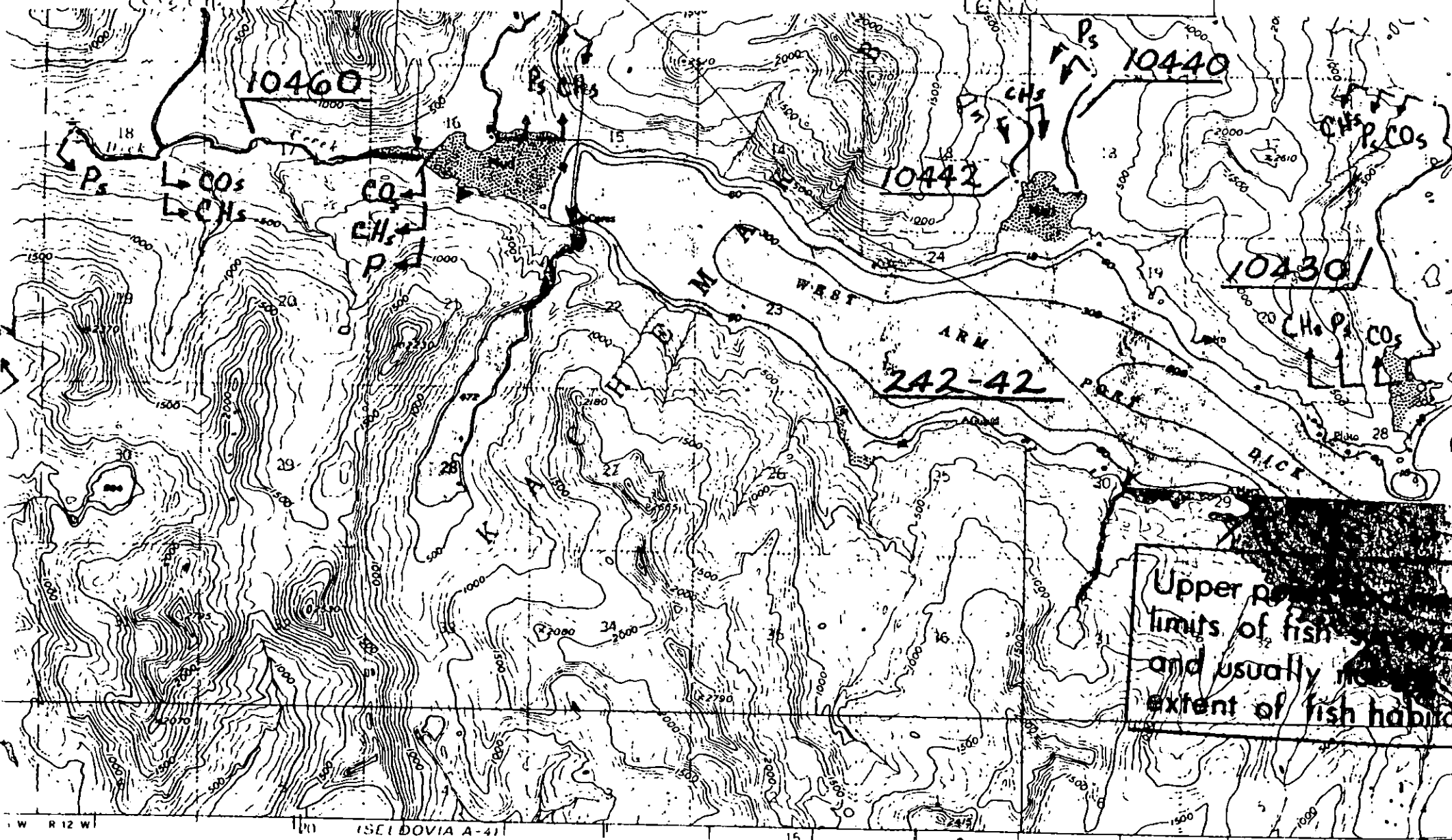
10440

10442

10430

242-42

Upper part of fish
limits of fish
and usually not
extent of fish habitat



SCALE 1:63360

STANDARD GEOLOGICAL SURVEY REGIONAL CHARTS

506-1111

PD-07

PD

← KEN 74B

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

OOOO No Oil

PD-4

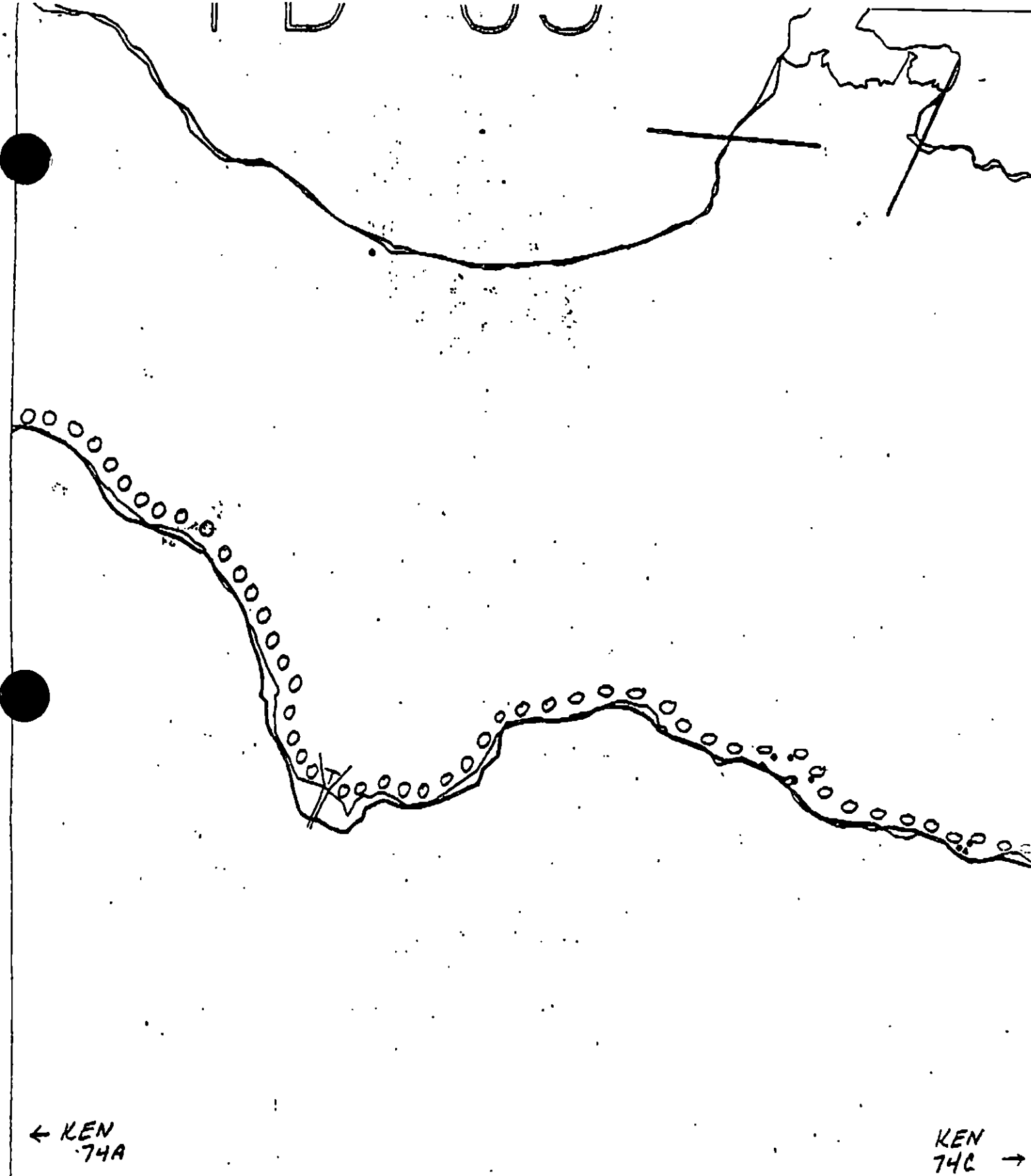
ADEC Segment Length: 11307m

0 300 400 500

Map Key: KEN-74c

Name: SawyerDate: 4/27/90

Date Entered:



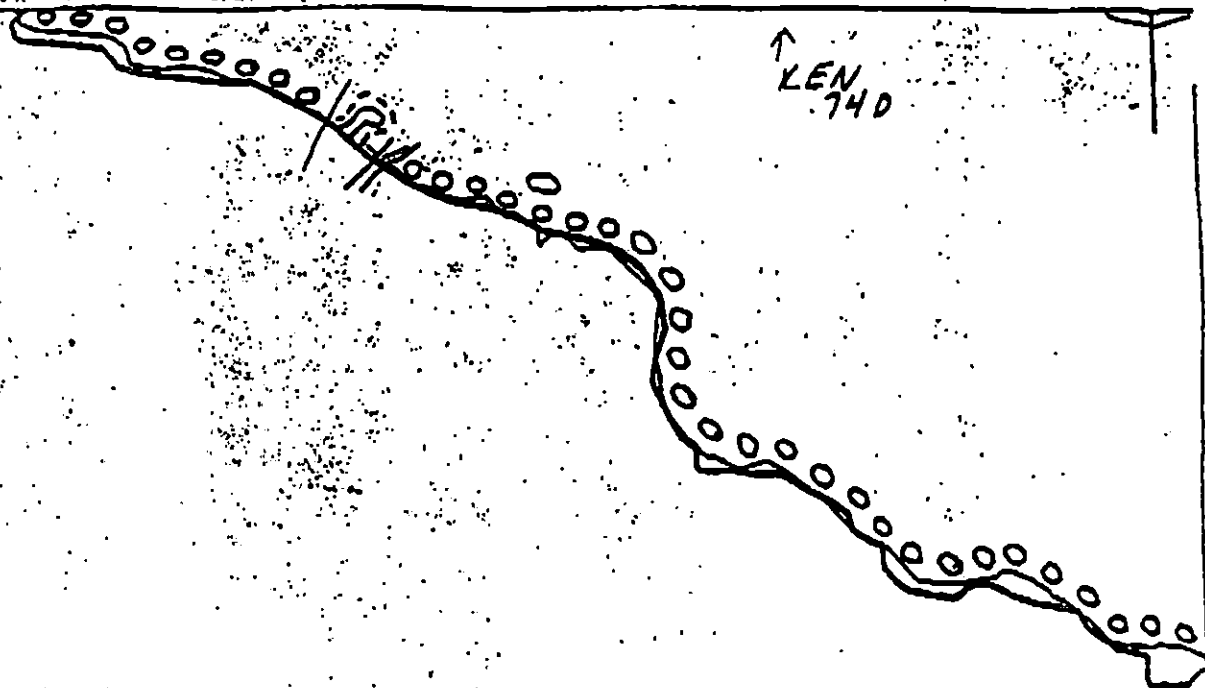
XXXX Wide
/// Medium
--- Narrow
TTTT Very Light
0000 No Oil

PD-4

ADEC Segment Length: 11307m



Map Key: KEN-74b
Name: Sawyer
Date: 4/27/90
Data Entered:



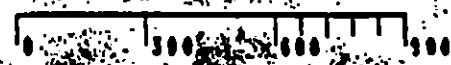
PD-0

KEN 743 →

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

PD-4

ADEC Segment Length: 11307m



Map Key: KEN-74a

Name: Sawyer

Date: 4/27/90

Date Entered:

PD-02

PD-01



XXX Wide

//// Medium

--- Narrow

TTTT Very Light

PD-4

ADEC Segment Length: 11307m

0 500 1000 1500

Map Key: KEN-74d

Name: SawyerDate: 4/27/90

Data Entered:

1991 MAYSAP EVALUATION

SEGMENT: PD 004 SUB: B REGION: KEN SURVEY DATE: 5/21/91

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: 6/07/91

RECOMMENDATIONS:

	INITIAL	TAG	FOSC
TREATMENT REQUIRED (Y or N)	<u>N</u>	<u>N</u>	<u>N</u>
Manual Pickup (Check as Req.)	<u> </u>	<u> </u>	<u> </u>
Spot Washing	<u> </u>	<u> </u>	<u> </u>
Bio-Customblen Only	<u> </u>	<u> </u>	<u> </u>
Bio-Inipol/Customblen	<u> </u>	<u> </u>	<u> </u>
Other	<u> </u>	<u> </u>	<u> </u>
Other	<u> </u>	<u> </u>	<u> </u>

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: June 7 1991

FOSC APPROVAL DATE: 6/11/91

ADEC [Signature]

FOSC [Signature]

EXXON [Signature]

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

USCG [Signature]

NOAA [Signature]

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT PD-004 SUBDIVISION B DATE 5/21/91

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara S. Crosby☒ NTRNo treatment recommended.

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles 5/21/91☒ NTRNo significant oiling found.

LANDMANAGER

NAME

Jeff Johnson

OF

ADNR

SIGNATURE

Jeff Johnson☒ NTRSmall amounts of oil, widely scattered. Additional activity/disturbance not justified for so little oil.

USCG/NOAA

NAME

Donald McManis

SIGNATURE

Donald McManis☒ NTRSmall, spattered patches of oil located and were picked up by VECO.Donald McManis

revised 5/31/91 kw

Og SKETCH MAP

PD 004.B

for SEMPELS

MAY 21 / 91

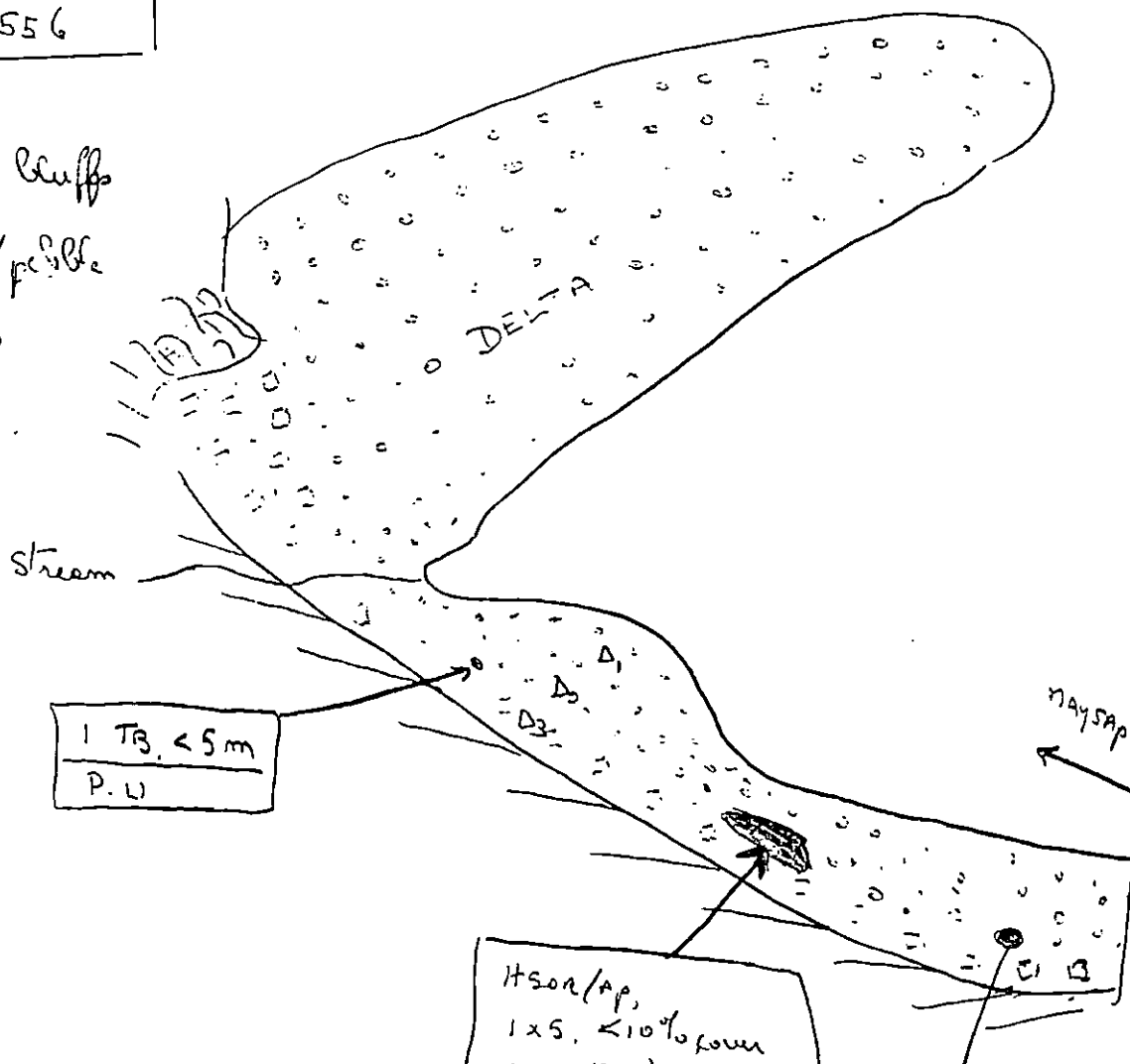
1540-1556

Legend

 Bedrock bluffs

 Cobble / pebble

 pebble / cb



1 TB < 5m
P.U.

Hson/ap,
1x5, <10% cover
2m thick, <20cm
dia. pebbles on pb.
Between cb/gd
P.U.

1 TB < 5m
dia. P.U.

Meters

50

Reviewed: MC 6/2/91
reviewed 5/31/91 KC

TEAM #	4	DATE/TIME	May 21, 1991 1541 - 1603
SEGMENT #	PD004	TIDAL HEIGHT (Range)	+1.8 => +2.3
SUBDIVISION	B	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil-Related Comments

A few small patches of oil were located on the cobble sediments of the beach and picked up. At this location there were moderately abundant Ulva, sparse barnacles, and little else.

General Comments

PD004-B is a short subdivision located at the innermost section of Port Dick, adjacent to a wide delta with clams and eel grass. Biota at this subdivision, other than the clam bed, are sparse. Fucus is present in the middle to low zone, with moderate densities of barnacles above, and moderately dense filamentous algae over the middle zone cobble.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	Salmon Fry
Seabirds			
Waterfowl			
Gulls/Kittiwakes	3	41	
Shorebirds	1	3	
Corvids	1	7	
Other Birds	1	1	

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

-----Shoreline subdivision map showing important biological features attached.

Handwritten notes: 0.004 0.004 0.004

Common Species on PD004-B

- A. Marine Plants
 1. Diatoms, Blue Greens
 2. Green Algae - Chlorophyta - Enteromorpha sp., Ulva sp., Urospora sp.
 3. Brown Algae - Phaeophyta
Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Ralfsia sp., Syctosiphon lomentaria
 4. Red Algae - Rhodophyta
Endocladia muricata, Halosaccion glandiforme, 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?
 2. Anemones - Anthopleura artemesia, Eplactis ritteri, Urticina crassicornis,
 3. Hydroids - Sertulariidae,
 5. Flatworms - Platyhelminthes - Polyclads
 6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
 8. Polychaete Worms
Nereidae - Nereis spp.
Serpulidae - Serpula sp.
Spirorbidae - Spirorbis sp.
 9. Peanut worms - Sipunculids - Phascolosoma agassizii
 10. Crustaceans
 - a. Amphipods - Traskorchestia traskiana
 - b. Barnacles - Balanus glandula, Semibalanus cariosus
 - c. Crabs - Paguridae (hermit crabs),
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
 11. Mollusca
 - a. Chitons - Mopalia mucosa, Tonicella lineata,
 - b. Snails - Gastropods
Amphissa columbiana, Littorina sp., Natica clausa, Nucella lamellosa, N. lima, Searlesia dira, Tachyrhynchus sp.
 - c. Limpets - Lottia persona, L. limatula, Tectura fenestrata, T. persona, T. scutum, Siphonaria thersites
 - e. Bivalves - Chlamys hastata, Clinocardium sp., C. nuttalli, Hiatella arctica, Macoma balthica, Macoma nasuta, Modiolus modiolus, Mya arenaria (soft-shell clam), Mytilus edulis, Pododesmus cepio, Prototheca staminea, Saxidomus giganteus
 12. Echinoderms
 - b. Sea stars - Dermasterias imbricata, Evasterias truscheli, Leptasterias hexactis, Pycnopoda helianthoides,
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
 13. Bryozoans - Membranipora sp., Schizoporella sp.
 15. Fishes
Cottidae
Stichaeidae - Xiphister atropurpureus, X. mucosus
- III. Birds - Bald Eagle (1), Glaucous-winged Gull (20), Crow (7), Shorebird (3), Boneparte's Gull (20), Herring Gull (1), Magpie (1)

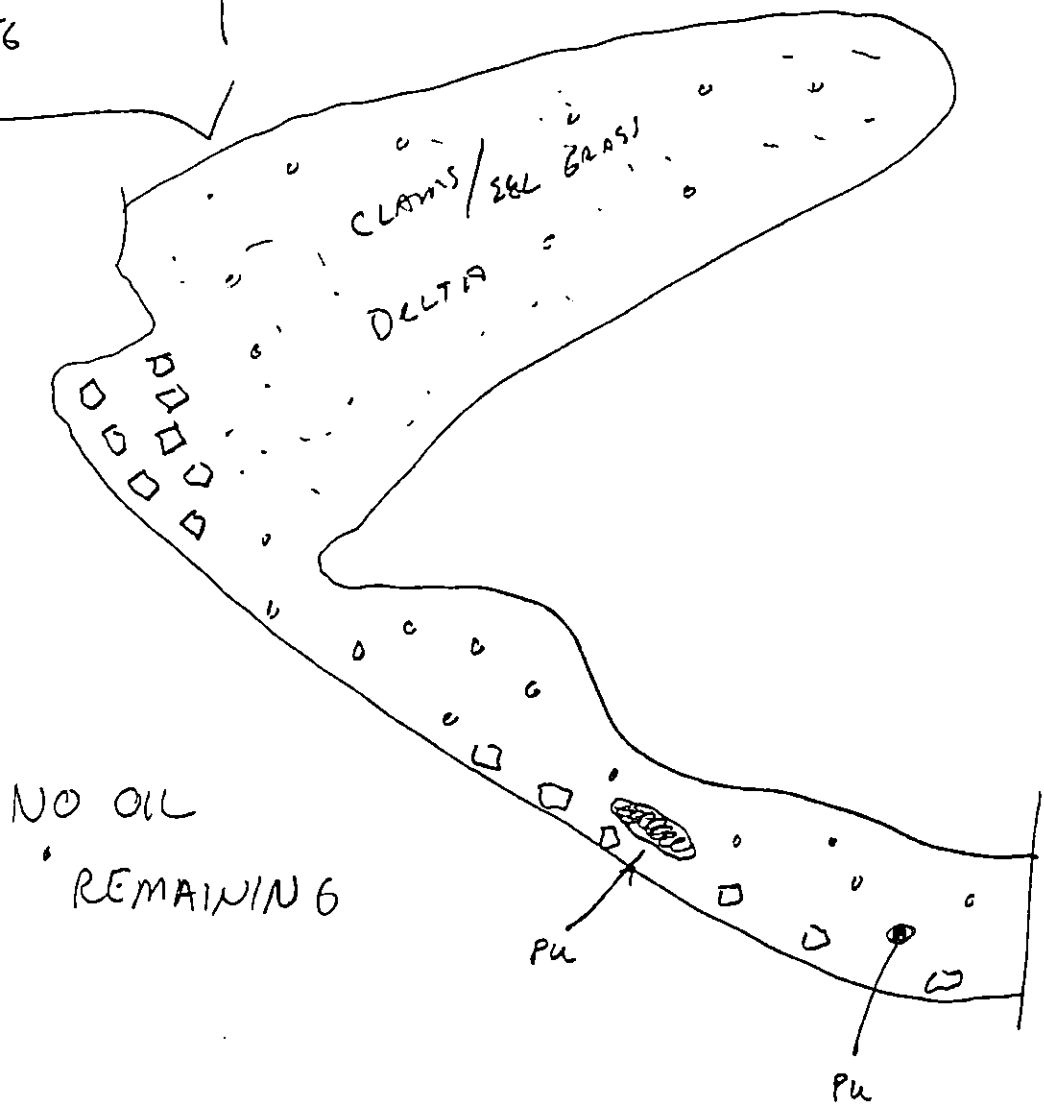
BIO SKETCH MAP

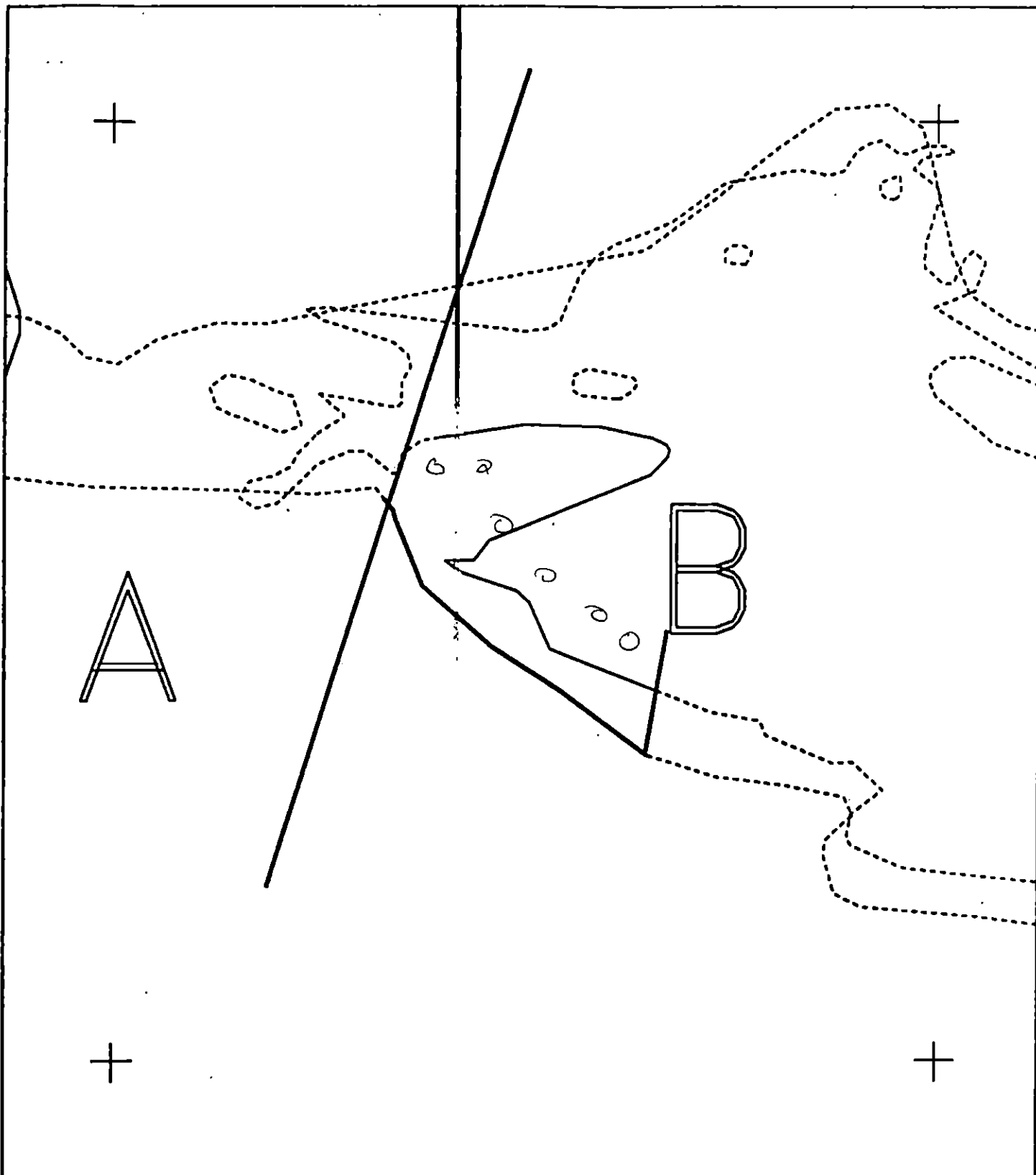
PD 004-B

J P BARRY

21 MAY 91

1540-1556





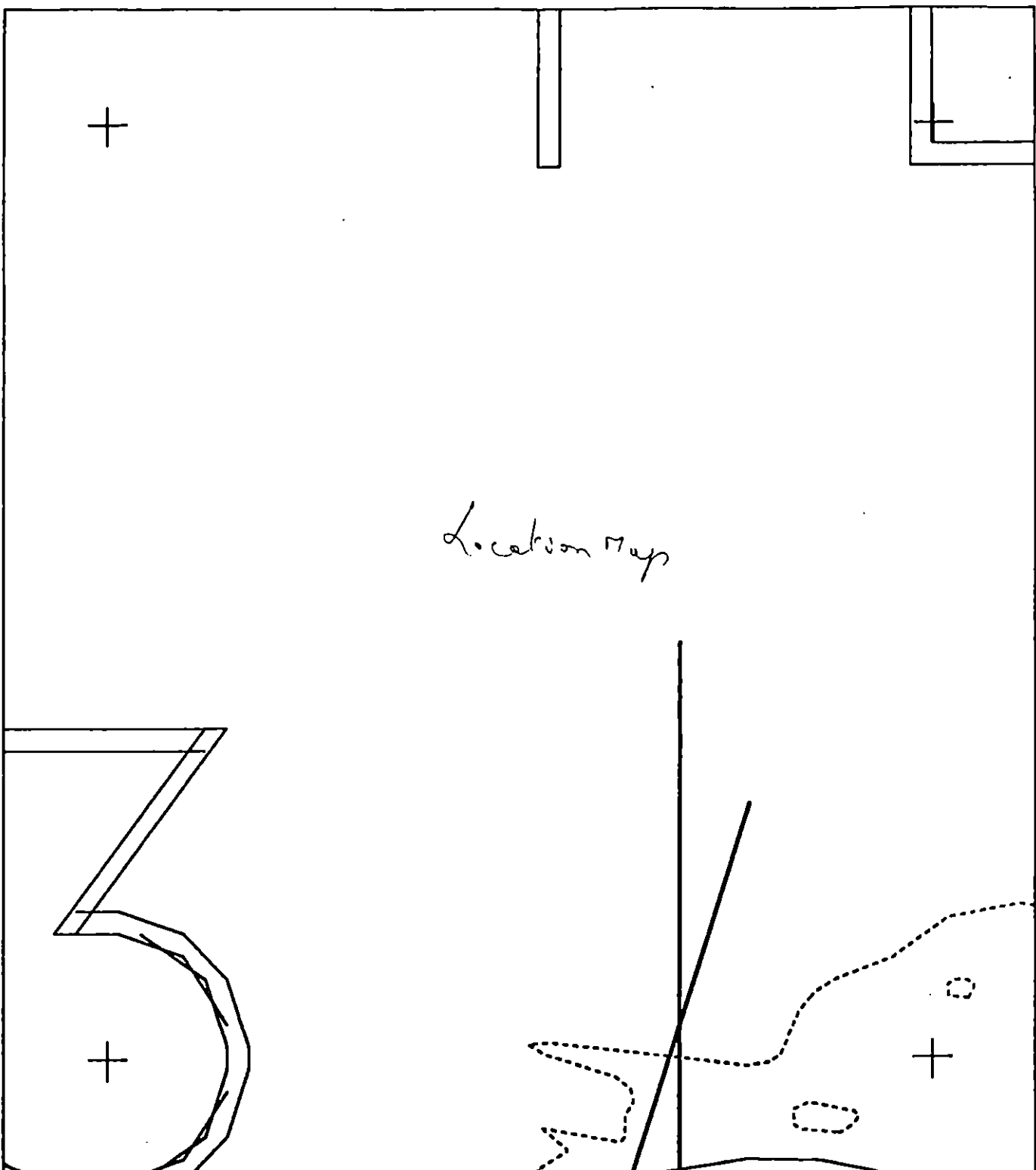
XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

PD004 B
 ADEC Subsegment Length: 271m
 METERS
 0 100 200
 AK State Plane Zone 4
 npd004b

Subdivision Field Map
 Map Key: KENPD004B
 Name: J.M. Sempels
 Date: 21 May 1991
 Date Entered:



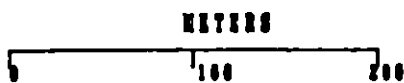
Reviewed: MC 6/2/91
 revised 5/21/91 RG



Location Map



PD004 B



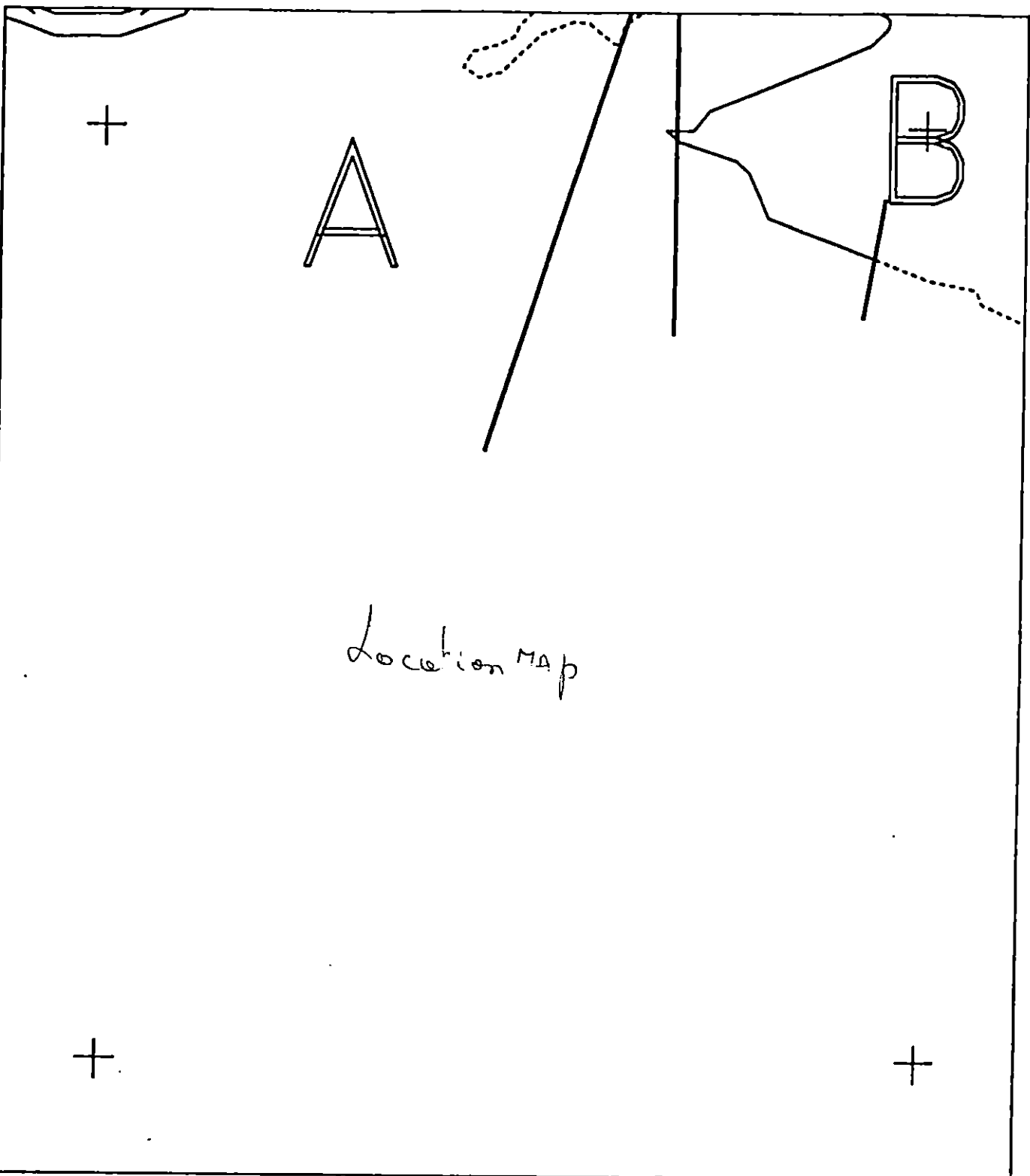
AK State Plane, Zone 6
NAD83

Subdivision Field Map

Map Key: KENPD004B11

Name: J. M. Sample

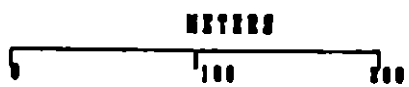
Date: MAY 91/91



Location Map



PD004 B



AK State Plane Zone 4
spdb04bx

Subdivision Field Map
Map Key: KBNPD004Bx
Name: Jay Sengul
Date: MAY 31/91

1991 MAYSAP EVALUATION

SEGMENT: PD 004 SUB: A REGION: KEN SURVEY DATE: 5/22/91

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: [Signature] Date: 6/07/91

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

N

A

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Custombien

Other

Other

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: JUNE 7 1991

FOSC APPROVAL DATE:

ADEC

FOSC

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

EXXON

USCG

NOAA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

MAYSAP FIELD SHORELINE COMMENT SHEET

45

TEAM NO. 4SEGMENT PTD-004SUBDIVISION ADATE 5/22/91

ADEC

NAME Clara S. CrosbySIGNATURE Clara S. Crosby

☒ NTR Although this beach has quite a bit of oil remaining on it — The oil occurs in the form of FL & scattered patches of MS/HSOR — The areas that do concern me are the ~~MS~~ FL which is associated w/ the anoxic mud — These areas could possibly degrade slower than normal ~~HSOR~~ (Ref-Bio). This beach has been worked heavily in the past (Time to let it rest — ?)

EXXON

NAME George P. Stiles

SIGNATURE _____

☒ NTR No appreciable oil found.

LANDMANAGER

NAME Jeff Johnson OF ADNRSIGNATURE [Signature]☒ NTR

Mars Cove has improved remarkably. HSOR found and picked up. Oil is widely scattered, commonly in rock crevices. Oil is not concentrated enough heavy enough to work this segment again.

USCG/NOAA

NAME John McMahon SIGNATURE [Signature]☒ NTR

Beach(es) look fairly clean compared to last years survey. Of mention that due to the geomorphology, this beach is difficult to treat. It appears any treatment except bioremediation would be a major effort.

[Signature]

MAYSAP SHORELINE OILING SUMMARY

PAGE ____ OF ____

TEAM NO. 4OG J M SEMPERSBIO J. BARRYSEGMENT PD-004ADEC GeosbyLANDMANAGER Johnson 1001 DUESUBDIVISION AEXXON George P. StilesUSCG/NOAA McMahan/McDonaldDATE MAY 1, 92 191TIME 13:55 to 15:00TIDE LEVEL +4.1 ft. to +1.8 ft.ENERGY LEVEL: ☐ H ☐ M ☒ LSURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELOWEATHER: ☒ SUN ☐ CLOUDS ☐ FOG ☐ RAIN ☐ SNOWTOTAL LENGTH SHORELINE SURVEYED: 880 mNEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONEEST. OIL CATEGORY LENGTH: W — m M — m N — m VL 149 m NO 731 m US 1054 m

L O C	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE VHML	AREA		ZONE				NOTES
	AP	MS	TB	SO	CV	CT	ST	FL	DB	NO			WIDTH m	LENGTH m	S	UI	MI	LI	
A1					S	S					Reddish	V	1	200	X				
A2					S	S					"	"	1	30	X				See
A3					S	S					"	"	3	6	X				map
A4				S	S		S				Edge	M	20	8	X				L-SOR
A5				S			S				"	L	90	5	X	X			L-SOR + M-SOR
A6				S		S	S				Co. po	L	10	40	X	X			L-SOR
A7						T					Red	V	2	40	X				
A8					S						Red	H	1	5	X				

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

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

PIT. NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE- SUBSURFACE SEDIMENTS	NOTES	
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI			
1	30							X	--	4	30	-					X	Sd/gr/bb	See
2	30		X						15-17	4	-	-					X	" " "	
3	25							X	--	4	-	-					X	" "	map
4	20							X	--	4	-	-			X			" "	
5	20							X	--	4	-	-			X			" "	Down to bedrock
6	20							X	--	4	-	-			X			" "	to bedrock
7	30							X	--	4	-	-					X	pl. b. m.	
8	25							X	--	4	-	-				X		pl. b. m.	
9	20							X	--	4	-	-			X			" "	

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

OG COMMENTS:

Long shoreline, mostly bedrock cliffs/bluffs with pocket to long leader of mixed sediments, often with a fringe of eroded bedrock next to the bedrock walls. 3 Areas for which oil had been observed before were surveyed in winter. 1/2 of the subdivision for which no oil was reported following previous surveys was not surveyed.

Revised: MC 6/2/91
revised 5/31/91 KG

PAGE OF

SEGMENT _____

DATE ____/____/91

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

REVIEWED: MC 6/2/91

log sketch
LOCATION MAP

PD-004-A

MAY 21 1612-1703

MAY 22 1255-1508

PD-02



PD-04

AREA 2

AREA 3

PD-

PD004 A Substation Field Map Map Scale: 1:50,000 Number: _____ Date: _____	PD004 A Substation Field Map Map Scale: 1:50,000 Number: _____ Date: _____	PD004 A Substation Field Map Map Scale: 1:50,000 Number: _____ Date: _____
---	---	---

PD 4 A 51

SKETCH MAP

Legend

PD. 004 - A

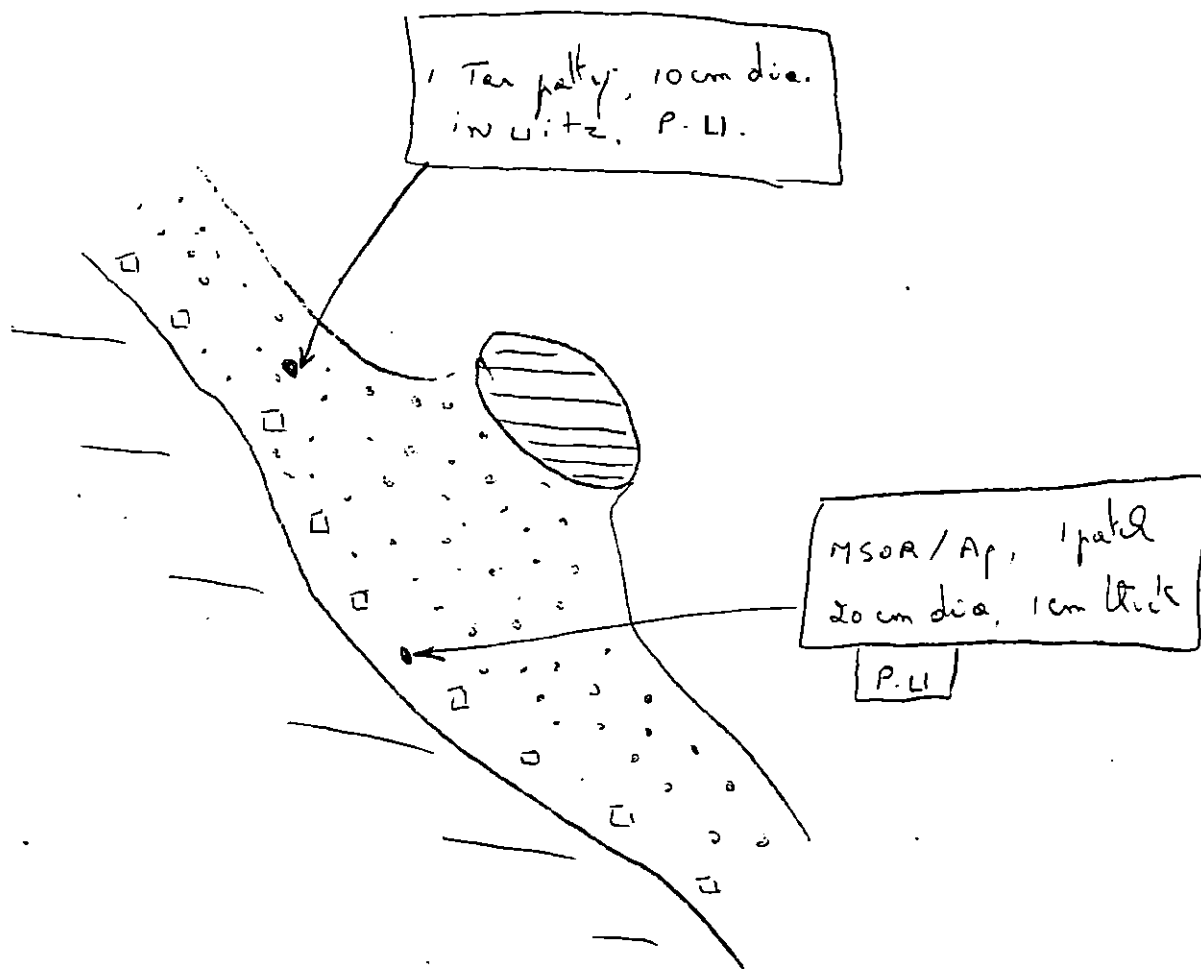
AREA I

JM SEMPELS

MAY 21 / 91

1619 - 1620

-  Bedrock bluffs
-  Boulder / cobble
-  Cobble / Pebble



0 20
meters

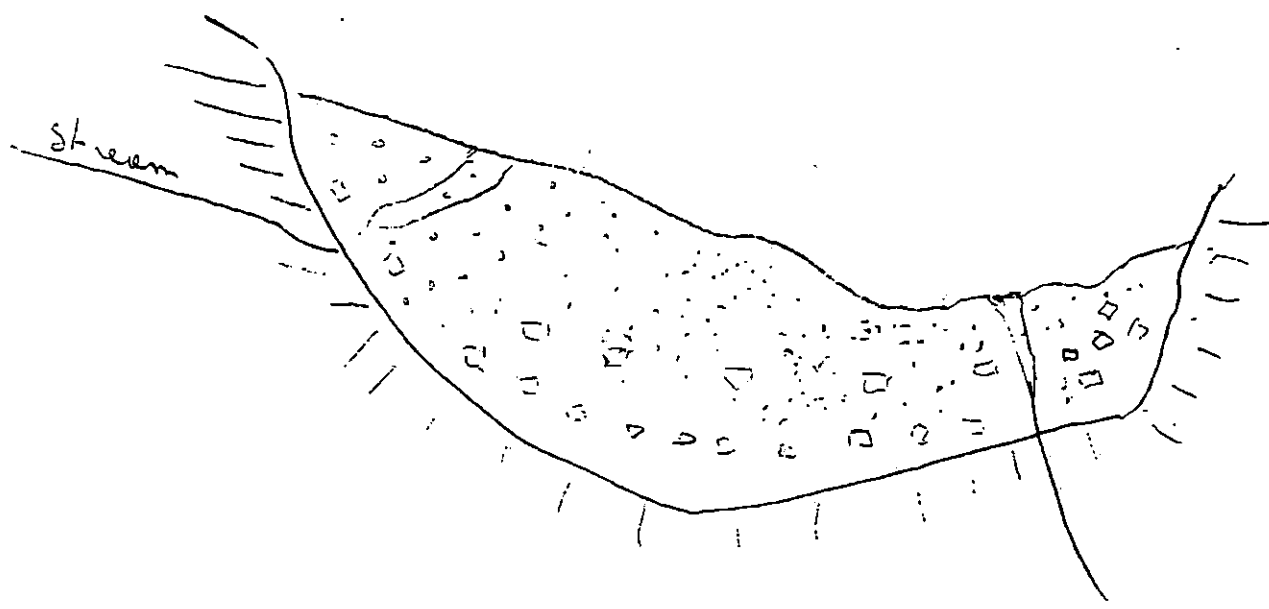
Oy Sketch Map

Legend

PD-004-A
 AREA-II
 DM SEMPELS

MAY 31 / 91
 1643 - 1703

(I) Steep rock cliff
 (II) Boulders / cobbles
 (III) pebbles / cobbles



meters
 0 50

Legend

-  Bedrock cliffs / bluffs / outcrops
-  Boulder / cobble (angular)
-  Angular cobble / pebble

og Sketch Map.

PD4A
21

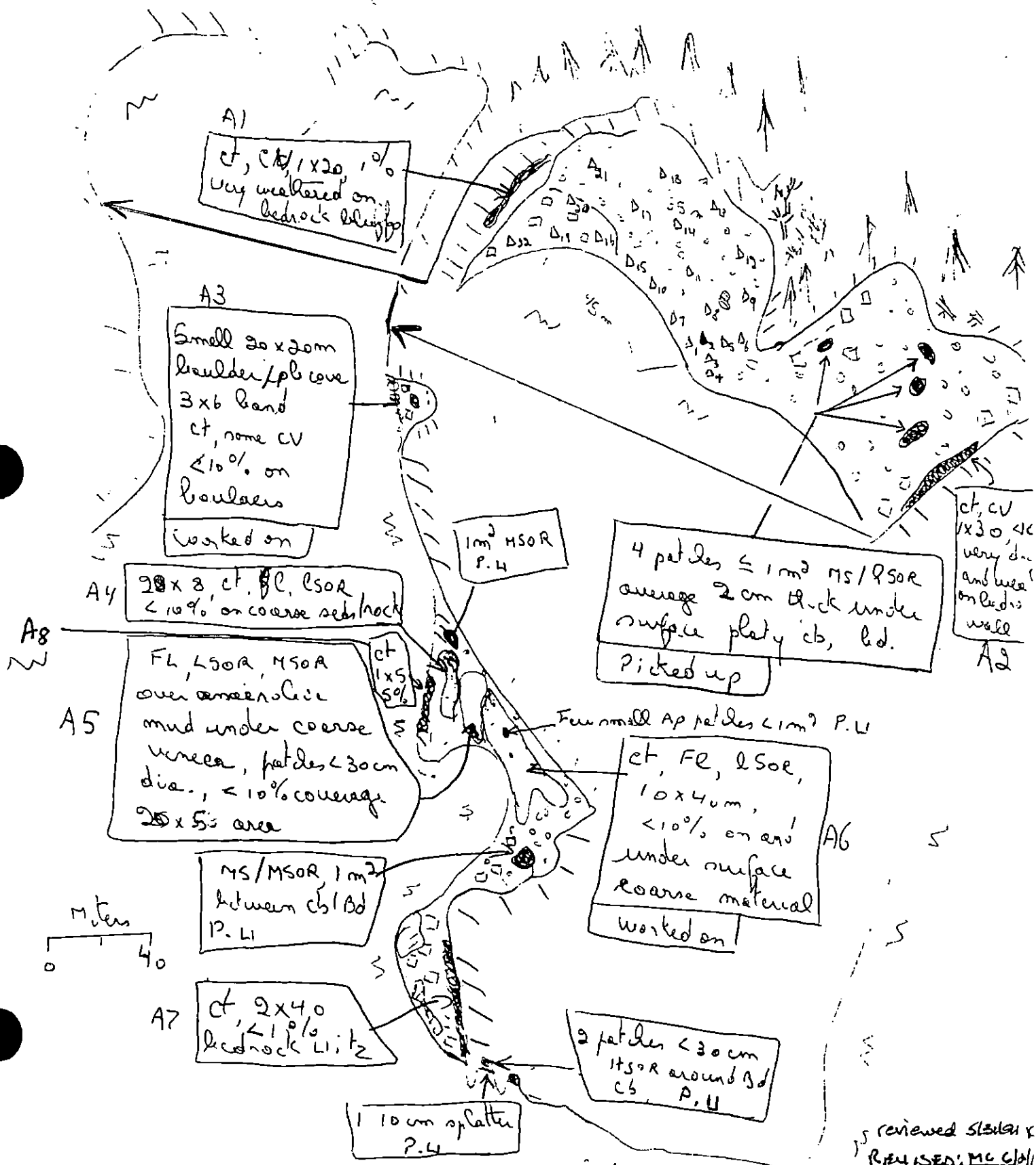
PD-004-A

AREA III MARS COVE

47 SAMPLES

MAY 23/91

1255-1502

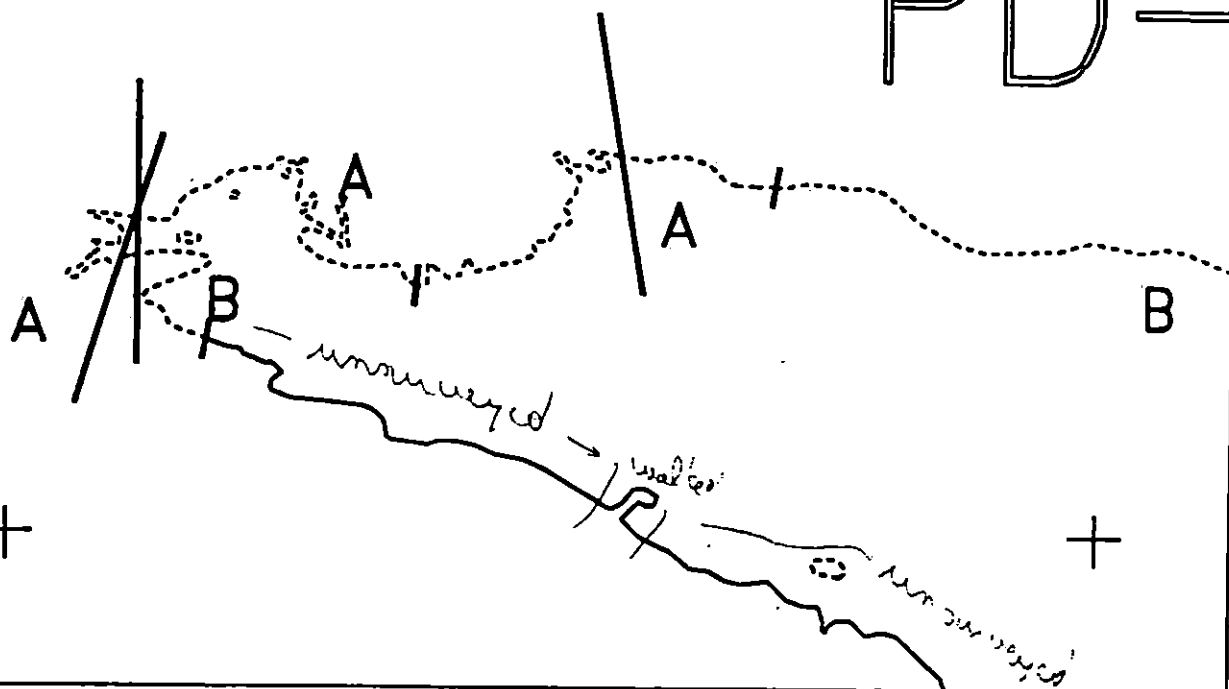


Location Map 12-74

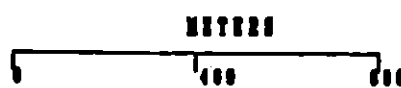
PD-02

PD-

3



PD004 A



AK State Plane Zone 4
1983 datum

Subdivision Field Map

Map Key: KENPD004Ac

Name: JM Samples

Date: MAY 31 / 91

+

+

Location Map of U

PD

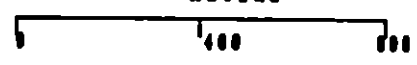
+

+



PD004 A

METERS



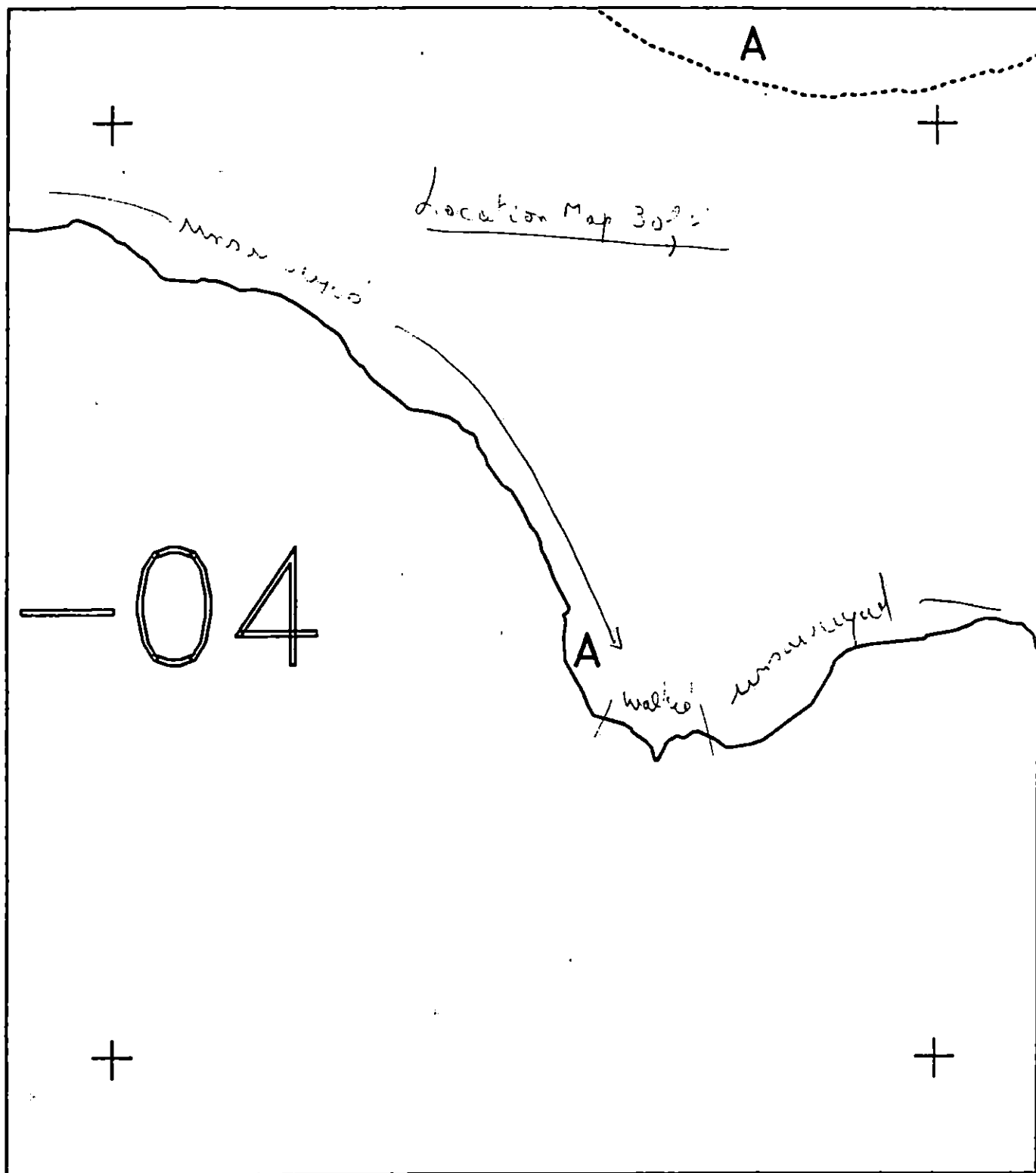
AK State Plane Zone 4
spdb0400

Subdivision Field Map

Map Key: KENPD004Aa

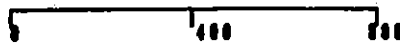
Name: J. M. Semple

Date: MAY 21/91



PD004 A

METERS



AK State Plane Zone 4
spdb04b

Subdivision Field Map

Map Key: KENPD004Ab

Name: Joy Sempel

Date: MAY 21/91

+

PD-

A

near Map 4 of 4

unsurveyed

water

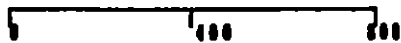
+

+



PD004 A

METERS



AK State Plane Zone 6
sp00400

Subdivision Field Map

Map Key: KENPD004Ac

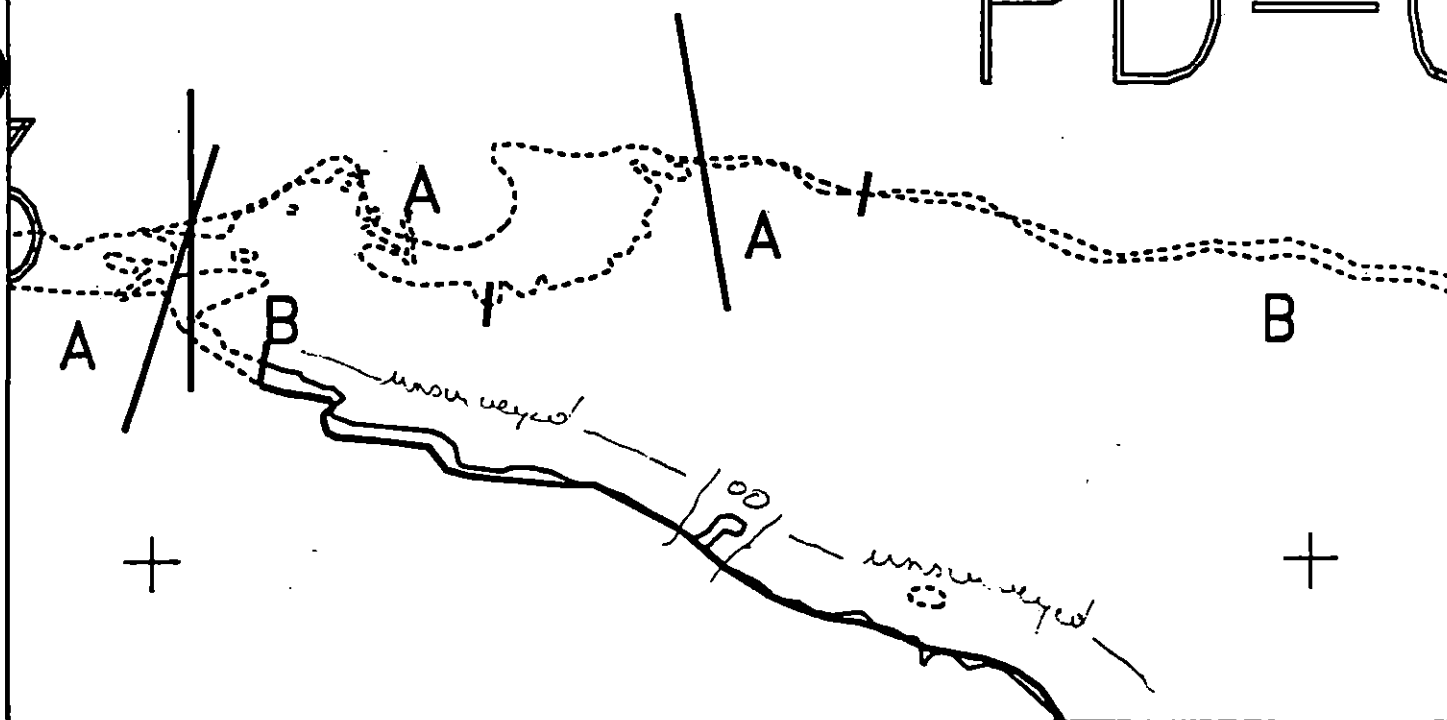
Name: JM Sample

Date: MAY 91

D. Serra Map 10/2/91

PD-02

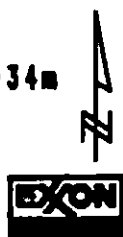
PD-0



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

PD004 A
 ADEC Subsegment Length: 10934m
 METERS

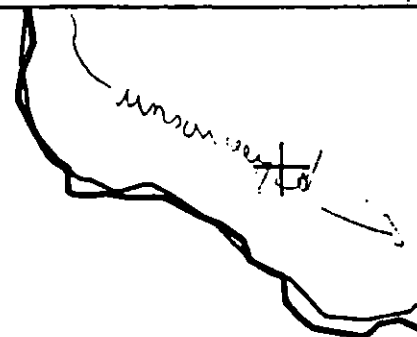
AK State Plane Zone 4
 up0004ed



Subdivision Field Map
 Map Key: KENPD004Ad
 Name: Im Simon
 Date: 10/2/91
 Date Entered:

Reviewed: MC 6/2/91
 reviewed 5/31/91 CG

+



Oil Spill Map 2 of 4

PD-

+

+

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

PD004 A

ADEC Subsegment Length: 10934m
 METERS

5 400 700
 AK State Plane Zone 4
 spd004aa



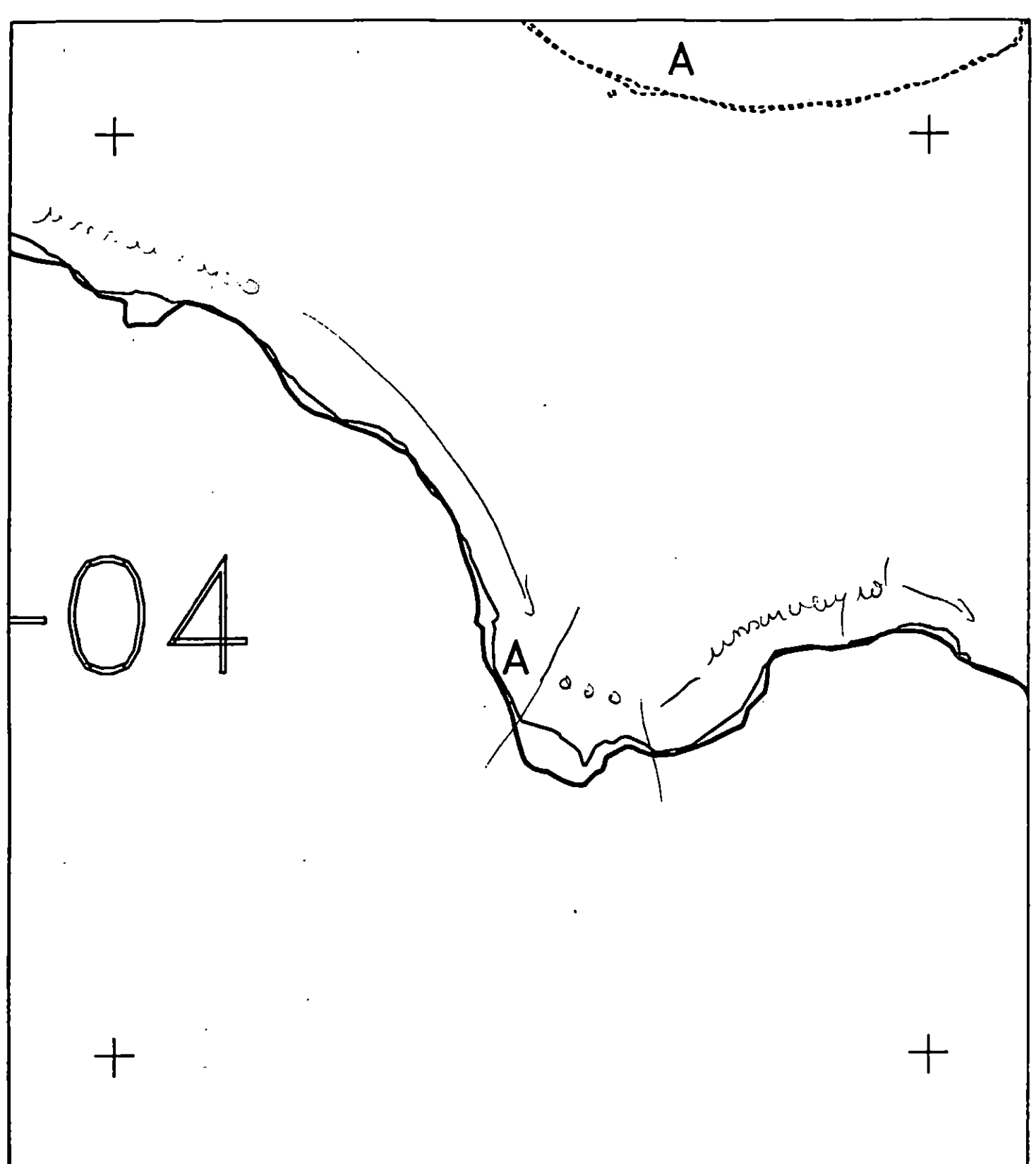
Subdivision Field Map

Map Key: KENPD004Aa

Name: for SamplesDate: May 21/91

Date Entered:

Reviewed: 6/2/91
 reviewed 5/31/91 KG



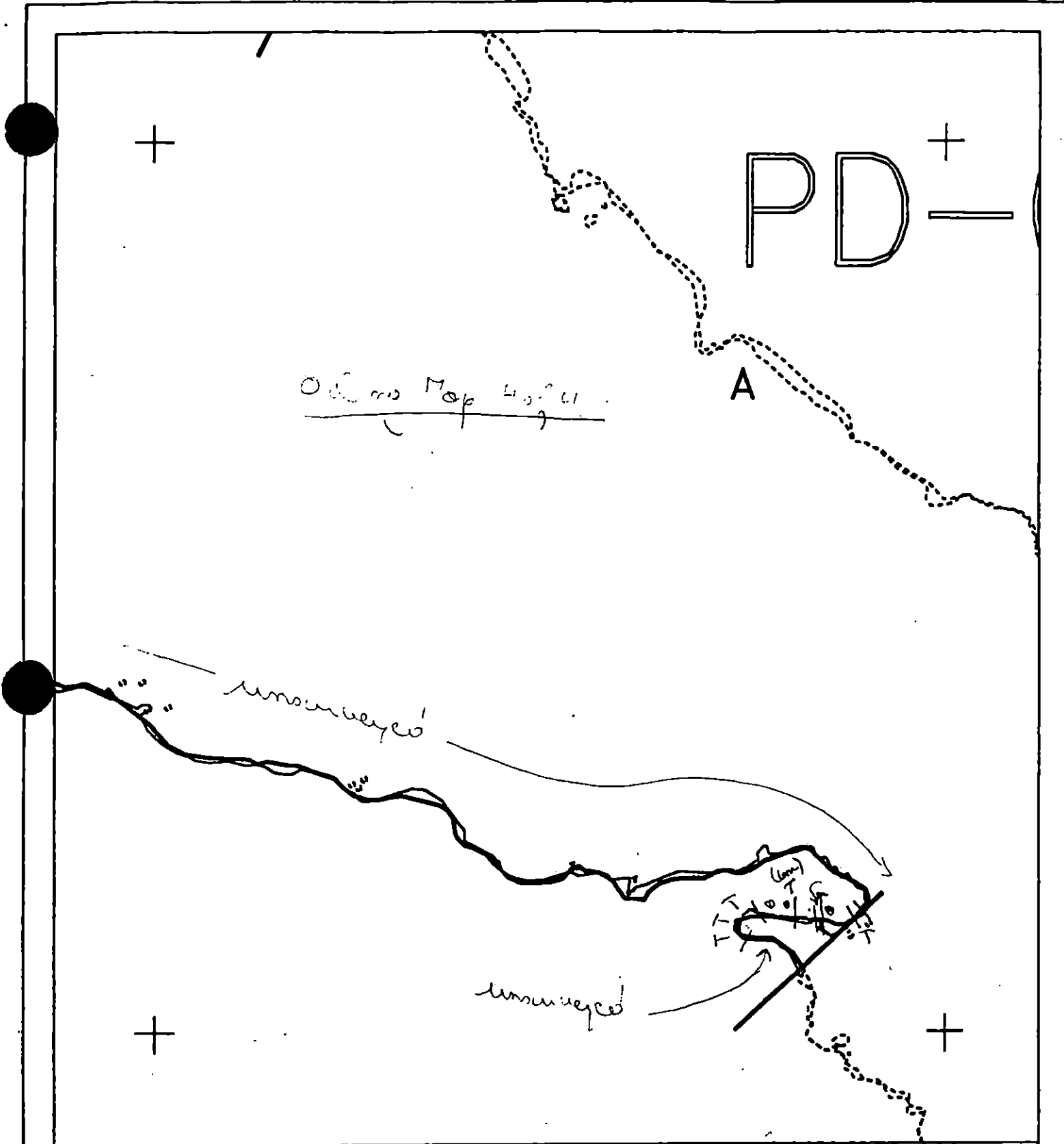
XXXX Wide
//// Medium
---- Narrow
TTTT Very Light
0000 No Oil

PD004 A
ADEC Subsegment Length: 10034m
METERS
5 100 200
AK State Plane Zone 4
apd004ab



Subdivision Field Map
Map Key: KENPD004Ab
Name: J.M. Sempels
Date: 5/21/91
Data Entered:

Reviewed: 6/2/91
revised 5/31/91 KC



Oil no Map 4.5.2.11

PD-

A

unsurveyed

unsurveyed

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

PD004 A
 ADEC Subsegment Length: 10934m
 METERS
 0 400 800
 AK State Plane Zone 4
 spd004a



Subdivision Field Map
 Map Key: KENPD004Ac
 Name: for Sample
 Date: May 21 '91
 Date Entered:

REVISIONS: 6/12/91
 revised station XG

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 4 DATE/TIME May 21/22, 1991 1612-1700, 1252-1500
SEGMENT # PD004 TIDAL HEIGHT (Range) +2.3 => +4.0, +5.2 => +1.9
SUBDIVISION A BIOLOGIST JIM BARRY
SEA STATE Calm WIND SPEED/DIRECTION Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil-Related Comments

AREA I

MSOR/AP patch in upper zone of cobble beach. This beach has fairly high cover of green and brown filamentous algae (and diatoms) over cobble through much of the intertidal zone. This filamentous algae is present at the location of the patties. Some drift algae was also present. No other biota observed.

AREA II (Shelter Cove)

No oil was found at this location (Shelter Cove). A few streams enter the beach at this cove, and have formed a wide delta of pebbles and cobble. Barnacles are abundant on cobble over this delta and clams appear to be moderately abundant throughout. Littorine snails, limpets, and hermit crabs also are sparse to moderately abundant. Isopods are common under cobble where organic detritus collect. The middle zone along the boulder talus and bedrock shore have moderate barnacle and Fucus cover.

AREA III (Mars Cove)

1, A2, A7 Coat of oil on bedrock cliffs. This oil overlaps the upper part of the barnacle zone. Juvenile barnacles are common on the weathered oil. Littorine snails and limpets are present in moderate densities.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	Salmon Fry
Seabirds			
Waterfowl	5	125	
Gulls/Kittiwakes	4	26	
Shorebirds	1	3	
Corvids	1	7	
Other Birds	1	1	

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

Shoreline subdivision map showing important biological features attached.

- A3 A CT/CV of oil is present on the upper zone boulders at this site. Few biota are present on the oiled boulders or on the adjacent clean boulders at this tidal height.
- A4 Oil (CT/SOR) is found on the coarse sediments at the upper part of the beach. Barnacles and littorine snails are sparse in these cobbles and pebbles. Few other biota were present.
- A5 This extensive area of oiling (LSOR/FL/MSOR) in this small cove has apparently been incorporated into some of the granular sediments on the surface, resulting in an impermeable cap of sediment over the finer sediments below. Thus, the underlying sediments are anaerobic, with black hydrogen sulfide-laden muds. This process naturally occurs in fine sediments and may not be related to the presence of the oil. Biota are nevertheless very abundant, with high densities of barnacles, green algae, rockweed, and mussels, depending upon the tidal height. Polychaete worms are abundant in the aerobic sediments, as are isopods, amphipods, limpets, and littorine snails.
- A6 This biota in this area are similar to those found in A6. The anaerobic area does not seem quite so extensive here. In addition, this oiled area extends to the high zone, where few biota are found.

Cleanup Considerations

For most of this subdivision, cleanup operations, if recommended, will have little effect on the biota in question. At locations A5 and A6, however, the consequences of attempting removal of the oil from sediments in the middle to high zone may be detrimental to the resident species assemblage. Oil removal would require destruction of most of the surface biota as well as removal of much of the fine sediments from the beach. The present high densities of infaunal species (worms, some crustaceans), act to turn over the sediments and will likely facilitate aeration of the black muds. As the oil degrades and the sediments become aerated, via percolation from the overlying water, the black mud concentration of this area may decrease.

General Comments

PD004-A is a very long subdivision with cobble shores, bedrock cliffs, and a few protected coves. The entire subdivision is well protected from waves. The only areas surveyed were three coves (see OG map). The shores are not particularly diverse, and have a sparse upper intertidal with barnacles and littorine snails, a middle zone with moderate to dense Fucus cover, mussels, and associated species, and a low zone with Fucus and red algae.

Mars Cove (see map) is the only location with significant oil. This location has oil in the middle to upper zone on a cobble beach, with mousse, HSOR, a film in fine sediments.

General Zonation on PD004-A

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal

Oil		- - -				
Green Algae (Ulva/other)		- - -	---++**++	-----	- - -	-
Barnacles (Balanus)		-	---+*****++	-----		
Mussels (Mytilus)				---+*****+--		
Rockweed (Fucus)			-----	---+++++*****+--	+++--	
Other Red Algae					---+*****+--	++++**
Littorine Snails			- - -	---+++++*****+--	-----	
Clams						- - -

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

Common Species on PD004-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Endocladia muricata, Halosaccion glandiforme, 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?
2. Anemones - Anthopleura artemesia, Epiactis ritteri, Urticina crassicornis,
3. Hydroids - Sertulariidae,
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaete Worms
Nereidae - Nereis spp.
Serpulidae - Serpula sp.
Spiorobidae - Spiorobis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii
10. Crustaceans
a. Amphipods - Traskorchestia traskiana
b. Barnacles - Balanus glandula, Semibalanus cariosus
c. Crabs - Paguridae (hermit crabs),
d. Isopods - Cirrana harfordi, Idotea wosnesenskii, Gnorimosphera oregonensis
11. Mollusca
a. Chitons - Mopalia mucosa, Tonicella lineata,
b. Snails - Gastropods
Amphissa columbiana, Littorina sp., Natica clausa, Nucella lamellosa, N. lima, Searlesia dira, Tachyrhynchus sp.
c. Limpets - Lottia persona, L. limatula, Tectura fenestrata, T. persona, T. scutum, Siphonaria thersites
e. Bivalves - Chlamys hastata, Clinocardium sp., C. nuttalli, Hiatella arctica, Macoma balthica, Macoma nasuta, Modiolus modiolus, Mya arenaria (soft-shell clam), Mytilus edulis, Pododesmus cepio, Prototheca staminea, Saxidomus giganteus
12. Echinoderms
b. Sea stars - Dermasterias imbricata, Evasterias truscheli, Leptasterias hexactis, Pycnopoda helianthoides,
c. Sea Cucumbers - Holothurians - Eupentacta sp.
d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Schizoporella sp.
15. Fishes
Cottidae
Stichaeidae - Xiphister atropurpureus, X. mucosus

III. Birds - Bald Eagle (1), Glaucous-winged Gull (20), Crow (7), Shorebird (3), Bonaparte's Gull (20), Herring Gull (1), Magpie (1), Lesser Scaup (80), Mallard (10), Barrow's Goldeneye (5), Surf Scoter (5), Common Merganser (5),

BIO SKETCH MAP

PDOO4-A

AREA I

JP BARRY

21 MAY 91

1610-1620

Legend



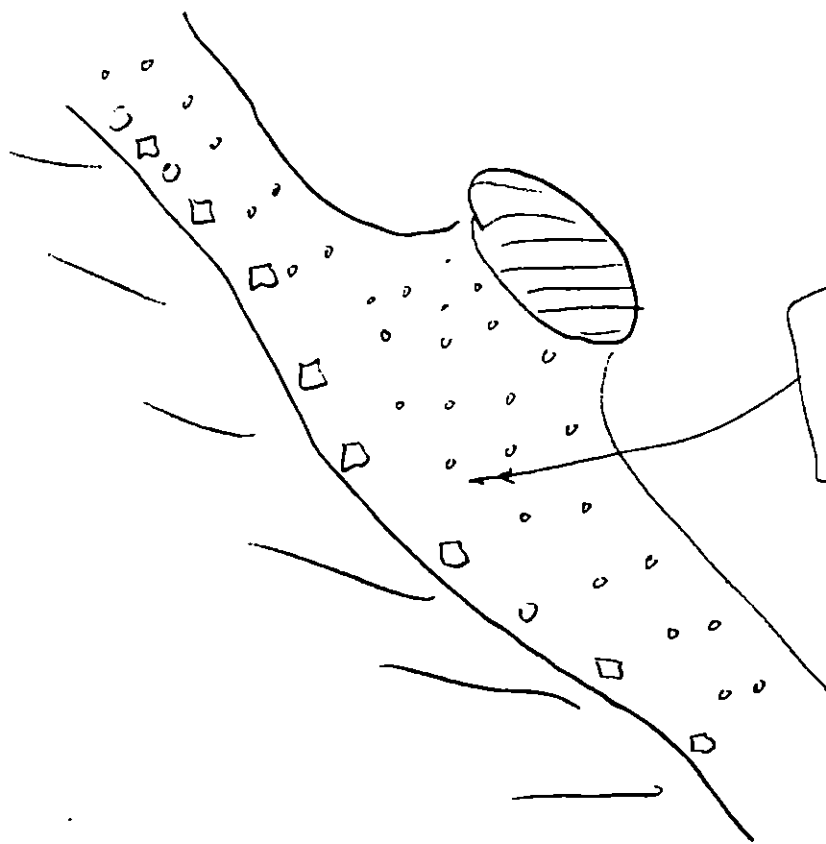
Bedrock Cliffs/Bluffs



Boulder/Cobble

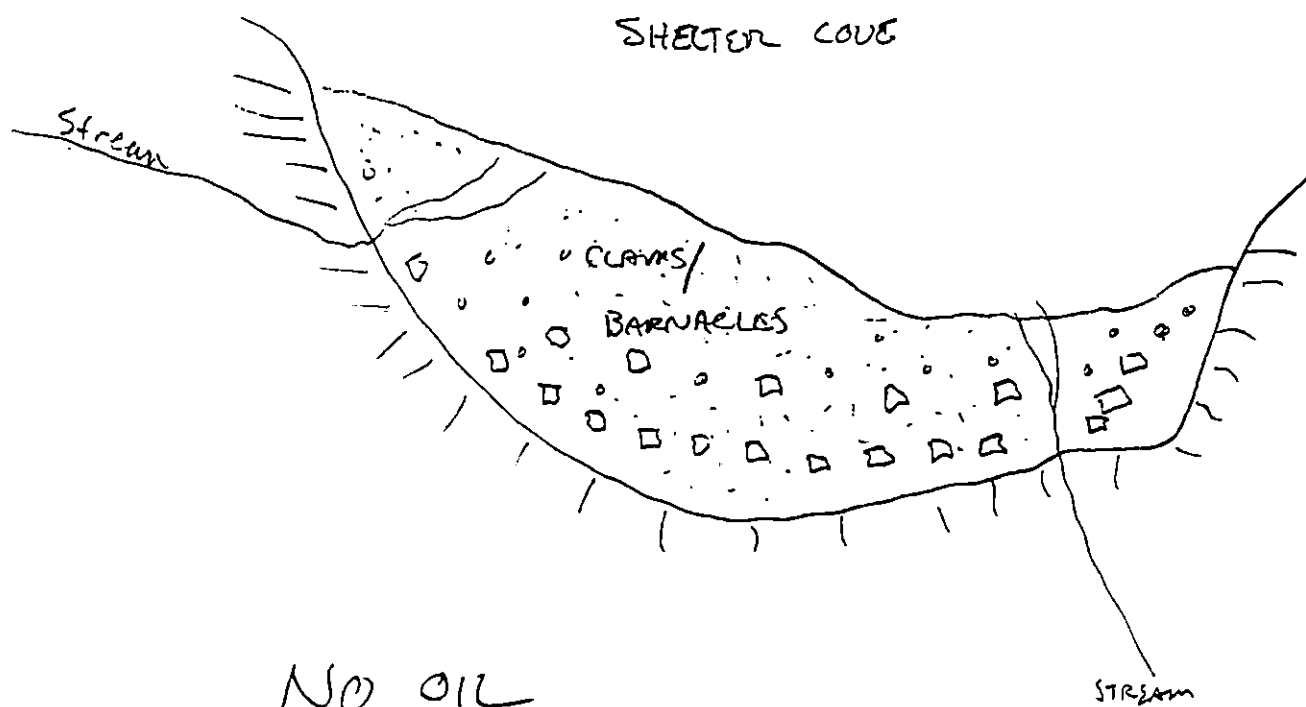


Cobble/Pebble



Green Filamentous Algae
FUCUS DRIFT ALGAE, LITTLE
ELSE

BIO SKETCH MAP	Legend
PD 004-A	 Steep Bedrock Cliffs
AREA II	 Boulders/Cobble
SP BARRY	 Pebble/Cobble
21 MAY 91	
1643 - 1703	



Meters

0 50

Legend

-  Bedrock cliffs / bluffs / outcrop
-  Boulder / Cobble
-  Angular cobble / pebble

BIO SKETCH MAP

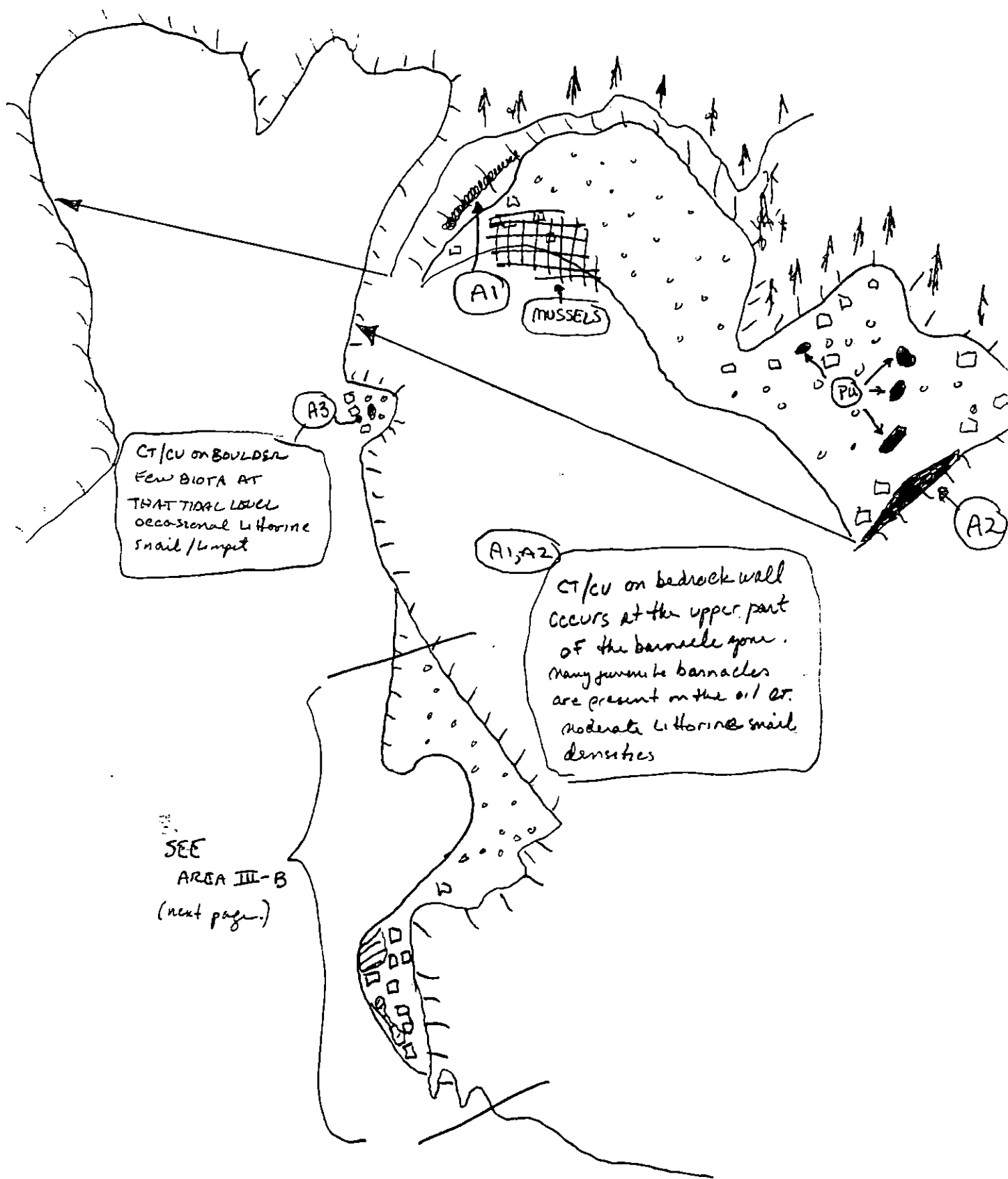
PD 004-A

AREA III - MARS COVE

J P BAREY

22 MAY 1991

1295-1508



BIO SKETCH MAP

PDOO4-A

AREA III-B

22 MAY 81

JP Barry

A4 CT/CSOR ON COARSE
SEDIMENT -
SPARSE BARNACLES,
LIMPETS, LITTORINES

AS

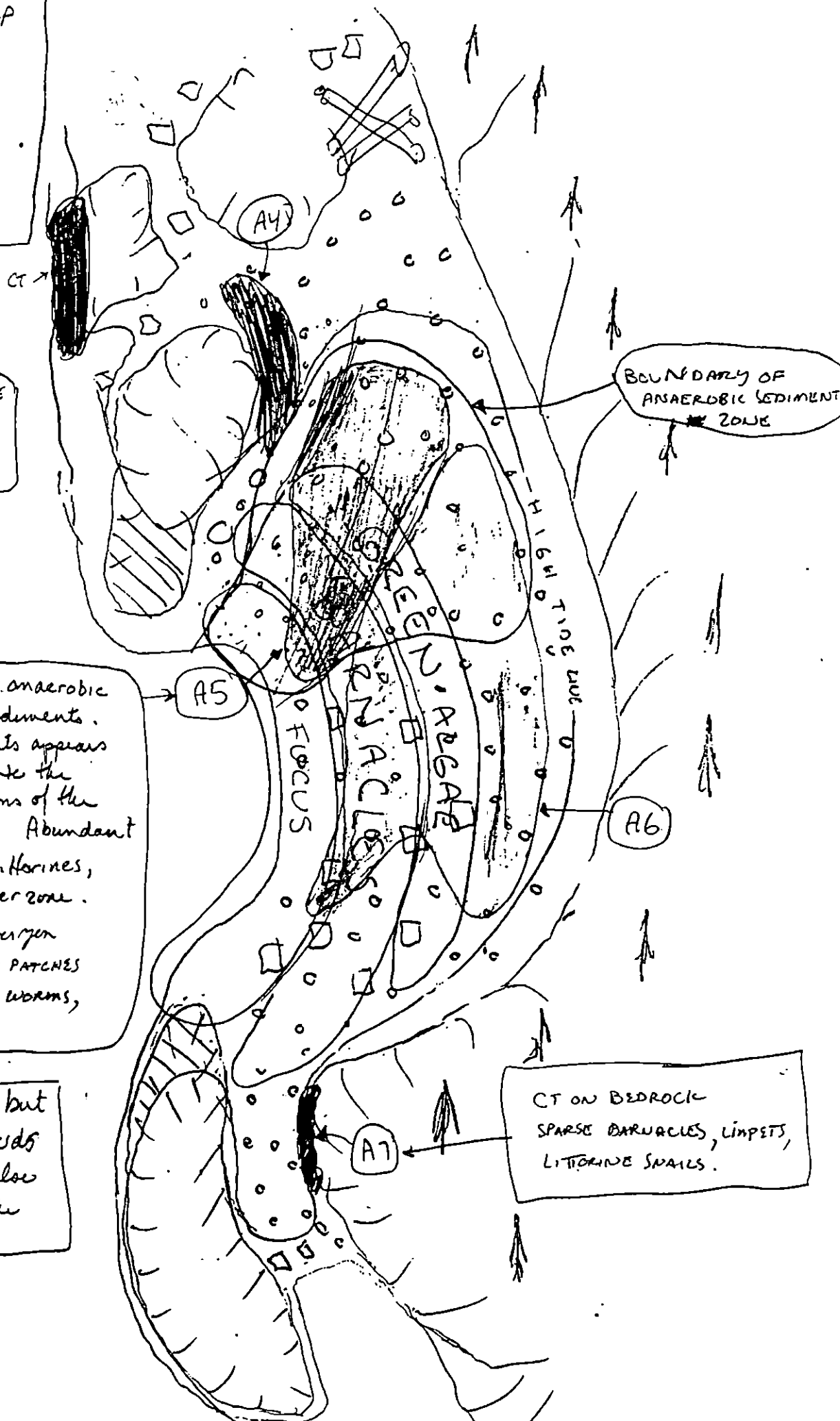
FLOR, FL, MSOR over anaerobic
muds under coarse sediments.
Oil in surface sediments appears
to have contributed to the
low oxygen conditions of the
underlying mud. Abundant
biota on surface. Littorines,
green algae on upper zone.

Focus, Mussels, mud in lower zone
BARNACLES DENSE IN PATCHES
DENSE POLYCHAETE WORMS,
ISOPODS

A6 - SOME AS AS, but
less anaerobic muds
in portion. This also
extends higher in the
intertidal -

CT ON BEDROCK
SPARSE BARNACLES, LIMPETS,
LITTORINE SNAILS.

BOUNDARY OF
ANAEROBIC SEDIMENT
ZONE



1991 MAYSAP EVALUATION

SEGMENT: PD 004 **SUB:** A **REGION:** KEN **SURVEY DATE:** 5/22/91

ENVIRONMENTAL SENSITIVITIES:

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

Ecological/Constraints (see page two for details) Eagle nest

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: _____ **Date:** _____

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____

FOSC APPROVAL DATE: _____

ADEC _____

FOSC _____

EXXON _____

USCG _____

NOAA _____

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

MAYSAF FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT PD-004 SUBDIVISION A DATE 5/22/91

ADEC

NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☒ NTR Although this beach has quite a bit of oil remaining on it — The oil occurs in the form of FL & scattered patches of MS/HSOR — The areas that do concern me are the ~~MS~~ FL which is associated w/ the anoxic mud — These areas could possibly degrade slower than normal ~~however~~ (Ref-Bio) This beach has been worked heavily in the past (Time to let it rest — ?)

EXXON

NAME George P. Stiles SIGNATURE _____

☒ NTR No appreciable oil found.

NDMANAGER

NAME Jeff Johnson OF ADNR SIGNATURE [Signature]☒ NTR

Mars Cove has improved remarkably. HSOR found and picked up. Oil is widely scattered, commonly in rock crevices. Oil is not concentrated enough heavy enough to ~~work~~ ^{start} this segment again.

USCG/NOAA

NAME [Signature] SIGNATURE [Signature]☒ NTR

Beach(es) look fairly clean compared to last year's survey. Of mention that due to the geomorphology this beach is difficult to treat. It appears any treatment & best bioremediation would be a major effort.

[Signature]

TEAM NO. HOG J. M. SEMPERSADEC BoobyEXXON George P. StilesBIO J. BarryLANDMANAGER Johnson 10/1/91USCG/NOAA McMahon/McDonaldSEGMENT PD 004SUBDIVISION ADATE MAY 1, 1991TIME 13:55 to 15:02TIDE LEVEL +4.1 ft. to +1.8 ft.ENERGY LEVEL: ☐ H ☐ M ☒ LSURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELOWEATHER: ☒ SUN ☐ CLOUDS ☐ FOG ☐ RAIN ☐ SNOWTOTAL LENGTH SHORELINE SURVEYED: 880 mNEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONEEST. OIL CATEGORY LENGTH: W — m M — m N — m VL 149 m NO 731 m US 1-54 m

L O C	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE VHML	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO			WIDTH m	LENGTH m	S	UI	MI	LI	
A1					S	S					Red	V	1	20	X				
A2					S	S					"	"	1	30	X				See
A3					S	S					"	"	3	2	X				map
A4				S	S			S			Edge	M	20	8	X				L-SOR
A5				S				S			"	L	90	5	X	X			L-SOR + M-SOR
A6				S				S			Co. po	L	10	40	X	X			L-SOR
A7					T						Ad	V	2	40	X				
A8					S						Red	H	1	5	X				

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

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

PHOTO ROLL # MAYSAP-

FRAMES

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE- SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
1	30							X	---	4	20	-					Sd/ge/bb	
2	30		X						15-17	4	-	-				X	" " " "	See
3	25							X	---	4	-	-				X	" " " "	map
4	20							X	---	4	-	-			X		" " " "	
5	20							X	---	4	-	-			X		" " " "	Down to bedrock
6	20							X	---	4	-	-			X		" " " "	To Curves
7	30							X	---	4	-	-				X	blt/bd	
8	35							X	---	4	-	-				X	blt/bd	
9	30							X	---	4	-	-			X		" " " "	

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

OG COMMENTS:

Long shoreline, mostly beach cliffs/bluffs with
 pocket to Perry Beach of mixed sediments, often with a fine
 gravel bar near the beach. 3 Areas for which
 oil had been observed before were surveyed in area. 1/2
 of the shoreline for which no oil was reported following
 our surveys was not surveyed.

 Revised: MC 6/2/91
 revised 5/31/91 KG

log sketch
LOCATION MAP

PD-004-A

MAY 21 1619-1703

MAY 22 1255-1508

PD-02

3



AREA 1

PD-04



AREA 2

PD-

AREA 3



PD004 A Substation Photo Map Map No. 000000000 Name _____ Date _____	PD004 A Substation Photo Map Map No. 000000000 Name _____ Date _____	PD004 A Substation Photo Map Map No. 000000000 Name _____ Date _____
---	---	---

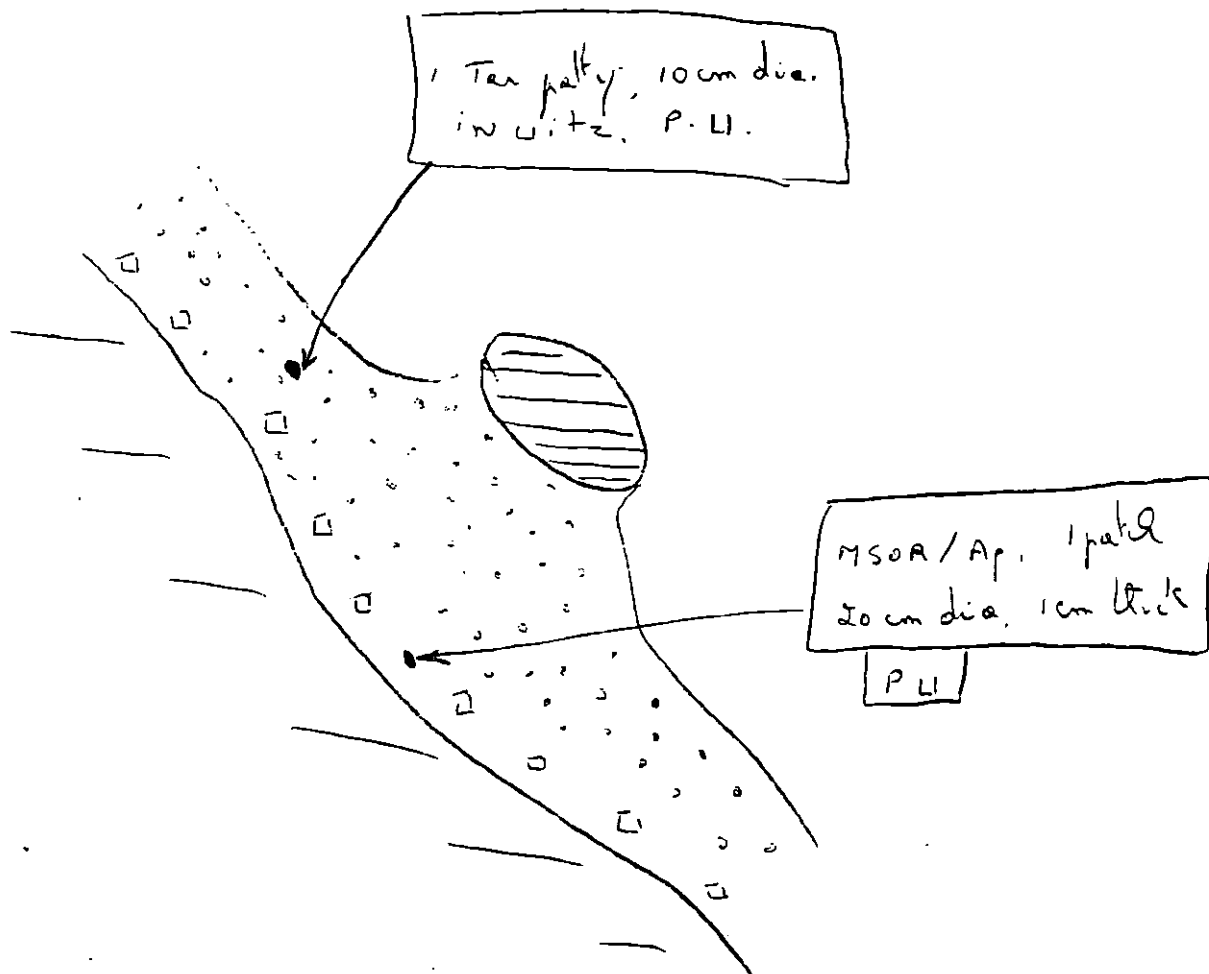
PD 4 A 5/

SKETCH MAP

PD. 004 - A
 AREA I
 27 SAMPLES
 MAY 21 / 91
 1619 - 1620

Legend

-  Bedrock bluffs
-  Boulder / cobble
-  Cobble / Pebble



2 meters

Oy Sketd Map

Legend

PD-004-A

AREA-II

DM SEMPELS

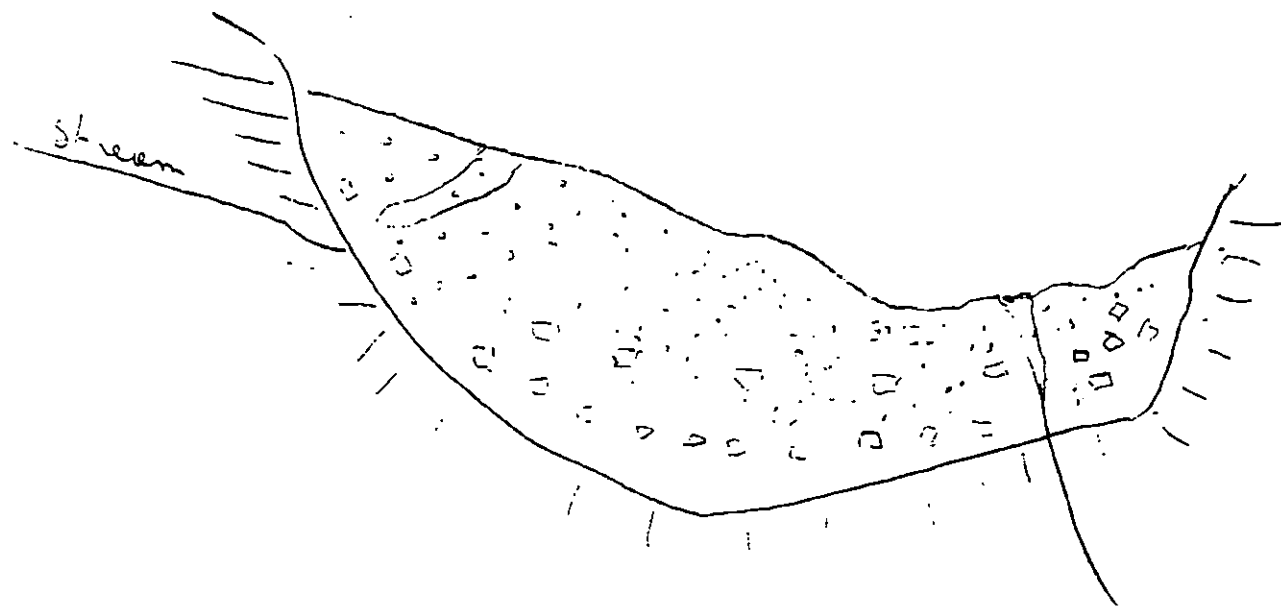
MAY 21 / 91

1643 - 1703

(I) steep bank / cliff

(II) Boulders / cobbles

(III) pebbles / cobbles



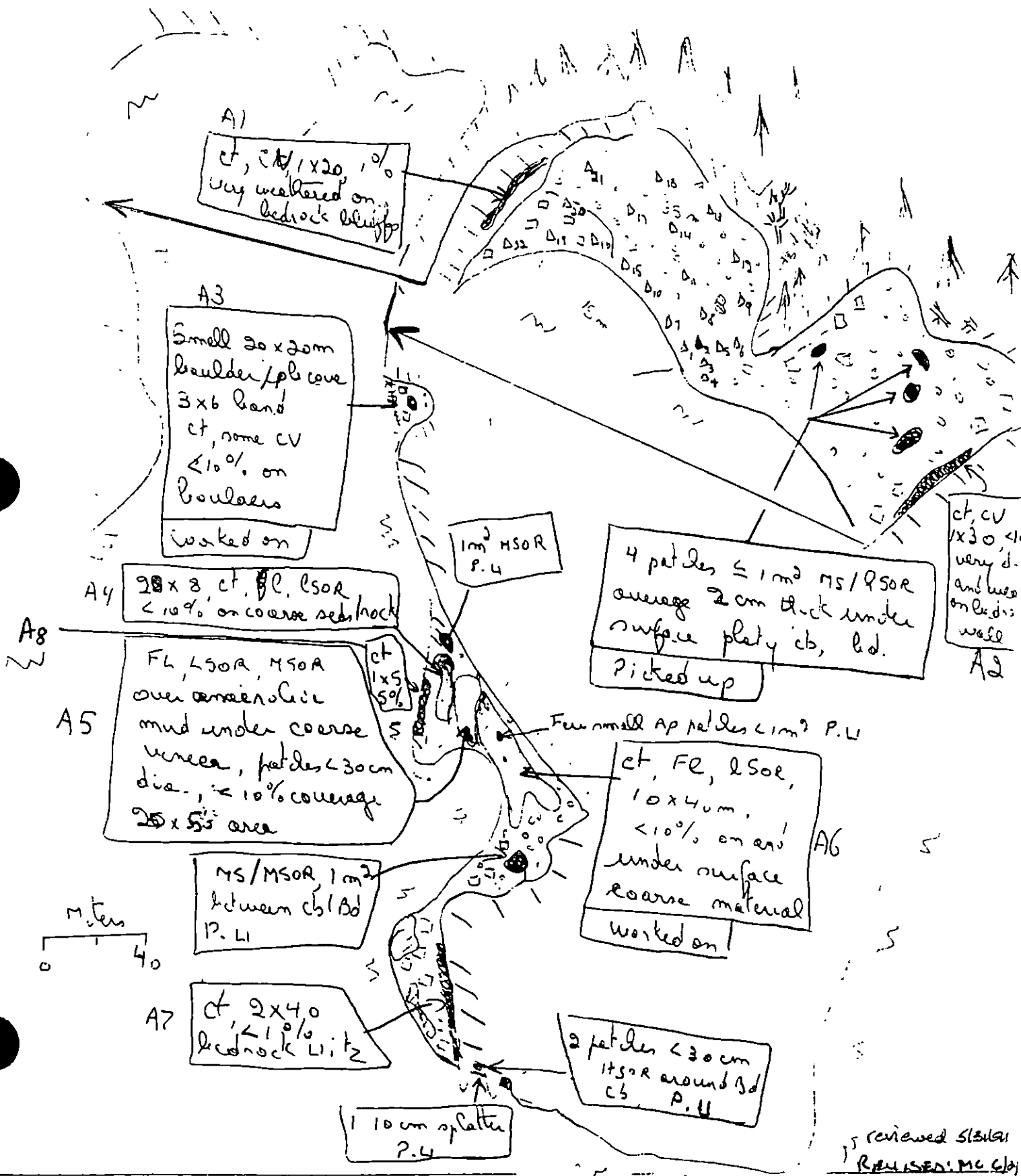
50
meters

- Bedrock cliffs / Bluffs / outcrops
- Boulders / cobble (angular)
- Angular cobble / pebble

3g Sketch Map.

PD4A
8/

PD-004-A
AREA II MARS COVE
J.M. SEMPELS
May 23/91
1255-1502

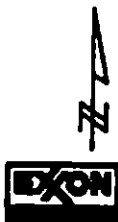
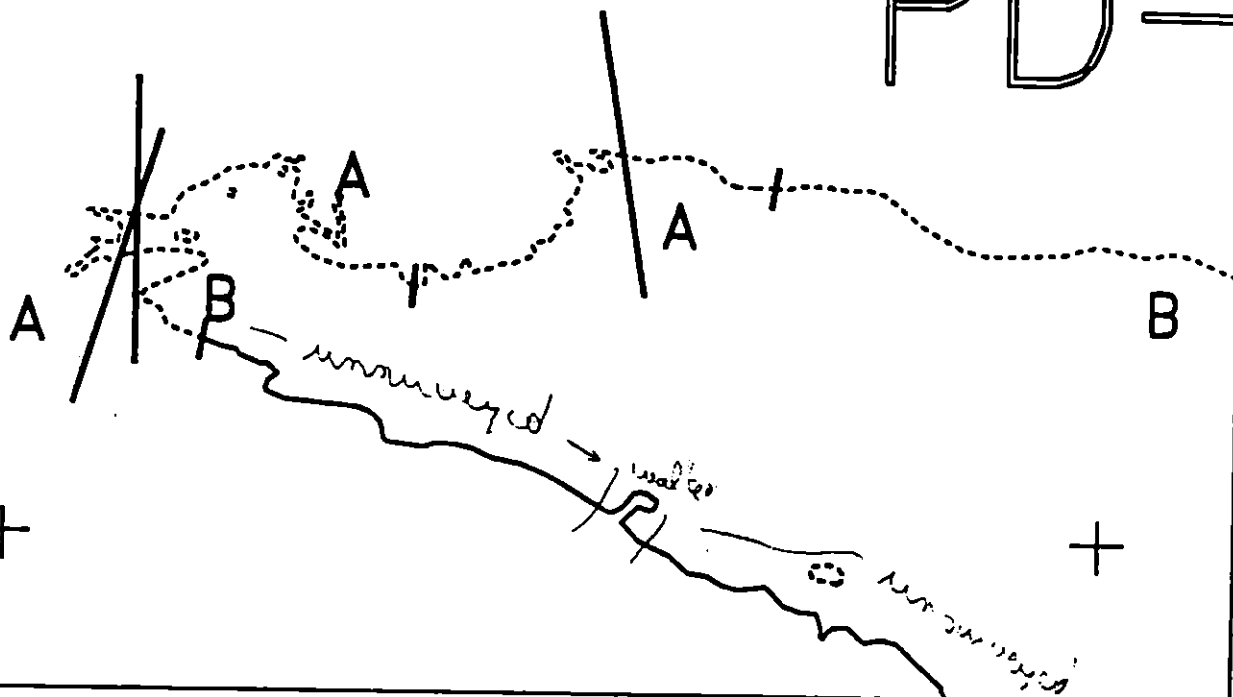


Location Map 10-24

PD-02

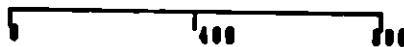
PD-

3



PD004 A

METERS



AK State Plane Zone 4
NAD83

Subdivision Field Map

Map Key: KENPD004A

Name: JM Gumples

Date: MAY 31 / 91



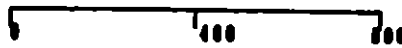
Location May 28, 91

PD



PD004 A

METERS



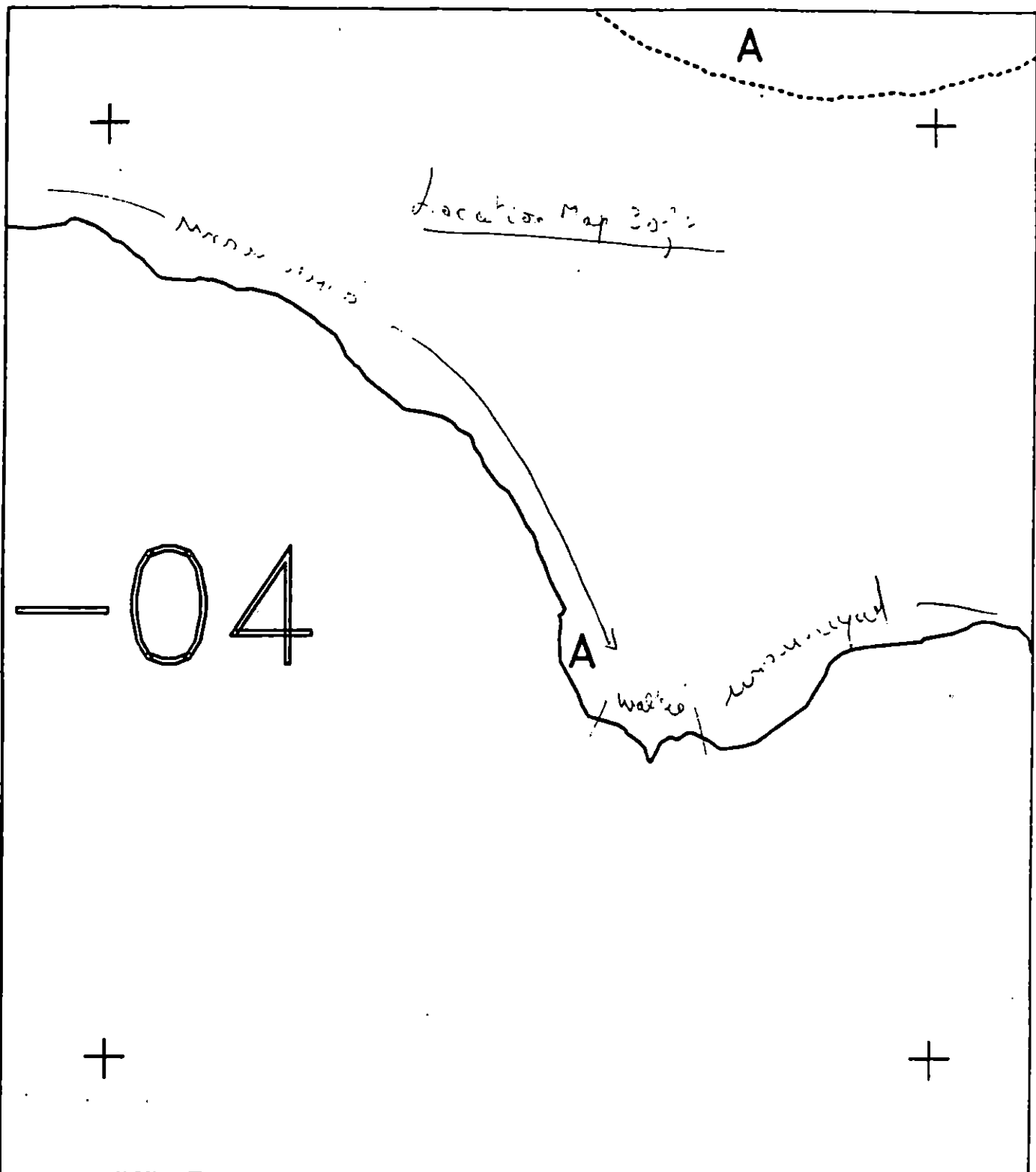
AK State Plane Zone 4
spdb400

Subdivision Field Map

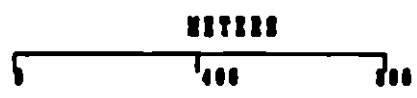
Map Key: KENPD004Aa

Name: J. M. Semple

Date: MAY 28 91



PD004 A



AK State Plane Zone 4
890004ab

Subdivision Field Map
Map Key: KENPD004ab
Name: Jay Sempel
Date: MAY 21 / 9

+

PD-

A

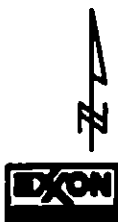
location Map 4-11-11

main road

water

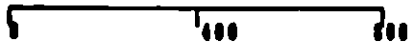
+

+



PD004 A

METERS



AK State Plane Zone 4
up980400

Subdivision Field Map

Map Key: EBNPD004Ac

Name: JM Sample

Date: MAY 91

D. 3. 1991

PD-02

PD-0



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

PD004 A
ADEC Subsegment Length: 10934m
METERS

AK State Plane Zone 4
up0004ad



Subdivision Field Map
Map Key: KENPD004Ad
Name: Im S. 1991
Date: 1991
Data Entered:

Reviewed: MC 6/2/91
reviewed 5/31/91 EG

+



Oil Spill Map 2 of 4

PD-

+

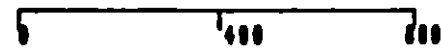
+

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

PD004 A

ADEC Subsegment Length: 10034m

METERS



AK State Plane Zone 4
sp400400



Subdivision Field Map

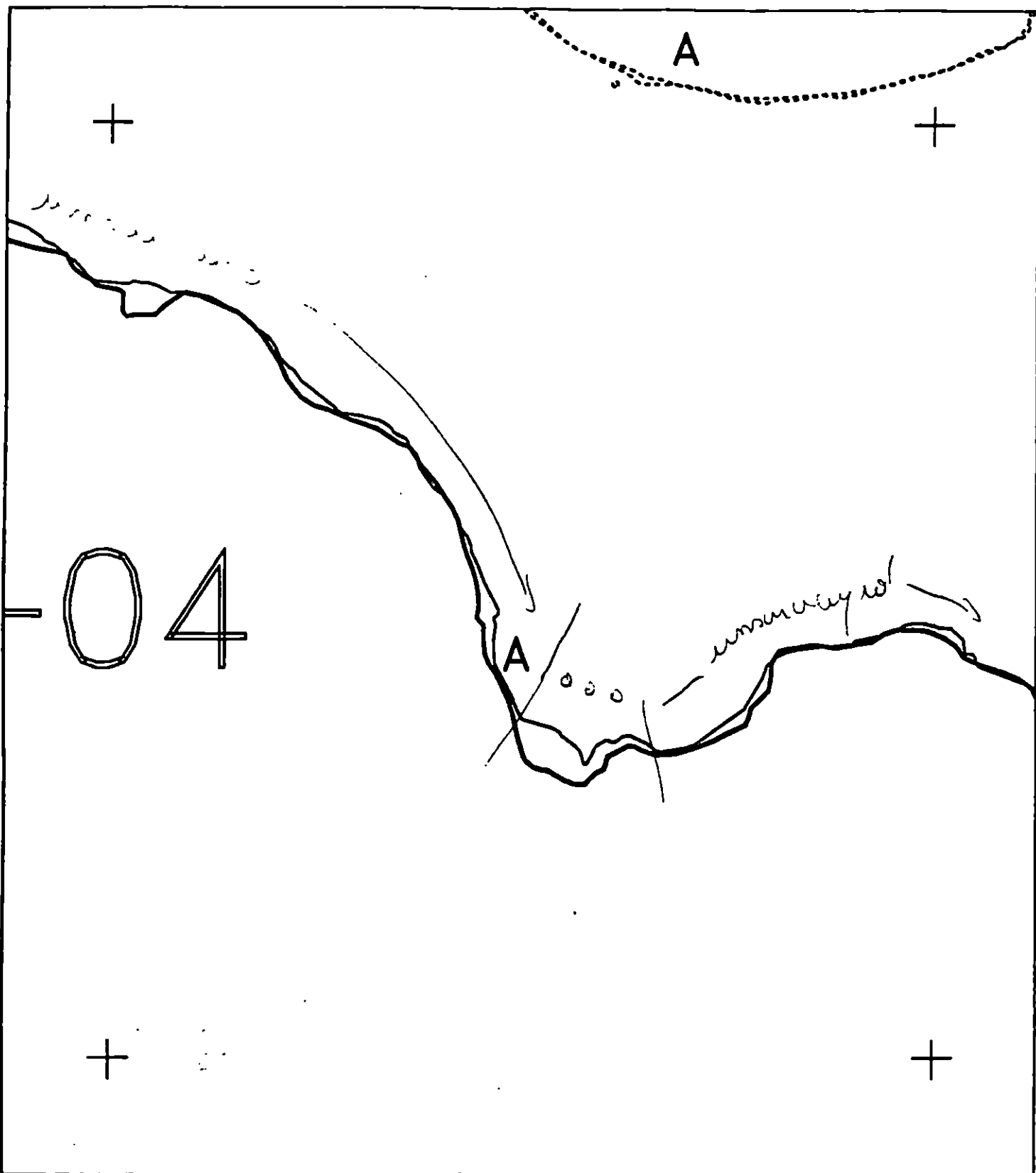
Map Key: KENPD004Aa

Name: J. Searles

Date: May 31/91

Date Entered:

Reviewed: 6/2/91
revised 5/31/91 K6



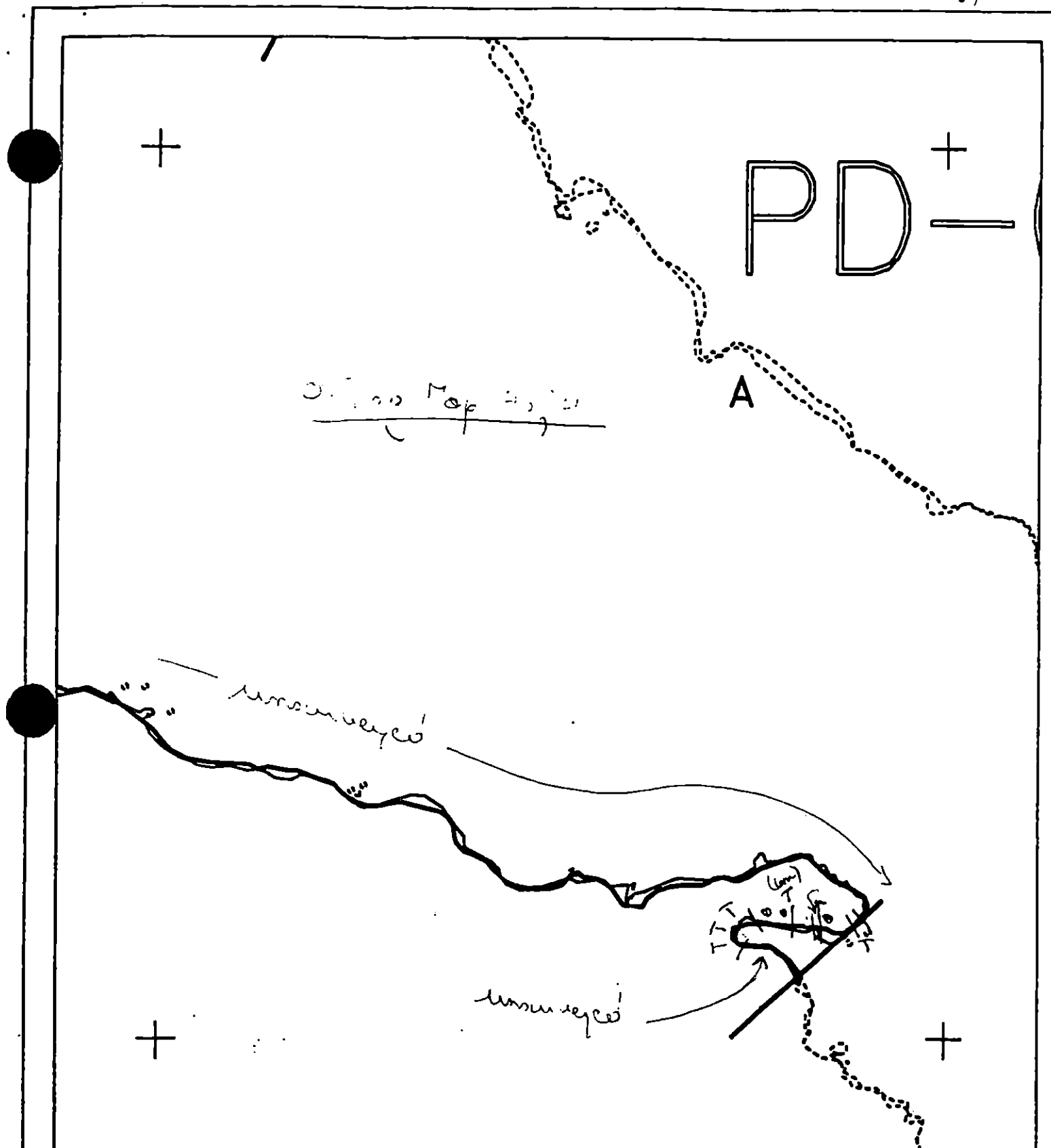
XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

PD004 A
 ADEC Subsegment Length: 10934m
 METERS
 0 400 800
 AK State Plane Zone 4
 apd004ab

Subdivision Field Map
 Map Key: KENPD004Ab
 Name: J.M. Sempels
 Date: 5/21/91
 Date Entered:



Revis 6/2/91
 revised 5/31/91 RG



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

PD004 A
ADEC Subsegment Length: 10934m
METERS
0 400 800
AK State Plane Zone 4
spd004ac



Subdivision Field Map
Map Key: KENPD004Ac
Name: for Sample
Date: May 2, 79
Data Entered:

Reviewed: 6/11/91
revised stationing

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 4 DATE/TIME May 21/22, 1991 1612-1700, 1252-1500
 SEGMENT # PD004 TIDAL HEIGHT (Range) +2.3 => +4.0, +5.2 => +1.9
 SUBDIVISION A BIOLOGIST JIM BARRY
 SEA STATE Calm WIND SPEED/DIRECTION Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil-Related Comments

AREA I

MSOR/AP patch in upper zone of cobble beach. This beach has fairly high cover of green and brown filamentous algae (and diatoms) over cobble through much of the intertidal zone. This filamentous algae is present at the location of the patties. Some drift algae was also present. No other biota observed.

AREA II (Shelter Cove)

No oil was found at this location (Shelter Cove). A few streams enter the beach at this cove, and have formed a wide delta of pebbles and cobble. Barnacles are abundant on cobble over this delta and clams appear to be moderately abundant throughout. Littorine snails, limpets, and hermit crabs also are sparse to moderately abundant. Isopods are common under cobble where organic detritus collect. The middle zone along the boulder talus and bedrock shore have moderate barnacle and Fucus cover.

AREA III (Mars Cove)

A1, A2, A7 Coat of oil on bedrock cliffs. This oil overlaps the upper part of the barnacle zone. Juvenile barnacles are common on the weathered oil. Littorine snails and limpets are present in moderate densities.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	Salmon Fry
Seabirds			
Waterfowl	5	125	
Gulls/Kittiwakes	4	26	
Shorebirds	1	3	
Corvids	1	7	
Other Birds	1	1	

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

Shoreline subdivision map showing important biological features attached.

- A3 A CT/CV of oil is present on the upper zone boulders at this site. Few biota are present on the oiled boulders or on the adjacent clean boulders at this tidal height.
- A4 Oil (CT/SOR) is found on the coarse sediments at the upper part of the beach. Barnacles and littorine snails are sparse in these cobbles and pebbles. Few other biota were present.
- A5 This extensive area of oiling (LSOR/FL/MSOR) in this small cove has apparently been incorporated into some of the granular sediments on the surface, resulting in an impermeable cap of sediment over the finer sediments below. Thus, the underlying sediments are anaerobic, with black hydrogen sulfide-laden muds. This process naturally occurs in fine sediments and may not be related to the presence of the oil. Biota are nevertheless very abundant, with high densities of barnacles, green algae, rockweed, and mussels, depending upon the tidal height. Polychaete worms are abundant in the aerobic sediments, as are isopods, amphipods, limpets, and littorine snails.
- A6 This biota in this area are similar to those found in A6. The anaerobic area does not seem quite so extensive here. In addition, this oiled area extends to the high zone, where few biota are found.

Cleanup Considerations

For most of this subdivision, cleanup operations, if recommended, will have little effect on the biota in question. At locations A5 and A6, however, the consequences of attempting removal of the oil from sediments in the middle to high zone may be detrimental to the resident species assemblage. Oil removal would require destruction of most of the surface biota as well as removal of much of the fine sediments from the beach. The present high densities of infaunal species (worms, some crustaceans), act to turn over the sediments and will likely facilitate aeration of the black muds. As the oil degrades and the sediments become aerated, via percolation from the overlying water, the black mud concentration of this area may decrease.

General Comments

PD004-A is a very long subdivision with cobble shores, bedrock cliffs, and a few protected coves. The entire subdivision is well protected from waves. The only areas surveyed were three coves (see OG map). The shores are not particularly diverse, and have a sparse upper intertidal with barnacles and littorine snails, a middle zone with moderate to dense Fucus cover, mussels, and associated species, and a low zone with Fucus and red algae.

Mars Cove (see map) is the only location with significant oil. This location has oil in the middle to upper zone on a cobble beach, with mousse, HSOR, a film in fine sediments.

General Zonation on PD004-A

Biota:	Tide Level	Supratidal	Upper	Middle	Low	Subtidal
Oil		- - -				
Green Algae (Ulva/other)			- - -	+++***+		- - -
Barnacles (Balanus)			-	+++***+		
Mussels (Mytilus)					+++***+	
Rockweed (Fucus)					+++***+	
Other Red Algae						+++***+
Littorine Snails					+++***+	
Clams						

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

Common Species on PD004-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Endocladia muricata, Halosaccion glandiforme, 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?
2. Anemones - Anthopleura artemesia, Epiactis ritteri, Urticina crassicornis,
3. Hydroids - Sertulariidae,
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Euplectonema gracile
8. Polychaete Worms
Nereidae - Nereis spp.
Serpulidae - Serpula sp.
Spirorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii
10. Crustaceans
a. Amphipods - Traskorchestia traskiana
b. Barnacles - Balanus glandula, Semibalanus cariosus
c. Crabs - Paguridae (hermit crabs),
d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimosphera oregonensis
11. Mollusca
a. Chitons - Mopalia mucosa, Tonicella lineata,
b. Snails - Gastropods
Amphissa columbiana, Littorina sp., Natica clausa, Nucella lamellosa, N. lima, Searlesia dira, Tachyrhynchus sp.
c. Limpets - Lottia persona, L. limatula, Tectura fenestrata, T. persona, T. scutum, Siphonaria thersites
e. Bivalves - Chlamys hastata, Clinocardium sp., C. nuttalli, Hiatella arctica, Macoma balthica, Macoma nasuta, Modiolus modiolus, Mya arenaria (soft-shell clam), Mytilus edulis, Pododesmus cepio, Prototheca staminea, Saxidomus giganteus
12. Echinoderms
b. Sea stars - Dermasterias imbricata, Evasterias truscheri, Leptasterias hexactis, Pycnopoda helianthoides,
c. Sea Cucumbers - Holothurians - Eupentacta sp.
d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Schizoporella sp.
15. Fishes
Cottidae
Stichaeidae - Xiphister atropurpureus, X. mucosus

- III. Birds - Bald Eagle (1), Glaucous-winged Gull (20), Crow (7), Shorebird (3), Bonaparte's Gull (20), Herring Gull (1), Magpie (1), Lesser Scaup (80), Mallard (10), Barrow's Goldeneye (5), Surf Scoter (5), Common Merganser (5),

BIO SKETCH MAP

PDOO4-A

AREA I

JP BARRY

21 MAY 91

1610-1620



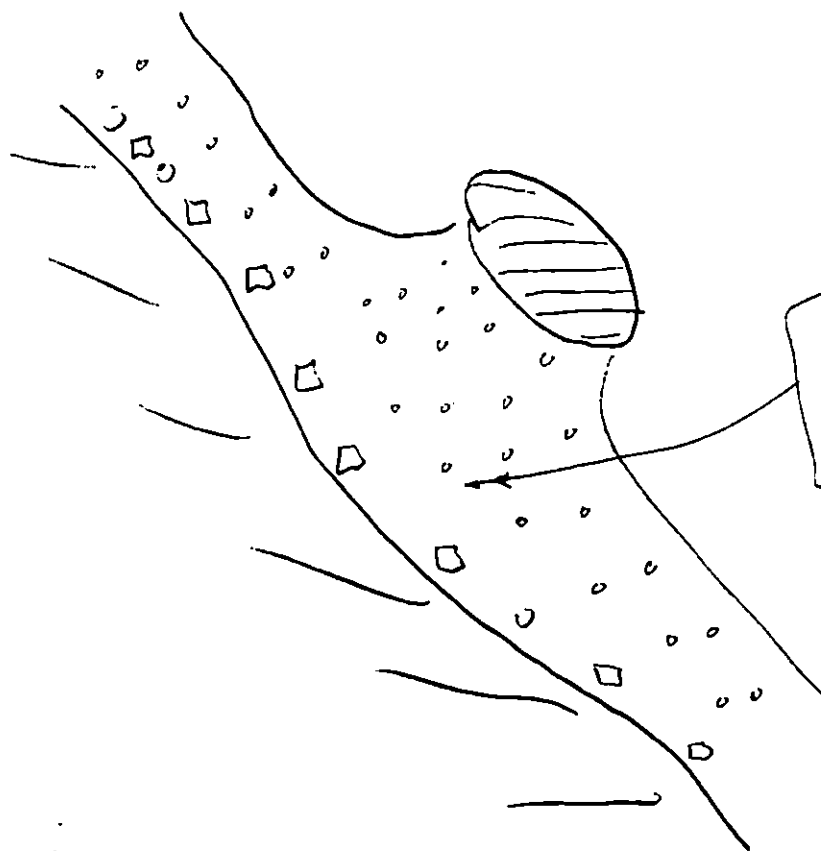
Bedrock Cliffs/Bluffs



Boulder/Cobble

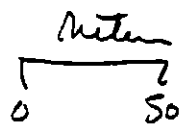
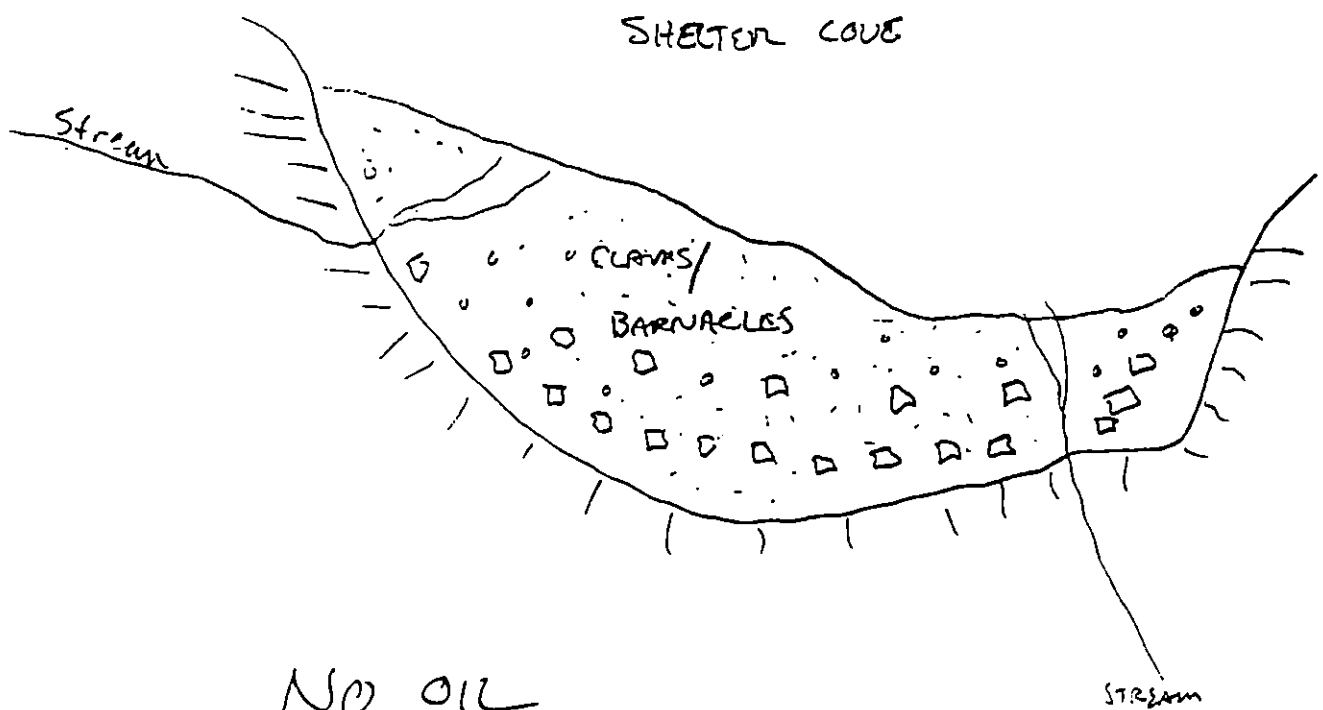


Cobble/Pebble



Green Filamentous Algae
FUCUS DRIFT ALGAE, LITTLE
ELSE

BIO SKETCH MAP	Legend
PD 004-A	 Steep Bedrock Cliffs
AREA II	 Boulders/Cobble
J P BARRY	 Pebble/Cobble
21 MAY 91	
1643 - 1703	



- ▮ Bedrock cliffs / bluffs / outcrop
- ▮ Boulder / Cobble
- ▮ Angular cobble / pebble

BIO SKETCH MAP

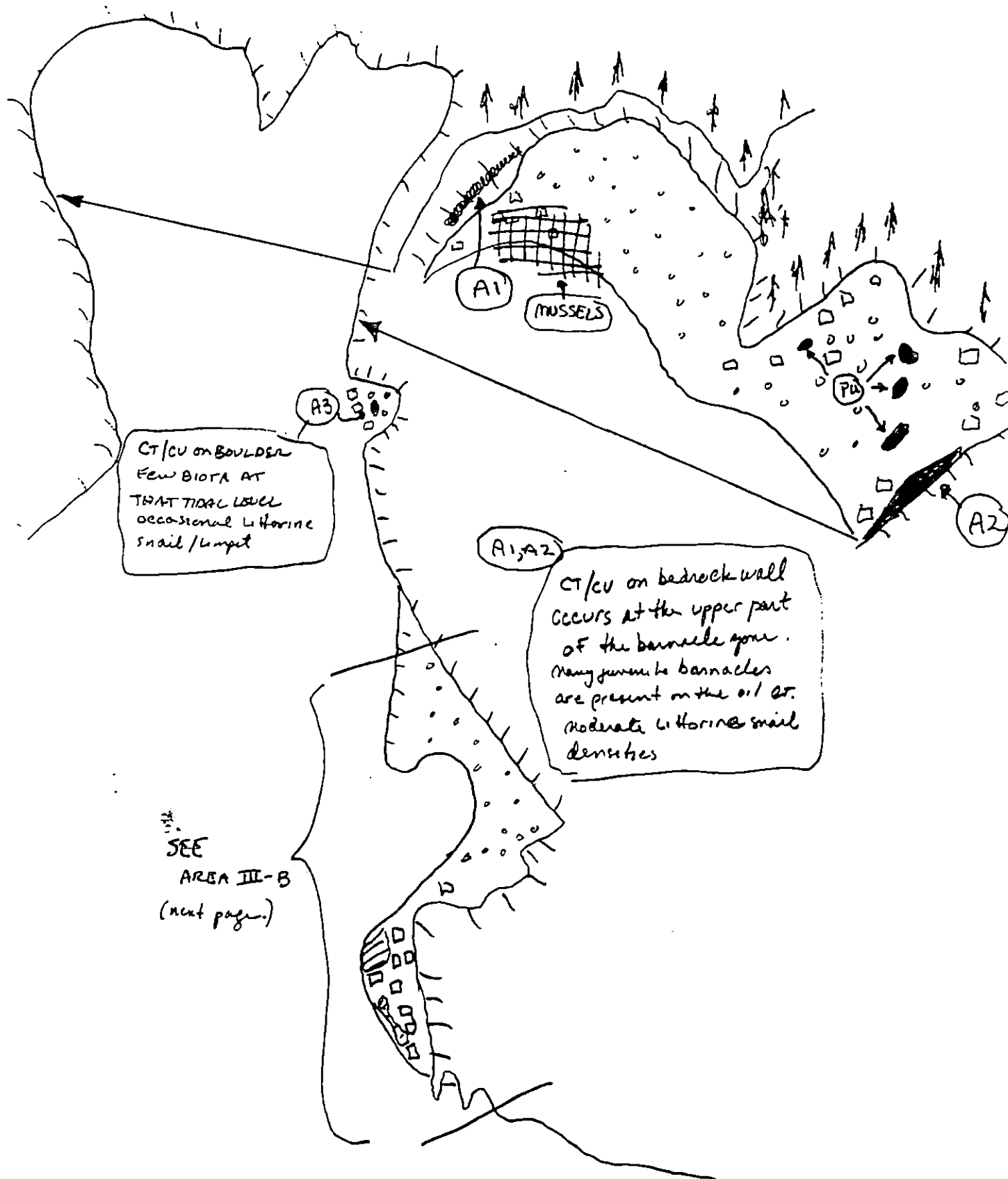
PD 004-A

AREA III - MARS COVE

J P BAREY

22 MAY 1991

1295-1508



BIO SKETCH MAP

PDOO4-A

AREA III-B

22 MAY 81

JP BARRY

A4 CT/CSOR ON COARSE
SEDIMENT -
SPARSE BARNACLES,
LIMPETS, LITTORINES

AS

LSOR, FL, MSOR over anaerobic
muds under coarse sediments.
In surface sediments appears
to have contributed to the
low oxygen conditions of the
underlying mud. Abundant
biota on surface. Littorines,
green algae on upper zone.

Focus, Mussels, mud in lower zone
BARNACLES DENSE IN PATCHES
DENSE POLYCHAETE WORMS,
ISOPODS

A6 - SOME AS, but
less anaerobic muds
in portion. This also
extends higher in the
intertidal -

CT ON BEDROCK
SPARSE BARNACLES, LIMPETS,
LITTORINE SNAILS.

BOUNDARY OF
ANAEROBIC SEDIMENT
ZONE

HIGH TIDE LINE

FOCUS

GREEN ALGAE

BARNACLES

CT

A4

A5

A6

A7

1991 MAYSAP EVALUATION

SEGMENT: PD 004 **SUB:** B **REGION:** KEN **SURVEY DATE:** 5/21/91

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 _____

WATGAT FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT PD-004 SUBDIVISION B DATE 5/21/91

ADEC

NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☒ NTR

7/1 treatment recommended.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/21/91

☒ NTR

No significant oiling found.

LANDMANAGER

NAME Jeff Johnson OF ADNR SIGNATURE [Signature]

☒ NTR

Small amounts of oil, widely scattered. Additional activity/disturbance not justified for so little oil.

USCG/NOAA

NAME [Signature] SIGNATURE [Signature]

☒ NTR

Small, scattered patches of oil located and were picked up by VECO.

[Signature]

SEGMENT 2D, 234

SUBDIVISION 15

DATE May 12 / 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 571 m US____m

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

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE PHOTO ROLL # MAYSAP- 41 (10) - FRAMES 11

2

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

REVIEWED: MC 6/2/91
raised 5/31/91 EG

Orig SKETCH MAP

PD-004-B

JM SEMPELS

MAY 21 / 91

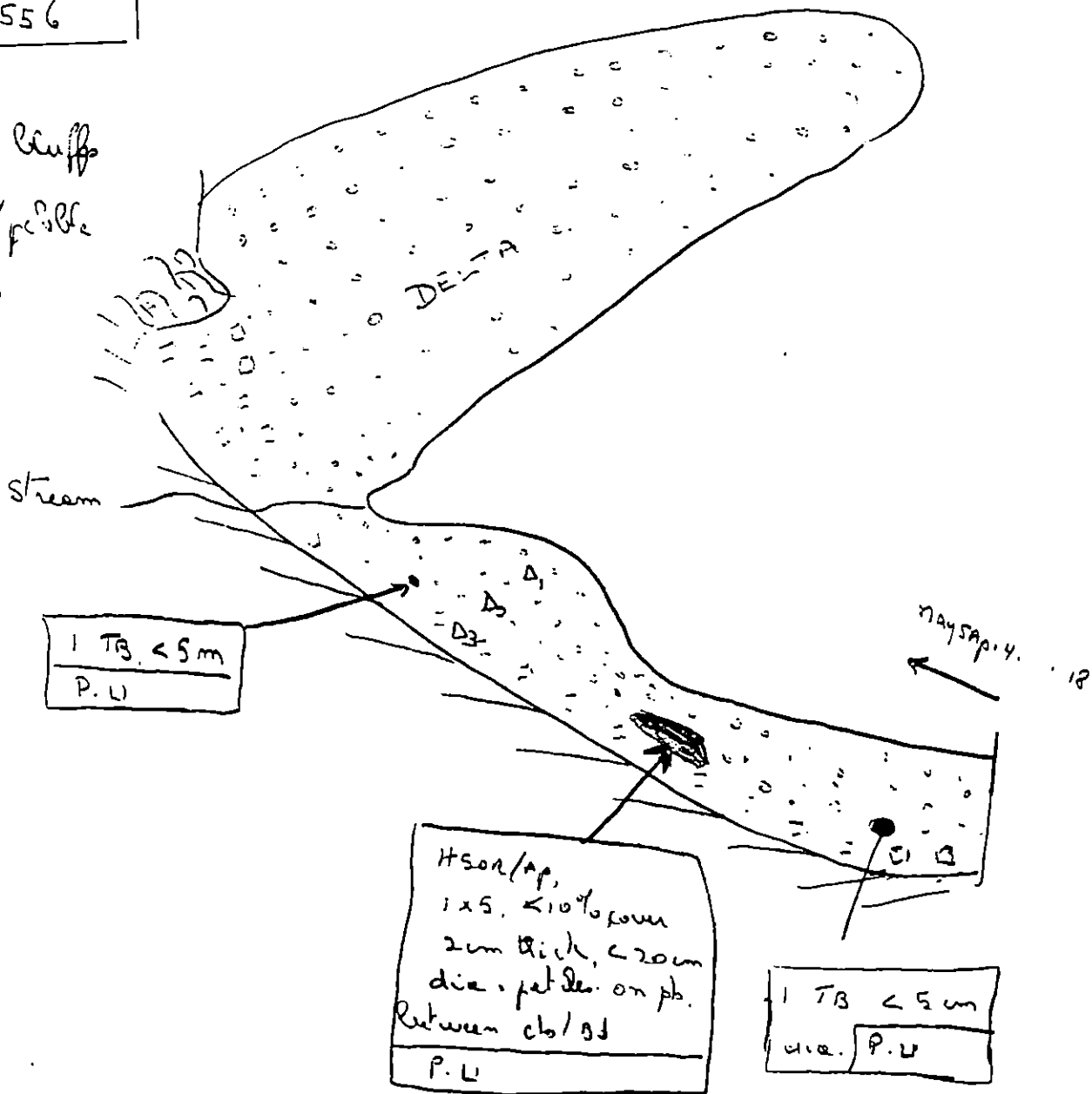
1540-1556

Legend

Brick Bluff

Cobble / pebble

pebble / cb

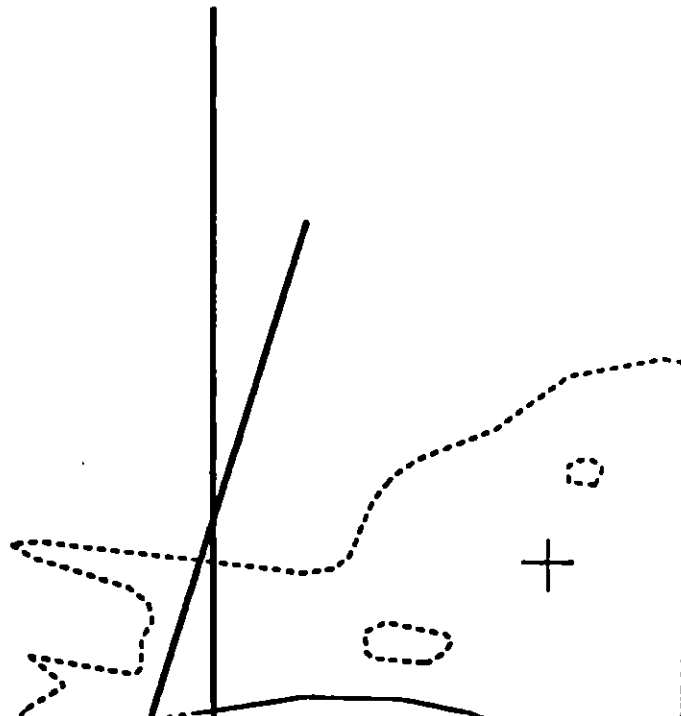
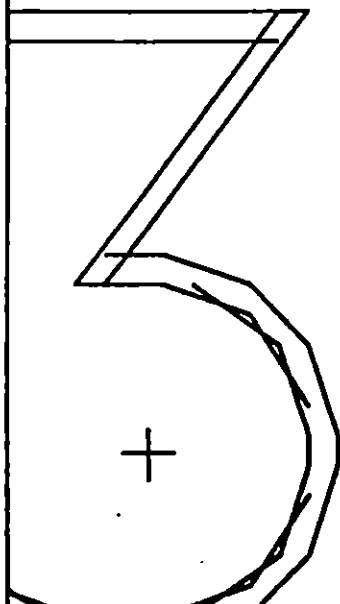


Reviewed: MC 6/2/91

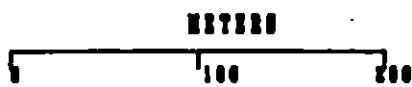
revised 5/31/91 KL



Location Map



PD004 B



AK State Plane Zone 4
NAD83

Subdivision Field Map

Map Key: KEMPD004B11

Name: for Sample

Date: MAY 31/91

+

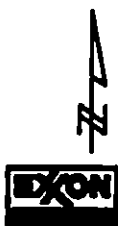
A

B

Location Map

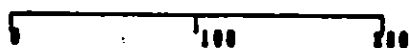
+

+



PD004 B

METERS



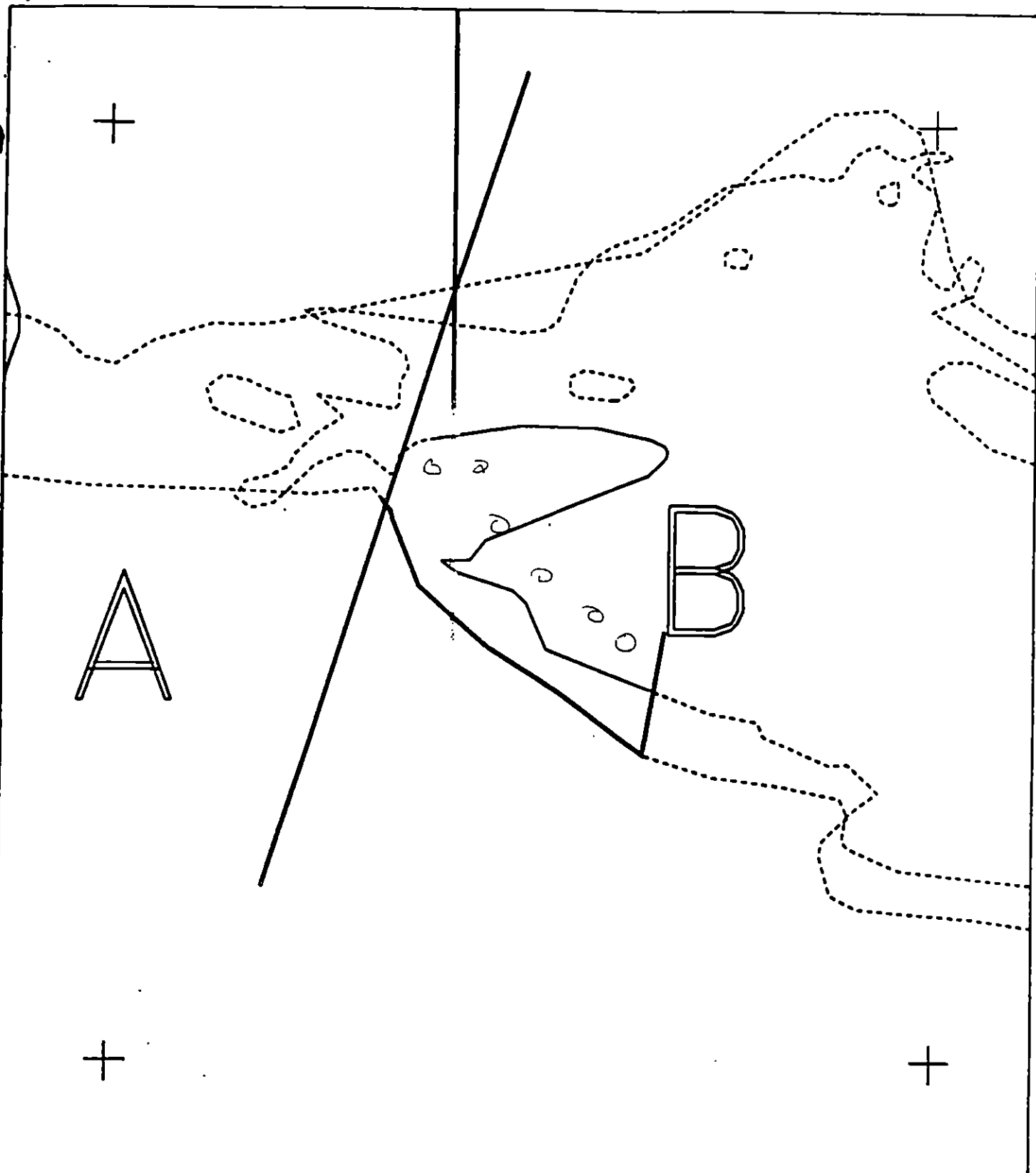
AK State Platte Zone 4
sp0004b2

Subdivision Field Map

Map Key: KENPD004B2

Name: Jay Sengul

Date: MAY 21/91



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

PD004 B
 ADEC Subsegment Length: 271m
 METERS
 0 100 200
 AK State Plane Zone 4
 apd004b

Subdivision Field Map
 Map Key: KENPD004B
 Name: J.M. Sempels
 Date: 21 May 1991
 Date Entered:



Reviewed: MC 6/2/91
 revised 5/21/91 KCG

TEAM #	4	DATE/TIME	May 21, 1991 1541 - 1603
SEGMENT #	P0004	TIDAL HEIGHT (Range)	+1.8 to +2.3
SUBDIVISION	B	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil-Related Comments

A few small patches of oil were located on the cobble sediments of the beach and picked up. At this location there were moderately abundant Ulva, sparse barnacles, and little else.

General Comments

P0004-B is a short subdivision located at the innermost section of Port Dick, adjacent to a wide delta with clams and eel grass. Biota at this subdivision, other than the clam bed, are sparse. Fucus is present in the middle to low zone, with moderate densities of barnacles above, and moderately dense filamentous algae over the middle zone cobble.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	Salmon Fry
Seabirds			
Waterfowl			
Gulls/Kittiwakes	3	41	
Shorebirds	1	3	
Corvids	1	7	
Other Birds	1	1	

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

-----Shoreline subdivision map showing important biological features attached.

Common Species on PD004-B

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta - Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Endocladia muricata, Halosaccion glandiforme, Mastocarpus sp., Membranoptera dimorpha, Odonthalia floccosa, Palmeria 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?
2. Anemones - Anthopleura artemesia, Epiactis ritteri, Urticina crassicornis,
3. Hydroids - Sertulariidae,
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaete Worms
Nereidae - Nereis spp.
Serpulidae - Serpula sp.
Spiorbidae - Spiorobis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii
10. Crustaceans
a. Amphipods - Traskorchestia traskiana
b. Barnacles - Balanus glandula, Semibalanus cariosus
c. Crabs - Paguridae (hermit crabs),
d. Isopods - Cirrana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
11. Mollusca
a. Chitons - Mopalia mucosa, Tonicella lineata,
b. Snails - Gastropods
Amphissa columbiana, Littorina sp., Natica clausa, Nucella lamellosa, N. lima, Searlesia dira, Tachyrhynchus sp.
c. Limpets - Lottia persona, L. limatula, Tectura fenestrata, T. persona, T. scutum, Siphonaria thersites
e. Bivalves - Chlamys hastata, Clinocardium sp., C. nuttalli, Hiatella arctica, Macoma balthica, Macoma nasuta, Modiolus modiolus, Mya arenaria (soft-shell clam), Mytilus edulis, Pododesmus cepio, Prototheca staminea, Saxidomus giganteus
12. Echinoderms
b. Sea stars - Dermasterias imbricata, Evasterias truscheli, Leptasterias hexactis, Pycnopoda helianthoides,
c. Sea Cucumbers - Holothurians - Eupentacta sp.
d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Schizoporella sp.
15. Fishes
Cottidae
Stichaeidae - Xiphister atropurpureus, X. mucosus

- III. Birds - Bald Eagle (1), Glaucous-winged Gull (20), Crow (7), Shorebird (3), Bonaparte's Gull (20), Herring Gull (1), Magpie (1)

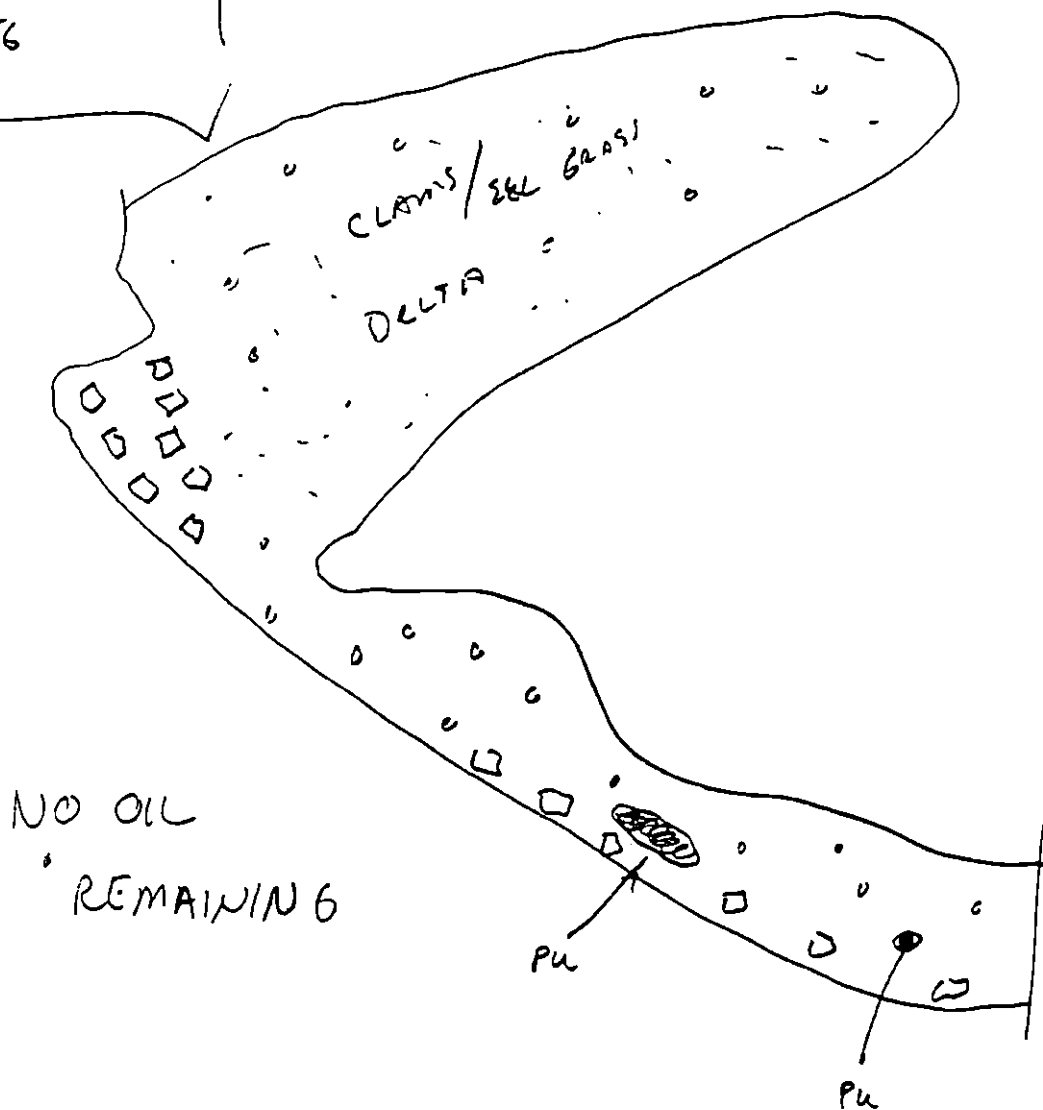
BIO SKETCH MAP

P D 004-B

J P BARRY

21 MAY 91

1540-1556



ASAP TAG REVIEW SHEET

Segment: PD04

Subd: A

Site: 1

Date

PRE-Review 11 AUG 90

Priority For Addressing In 1990

 HIGH

 MEDIUM

X LOW

 NTR

X N/A

Treatment

Recommended:

BIO, → SR

MP

2f

Tarmy mouse

Priority Site For Reassessment In 1991

YES

NO

✓

CG

YES

NO

✓

ADEC

YES

NO

✓

EXXON

YES

NO

✓

LAND MGR

TAG 13 AUG 90

Manual Pickup Mouse Patches
& BIO (INAPOL)

Medium
Priority

WORK PLAN MODIFICATION RECOMMENDATION

ASAP

SEGMENT PD-04 SUBDIVISION A DATED 8/3/90

MODIFICATION CLASS I X CLASS II CLASS III

1. REASON FOR MODIFICATION

surface OR, mousse, asphalt pavement, cover, coat on boulders and cobbles still remain at this site. With the degree of oiling present more work should be done at this site.

2. SUGGESTED ADJUSTMENT TO WORK PLAN

Header flood along with warm-water wash. Along with manual removal and bio remediation (customblen).

3. TIMING ISSUES

Work should be completed by September 15, 1990.

ADEC John R. Reed

EXXON Keith Miller don not agree

USCG John Miller

LAND MANAGER John Miller

* I DO NOT CONCUR, SUBDIVISION IS SCHEDULED FOR BIO (RC)
S.A.G. I FEEL MANUAL REMOVAL BEFORE BIO IS WARRANTED

ADNR (If field rep is on scene)

**TAG
FOLDER**

FIELD SHORELINE COMMENT SHEET

SEGMENT AS / PD04 SUBDIVISION: A SITE: 1 DATE 3 Aug 1990

SCG

NAME SCHULTZ GREGORY J SIGNATURE *Gregory J. Schultz*

☒ YES

☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

SOR, Patchy scattered tarmat (FRYABLE)

ADEC

NAME JOHN R. REED SIGNATURE *John R. Reed*

☒ YES

☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

surface OK, scattered mousse, patchy tarmat, and cover on boulders and cobbles still remain at this site. This site could use some manual removal 1990. Needs Reassessment spring 1991.

LAND MANAGER

NAME David K. Kenay ADNR SIGNATURE *David K. Kenay*

☒ YES

☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

Observed scattered mousse, tarmats and cover on boulders and cobbles in this subdivision. Some mousse appears to be coalescing and pooling in depressions after treatment and granular applied this summer. Subdivision needs additional treatment to remove mousse and CP sediment in 1990 and needs reassessment in 1991.

EXXON

NAME Keith Miles SIGNATURE *Keith Miles*

☒ YES

☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

Area still oiled and is producing light silver sheen.

ASAP SHORELINE OILING SUMMARY

TEAM NO. 04 EXXON Keith Miles SEGMENT AS/ PD-4
 OG Rich Marty USGS/USCA G. Schultz SUBDIVISION A
 ADEC Randy Reed LAND REP Dave Kenagy DNR TOTAL NO. SITES 1
 DATE 03 Aug 1990 TIME 08:15 to 08:50 TIDE LEVEL 2.5' to 3.5'
 TOTAL EST LENGTH OF SHORELINE SURVEYED: 40 m
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WEATHER: ☐ Sun ☒ Clouds ☒ Fog ☒ Rain ☐ Snow
 OIL CATEGORY LENGTH: W — m M 40 m N — m VL — m NO — m US — m

SURFACE OIL

SITE 1

SITE 2

SITE 3

CHARACTER	DISTRIBUTION				OILED ZONES			
	/C	/B	/P	/S	SU	UI	MI	LI
ASPHALT			I			I	I	
S.O.R.			X			X	X	
POOLED								
COVER		X				X	X	
COAT								
STAIN								
MOUSSE				X		X	X	
PATTIES/T.B.								
FILM								
NO OIL					X			
EST. SITE LENGTH					40m			

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

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

SUBSURFACE OIL

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

Photographs:

Roll No. —

Frames —

COMMENTS Some Sheen coming off. Agency people say that the remainder of segment is less oiled.

OG Sawyer
 SEGMENT PD4
 SUBDIVISION A
 DATE April 27 90

CHECKLIST

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

LEGEND

- 1 Δ No Subsurface Oil
- 2 Δ Subsurface Oil
- CT/C Constructed Distribution
- CT/B Broken Distribution
- CT/P Patchy Distribution
- CT/S Spotted Distribution
- Oil Vegetation
- Photo location, direction, and number

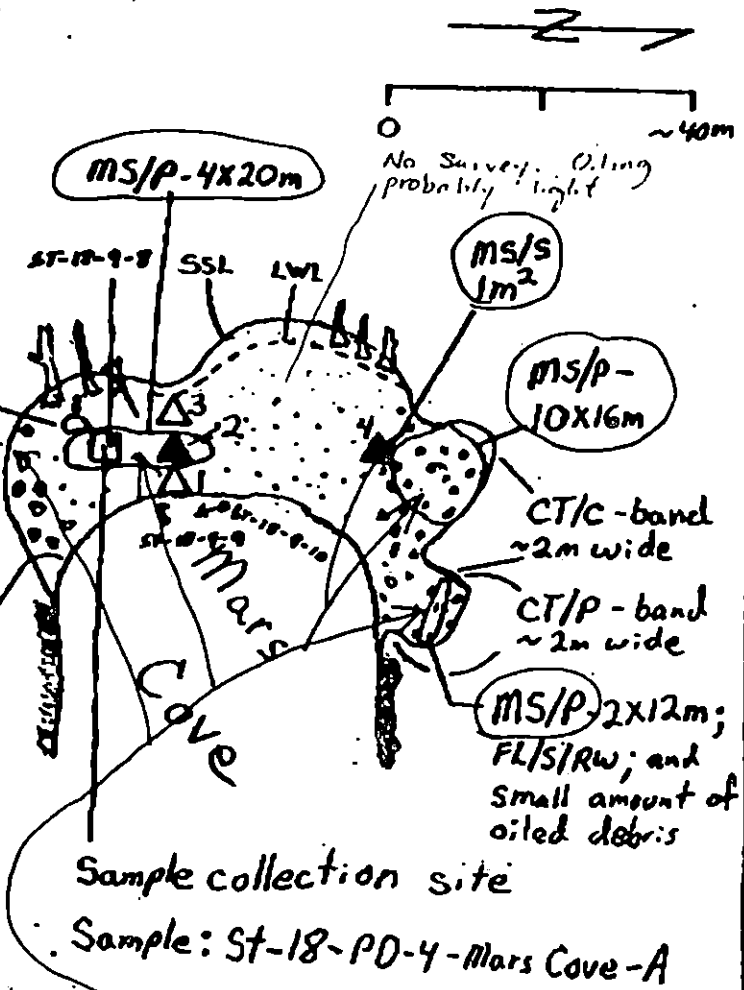
CT/S in protected sites

MS/S - 2m²
 FI/S/RW in pooled water

-3.0m tide level

Bedrock cliffs

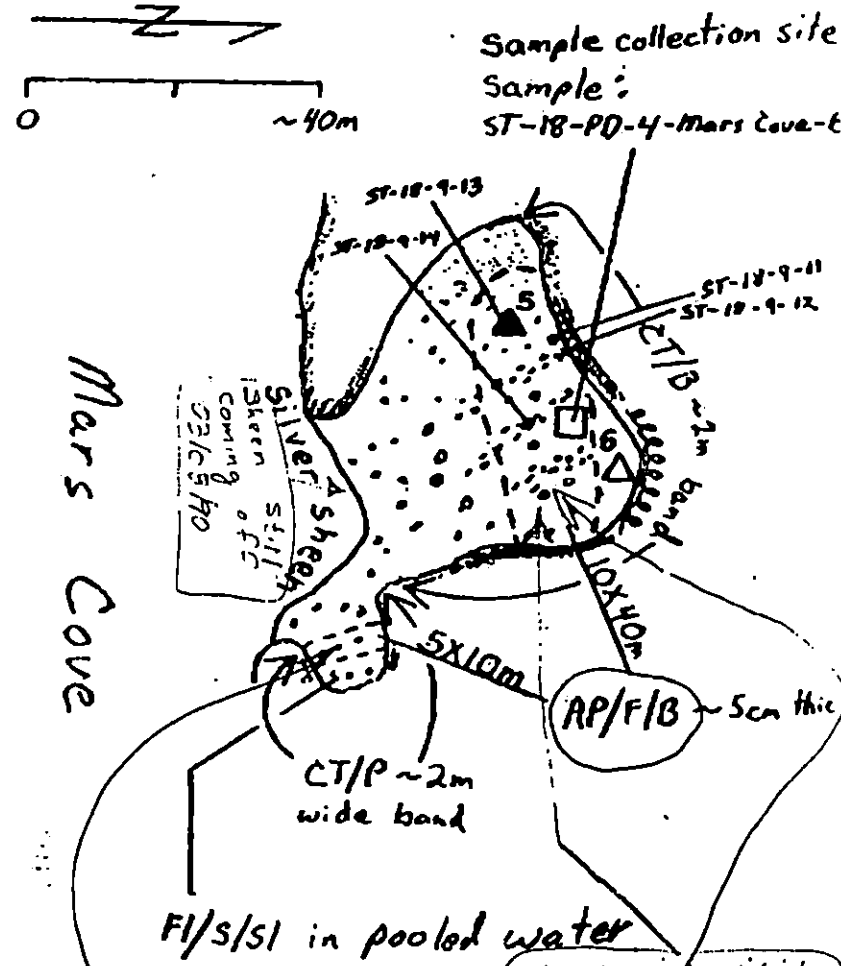
Sketch Map B NOT SURVEYED (enlargement)



Sample collection site
 Sample: St-18-PD-4-Mars Cove-A

ONLY SKETCH MAPS - B+C PROVIDED

Sketch Map C (enlargement)



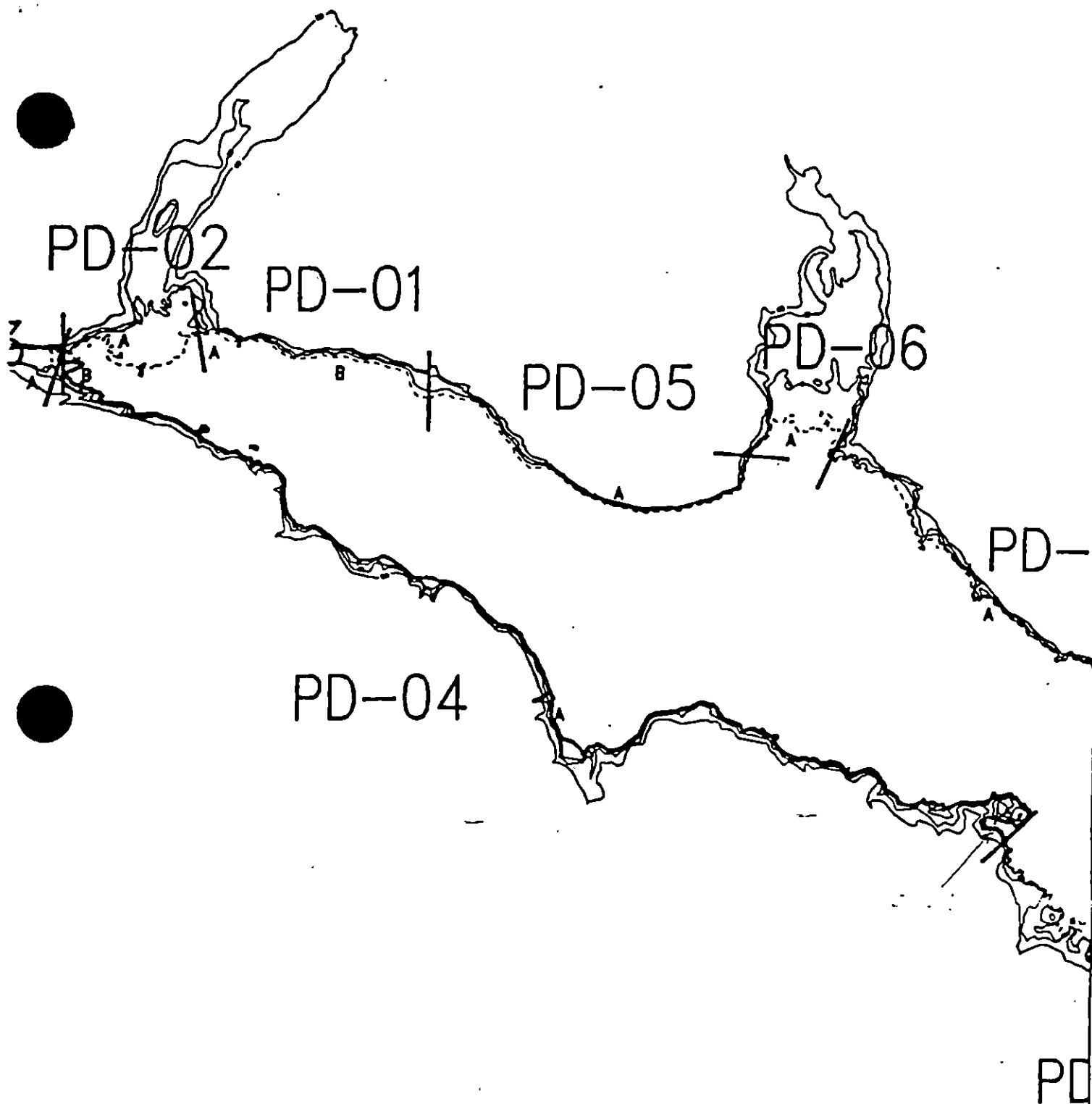
FI/S/Sl in pooled water

MANUALLY REMOVE TARMATS & MOUSSE PATTIES

itchy interstitial tar mats
 band in tide cover 3/10/90
 Some SOR
 Mousse patties
 Scattered am
 Revision 03/04/90

See Sketch Map A

Oil Character Length (m): AP 40m PO CV CT 40m ST MS PT TB FL RD



SEGMENT PD-4

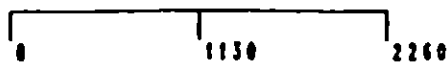
Segment Location Map

Map Key: KENPD-4

July 18, 1990.

1:44483

METERS



ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT PD-4 SUBDIVISION A (1 of 1)

WORK WINDOW	
Manual Pickup Tarmat Removal	OPEN
Bioremediation and Spot Washing Less Than 100m From Stream	WORK PRIOR TO 6/25 (ADF&G MONITOR REQ.)
Bioremediation and Spot Washing More Than 100m From Stream	WORK PRIOR TO 6/25

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B Salmon Stream

ADF&G catalogued anadromous stream (242-42-10460) is in Subdivision A. This subdivision is closed to bioremediation and spot washing less than 100m from stream 7/10 to 8/31. Before 7/10, bioremediation and spot washing are permitted less than 100m from stream with on-site ADF&G monitor or ADEC alternate present. No constraint to bioremediation and spot washing more than 100m from stream. No constraint to manual pickup and tarmat removal.

1J Purse Seine Area

Closed to bioremediation after 6/25.

5T Bald Eagle Nest

NO CONSTRAINT. USFWS 6/1/90 map indicates no active nest within 400m of Subdivision A work site.

OTHER ECOLOGICAL CONSIDERATIONS

No disturbance to stream bed or banks. Restrict boat and air traffic to essential minimum after 6/25. No flushing of pollutants or sediments into stream drainage; do not allow Inpol to enter stream flow. On-site examination and consultation by ADF&G monitor is required prior to bioremediation and spot washing in order to authorize a setback distance from the stream during chemical application; if ADF&G monitor's presence is impossible, authorization may be given by the ADEC monitor. Avoid any unnecessary disturbance or damage to uncoiled biota and substrate.

FOSC

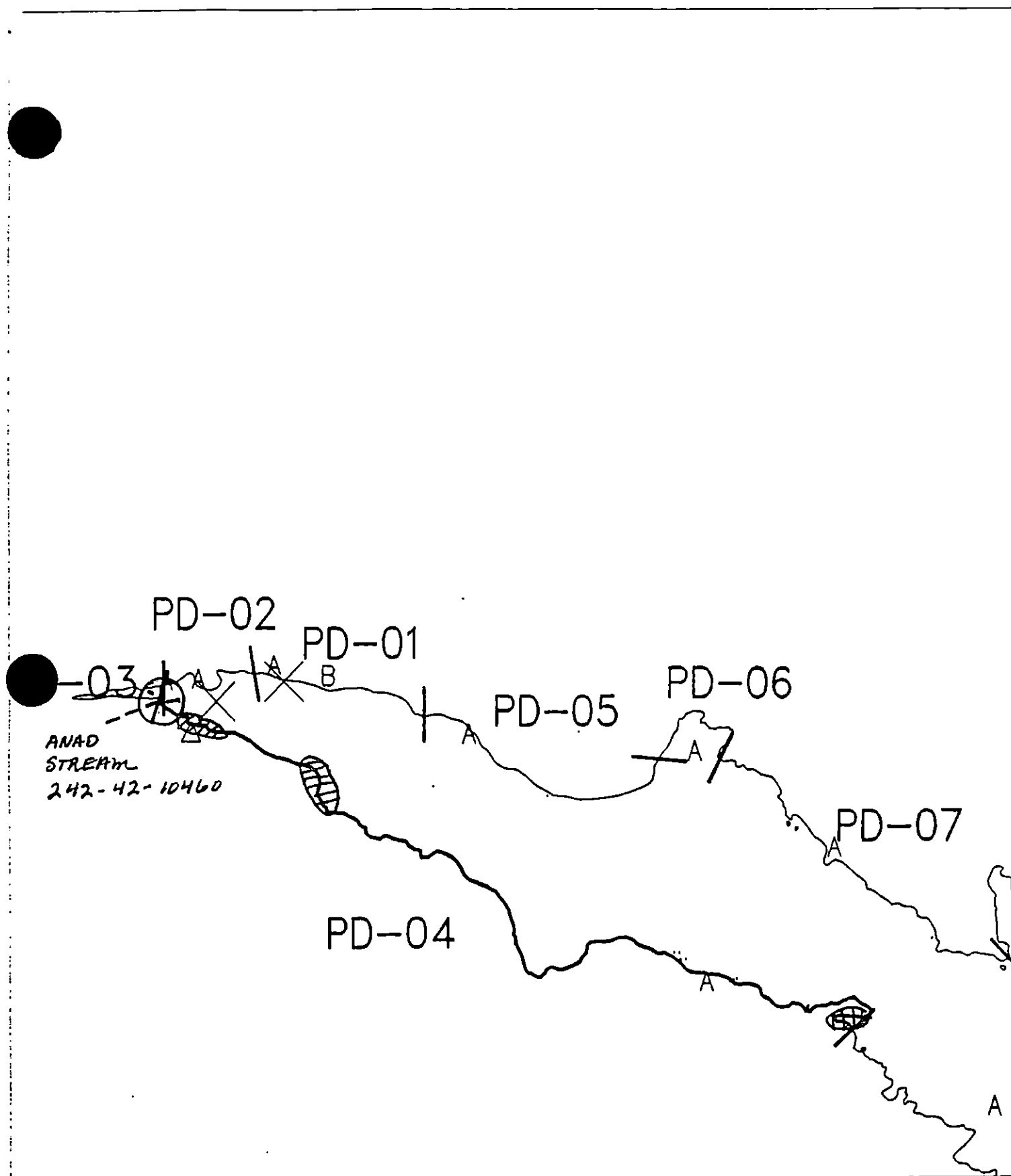
Date

6-19-90

Prepared by

Date

6/16/90



EXXON
 Exxon Company, USA
 Map Key: KEN-PD-4
 June 10, 1990



ECOLOGY MAP
 SEGMENT PD-4
 SUBDIVISION A (1 of 1)
 METERS
 0 1448 2897

- | | |
|---|---------------------|
| ★ | Seabird Colony |
| ▲ | Active Eagle Nest |
| △ | Inactive Eagle Nest |
- 1 inch = 4752 feet

SHORELINE EVALUATION

SEGMENT ST/ PD-04 SUBDIVISION A (1 OF 1) DATE 4/27/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 242-42-10460 plus two possible uncatalogued anadromous streams (see map).

- 1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
- 1B Salmon stream mouth - spawning (7/10 to 8/31)
- 1J Purse seine area (6/25 to 8/31)
- 4GA Alaska State Wilderness Park
- 5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
- 6NN Recreation: Sportfishing

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: [Signature] DATE: 5/1/90

OILING CATEGORIZATION:

Wide 53 m: Medium 398 m: Narrow 192 m: V.Light 563 m: No Oil 10100 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> </u> Manual Pickup | <u> </u> Absorbents (pads, rolls, etc) |
| <u>X</u> Bioremediation | <u>X</u> Spot Washing: <u>X</u> Wands |
| <u>X</u> Tarmat Removal | <u> </u> Beach Cleaner |
| | <u> </u> Other (see comments) |

COMMENTS: Recommended treatment includes manual removal of tarmats and mousse patties in areas indicated on sketch maps. Work should be conducted between 6/1 and 7/10 with approval of USFWS regarding eagle nest constraints.

SEE CONSTRAINTS ADDENDUM DATED 6/16/90. JP

TAG COMMENTS: MANUAL PICKUP - FOLLOWED BY SPOT WASH AND
BIOREMEDIATION

TAG APPROVAL DATE: 5/8/90

ADEC ART WELCH Art Welch

EXXON ANDY BART Andy Bart

NOAA GARY PETER Gary Peter

USCG G.A. BEITER G.A. Beiter

FOSC: [Signature] DATE: 5-12-90

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT PD-04 SUBDIVISION B (2 of 2)

WORK WINDOW	
Manual Pickup	OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B	Salmon Stream	ADF&G catalogued anadromous stream is more than 100m from work site. No constraint to manual pickup.
1J	Purse Seine Area	No constraint to manual pickup.
5T	Bald Eagle Nest	NO CONSTRAINT. USFWS 6/1/90 map indicates no active nest within 400m of Subdivision B work site.

OTHER ECOLOGICAL CONSIDERATIONS

Restrict boat and air traffic to essential minimum after 7/20. Avoid any unnecessary disturbance or damage to unrolled biota and substrate.

FOSC

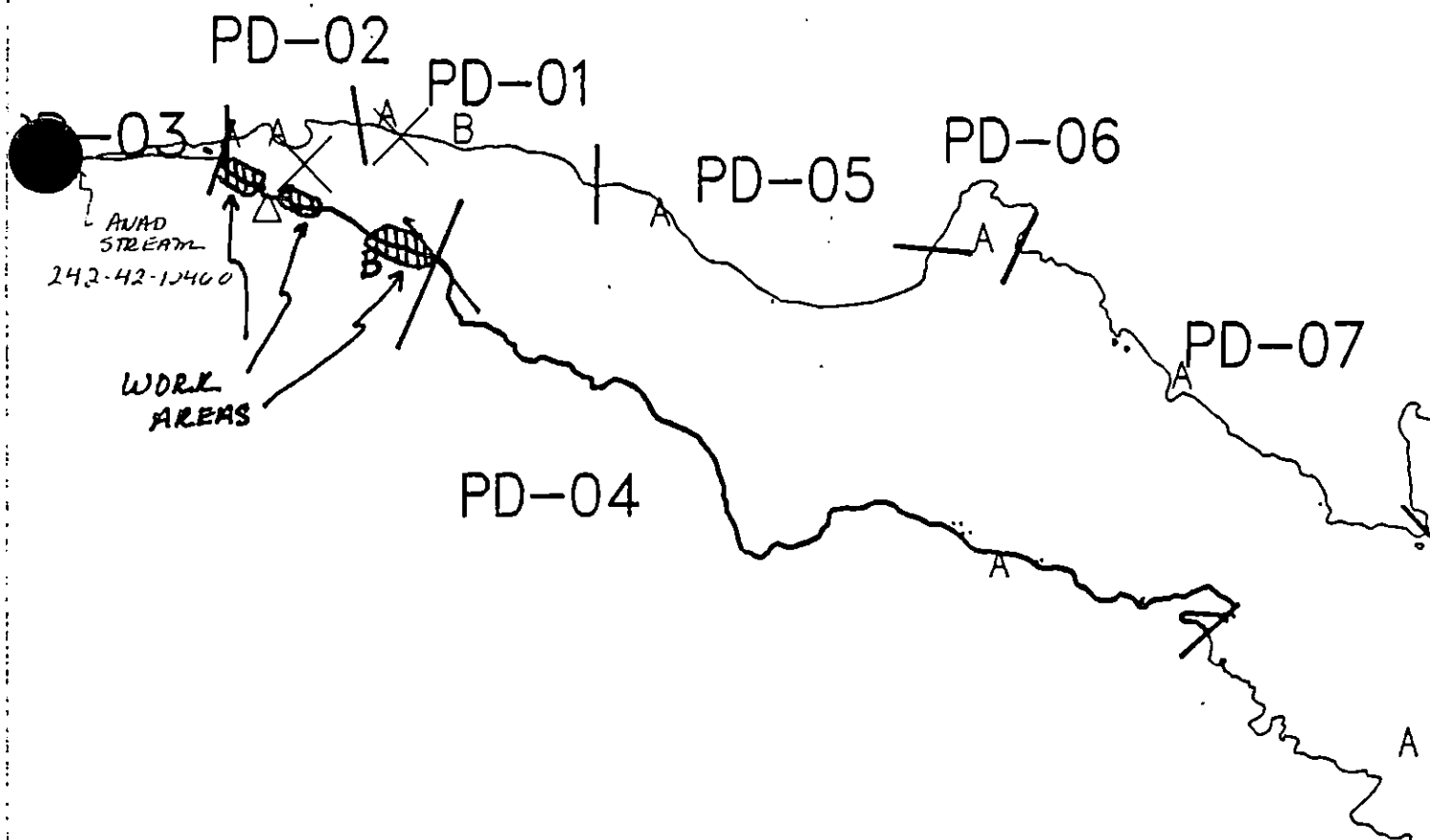
Date

6-25-90

Prepared by

Date

6/25/90



Exxon Company, USA
Map Key: KEN-PD-4
June 10, 1990



ECOLOGY MAP
SEGMENT PD-4
SUBDIVISION B (2 of 2)
METERS
0 1448 2897

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

1 inch = 4752 feet

SHORELINE EVALUATION

SEGMENT ST/ PD-004 SUBDIVISION B (2 OF 2) DATE 6/2/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1J Purse seine area (7/20 to 9/30)
4GA Alaska State Wilderness Park
6NN Recreation: Sportfishing
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact Exxon's Cultural Resource Program immediately (564-3274 (Anchorage) or 229-1508 (24 hrs.)).

SHPO SIGNATURE: Charles E. H. H.

DATE: June 19, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V. Light 271 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: <u> </u> Wands
☐ Tarmat Removal	☐ Beach Cleaner
	☐ Other (see comments)

COMMENTS: Recommended treatment is manual pick up of mousse as annotated on attached sketch map.

SEE CONSTRAINTS ADDENDUM DATED 6/25/90

TAG COMMENTS:

TAG APPROVAL DATE: 6-16-90

ADEC

NDA

FOSC

Date 6-22-90

REGION: KENAI

SEGMENT: ST/PD-05

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ PD-05 SUBDIVISION A (1 OF 1) DATE 4/26/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1J Purse seine area (6/25 to 8/31)

4GA Alaska State Wilderness Park

6NN Recreation: Sportfishing

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 90 m: V.Light 300 m: No Oil 2828 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) manual pickup of tarmat and mousse followed by bioremediation in areas indicated on sketch map. Work should be conducted before 6/25 based on fishing constraints.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

- 1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
 1B Salmon stream mouth - spawning (7/10 to 8/31)
 No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream without authorization from ADF&G. No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G. Treatment which is not intrusive and which will not affect nearshore oil or toxicity levels, such as manual removal, can probably proceed without adherence to time constraints. In any case, contact ADF&G Habitat Division prior to treatment for consultation and/or permit application.
 AGENCY CONTACT PERSON: ADF&G John Morison 267-2324
- 1C Salmon fry nursery area (4/31 to 7/31)
 No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to July 31 unless authorized by ADF&G. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G prior to treatment for confirmation and advice.
 AGENCY CONTACT PERSON: ADF&G Larry Peltz 424-3214
- 1D Esther Hatchery release (4/15 to 6/15)
 1E Main Bay Hatchery release (4/20 to 6/15)
 1F Sawmill Bay Hatchery release (4/15 to 6/1)
 1G Cannery Creek Hatchery release (4/21 to 6/1)
 1H Remote release site
 No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G and/or PWS Aquaculture Association. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G or PWS Aquaculture Association for confirmation and authorization.
 AGENCY CONTACT PERSON: 1E ADF&G Larry Peltz 424-3214
 1D 1F 1G PWS Aquaculture Association John McMillan or Bruce Suzumoto 424-7511
- 1I Gill net area (6/7 to 8/31)
 1J Purse seine area (7/20 to 9/30)
 1K Purse seine hook-off (7/20 to 9/30)
 1L Set net sites (6/11 to 7/25)
 Contact ADF&G for specific dates, locations and constraints. Restrict boat and air traffic to essential minimum. When set net sites are present (1L) restrict beach operations to essential minimum as authorized by ADF&G. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G James Brady 424-3212
- 2M Herring spawning (4/1 to 6/15)
 Contact ADF&G for confirmation - dates and locations may vary. Restrict boat traffic to essential minimum. Avoid damage to 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
- 30, 3Q Harbor seal and sea lion pupping (5/15 to 7/1)
 Harbor seal and sea lion molting (8/15 to 9/15)
 Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts. No application of Inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31). Contact ADF&G and USFWS prior to treatment for confirmation.
 AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 586-7235
 ADF&G Don Calkins 267-2403
- 5R Seabird colony (5/1 to 9/1)
 Restrict air and boat traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from colony. Contact USFWS prior to treatment.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 5S Shorebird/waterfowl concentration (4/1 to 5/15)
 Restrict all activity to essential minimum, especially air traffic. Contact USFWS and ADF&G for confirmation.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
 ADF&G Tom Roth 267-2206
- 5T All Bald Eagle nests (3/1 to 6/1)
 Active Bald Eagle nests (3/1 to 9/1)
 Restrict air traffic and all disturbance to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 6U Upland sites: Tent sites (6/1 to 9/15)
 6V Anchorage (6/1 to 9/15)
 6W Forest Service cabins (6/1 to 9/15)
 6X Lodge (6/1 to 9/15)
 6Y Special use destination
 6VW Sport Fishing
 7Z Subsistence area: Salmon harvesting (5/1 to 9/30)
 7HH Finfish harvesting
 7II 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/ PD005

SUBDIVISION: A

DATE 4/26/1990

~~NOAA~~

~~USCG~~

NAME

DONALD A. MACDONALD

SIGNATURE

Donald A. MacDonald

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

The segment is mostly clean with splashes of oiling in the central portion of the segment. I have no questions about the SSAT forms; as filled out.

ADEC

NAME

JOHN R. REED

SIGNATURE

John R. Reed

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

Manual removal of mousse patches in this area with shovels will be easy. Some were picked up as we surveyed. Most of the scattered mousse patches were in the MITZ. I agree with SSAT FORMS.

LAND MANAGER

NAME

SHARIE MATHWEN-TONEY

SIGNATURE

Sharie Mathwen-Toney

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

This segment is within Kachemak Bay State Wilderness Park. I agree with SSAT team data. This area has high recreation and wildlife resource values, good anchorage areas. I recommend manual removal of mousse patties. The area is a high use area with commercial and fishing and sport fisherman.

SHORELINE OILING SUMMARY

REVISION NO. 04/13/90

OG Sawyer NOAA MacDonald SEGMENT STI/PDS
 BIO Carr LAND REP Mathvan-Toney SUBDIVISION A (1 OF 1)
 EXYON Boyer ADEC Reed TIME 1830 to 2000
 NO. 18 TIDE LEVEL +6.0 to +2.5 DATE Apr 126 / 90
 SUBDIVISION LENGTH: 3247 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☐ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 35 % B 35 % C 15 % P 15 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Lang 65 % Hang 0 % Vert 35 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 100 m VL 330 m NO 2817 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	10	15	20	25	SP	BR	OR	OL	OF	NO	TL	LA	SU	U	M	U
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT																
STAIN																
MOUSSE																
PATTIES																
TARBALLS																
NO OIL																

PAVEMENT H 7 sq. m by 3 cm

PATTIES / TARBALLS 0 BAGS

NEAR SHORE SHEEN? NO BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS?

YES ☒ NO ☐

TYPE Asphalt Patches

#BAGS 2

Photographs:

Roll No. ST-18-9

Frames 6-7

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)	Y	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	VO	SP	BR	OR	OL	OF	NO	TL	LA	SU	U	M	U				
1	20																								P-S, G
2	25																								P-S, G
3	20																								P-S, G
4	40																								P-P
5	25																								P-P

COMMENTS PO-5 comprises a rather long (~1.5km) low angle boulder and cobble beach and bedrock cliffs along the eastern part of this section. Little oil was observed in the section and much (most) of the relatively heavy oil accumulation were collected.

REVIEWED _____ DATE _____

OG Sander

SEGMENT ST/ PD 5

SUBDIVISION A

DATE Apr 1 27 90

SKETCH MAP

CHECKLIST

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

LEGEND

1 Δ
Pit - No Subsurface Oil

2 Δ
Pit - Subsurface Oil

$\boxed{\text{CT/C}}$
Continuous Distribution

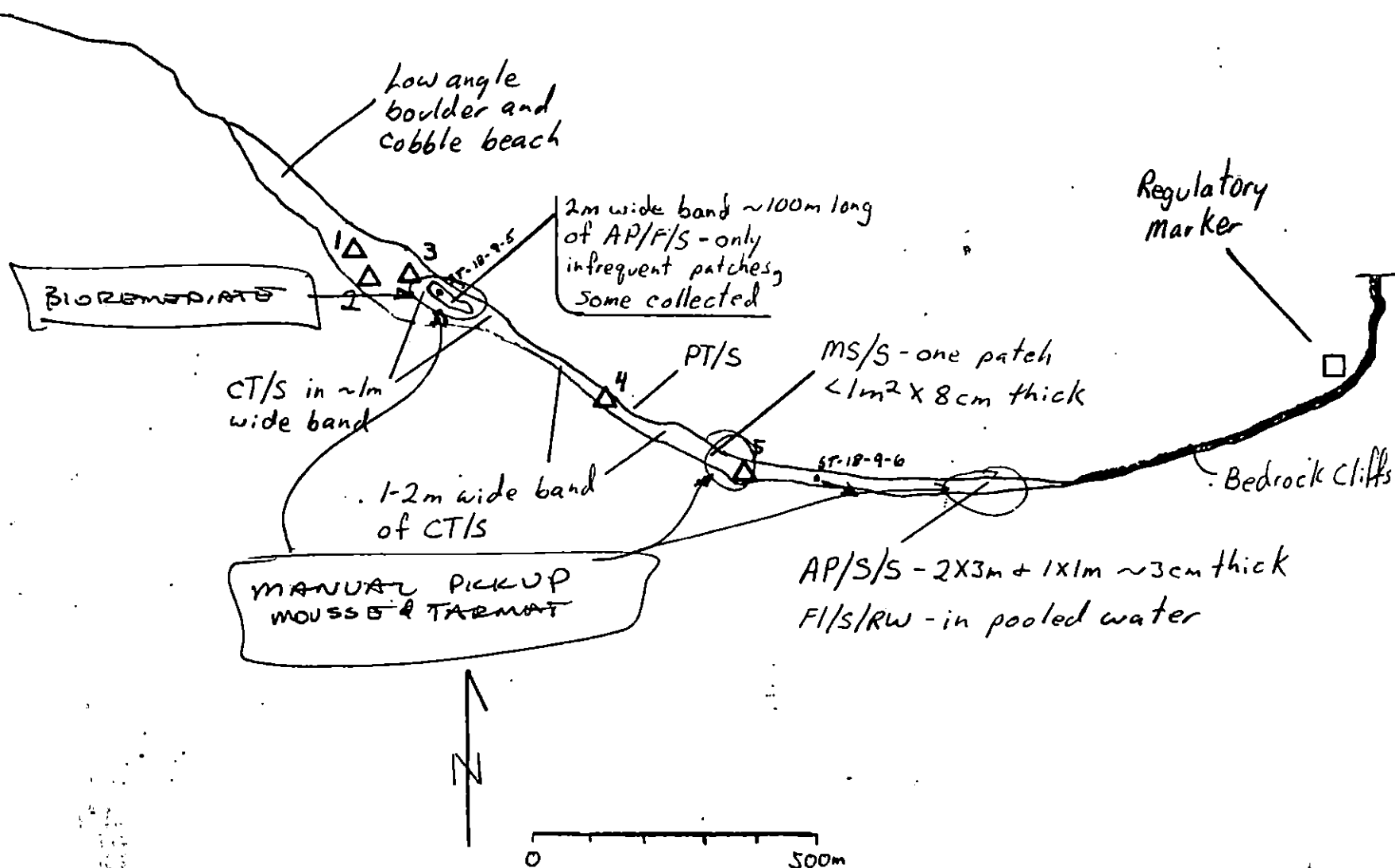
$\boxed{\text{CT/B}}$
Broken Distribution

$\boxed{\text{CT/P}}$
Patchy Distribution

$\boxed{\text{CT/S}}$
Splashed Distribution

lll
Oiled Vegetation

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



SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / PD-5 Subdivision A Date (mo / day / yr) 4-26-90
 Time (24 hr) 1810 Biologist MARK CARR

- (A) Substrate type and % of segments:
 (1) Bedrock 35 (2) Boulder 35 (3) Cobble 15 (4) Pebble 15 (5) Sand 0 (6) Silt 0
- (B) Overall % cover of biota (% of segment): Dense 10 Moderate 10 Low 80
- (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-18-9

Frames 6 & 7

BARNACLES

	Dense			Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
7EDRCK	2	2	2	2	2	2	2	2	2	2	2	2	1L ← NO BEDROCK IN LOW TIDAL
BOULB	2	2	2	2	2	2	2	2	2	2	2	2	2 ← NOT PRESENT IN WATER ZONE
COBB	3	3	3	3	3	3	3	3	3	3	3	3	3 ← NOT PRESENT
PEBB	4	4	4	4	4	4	4	4	4	4	4	4	4 ← NOT PRESENT IN ANY ZONE
	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	
7ED	2	2	2	2	2	2	2	2	2	2	2	2	1L ← NOT PRESENT IN WATER ZONE
BOULB	2	2	2	2	2	2	2	2	2	2	2	2	2 ← NOT PRESENT IN WATER ZONE
COBB	3	3	3	3	3	3	3	3	3	3	3	3	3 ← NOT PRESENT
PEBB	4	4	4	4	4	4	4	4	4	4	4	4	4 ← NOT PRESENT IN WATER ZONE
	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

GASTROPODS

	Dense			Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
7ED	2	2	2	2	2	2	2	2	2	2	2	2	1L ← NO BEDROCK IN LOW TIDAL ZONE
BOULB	2	2	2	2	2	2	2	2	2	2	2	2	2
COBB	3	3	3	3	3	3	3	3	3	3	3	3	3 ← NOT PRESENT
PEBB	4	4	4	4	4	4	4	4	4	4	4	4	4 ← NOT PRESENT IN WATER TIDAL ZONE
	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

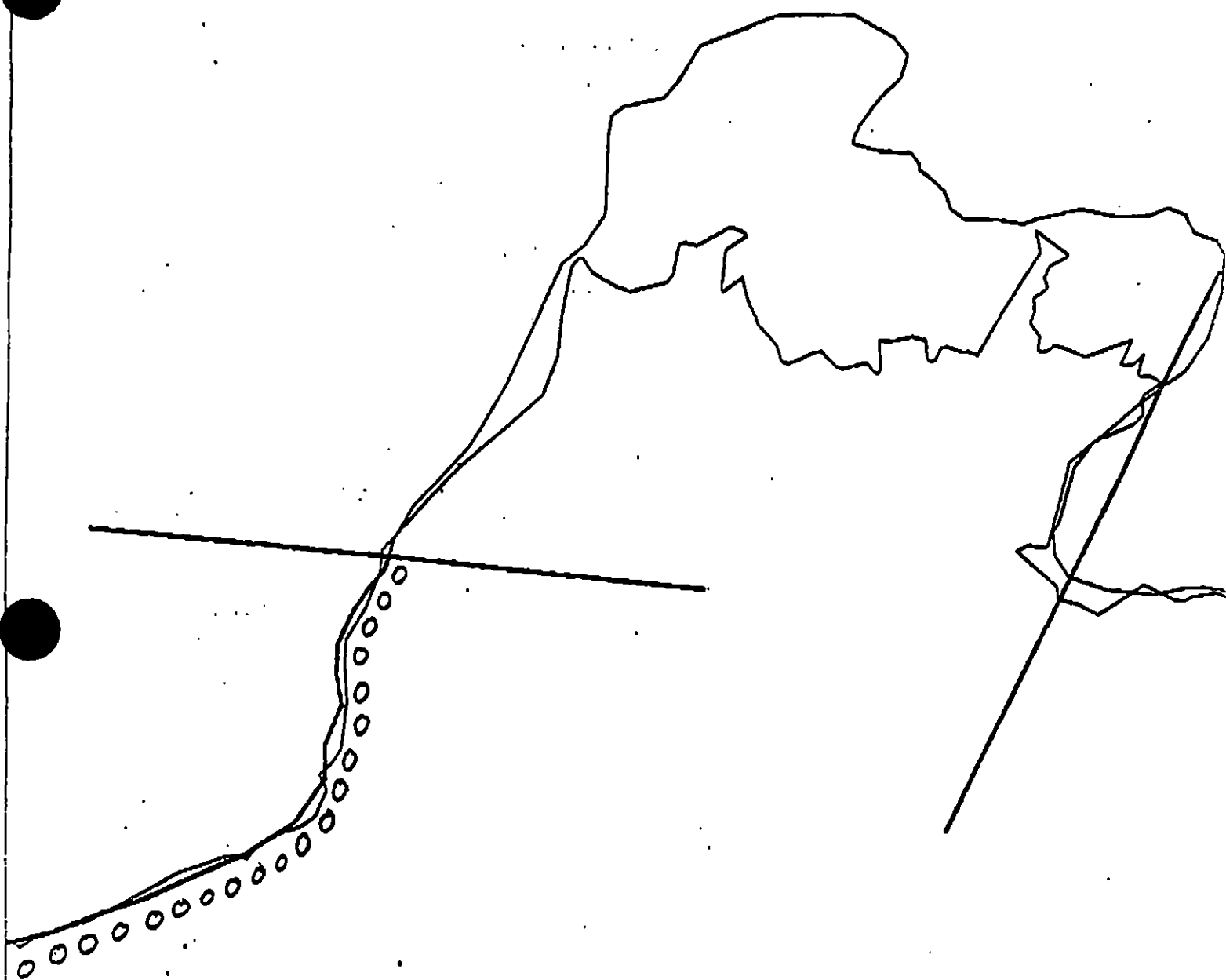
	Dense			Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
7ED	2	2	2	2	2	2	2	2	2	2	2	2	1L ← NOT PRESENT IN WATER ZONE
BOULB	2	2	2	2	2	2	2	2	2	2	2	2	2 ← NO BEDROCK IN LOW TIDAL ZONE
COBB	3	3	3	3	3	3	3	3	3	3	3	3	3 ← NOT PRESENT
PEBB	4	4	4	4	4	4	4	4	4	4	4	4	4 ← NOT PRESENT IN WATER ZONE
	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

Wildlife Observations/ General Comments:

Black bear (1), unio hawk (1), harlequin duck (2), river otter (3), merganser (1).

Ecological Considerations:

1 J (Purse seine area), 1 GA (Alaska State Park/Wilderness), 6 NN (Sport-fishing)
 Dense beds of laminarian algae in shallow subtidal



←KEN
75B

XXXX Wide

//// Medium

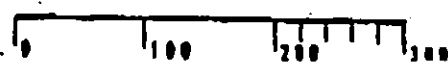
--- Narrow

TTTT Very Light

OOOO

PD-5

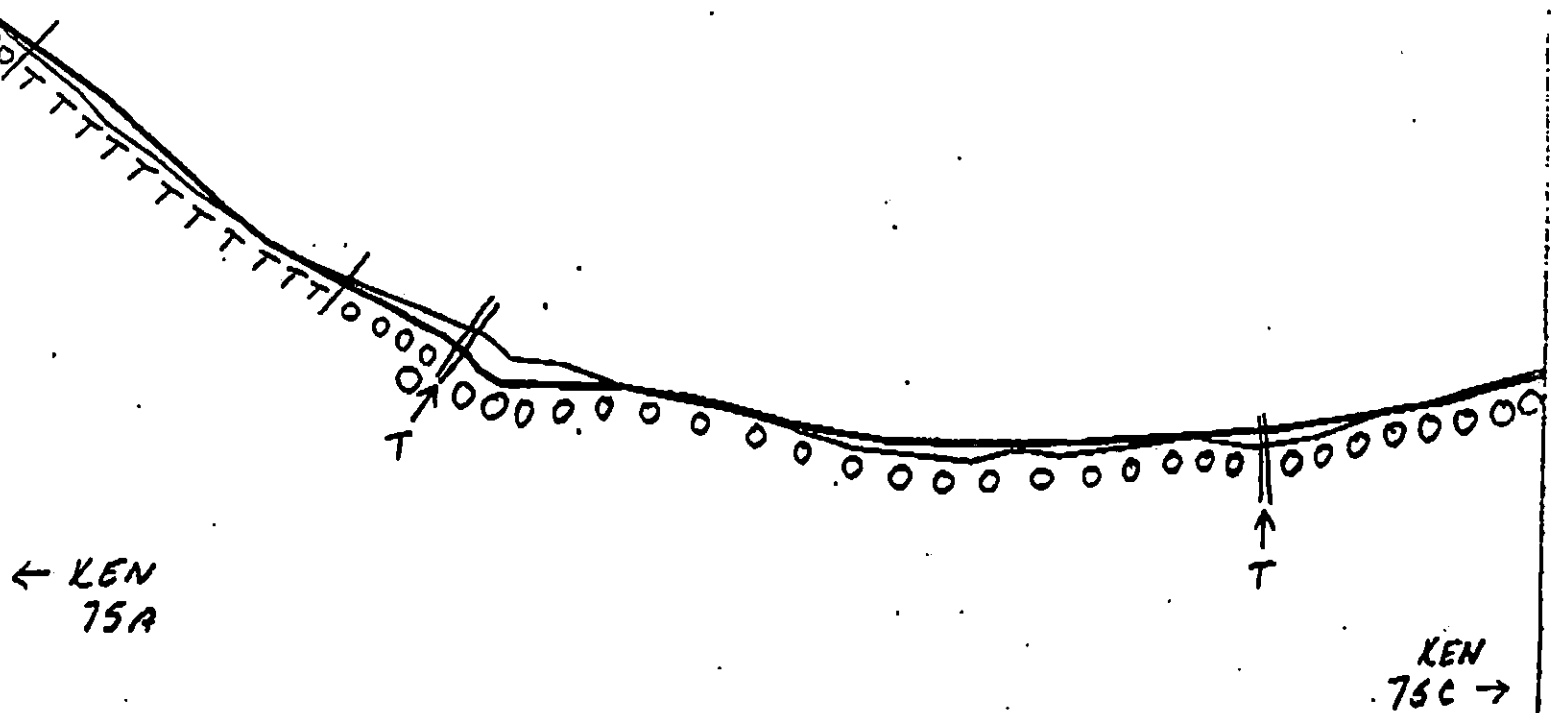
ADEC Segment Length: 3217m



Map Key: KEN-75c

Name: Sawyer

Date: 4-26-90



XX Wide

/// Medium

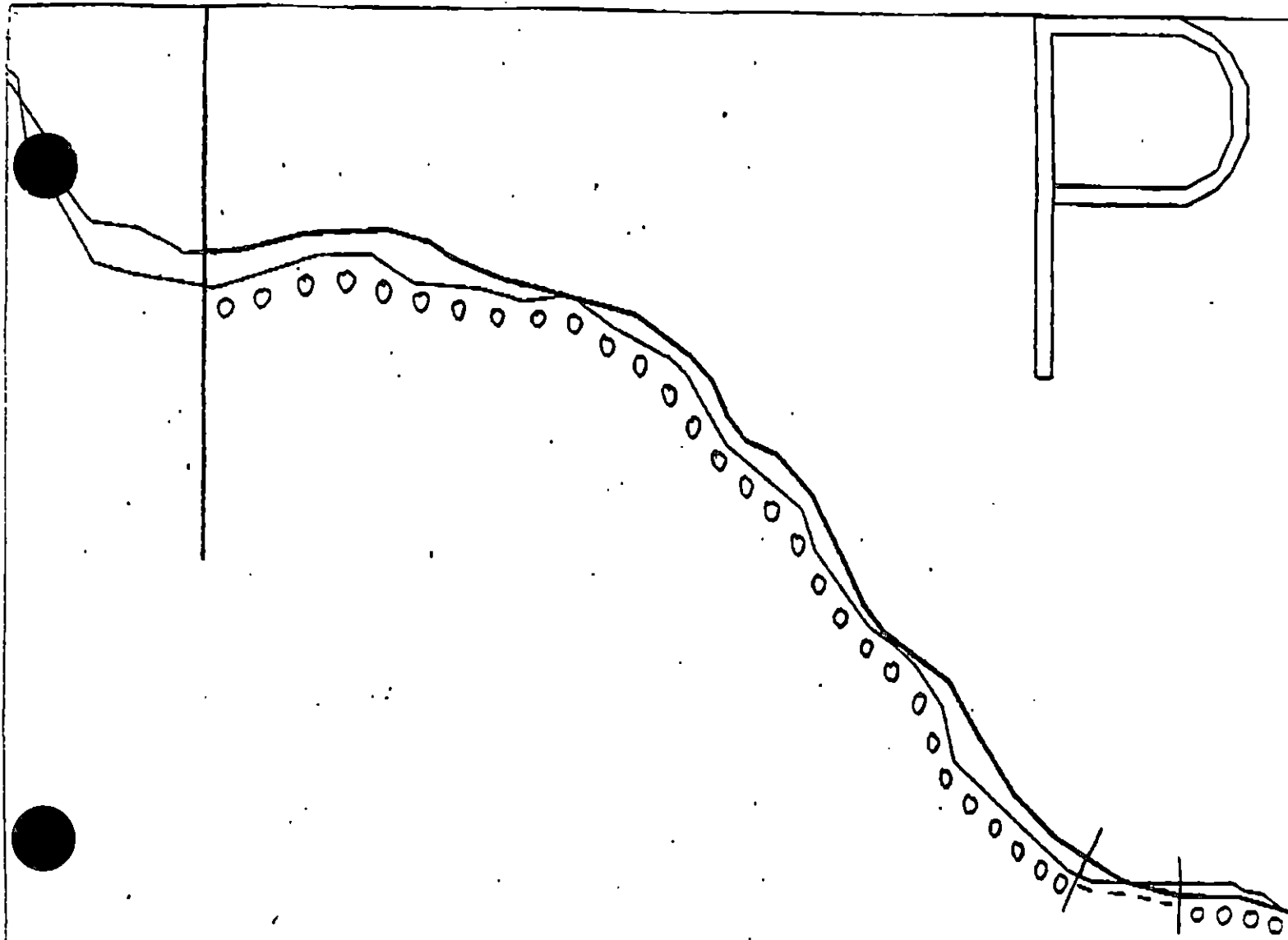
--- Narrow

TTTT Very Light

oooo

Map Key: KEN-75b

Name: SawyerDate: 4-26-90



KEN
75B →

● XXX Wide

PD-5

//// Medium

---- Narrow

TTTT Very Light

ADEC Segment Length: 3217m



Map Key: KEN-75a

Name: Sawyer

Date: 4-26-90

REGION: KENAI

SEGMENT: ST/PD-06

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ PD-06 SUBDIVISION A (1 OF 1) DATE 4/26/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

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

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

1J Purse seine area (6/25 to 8/31)

4GG Alaska State Parks

6NN Recreation: Sportfishing

8AA Sensitive Estuary

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

If 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 1754 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
1B

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

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

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

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

1C

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

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

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

1D

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

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

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

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

1H Remote release site

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

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

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

1I

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

✓ 1J Purse seine area (7/20 to 9/30)

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

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

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

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

2M

Herring spawning (4/1 to 6/15)

Contact ADF&G for confirmation - dates and locations may vary. Restrict boat traffic to essential minimum. Avoid damage to uncultured 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

30, 3Q

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

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

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

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

ADF&G Don Calkins 267-2403

5R

Seabird colony (5/1 to 9/1)

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

5S

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

ADF&G Tom Roth 267-2206

5T

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

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

6U

✓ Recreation:

Tent sites (6/1 to 9/15)

6V

Anchorage (6/1 to 9/15)

6W

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

6X

Lodge (6/1 to 9/15)

6Y

Special use destination

7Z

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

7HH

Finfish harvesting

7I

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 / PD006

SUBDIVISION: A

DATE 4/26/1990

NOAA

USCG

NAME

DONALD H. Macdonald

SIGNATURE

Donald H. Macdonald

☐ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

Only surveyed a portion of the western shore which the ADEC survey had indicated as very lightly oiled; the rest of the segment which encompasses a rich tidal flat, was indicated by the ADEC survey as having no oil. The segment also includes an anadromous fish stream. No oil was observed.

ADEC

NAME

John R. Reed

SIGNATURE

John R. Reed

☒ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

No oil was observed in this segment. I agree with SSAT data.

LAND MANAGER

NAME

SHARIE Methven-Toney

SIGNATURE

Sharie Methven-Toney

☒ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

Agree with SSAT team data. PD-6 is within Kachemak Bay State Wilderness Park. The area is a high wilderness use area, recreation use, wildlife resource values, sportfishing. The area encompasses a rich tidal flat - clams, mussels and scallops. The area offers good anchorages and tent sites.

SHORELINE OILING SUMMARY

REVISION NO. 06/12/90

OG Sawyer NOAA MacDonald SEGMENT ST/ PD6
 BIO Carr LAND REP Methven-Toney SUBDIVISION A (1 OF 1)
 EYXON Boyer ADEC Reed TIME 20:00 to 20:15
 NO. 18 TIDE LEVEL +4.5 to +4.0 DATE Apr 126/90
 SUBDIVISION LENGTH: 1841 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 20 % B 10 % C 30 % P 0 % G 0 % S 40 % M 0 % V 0 %
 SLOPE: Long 60 % Hang 0 % Vert 40 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 0 m NO 1841 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	10	15	17	18	19	20	21	22	23	24	25	26	SU	U	M	U
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT																
STAIN																
MOUSSE																
PATTIES																
TARBALLS																
NO OIL																

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

OILED DEBRIS	No	AMOUNT		
		SM	MD	LG
Logs				
Vegetation				
Trash				
Debris				

DID YOU COLLECT DEBRIS?

YES ☐ NO ☒TYPE -#BAGS 0

Photographs:

Roll No. ST-18-9Frames NONE

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)	T	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		VO	UC	19	20	21	22	23	24	25	26					
1	20																			N	15	C-C, P, G
2	25																					C, P-C, P, G
3	20																					C, P-C, P, G

COMMENTS ST/PD6 comprises a rather extensive tidal flat, bordered by bedrock cliffs and boulder-cobble beaches. No oil was observed.

REVIEWED

PAT

DATE 29 Apr 90

OG Sac
SEGMENT ST/ PD-6
SUBDIVISION A

DATE Apr 1 28 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)
☐ Pit Location(s)
☐ Photo Location(s)

LEGEND

1 Δ

Pit - No Subsurface Oil

2 Δ

Pit - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

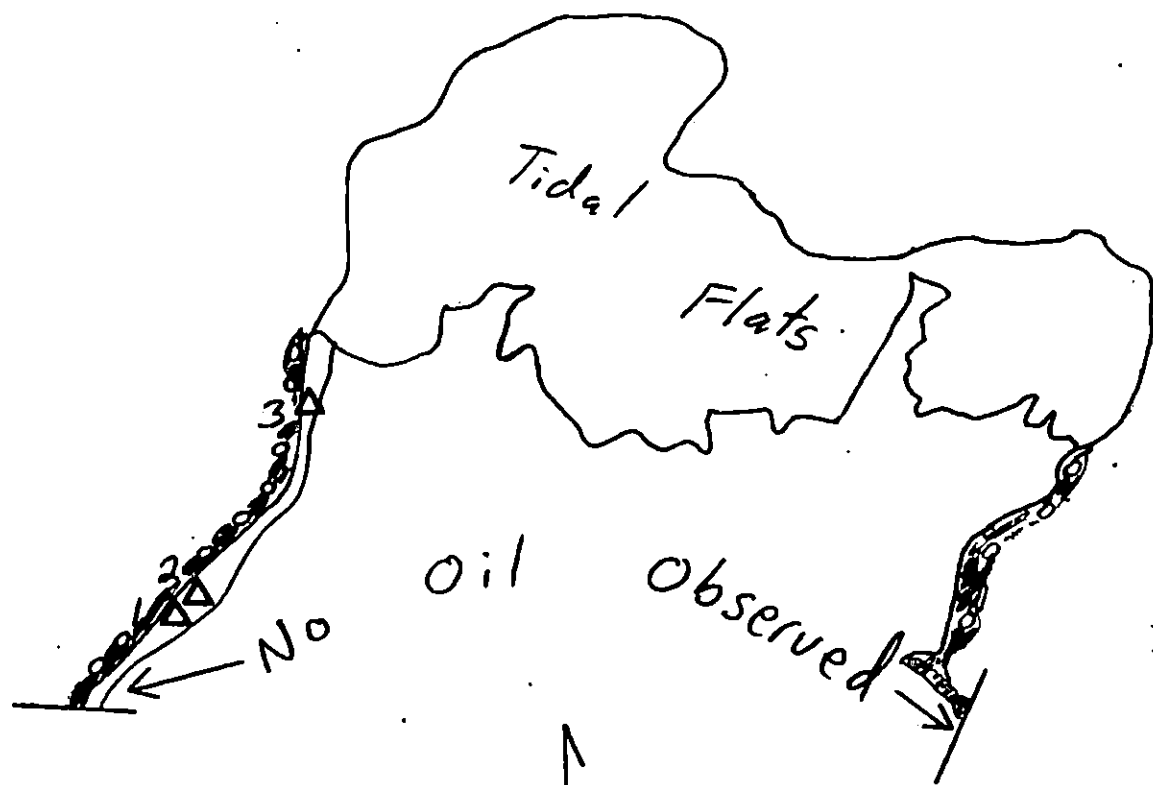
Splashed Distribution

Oil Vegetation

Photo location, direction,
and number

~~Bedrock cliffs~~ Bedrock cliffs
w/ boulders at base

SKETCH MAP



Port Dick

0 300m

Oil Character Length (m): AP ☐ PO ☐ CV ☐ CT ☐ ST ☐ MS ☐ PT ☐ TB ☐ FL ☐ NO 1841

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST./ PD-6 Subdivision A Date (mo / day / yr) 4-26-90
 Time (24 hr) 2000 Biologist MARK CARR

- (A) Substrate type and % of segments:
 (1) Bedrock 20 (2) Boulder 10 (3) Cobble 30 (4) Pebble 0 (5) Sand 40 (6) Silt 0
- (B) Overall % cover of biota (% of segment): Dense 10 Moderate 10 Low 80
- (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	
BED	2	2	2	2	2	2	2	2	2	2	2	2	1L SUBSTRATUM NOT PRESENT
BOULD	3	3	3	3	3	3	3	3	3	3	3	3	2.5 IN LOW TIDAL ZONE.
COBB	4	4	4	4	4	4	4	4	4	4	4	4	NOT PRESENT
SAND	5	5	5	5	5	5	5	5	5	5	5	5	5 NOT PRESENT ON SAND.
	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	
BED	2	2	2	2	2	2	2	2	2	2	2	2	1L SUBSTRATUM NOT PRESENT
BOULD	3	3	3	3	3	3	3	3	3	3	3	3	2.5 IN LOW TIDAL ZONE
COBB	4	4	4	4	4	4	4	4	4	4	4	4	NOT PRESENT IN UPPER ZONE.
	5	5	5	5	5	5	5	5	5	5	5	5	NOT PRESENT
	6	6	6	6	6	6	6	6	6	6	6	6	5 NOT PRESENT ON SAND

GASTROPODS

	Dense			Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
BED	2	2	2	2	2	2	2	2	2	2	2	2	1L SUBSTRATUM NOT PRESENT
BOULD	3	3	3	3	3	3	3	3	3	3	3	3	2.5 IN LOW TIDAL ZONE
COBB	4	4	4	4	4	4	4	4	4	4	4	4	NOT PRESENT
SAND	5	5	5	5	5	5	5	5	5	5	5	5	5 NOT PRESENT ON SAND
	6	6	6	6	6	6	6	6	6	6	6	6	

FUCUS

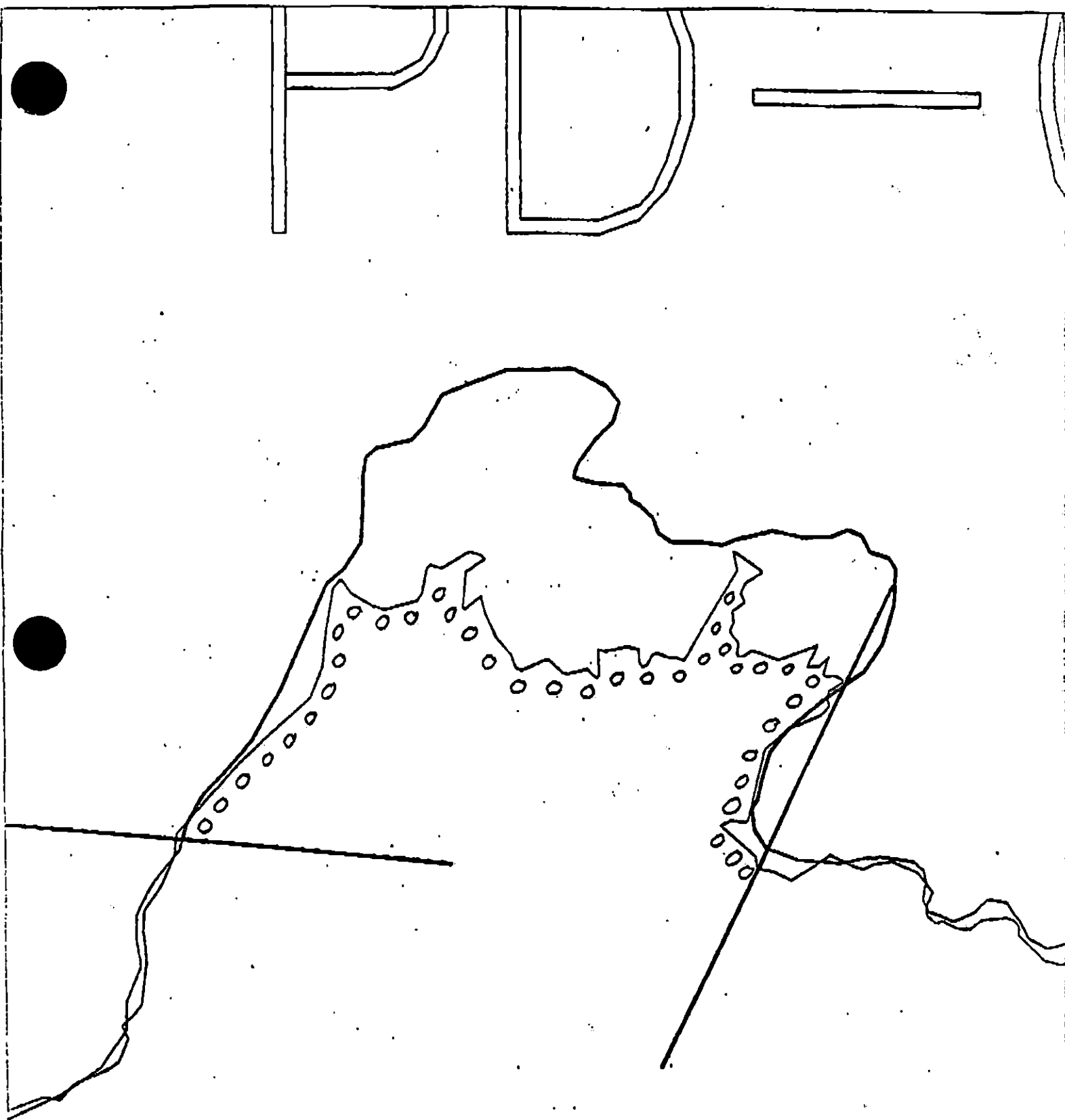
	Dense			Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
BED	2	2	2	2	2	2	2	2	2	2	2	2	1L SUBSTRATUM NOT PRESENT
BOULD	3	3	3	3	3	3	3	3	3	3	3	3	2.5 IN LOW TIDAL ZONE
COBB	4	4	4	4	4	4	4	4	4	4	4	4	NOT PRESENT
SAND	5	5	5	5	5	5	5	5	5	5	5	5	5 NOT PRESENT ON SAND
	6	6	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments:

Harlequin ducks (17), merganser (1), glaucous-winged gull (20), bald eagle (1)
 Clams abundant in LTE and shallow subtidal.

Ecological Considerations:

1A, B (salmon stream), 1J (Purse seine area), 4GA (Alaska State Park/Wilderness)
 GNN (sport fishing), 8AA (sensitive estuary).



REGION: KENAI

SEGMENT: ST/PD-07

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ PD-07 SUBDIVISION A (1 OF 1) DATE 4/26/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1J Purse seine area (6/25 to 8/31)

4GA Alaska State Wilderness Parks

6NN Recreation: Sportfishing

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 0 m: Narrow 28 m: V.Light 209 m: No Oil 4608 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 (6/11 to 7/25)
 Contact ADF&G for specific dates, locations and constraints. Restrict boat and air traffic to essential minimum. When set net sites are present (1L) restrict beach operations to essential minimum as authorized by ADF&G. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G James Brady 424-3212

2M Herring spawning (4/1 to 6/15)
 Contact ADF&G for confirmation - dates and locations may vary. Restrict boat traffic to essential minimum. Avoid damage to uncoiled intertidal and subtidal algae and seagrass. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G Evelyn Biggs 424-3235

3P Harbor seal and sea lion pupping (5/15 to 7/1)
 3Q Harbor seal and sea lion molting (8/15 to 9/15)
 Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts. No application of Inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31). Contact ADF&G and USFWS prior to treatment for confirmation.
 AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 586-7235
 ADF&G Don Calkins 267-2403

5R Seabird colony (5/1 to 9/1)
 Restrict air and boat traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from colony. Contact USFWS prior to treatment.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

5S Shorebird/waterfowl concentration (4/1 to 5/15)
 Restrict all activity to essential minimum, especially air traffic. Contact USFWS and ADF&G for confirmation.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
 ADF&G Tom Roth 267-2206

5T All Bald Eagle nests (3/1 to 6/1)
 Active Bald Eagle nests (3/1 to 9/1)
 Restrict air traffic and all disturbance to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

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

7Z Subsistence area: Salmon harvesting (5/1 to 9/30)
 7HH Finfish harvesting
 7II Deer harvesting (8/15 to 2/28)
 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/ PD007 SUBDIVISION: A DATE 4-26-1990
 NOAA UCCG

NAME Donald A. MacDonnell SIGNATURE Donald A. MacDonnell

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
 COMMENTS

Only a few scattered patches of mussel were present. The segment has cobble and boulder beaches along with bedrock faces; the intertidal zone was generally settled. The segment starts just east of the tidal flats of PD006. The bio and I did a good job.

ADEC
 NAME JOHN R. REED SIGNATURE John R. Reed

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
 COMMENTS

Very scattered mussel patches in this segment, most were picked up as we surveyed. No treatment is recommended. I agree with SSAT Data.

LAND MANAGER

NAME SHARIE Methven-Toney SIGNATURE Sharie Methven-Toney

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
 COMMENTS

The area is within Kachemak Bay State Wilderness Park. I agree with SSAT data on PD7. This area has high recreation values, wildlife values, good anchorages, tent sites and popular with pleasure boaters and commercial fisherman. This area receives heavy human use.

SHORELINE OILING SUMMARY

REVISION NO. 04/13/90

OG Sawyer NOAA MacDonald SEGMENT ST/ PD 7
 BIO Carr LAND REP Mathew-Toney SUBDIVISION A (1 OF 1)
 ON Boyer ADEC Reed TIME 20:20:22:00
 NO. 18 TIDE LEVEL +4 to +2.5 DATE Apr 12 1990

EST. SUBDIVISION LENGTH: 5120 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 15 % C 5 % P 5 % G 5 % S 0 % M 0 % V 0 %
 SLOPE: Lang 30 % Hang 0 % Vert 70 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 40 m VL 400 m NO 4920 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	FC	FB	FP	FS	1	2	3	4	5	6	7	8	SU	U	M	U
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT																
STAIN																
MOUSSE																
PATTIES																
BALLS																
FILM																
NO OIL																

collected 5 4680
 PAVEMENT H (P) (S) → 1 sq. m by 3 cm

PATTIES / TARBALLS 1 BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS?

YES ☒ NO ☐

TYPE Asphalt pavement

#BAGS 2

Photographs:

Roll No. ST-18-9

Frames NONE

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL	BELOW		OIL / FILM COLOR								PIT ZONE				A N A	SHEEN (Y/N)	↓	SURFACE-SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		VO	VE	1	2	3	4	5	6	7	8	SU	U	M	U				
1	35																								P-G, P, S
2	30																								P-G, S
3	25																								P-P, C
4	35																								P-P, S, C
5	15						0.5*																		C-P, S, C

COMMENTS * Oiled interval < 5cm in pit #5 does not constitute subsurface oil

OG Sawy

SEGMENT ST/ PD7

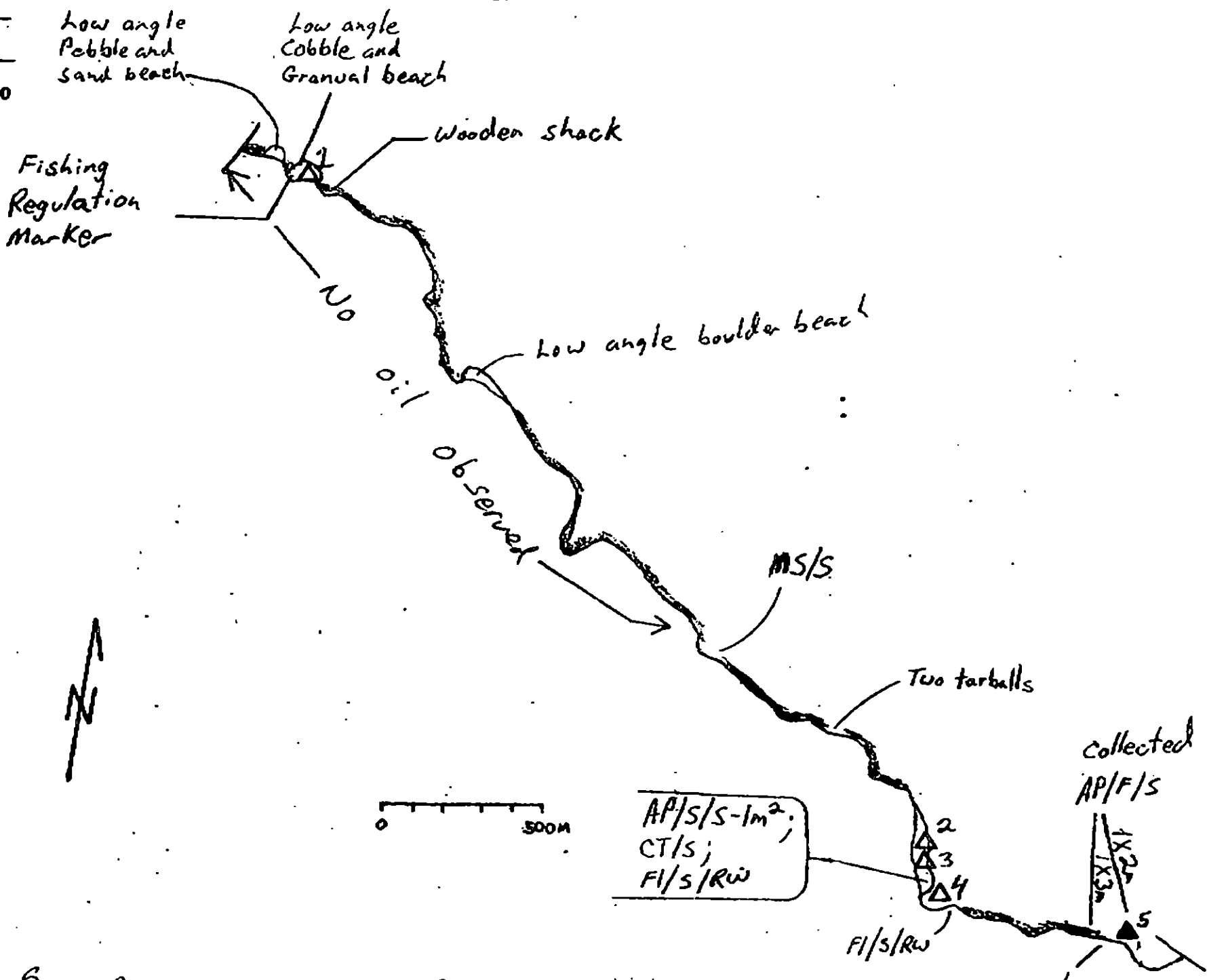
SUBDIVISION A

DATE Apr 28 90

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

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

SKETCH MAP



SHORELINE ECOLOGICAL SUMMARY

REVISION: 00/22/90

Segment ST/ PD-7 Subdivision A Date (mo / day / yr) 4-26-90
 Time (24 hr) 2020 Biologist MARK CARR

- (A) Substrate type and % of segments:
 (1) Bedrock 70 (2) Boulder 15 (3) Cobble 5 (4) Pebble 5 (5) Sand 5 (6) Silt 0
- (B) Overall % cover of biota (% of 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 (O)

Photographs: _____
 Roll No. _____

Frames NONE

BARNACLES

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

NOT PRESENT IN ANY ZONE

MYTILUS

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

NOT PRESENT IN UPPER ?
 NOT PRESENT IN ANY ZONE

GASTROPODS

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

NOT PRESENT IN ANY ?
 NOT PRESENT

FUCUS

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

NOT PRESENT IN UPPER ZONE,
 NOT PRESENT

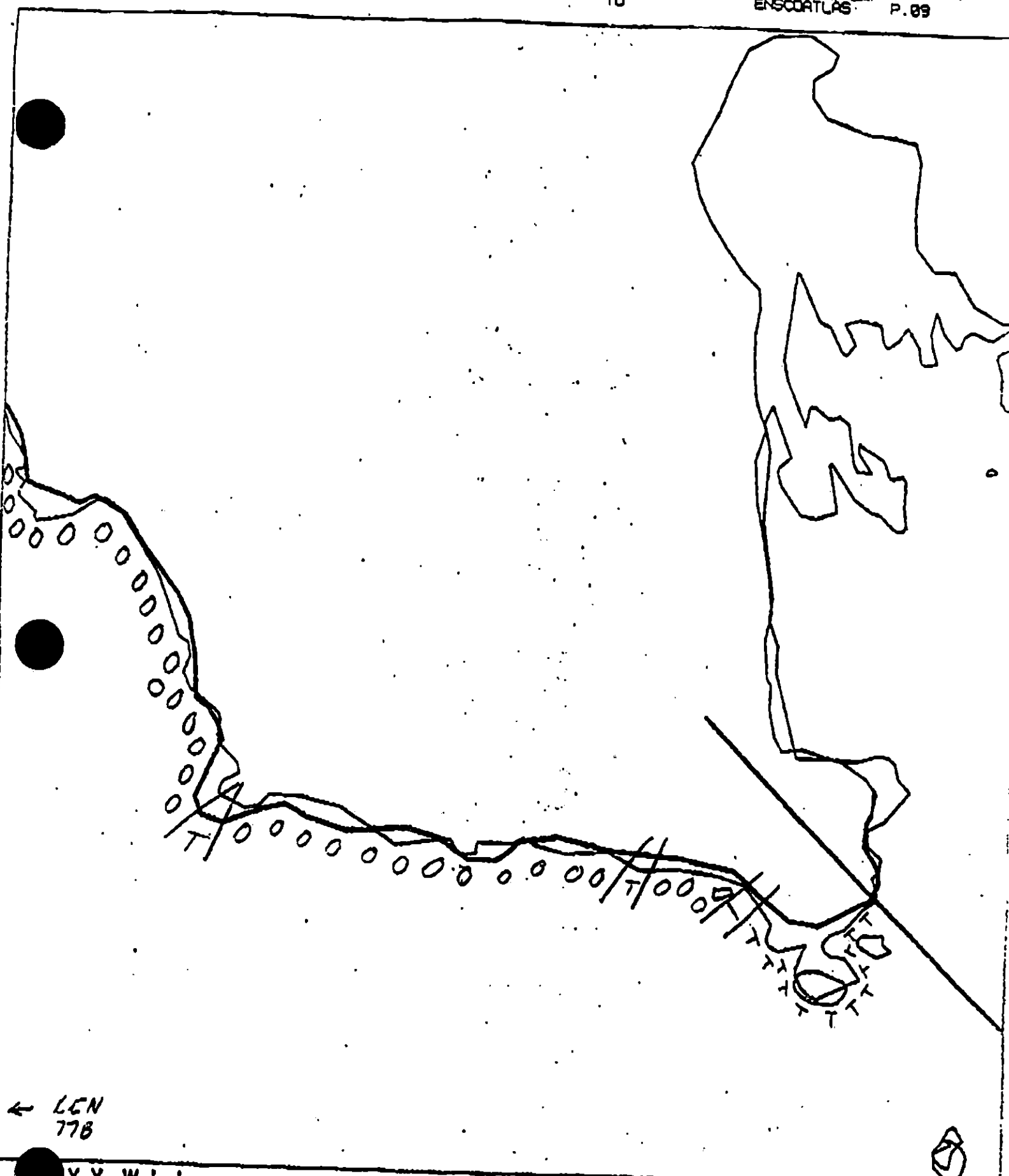
Wildlife Observations/ General Comments:

bald eagle (1), harlequin ducks (14), river otter (3), grebe (1), black bear (1)

Ecological Considerations:

T (pure seine area), 4GA (Alaska State Park/Wilderness),
 GNN (sportfishing)

Dense laminarians in shallow subtidal



← LCN
77B

XX Wide

/// Medium

--- Narrow

TTTT Very Light

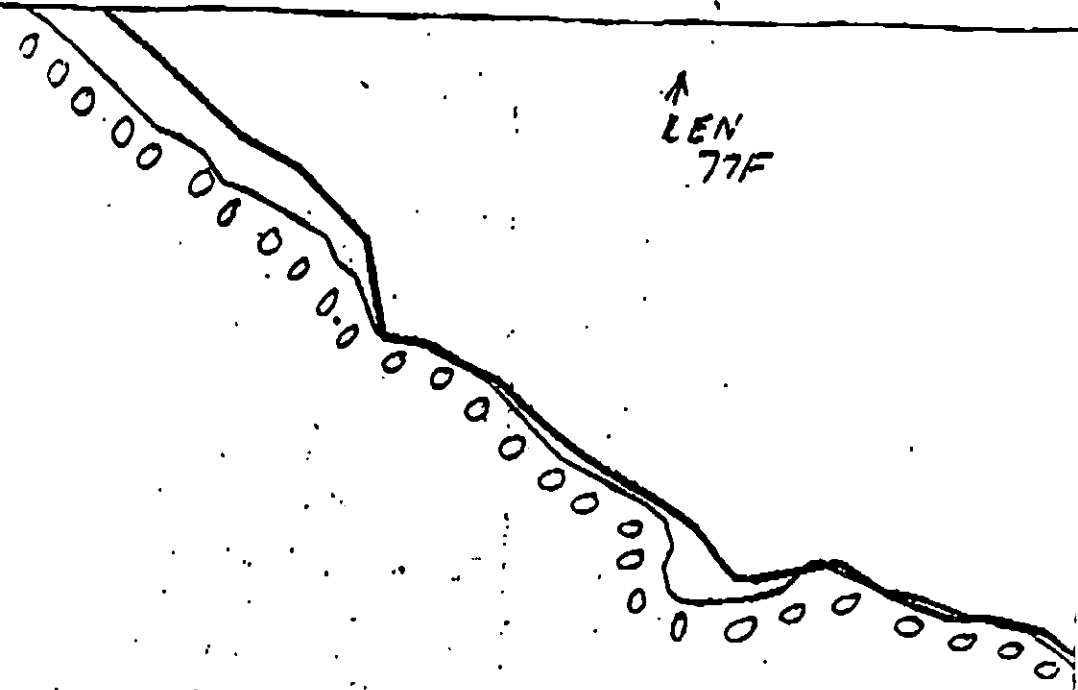
PD-7

ADEC Segment Length: 495m

Map Key: KEN-77c

Name: Sawyer

4-28-90



LEN 77C →

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

PD-7

ADEC Segment Length: 4951m

Map Key: KEN-77b

Name: Sawyer

Date: 4-70-91

← LEN
77E

PD

—

↓ LEN 77B

XXX Wide

//// Medium

--- Narrow

TTTT Very light

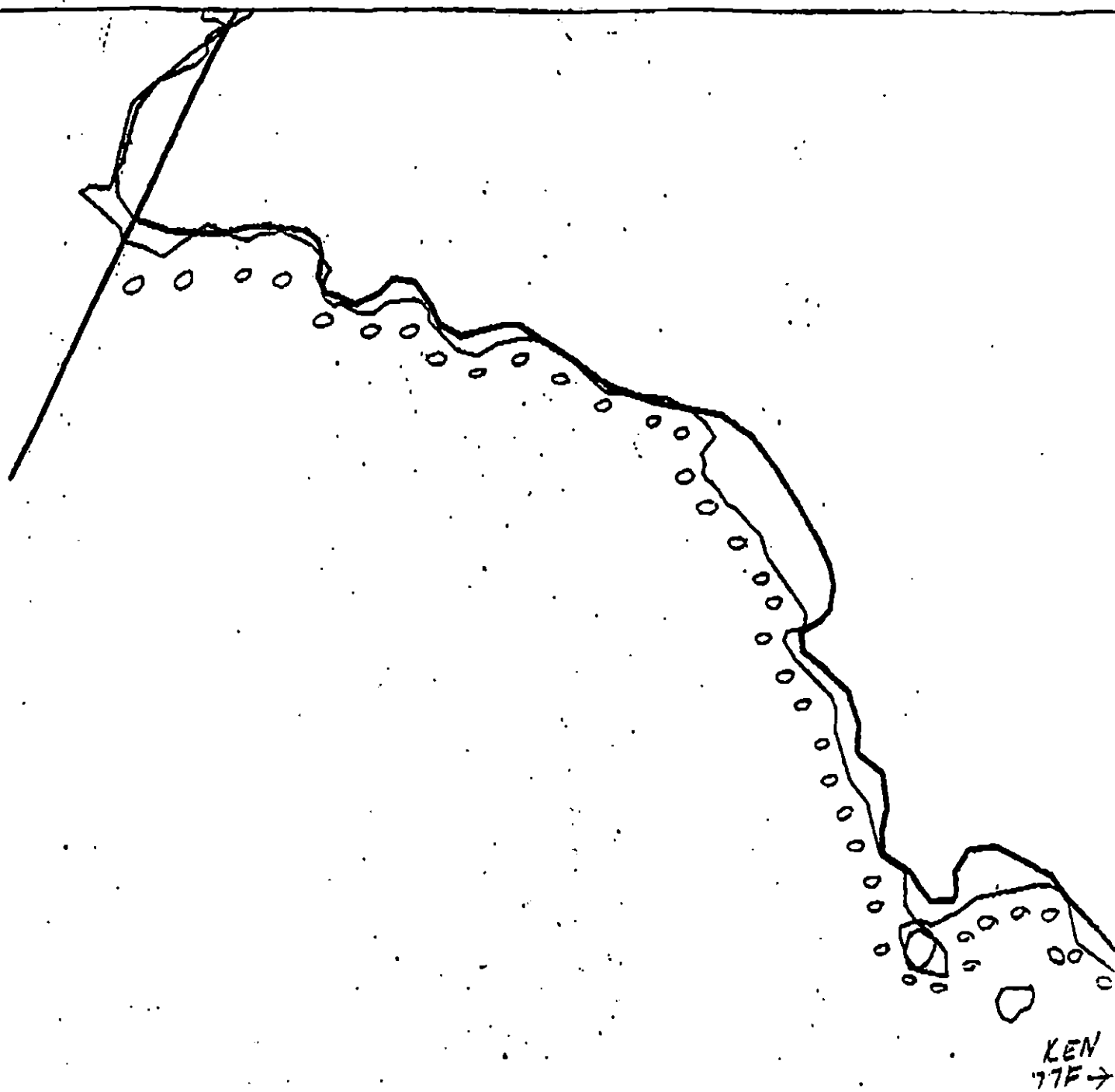
PD-7

ADEC Segment Length: 495m

Map Key: KEN-171

Name: Sawyer

Date: 4-28-90



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

PD-7

ABEC Segment Length: 4951m

Map Key: KEN-770

Name: Sawyer

4-22-90

REGION: KENAI

SEGMENT: ST/PD-08

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ PD-08 SUBDIVISION A (1 OF 1) DATE 4/23/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 242-42-10430

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

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

1J Purse seine area (6/25 to 8/31)

4GG Alaska State Parks

6NN Recreation: Sportfishing

8AA Sensitive Estuary

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

If 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 3240 m: No Oil 2267 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
1B

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

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

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

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

1C

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

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

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

1D

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

1E

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

1F

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

1G

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

1H

Remote release site

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

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

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

1J
1K

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

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

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

1L

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

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

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

2M

Herring spawning (4/1 to 6/15)

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

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

30, 3Q

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

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

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

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

ADF&G Don Calkins 267-2403

5R

Seabird colony (5/1 to 9/1)

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

5S

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

ADF&G Tom Roth 267-2206

5T

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

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

6U

Recreation:

Tent sites (6/1 to 9/15)

6V

Anchorage (6/1 to 9/15)

6W

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

6X

Lodge (6/1 to 9/15)

6Y

Special use destination

7Z

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

7HH

Finfish harvesting

7H

Deer harvesting (8/15 to 2/28)

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 / PD-08 SUBDIVISION: A (1 of 1) DATE 4/23/90
 NAME DONALD A. Mc DONALD SIGNATURE Donald A. McDonald

☐ ~~NO TREATMENT RECOMMENDED~~ ☐ ~~TREATMENT SUGGESTED~~

COMMENTS

Mousse coat and film found along the western shore of the segment. The eastern side of the western arm of segment had an anadromous ^{fish} stream and fish (possibly salmonid) fry were observed within this arm.

ADEC
 NAME JOHN R. REED SIGNATURE John R. Reed

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS

Mousse patties in PD-08 could be manually removed by shovel. The banks of the anadromous stream were clean. This is an area of high Recreational value. I agree with data on SSAT Forms.

LAND MANAGER

NAME SHARIE Methven-Jones SIGNATURE Sharie Methven-Jones

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS

~~PORT~~ PORT DICK-West Arm Segment PD8 is located within Kachemak Bay State Wilderness Park. The area offers unique recreation activities, fishing- sportfishing and commercial clam digging. The area has two large tidal flats and one anadromous fish stream, extremely high wilderness values. The area has high wildlife values in the tidal flats and uplands. I recommend manual cleanup of mousse patties, (accessible using skiffs) and the removal of boom chain and cable which were found in the segment. I agree with data on the SSAT forms.

SHORELINE OILING SUMMARY

REVISION NO. 04/15/88

OG Sawyer NOAA USCG Mac Donald SEGMENT ST/ PD-008
 BIO Carr LAND REP Methuen-Toney SUBDIVISION A (1 OF 1)
 ON Bayer ADEC Reed TIME 16:30 to 20:00
 NO. 18 TIDE LEVEL +4.5 to +2.0 DATE Apr 1 23 1990
 EST. SUBDIVISION LENGTH: 6.559 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 60 % B 15 % C 10 % P 5 % G 0 % S 10 % M 0 % V 0 %
 SLOPE: Lang 30 % Hang 10 % Vert 60 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 3959 m NO 2600 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	LC	RS	RP	RS	1	2	3	4	5	SU	U	M	U
ASPHALT													
PAVEMENT													
POOLED													
COVER													
COAT													
STAIN													
MOUSSE													
PATTIES													
TARBALLS													
FILM													
NO OIL													

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

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS?

YES ☒ NO ☐TYPE pom-pom, fiberglass rods#BAGS 1

Photographs:

Roll No. ST-18-8Frames 19-23

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	VS	1	2	3	4	5	SU	U	M	U				
1	15						0-4													Y	10	B-G, B
2	30																				5	P-G, S
3	20																					m-S, G
4	25																					P-S, m
5	20																					C-G
6	20																					P-P

COMMENTS ST/PO-008 has two large tidal flats, a few small lagoons, and one or two anadromous fish streams. On either side of the eastern embayment are debris (cable and chain) that was possibly related to booming operations.

RAY

SEGMENT ST/ PD-008 SUBDIVISION A (1 OF 1)

REVISION 04/13/90

[illegible]

REVIEWED BAT DATE 25 Apr 90

OG Sac
SEGMENT ST/PO-008

SUBDIVISION A

DATE Apr 1 23 90

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Boundary
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HAWAII
- ☐ SSI
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ PI Location(s)
- ☐ Photo Location(s)

LEGEND

1 Δ

PI - No Subsurface Oil

2 Δ

PI - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

Oil Vegetation

Oil Vegetation

Oil Vegetation

Oil Vegetation

Oil Vegetation

Oil Vegetation

Oil Vegetation

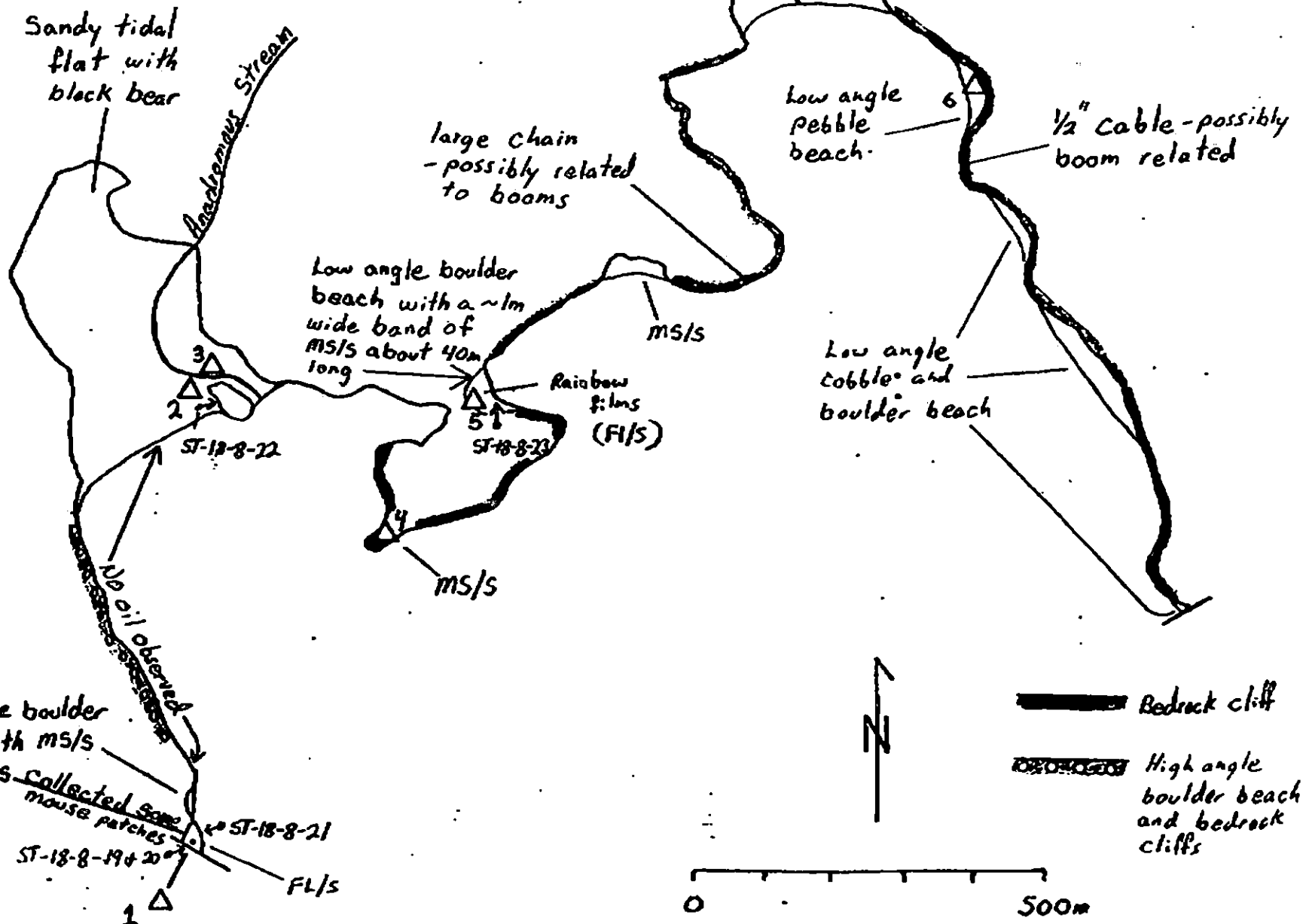
Oil Vegetation

Oil Vegetation

Oil Vegetation

Oil Vegetation

SKETCH MAP



SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST PD-8 Subdivision A Date (mo / day / yr) 4-23-90

Time (24 hr) 1630 Biologist MARK CARR

- (A) Substrate type and % of ^{SUBDIVISION} segments:
 (1) Bedrock 10 (2) Boulder 15 (3) Cobble 10 (4) Pebble 5 (5) Sand 10 (6) Silt 10
- (B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense 90 Moderate 5 Low 5
- (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: ST-18-8
 Roll No. 5T-18-8

Frames 19-23

BARNACLES

	Dense		Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
BED	2	2	2	2	2	2	2	2	2	2	2	2
BOUL	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
PEBB	5	5	5	5	5	5	5	5	5	5	5	5
SAND	6	6	6	6	6	6	6	6	6	6	6	6
SILT	6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

NOT PRESENT IN ANY ZONE.

MYTILUS

	Dense		Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
BED	2	2	2	2	2	2	2	2	2	2	2	2
BOUL	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
PEBB	5	5	5	5	5	5	5	5	5	5	5	5
SAND	6	6	6	6	6	6	6	6	6	6	6	6
SILT	6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT IN ANY ZONE

NOT PRESENT

NOT PRESENT IN UPPER & LOWER ZONE.

NOT PRESENT IN ANY ZONE.

GASTROPODS

	Dense		Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
BED	2	2	2	2	2	2	2	2	2	2	2	2
BOUL	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
PEBB	5	5	5	5	5	5	5	5	5	5	5	5
SAND	6	6	6	6	6	6	6	6	6	6	6	6
SILT	6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

NOT PRESENT IN ANY ZONE.

FUCUS

	Dense		Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
BED	2	2	2	2	2	2	2	2	2	2	2	2
BOUL	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
PEBB	5	5	5	5	5	5	5	5	5	5	5	5
SAND	6	6	6	6	6	6	6	6	6	6	6	6
SILT	6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT IN UPPER & LOWER ZONE

NOT PRESENT

NOT PRESENT IN ANY ZONE

Wildlife Observations/ General Comments:

Harlequin ducks (26), black bear (1), salmonid fry (4-5cm) ~ 200, bufflehead (14), NW crow (9), surf scoters (8), mallard duck (8)

Ecological Considerations:

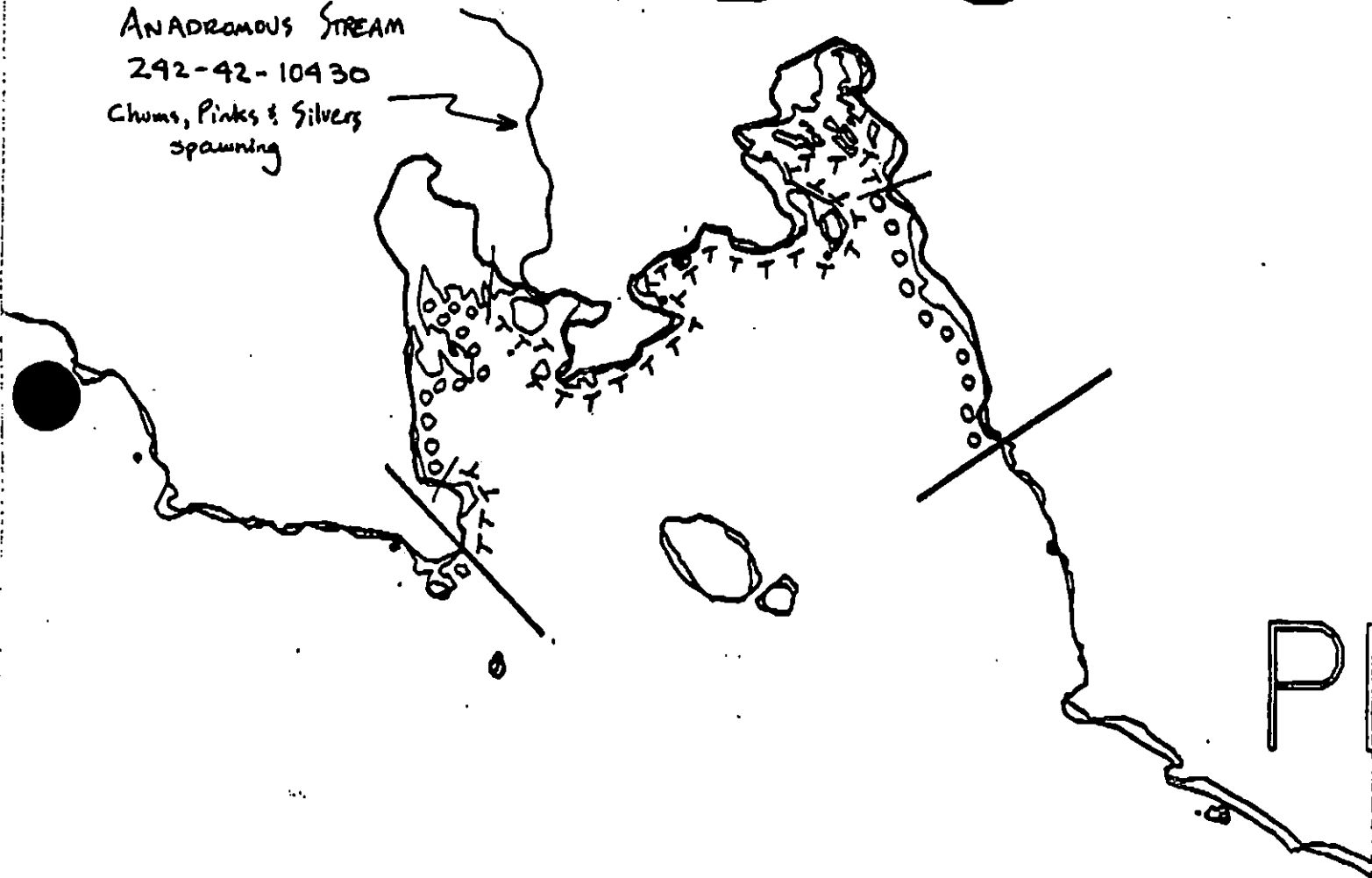
1A,B (Salmonid stream) - 2, 1J (Purse seine area), 4GA (Alaska State Park / Wilderness), 6M,N (Sportfishing), 3AA (Sensitive estuary).

ECOLOGY MAP

1A, 1B 4GA
1J 6NN
8AA

PD-8

ADF*G
ANADROMOUS STREAM
292-42-10430
Chums, Pinks & Silvers
spawning



XXX Wide

/// Medium

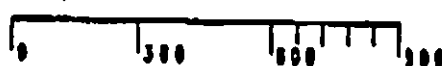
--- Narrow

TTTT Very Light

OOOO

PD-8

ADEC Segment Length: 5369m



Map Key: KEH-78

Name: Barry AMM

Date: 4/25/90

PD-8



PD-8

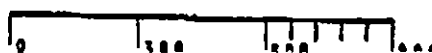
XXX Wide

/// Medium

--- Narrow

TTTT Very Light

ADEC Segment Length: 5369m



Map Key: KEN-78

Name: SawyerDate: 4-23-90

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT PD-8 SUBDIVISION A (1 of 1)

WORK WINDOW	
Manual Pickup	OPEN

ARCHAEOLOGICAL INSPECTION/CONSULTATION REQUIRED.

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

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B	Salmon Stream	ADF&G catalogued anadromous stream (242-42-10430) is present in Subdivision A. No constraint to manual pickup.
1J	Purse Seine Hook-off	No constraint to manual pickup.
8AA	Sensitive Estuary	No constraint to manual pickup.

OTHER ECOLOGICAL CONSIDERATIONS

No disturbance of stream bed or banks. Restrict boat and air traffic to essential minimum after 6/25. Avoid any unnecessary disturbance or damage to uncollected biota and substrate. Sensitive estuary, restrict beach disturbance to essential minimum.

TAG APPROVAL DATE 6/01/90
ADEC Ray Monais
EXXON Ray Monais
NOAA G.A. Reiter
USCG G.A. Reiter

FOSC

DD Prome, CDK/USCG DATE 6/2/90

Acting

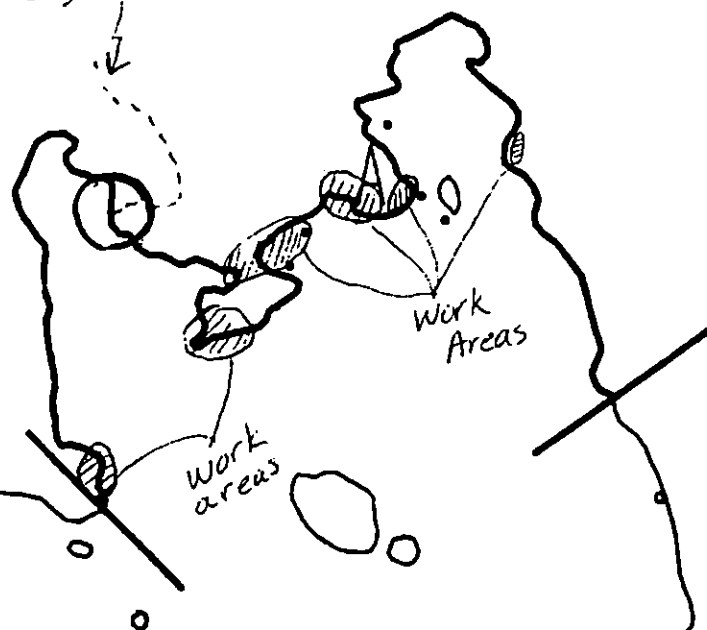
Prepared By: Andra May WTK

Date

5/31/90

ADFG Anadromous Stream
(242-42-10430)

PD-8



PD



Exxon Company, USA
Map Keys KEN-PD-8
May 17, 1990



ECOLOGY MAP
SEGMENT PD-8
SUBDIVISION A (1 of 1)
METERS
0 549 1099

★ Seabird Colony
▲ Eagle Nest

1 inch = 1803 feet

SHORELINE EVALUATION

SEGMENT ST/ PD-08 SUBDIVISION A (1 OF 1) DATE 4/23/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

DF&G anadromous stream no. 242-42-10430

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

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

1J Purse seine area (6/25 to 8/31)

4GG Alaska State Parks

6NN Recreation: Sportfishing

8AA Sensitive Estuary

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

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

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

SHPO SIGNATURE: J. David McManis

DATE: 5/10/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 3240 m: No Oil 2267 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

1003 ~~No Treatment Recommended~~
X Treatment Recommended
X 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: Collect debris and Mousse as indicated on
Sketch map.

TAG APPROVAL DATE: May 5 1990

ADEC Art Weiner Art Weiner

EXXON Mark N. Gilbert Mark N. Gilbert

NOAA Gary Petros Gary Petros

USCG G.A. Reiter G.A. REITER

FOSC: ML

DATE: 5-12-90

SHORELINE EVALUATION

SEGMENT ST/ PD-08 SUBDIVISION A (1 OF 1) DATE 4/23/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 242-42-10430

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

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

1J Purse seine area (6/25 to 8/31)

4GG Alaska State Parks

6NN Recreation: Sportfishing

8AA Sensitive Estuary

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

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

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

SHPO SIGNATURE: J. David McManis DATE: 5/10/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 3240 m: No Oil 2267 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 Removal	☐ Beach Cleaner
	☐ Other (see comments)

COMMENTS:

TAG COMMENTS: Collect debris and Mousse as indicated on
Sketch map.

TAG APPROVAL DATE: May 5, 1990
ADEC Art Weiner Art Weiner
EXXON Mark N. Silber Mark N. Silber FOSC: ML DATE: 5-12-90
NOAA Gary Petros Gary Petros
USCG G.A. Reiter G.A. REITER

OG SA
 SEGMENT ST/PD-008

SUBDIVISION A

DATE Apr 1 23 90



CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Boundary
- ☐ Oil Out
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HPA/LVL
- ☐ SSL
- ☐ Profile 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

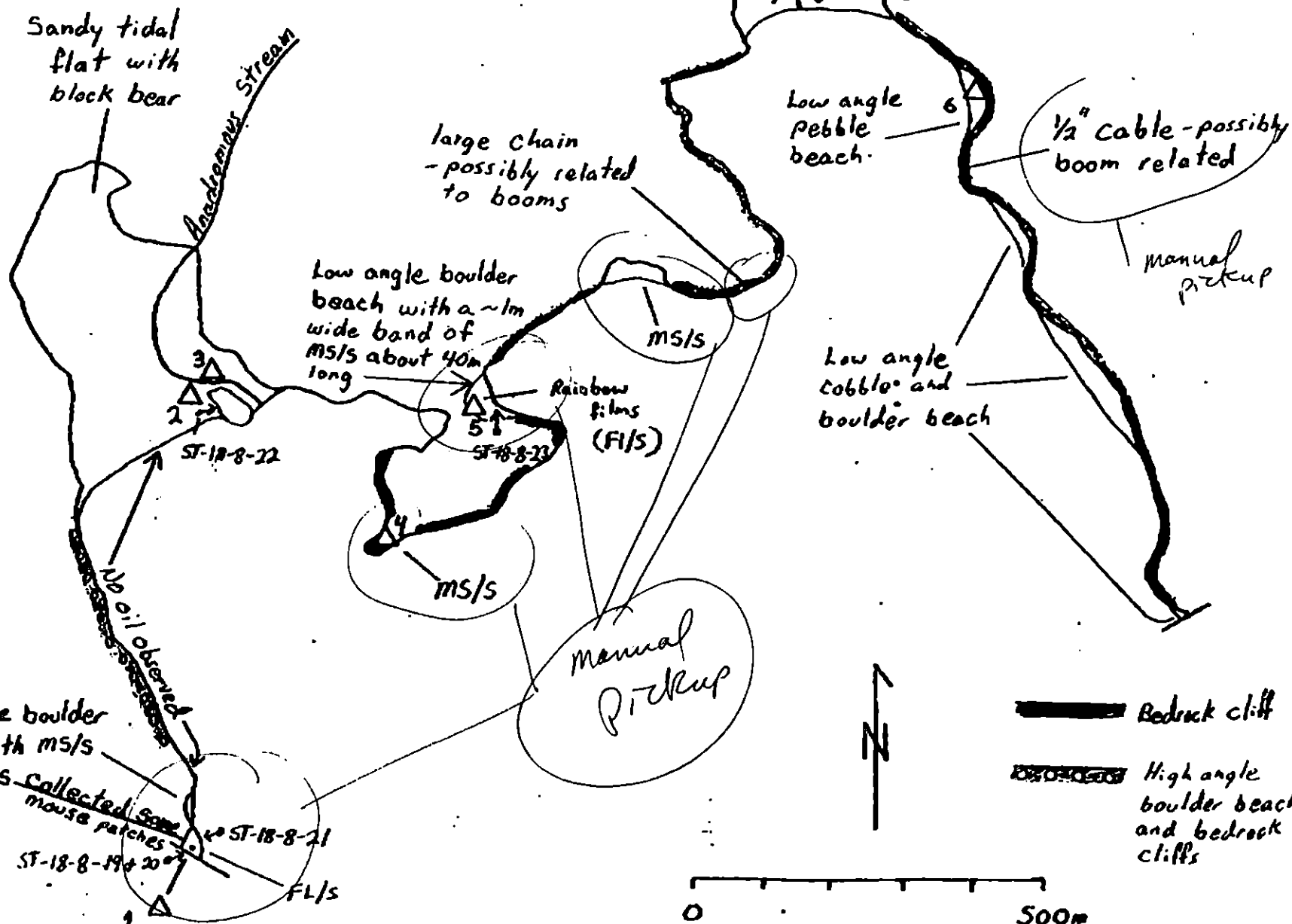
CT/S
 Splashed Distribution

eee
 Oiled Vegetation

1 →
 Photo location, direction, and number

Low angle boulder beach with MS/S and CT/S

SKETCH MAP



Bedrock cliff
 High angle boulder beach and bedrock cliffs

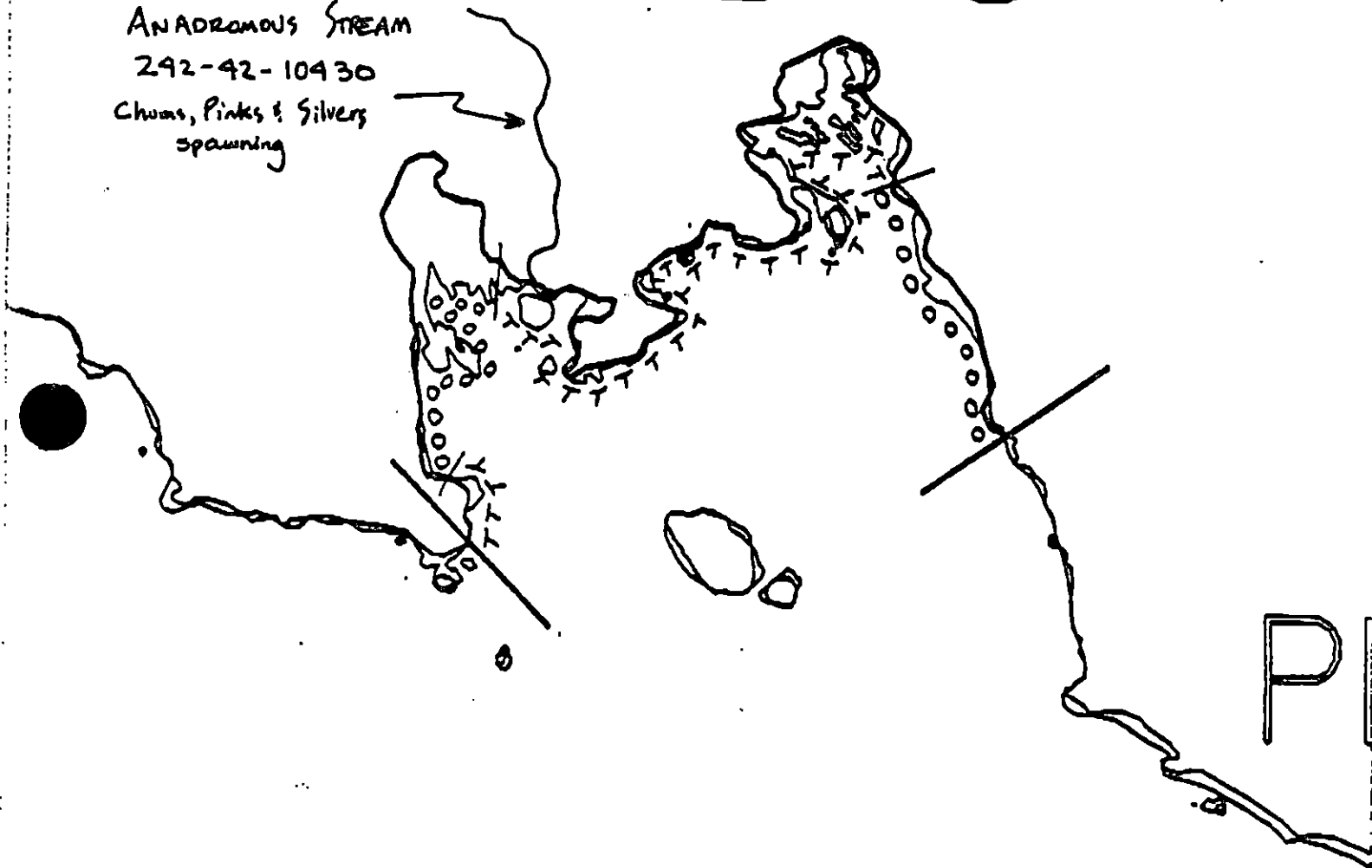
0 500m

ECOLOGY MAP

1A,1B 4GA
1J 6NN
8AA

PD-8

ADF*G
ANADROMOUS STREAM
292-42-10430
Chums, Pinks & Silvers
spawning



XXXX Wide

// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

PD-8

ADEC Segment Length: 5389m



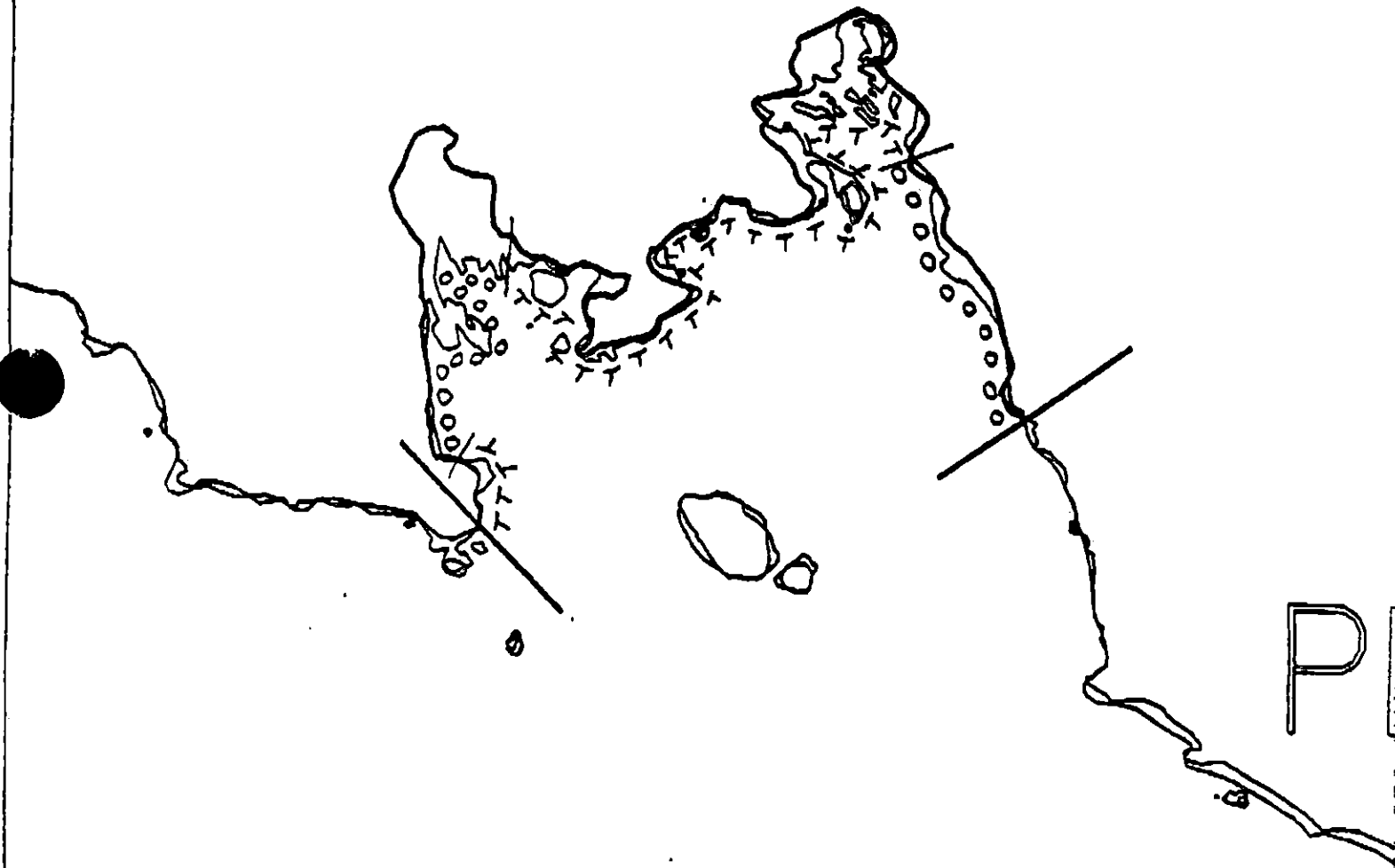
Map Key: KEN-78

Name: Barry Mmm

Date: 4/25/90

Date Entered:

PD-8



XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

PD-8

ADEC Segment Length: 5389m



METERS

Map Key: KEN-78

Name: Sawyer

Date: 4-23-90

Data Entered:

1991 MAYSAP EVALUATION

SEGMENT: PD 008 SUB: A REGION: KEN SURVEY DATE: 5/23/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN 5/1 - 7/10; RESTRICTED 7/10 - 9/15

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature:

Date:

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

~

八

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: JUNE 7 1991

FOSC APPROVAL DATE: 6/11/91

ADEC

FOSC

EXXON

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

USCG

NOAA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

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

MAYSAP FIELD SHORELINE COMMENT SHEET

46

TEAM NO. 4 SEGMENT PD-008 SUBDIVISION A DATE 5/23/91

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara S. Crosby☒ NTR

*the very light to trace amts of oil
observed w/in this subsegment.*

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles 5/27/91☒ NTR

No appreciable oil found.

LANDMANAGER

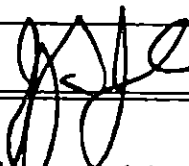
NAME

Jeff Johnson

OF

ADNR

SIGNATURE

☒ NTR

Concur w/ other comments very little oil.

USCG/NOAA

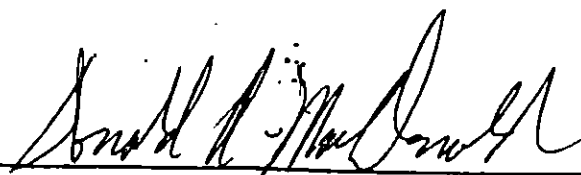
NAME

John H. Mahoney

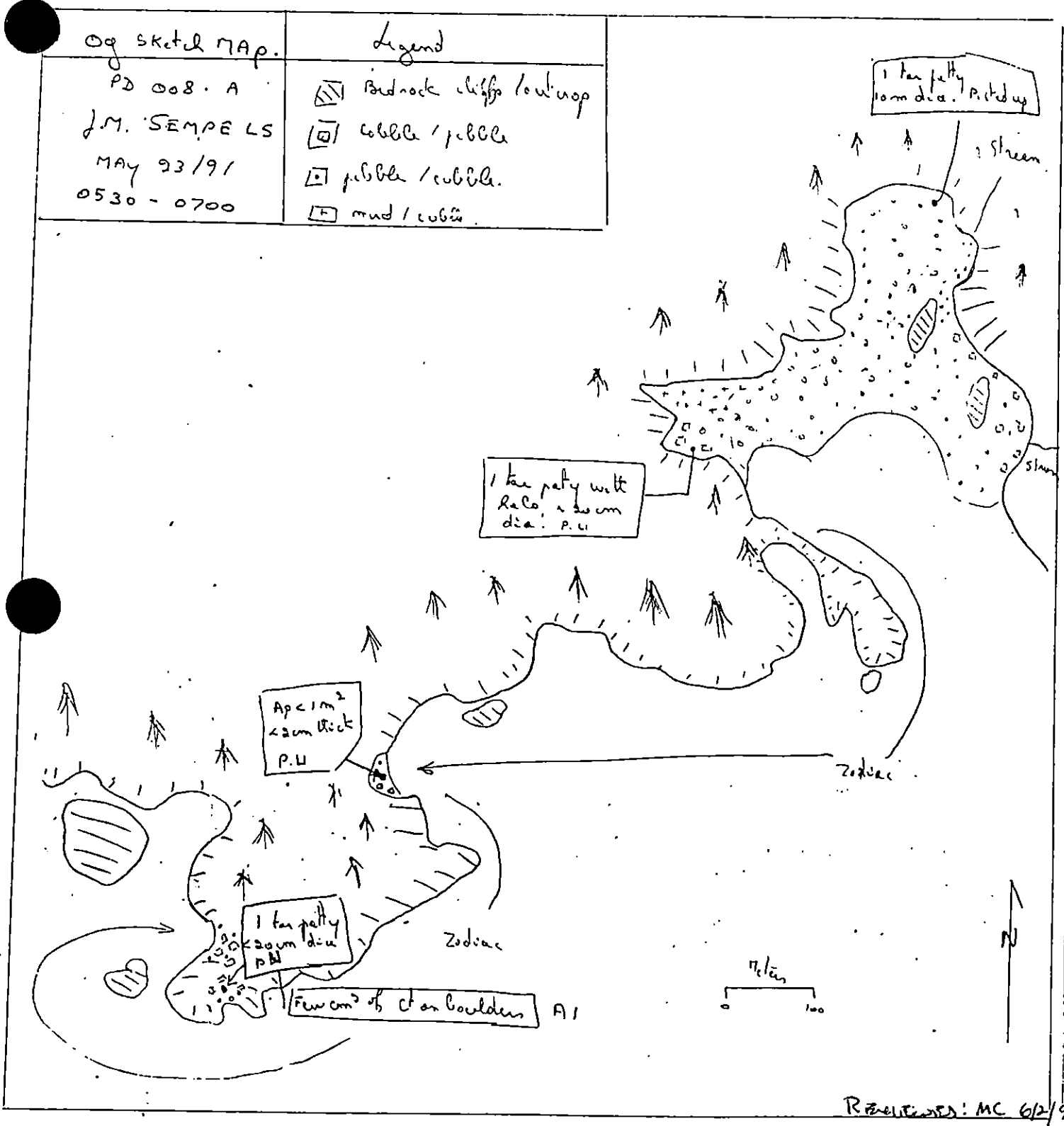
SIGNATURE

☒ NTR

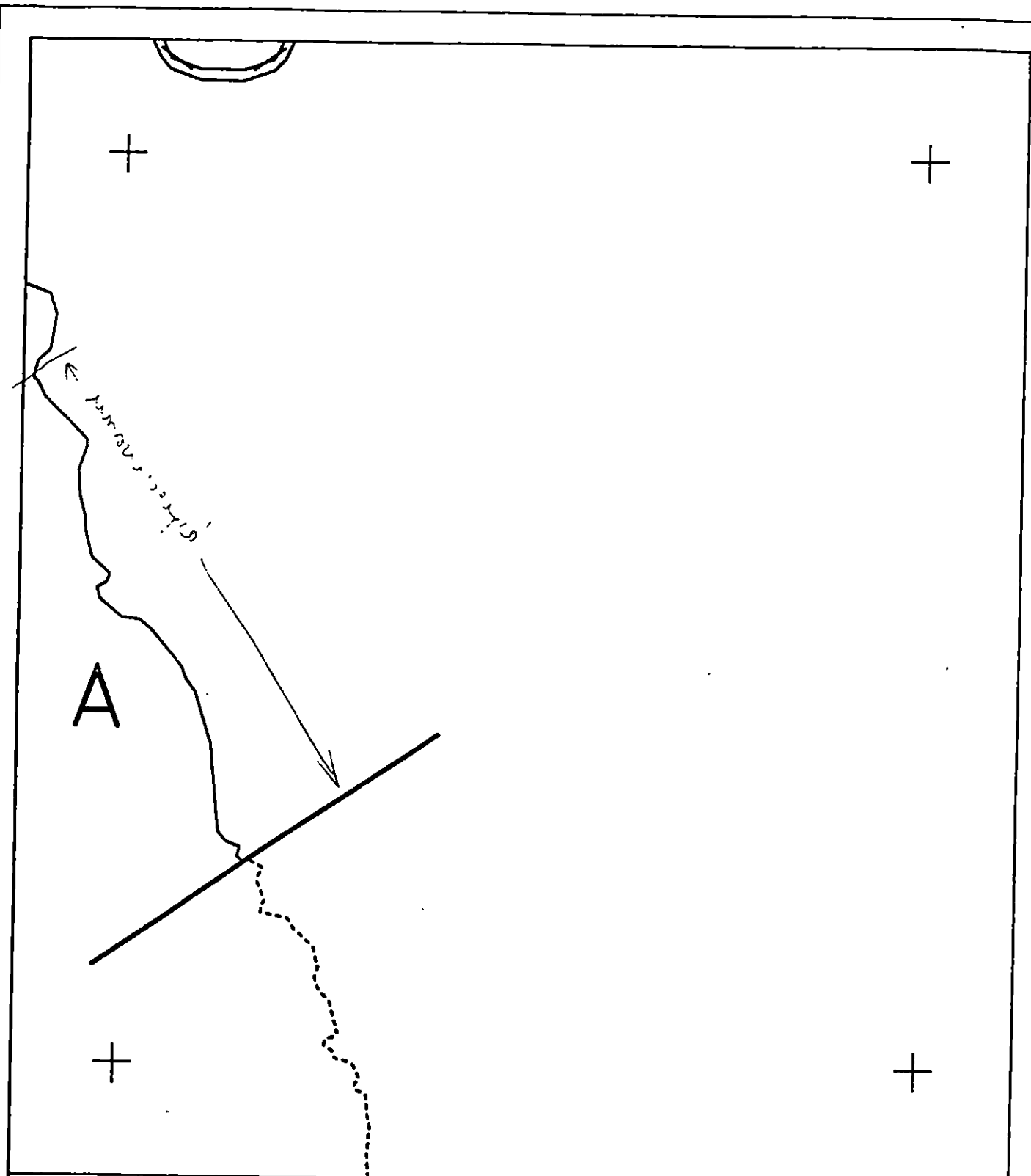
only minor oil found and picked-up.



Reviewed: MC 6/1/91
revised 5/31/91 KG

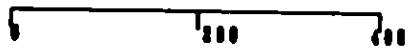


REVIEWED: MC 6/2/91



PD008 A

METERS



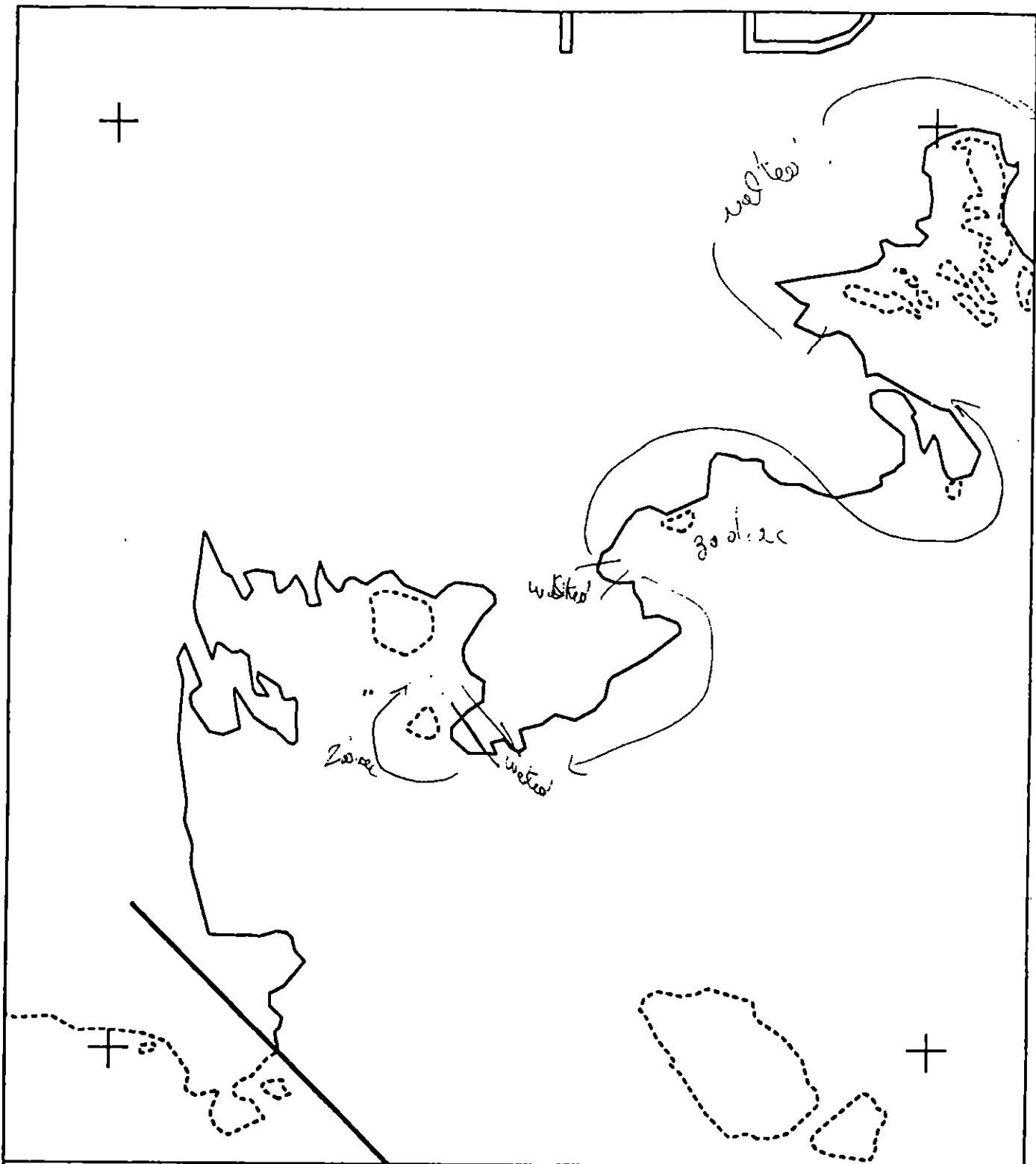
AK State Plane Zone 4
sp008ab

Subdivision Field Map

Map Key: KENPD008Ab

Name: Jean Marie Sengul

Date: May 23/91



PD008 A

Subdivision Field Map

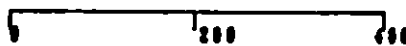
Map Key: KENPD008Aa

Name: Jean Marie Enpin

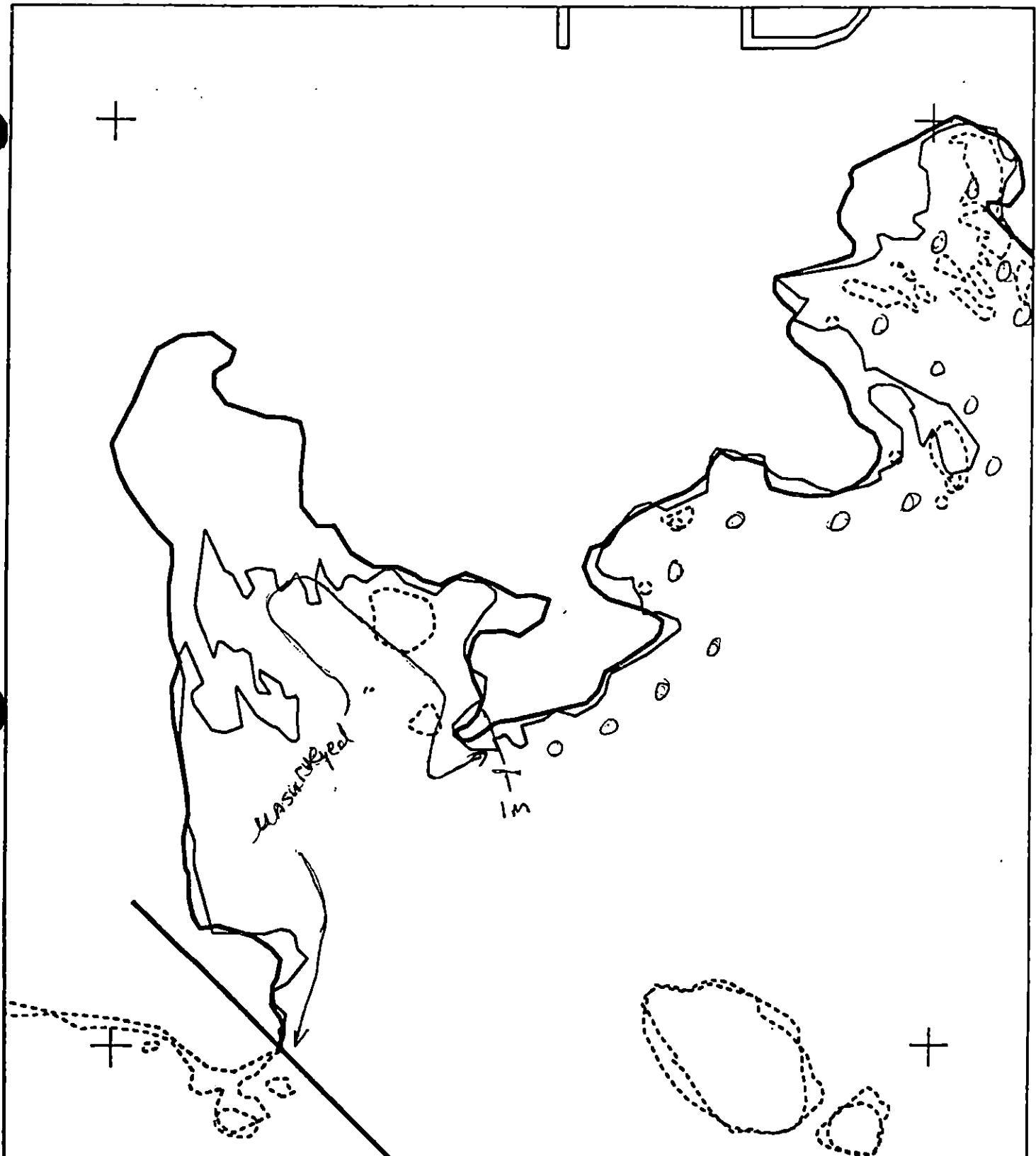
Date: May 23/91



METERS



AK State Plane Zone 4
spdb008a



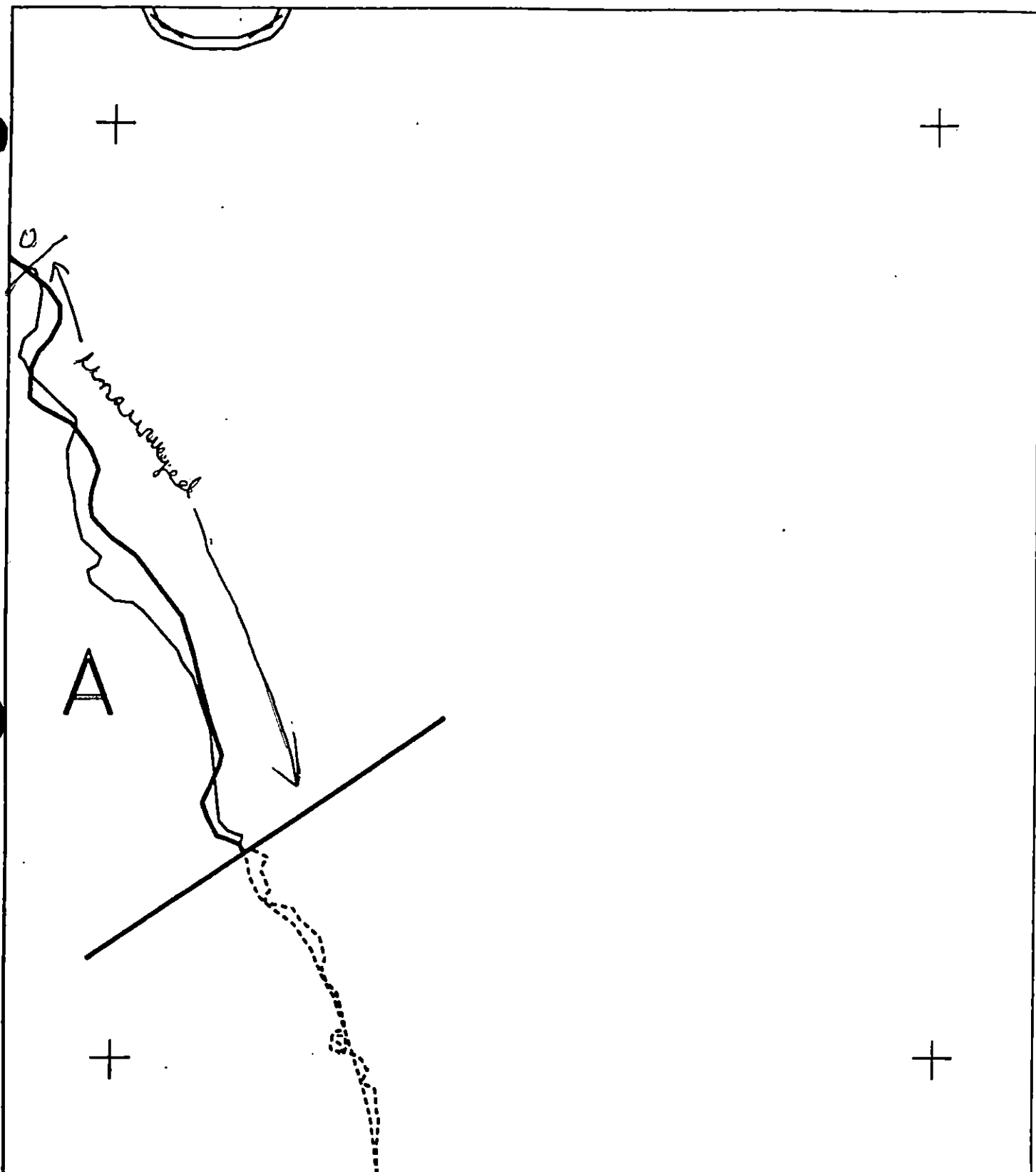
XXXX Wide
//// Medium
---- Narrow
TTTT Very Light
0000 No Oil

PD008 A
ADEC Subsegment Length: 5508m
METERS
AK State Plane Zone 4
apd008a

Subdivision Field Map
Map Key: KENPD008Aa
Name: M. S. Smith
Date: May 23/91
Data Entered:



Revised: MG 6/2/91
reviewed 5/31/91 KB



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

PD008 A

ADEC Subsegment Length: 5506m

METERS

0 100 200
 AK State Plane Zone 4
 apd008ab



Subdivision Field Map

Map Key: KENPD008Ab

Name: for Seamy

Date: May 97

Date Entered:

Revision: me 6/24/91
 reviewed 5/31/91 KG

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 23, 1991	0530 - 0705
SEGMENT #	PD008	TIDAL HEIGHT (Range)	+1.9 => +3.8	
SUBDIVISION	A	BIOLOGIST	JIM BARRY	
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm	

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil-Related Comments

A1 A coat of oil was found on some boulders in the upper intertidal zone. Biota are sparse at this level of the intertidal, with scattered barnacles, limpets and littorine snails. Green filamentous algae form a film in patches in this area. The middle to lower zones at this site have a dense cover of Fucus, with moderate mussels densities.

Cleanup Considerations

Some manual pickup was completed during the survey. Additional manual removal, if recommended will not impact the biota of the beach, provided access is restricted to rocky shores away from the clam bed/ eel grass habitats.

General Comments

PD008-A is located inside the entrance to Port Dick, but parts of it may be exposed to moderate waves, especially during storms. The most prominent feature of the subdivision, however, is the protected inner section where an extensive mud/sand/cobble flat occurs. This area forms an extensive clam and mussel bed in the lower zone. The middle zone of nearly the entire subdivision has dense Fucus on cobble, boulder, and bedrock substrata.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

		FISH OBSERVED	
BIRDS	# OF SPECIES	TOTAL BIRDS	SPECIES PRESENT
Eagles	1	1	
Seabirds			
Waterfowl	1	4	
Gulls/Kittiwakes	1	3	
Shorebirds	1	4	
Corvids	1	3	
Other Birds			

		LAND MAMMALS	
MARINE MAMMALS # OBSERVED	SPECIES	# OBSERVED	
Sea Otters		Black Bear	1
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

D. J. L.

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal
Oil			- -			
Bare Rock		-- - -				
Rockweed (Fucus)			--++*****+++-	- -		
Barnacles (Balanus)			- -	+++++++--	-- - -	
Limpets/Littorine Snails			- - -	--+-+-----		
Mussels (Mytilus)				--+++ + *** * ++ + ++ -		
Red Algae					-----+++++++*	
Filamentous Green Algae			- - - -	- -	-+ + + +-+--++*-+-+*****	
Green Algae (Ulva/other)				- ++ + + -+ -+ +*****		
Upright Brown Algae (not Fucus)					-- - -++* * * *	
Eel Grass						--+*****
Clams						+*****

List of Common Species from PD008-A

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Agarum fimbriatum, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Endocladia muricata, Halosaccion glandiforme, 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)

1. Sponges - Porifera - *Halichondria bowerbanki?*,
2. Anemones - *Anthopleura artemesia*, *Epiactis ritteri*, *Urticina crassicornis*,
3. Hydroids - *Sertulariidae*,
5. Flatworms - *Platyhelminthes* - *Polyclads*
6. Nemertean Worms - Ribbon Worms - *Emplectonema gracile*
8. Polychaete Worms
 - Nereidae* - *Nereis* spp.
 - Serpulidae* - *Serpula* sp.
 - Spirorbidae* - *Spirorbis* sp.
9. Peanut worms - Sipunculids - *Phascolosoma agassizii*
10. Crustaceans
 - a. Amphipods - *Traskorchestia traskiana*
 - b. Barnacles - *Balanus glandula*, *Semibalanus cariosus*
 - c. Crabs - *Paguridae* (hermit crabs),
 - d. Isopods - *Cirrana harfordi*, *Idotea wosnesenskii*, *Gnorimosphera oregonensis*

PY008-A Biological Summary (continued)

- 11. Mollusca
 - a. Chitons - Mopalia mucosa, Tonicella lineata,
 - b. Snails - Gastropods
 - Amphissa columbiana, Littorina sp., Natica clausa, Nucella lamellosa, N. lima, Searlesia dira, Tachyrhynchus sp.
 - c. Limpets - Lottia persona, L. limatula, Tectura fenestrata, T. persona, T. scutum, Siphonaria thersites
 - e. Bivalves - Chlamys hastata, Clinocardium sp., C. nuttalli, Histella arctica, Macoma balthica, Macoma nasuta, Modiolus modiolus, Mya arenaria (soft-shell clam), Mytilus edulis, Pododesmus cepio, Prototheca staminea, Saxidomus giganteus
- 12. Echinoderms
 - b. Sea stars - Dermasterias imbricata, Evasterias truscheli, Leptasterias hexactis, Pycnopoda helianthoides,
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
- 13. Bryozoans - Membranipora sp., Schizoporella sp.
- 15. Fishes
 - Cottidae
 - Stichaeidae - Xiphister atropurpureus, X. mucosus

III. Birds - Crow (3), Bald Eagle (1), Sandpipers (4), Common merganser (4), Glaucous-winged Gull (3)

BIO SKETCH MAP

PDOOB-A

JP BARRY

23 MAY 1991

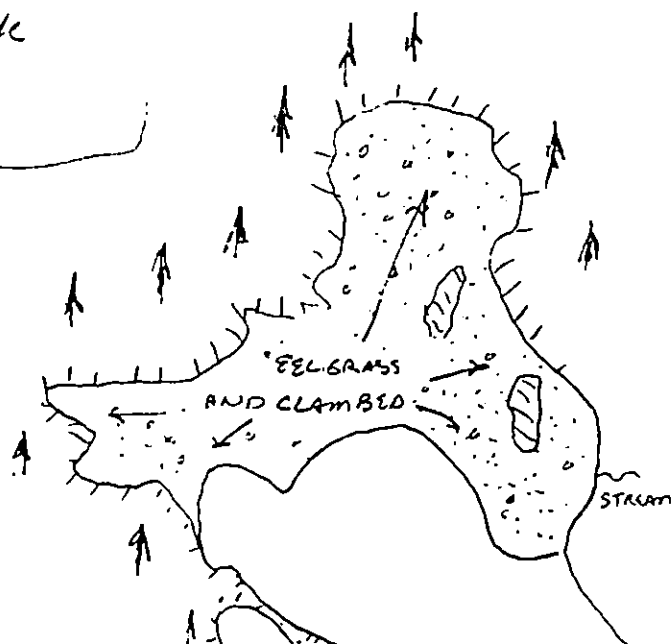
0530 - 0700

 Bedrock cliffs/b'uffs

 Cobble/pebble

 Pebble/cobble

 Mud/cobble

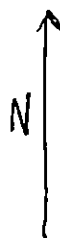


Dense Fucus
IN MOST OF
MIDDLE TO LOW
ZONE ON COBBLE,
BOULDER, BEDROCK

Dense Mussels

A1

CT ON COBBLE -
SPARSE BARNACLES, LIMNETS,
LITTERING SNAILS. PATCHY
GREEN PELAMENTOUS ALGAE.
Dense Fucus, MODERATE
MUSSEL OCCUR BELOW
IN MIDDLE TO LOW ZONE



0 100

1991 MAYSAP EVALUATION

SEGMENT: PD 008 SUB: A REGION: KEN SURVEY DATE: 5/23/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN 5/1 - 7/10; RESTRICTED 7/10 - 9/15

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: _____ Date: _____

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____

FOSC APPROVAL DATE: _____

ADEC _____

FOSC _____

EXXON _____

USCG _____

NOAA _____

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

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

MATSAP FIELD SHORELINE COMMENT SHEET

46

TEAM NO. 4 SEGMENT PD-008 SUBDIVISION A DATE 5/23/91

ADEC
NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☒ NTR
the very light to trace amts of oil observed w/in this subsegment.

EXXON
NAME George P. Stiles SIGNATURE George P. Stiles 5/23/91

☒ NTR
No appreciable oil found.

LANDMANAGER
NAME Steve Johnson OF ADNR SIGNATURE [Signature]

☒ NTR
Concur w/ other comments very little oil.

USCG/NOAA
NAME [Signature] SIGNATURE [Signature]

☒ NTR
only minor oil found and picked-up.

[Signature]

Reviewed: MC 6/17/91
revised 5/31/91 KG

Org Sketd Map.

PD 008. A

J.M. SEMPELS

MAY 23/91

0530 - 0700

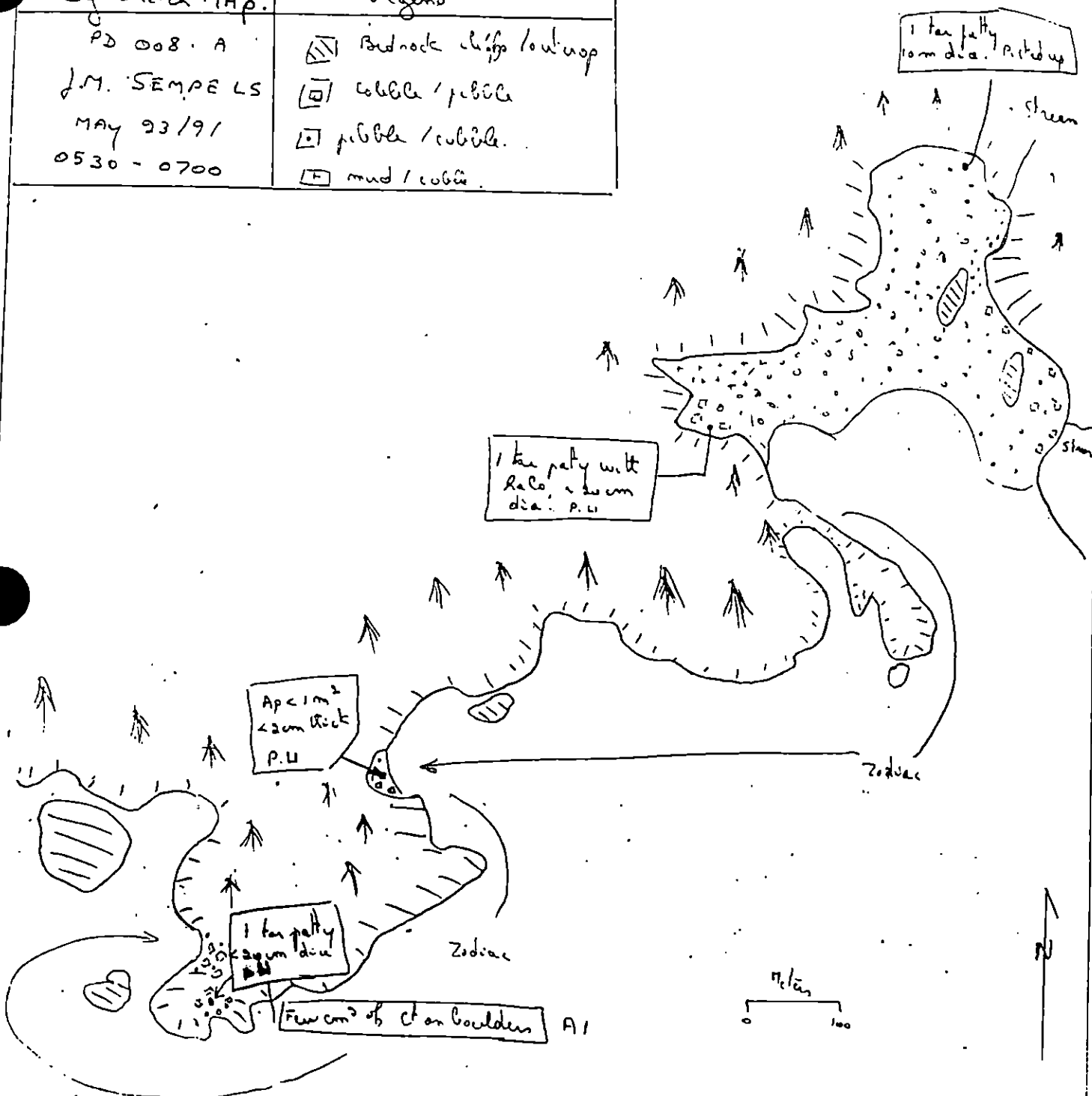
Legend

 Bedrock cliffs / outcrop

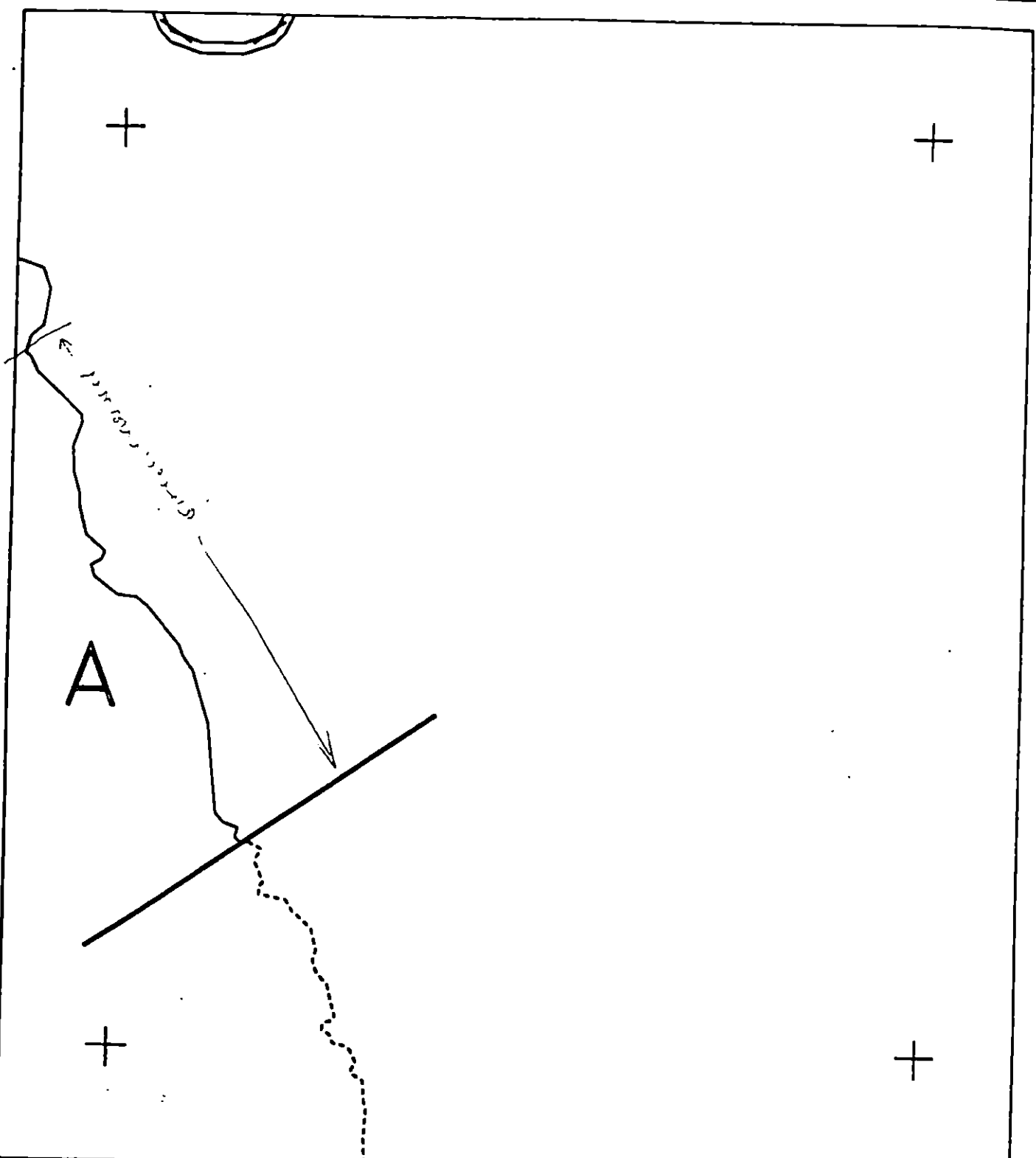
 cobble / pebble

 pebble / cobble

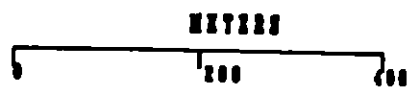
 mud / cobble



REVIEWED: MC 6/2/91



PD008 A



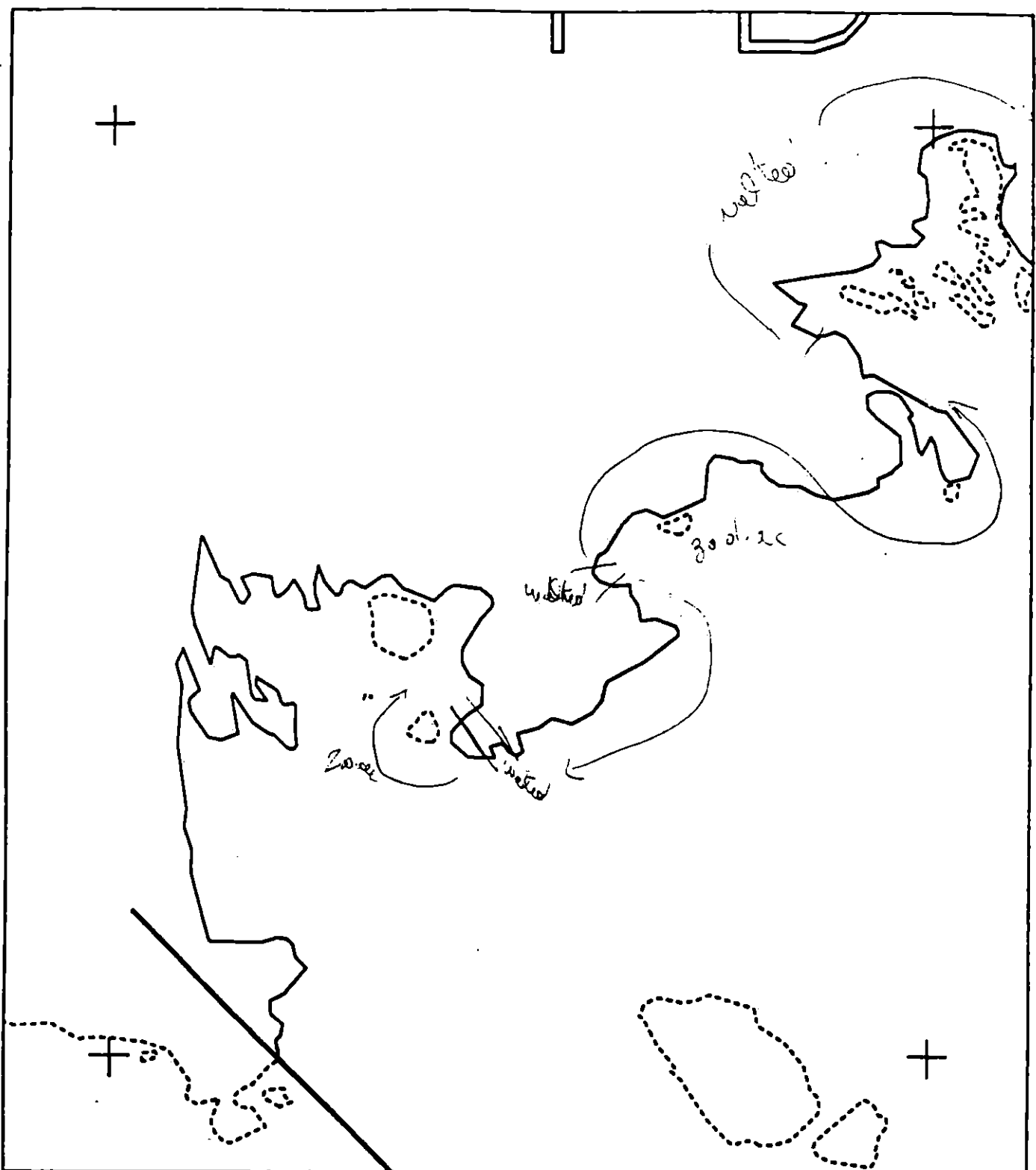
AK State Plane Zone 4
up to 8400 ft

Subdivision Field Map

Map Key: KENPD000AB

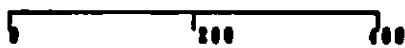
Name: John F. Smith, Jr.

Date: May 93 / a.



PD008 A

METERS



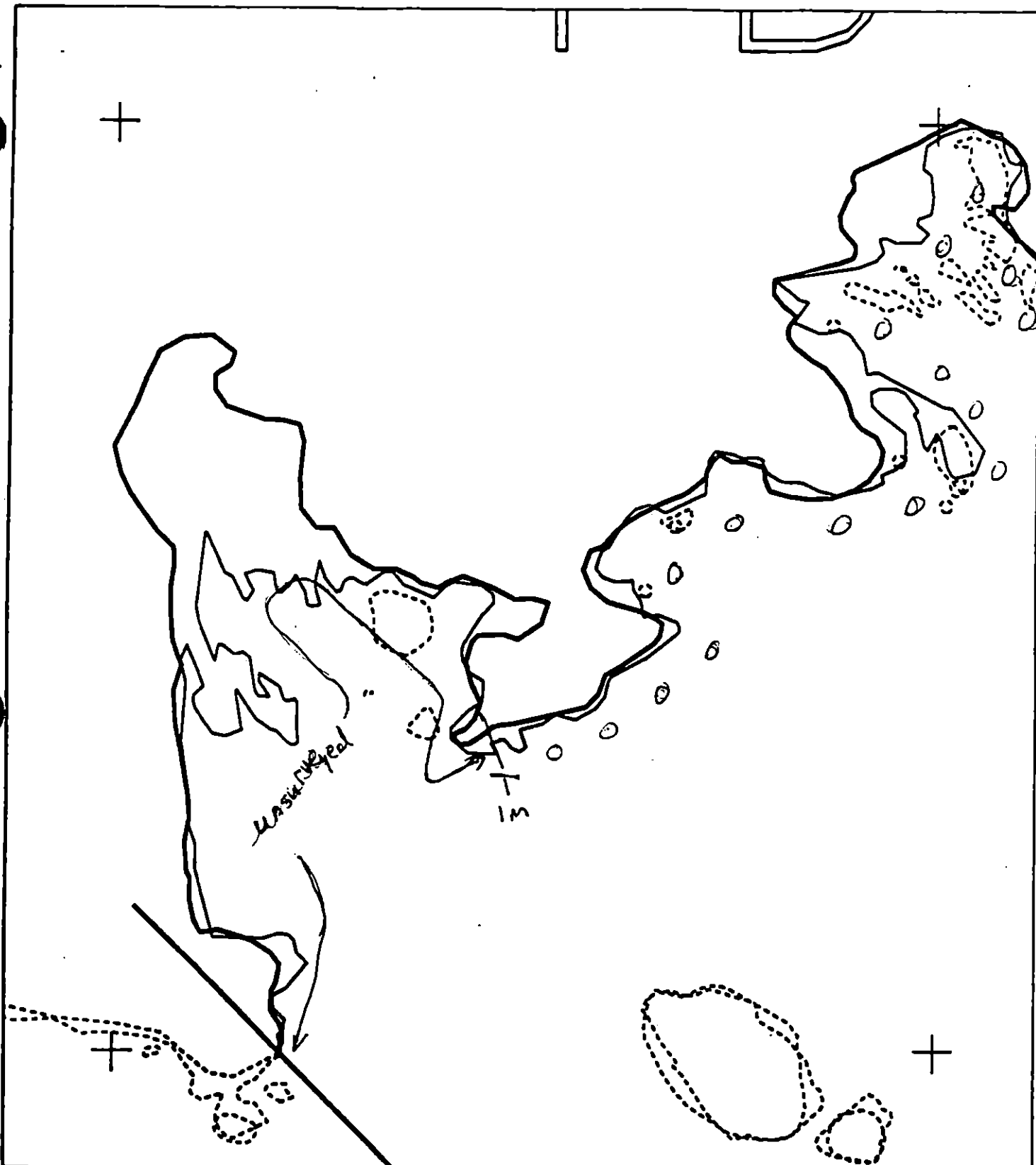
AK State Plane Zone 4
NAD83

Subdivision Field Map

Map Key: KENPD008Aa

Name: John Davis, Jr.

Date: May 23/91



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

PD008 A

ADEC Subsegment Length: 5500m

METERS

0 200 400
 AK State Plane Zone 4
 spd008aa



Subdivision Field Map

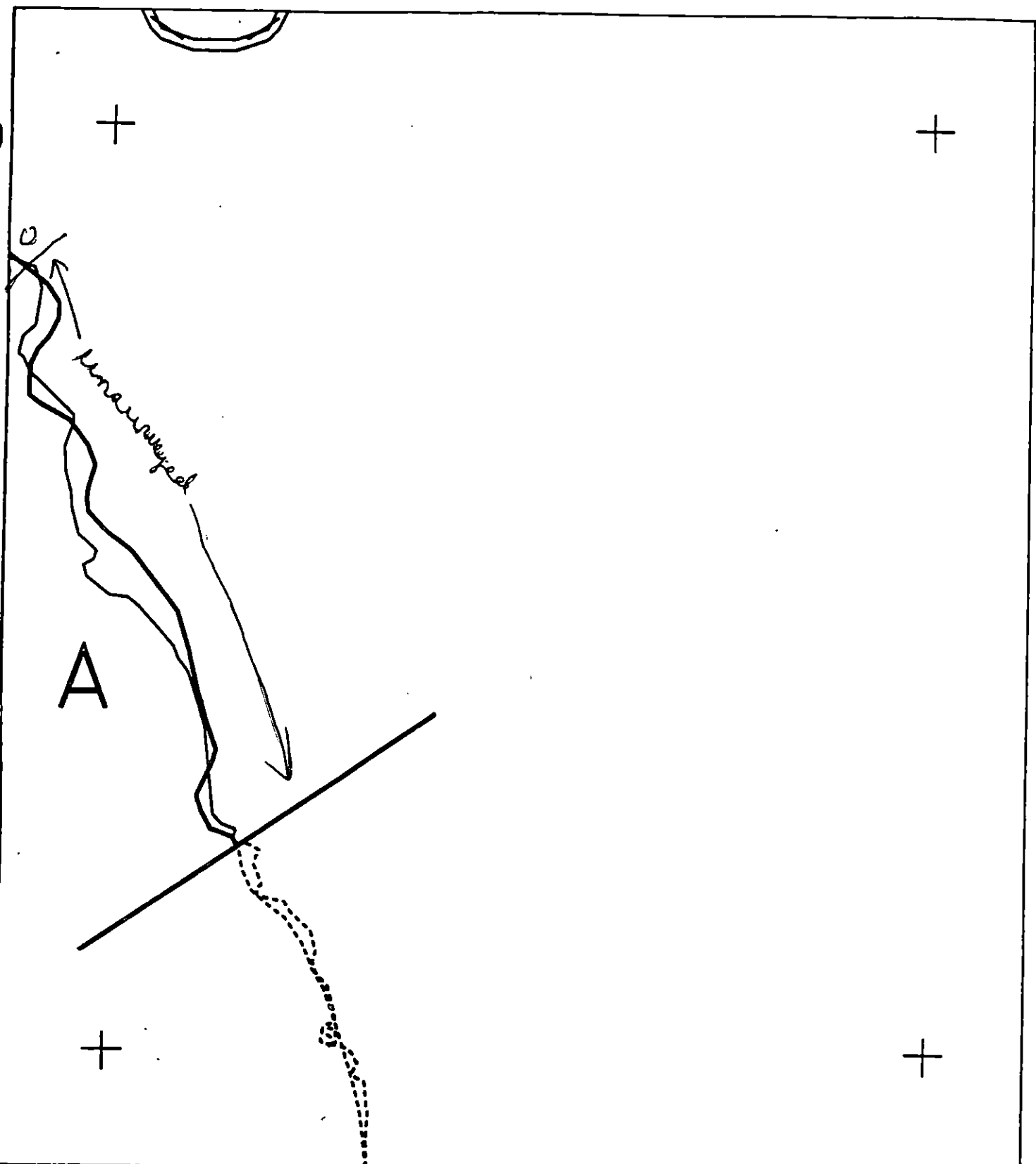
Map Key: KENPD008Aa

Name: M. S. S. S.

Date: May 23/9.

Date Entered:

Revised: MG 6/2/91
 reviewed 5/31/91 KG



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

PD008 A
ADEC Subsegment Length: 5500m
METERS
0 200 400
AK State Plane Zone 4
sp0008ab

Subdivision Field Map
Map Key: KENPD008Ab
Name: for Semyon
Date: 6/24/91
Data Entered:


Reviewed: mc 6/24/91
revised 5/31/91 KG

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME May 23, 1991	0530 - 0705
SEGMENT #	PD008	TIDAL HEIGHT (Range)	+1.9 => +3.8
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil-Related Comments

A1 A coat of oil was found on some boulders in the upper intertidal zone. Biota are sparse at this level of the intertidal, with scattered barnacles, limpets and littorine snails. Green filamentous algae form a film in patches in this area. The middle to lower zones at this site have a dense cover of Fucus, with moderate mussels densities.

Cleanup Considerations

Some manual pickup was completed during the survey. Additional manual removal, if recommended will not impact the biota of the beach, provided access is restricted to rocky shores away from the clam bed/ eel grass habitats.

General Comments

PD008-A is located inside the entrance to Port Dick, but parts of it may be exposed to moderate waves, especially during storms. The most prominent feature of the subdivision, however, is the protected inner section where an extensive mud/sand/cobble flat occurs. This area forms an extensive clam and mussel bed in the lower zone. The middle zone of nearly the entire subdivision has dense Fucus on cobble, boulder, and bedrock substrata.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

		FISH OBSERVED	
BIRDS	# OF SPECIES	TOTAL BIRDS	SPECIES PRESENT
Eagles	1	1	
Seabirds			
Waterfowl	1	4	
Gulls/Kittiwakes	1	3	
Shorebirds	1	4	
Corvids	1	3	
Other Birds			

MARINE MAMMALS # OBSERVED		LAND MAMMALS	
	SPECIES	# OBSERVED	
Sea Otters		Black Bear	1
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

PY008-A Biological Summary (continued)

Mussels vary in density, but have their highest abundance along the most exposed bedrock shores of the subdivision, where they form dense patches. Barnacles, limpets, and littorine snails also vary in abundance, and are most common on rocky substrata in the middle to upper zone. Brown algae are dense in the subtidal of exposed areas. Protected waters have dense cover of filamentous and fleshy green algae, brown algae, and some species of red algae in the low zone. Eel grass is abundant throughout the clam bed below the low tide zone.

General Zonation Pattern on PD008-A

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal
Oil			- -			
Bare Rock		-- - -				
Rockweed (Fucus)				--++*****+++-	- -	
Barnacles (Balanus)			- -	+++++++	-- - -	
Limpets/Littorine Snails			- -	- - - - -	+++++++	
Mussels (Mytilus)				--+++ + *** * ++ + ++ -		
Red Algae					-----+++++++	
Filamentous Green Algae			- - - -	- - - + + + + -	++-+***-+-+*****	
Green Algae (Ulva/other)				- ++ + + - + - +	*****	
Upright Brown Algae (not Fucus)					-- - -++* * * *	
Eel Grass						--+*****
Clams						+*****

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

List of Common Species from PD008-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Agarum fimbriatum, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Endocladia muricata, Halosaccion glandiforme, 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?
2. Anemones - Anthopleura artemesia, Epiactis ritteri, Urticina crassicornis,
3. Hydroids - Sertulariidae,
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Euplectonema gracile
8. Polychaete Worms
Nereidae - Nereis spp.
Serpulidae - Serpula sp.
Spirorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii
10. Crustaceans
 - a. Amphipods - Traskorchestia traskiana
 - b. Barnacles - Balanus glandula, Semibalanus cariosus
 - c. Crabs - Paguridae (hermit crabs),
 - d. Isopods - Cirrana harfordi, Idotea wosnesenskii, Gnoriomysphaeroma oregonensis

PY008-A Biological Summary (continued)

- 11. Mollusca
 - a. Chitons - *Mopelia mucosa*, *Tonicella lineata*,
 - b. Snails - Gastropoda
 - Amphissa columbiana*, *Littorina* sp., *Natica clausa*, *Nucella lamellosa*, *N. lima*, *Searlesia dira*, *Tachyrhynchus* sp.
 - c. Limpets - *Lottia persona*, *L. limatula*, *Tectura fenestrata*, *T. persona*, *T. scutum*, *Siphonaria thersites*
 - e. Bivalves - *Chlamys hastata*, *Clinocardium* sp., *C. nuttalli*, *Hiatella arctica*, *Macoma balthica*, *Macoma nasuta*, *Modiolus modiolus*, *Mya arenaria* (soft-shell clam), *Mytilus edulis*, *Pododesmus cepio*, *Prototheca staminea*, *Saxidomus giganteus*
- 12. Echinoderms
 - b. Sea stars - *Dermasterias imbricata*, *Evasterias truscheli*, *Leptasterias hexactis*, *Pycnopoda helianthoides*,
 - c. Sea Cucumbers - Holothurians - *Eupentacta* sp.
 - d. Urchins - *Strongylocentrotus droebachiensis*
- 13. Bryozoans - *Membranipora* sp., *Schizoporella* sp.
- 15. Fishes
 - Cottidae
 - Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*

III. Birds - Crow (3), Bald Eagle (1), Sandpipers (4), Common merganser (4), Glaucous-winged Gull (3)

BIO SKETCH MAP

PD008-A

JP BAREJ

23 MAY 1951

0530 - 0700



Bedrock cliffs/buffs



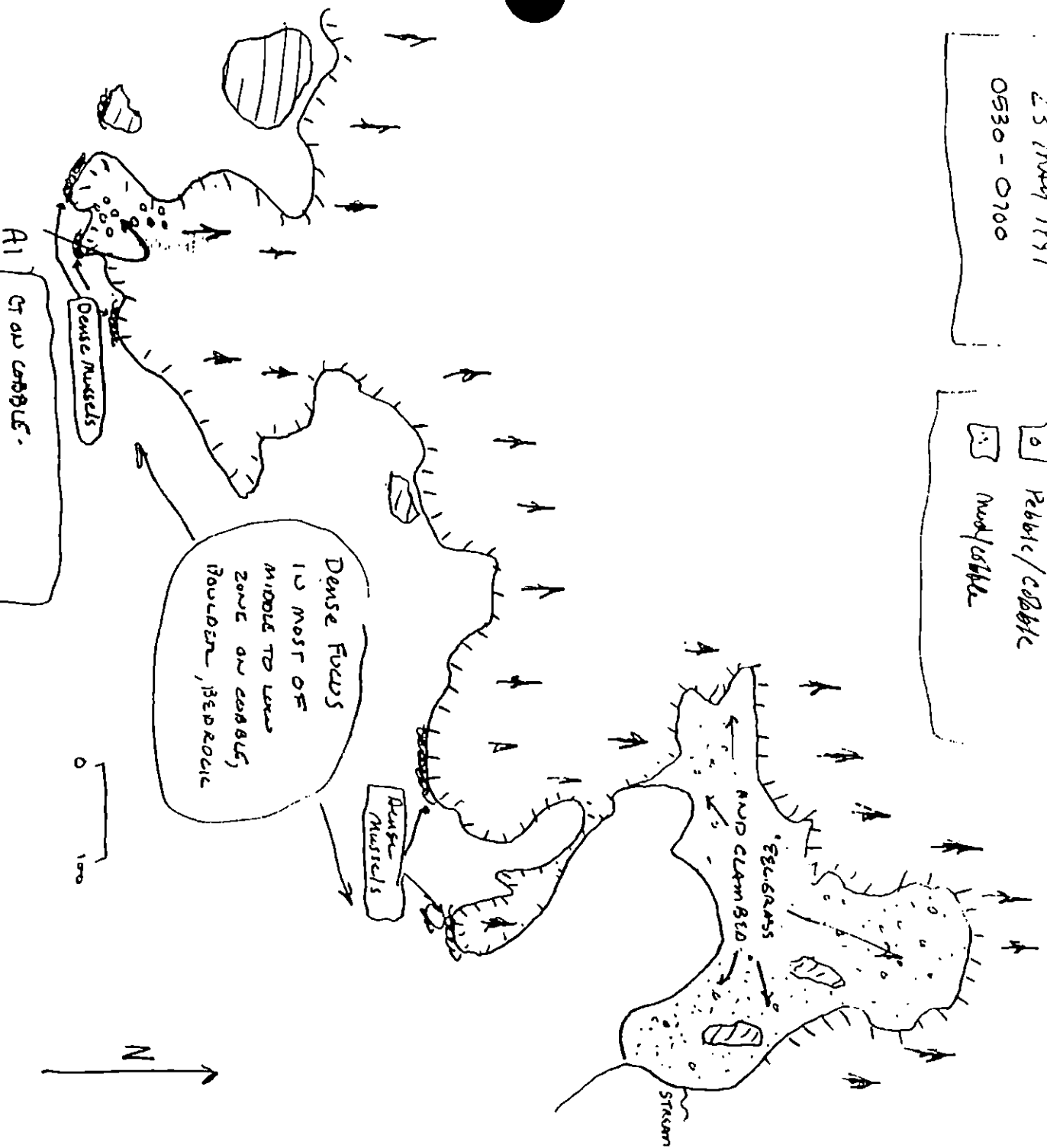
Cobble/pebble



Pebble/cobble



Mud/cobble



REGION: KENAI

SEGMENT: ST/PD-10

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ PD-010 SUBDIVISION A (1 OF 1) DATE 4/26/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ST-3 All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1J Purse seine area (7/20 to 9/30)
4GA State Marine Park Alaska State Parks
6NN Recreation: Sportfishing

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact Exxon's Cultural Resource Program immediately (564-3274 (Anchorage) or 229-1508 (24 hrs.)).

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 28 m: Medium 3 m: Narrow 0 m: V.Light 0 m: No Oil 8766 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 12 cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes: 1) manual pick up of mousse patties and 2) manual removal of tarmats in areas indicated on sketch map. Work between 6/1 to 7/10 with approval of USFWS regarding eagle nest.

TAG COMMENTS: _____

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

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

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

MENT ST / PD10

SUBDIVISION:

A

DATE 4-26-90

NO. 0919

USCG

NAME

DONALD A. MacDONALD

SIGNATURE

Donald A. MacDonald

☐ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

The only oiling that was seen was on the small peninsula in the southeast section of the segment. The intertidal zone was very healthy with a wide diversity of plant and animal life. As usual all members of the team were in basic agreement as reported on the other forms.

ADEC

NAME

JOHN R. REED

SIGNATURE

John R. Reed

☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

I am recommending manual cleanup of broken asphalt pavement on the eastern beach of the peninsula in the ~~SE~~ S/E end of the segment. This is a 30 x 25 m patch of asphalt in a boulder and cobble beach. Some of the boulders will need to be turned over for better access to the pavement. I agree with data on SSAT Form

LAND MANAGER

NAME

SHARIE Methven-Toney

SIGNATURE

Sharie Methven-Toney

☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

Port Dick-West Arm Segment PD10 is within Kachemak Bay State Wilderness Park, and has high recreation & wildlife resource values. Two ^{Study} Garclan Sites Signs should be removed after project. Several tent sites and good storage within segment. One cultural site is east of segment. The one boulder and cobble beach with oil we found is located on the east of the segment which we recommend manual ^{cleanup} removal of oil and moving the rocks over. I agree with SSAT forms. The area is used with sport fishing and commercial fishing.

SHORELINE OILING SUMMARY

REVISION NO. 04/13/90

OG Sawyer ^{NOAA} MacDonald SEGMENT ST/ PD 10
 BIG Carr LAND REP Methven-Taney SUBDIVISION A (1 OF 1)
 N Boyer ADEC Reed TIME 07:15 to 11:10
 T M NO. 18 TIDE LEVEL -1.5 to +0.5 DATE Apr 1 26 1990
 EST. SUBDIVISION LENGTH: 6/09 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: E to W
 SURFACE SEDIMENTS: R 40 % B 20 % C 10 % P 30 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 60 % Hang 0 % Vert 10 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W 25 m M 5 m N 0 m VL 0 m NO 6079 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	10	15	17	18	20	25	30	35	40	45	50	55	SU	U	M	U
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT																
STAIN																
MOUSSE																
PATTIES																
BALLS																
FILM																
NO OIL																

PAVEMENT H (P) S 750 sq. m by 8 cm

PATTIES / TARBALLS 0 BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

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

DID YOU COLLECT DEBRIS?

YES ☒ NO ☒

TYPE 1 TARBALL

#BAGS 1

Photographs:

Roll No. ST-18-9

Frames 1-5

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM)	BELOW		OIL / FILM COLOR								PIT ZONE				A N A	W E E N (Y/N)	T	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		VO	VC	20	25	30	35	40	45	50	55	SU	U	M	U				
1	20																								P-G, B
2	25																								P-S, P
3	25																								P-S, P
4	30																								P-S, P, C
5	25																							20	P-G, P
6	25																								P-C, P

COMMENTS ST/PD10A comprises several low angle pebble beaches of varying size. The headland extending eastward of pit #8 has the only oil observed in this segment. The shoreline south of this segment was examined because oil was observed and there is a cultural site.

----- RAT ----- 28 Apr 90

OG Sawyer

SEGMENT ST/PO10

SUBDIVISION A

DATE Apr 1 26 90

CHECKLIST

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

LEGEND

1
 Pti - No Subsurface Oil

2
 Pti - Subsurface Oil

CT/C
 Continuous Distribution

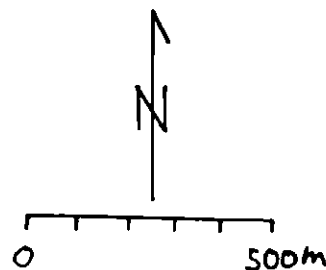
CT/B
 Broken Distribution

CT/P
 Patchy Distribution

CT/S
 Splashed Distribution

Oiled Vegetation

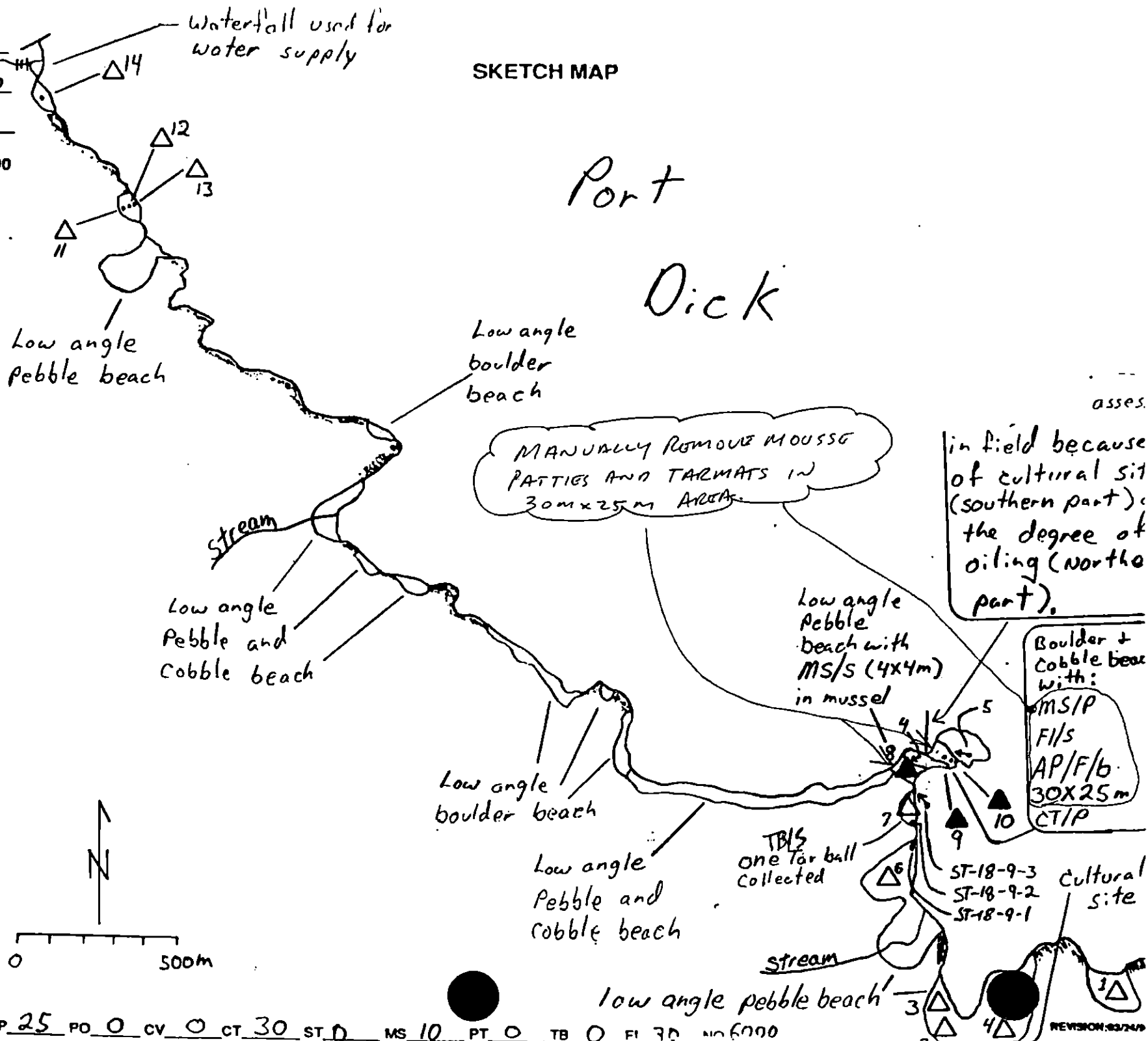
1 2 ventral
 Photo location, direction, and number



Oil Character Length (m): AP 25 PO 0 CV 0 CT 30 ST 0 MS 10 PT 0 TB 0 FI 30 NO 6000

SKETCH MAP

Port
Dick



SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST/ PD-10 Subdivision A Date (mo / day / yr) 4-26-90
 Time (24 hr) 0715 Biologist MARK CARR

- (A) Substrate type and % of segments:
 (1) Bedrock 40 (2) Boulder 20 (3) Cobble 10 (4) Pebble 30 (5) Sand 0 (6) Silt 0
- (B) Overall % cover of biota (% of segment): Dense 80 Moderate 15 Low 5
- (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-18-9

Frames 1-5

BARNACLES

	Dense		Moderate			Sparse			Rare		
	1L		1U	1M	1L	1U	1M	1L	1U	1M	1L
Bed	2	2	2	2	2	2	2	2	2	2	2
10mL	3	3	3	3	3	3	3	3	3	3	3
100B	4	4	4	4	4	4	4	4	4	4	4
100B	5	5	5	5	5	5	5	5	5	5	5
	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT
 NOT PRESENT IN UPPER & LOWER TIDAL ZONE.
 NOT PRESENT IN ANY TIDAL ZONE.

MYTILUS

	Dense		Moderate			Sparse			Rare		
	1L		1U	1M	1L	1U	1M	1L	1U	1M	1L
Bed	2	2	2	2	2	2	2	2	2	2	2
10mL	3	3	3	3	3	3	3	3	3	3	3
100B	4	4	4	4	4	4	4	4	4	4	4
100B	5	5	5	5	5	5	5	5	5	5	5
	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT IN LOW TIDAL ZONE.
 NOT PRESENT
 NOT PRESENT IN UPPER OR LOWER TIDAL ZONE.

GASTROPODS

	Dense		Moderate			Sparse			Rare		
	1L		1U	1M	1L	1U	1M	1L	1U	1M	1L
Bed	2	2	2	2	2	2	2	2	2	2	2
10mL	3	3	3	3	3	3	3	3	3	3	3
100B	4	4	4	4	4	4	4	4	4	4	4
100B	5	5	5	5	5	5	5	5	5	5	5
	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT IN UPPER TIDAL ZONE
 NOT PRESENT
 NOT PRESENT IN ANY TIDAL ZONE.

FUCUS

	Dense		Moderate			Sparse			Rare		
	1L		1U	1M	1L	1U	1M	1L	1U	1M	1L
Bed	2	2	2	2	2	2	2	2	2	2	2
10mL	3	3	3	3	3	3	3	3	3	3	3
100B	4	4	4	4	4	4	4	4	4	4	4
100B	5	5	5	5	5	5	5	5	5	5	5
	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT IN UPPER TIDAL ZONE
 NOT PRESENT IN UPPER ZONE.
 NOT PRESENT
 NOT PRESENT IN ANY TIDAL ZONE.

Wildlife Observations/ General Comments:

Bald eagle (5) including 1 immature, ruby-crowned kinglet (song), mink tracker (1), varied thrush (song), golden-eye (20); N.W. crow (1), harlequin ducks (20),

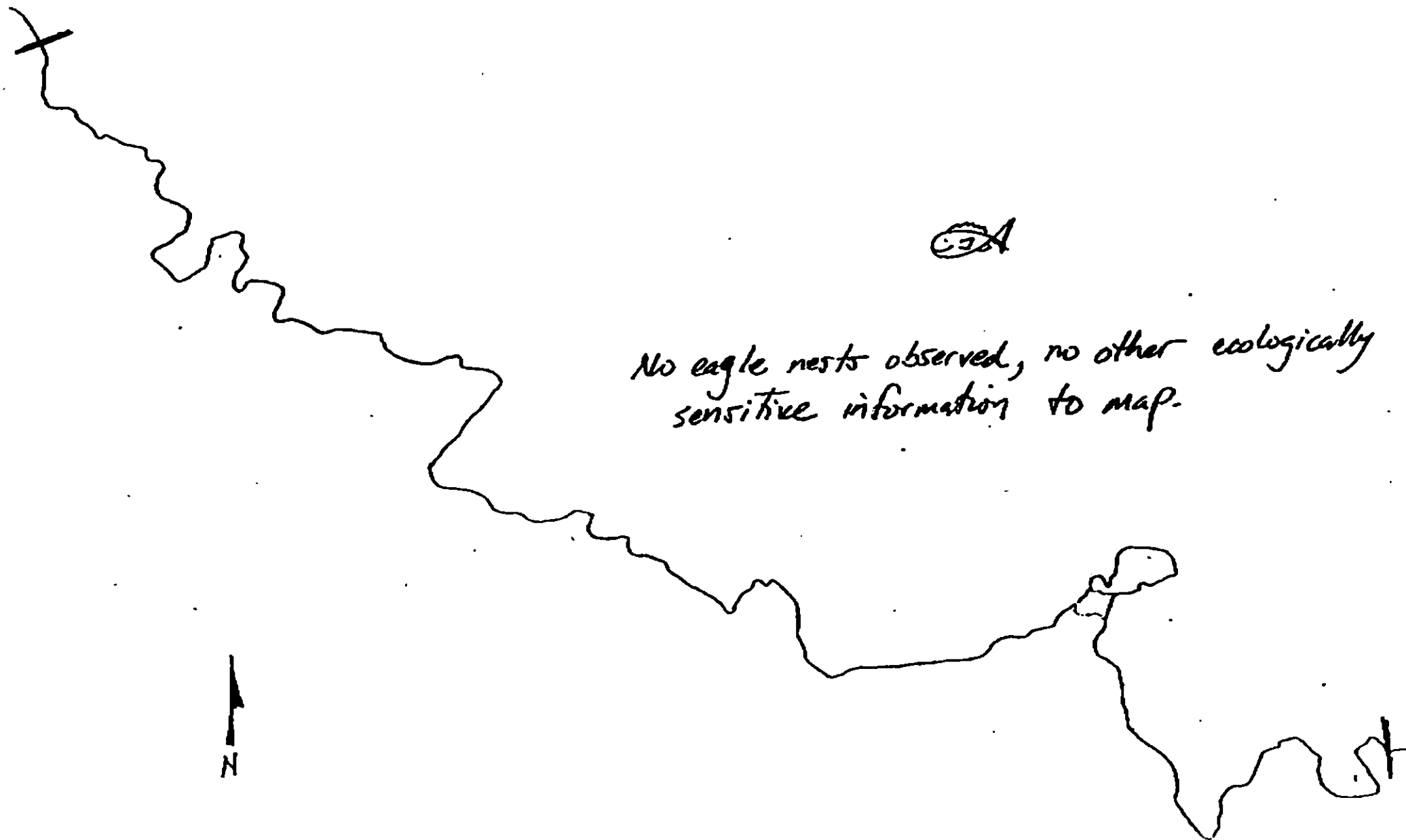
Ecological Considerations: mallard duck (3), glaucous-winged gull (5).

First observation of "recruited" ($\approx 2mm$) *Mytilus* and littorines ($\approx 2mm$) inhabiting oiled substratum. Recruits occupied mussel bed imbedded in asphalt.

ST (Bald eagle nest) - 2 1.T / D. State Arch.

BIO SKETCH - ECOLOGY MAP

PD-10 (4-26-90)



PD-10

PD-10

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

PD-10

Approx. Segment Length: 9935m

Map Key: KEN-PD-10a
Name: Sawyer
Date: 4-26-90

PD-10

Reprint this part
@ 1"=500' I will
RE-plot
fw

PD-10

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

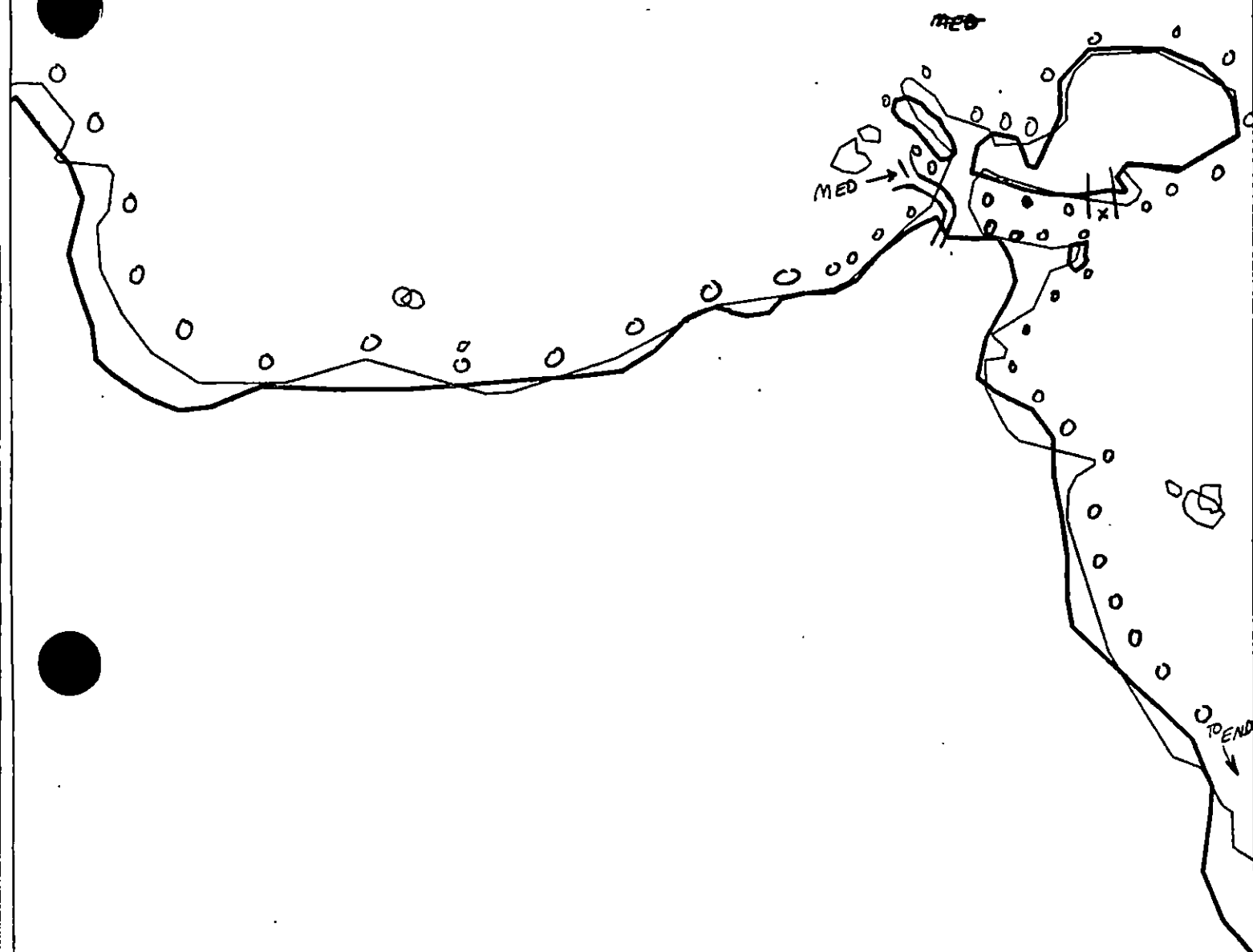
PD-10

Approx. Segment Length: 5935m

Map Key: KEN-PD-10a

Name: Sawyer

Date: 4-26-90



XXXX Wide

PD-10

//// Medium

---- Narrow

ADEC Segment Length: 216m

TTTT Very Light



0000 No Oil

Map Key: PD-10c

Name: _____

Date: _____

Data Entered: _____

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

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

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT PD-010 SUBDIVISION A DATE 5/23/91

DEC NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☒ NTR The oil within this segment is under interstitial small patches — AP, HSOR, MSOR — A₂ & lg mussel bed in lower intertidal was oiled — CSOR — This was not observed on this survey due to the height of the tide. (Please reference ADEC Data — transect SITE)

EXXON NAME George L. Stiles SIGNATURE George L. Stiles 5/23/91

☒ NTR No appreciable oil found. I tried to locate the A₂ area wading in the water and prodding with a shovel and was unable to locate. This area is based totally on the ADEC Rep. memory.

LANDMANAGER NAME Jeff Johnson OF ADNR SIGNATURE Jeff Johnson

☒ NTR Concur with DEC comments. AP, HSOR, MSOR that was found was picked up. Mussel beds would be unreasonably disturbed looking for more.

USCG/NOAA NAME Phil McMahon SIGNATURE Phil McMahon

☒ NTR Only minor oil found and picked-up most of it.

Don A. McMahon

PAGE ____ OF ____

Revised: MC 6/14/91
revised 5/31/91 KG

CO SKED MAP

PD. 010. A

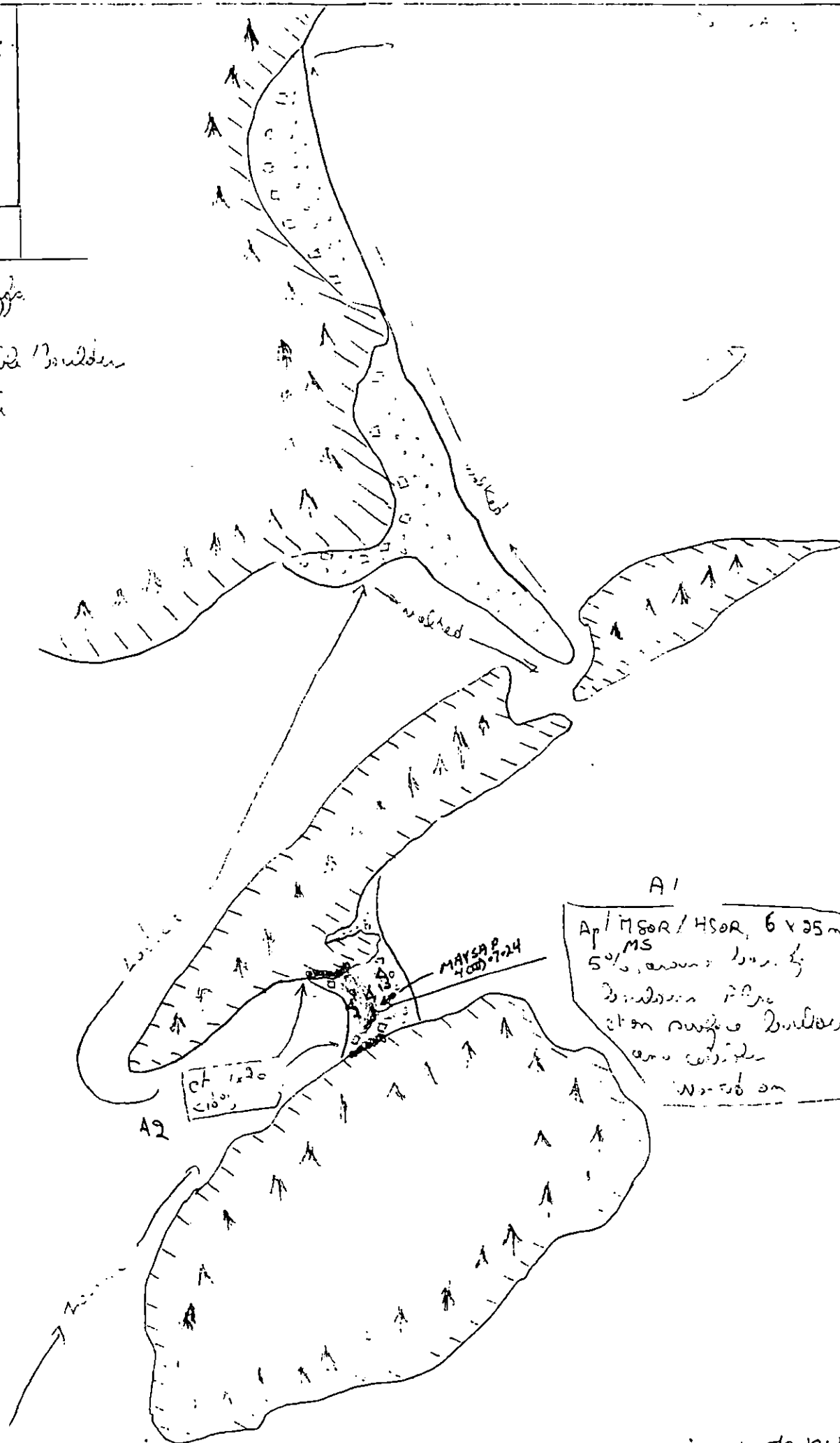
JM SEMPELS

AY 23/91

0710 - 0802

Legend

-  Seismicity
-  American Indian Boulder
-  Pecos / Loma



A1

Ap / HGOR / HGOR, 6 x 25 m
50% MS
Boulders are
on surface boulders
and water
was on

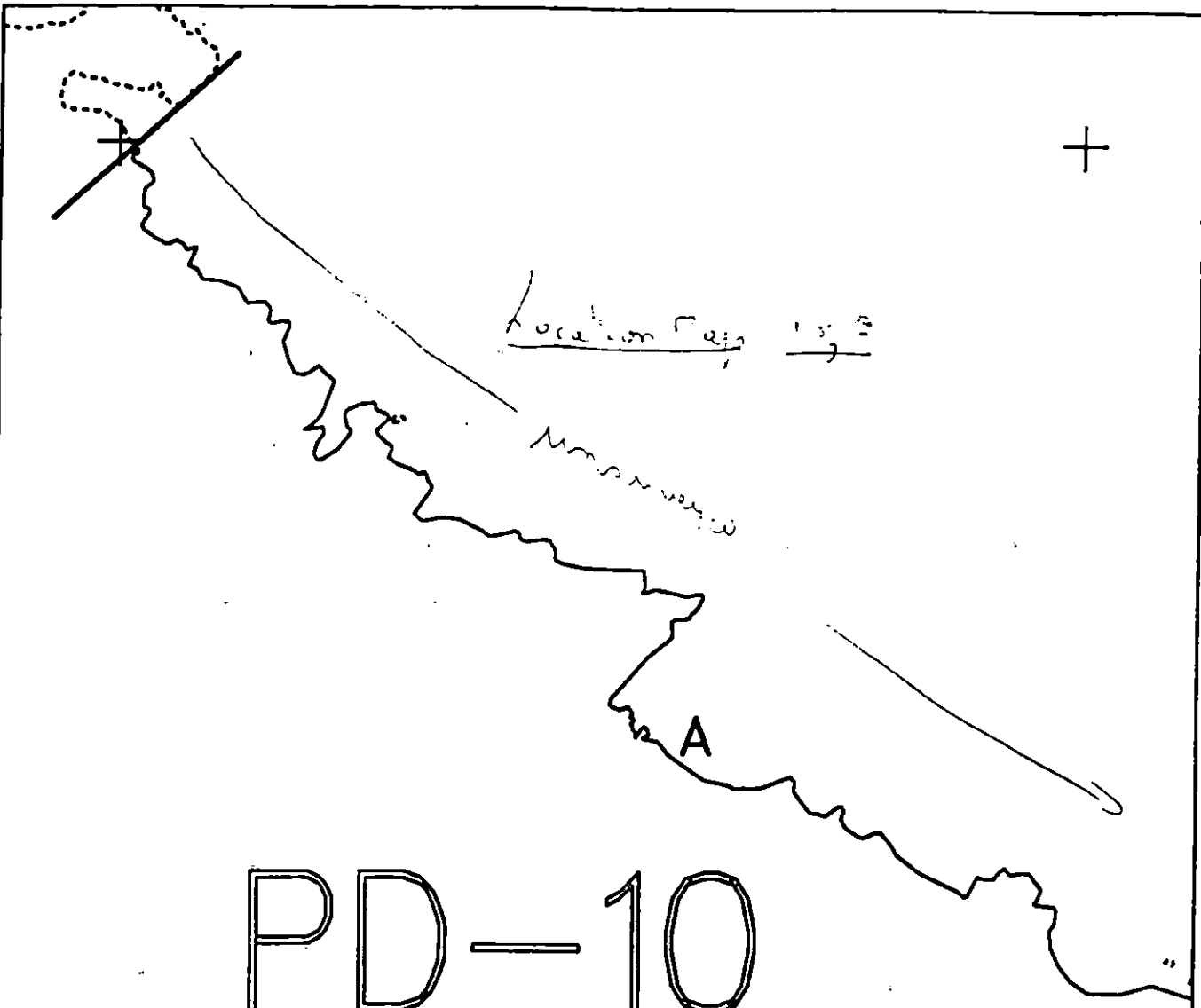
A2

CH 1230
C100

MAYSA
4000-7-24

MAYSA
4000-7-23

0 50

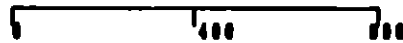


PD-10



PD010 A

METERS



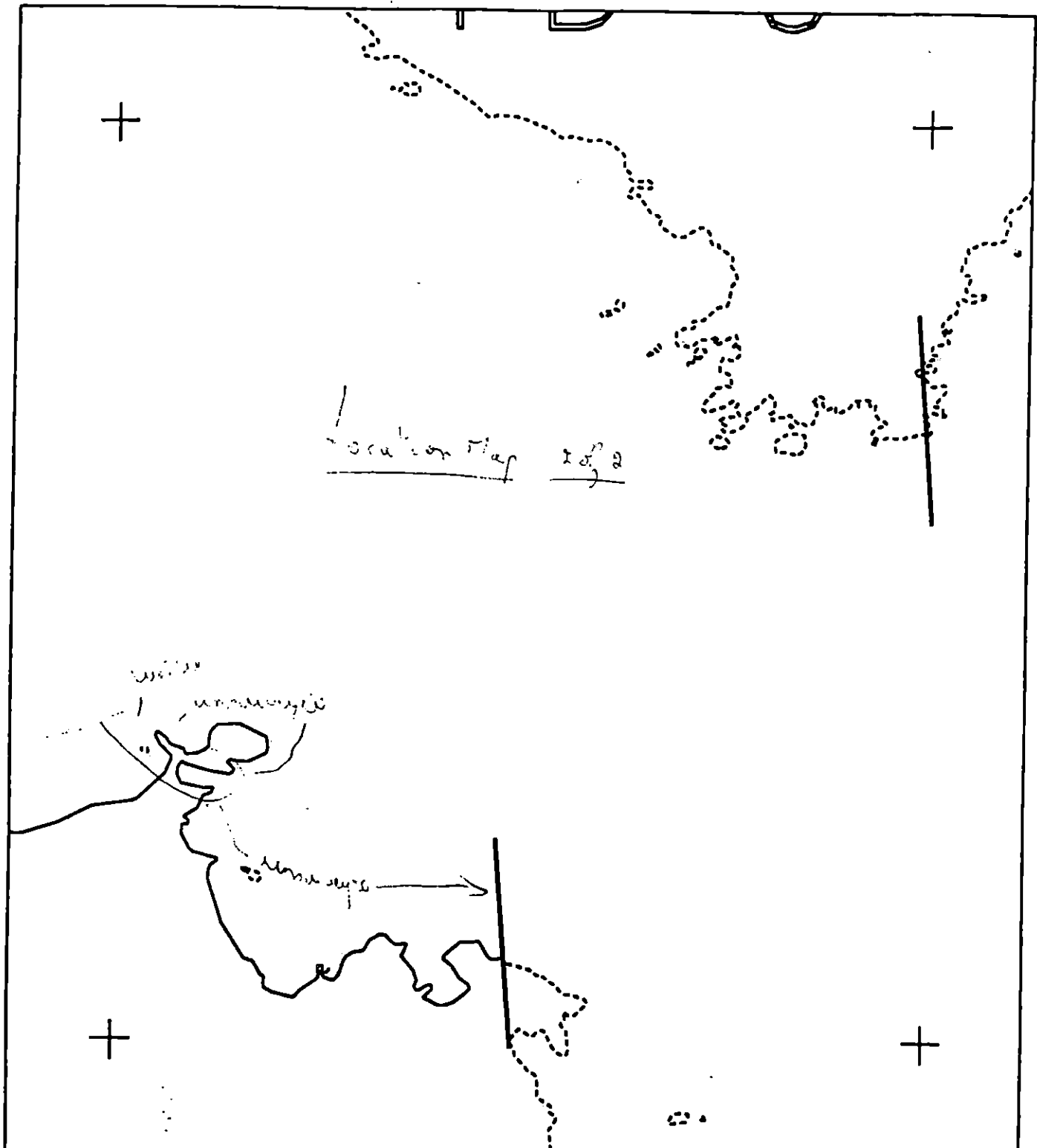
AK State Plane Zone 4
sp201000

Subdivision Field Map

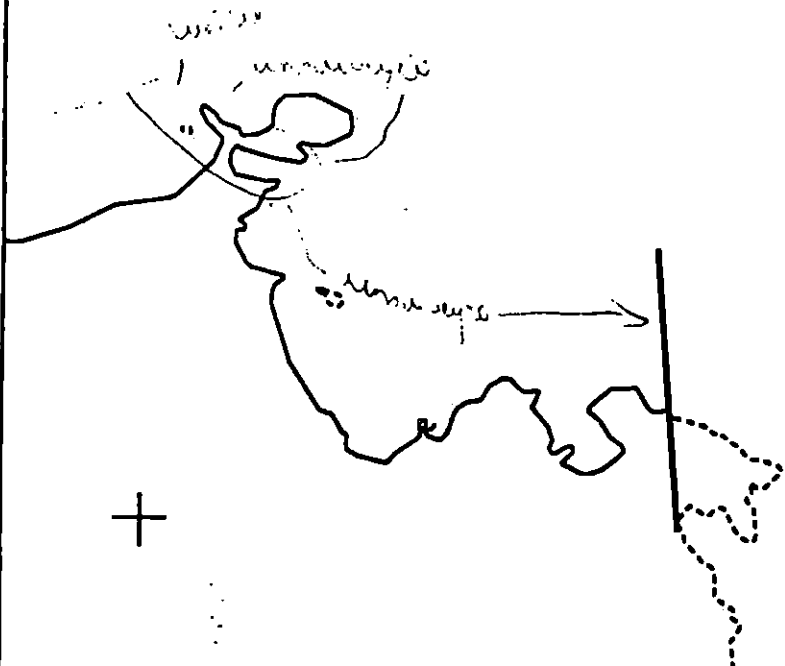
Map Key: KENPD010Aa

Name: JM Sengels

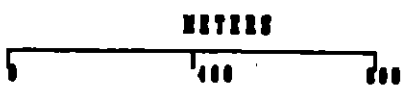
Date: May 23/91



Location Map of 2



PD010 A



AK State Plane Zone 4
sp0100b

Subdivision Field Map
Map Key: KENPD010Ab
Name: JM Samples
Date: May 93/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 23, 1991 0715 - 0800
SEGMENT #	PD010	TIDAL HEIGHT (Range)	+4.1 => +5.7
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil-Related Comments

A1 This area has a CT to MSOR in patches in the upper zone of the beach. The most abundant biota at this location are barnacles, limpets, and littorine snails, which are all moderate in abundance. The oil location is about 5 to 10 ft from the upper edge of the mussel bed.

A2 SPARSE BARNACLES, LIMPETS, LITTORINAE

Cleanup considerations

Some manual cleanup was done on this beach during the survey. Additional manual cleanup will not harm the biota at the site, unless trampling or other disruption of the mussel bed occurs. Cleanup workers, if recommended, should simply walk around the mussel bed for beach access.

General Comments

The survey visited to very small coves along this subdivision where previous significant oiling was reported. Although some oil remains, there is ample evidence of recovery. The mussel bed in the middle to low zone has dense cover of young mussels, indicating a large recent recruitment event. This is the most significant biological feature of the cove. Below is zone Fucus is abundant, with moderate to dense cover over the intertidal boulders and bedrock walls. Barnacles are abundant above the mussel zone.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

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

MARINE MAMMALS OBSERVED	# OBSERVED	LAND MAMMALS SPECIES	#
Sea Otters		River Otter	- 4 (1A, 3 juveniles?)
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

PD010-A Biological Summary, continued

Common Species on PD010-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta - Enteromorpha sp., 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, Mastocarpus sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria palmata, Petrocelis sp., Porphyra sp., Rhodomela larix
5. Higher Plants - Leymus mollis (beach rye grass)

II. Marine Animals

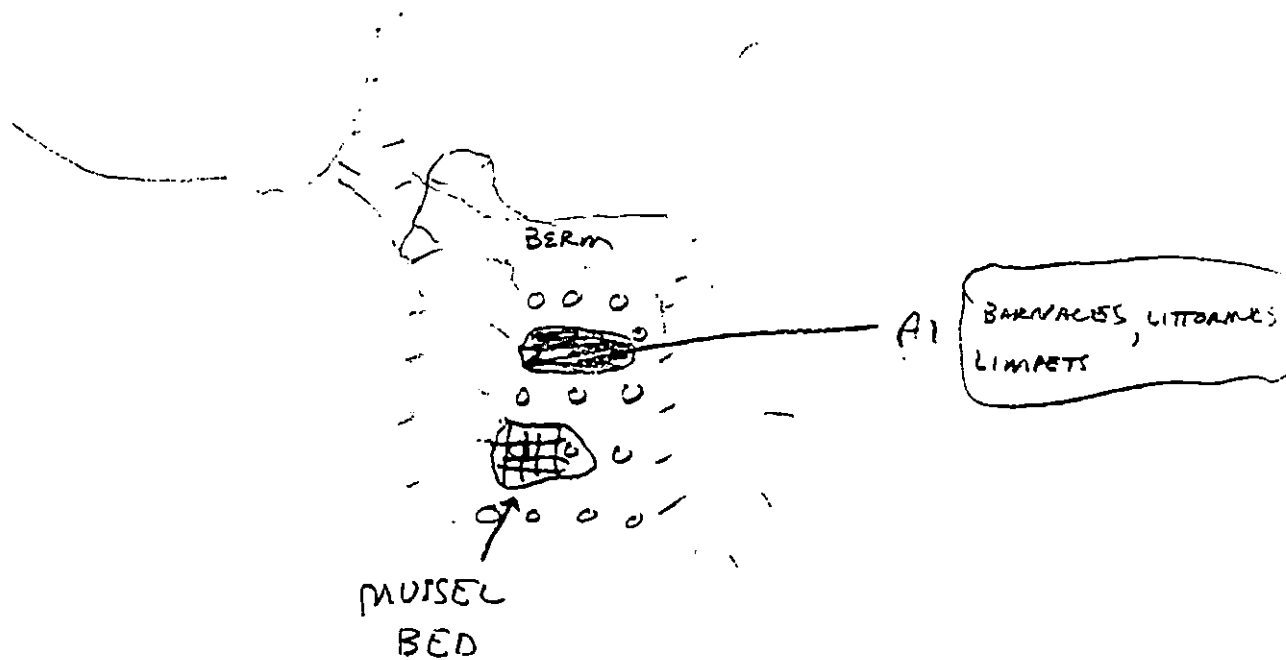
1. Sponges - Porifera - Halichondria bowerbanki?
2. Anemones - Anthopleura artemesia, Epiactis ritteri, Urticina crassicornis,
3. Hydroids - Sertulariidae,
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaete Worms
Nereidae - Nereis spp.
Serpulidae - Serpula sp.
Spirorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii
10. Crustaceans
 - a. Amphipods - Traskorchestia traskiana
 - b. Barnacles - Balanus glandula, Semibalanus cariosus
 - c. Crabs - Paguridae (hermit crabs),
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
11. Mollusca
 - a. Chitons - Mopalia mucosa, Tonicella lineata,
 - b. Snails - Gastropods
Amphissa columbiana, Littorina sp., Natica clausa, Nucella lamellosa, N. lima, Searlesia dira, Tachyrhynchus sp.
 - c. Limpets - Lottia persona, L. limatula, Tectura fenestrata, T. persona, T. scutum, Siphonaria thersites
 - e. Bivalves - Mytilus edulis, Pododesmus cepio, Prototheca staminea
12. Echinoderms
 - b. Sea stars - Dermasterias imbricata, Evasterias truscheli, Leptasterias hexactis, Pisaster ochraceus
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Schizoporella sp.
15. Fishes
Cottidae
Stichaeidae - Xiphister atropurpureus, X. mucosus

III. Birds - Bald Eagle (1), Black Oystercatcher (2)

BIO SKETCH MAP

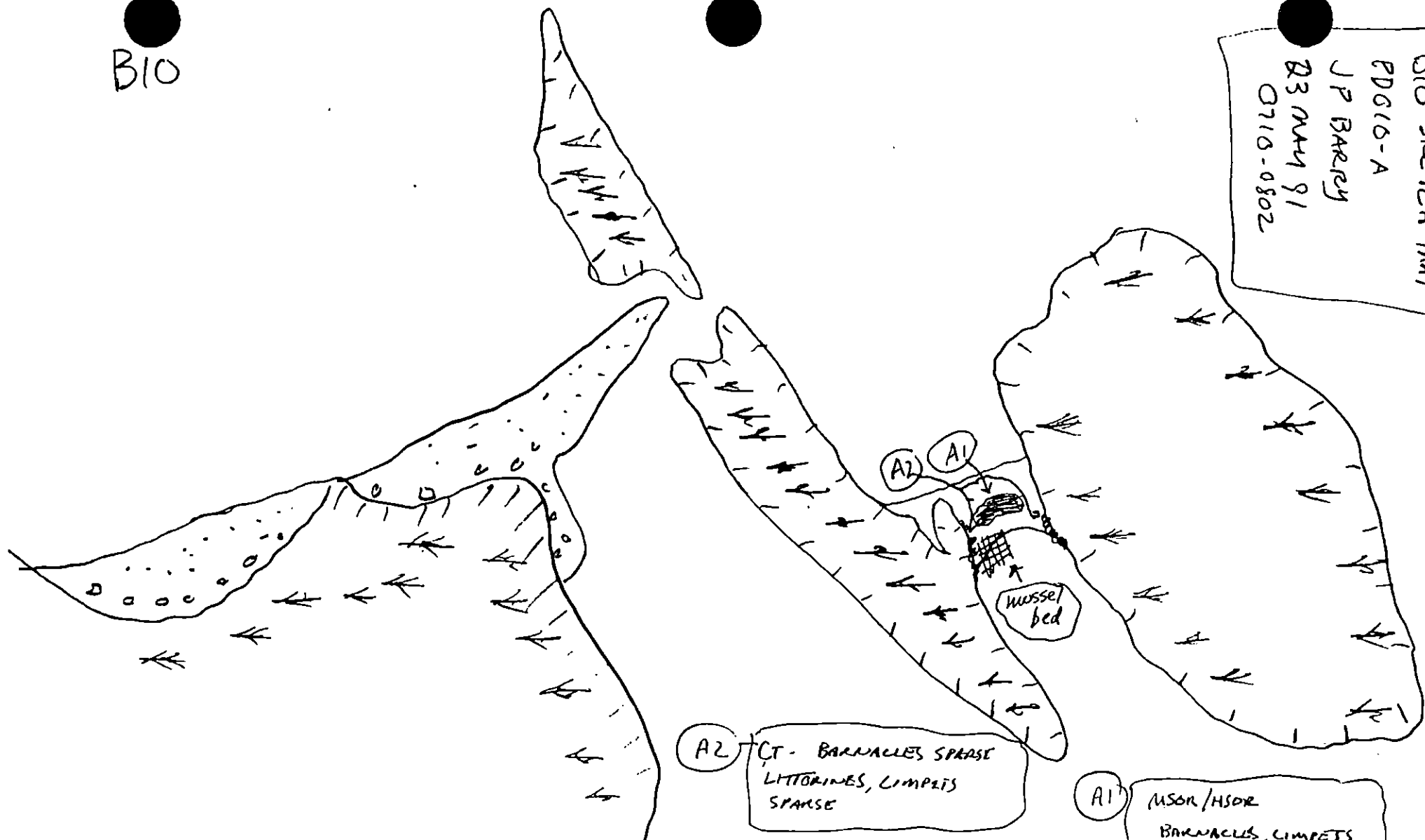
PDO10-A

JP BARRY



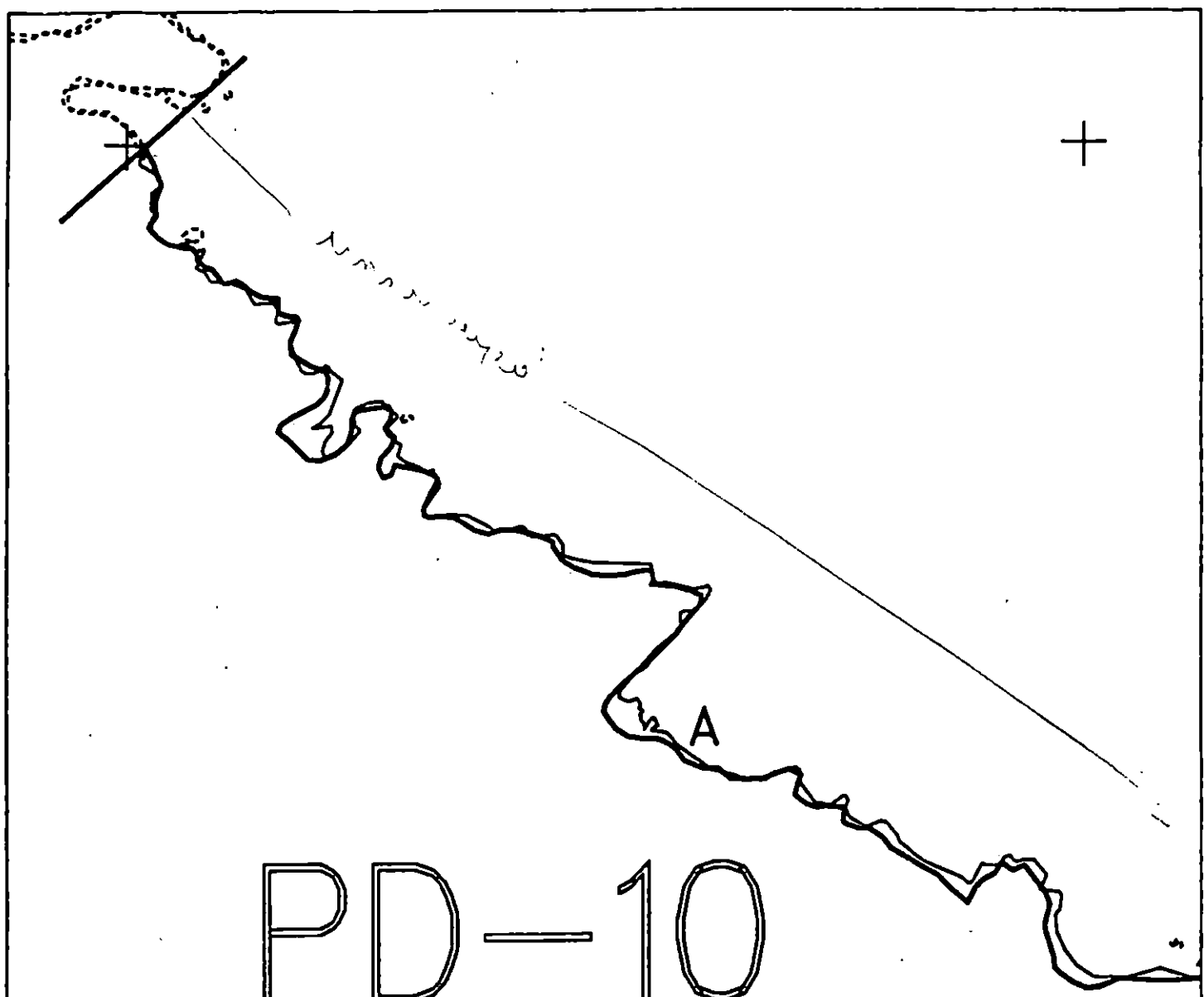
BIO

BIO SKETCH MAP
PDG16-A
JP BARELY
D3 MAY 91
0710-0802



A2 CT - BARNACLES SPARSE
LITTORINES, LIMPETS
SPARSE

A1 MSON/HSOR
BARNACLES, LIMPETS
LITTORINE SPACES
all moderate. Some
Green algal films.
MUSSEL BED DENSE
Below area



PD-10

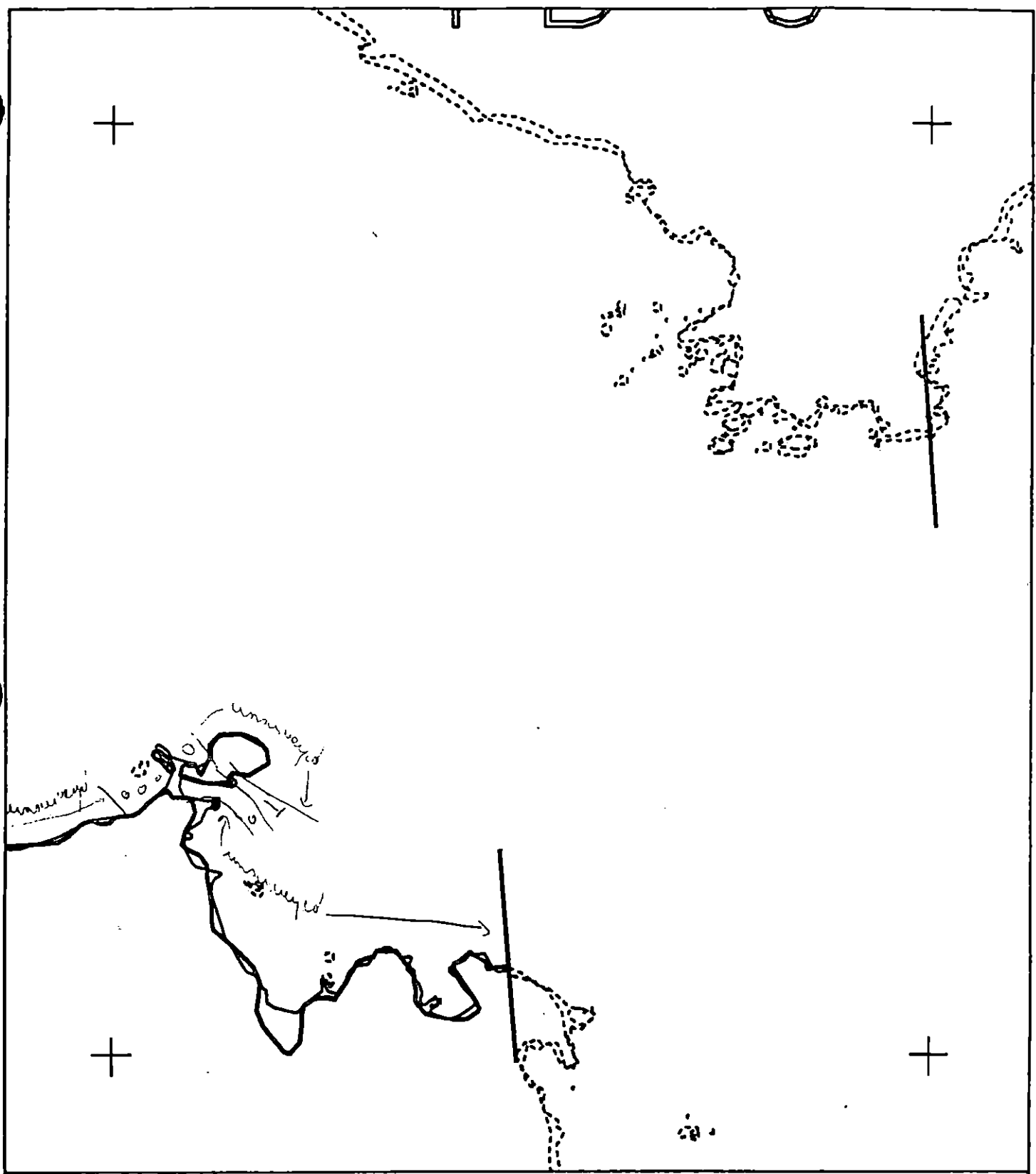
XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

PD010 A
 ADEC Subsegment Length: 6708m
 METERS
 0 400 800
 AK State Plane Zone 4
 NAD83



Subdivision Field Map
 Map Key: KENPD010Aa
 Name: J. M. Sempel
 Date: MAY 23/91
 Date Entered:

reviewed 5/31/91 K6
 REVIEWED: MC 6/2/91



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

PD010 A
 ADEC Subsegment Length: 8796m
 METERS
 0 400 800
 AK State Plane Zone 4
 up010ab



Subdivision Field Map
 Map Key: KENPD010Ab
 Name: J. J. Sample
 Date: May 23/91
 Date Entered:

revised 5/31/91 K6
 Reviewed: MC 6/2/91

1991 MAYSAP EVALUATION

SEGMENT: PD 010 SUB: A REGION: KEN SURVEY DATE: 5/23/91

ENVIRONMENTAL SENSITIVITIES:

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

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: _____ Date: _____

RECOMMENDATIONS:

	INITIAL	TAG	FOSC
TREATMENT REQUIRED (Y or N)	<u>N</u>	_____	_____
Manual Pickup (Check as Req.)	_____	_____	_____
Spot Washing	_____	_____	_____
Bio-Customblen Only	_____	_____	_____
Bio-Inipol/Customblen	_____	_____	_____
Other _____	_____	_____	_____
Other _____	_____	_____	_____

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____ FOSC APPROVAL DATE: _____

ADEC _____ FOSC _____

EXXON _____

USCG _____

NOAA _____

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

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

TEAM NO. 4 SEGMENT PD-010 SUBDIVISION A DATE 5/23/91

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara S. Crosby☒ NTR

The oil within this segment is under/interstitial small patches — AP, HSOR, MSOR — A₂ → lg mussel bed in lower intertidal was oiled — LSOR — This was not observed on this survey due to the height of the tide. (Please reference ADEC Data = transect SITE)

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles 5/23/91☒ NTR

No appreciable oil found. I tried to locate the A₂ area wading in the water and grabbing with a shovel and was unable to locate. This area is based totally on the ADEC Reps. memory.

NDMANAGER

NAME

Jeff Johnson

OF

ADNR

SIGNATURE

Jeff Johnson☒ NTR

concur with DEC comments. AP, HSOR, MSOR that was found was picked up. Mussel beds would be unreasonably disturbed looking for more.

USCG/NOAA

NAME

John McMahon

SIGNATURE

John McMahon☒ NTR

Only minor oil found and picked-up most of it.

Don A. McMahon

CG Sked Map

PD-010-A

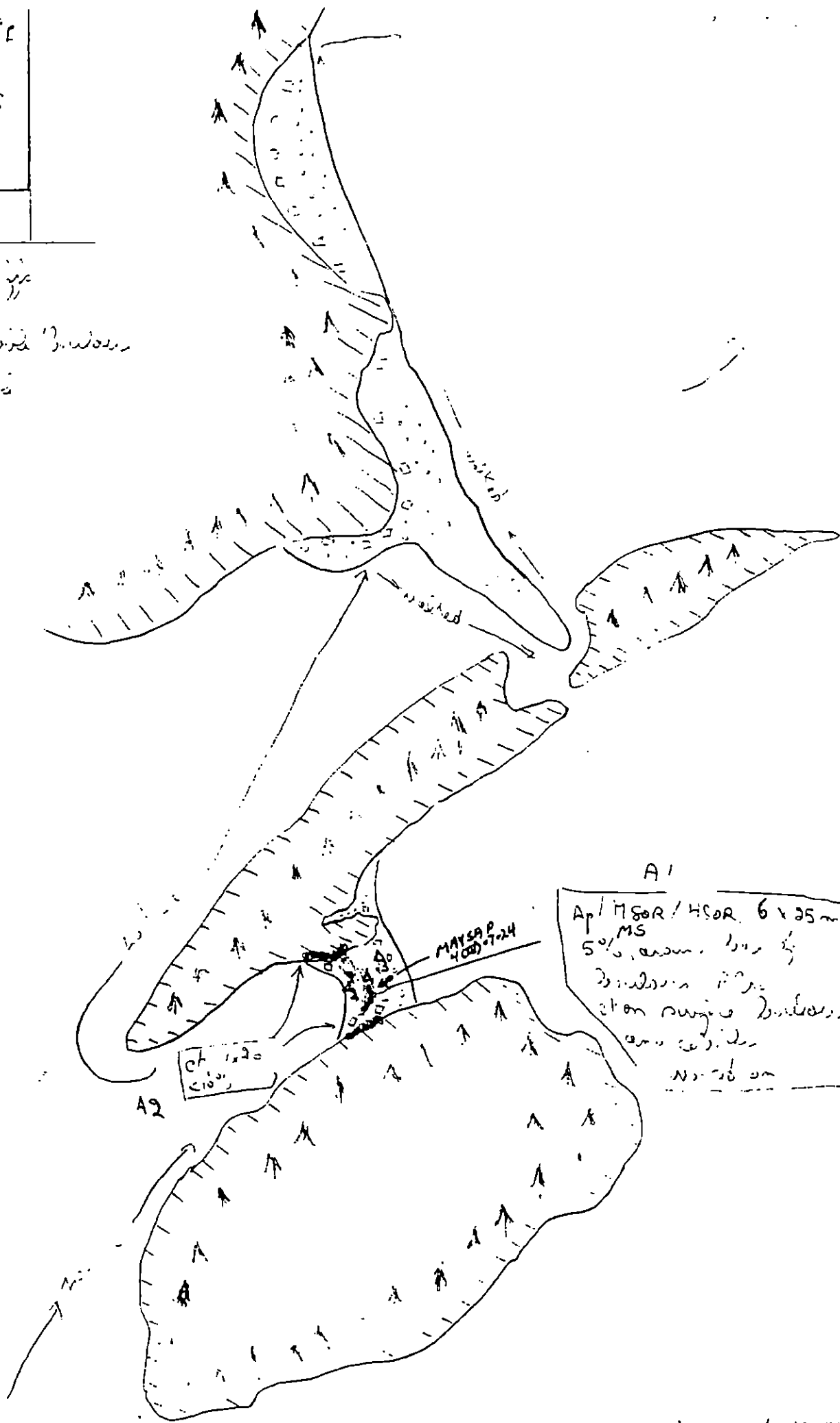
JM SEMPLS

MAY 23/91

0710 - 0802

Legend

-  Sandstone
-  Limestone
-  Fossiliferous Limestone
-  Shale



Common Species on PD010-A

- A. Marine Plants
1. Diatoms, Blue Greens
 2. Green Algae - Chlorophyta - Enteromorpha sp., Ulva sp., Urospora sp.
 3. Brown Algae - Phaeophyta
Alaria marginata, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Ralfsia sp., Syctosiphon lomenteria
 4. Red Algae - Rhodophyta
Endocladia muricata, Halosaccion glandiforme, Mastocarpus 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 ritteri, Urticina crassicornis,
 3. Hydroids - Sertulariidae,
 5. Flatworms - Platyhelminthes - Polyclads
 6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
 8. Polychaete Worms
Nereidae - Nereis spp.
Serpulidae - Serpula sp.
Spirorbidae - Spirorbis sp.
 9. Peanut worms - Sipunculids - Phascolosoma agassizii
 10. Crustaceans
 - a. Amphipods - Traskorchestia traskiana
 - b. Barnacles - Balanus glandula, Semibalanus cariosus
 - c. Crabs - Paguridae (hermit crabs),
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimosphera oregonensis
 11. Mollusca
 - a. Chitons - Mopalia mucosa, Tonicella lineata,
 - b. Snails - Gastropods
Amphissa columbiana, Littorina sp., Natica clausa, Nucella lamellosa, N. lima, Searlesia dira, Tachyrhynchus sp.
 - c. Limpets - Lottia persona, L. limatula, Tectura fenestrata, T. persona, T. scutum, Siphonaria thersites
 - e. Bivalves - Mytilus edulis, Pododemus cepio, Prototheca staminea
 12. Echinoderms
 - b. Sea stars - Dermasterias imbricata, Evasterias truschell, Leptasterias hexactis, Pisaster ochraceus
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
 13. Bryozoans - Membranipora sp., Schizoporella sp.
 15. Fishes
Cottidae
Stichaeidae - Xiphister atropurpureus, X. mucosus
- III. Birds - Bald Eagle (1), Black Oystercatcher (2)

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 23, 1991 0715 - 0800
SEGMENT #	PD010	TIDAL HEIGHT (Range)	+4.1 => +5.7
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil-Related Comments

- A1 This area has a CT to MSOR in patches in the upper zone of the beach. The most abundant biota at this location are barnacles, limpets, and littorine snails, which are all moderate in abundance. The oil location is about 5 to 10 ft from the upper edge of the mussel bed.
- A2 SPARSE BARNACLE, LIMPET, LITTORINE

Cleanup considerations

Some manual cleanup was done on this beach during the survey. Additional manual cleanup will not harm the biota at the site, unless trampling or other disruption of the mussel bed occurs. Cleanup workers, if recommended, should simply walk around the mussel bed for beach access.

General Comments

The survey visited to very small coves along this subdivision where previous significant oiling was reported. Although some oil remains, there is ample evidence of recovery. The mussel bed in the middle to low zone has dense cover of young mussels, indicating a large recent recruitment event. This is the most significant biological feature of the cove. Below this zone Fucus is abundant, with moderate to dense cover over the intertidal boulders and bedrock walls. Barnacles are abundant above the mussel zone.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

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

MARINE MAMMALS
OBSERVED

OBSERVED

LAND MAMMALS
SPECIES

#

Sea Otters

River Otter

- 4 (1A, 3 juveniles?)

Pinnipeds (specify)

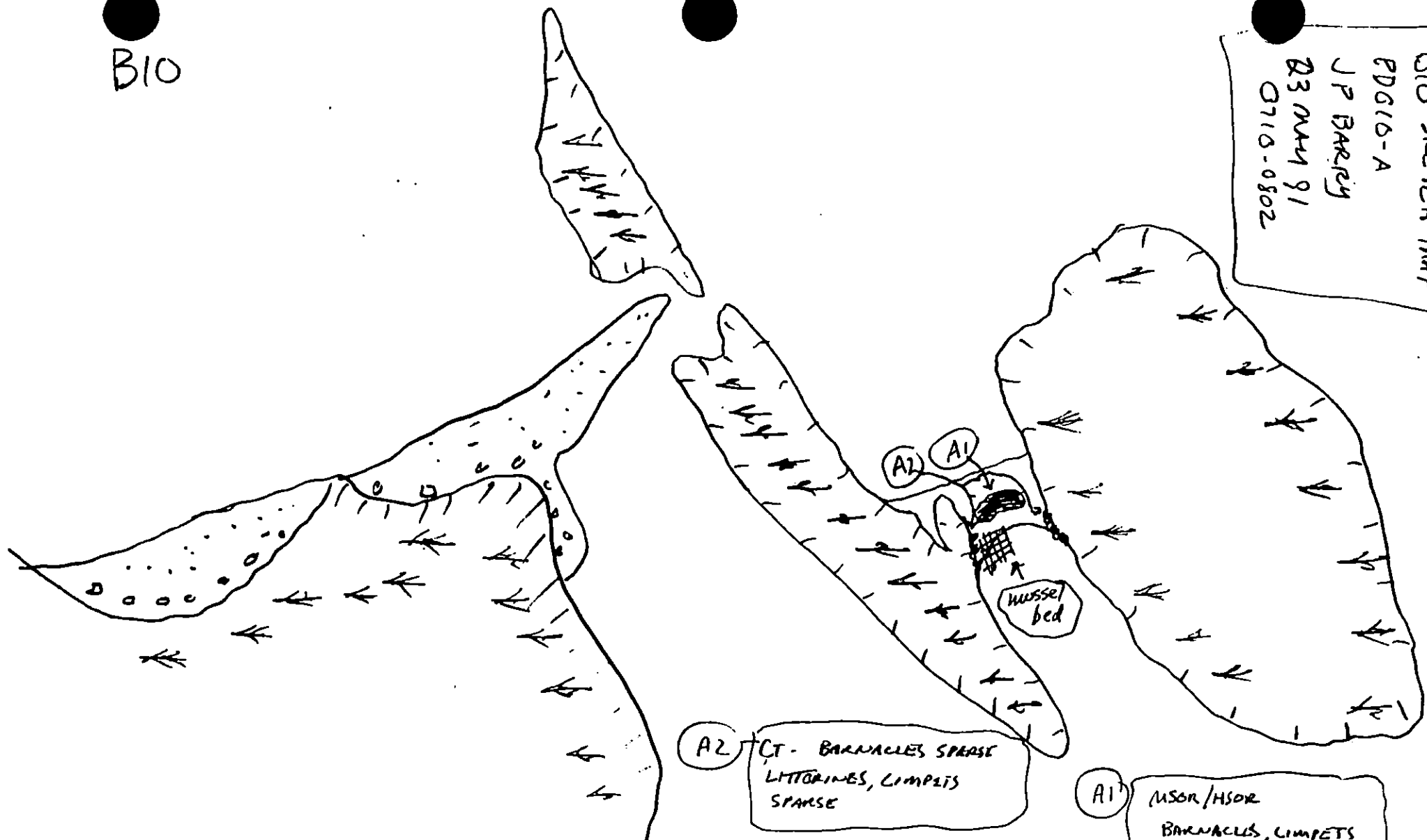
Whales (specify)

Shoreline subdivision map showing important biological features attached.

Randy Allen

B10

B10 SKETCH MAP
EDG10-A
JP BAREY
23 MAY 91
0710-0802



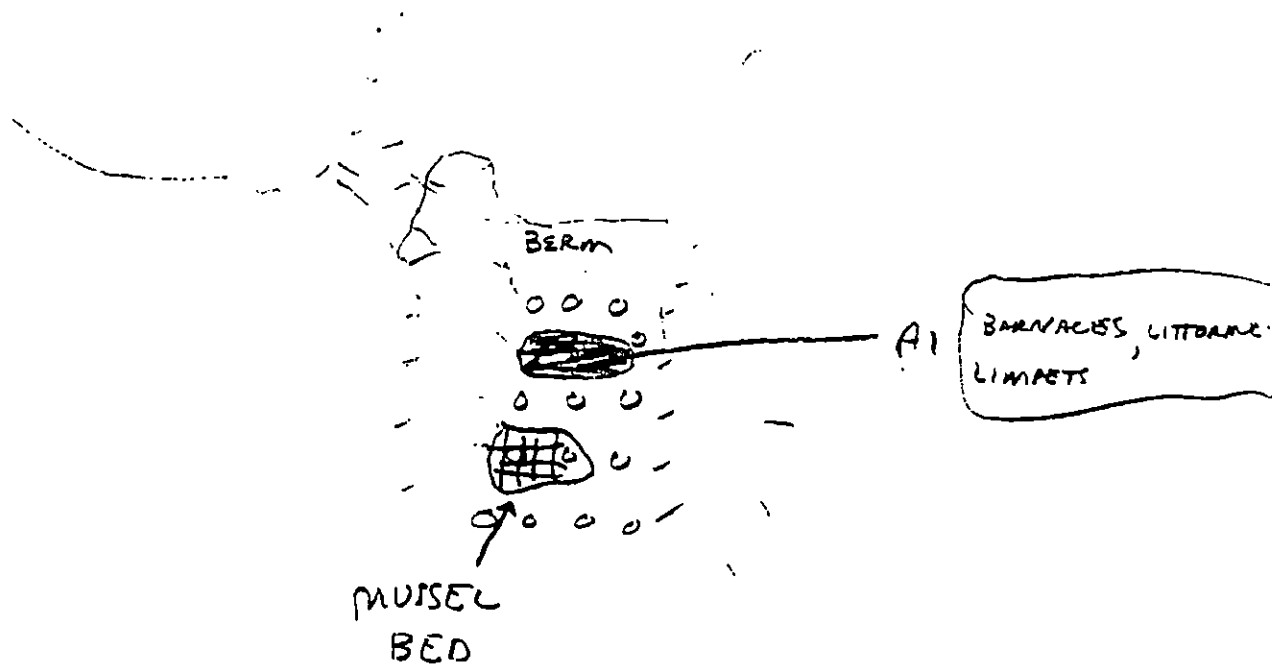
A2 CT - BARNACLES SPARSE
LITTORINES, LIMPETS
SPARSE

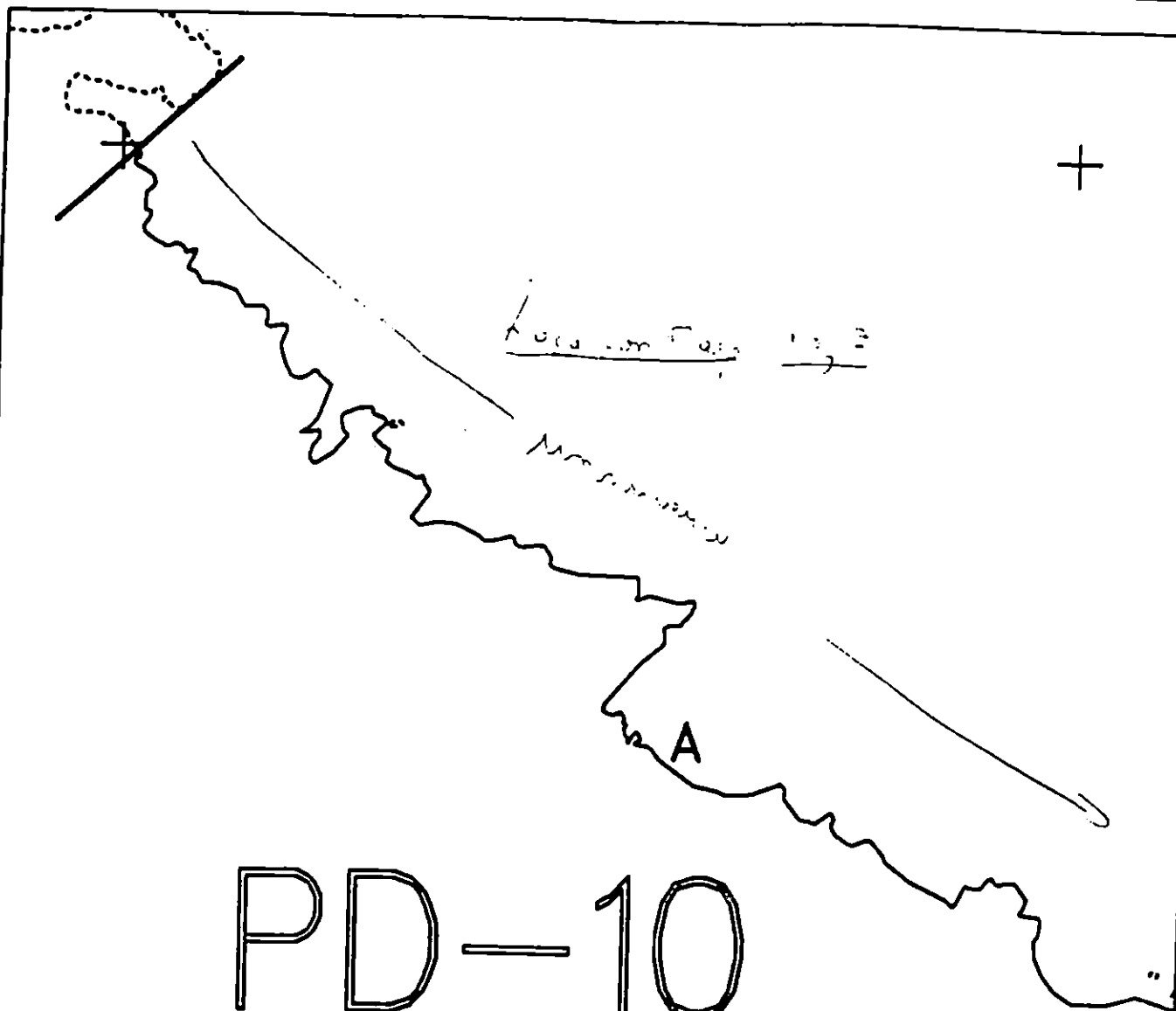
A1 MSON/MSOR
BARNACLES, LIMPETS
LITTORINE SNAILS
all moderate. Some
Green algal filaments.
MUSSEL BED DENSE
Below area

BIO SKETCH MAP

PDO10-A

JP Barry



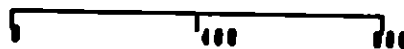


PD-10



PD010 A

METERS



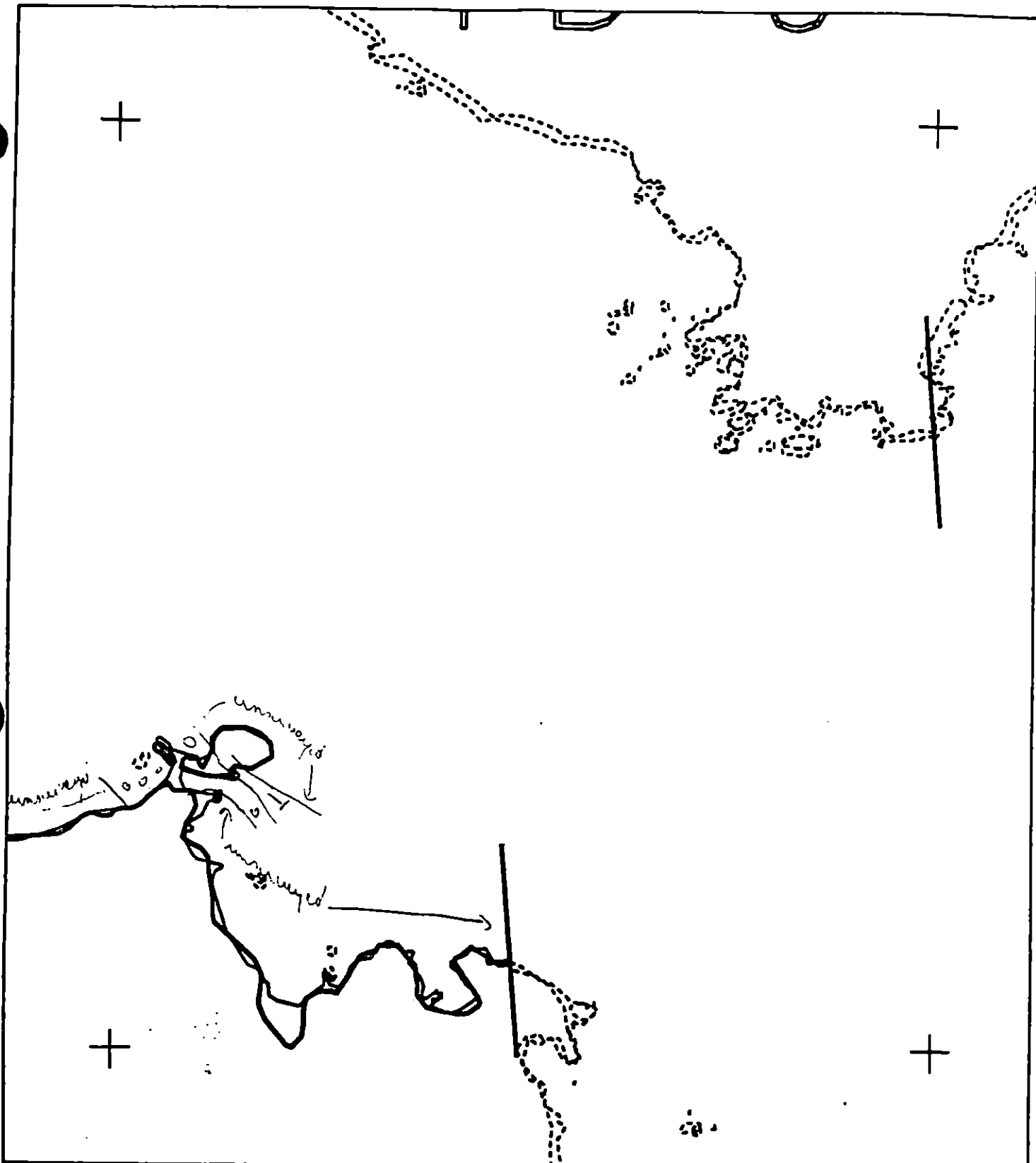
AK State Plane Zone 4
sp001000

Subdivision Field Map

Map Key: KENPD010Aa

Name: JM Sengels

Date: May 23/91



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

PD010 A
 ADEC Subsegment Length: 8796m
 METERS
 0 400 800
 AK State Plane Zone 4
 spd010ab



Subdivision Field Map
 Map Key: KENPD010Ab
 Name: Jim Sample
 Date: May 23/91
 Date Entered:

reviewed 5/31/91 K6
 REVISIONS: NC 6/24/91

PD-10

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

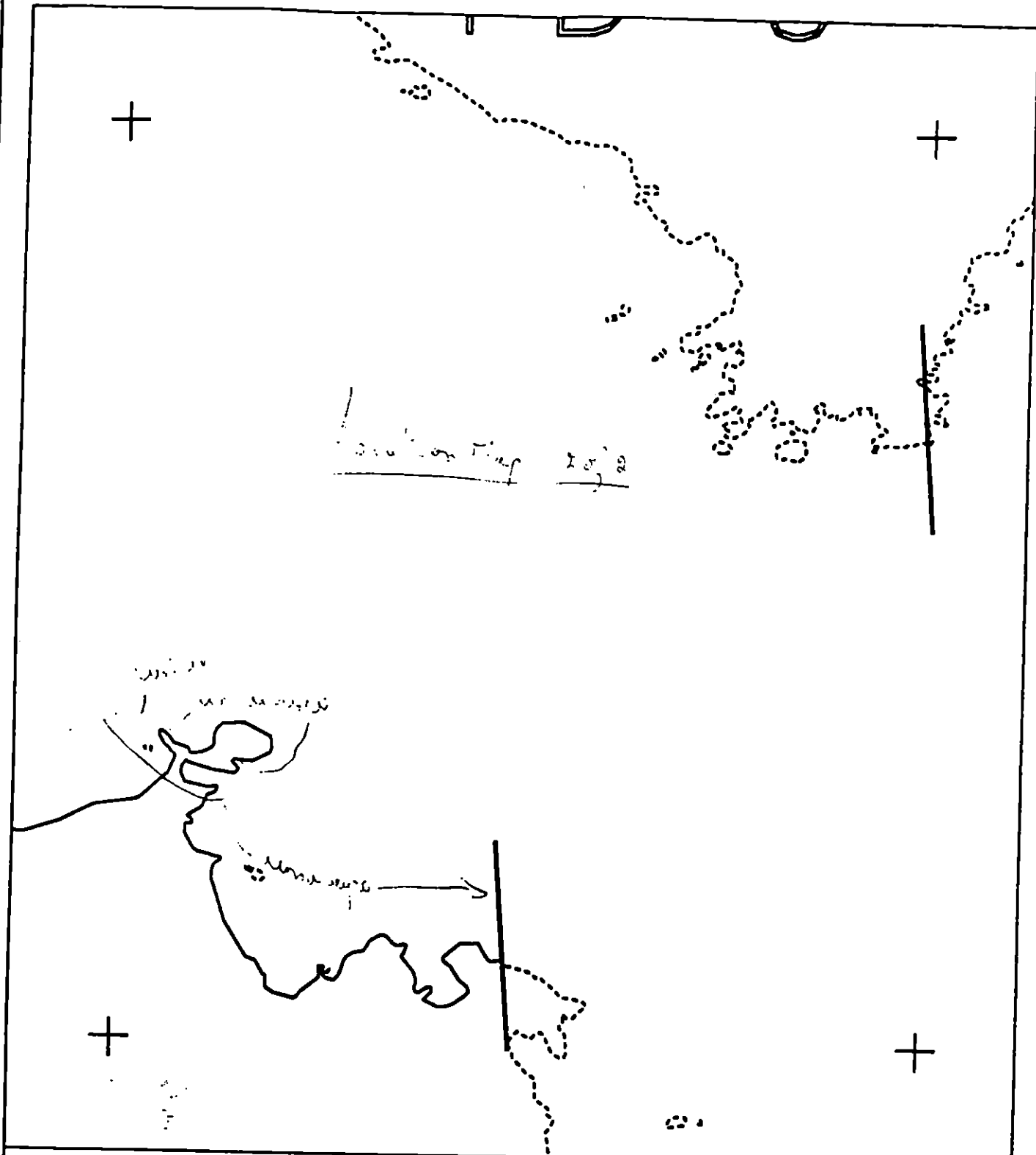
PD010 A
ADEC Subsegment Length: 8796m
METERS

AX State Plane Zone 4
up010a

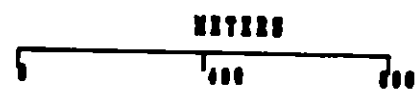


Subdivision Field Map
Map Key: KENPD010Aa
Name: J. Sempel
Date: MAY 23/91
Date Entered:

Reviewed 5/31/91 KCo
REVIEWED: AC 6/2/91



PD010 A



AZ State Plane Zone 4
spdb00b

Subdivision Field Map
Map Key: KENPD010Ab
Name: JM Samples
Date: May 23/91

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT PD-10 SUBDIVISION A (1 of 1)

WORK WINDOW	
Manual Pickup Tarmat Removal	OPEN
Bioremediation	WORK PRIOR TO 7/20

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

- | | |
|---------------------|---|
| 1A,1B Salmon Stream | An ADF&G uncatalogued anadromous stream is in Subdivision A and more than 100m from work site. No constraint to manual pickup, tarmat removal and bioremediation. |
| 1J Purse Seine Area | Closed to bioremediation after 7/20. No constraint to manual pickup and tarmat removal. |

OTHER ECOLOGICAL CONSIDERATIONS

No disturbance to stream bed or banks. No flushing of pollutants or sediments into stream drainage; do not allow Inipol to enter stream flow. On-site examination and consultation by ADF&G monitor is required prior to bioremediation in order to authorize a setback distance from the stream during chemical application; if ADF&G monitor's presence is impossible, authorization may be given by the ADEC monitor. Avoid any unnecessary disturbance or damage to uncollected biota and substrate.

FOSC

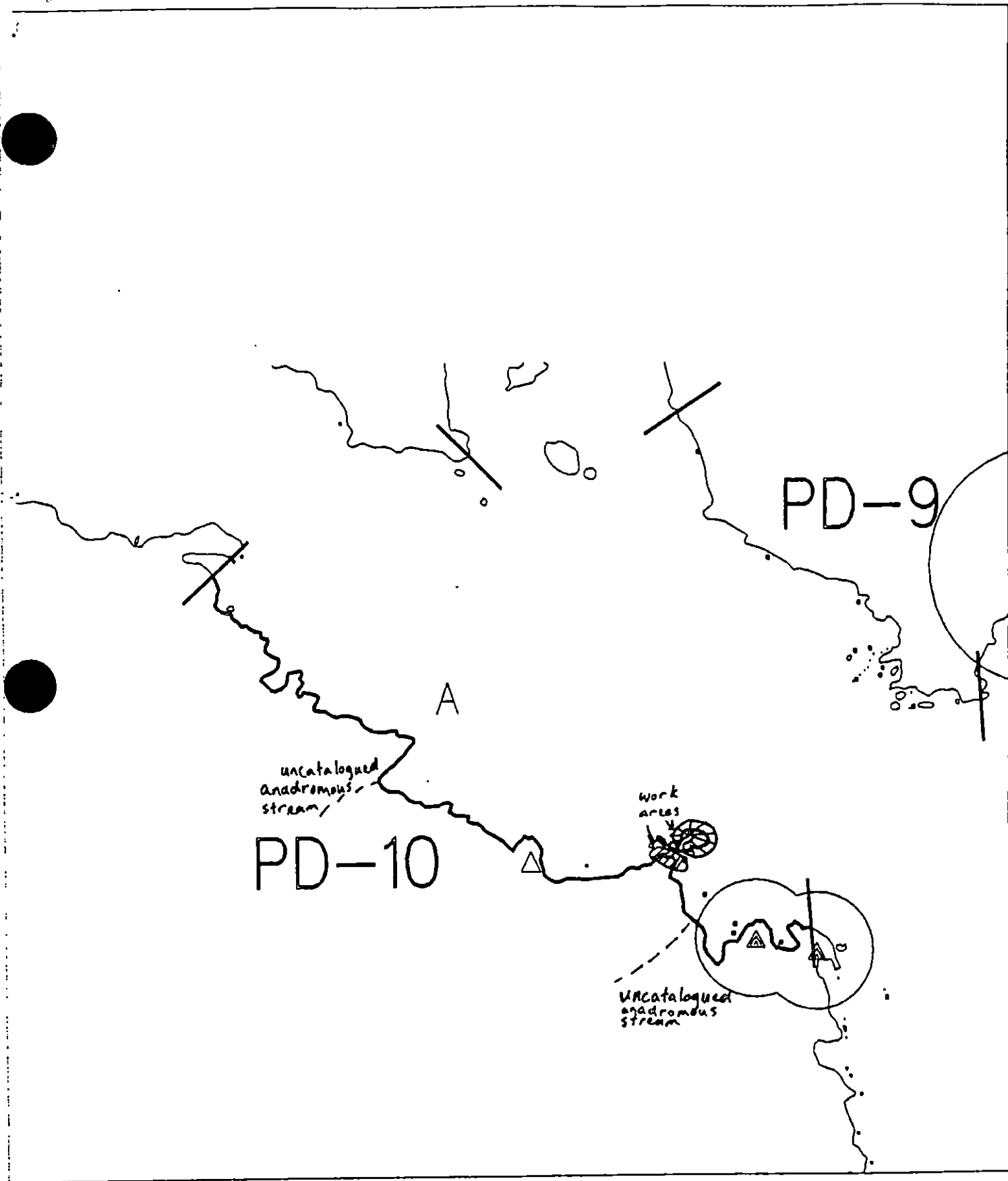
Date

6-19-90

Prepared by

Date

6/16/90



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



ECOLOGY MAP
 SEGMENT PD-10
 SUBDIVISION --- (--- of ---)
 METERS
 0 889 1778

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

1 inch = 2917 feet

SHORELINE EVALUATION

SEGMENT ST/ PD-010 SUBDIVISION A (1 OF 1) DATE 4/26/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T-3 All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1J Purse seine area (7/20 to 9/30)
4GA State Marine Park Alaska State Parks
6NN Recreation: Sportfishing
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact Exxon's Cultural Resource Program immediately (564-3274 (Anchorage) or 229-1508 (24 hrs.)).

SHPO SIGNATURE: Rachel Jean Dore DATE: 5/20/90

OILING CATEGORIZATION:

Wide 28 m: Medium 3 m: Narrow 0 m: V.Light 0 m: No Oil 8766 m
Subsurface Oil Observed: Yes X No Maximum Depth 12cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes: 1) manual pick up of mousse patties and 2) manual removal of tarmats in areas indicated on sketch map. Work between 6/1 to 7/10 with approval of USFWS regarding eagle nest.

SEE CONSTRAINTS ADDENDUM DATED 6/16/90. PP

TAG COMMENTS: BIOREMEDIATE (CUSTOMBLEN) AS REQUIRED FOLLOWING
TARMAT REMOVAL
AVOID DENSE MUSSEL BEDS DURING APPLICATION OF CUSTOMBLEN.

TAG APPROVAL DATE: 5/21/90
ADEC Art Weidner
EXXON Andy Tish
NOAA Joseph T. Hall
USCG G.A. REITER

FOSC: [Signature]

DATE: MAY 25 1990

REGION: KENAI

SEGMENT: ST/PD-11

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ PD-11 SUBDIVISION A (1 OF 1) DATE 4/8/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

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

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

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

8AA Sensitive Estuary

4GG Alaska State Wilderness Park

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 11443 m

Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

X No Treatment Recommended

_____ Treatment Recommended

_____ Manual Pickup

_____ Bioremediation

_____ Tarmat: _____ Breakup

_____ Removal

_____ Snare/Absorbent Booms

_____ Oil Snares (pom poms)

_____ Absorbents (pads, rolls, etc)

_____ Spot Washing: _____ Wands

_____ Beach Cleaner

_____ Other (see comments)

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

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

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / PD 11 SUBDIVISION: 4 DATE 4/8/90

LOG / NOAA
NAME JACQUI MICHEL SIGNATURE Michel

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

We looked at all the likely areas for deposition of oil and failed to find any. The delta platform showed evidence of reworking on the seaward edge, but the landward section is very low energy. The subtidal had abundant infauna and a rich, diverse algae growth and seagrasses.

ADEC
NAME JOHN R. REED SIGNATURE John R. Reed

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

This is a large segment with a lot of vertical cliffs with small pocket beaches mixed in, and also a large intertidal delta at the head of the bay. No oil was observed in this segment. I have read and agree with all data on S.S.A. for

LAND MANAGER DNR/DPOR
NAME Jeffrey S. Johnson SIGNATURE Jeff Johnson

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

I concur with assessment. We skirted the segment by skiff, south to north, made landings on 2 small beaches, walked the intertidal delta in Taylor Bay, and checked the beaches on the east side of Taylor Bay, without finding oil. I recommend checking past records to determine where cleanup/treatment has occurred exactly & inspect that location specifically. If tar mats are found, I recommend manual removal by shovel. No oiled debris.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG Mann USCG NOAA Michel SEGMENT ST/ PD-11
 BIO Carl LAND REP Johnson - DNR SUBDIVISION A
 EXXON Boyer ADEC Reed TIME 4:35 to 6:50
 TEAM NO.: 18 TIDE LEVEL: +6 to +1 DATE 4/18/90
 EST. SUBDIVISION LENGTH: 14.029 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 PLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: S to N
 SURFACE SEDIMENTS: R 20 % B 15 % C 25 % P 25 % G 5 % S 5 % M 5 % V 0 %
 SLOPE: Long 40 % Hang 20 % Vert 20 % WAVE EXPOSURE: ☒ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 0 m NO 14.029 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	R	B	C	P	W	M	N	VL	NO	SU	U	M	U			
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT																
STAIN																
MOUSSE																
PATTIES																
TARBALLS																
FILM																
NO OIL																

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

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED

☐ YES ☒ NOTYPE N/A#BAGS N/A

Photographs:

Roll No. NoneFrames

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CM)	BELOW		OIL / FILM COLOR								PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	W	M	N	VL	NO	SU	U	M	U					
1	35					✓	.										✓				N	PC throughout	
2	40					✓	.										✓				N	P throughout	
3	30					✓	.										✓				N	PCG throughout	
4	50					✓	.											✓			Y	P mud organic through	
5	25					✓	.										✓				Y	" " out	
6	25					✓	.											✓			Y	" "	

COMMENTS Segment PD-11 is a diverse shoreline that includes vertical sea cliffs, cobble/pebble pocket beaches, as well as several large, bay-head deltas. We made 2 landings on pocket beaches along the southwest section of PD-11 and failed to find any trace of oil. Six of us searched the large delta surface at the NW end of the segment and failed to spot any oil. We walked all the pebble-cobble-mud beaches (and delta) on the NE end of the segment and failed to find oil. This is a biologically diverse and geologically spectacular area.

OG 11/21/90

SKETCH MAP

SEGMENT STI PD-11

SUBDIVISION A

DATE 4.8 90

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ See Sub Entry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. H₂O/L₂W₂
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Pk Location(s)
- ☐ Photo Location(s)

No sketch

LEGEND

1 

Pk - No Subsurface Oil

2 

Pk - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

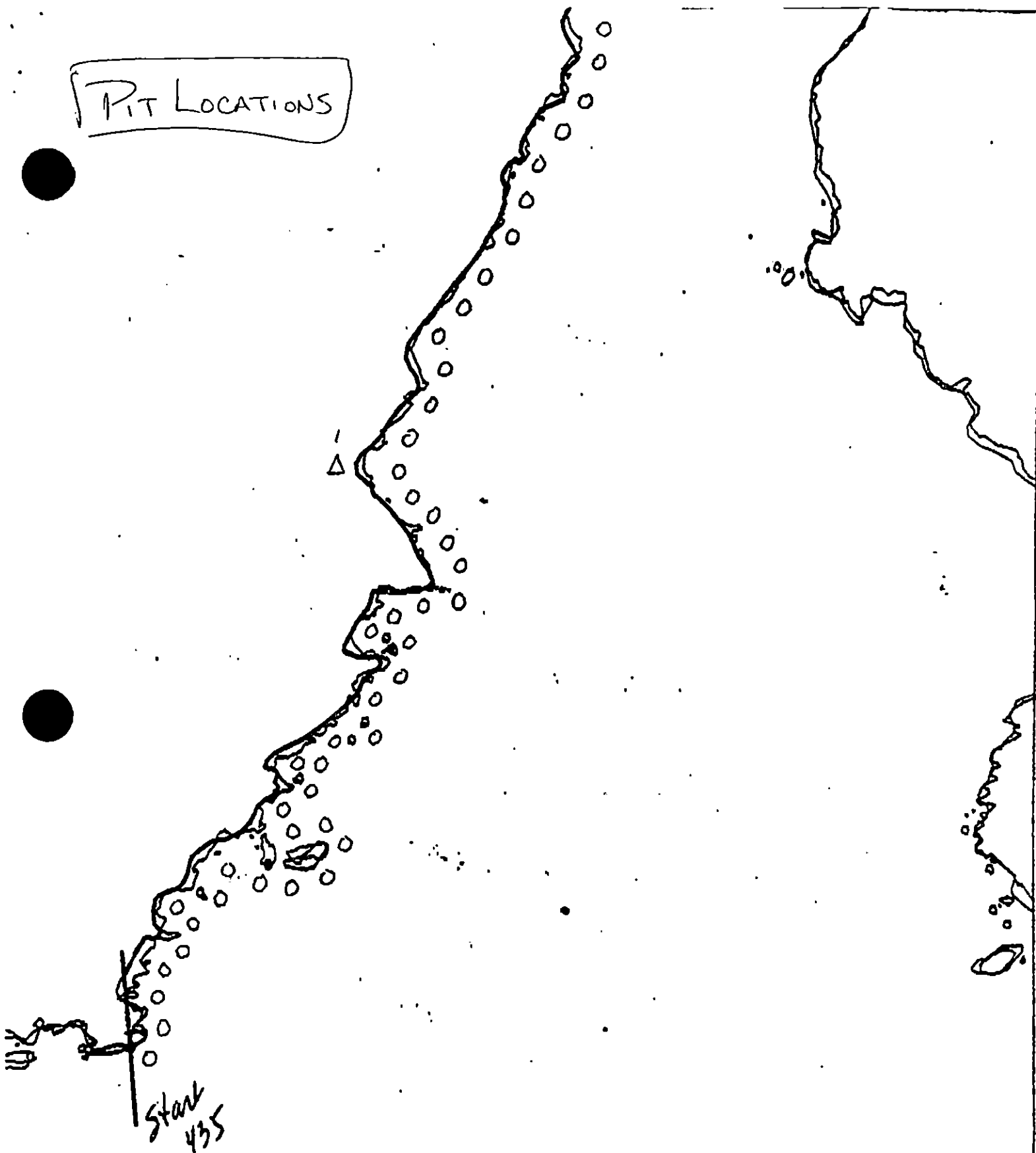
Oil Vegetation

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 14,029

PIT LOCATIONS



XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

0000 No Oil

PD-11

EXXON Segment Length: 14029m



Map Key: PWS-PD-11a

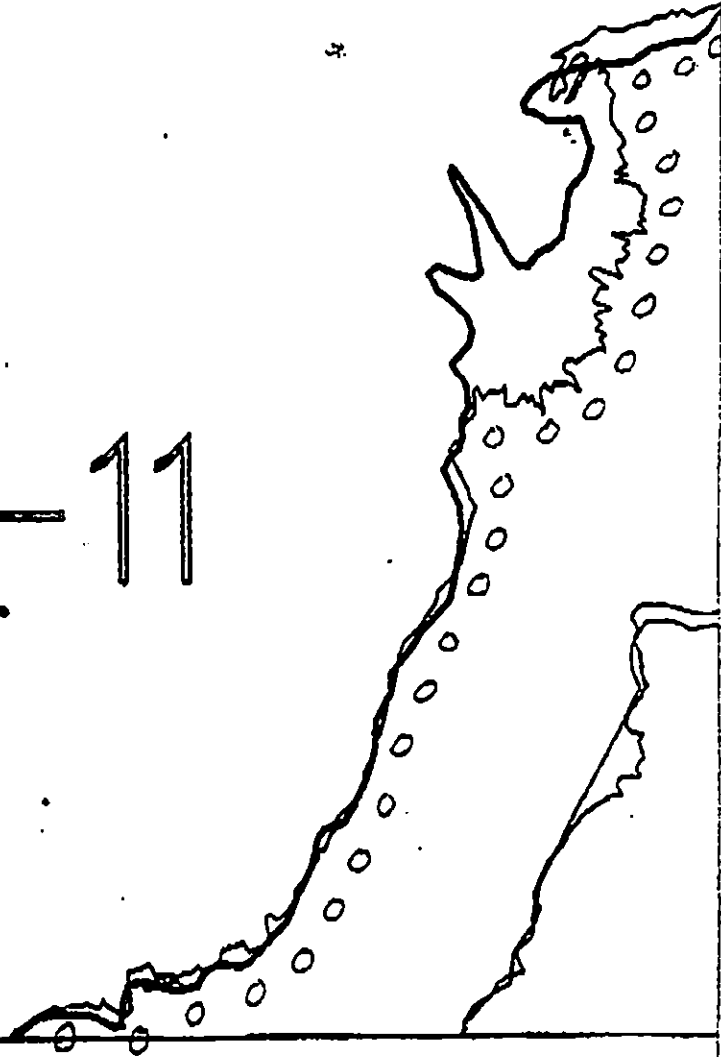
Name: MANN

Date: 4/8/90

Data Entered:

PIT LOCATIONS

PD-11



XXXX Wide

●// Medium

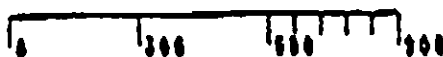
---- Narrow

TTTT Very Light

0000 No Oil

PD-11

EXXON Segment Length: 14029m



METERS

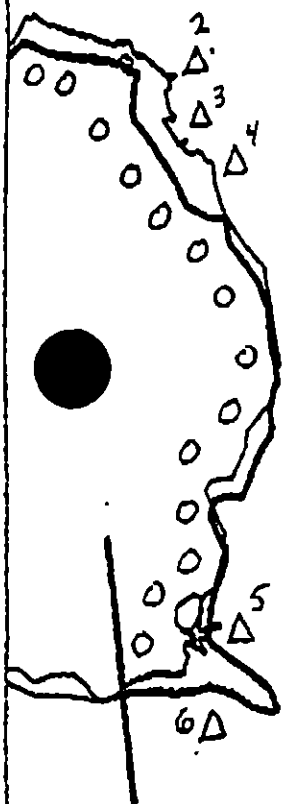
Map Key: PWS-PD-11c

Name: Mann

Date: 4/8/90

Data Entered:

PIT LOCATIONS



XXXX Wide

●// Medium

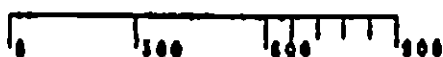
---- Narrow

T-TTT Very Light

0000 No Oil

PD-11

EXXON Segment Length: 14029m



METERS



Map Key: PWS-PD-11d

Name: Mann

Date: 4/8/90

Data Entered:

SHORELINE ECOLOGICAL SUMMARY

Segment ST / PD-11 Subdivision A (1 of 2 SHEETS) Date (mo / day / yr) 4/8/90

Time (24 hr) 1635 Biologist M. CARR

Substrate type and % of ^{SUBDIVISION} segments:
(1) Bedrock 20 (2) Boulder 15 (3) Cobble 25 (4) Pebble 30 (5) Sand 5 (6) Silt 5

(B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense 20 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 DONE

BARNACLES

	Dense			Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
Bedrock	2	2	2	2	2	2	2	2	2	2	2	2	
Boulder	3	3	3	3	3	3	3	3	3	3	3	3	NOT PRESENT
Cobble	4	4	4	4	4	4	4	4	4	4	4	4	
Pebble	5	5	5	5	5	5	5	5	5	5	5	5	NOT PRESENT IN ANY ZONE
Sand	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	
Bed	2	2	2	2	2	2	2	2	2	2	2	2	
Bould	3	3	3	3	3	3	3	3	3	3	3	3	NOT PRESENT
Cobb	4	4	4	4	4	4	4	4	4	4	4	4	
Pebb	5	5	5	5	5	5	5	5	5	5	5	5	NOT PRESENT IN ANY ZONE
Sand	6	6	6	6	6	6	6	6	6	6	6	6	

STROPODS

	Dense			Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
Bed	2	2	2	2	2	2	2	2	2	2	2	2	
Bould	3	3	3	3	3	3	3	3	3	3	3	3	NOT PRESENT
Cobb	4	4	4	4	4	4	4	4	4	4	4	4	
Pebb	5	5	5	5	5	5	5	5	5	5	5	5	NOT PRESENT IN ANY ZONE
Sand	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	
Bed	2	2	2	2	2	2	2	2	2	2	2	2	
Bould	3	3	3	3	3	3	3	3	3	3	3	3	NOT PRESENT
Cobb	4	4	4	4	4	4	4	4	4	4	4	4	
Pebb	5	5	5	5	5	5	5	5	5	5	5	5	NOT PRESENT IN ANY ZONE
Sand	6	6	6	6	6	6	6	6	6	6	6	6	

* Wildlife Observations General Comments:

Cobble, pebble and sand substrates comprise back bay tidal flats.
Bedrock and boulder line the western length of Bay.

Ecological Considerations:

Note that small cobble beaches along western length of bay are comprised of well-rounded rocks indicative of heavy wave action. Consequently, no organisms were observed there other than mussels (S) and barnacles (S) restricted to a few very large boulders. (S = sparse).

* see page 2.

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/80

Segment ST / PD-11 Subdivision A (SHEET 2 of 2) Date (mo / day / yr) 4/8/80(24 hr) 1635 Biologist MA. CARR(A) Substrate type and % of ^{SUBDIVISION} segments:
(1) Bedrock _____ (2) Boulder _____ (3) Cobble _____ (4) Pebble _____ (5) Sand _____ (6) Silt _____(B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense _____ Moderate _____ Low _____

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

Photographs: _____
Roll No. _____

Frames _____

BARNACLES

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

NOT PRESENT

MYTILUS

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

NOT PRESENT

GASTROPODS

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

NOT PRESENT

FUCUS

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

NOT PRESENT

Wildlife Observations/ General Comments:

Commerants (8) red-faced (1) pelagic.
 Glaucous-winged gull (=100)
 Harlequin ducks (10)

Ecological Considerations:

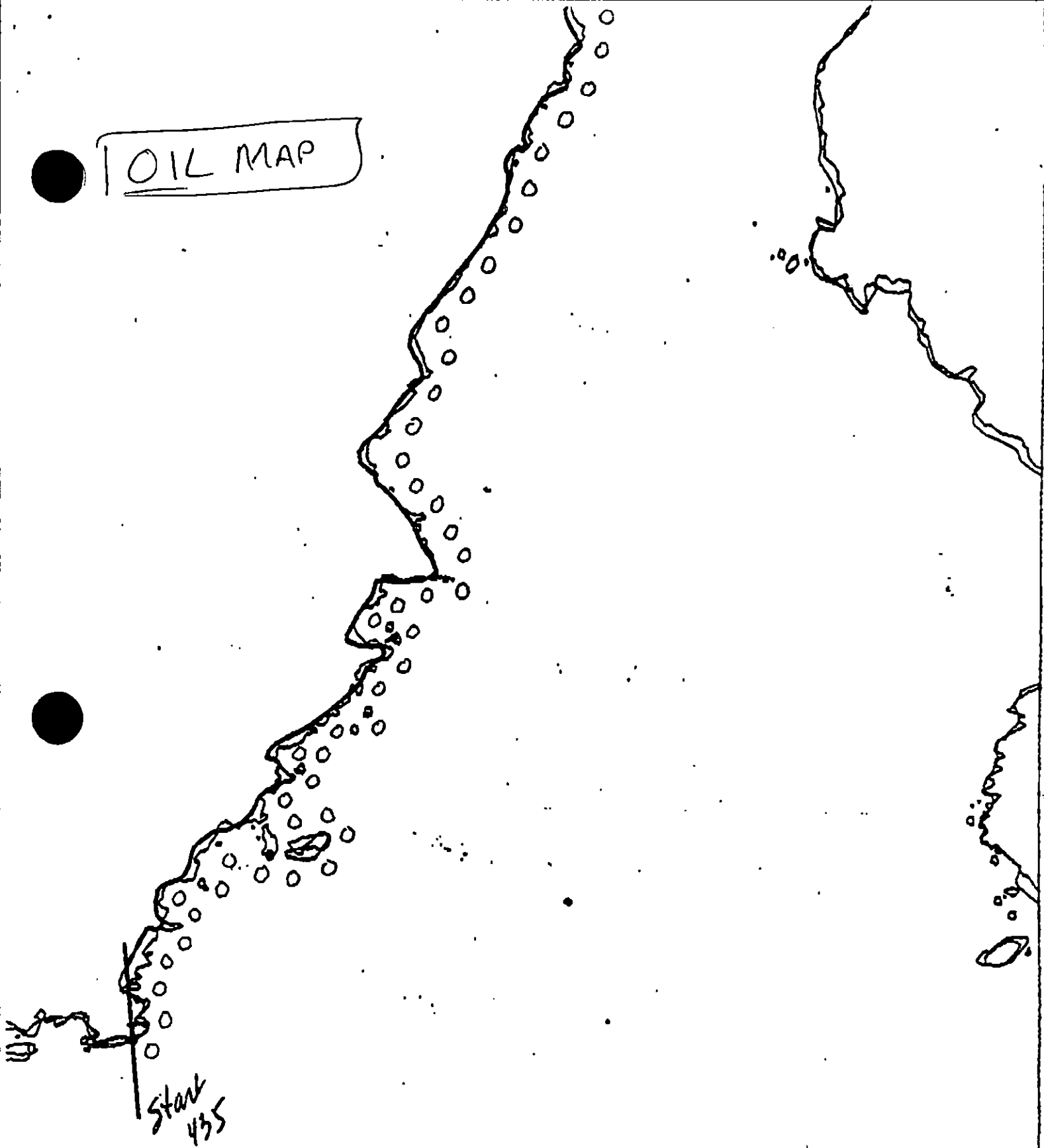
ser sculp / common golden-eye (80)

Sensitivity code information
 - unavailable!

Grebe (1) unid.
 Mountain goat (3)
 Bald eagle (1), mature
 Harbor seal (2)
 N.W. crows (50)
 Sea otter (5)
 Mottled ducks (35)
 Magpies (2)
Scydmaen giganteus (butter clam) (#=?)
Prothaca staminea (Pacific littleneck) (#=?)
Polinices patella (moon snail) (#=?)



OIL MAP



XXXX Wide

/// Medium

● - Narrow

TTTT Very Light

0000 No Oil

PD-11

EXXON Segment Length: 14029m



Map Key: PWS-PD-11a

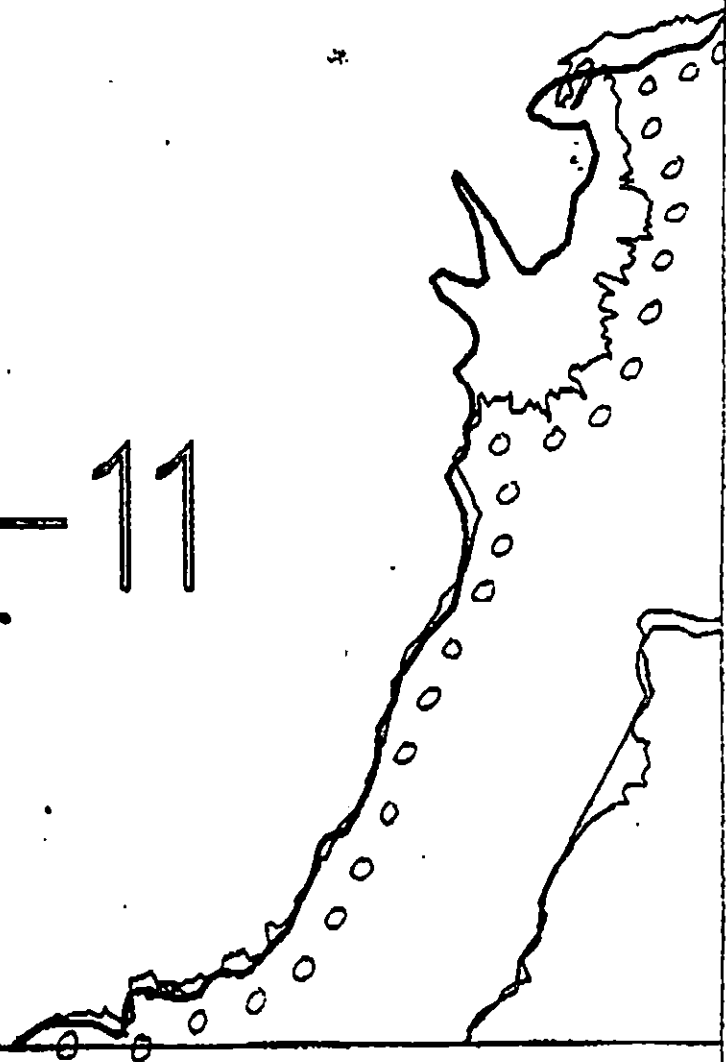
Name: MANN

Date: 4/8/90

Date Entered:

OIL MAP

PD-11



XXXX Wide

PD-11

/// Medium

EXXON Segment Length: 14029m

-- Narrow

TTT Very Light

0000 No Oil



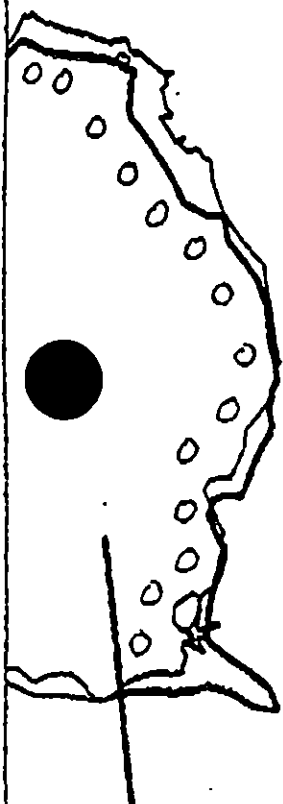
Map Key: PWS-PD-11c

Name: Mann

Date: 4/8/90

Data Entered:

OIL MAP



XXXX Wide

PD-11

/// Medium

--- Narrow

TTTT Very Light

0000 No Oil

EXXON Segment Length: 14029m

0 500 600 800
METERS



Map Key: PWS-PD-11d

Name: Mann

Date: 4/8/90

Data Entered:

REGION: KENAI

SEGMENT: ST/PE-01

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ PE-01 SUBDIVISION A (1 OF 1) DATE 4/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

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)
4GA Alaska State Wilderness Park
6X Recreation: Lodge (6/1 to 9/15)
9BB Privately Developed Lands

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

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 79 m: Medium 53 m: Narrow 94 m: V.Light 361 m: No Oil 0 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 27 cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) manual removal of asphalt pavement 2) bioremediation of areas of surface and subsurface oil in areas shown on attached sketch map. Work should be conducted before 5/15 or between 7/1 and 8/15 based on pinniped constraints. NOTE: ADF&G to survey site prior to any work.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

MENT ST / PE-01 SUBDIVISION: A DATE 4-29-90

USCG

NAME David S. Thomas SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

ADEC

NAME

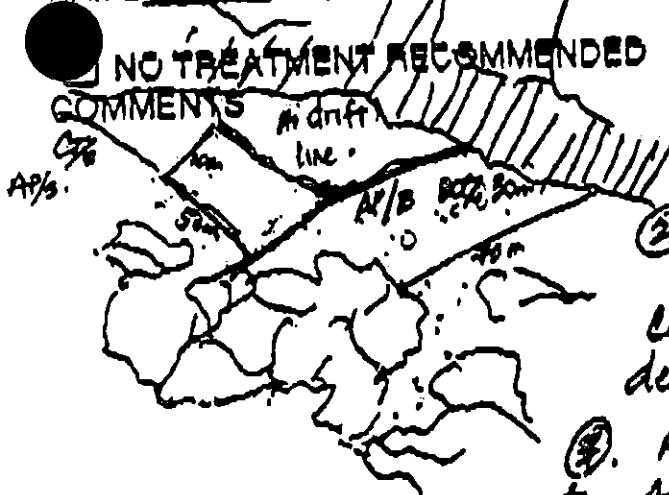
Clara S. Crosby

SIGNATURE

[Signature]

☐ NO TREATMENT RECOMMENDED

COMMENTS



☒ TREATMENT SUGGESTED

- ①. Suggest manual removal of AP no other specific techniques recommended.
- ②. Considering subsurface oiling, area designated moderate has a continuous coverage of a 10x50m area. WIDE designation for subsurface -
- ③. All clean-up activity to be subjected to ADFEG constraints.

LAND MANAGER

A.O.F.B.G.

NAME

Lee Glenn

SIGNATURE

[Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

See comments attached

Attachment - FIELD SHORELINE COMMENT SHEET

PI-01 4-29-90

Lee Glenn - Alaska Dept. of Fish and Game

The sea lion haulout on the south tip of Peil Island remains heavily oiled. No cleanup was attempted last year and there were no significant natural cleaning on this high energy beach over winter. The oil remains wet and fluid even on moderately warm days. Pooled surface oil, therefore, remains an environmental threat to fish and wildlife (especially birds). There is a concern that this oil may re-float and threaten some commercial salmon fishing areas of Cook Inlet or Kodiak Islands.

There are obstacles to a successful cleanup operation on Peil Island. Congress recently added Sea Lions to the list of species that are threatened. As a result of that action and because Sea Lions remain in a state of population decline, the National Marine Fisheries Service and the Alaska Department of Fish and Game will not allow cleanup of this haulout if such activity will cause disturbance to these mammals.

The following criteria for cleaning the sea lion haulout on Peil Island will be followed:

1. A.D.F.G. will survey the haulout and keep Exxon informed as to the possibility of mobilizing a successful cleanup effort which will result in little or no impact on Sea Lions.

2. Cleanup should start as soon as possible since the number of animals utilizing the area are low (less than 12) and will build over the next 2 months (over 100 last summer).

3. All treatment shall be Type A.

4. Initial cleaning shall concentrate on pooled, mobile, surface oil.

5. In treating asphalt pavement and for mats, concentrate only on that which can

be quickly and readily picked up and moved.
6. No bioremediation is recommended
unless pooled surface oil is removed and
asphalt and tar mats are picked up or broken up.

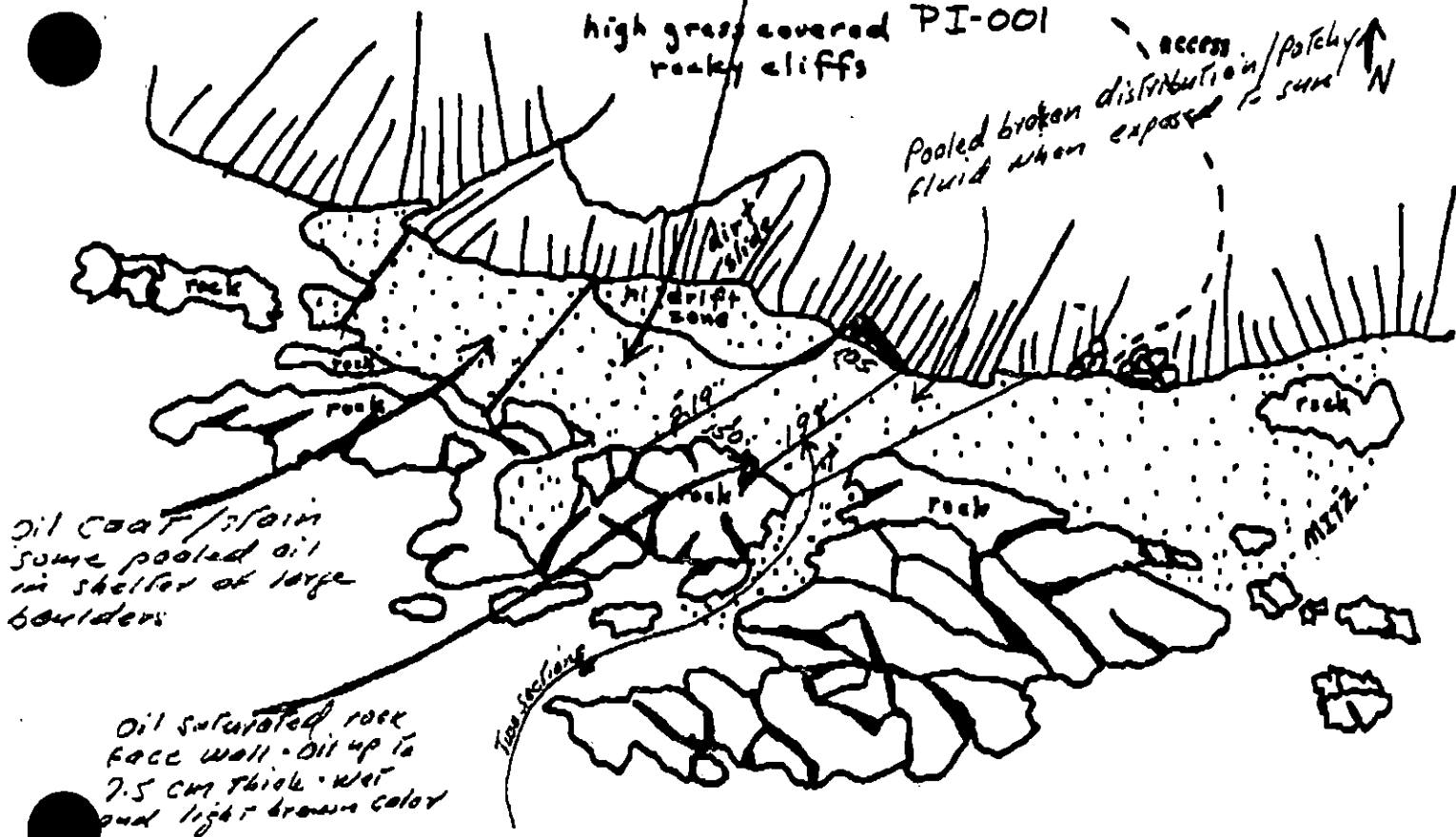
Joe Glenn

Subsurface Mousse saturated
sediments - oil up to 7 cm thick

PERL ISLAND, SEA LION HAULOUT, SE COAST

high grass covered PI-001
rocky cliffs

access in patchy
fluid when exposed to sun N



SHORELINE OILING SUMMARY

REVISION NO. 04/13/90

OG RICK GILLIE USCG DAVE THOMAS SEGMENT ST/ PE-01
 BIO DAVE LOHFE LAND REPLY GLENN (ADEC) SUBDIVISION A (1 OF 1)
 EXXON FRANK BOX ADEC CLARA CROSBY TIME 09:45 11:15
 TEAM NO. 13 TIDE LEVEL +1 to -2 DATE 04/29/90
 EST. SUBDIVISION LENGTH: 1,194 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☐ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: E to W
 SURFACE SEDIMENTS: R 40 % B 45 % C 10 % P 5 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 70 % Hang 10 % Ven 20 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 100 m M 80 m N 120 m VL 894 m NO 0 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	C	N	P	S	SW	W	U	M	U	SW	U	M	U
ASPHALT PAVEMENT		X		✓		X					✓	X	
POOLED													
COVER													
COAT	X		X	✓		X					X		
STAIN													
MOUSSE													
PATTIES													
TARBALLS													
FILM													
NO OIL										X			X

PAVEMENT H F 2,500 sq. m by 5 cm

PATTIES / TARBALLS 0 BAGS

NEAR SHORE SHEEN? NO BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris		X	

DID YOU COLLECT DEBRIS?

YES ☐ NO ☒

TYPE NO

#BAGS NO

Photographs: DEBRIS NOT OILED

Roll No. ST-13-6

Frames 1-10

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL	BELOW		OIL / FILM COLOR					PIT ZONE				A N A	SHEEN (Y/N)	↓	SURFACE SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	SW	W	U	M	U	SW	U	M	U				
1	15	X					5-10		X	X					X							P-PG
2	15	X					10-14		X	X					X							B-G, S
3	20	X					10-13		X	X					X							B-P, S
4	15					X	-		X						X							B-P, S
5	15					X	-		X						+							B-P, S
6	20	X					10-13		X	X					X							B-P, G

COMMENTS

GEOMORPHOLOGY: EXPOSED POINT WITH HOUSE-SIZE ROCKS SHELTERING A BOULDER/CORAL VENEER OVER WAVE/CUT BEDROCK PLATFORM.

OILING: ASPHALT PAVEMENT 5-8 CM THICK BETWEEN AND AROUND BOULDER.

REVIEWED BAT DATE MAY 20

SHORELINE OILING SUMMARY (PAGE 2)
 SEGMENT ST/ PE-01 SUBDIVISION A (1 OF 1)

REVISION 06/15/90

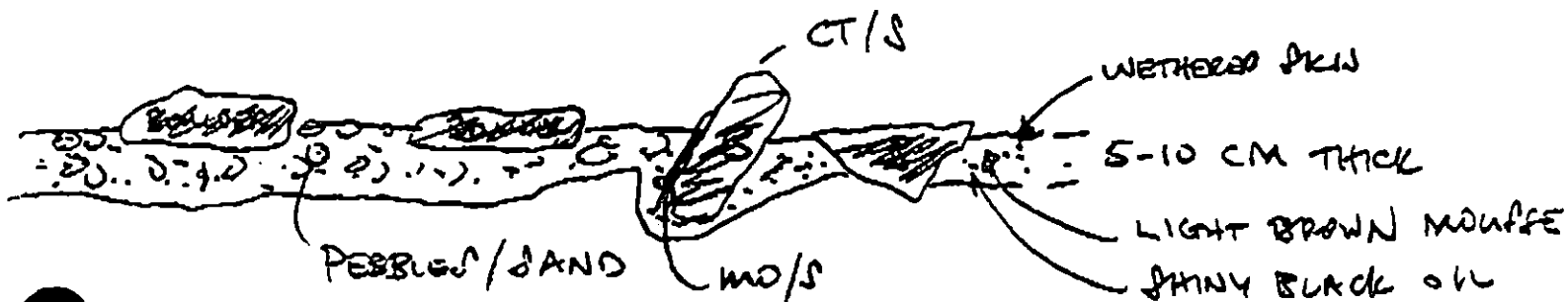
SUBSURFACE OIL (CONTINUED)

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM)	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	GREEN (Y/N)	↓	SURFACE - SUBSURFACE SEDIMENTS
		OF	OR	OL	OF	NO		UO	UC	1/2	3/4	1/2	3/4	1/2	3/4	SU	U	M	L				
7	15	X					10-13		X	X						X							B-G, S
8	30			X			20-27		X	X						X							B-P, G
9	60					X	.		X							X							P-P, G
10	30	X					15-20		X	X						X							B-P, G
11	15	X					7-10		X			X				X							B-G, S
							.																
							.																
							.																
							.																
							.																
							.																
							.																
							.																
							.																
							.																
							.																
							.																

COMMENTS

SUBSURFACE OILING: EXTENDS TO 75 CM DEPTH IN PITS WITH SURFACE ASPHALT AND IS A BURIED OIL LENS TO 20-30 CM DEPTHS IN WITE (PITS 8,10)

TYPICAL CROSS-SECTION OF ASPHALT PAVEMENT (80% COVER)



REVIEWED BAT DATE 1 May 90

SHORELINE ECOLOGICAL SUMMARY

REVISION: 05/22/90

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

Time (24 hr) 9:45 Biologist David Lohse

(A) Substrate type and % of segments:
(1) Bedrock 40 (2) Boulder 45 (3) Cobble 10 (4) Pebble 5 (5) Sand (6) Silt

(B) Overall % cover of biota (% of segment): Dense 45 Moderate 15 Low 30

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

Photographs:
Roll No. ST-13-6

Frames 1-10

BARNACLES

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

NOT PRESENT

MYTILUS

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

NOT PRESENT

GASTROPODS

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

NOT PRESENT

FUCUS

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

NOT PRESENT

Wildlife Observations/ General Comments:

See page 2

Ecological Considerations:

M, O, P, Q - Pinniped Haulout
Seabird colony nearby - unknown how close it is to segment boundary.
Other ecological considerations for this specific segment are unknown.

Segment ST-PE 001

Subdivision A

4-29-90

Biologist: David Lohr

Life Observations and Comments

1. Present in low intertidal: Rhodamelia, Enteromorpha, Halosaccion, Alaria, Porphyra, coralline algae, yellow sponge, Katharina tunicata, unknown red algal "blade" (Iridea?), Laminaria, Cladophora, Pagurus

mid intertidal: Ralfsia, coralline algae, Endocladia, Anelopus, Nueella, Anomopleura, Ulva, Enteromorpha, Halosaccion, Scytosiphon, Alaria (in tide pools), Rhodamelia, Laminaria (in tide pools), unknown red algal "branch" (Rhodomenia?), unknown yellow sponge, Epiactus

high intertidal: Porphyra, Ulva, Endocladia

2. Many gulls and oystercatchers seen in the area

3. Algal cover in low intertidal was ~95% on boulders (2 sites estimated), 75-95% on bedrock (3 sites), and ~95% on cobble (1 site).

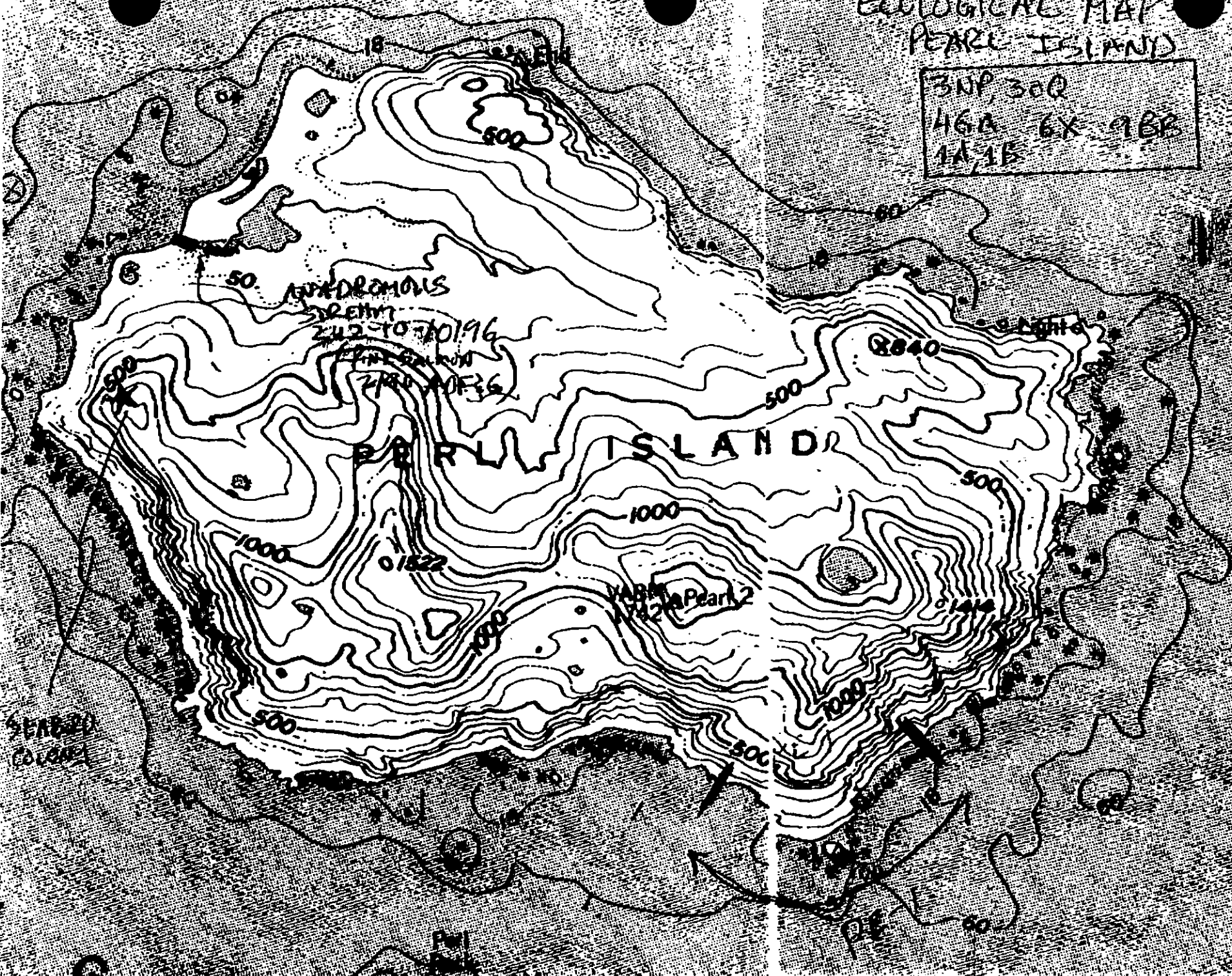
4. Littorine egg masses were found on low intertidal boulders. Also a group of unknown eggs was observed in the mid-intertidal. (see picture #2 on roll ST-13-6).

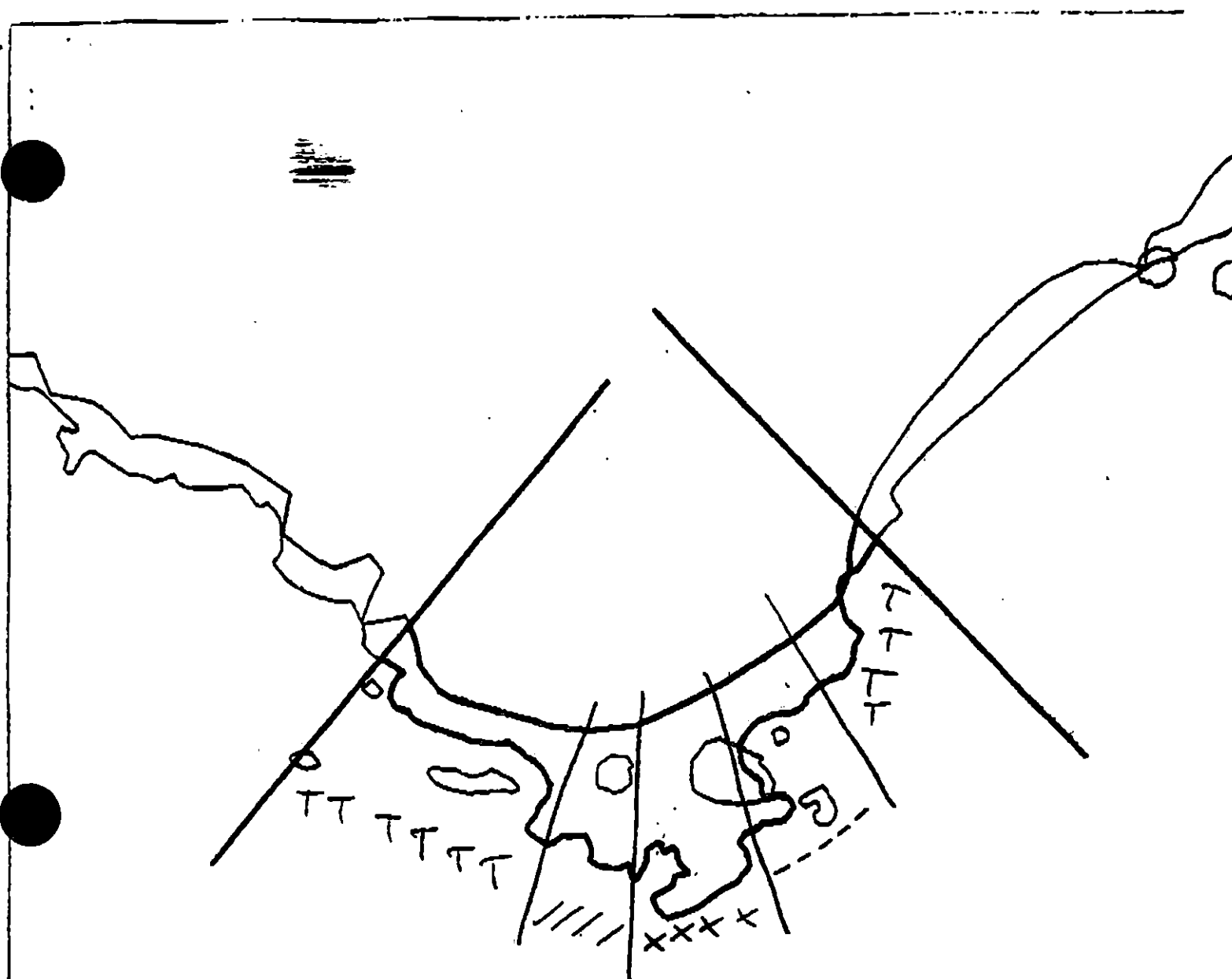
5. Ralfsia was quite abundant in the mid intertidal. It occupied ~60% of mid intertidal bedrock (1 site estimated), and from 10-75% of mid intertidal boulders (2 sites estimated).

6. Barnacle mortality on high intertidal bedrock was ~15% (based on estimate of one site), 50% on high intertidal boulders (1 site), and ~5% on mid intertidal bedrock (1 site).

ECOLOGICAL MAP
PEARL ISLANDS

3NP, 30Q
46A 6X 9BB
1A, 1B





XXXX Wide

//// Medium

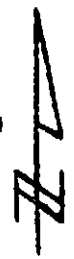
--- Narrow

TTTT Very Light

0000 No

PE-1

Approx. Segment Length: 891m

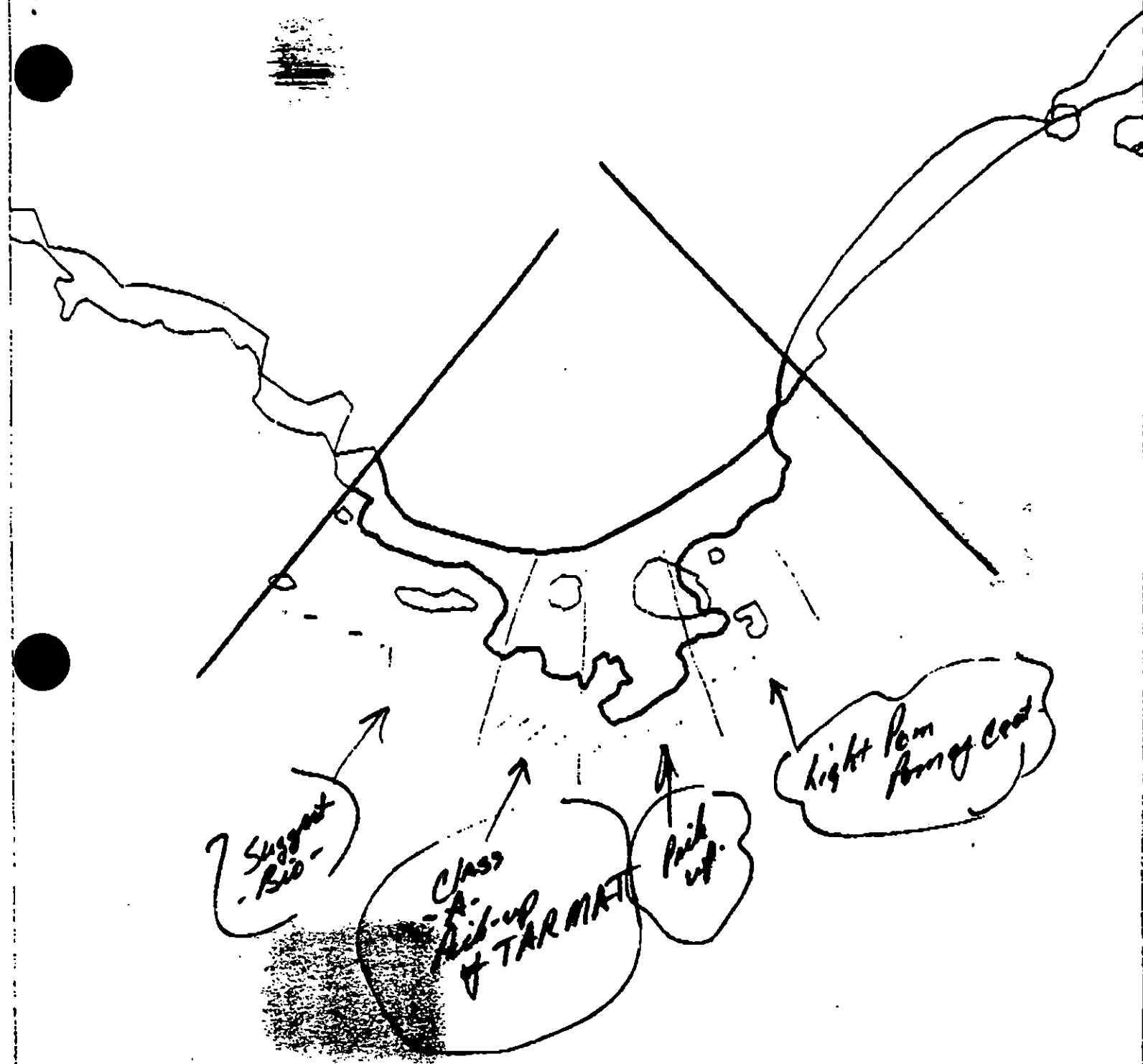


Map Key: KEN-PE-1

Name: Rick Gillie

Date: 04/29/90

Date Entered:



XXXX Wide

PE-1

Map Key: KEN-PE-1

Name: RICK GILLIE

Date: 04/29/10

Date Entered:

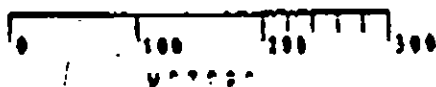
/// Medium

Approx. Segment Length: 891m

--- Narrow

TTTT Very Light

OOOO No Oil



ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT PE-1 SUBDIVISION A (1 of 1)

WORK WINDOW	
Tarmat Removal	WORK FROM 7/1 to 8/15
Bioremediation	WORK FROM 7/1 TO 7/31

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

3N,O,P,Q

Harbor Seal And Sea Lion
Pupping and Molting

Closed to bioremediation before 7/1 and after 7/31.
Closed to tarmat removal before 7/1 and after 8/15.

OTHER ECOLOGICAL CONSIDERATIONS

Do not apply bioremediation to specific areas where seals or sea lions are observed to haulout. Do not chase or harass seals or sea lions, and do not approach pups under any circumstances. When working on or near haulouts, complete the job as quickly as possible with minimum personnel, equipment, noise and disturbance. Keep boats and personnel as far from actual haulouts as is practical to do the work specified. Minimize air traffic near haulouts, maintain elevation as is practical, and avoid repeated overflights of the same haulout areas. Avoid any unnecessary disturbance or damage to unrolled blots and substrate.

FOSC

Date

6-10-90

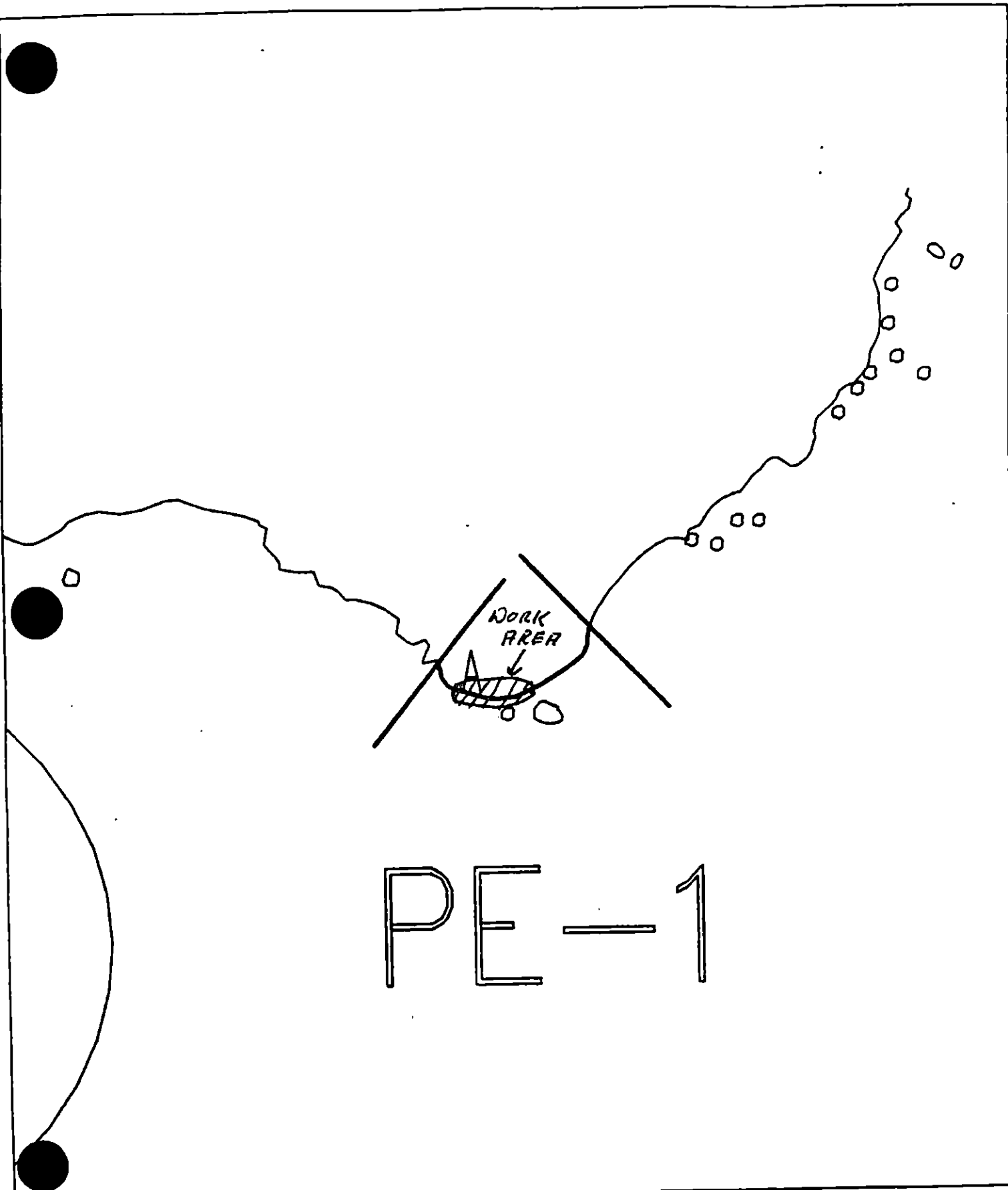
Prepared by

J.P. Phillips

6-10-90
amr

Date

6/10/90



ECOLOGY MAP
SEGMENT PE-1

CHRONOLOGICAL # (/ of /)



Seabird Colony



Eagle Nest

SHORELINE EVALUATION

SEGMENT ST/ PE-01 SUBDIVISION A (1 OF 1) DATE 4/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

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)
4GA Alaska State Wilderness Park
6X Recreation: Lodge (6/1 to 9/15)
9BB Privately Developed Lands
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

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: [Signature]

DATE: 5/2/90

OILING CATEGORIZATION:

Wide 79 m: Medium 53 m: Narrow 94 m: V.Light 361 m: No Oil 0 m
Subsurface Oil Observed: Yes X No Maximum Depth 27 cm

RECOMMENDATIONS:

 No Treatment Recommended
X Treatment Recommended
 Manual Pickup
X Bioremediation
X 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 1) manual removal of asphalt pavement 2) bioremediation of areas of surface and subsurface oil in areas shown on attached sketch map. Work should be conducted before 5/15 or between 7/1 and 8/15 based on pinniped constraints. NOTE: ADF&G to survey site prior to any work. CONTACT LEE GLEN (235-5322) PRIOR TO WORK.

SEE CONSTRAINTS ADDENDUM dated 6/10/90

TAG COMMENTS:

TAG APPROVAL DATE: 5/12/90

ADEC ART WEAVER
EXXON GARY PETERSON
NOAA GARY PETERSON
USCG D.D. ROME

FOSC: [Signature]

DATE: 5-14-90

Manual pickup of mousse + pooled oil. Coordinate with AD+NR + ADF&G to ensure proper land manager on site. Cont.

SHORELINE EVALUATION

SEGMENT ST/ PE-01 SUBDIVISION A (1 OF 1) DATE 4/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

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)
4GA	Alaska State Wilderness Park
6X	Recreation: Lodge (6/1 to 9/15)
9BB	Privately Developed Lands

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: J. David McMahon DATE: 5/12/90

OILING CATEGORIZATION:

Wide 79 m: Medium 53 m: Narrow 94 m: V.Light 361 m: No Oil 0 m
Subsurface Oil Observed: Yes X No Maximum Depth 27 cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) manual removal of asphalt pavement 2) bioremediation of areas of surface and subsurface oil in areas shown on attached sketch map. Work should be conducted before 5/15 or between 7/1 and 8/15 based on pinniped constraints. NOTE: ADF&G to survey site prior to any work. CONTACT LEE GLEN (235-5322) PRIOR TO WORK

TAG COMMENTS: _____

TAG APPROVAL DATE: 5/12/90.

ADEC ART WENGER Art Wenger

EXXON Amvitz Real

NOAA Gary Petrac Gary Petrac

USCG D.D. Rome DD Rome

FOSC: ✓ 1 1 DATE: 5-14-76

Manual pickup of mouse + pooled oil.
Coordinate with AD + NR + AAF + G to
ensure proper land manager on site. Only
OI allowed!

PERL ISLAND, SEA LION HAU/OUT, SE COAST

PI-001

access distribution / patchy
Pooled broken fluid when exposed to sun ↑ N

Oil saturated rock
face wall - oil up to
7.5 cm thick - wet
and light brown color

See video of oil taken in this area on April 12, 1990. Video shows how fluid the oil is & how thick & THIS IS THE OIL A.O.F. & G. WOULD LIKE REMOVED FIRST. See Dick Hensel (A.O.F. & G. 257-2341) on STAG for copy of video.

OG RIO GALLIE

SEGMENT ST/ PE-01

SUBDIVISION A-1 of 1

DATE 04/29/90

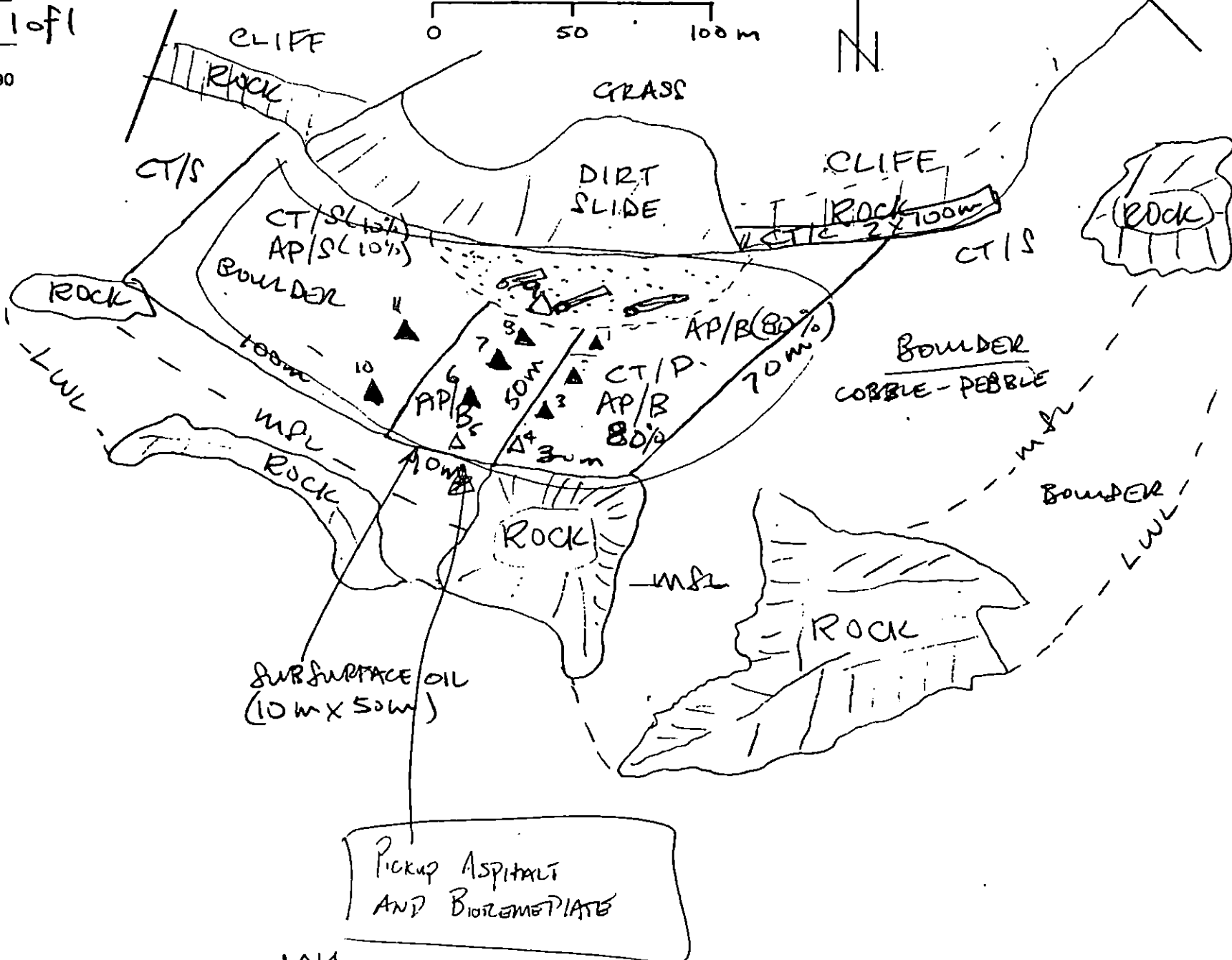
CHECKLIST

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

LEGEND

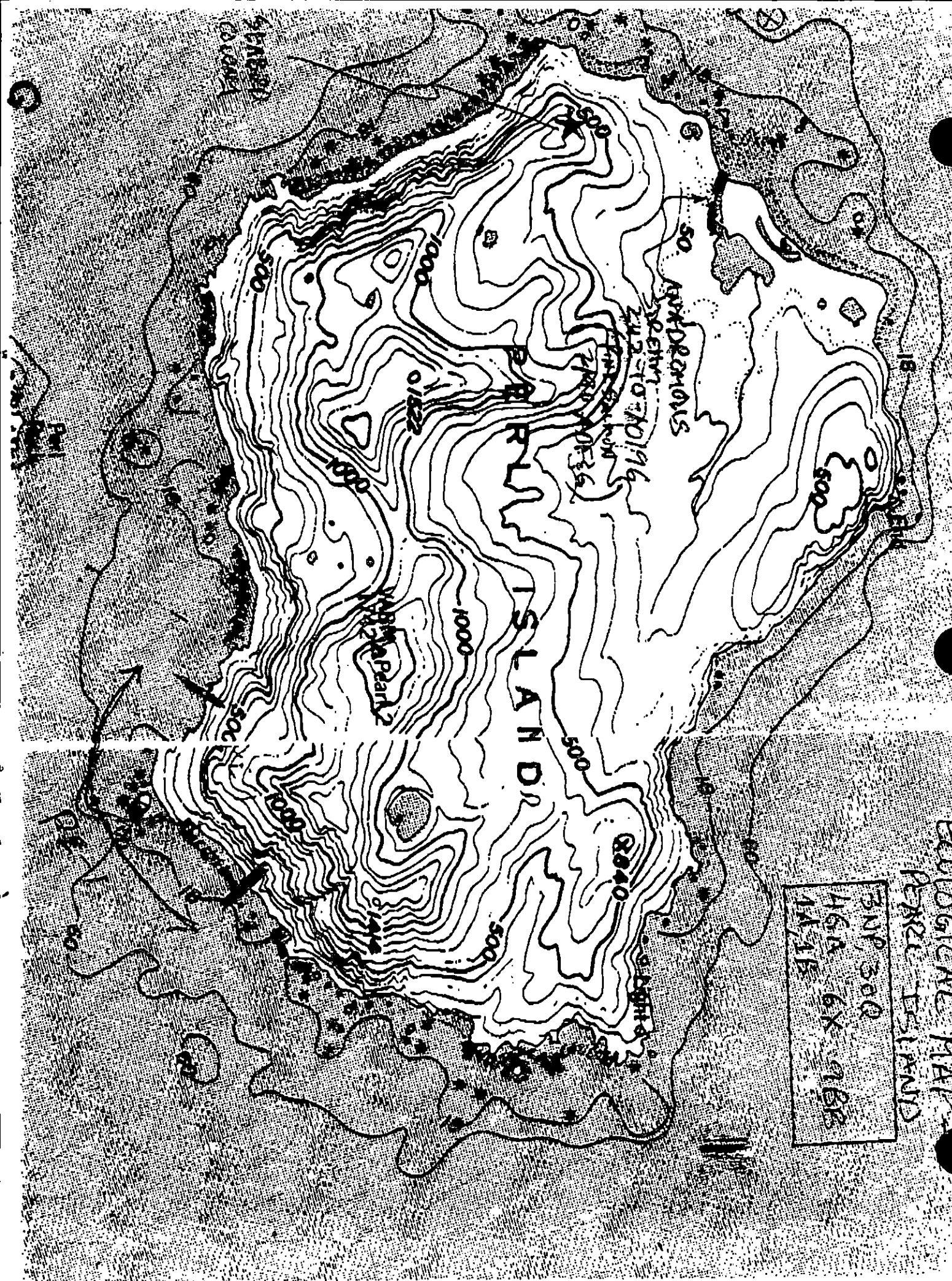
- 1 Δ
Pit - No Subsurface Oil
- 2 $\blacktriangle$
Pit - Subsurface Oil
- CT/C
Continuous Distribution
- CT/B
Broken Distribution
- CT/P
Patchy Distribution
- CT/S
Splashed Distribution
- 
Oiled Vegetation
- 1 
Photo location, direction, and number

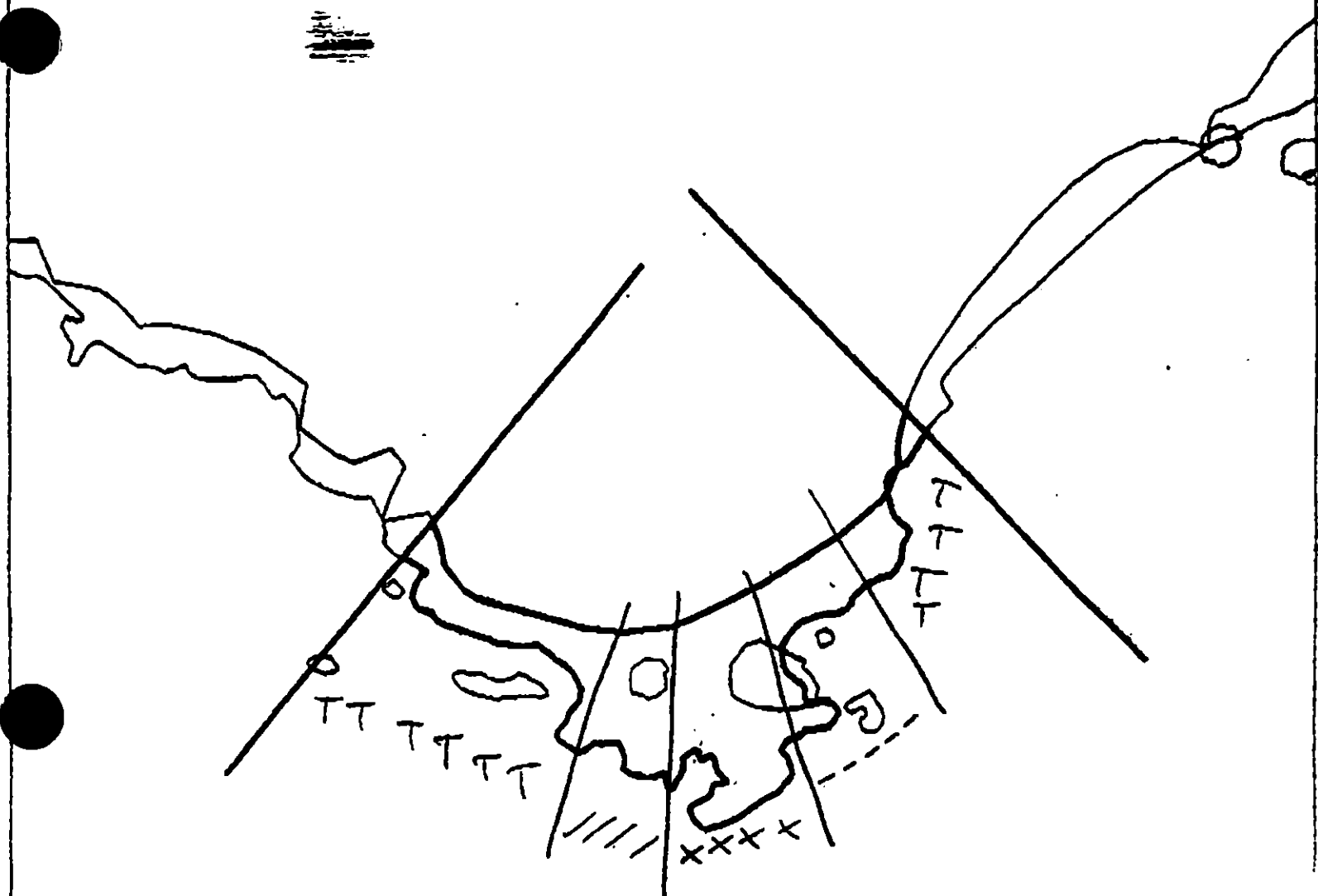
SKETCH MAP



Oil Character Length (m): AP 180 PO 0 CV 0 CT 1014 ST 0 MS 0 PT 0 TB 0 FL 0 NO 0

3NF, 300
46A 6X 16R
4A 1B





XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

OOOO No. 1

PE-1

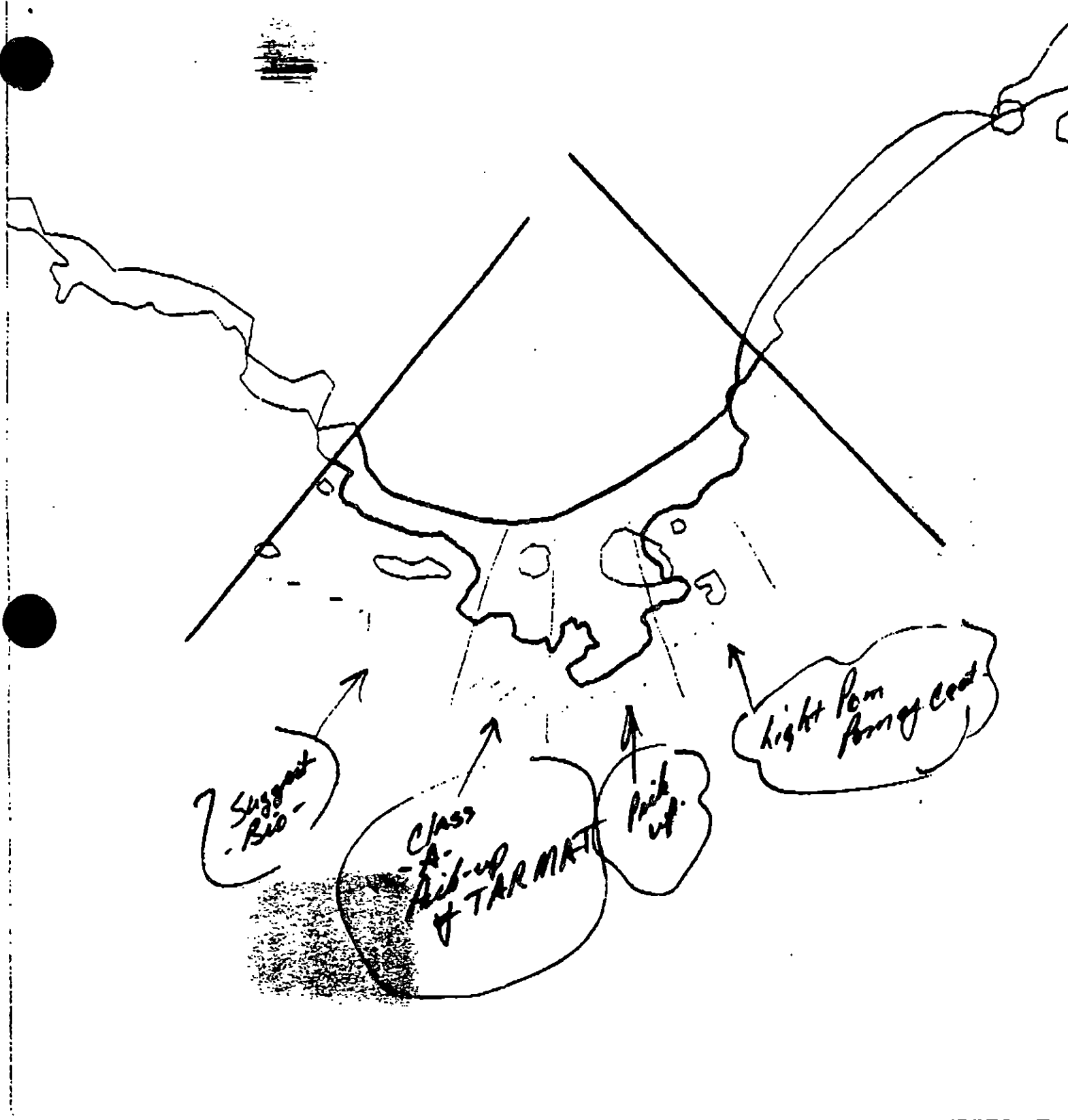
Approx. Segment Length: 891m



Map Key: KEN-PE-1

Name: Rick GillieDate: 04/29/90

Date Entered:



XXXX Wide

/// Medium

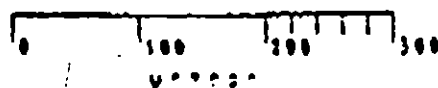
--- Narrow

TTTT Very Light

OOOO No Oil

PE-1

Approx. Segment Length: 891m



Map Key: KEN-PE-1

Name: RICK GILLIE

Date: 04/29/90

Date Entered:

1991 MAYSAP EVALUATION

SEGMENT: PE 001 **SUB:** A **REGION:** KEN **SURVEY DATE:** 5/7/91

ENVIRONMENTAL SENSITIVITIES:

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

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: _____ **Date:** _____

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

Manual Pickup (Check as Req.) _____

Spot Washing _____

Bio-Customblen Only _____

Bio-Inipol/Customblen _____

Other _____

Other _____

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____

FOSC APPROVAL DATE: _____

ADEC _____

FOSC _____

EXXON _____

USCG _____

NOAA _____

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Pinniped Haulout: Access restricted from 5/15 to 6/30 and 8/15 to 9/15 unless approved by NMFS. Maintain 1000' vertical and 1/2 mile (3 mile for sea lions at all times) horizontal buffer.

ADEC

NAME S. Ferguson

SIGNATURE [Signature]

☐ NTR

☒ TREATMENT RECOMMENDED

AGREE WITH LAND MANAGERS COMMENTS AND RECOMMEND FOLLOWING SUGGESTIONS FOR CLEAN UP

EXXON

NAME G. STILES

SIGNATURE [Signature] 5/8/91

☐ NTR

The boulder beach has very light asphalt/SOE with pockets of higher concentrations. If clean-up is recommended it would require a helo squad to fly the crews, equipment and waste in and out. The work would have to be performed with sea lions present which should not be a problem if done slowly at start up based on our survey helo flight on and off the beach.

LANDMANAGER

L. Glenn

A.D.F.B.G.

NAME [Signature]

OF [Signature]

SIGNATURE [Signature]

☐ NTR

☒ Treatment Recommended

See Comments - Attached

USCG/NOAA

NAME CWO SPUR / R. Hoff

SIGNATURE [Signature] Rebecca Hoff

☐ NTR

Patches of asphalt and SOE remain in the sheltered area (area *). Any treatment is complicated by the fact that Steller sea lions haul out here. Manual treatment (pick up of asphalt patches & breaking up surface) could be undertaken soon (in early May) with careful restrictions on helicopter approach & activities of workers (see landmanager comments). Leaving the area untreated is also an acceptable option if treatment is deemed to be cause unacceptable disturbance to the sea lions. Winter storms will continue to weather remaining oil, as has already happened in the more exposed areas of the segment. The weathered oil probably represents little direct threat to the sea lions or other biological resources in the area.

FIELD SHORELINE COMMENT SHEET

Segment PE-001A
Date May 7, 1991
Name Lee Glenn *L.G.*

This beach has never been worked and no significant natural cleaning has occurred since the oil came ashore in the spring of 1989. This is a high value resource area that is utilized by marine mammals, birds and intertidal marine life. Sea lions have been observed hauled out on the oiled beach. Also the oiled segment is centrally located to commercial fishing areas and if left without treatment could affect these harvests and markets.

Suggest manual removal of AP and MS that is indicated on the sketch map. Roll cobble to access pooled mousse. On warm days during June, July and August this oil is fluid and therefore remains a threat to biota. Recommend the cleanup team access this site by helicopter and coordinate with ADF&G (Lee Glenn) regarding constraints associated with marine mammals. Cleanup of this site should be given priority with cleanup restricted to oil that can be easily removed. A cleanup team working during two low tide periods would significantly improve the quality of this beach.

SEGMENT PE-1

SUBDIVISION A

DATE 7 / May / 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 55m VL 125m NO m US 408m

[illegible]

DISTRIBUTION: C = 91-100%; B = 51-60%; P = 11-50%; S = 1-10%; T = <1%

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

PHOTO ROLL # MAYSAP-

FRAMES 11-24

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
1	20							X	-						X		B-C-P-S-G	
2	13							X	-						X		B-C-P-G-S	
3	30			X					24-28	Y	20	S			X		B-C-P-G	
4	30			X					20-22	Y				X			B-C-P-G	
5	20			X					15-17	Y				X			B-C-P-G	
6	22			X					10-12	Y					X		B-C-P-G	
7	35			X					30-32	Y				X			B-C	W/I Beach Area
8	17		X						0-12	Y				X			B-C	" " "
9	20			X					15-16	Y				X			B-C-P-G	

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

OG COMMENTS: This segment consists of a boulder-cobble beach that is protected by house-sized bedrock outcrops along the seaward edge. The beach materials overlie an irregular bedrock platform. The major oiling consists of an asphalt pavement that occurs between boulders and bedrock outcrops behind the major bedrock island, covering an area of approximately 20 by 80 m. The asphalt is presently cohesive but could begin to release oil if the weather warms considerably. In the same approximate region a subsurface MOR-HOR layer is found buried by 5 to 30 cm of sediment. In warm weather this oil may become less viscous and flow. The areas on either side of the asphalt region have trace oil in the form of SOR and asphalt patches between cracks of rocks and between boulders.

revised 5/10/19 L.

REVISED 6 10 MAY

SEGMENT D. Fitzgerald

SUBDIVISION PE-1-A

DATE 7 / May / 91

[illegible]

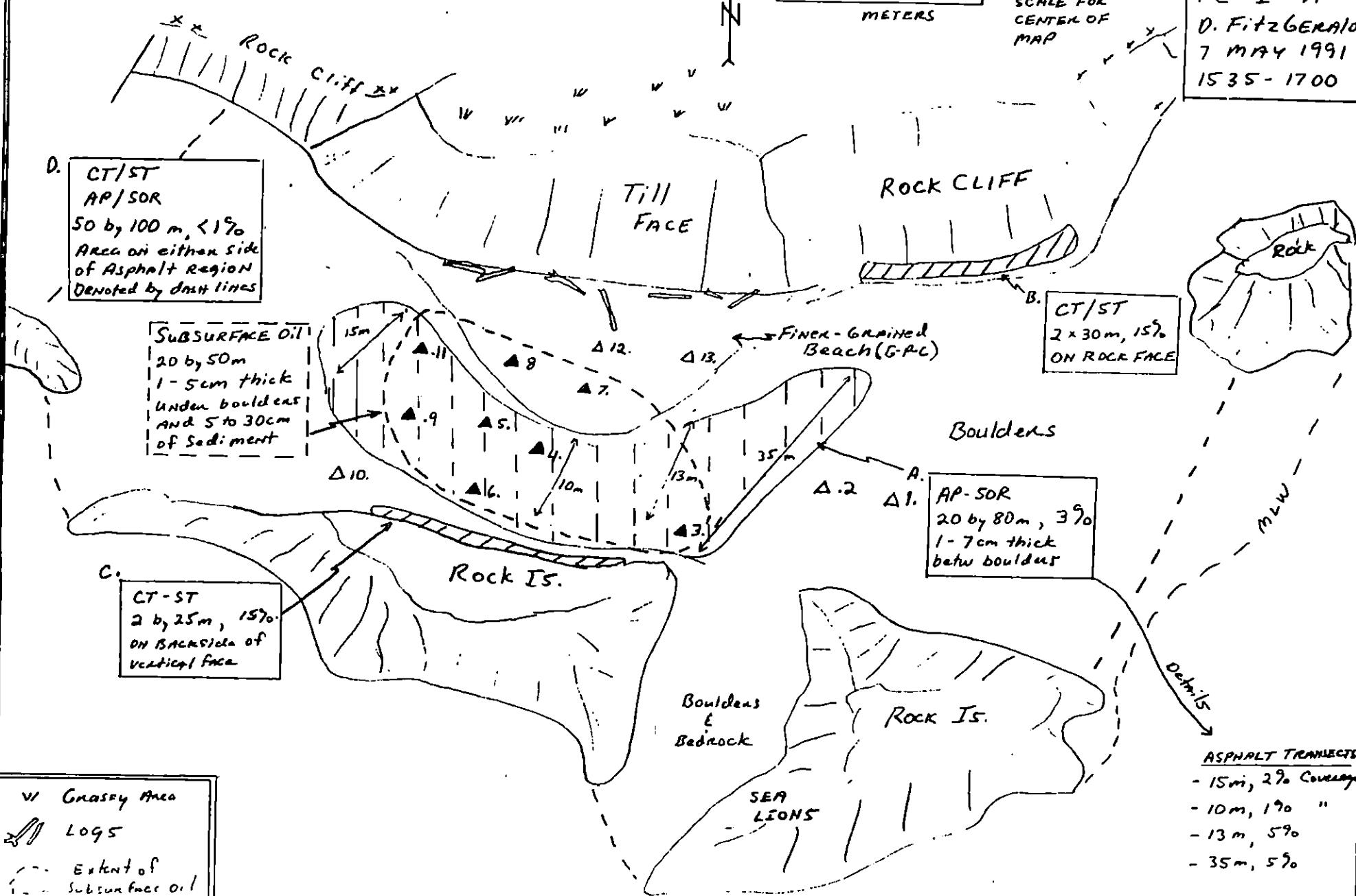
SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS:

REVIEWED ~~CO~~ 15 MAY

Sketch MAP/OC
PE-1-A
D. Fitzgerald
7 MAY 1991
1535-1700

0 50
METERS
SCALE FOR
CENTER OF
MAP



REVIEWED CO 10 MAY

- VI Grassy Area
- Log5
- Extent of Subsurface Oil
- Pit locations
- Photo sites

ASPHALT TRAVERSES
- 15m, 29% Coverage
- 10m, 19% "
- 13m, 59%
- 35m, 59%

Gulf of Alaska

Photo Locations

Maytag 6-08 # 14-24

Sketch MAP/LOG
PE-1-A
D. FITZGERALD
7 MAY 1991
1535-1700

0 50
METERS
SCALE FOR
CENTER OF
MAP

D. CT/ST
AP/SOR
50 by 100 m, <1%
Area on either side
of Asphalt region
Denoted by dash lines

SUBSURFACE OIL
20 by 50m
1-5cm thick
Under boulders
and 5 to 30cm
of Sediment

B. CT/ST
2 x 30m, 15%
ON ROCK FACE

A. AP-SOR
20 by 80m, 3%
1-7cm thick
betw boulders

C. CT-ST
2 by 25m, 15%
ON BACKSIDE OF
Vertical face

ASPHALT TRANSECTS
- 15m, 2% Coverage
- 10m, 1% "
- 13m, 5%
- 35m, 5%

W Grassy Area
Log
Extent of
Subsurface Oil
Pit locations
Photo sites

Gulf of Alaska

NAVSAP BIOLOGICAL SUMMARY FORM

TEAM # 6 Hilo

DATE May 7 1991

SEGMENT # PE-01

TIDAL HEIGHT (Range) 4ft - 6ft (1530 - 1700)

SUBDIVISION #

BIOLOGIST H. Davis

SEA STATE 6 Choppy + Rough

WIND SPEED/DIRECTION 10 mph (Gusts to 15) E

PHOTOGRAPHS: ROLL # 6-08

FRAME # 19-24

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

A+D Very little biota in these areas some filamentous greens; littorines very few scattered barnacles. This area is used by the sea lions as a haul out.

B. Very sparse barnacles, littorines and 1-3 patches of Fucus.

C. Some endocladia, Fucus, sparse barnacles, rare mytilus and littorines in crevices.

E. The shore at the East and West sides of the point had moderate dense patchy populations that were low in diversity. Fucus, Endocladia, littorines were almost the only organisms in the LITZ. MITZ had Fucus, Odonthalia, Corallinaceae, Katherina, limpets and mytilus. LITZ not visible due to windy conditions and tidal height.

F. This area was observed from a distance so that the sea lions weren't disturbed. It was a very rich diverse rocky community. LITZ Porphyria, Ulva, Endocladia, Fucus, limpets, Barnacles and mussels, MITZ Fucus, Endocladia, Redblades (Gracilaria?), Odonthalia, Corallinaceae were visible.

This area is a Sea lion haul out area. They will be increasing in numbers as the summer progresses and any clean up should take this into account. There were 20-25 sea lions present on the rock is. during this survey. They hadn't begin using A+D yet. Approaching from the west would probably cause the least amount of disturbance.

Birds.

Oystercatchers (2) New Gulls (>20)

Cormorants (sp) (>20) Kittiwakes (>20) Glaucous winged gulls (>20) loon sp (4) Murrelet (2)

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	0		0
Seabirds ^{Cormorants} ^{Loon, Murrelet} (sp)	3	> 20	
Waterfowl	0		
Gulls/Kittiwakes	3	> 60	
Shorebirds ^{Oystercatchers}	1	2	
Corvids	0		
Other Birds	0		

LAND MAMMALS

MARINE MAMMALS	# OBSERVED	SPECIES	# OBSERVED
Sea Otters	0	0	
Pinnipeds (specify)			
Steller's sea lion	20 - 25		
Whales (specify)	0		

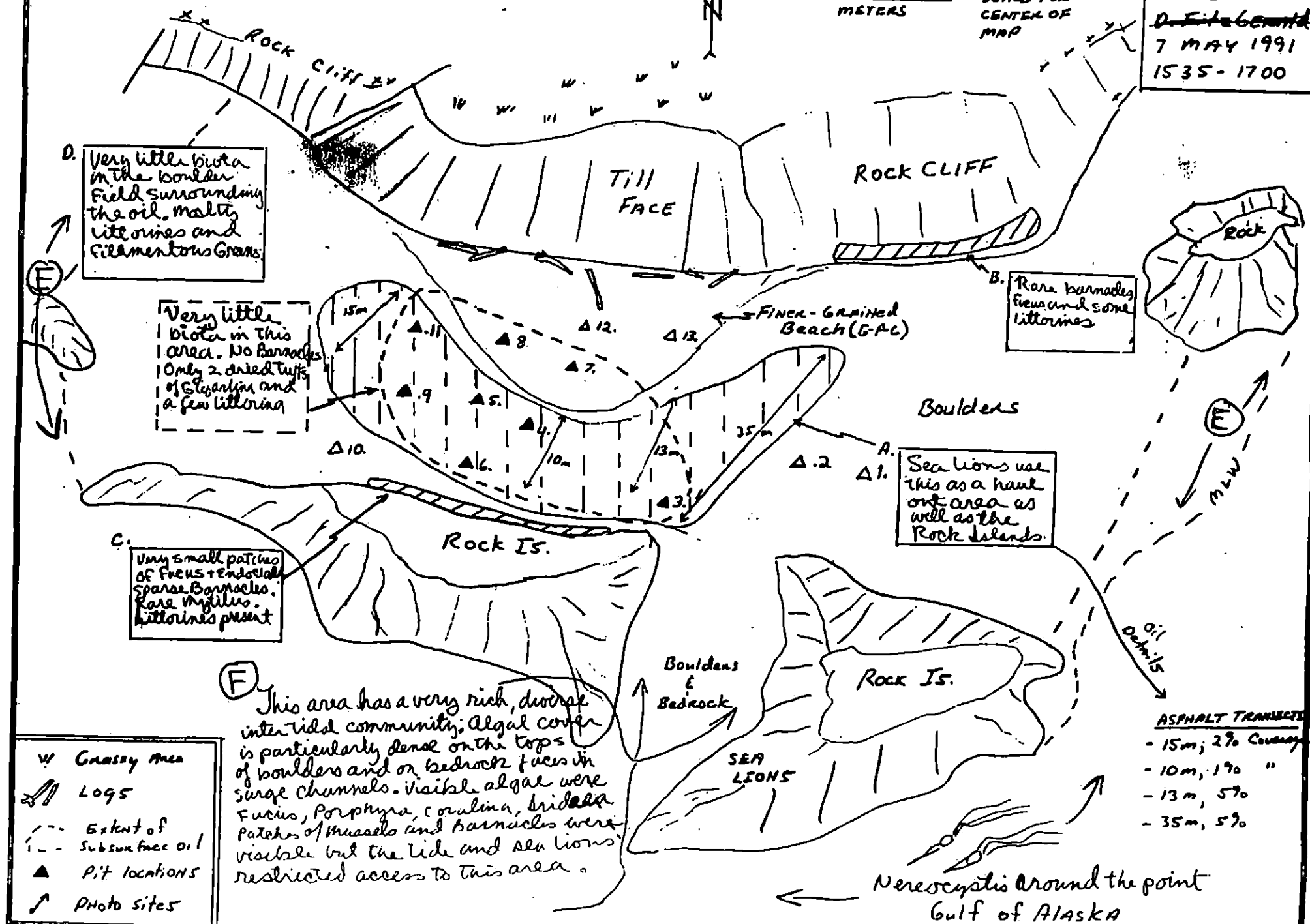
Shoreline subdivision map showing important biological features attached.

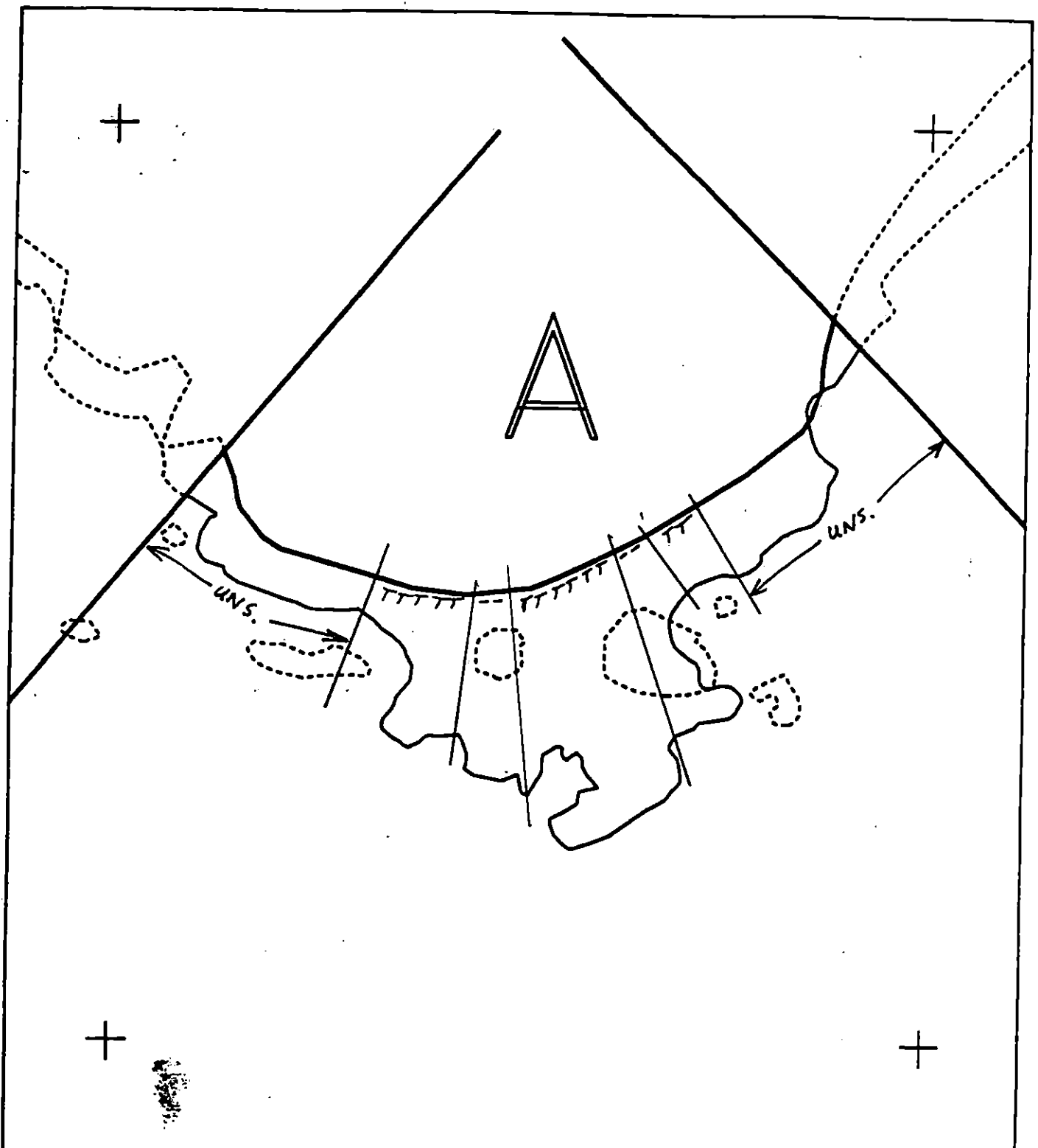
Bio Map Heather Davis

0 50
METERS

SCALE FOR
CENTER OF
MAP

Sketch Map
PE-1-A
D. E. G. G. G.
7 MAY 1991
1535-1700





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

PE001 A

ADEC Subsegment Length: 588m

METERS

0 100 200

AK State Plane Zone 4
sp001a



Subdivision Field Map

Map Key: KENPE001A

Name: D. Fitzgerald

Date: 7 May 1991

Date Entered:

reviewed 5/10/91 KG
 REVISED CD 10 MAY

1991 MAYSAP EVALUATION

SEGMENT: PE 001 SUB: A REGION: KEN SURVEY DATE: 5/7/91

ENVIRONMENTAL SENSITIVITIES:

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

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: Rachel Ann Dale Date: 5/22/91

RECOMMENDATIONS:

	INITIAL	TAG	FOSC
TREATMENT REQUIRED (Y or N)	<u>N</u>	<u>✓</u>	<u>✓</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: INFORMAL CONSULTATION PERFORMED 5/22/91 WITH NMFS (SMITH)
NOAA EXXON VALDEZ PROJECT OFFICE (TALBOT/Phillips) as required
by Section 7 of the Marine Mammal Protection Act

FOSC: _____

TAG APPROVAL DATE: MAY 22 1991

FOSC APPROVAL DATE: 5/26/91

ADEC [Signature]

FOSC [Signature]
 E. E. PAGE, CDR, USCG
 CHIEF OF STAFF, FOSC

EXXON [Signature]

USCG [Signature]

NOAA [Signature]

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Pinniped Haulout: Access restricted from 5/15 to 6/30 and 8/15 to 9/15 unless approved by NMFS. Maintain 1000' vertical and 1/2 mile (3 mile for sea lions at all times) horizontal buffer.

FIELD SHORELINE COMMENT SHEET

Segment PE-001A
Date May 7, 1991
Name Lee Glenn *LG*

This beach has never been worked and no significant natural cleaning has occurred since the oil came ashore in the spring of 1989. This is a high value resource area that is utilized by marine mammals, birds and intertidal marine life. Sea lions have been observed hauled out on the oiled beach. Also the oiled segment is centrally located to commercial fishing areas and if left without treatment could affect these harvests and markets.

Suggest manual removal of AP and MS that is indicated on the sketch map. Roll cobble to access pooled mousse. On warm days during June, July and August this oil is fluid and therefore remains a threat to biota. Recommend the cleanup team access this site by helicopter and coordinate with ADF&G (Lee Glenn) regarding constraints associated with marine mammals. Cleanup of this site should be given priority with cleanup restricted to oil that can be easily removed. A cleanup team working during two low tide periods would significantly improve the quality of this beach.

TEAM NO. 6-Helo SEGMENT PE-01 SUBDIVISION A DATE 7/1/91

ADEC

NAME S. FergusonSIGNATURE [Signature]☐ NTR☒ TREATMENT RECOMMENDED

AGREE WITH LAND MANAGERS COMMENTS AND RECOMMEND FOLLOWING
SUGGESTIONS FOR CLEAN UP

EXXON

NAME G. STILESSIGNATURE [Signature] 5/8/91☐ NTR

The boulder beach has very light asphalt/SOR with pockets of higher concentrations. If clean-up is recommended it would require a helo squad to fly the crews, equipment and waste in and out. The work would have to be performed with sea lions present which should not be a problem if done slowly at start up based on our survey helo flight on and off the beach.

LANDMANAGER L. Glenn A.O.F.S.G.NAME [Signature]OF USFWSSIGNATURE [Signature]☐ NTR☒ Treatment Recommended

See Comments - Attached

USCG/NOAA

NAME CWO Spurr / R. HoffSIGNATURE [Signature] Rebecca Hoff☐ NTR

Patches of asphalt and SOR remain in the sheltered area (area A). Any treatment is complicated by the fact that Steller sea lions haul out here. Manual treatment (pick up of asphalt patches + breaking up surface) could be undertaken soon (in early May) with careful restrictions on helicopter approach + activities of workers (see landmanager comments). Leaving the area untreated is also an acceptable option if treatment is deemed to be cause unacceptable disturbance to the sea lions. Winter storms will continue to weather remaining oil, as has already happened in the more exposed areas of the segment. The weathered oil probably represents little direct threat to the sea lions or other biological resources in the area.

SEGMENT PE-1

SUBDIVISION *A*

DATE 7 / May / 91

ENERGY LEVEL: ☐ H ☒ M ☐ L

SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO WEATHER: ☐ SUN ☒ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

TOTAL LENGTH SHORELINE SURVEYED: 100 m NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE

EST. OIL CATEGORY LENGTH: W 1 m M 1 m N 55 m VL 125 m NO 1 m US 408 m

[illegible]

DISTRIBUTION: C = 91-100%; B = 51-60%; P = 11-50%; S = 1-10%; T = <1%

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE PHOTO ROLL # MAYSAP- 6 - 08 FRAMES 41-24

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
1	20							X	-						X	B-C-P-S-G		
2	13							X	-						X	B-C-P-6-S		
3	30			X					24-28	Y	20	S			X	B-C-P-6		
4	30			X					20-22	Y				X		B-C-P-6		
5	20			X					15-17	Y				X		B-C-P-6		
6	22			X					10-12	Y					X	B-C-P-6		
7	35			X					30-32	Y				X		B-C	w/I Beach Area	
8	17		X						0-12	Y				X		B-C	" " "	
9	20			X					15-16	Y				X		B-C-P-6		

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

OG COMMENTS: This segment consists of a boulder-cobble beach that is protected by house-sized bedrock outcrops along the seaward edge. The beach materials overlie an irregular bedrock platform. The major oiling consists of an asphalt pavement that occurs between boulders and bedrock outcrops behind the major bedrock island, covering an area of approximately 20 by 80 m. The asphalt is presently cohesive but could begin to release oil if the weather warms considerably. In the same approximate region a subsurface MOR-HOR layer is found which is overlain by 5 to 30 cm of sediment. In warm weather this oil may become less viscous and flow. The areas on either side of the asphalt region have trace oil in the form of SOR and asphalt patches between cracks of rocks and between boulders.

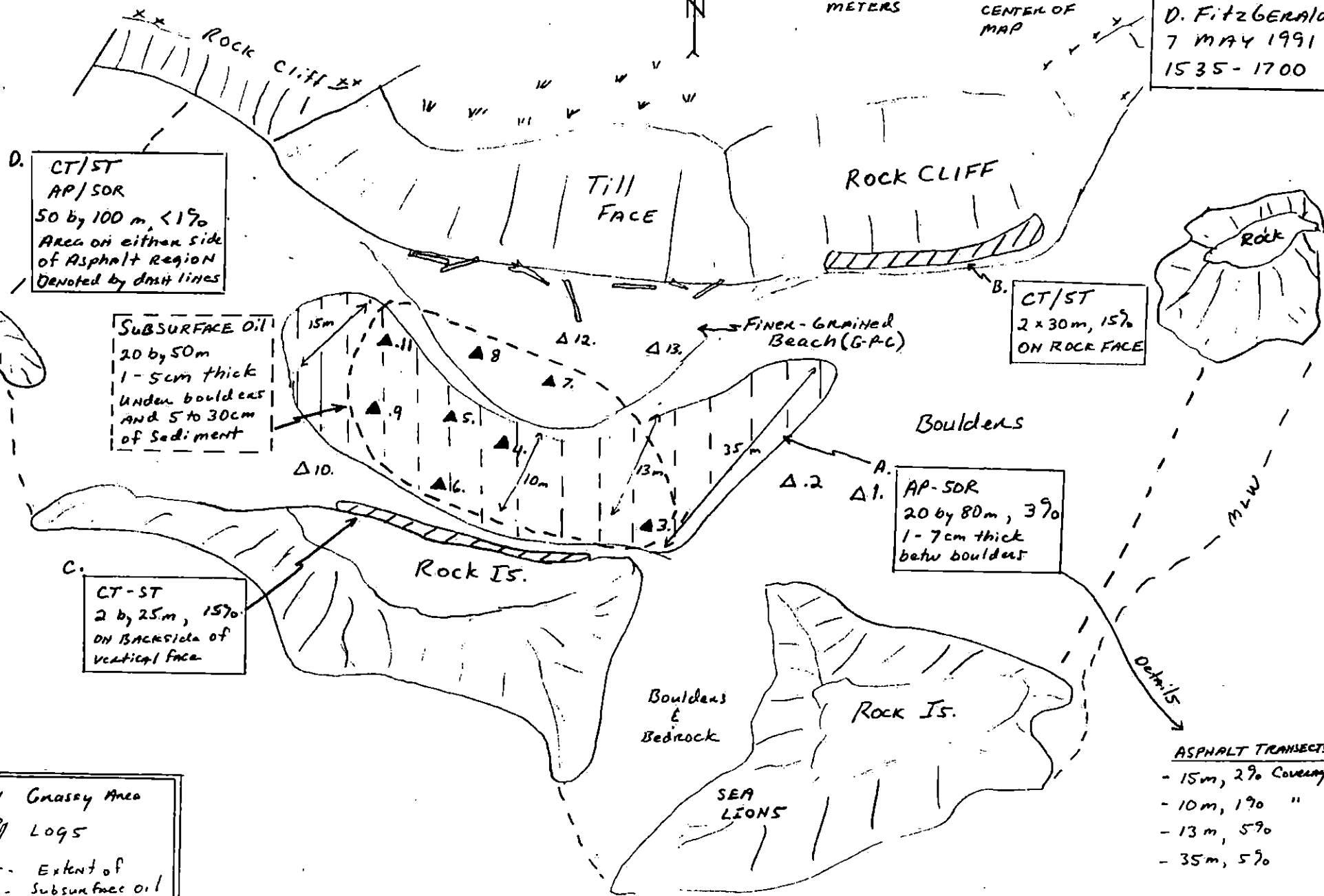
revised 5/10/91 KLG

REVISED 6 MAY

reviewed 5/10/91 KG
REVIEWED ~~CA~~ 18 MAY

Sketch Map (OG)
PE-1-A
D. Fitzgerald
7 May 1991
1535-1700

0 50
METERS
* SCALE FOR
CENTER OF
MAP



Gulf of Alaska

- VI Grassy Area
- Logs
- Extent of
Subsurface Oil
- Pit locations
- Photo sites

Photo Locations

Maytag 6-08 # 19-24

0 50
METERS

* SCALE FOR
CENTER OF
MAP

Sketch Map 106
PE-1-A
D. FitzGerald
7 MAY 1991
1535-1700

D. CT/ST
AP/SOR
50 by 100 m, <1%
Area on either side
of Asphalt region
Denoted by dash lines

SUBSURFACE OIL
20 by 50 m
1-5 cm thick
Under boulders
and 5 to 30 cm
of sediment

B. CT/ST
2 x 30 m, 15%
ON ROCK FACE

A. AP-SOR
20 by 80 m, 3%
1-7 cm thick
betw boulders

C. CT-ST
2 by 25 m, 15%
ON BACKSIDE OF
VERTICAL FACE

- V/ Grassy Area
- LogS
- Extent of
Subsurface oil
- Pit locations
- Photo sites

ASPHALT TRANSECTS
- 15m, 2% Coverage
- 10m, 1% "
- 13m, 5%
- 35m, 5%

Gulf of Alaska

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 6 Holo

DATE May 7 1991

SEGMENT # PE-01

TIDAL HEIGHT (Range) 4ft - 6ft (1530 - 1700)

SUBDIVISION A

BIOLOGIST H. Davis

SEA STATE 6 ft Choppy + Rough

WIND SPEED/DIRECTION 10 mph (Gusts to 15) E

PHOTOGRAPHS: ROLL # 6-08

FRAME # 19-24

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

A+D Very little biota in these areas some filamentous greens; littorines very few scattered barnacles. This area is used by the sea lions as a haul out.

B. Very sparse barnacles, littorines and 1-3 patches of Fucus.

C. Some endocladia, Fucus, sparse barnacles, rare mytilus and littorines in crevices.

E. The shore at the East and West sides of the point had moderate dense patchy populations that were low in diversity. Fucus, Endocladia littorines were almost the only organisms in the LITZ. MITZ had Fucus Odonthalia Corallinacea, Katharina, limpets and mytilus. LITZ not visible due to windy conditions and tidal height.

F. This area was observed from a distance so that the sea lions weren't disturbed. It was a very rich diverse rocky community. LITZ Porphyra, Ulva Endocladia Fucus limpets Barnacles and mussels, MITZ Fucus, Endocladia Redblades (Breda?) Odonthalia, Corallinacea were visible.

This area is a Sea lion haul out area. They will be increasing in numbers as the summer progresses and any clean up should take this into account. There were 20-25 sea lions present on the rocks during this survey. They hadn't begin using A+D yet. Approaching from the west would probably cause the least amount of disturbance.

Birds:

Oystercatchers (2) New Gulls (>20)

Cormorants (50) Kittiwakes (>20) Glaucous winged gulls (>20) Loon sp (4) Murrelet (2)

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	0		0
Seabirds Cormorant, Loon, Murrelet (sp)	3	> 20	
Waterfowl	0		
Gulls/Kittiwakes	3	> 60	
Shorebirds Oystercatchers	1	2	
Corvids	0		
Other Birds	0		

MARINE MAMMALS

	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	0	0	
Pinnipeds (specify)			
Steller's sea lion	20-25		
Whales (specify)	0		

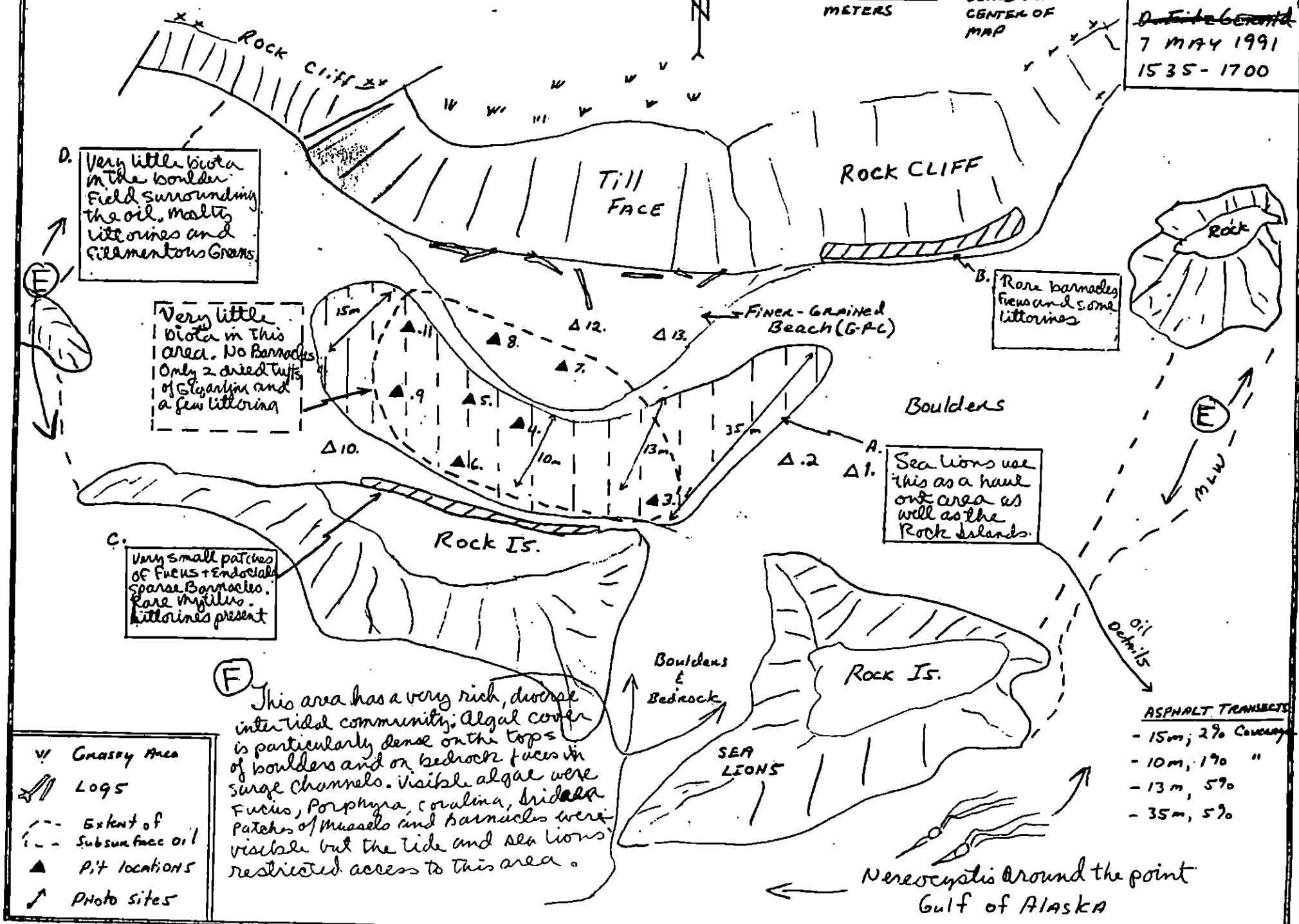
Shoreline subdivision map showing important biological features attached.

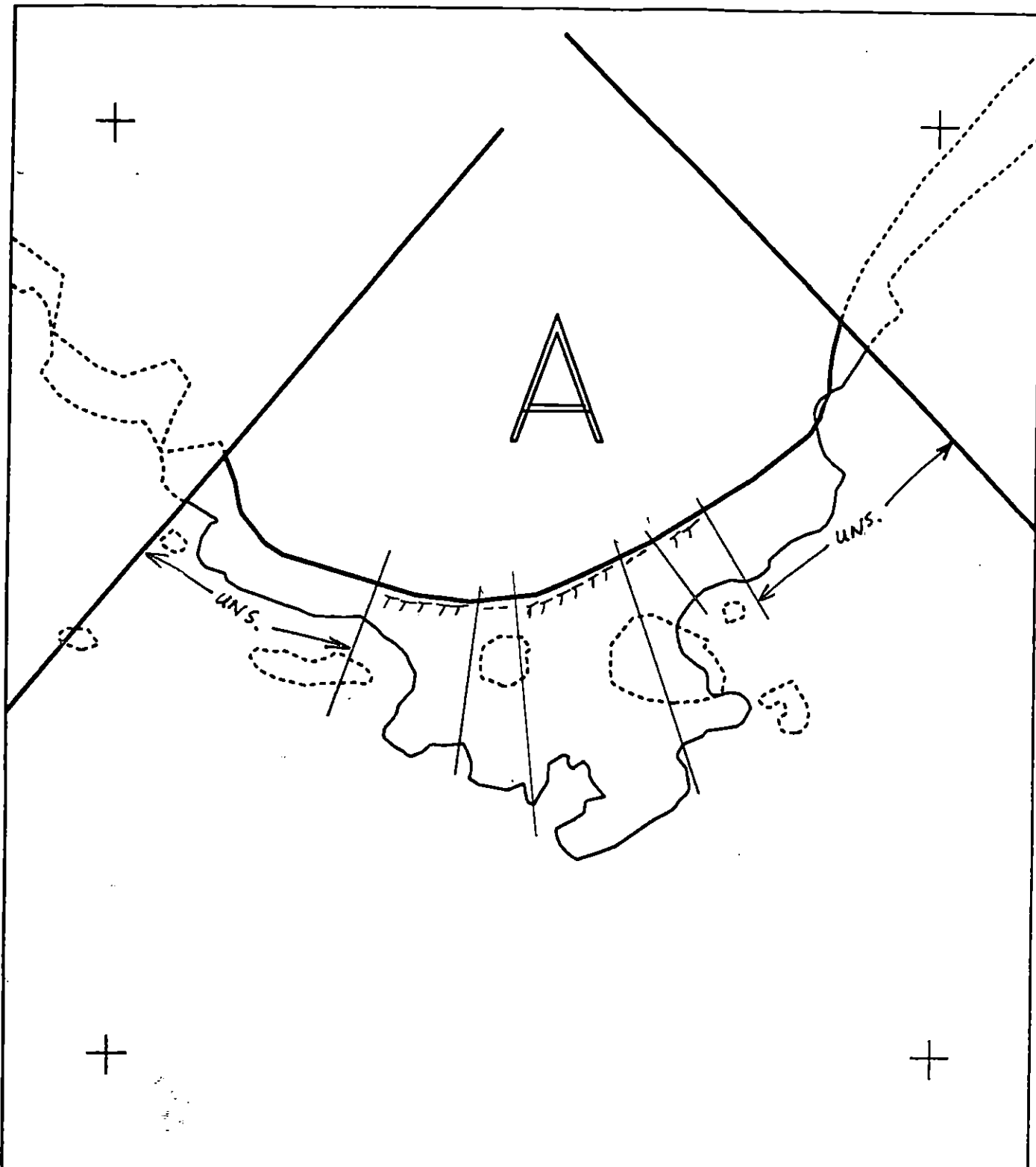
Bio Map Heather Da



SCALE FOR
CENTER OF
MAP

Sketch MAP
PE-1-A
Date 6/2/91
7 MAY 1991
1535-1700





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

PE001 A
 ADEC Subsegment Length: 588m
 METERS
 0 100 200
 AK State Plane Zone 4
 sp001a



Subdivision Field Map
 Map Key: KENPE001A
 Name: D. Fitzgerald
 Date: 7 May 1991
 Date Entered:

reviewed 5/10/91 KG
 REVISED CO 10 MAY

REGION: KENAI

SEGMENT: ST/PE-002

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ PE-002 SUBDIVISION A (1 OF 1) DATE 5/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

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

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

9BB Privately developed lands

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

Cultural resource survey in progress. Shoreline treatment cannot proceed until field data have been assessed and a formal archaeological constraint entered on the shoreline evaluation form.

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 807 m: No Oil 626 m

Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment is removal of oiled rope and remaining tar patties as shown on attached sketch map.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / PE SUBDIVISION: 2 DATE 5-29-90USCG
NAMEAEC Vandepels SIGNATURE AEC Vandepels☒ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

20 pits were dug ranging in depth from 20 to 61 cm. No oil was found in any pit. The tarballs that were found were picked up by the survey team. The oiled length of rope that was found was left. It was partly buried in among other debris (non spill related).

ADEC
ME

SIGNATURE _____

☐ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

LAND MANAGER

NAME _____

SIGNATURE _____

☐ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

FIELD SHORELINE COMMENT SHEET

SEGMENT ST 1 PF -2 SUBDIVISION: A DATE 5/21/90

USCG

NAME _____

SIGNATURE _____

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ADEC

NAME Russell Kumbier

SIGNATURE Russell Kumbier

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

Most of the recoverable oil was picked up by the survey crew. There is 1 large oily line toward the south end of the segment which should be picked up.

LAND MANAGER

NAME _____

SIGNATURE _____

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

Perl Island
Land Representative Report
for May 29, 1990, Oil Inspection Trip

Perl Island
Land Representative Report
for May 29, 1990, Oil Inspection Trip

People present:

Rex Coulter - EXXON Supervisor
Marty Cramer - Oil geologist on contract to EXXON
John Dixon - Biologist on contract to EXXON
Russell Kunibe - Alaska Department of Environmental
Conservation
Chief Rich Vandepels - U.S. Coast Guard
Stephen Anderson - Land owners representative
Harley Hess - Homesteader and island resident

2 ERA Helicopter pilots

We began the survey on the southern beach property line. We dug seven holes with no oil found in the sandy/stoney beach up to the salmon stream that empties into the ocean. This segment had many small oil splatters on rocks with larger coating on various pieces of driftwood. The predominant feature was a 3 foot square tangle of rope and electrical wire which was heavily oiled.

The second segment moves north from the stream along the gradually sloping, fine-sand beach up to the steep gravel bank near the lodge. We dug thirteen more holes in this segment with no oil found. Again, we found small oil splatters on rocks and some coating on driftwood. Toward the north end we started to find numerous spruce needle tar balls 2-3 inches in length. This region is the predominant area where the oil came ashore in April/May of 1989. Attached are some of David Loutrell's April, June, and July 1989 still photographs of the oil. David, Harley, and lodge employees were on the island when the oil came ashore. Their response was to gather and bag between three and four hundred bird carcasses that might kill predators. Harley describes the oil in this area as appearing like 500 cows had walked the beach leaving their droppings behind. This region is the area that I surveyed and videotaped during a May 10, 1989, inspection trip with other ranch owners. (I gave Marty Cramer a copy of the video tape on May 31, 1990.)

The short section from the front of the lodge to the northern most point of the beach contained many 2-3 inch tar balls mixed with spruce needles and other debris. We gathered many of these in Zip-lock bags as we walked through the area. An extremely large tar ball was found about the size of a flattened football. The party members were very impressed with the size and kept it mostly intact for origin analysis and possible display. No holes were dug.

The final section of beach turns east from the point to the cliffs. We walked through this section and observed no oil. We dug no holes.

While I can't conclude where the oil from April and May 1989 currently resides, I am pleased that it is not more readily noticeable. My recommendation for the Perl Island beach would be to remove the large oil/rope tangle near the salmon stream and have the same party walk the beach to recover more of the tar balls. Our ranch partners could then monitor the beach for more oil that may be discovered or come ashore.

Stephen W. Anderson
6/1/90

SHORELINE OILING SUMMARY

REVISION NO. 34-13-90

OG Marty Gramer USCG 1-11-11-11-11 SEGMENT ST/ P2-1
 BIO Tahia Dixon LAND REP Steve Anderson SUBDIVISION A (1 OF 1)
 EXXON Rox Coulter ADEC Russell Knaus TIME 11:40 to 14:00
 AM NO. A TIDE LEVEL +2 to -0.8 to +2 DATE 5/29/90
 T. SUBDIVISION LENGTH: 1433 m ☐ Sun ☒ Clouds ☐ Fog ☒ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☐ Rock Grass to SE end and Trees at NE end
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: SW to NE
 SURFACE SEDIMENTS: R 5 % B 5 % C 30 % P 20 % G 10 % S 30 % M — % V — %
 SLOPE: Long 70 % Hang 30 % Vert — % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 883 m NO 550 m

SURFACE OIL

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

PAVEMENT H F S 0 sq. m by 0 cmPATTIES (TARBALLS) 0.6 BAGSNEAR SHORE SHEEN? (NO) BR RW SL TL

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

DID YOU COLLECT DEBRIS?

YES ☒ NO ☐TYPE TARBALLS#BAGS 0.5

Photographs:

Roll No. JD-1Frames 9-20

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM)	BELOW		OIL / FILM COLOR							PIT ZONE				A N A	SHEEN (VND)	↓	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UG	UC	1	2	3	4	5	6	7	SU	U	M	N				
1	30	—	—	—	—	X	—	—	—	—	—	—	—	—	—	—	X	—	—	—	—	—	—	S - S/P
2	20	—	—	—	—	X	—	—	—	—	—	—	—	—	—	—	X	—	—	—	—	—	—	PLG - S/P
3	20	—	—	—	—	X	—	—	—	—	—	—	—	—	—	—	—	X	—	—	—	—	—	C/P - S/P
4	30	—	—	—	—	X	—	—	—	—	—	—	—	—	—	—	X	—	—	—	—	—	—	S - S/P/LG
5	45	—	—	—	—	X	—	—	—	—	—	—	—	—	—	—	X	—	—	—	—	—	—	C/B - S/P
6	40	—	—	—	—	X	—	—	—	—	—	—	—	—	—	—	X	—	—	—	—	—	—	S/P - S/LG

COMMENTS

Oiling was primarily tiny splatters (dots) on occasional corals and pebbles in SUT2 at south end of segment and splatters on a few logs and pieces of driftwood along south and central portions of segment. Numerous tarballs ranging from 1-10 cm in diameter were found along spring high tide line in north central part of segment. Along with one mousse patty that appeared to be more representative of lubric oil or waxy crude. The patty and most of the tarballs were recognized by survey team. One length reviewed BAT DATE 6 JUNE 90
 OF OILED ROPE WAS FOUND HALF BURIED AND TANGLED IN DEBRIS AT SOUTH END. IT WAS NOT RECOGNIZED

SHORELINE OILING SUMMARY (PAGE 2)

REVISION 04/13/90

SEGMENT ST/ PE-2 SUBDIVISION A (1 OF 1)

SUBSURFACE OIL (CONTINUED)

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CM)	BELOW		OIL / FILM COLOR						PIT ZONE				A	N	A	SHEEN (Y/N)	↓	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	SP	BR	DR	FW	GY	SL	OR	TL	LSH	SU	UI	M	LI			
7	40					X	-												X						P/G/S - S/G/P
8	35					X	-												X						S/P - S/G
9	50					X	-												X						S/P - S/G/P
10	61					X	-												X						S/G/P - S/G
11	55					X	-											X							S - S/G
12	25					X	-											X							S/P - S
13	50					X	-												X						S - S
14	60					X	-												X						S - S
15	45					X	-											X							S - S
16	45					X	-												X						S - S
17	45					X	-												X						S - S
18	45					X	-													X					S - S
19	50					X	-											X							S - S
20	50					X	-												X						S - S

COMMENTS

REVIEWED BAT DATE 6 June 90

DATE 5 1 29 90

CHECKLIST

- ✓ N Arrow
- ✓ Approx. Scale
- ✓ Seg/Sub Binary
- ✓ Off Dist.
- Width
- Length
- % Cover
- ✓ Substrate Character
- ✓ E or NW/SE/NE
- ✓ SSL
- ✓ Profile Location(s)
- ✓ Profile(s)
- ✓ Pth Location(s)
- ✓ Photo Location(s)
- (See Attached)

LEGEND

- 1 
 Pfr - No Subsurface Oil
- 2 
 Pfr - Subsurface Oil

CT/C
Continuous Distribution

CT/B

Broken Distribution

7-7

Patchy Distribution

7-7
EVS

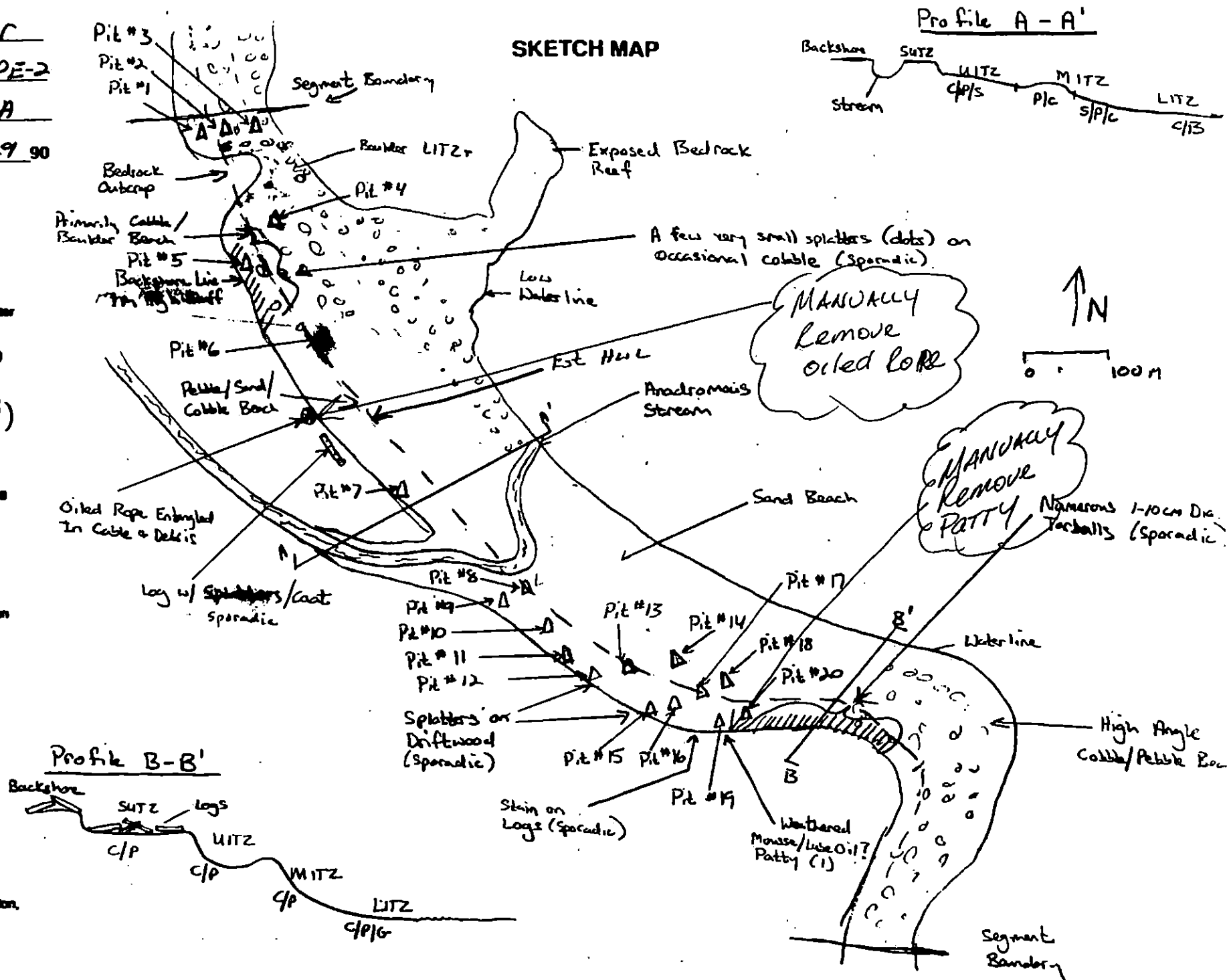
Scheduled Distribution

Used Vegetation

1 ➡

Photo location, direction,
and number

SKETCH MAP



SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST/ PE-2 Subdivision A Date (mo / day / yr) 5/29/70
 Time (24 hr) 1130-1400 Biologist John Dixon

- (A) Substrate type and % of segments:
 (1) Bedrock 5 (2) Boulder 5 (3) Cobble 30 (4) Pebble 30 (5) Sand 30 (6) Silt
- (B) Overall % cover of biota (% of segment): Dense 10 Moderate 5 Low 85
- (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. PE-2
 Frames F.9-20

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	X	X	2	X	X	X	
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 PRE
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	X	X	2	
3	3	3	3	3	3	3	3	3	X	X	3	
4	4	4	4	4	4	4	4	4	X	X	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 PRE
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	X	X	2	X	X	X	
3	3	3	3	3	3	X	X	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

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	X	2	X	X	X	
3	3	3	3	3	3	3	X	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments:

Beak (200) waterfowl (200), 5 shorebirds. Water line during survey: -0.7 to +4.5

The estimates of overall abundance in the above matrix are not very meaningful because of the extreme habitat heterogeneity.

Ecological Considerations:

The areas of rock outcrop had high cover & diversity, whereas the extensive cobble/pebble beach was extremely depauperate.

The rocky spit & dense mussel beds in the cobble/pebble/gravel flats south of the stream mouth should be avoided. The beach below the area where mussel patches were collected is a cobble/pebble beach & not sensitive.

Segment: PE-02 Subdivision: A Date: 05/29/90
Time of survey: 1130-1400 Waterline during survey: -0.7 - +4.5 feet
Biologist: John Dixon

ECOLOGICAL SUMMARY

This 1433-m long segment is made up of three major habitat types: (1) rock outcrop with a patchy boulder veneer; (2) gently sloping, protected cobble/pebble beach, and; (3) high energy pebble/sand/cobble beach. The southern part of the segment is partially in the shadow of two rocky spits and wave energy and the coarseness of the substrate tends to increase toward the north, where the beach is also narrower and steeper.

Rock outcrop and boulders, and protected cobbles make up less than 20 percent of the segment but contain essentially all of the biota. The stable outcrop and boulders have 80 to 100 % algal cover in the LITZ and MITZ. *Alaria* is very abundant in the lower areas and juvenile plants (< 10 cm long) are common. *Ulva*, *Fucus*, *Palmaria*, and filamentous reds and greens are also abundant. Under the boulders, the most prominent organisms were the seastar *Leptasterias* (around 30 % brooding eggs), the whelk *Searlesia*, the isopod *Idotea*, and hermit crabs. Higher on the shore *Alaria* drops out and *Fucus* is more abundant. Besides the algae seen lower on the shore, *Odonthalia*, *Halosaccion*, *Urospora*, and *Porphyra* are common. The barnacle *Semibalanus cariosus* was common on outcrops in the MITZ. Grazing snails were rare.

The protected cobble/pebble beach in the LITZ supports about 80% algal cover with many of the species seen on the more stable substrates present. *Alaria* was less abundant and *Fucus* more so. Littorines are sparse in the LITZ but increase in abundance higher on the shore. In the lower areas the cobbles and pebbles are set in a sandy gravel matrix and hence the crevice fauna is not well represented. In the MITZ the cobbles are larger and more protected. *Littorina scutulata* recruits (c. 2 mm) are common. Under the rocks there are very high densities of hermit crabs, the isopods *Idotea* and *Gnorimosphaeroma* and many *Littorina* egg masses. In the area south of the anadromous stream, there is substantial freshwater runoff and many shallow pools. *Rhodomela larix* is abundant and mussels, *Mytilus edulis*, dense among the pebbles and gravel.

The only marine organisms noted on the sandy high energy beaches were amphipods in the HITZ.

Ecology Map

Pebble/sand/cobble
Beach
Dapaypurato

cliffs
Rock
outcrop

Boulders
+ Rock outcrop
Dense &
Diverse
Biota

Rocky
Spill

Dense
mussel
Bed

Anchovy Stream

XXX Wide

//// Medium

---- Narrow

TTTT Very Light

PE-2-A

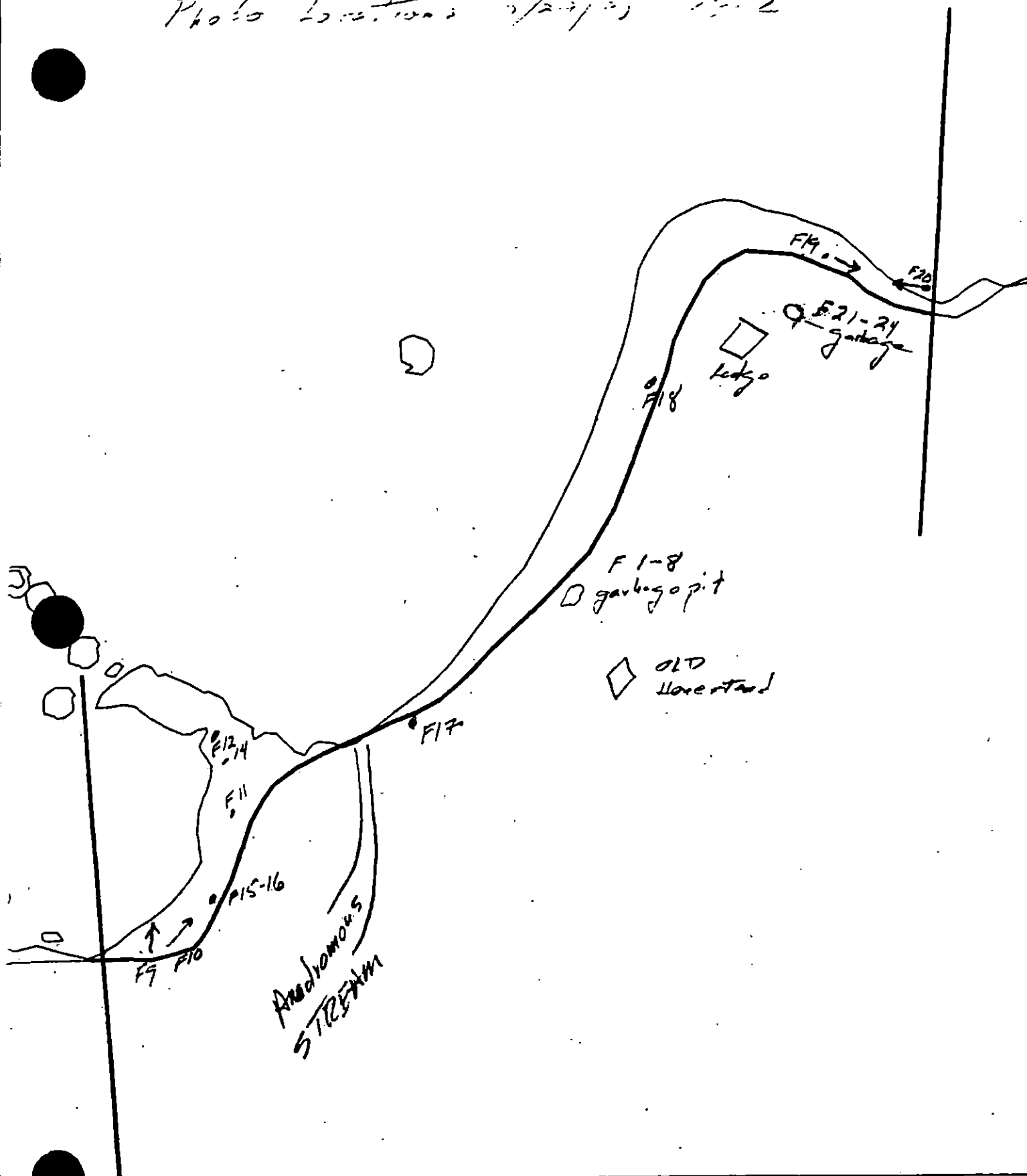
ADEC Segment Length: 1433m

Map Key: KEN-PE-2

Name: _____

Date: _____

Photo Locations 2/24/70 1:2



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

PE-2

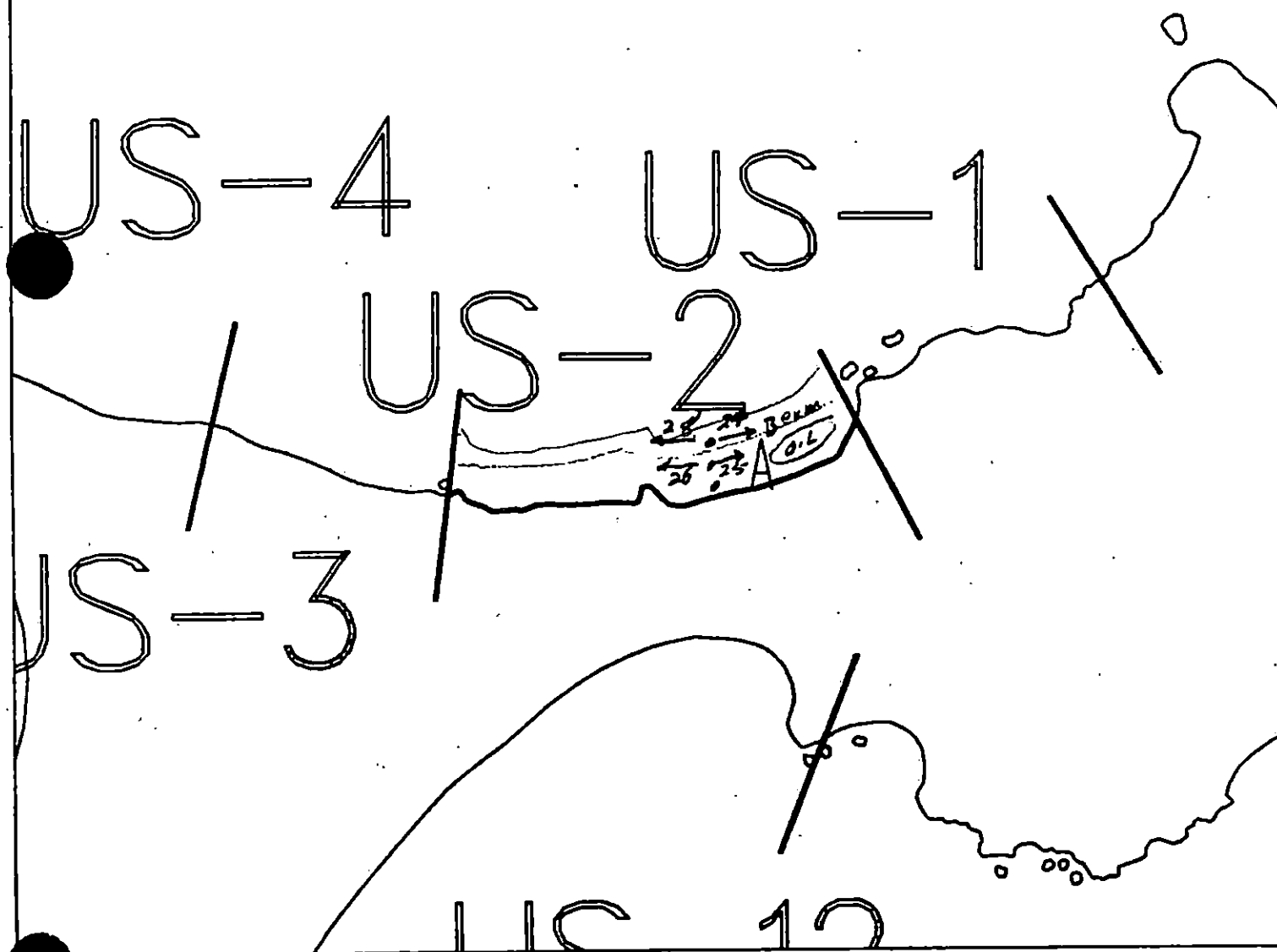
ADEC Segment Length: 1433m

Map Key: KEN-PE-2

Name: _____

Date: _____

● 5/29/90 Photo Locations US-2

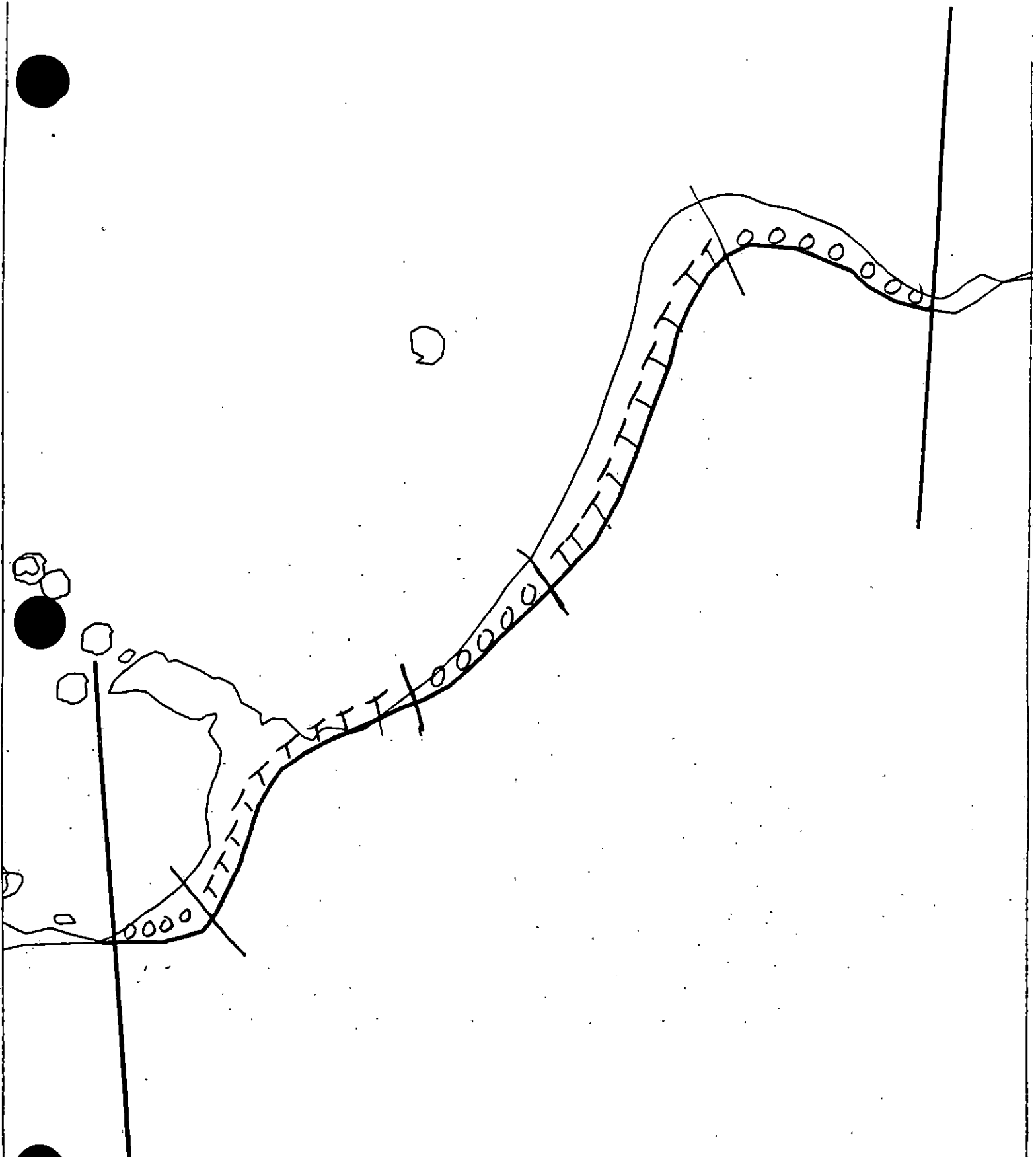


Exxon Company, USA
Map Key: KEN-US-2



ECOLOGY MAP
SEGMENT US-2
SUBDIVISION ___ (___ of ___)
METERS

★	Seabird Colony
▲	Eagle Nest



XXX Wide

//// Medium

--- Narrow

TTTT Very Light

PE-2

ADEC Segment Length: 1433m

Map Key: KEN-PE-2

Name: MARTY CRAMER

Date: 5/29/90



SHORELINE EVALUATION

SEGMENT ST/ PE-002 SUBDIVISION A (1 OF 1) DATE 5/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

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

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

9BB Privately developed lands

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

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

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

SHPO SIGNATURE: Charles E. Hines DATE: June 27, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V. Light 807 m: No Oil 626 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 Removal	<u> </u> Beach Cleaner
	<u> </u> Other (see comments)

COMMENTS: Recommended treatment is removal of oiled rope and remaining tar patties as shown on attached sketch map.

TAG COMMENTS:

TAG APPROVAL DATE: 6/16/90

ADEC Ray Morris R. Morris

EXXON ANDY TEAL

NOAA Joseph J. Albott

USCG G.A. REITER G.A. Reiter

FOSC:

DATE: 7-10-90

OG M. Cramer
 SEGMENT ST/PE-2
 SUBDIVISION A

DATE 5/29/90

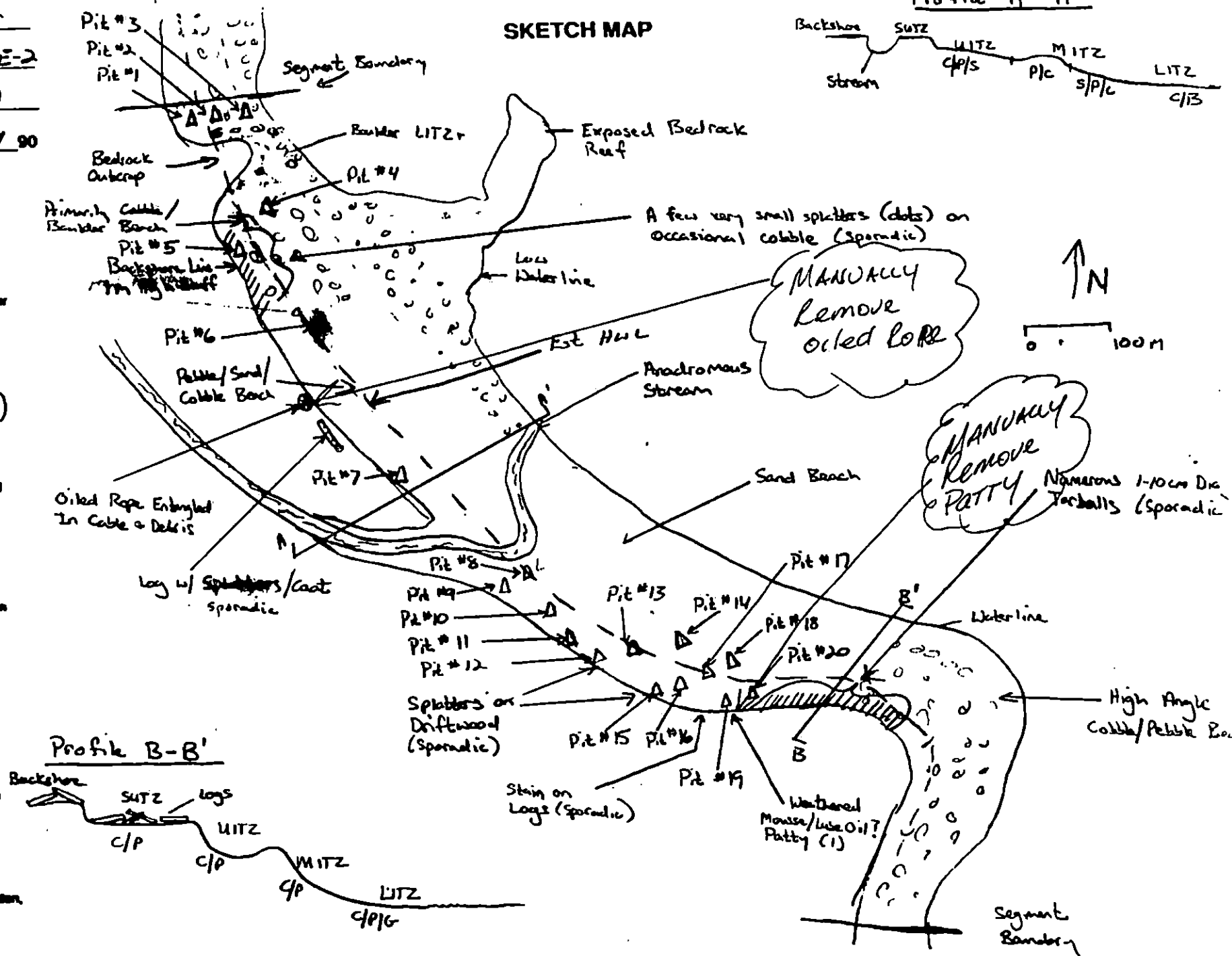
CHECKLIST

- ✓ N Arrow
- ✓ Approx. Scale
- ✓ Seg/Sub Entry
- ✓ On Dist.
- ✓ Width
- ✓ Length
- ✓ % Cover
- ✓ Substrate Character
- ✓ E at H/W/L/V/L
- ✓ S/L
- ✓ Profile Location(s)
- ✓ Profile(s)
- ✓ P/L Location(s)
- ✓ Photo Location(s)
- ✓ (See Attached)

LEGEND

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

SKETCH MAP



Ecology Map

Pebble/Sand/Cobble
Beds
Dapuduroto

cliff
Rock
outcrop

Boulders
+ Rock Outcrop
Dorsal
Diverse
Biota

Dorsal
10-1500
Bed

Franchet's Stream

Rocky
spit

XXX Wide

/// Medium

--- Narrow

TTTT Very light

PE-2.A

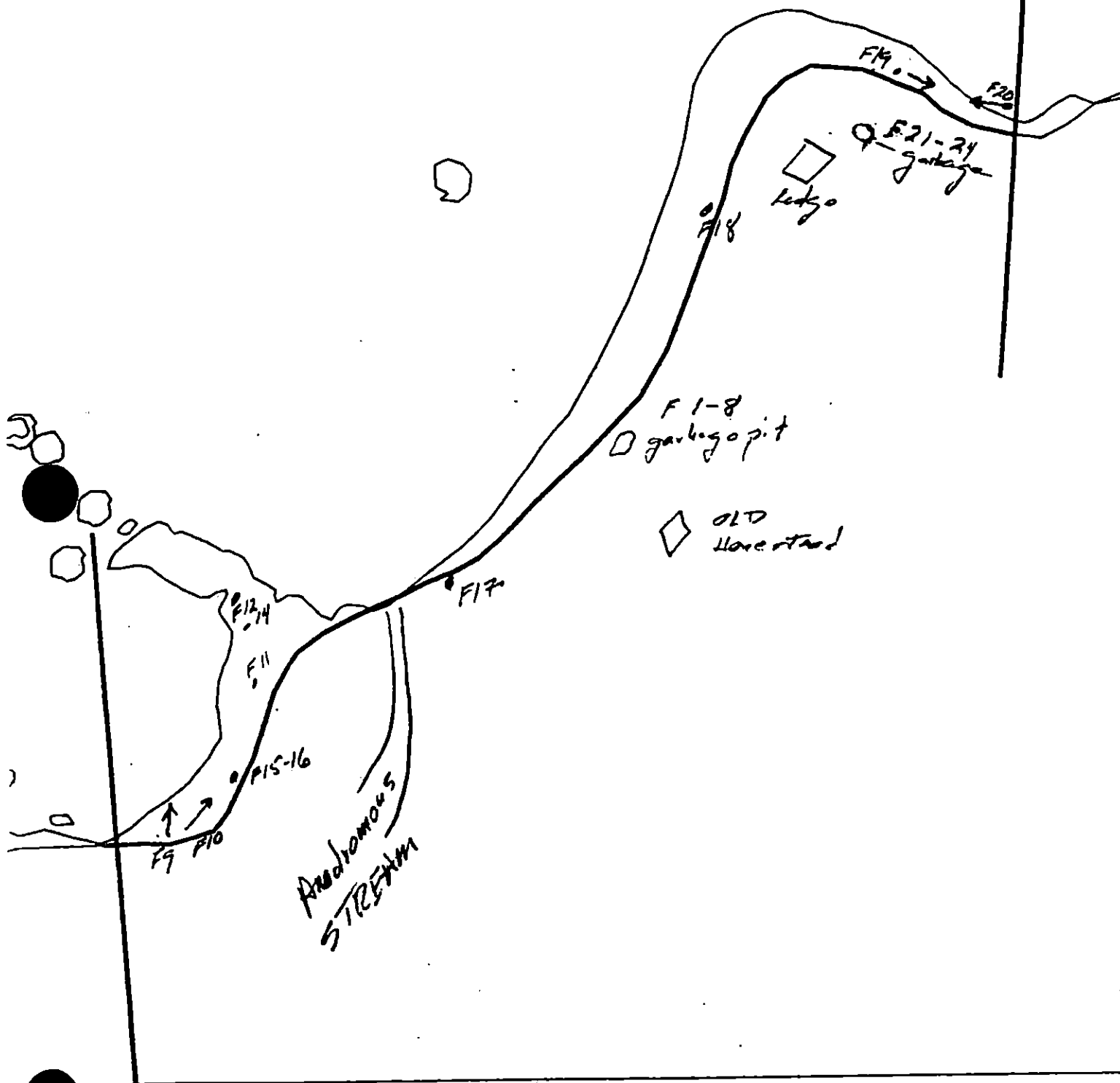
ADEC Segment Length: 1433m

Map Key: KEN-PE-2

Name: _____

Date: _____

Photo locations 1/22/73 PE-2



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

PE-2

ADEC Segment Length: 1433m

Map Key: KEN-PE-2

Name: _____

Date: _____



US-3

US-1

US-2

11212



Exxon Company, USA
Map Key: KEN-US-2

ECOLOGY MAP

SEGMENT US-2

SUBDIVISION ___ (___ of ___)
METERS



Seabird Colony



Eagle Nest

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT PE-2 SUBDIVISION A (1 of 1)

WORK WINDOW	
Manual Pickup	OPEN

ARCHAEOLOGICAL INSPECTION/CONSULTATION REQUIRED.

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

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,B Salmon Stream

An ADF&G uncatalogued anadromous stream is in Subdivision A.
No constraint to manual pickup.

OTHER ECOLOGICAL CONSIDERATIONS

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

FOSC

Date

7-11-90

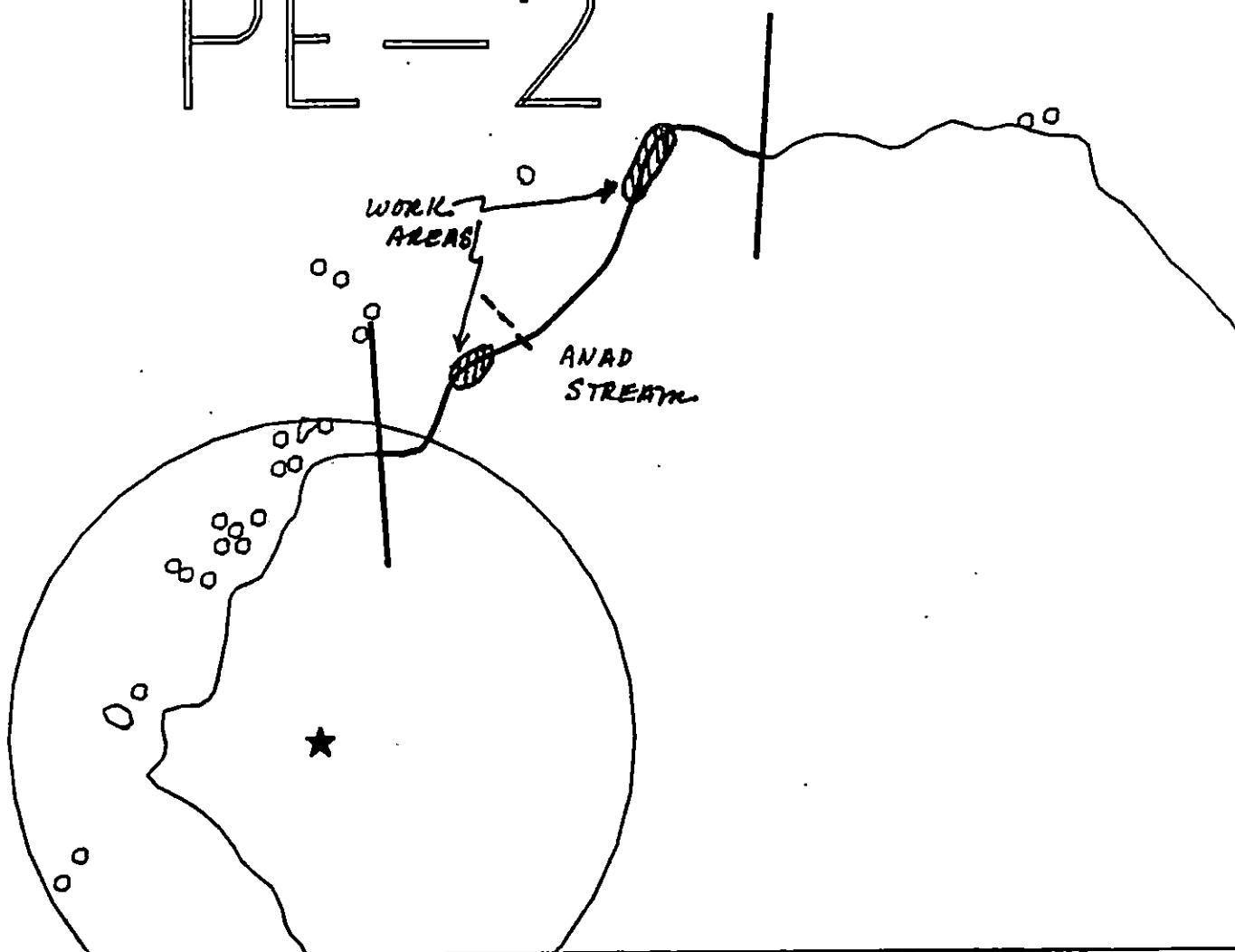
Prepared by

J.P. Phillips

Date

7/10/90

PE-2



Exxon Company, USA

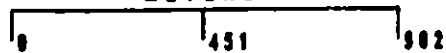
Map Key: KEN-PE-2

June 10, 1990



ECOLOGY MAP SEGMENT PE-2 SUBDIVISION A (1 of 1)

METERS



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

1 inch = 1480 feet

SHORELINE EVALUATION

SEGMENT ST/ PE-002 SUBDIVISION A (1 OF 1) DATE 5/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

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

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

9BB Privately developed lands

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

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

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

SHPO SIGNATURE: Charles E. Hines DATE: June 27, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 807 m: No Oil 626 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 Removal	<u> </u> Beach Cleaner
	<u> </u> Other (see comments)

COMMENTS: Recommended treatment is removal of oiled rope and remaining tar patties as shown on attached sketch map.

SEE CONSTRAINTS ADDENDUM DATED 7/10/90 PP

TAG COMMENTS:

TAG APPROVAL DATE: 6/16/90

ADEC Ron Nagai's R. Nagai

EXXON ANDY TEAL Andy Teal

NOAA John J. Abbott John J. Abbott

NSCG G. A. BEITER G. A. Beiter

FOSC:

DATE: 7-10-90

REGION: KENAI

SEGMENT: ST/PP-01

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ PP-01 SUBDIVISION A (1 OF 1) DATE 4/27/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

4GG Alaska State Parks
5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

If 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 24 m: No Oil 1993 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

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

COMMENTS: _____

TAG COMMENTS: _____

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

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

- 1A Salmon stream mouth - fry outmigration (3/1 to 5/15)**
1B Salmon stream mouth - spawning (7/10 to 8/31)
 No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream without authorization from ADF&G. No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G. Treatment which is not intrusive and which will not affect nearshore oil or toxicity levels, such as manual removal, can probably proceed without adherence to time constraints. In any case, contact ADF&G Habitat Division prior to treatment for consultation and/or permit application.
 AGENCY CONTACT PERSON: ADF&G John Morison 267-2324
- 1C Salmon fry nursery area (4/31 to 7/31)**
 No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to July 31 unless authorized by ADF&G. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G prior to treatment for confirmation and advice.
 AGENCY CONTACT PERSON: ADF&G Larry Peltz 424-3214
- 1D Esther Hatchery release (4/15 to 6/15)**
1E Main Bay Hatchery release (4/20 to 6/15)
1F Sawmill Bay Hatchery release (4/15 to 6/1)
1G Cannery Creek Hatchery release (4/21 to 6/1)
1H Remote release site
 No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G and/or PWS Aquaculture Association. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G or PWS Aquaculture Association for confirmation and authorization.
 AGENCY CONTACT PERSON: 1E ADF&G Larry Peltz 424-3214
 1D 1F 1G PWS Aquaculture Association John McMillan or Bruce Suzumoto 424-7511
- 1I Gill net area (6/7 to 8/31)**
1J Purse seine area (7/20 to 9/30)
1K Purse seine hook-off (7/20 to 9/30)
1L Set net sites (6/11 to 7/25)
 Contact ADF&G for specific dates, locations and constraints. Restrict boat and air traffic to essential minimum. When set net sites are present (1L) restrict beach operations to essential minimum as authorized by ADF&G. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G James Brady 424-3212
- 2M Herring spawning (4/1 to 6/15)**
 Contact ADF&G for confirmation - dates and locations may vary. Restrict boat traffic to essential minimum. Avoid damage to unopened intertidal and subtidal algae and seagrass. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G Evelyn Biggs 424-3235
- 3P Harbor seal and sea lion pupping (5/15 to 7/1)**
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 Rothy 267-2206
- 5T All Bald Eagle nests (3/1 to 6/1)**
Active Bald Eagle nests (3/1 to 9/1)
 Restrict air traffic and all disturbance to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 6U Recreation:**
6V Tent sites (6/1 to 9/15)
6W Anchorages (6/1 to 9/15)
6X Forest Service cabins (6/1 to 9/15)
6Y Lodge (6/1 to 9/15)
Special use destination
- 7Z Subsistence area: Salmon harvesting (5/1 to 9/30)**
7HH Finfish harvesting
7II Deer harvesting (8/15 to 2/28)
7I 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 / PP1 SUBDIVISION: A (ENTIRE SEGMENT) DATE 4/27/90

USCG

NAME

JERRY SCHULTZ

SIGNATURE

Jerry Schultz

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ADEC

NAME

MIKE EBEL

SIGNATURE

Michael Ebel

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

No further impact recommended.

PP-1-A: Moving from Pettaquamscutt Point Northward was a large sand beach which midway through the segment graded into cobble boulders & finally bedrock cliffs. Because the sand beach was observed to have heavy oil during the 1989 ADEC survey we dug a transect of 3 pits every 50m moving along the length of the shoreline. No subsurface oil was found. About 1/2 gallon of small tarballs (and 2 patties) were collected from the UTZ-STZ boundary. One small splash of oil was observed on boulders.

LAND MANAGER

NAME MIKE TETREAU

SIGNATURE

☒ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

NPS is not the primary land manager for this segment. Good survey, it does not appear that treatment is necessary.

SHORELINE OILING SUMMARY

REVISION NO. 06-13-90

OG Randy Siegel USCG Terry Schultze SEGMENT ST/ PP-1
 BIO Lewis Sherman LAND REP Peter Zollar (CAC) SUBDIVISION A (1 OF 7)
 EXXON Leonard Kerbst ADEC Mike Ebel TIME 11:10 to 12:25
 TEAM NO. 12 TIDE LEVEL -0.85' to 3.3' DATE 4/27/90
 * EST. SUBDIVISION LENGTH: 1907 m * ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow 53° F
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: S to N
 SURFACE SEDIMENTS: R 5 % B 5 % C 10 % P 30 % G 30 % S 20 % M 0 % V 0 %
 SLOPE: Long 25 % Hang 75 % Vert 0 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 1 m NO 1906 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	C	E	P	R	1	2	3	4	5	6	7	8	SU	U	M	U
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT				X					X						X	
STAIN																
MOUSSE																
PATTIES				X					X						X	
TARBALLS				X					X				X	X		
FILM																
NO OIL															X	X

PAVEMENT H F S 0 sq. m by 0 cmPATTIES / TARBALLS 30 BAGSNEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT			DID YOU COLLECT DEBRIS?
	SM	MD	LG	
Logs				YES ☒ NO ☐ Coast Guard's TYPE <u>Plastic/garb</u> #BAGS <u>1</u>
Vegetation				
Trash				
Debris				

Photographs: NoneRoll No. NoneFrames —

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL	BELOW		OIL / FILM COLOR								PIT ZONE				A	N	A	SHEEN (Y/N)	V	SURFACE-SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		US	SC	1	2	3	4	5	6	7	8	SU	U	M	U						
1	60					X	0-0		X									X							-	-	S
2	60					X	0-0		X									X							-	-	S
3	40					X	0-0		X									X							-	-	S
4	43					X	0-0		X									X							-	-	S
5	54					X	0-0		X									X							-	-	S
6	65					X	0-0		X										X						-	-	S

COMMENTS

* NO Exxon segment length provided to me. Length indicated was taken from computer map.

Length of shoreline consisting almost entirely of granular surface sediments—increasing coarseness from south (sand) to north (cobbles). 28 pits were dug, concentrated at southern end of beach—no oiling observed. One stretch of beach had small pellet-like tarballs, extending from UZ to the beach zone. All observed tarballs were picked up.

REVIEWED YHDATE 4-29-90

SHORELINE OILING SUMMARY (PAGE 2)

REVISION 06-13-90

SEGMENT ST/ PP-1 SUBDIVISION A (2 OF 3)

SUBSURFACE OIL (CONTINUED)

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CL)	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	SHEEN (Y/N)	!	SURFACE SUBSURFACE SEDIMENT
		OP	OR	OL	OF	NO		UO	UC	SL	BL	GR	BR	LT	LT	SU	U	M	U				
7	100					X	0-0		X									X			-	-	S
8	75					X	0-0		X								X				-	-	S
9	50					X	0-0		X							X					-	-	S
10	54					X	0-0		X									X			-	-	S
11	90					X	0-0		X								X				-	-	S
12	80					X	0-0		X							X					-	-	S
13	70					X	0-0		X									X			-	-	S
14	70					X	0-0		X								X				-	-	S
15	85					X	0-0		X							X					-	-	S
16	90					X	0-0		X									X			-	-	S
17	70					X	0-0		X								X				-	-	S
18	43					X	0-0		X							X					-	-	S
19	50					X	0-0		X									X			-	-	S
20	60					X	0-0		X								X				-	-	S

COMMENTS

3/16

REVIEWED

M/H

DATE

4-29-90

SHORELINE OILING SUMMARY (PAGE 2)

REVISION 04/13/90

SEGMENT ST/ PP-1 SUBDIVISION A (3 OF 3)

SUBSURFACE OIL (CONTINUED)

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CH)	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	SHEEN (Y/N)	↓	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	10/100	10/100	10/100	10/100	10/100	10/100	SU	U	M	U				
21	43					X	0-0		X									X					S
22	40					X	0-0		X								X						C, S
23	30					X	0-0		X							X							C, S
24	54					X	0-0		X									X					C, S
25	20					X	0-0		X								X						C, S
26	37					X	0-0		X							X							C, S
27	25					X	0-0		X									X					C, S
28	30					X	0-0		X								X						C, S
							.																.
							.																.
							.																.
							.																.
							.																.
							.																.

COMMENTS

REVIEWED YHDATE 4-29-90

4/16

KG Randy Siegel
 SEGMENT ST/ 
 SUBDIVISION A
 DATE 4 / 27 90

SKETCH MAP



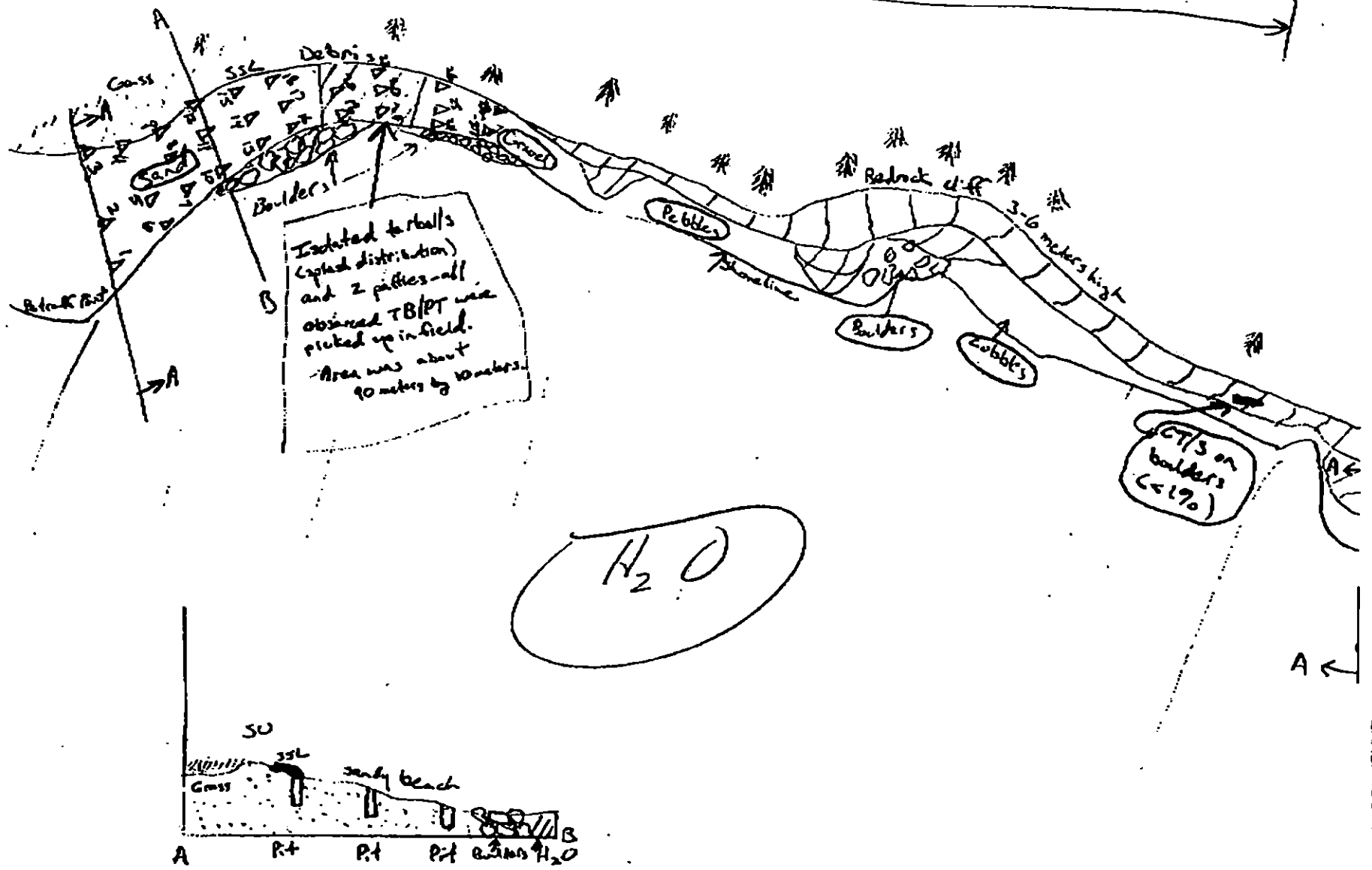
19.00 meters

CHECKLIST

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

LEGEND

- 1 Δ
- 2 - No Subsurface Oil
- 2 Δ
- ii - Subsurface Oil
- CT/C
- continuous Distribution
- CT/B
- broken Distribution
- CT/P
- patchy Distribution
- CT/S
- streaked Distribution
- lll
- red Vegetation
- 1 →
- photo location, direction, and number



5/16

Character Length (m): AP  PO  CV  CT  ST  MS  PT  TB  FL  NO 1906

REVISIONS

SHORELINE ECOLOGICAL SUMMARY (Page 1 of 2)

REVISION: 08/23/84

Segment ST / PP-1 Subdivision A Date (mo / day / yr) 4/27/90Time (24 hr) 1115-1245 Biologist SHARMA(A) Substrate type and % of segment: SUBSILV + granules
(1) Bedrock 5 (2) Boulder 5 (3) Cobble 10 (4) Pebble 30 (5) Sand 50 (6) Silt(B) Overall % cover of biota (% of segment): Dense Moderate Low X
SUBSILV

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

Photographs:
Roll No. Frames

BARNACLES

Dense			Moderate			Sparse			Rare			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 (ANCELA, LITTORINA, LYMAETA)

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: 1 pigeon guillemot, 2 sea lions, 1 river otter. Very abundant river otter tracks + signs of digging in the sandy supratidal, UTE, and MTE. Also some goose tracks. 2 Herring gulls, 1 pelagic cormorant. Various terns singing in forest. The extensive sand ditches of this segment are essentially barren macrobiotically - a very few shells of Mya & Saxidomus. (cont.)

Ecological Considerations:

We received no information regarding resource sensitivities previously identified for this segment. We observed no eagle nests, principal haulouts, anadromous streams, etc., and so no Sea Bear is attached. Biological communities here are healthy and normal re. their substrate types, this segment cannot benefit biotically from further human disturbance.

13/16

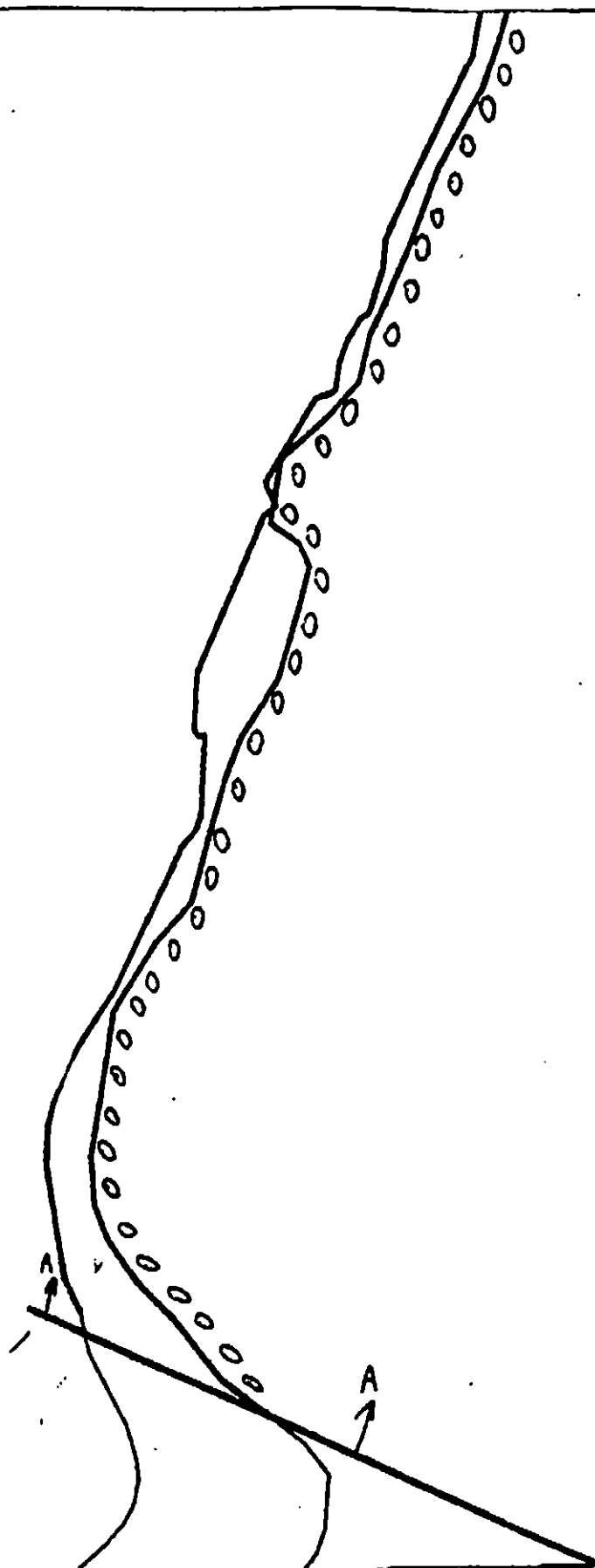
PP-1

Slovenia Ecological Summary (cont.)
(Page 2 of 2)

Sharman
4/27/90

General Comments (cont.):

On other portions, however, and below the sand beach in a couple places (in LT 2) are boulder fields which support a reasonably diverse & productive intertidal community. Sub-boulder habitats support, for example, Groenopsylla, Idotea, pricklybacks, amphipods, nereids, and limpets. Algae in the boulderfields include laminarians, alveolae, 3 red foliose spp., Polysiphonia/Parasiphonia forma, Fucus, and green filamentous (Acropora?). Barnacles, mussels, Fucus, and limpets appear to be recruiting fairly well. Generally healthy intertidal assemblages.



XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

OOOO No Oil

PP-1

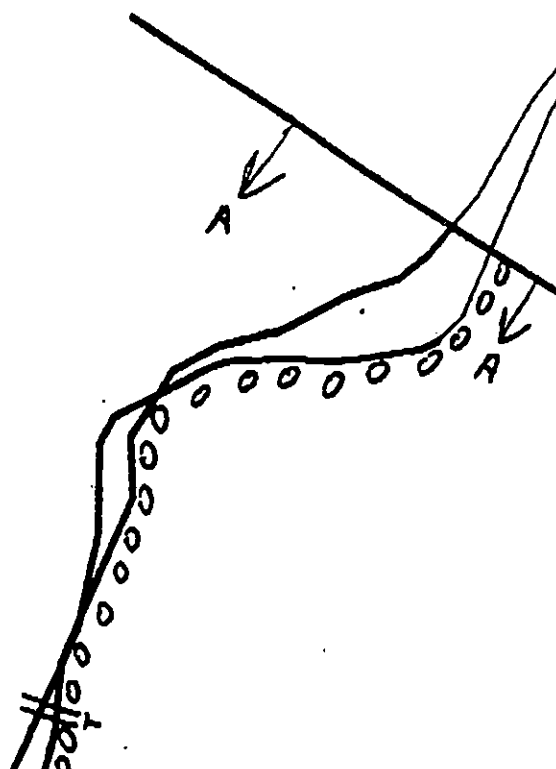
Approx. Segment Length: 1907m



Map Key: KEN-PP-1a

Name: Randy SiegelDate: 4/27/90

Data Entered:



XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

0000 No Oil

PP-1

Approx. Segment Length: 1907m



Map Key: KEN-PP-1b

Name: Robt Siegel

Date: 4/27/90

Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ PP-01 SUBDIVISION A (1 OF 1) DATE 4/27/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

4GG Alaska State Parks

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

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: *J. Paul M. McMan*

DATE: 5/8/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 24 m: No Oil 1993 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:

MONITORS TO ASSES AREA INDICATED ON SKETCH
FOR SIGNIFICANCE OF REMAINING OIL

TAG APPROVAL DATE: May 7 1990

ADEC ART L. JENSEN

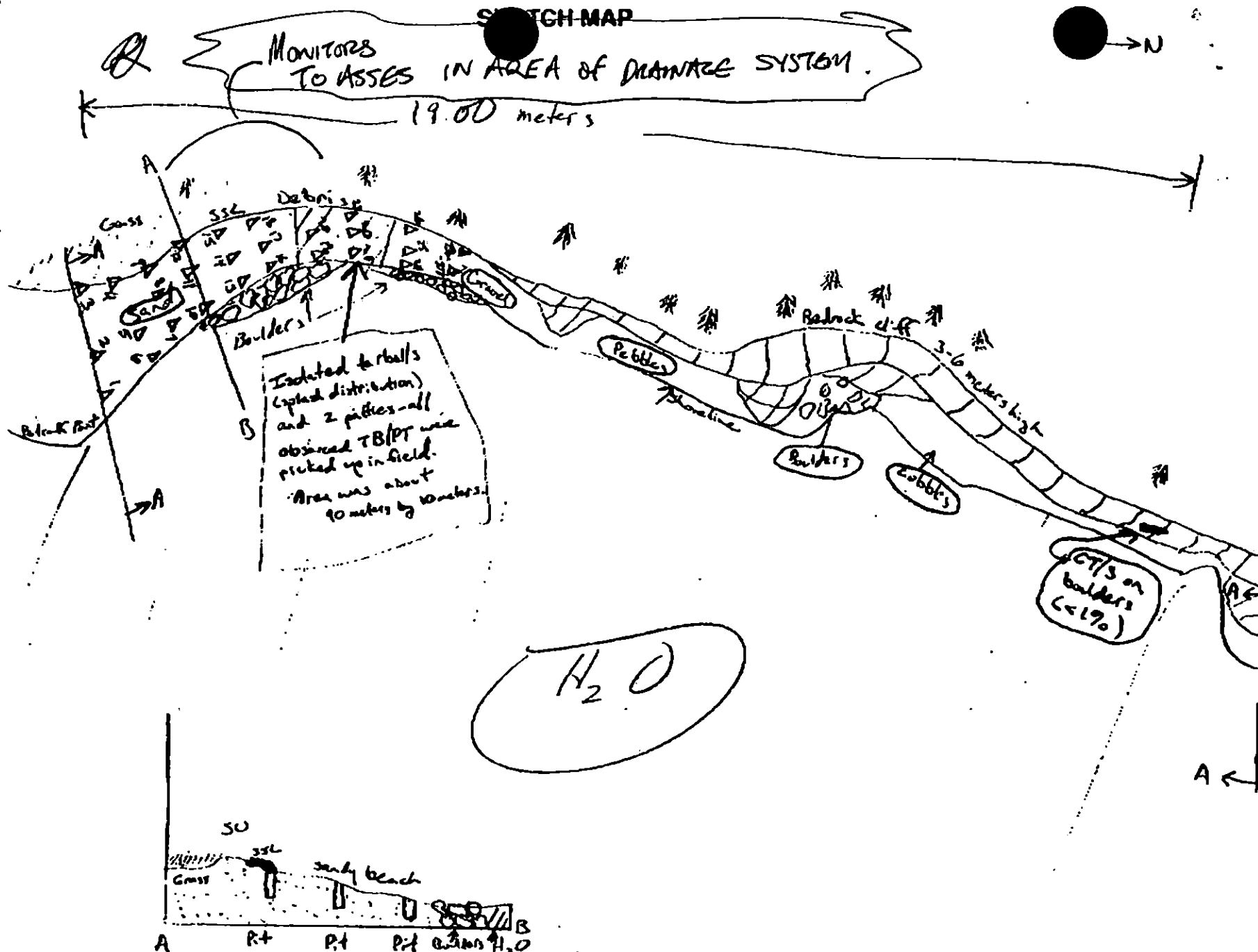
EXXON ANDY GAIL

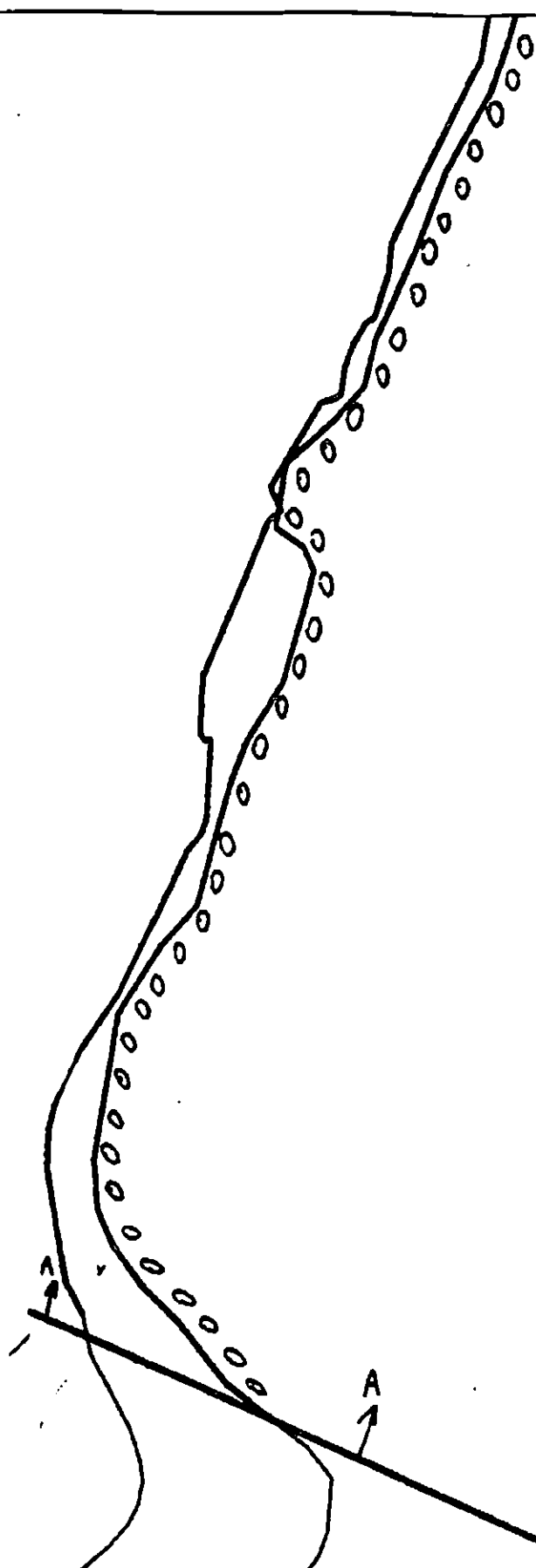
NOAA GARY PETROS

USCG B.A. REITER

FOSC:

DATE: 5-12-90

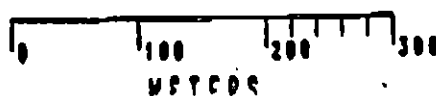




XXXX Wide
//// Medium
---- Narrow
TTTT Very Light
OOOO No Oil

PP-1

Approx. Segment Length: 1907m



Map Key: KEN-PP-1a

Name: Randy Siegel

Date: 4/27/90

Date Entered:

6/16

PP - 1

Approx. Segment Length: 1907m

0 100 200 300
METERS

Map Key: KEN-PP-1b

Name: Bob Siegel

Date: 4/27/90

Data Entered:

3/14

1991 MAYSAP EVALUATION

SEGMENT: PP 001 SUB: A 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: _____

<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 D. Hill of ADFG

SIGNATURE _____

☐ NTR In the past (1990) finding the buried seam of mousse in the sandy creek bed has been a couple hundred yards or so in the drift line on either side of the creek mouth. On this survey only one 85cm x 5cm patty of mousse was observed on the creek's north bank. There seems to have been more sand deposited in the creek bed this past winter than was deposited in the winter of 1989-90. Also much of the heavily oiled wood that was removed in 1989 has been replaced with new drift wood.

It will be interesting to see if the oil emerges with increasing temperatures and summer runoff which will probably erode the stream banks and deposited berm.

The area is frequented by land otters and shorebirds. The area is also within Kachamak Bay Wilderness Park.

Recommend resurveying the site in late June or early July.

SEE Attached Typed Comments typed to prevent print from being lost through photocopying

EXXON

NAME R. CoulterSIGNATURE Rep R. Coulter

- ☒ NTR AGENCY MONITORS NOTED THAT THE STREAM IN THIS SUBDIVISION IS NOT AN AWAQ STREAM. THE AREA AROUND THE STREAM MOUTH IS A NATURAL REPOSITORY. A LARGE COLLECTION OF TREES, LOGS TRASH AND DEBRIS LINED THE BACKSHORE AREA AS WELL AS THE STREAM BED. THE STREAM BED WAS DRY AND FILLED WITH SAND. ONE MOUSSE PATTY WAS FOUND AND REMOVED. SIX PITS IN AND NEAR THE CREEK BED REVEALED NO OIL. THERE IS NOTHING TO DO AT THIS SUBDIVISION.

LANDMANAGER

NAME J. JohnsonOF ADNRSIGNATURE [Signature]☒ NTR

I concur with ADFG, USCG and NOAA comments, though I recommend periodic re-survey to monitor possible future emergence of buried mousse. We need to be flexible in this site. It is within Kachamak Bay State Park, legislatively established for its scenic qualities, and therefore deserves to be watched.

USCG/NOAA

NAME Chief Jensen / G. SHIGENAKASIGNATURE [Signature]

- ☒ NTR There is no longer any detectable oil present on the water, adjoining shorelines, or places where it is likely to reach the water again.

THE FOCUS OF THIS VISIT WAS A STREAM THAT HAD BEEN IDENTIFIED AS ANADROMOUS BUT AT THE TIME OF THE SURVEY WAS NOT FLOWING AND SHOWED SIGNS OF HAVING BEEN DRY FOR SOME TIME. THE SHORELINE ON BOTH SIDES OF THE STREAM FOR SOME DISTANCE EACH WAY, AND THE STREAM BED ITSELF, WERE FINE SAND. RIVER OTTER TRACKS AND CAT WERE PLENTIFUL IN THE SAND; NEAR THE STREAM COURSE, BEAR TRACKS WERE OBSERVED. A LARGE AMOUNT OF DRIFTWOOD DEBRIS HAS COLLECTED IN THE LOWER PORTION OF THE STREAM BED. ALTHOUGH ADNR REP JOHNSON SAYS THIS BEACH WAS SEVERELY OILED, THE ONLY OIL RESIDUE OBSERVED ON THE SURFACE AND IN SEVERAL PITS DUG TO DEPTHS OF ABOUT 1m WAS ONE SMALL MOUSSE PATTY FOUND ON THE NORTH BANK OF THE STREAM. NO OTHER OIL WAS FOUND.

ADF&G MAYSAP comments on PP-1

Comments of Doug Hill (ADF&G)---These comments have been typed to prevent loss of the printed word on the "comment sheet" from fading through photo copying.

In the past (1990) finding the buried seam of mousse in the sandy creek bed has been hit and miss. Also in the past tarballs and tar patties were usually found for a couple hundred yards or so in the drift line on either side of the creek mouth. On this survey only one 5 cm X 5 cm patty of mousse was observed on the creek's north bank.

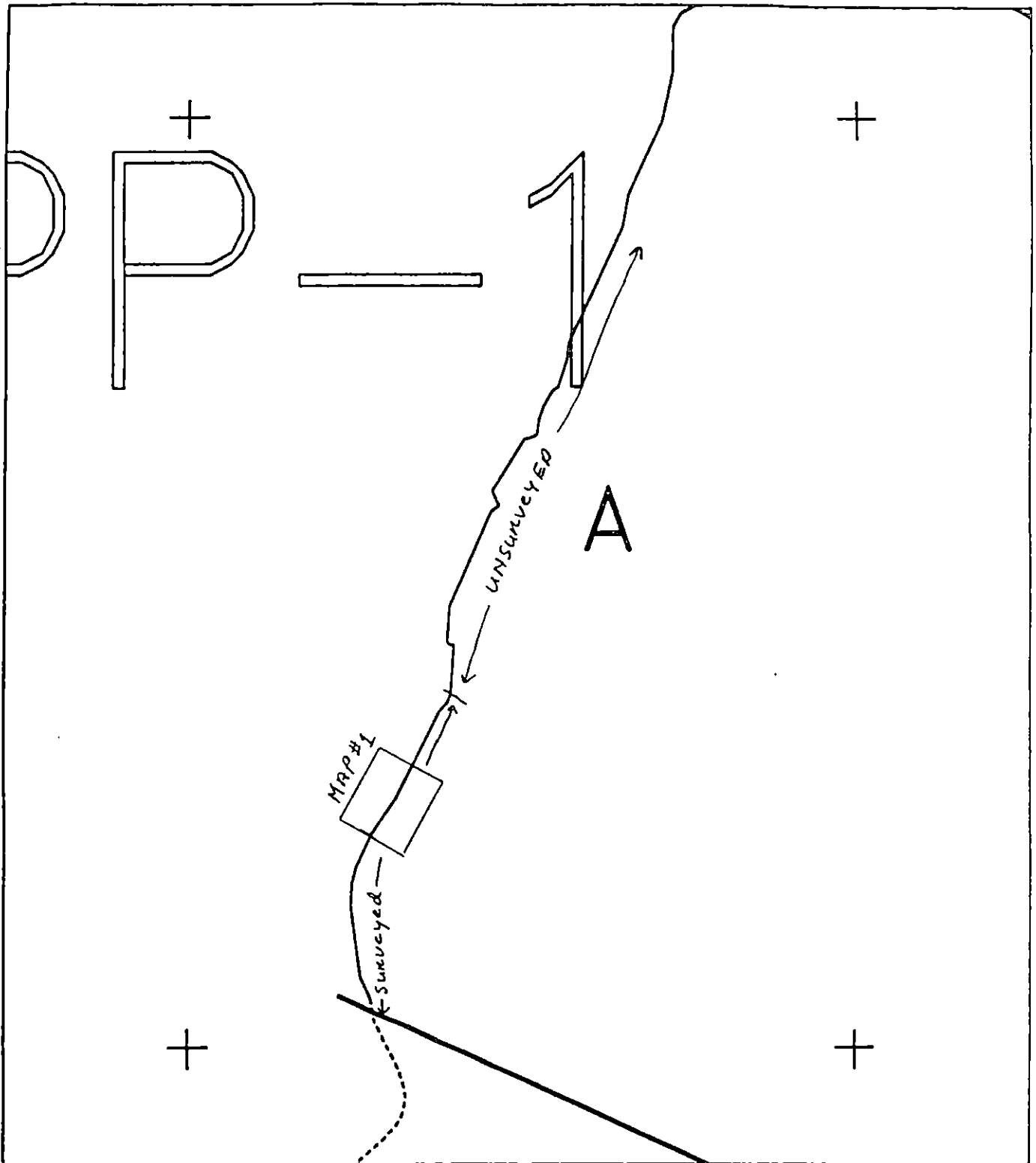
There seems to have been more sand deposited in the creek bed this past winter than was deposited in the of 1989-90. Also much of the heavily oiled wood that was removed in 1989 has been replaced with new drift wood.

It will be interesting to see if oil emerges with increasing temperatures and summer runoff which will probably erode the stream banks and deposited berm.

The area is frequented by land otters and shorebirds. The area is also within Kachemak Bay Wilderness Park.

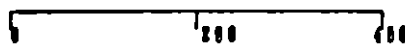
Recommend resurveying the site in late June or early July.

RECEIVED 10-11-64



PP001 A

METERS



AK State Plane Zone 4
applied

Subdivision Field Map

Map Key: KENPP001A

Name: O. Fitzgerald

Date: 13 May 1966

 EVERGREENS
 GRASSY
 PHOTO SITES

SKETCH MAP (OG)
 PP-1
 D.M. FITZGERALD
 13 MAY 1991
 800-845

KENAI
PENINSULA

SAND DUNES

PETROF
POINT

MLW

NUKA
PASSAGE

0 30
METERS

EPHEMERAL STREAM
 Δ1.
 Δ2.
 Δ3.
 Δ4.
 Δ5.
 Δ6.
 PILED LOGS
AND TRASH
 1 MOUSSE RATY
PICKED UP BY
VECO WORKER

12 MAY 1991
 REVIEWED CG 17 MAY

EVERGREENS
GRASSY
PHOTO SITES

PHOTO SITES, PP-1
ROLL 6-13, FRAMES 7 THRU 9

SKETCH MAP(OG)
PP-1
D.M. FITZGERALD
13 MAY 1991
800-845

KENAI
PENINSULA

SAND DUNES

EPHEMERAL
STREAM

#7

Δ6.

Δ5.

#8

PILED LOGS
AND TRASH

1 MOUSSE PARTY
PICKED UP BY
VECO WORKER

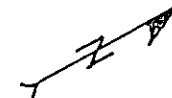
PETROF
POINT

MLW

NUKA

PASSAGE

0 30
METERS



12 VIEWED
REVIEWED 6/17/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 6 DATE 5/13/91
 SEGMENT # PP-001 TIDAL HEIGHT (Range) -2.2 to -1.0
 SUBDIVISION BIOLOGIST T.A. Schroeder
 SEA STATE Calm WIND SPEED/DIRECTION Calm
 PHOTOGRAPHS: ROLL # FRAME #

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

The beach area around the supposed abandoned stream is composed of fine sand, which probably provides a very good environment for most plants and animals. A large gull hole bed exists offshore approximately 20 yards and extends along the southern 75 of the beach segment. A bouldered patch located 100 yards north of the stream location is the first stable area, which supports a variety of good and interesting organisms.

No water was present in the (abandoned?) stream in spite of heavy spring water runoff in the area. The stream area was completely filled with logs and debris and no spawning gravel was observed in the area. The stream obviously is not a major salmon producer.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl			
Gulls/Kittiwakes			
Shorebirds	1 - sandpiper	5	
Corvids			
Other Birds	1 marsh hawk	1	

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	1	Beaver and river	
Pinnipeds (specify)		otter tracks	
Whales (specify)		along entire beach	

Shoreline subdivision map showing important biological features attached.

EVERGREENS
W GRASSY
PHOTO SITES

BIO. Comments
included.
T. R. Schroeder

SKETCH MAP (OG)
PP-1
D. M. FITZGERALD
13 MAY 1991
800-845

KENAI
PENINSULA

EPHEMERAL
STREAM

SAND DUNES

PILED LOGS
AND TRASH

1 MOUSSE PATTY
PICKED UP BY
VECO WORKER

Boulder patch w/ fucus
kelp, laminaria, littoral
snails and limpets.
First stable substrate
on beach segment.

PETROF
POINT

MLW

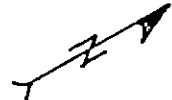
Barren Sand beach

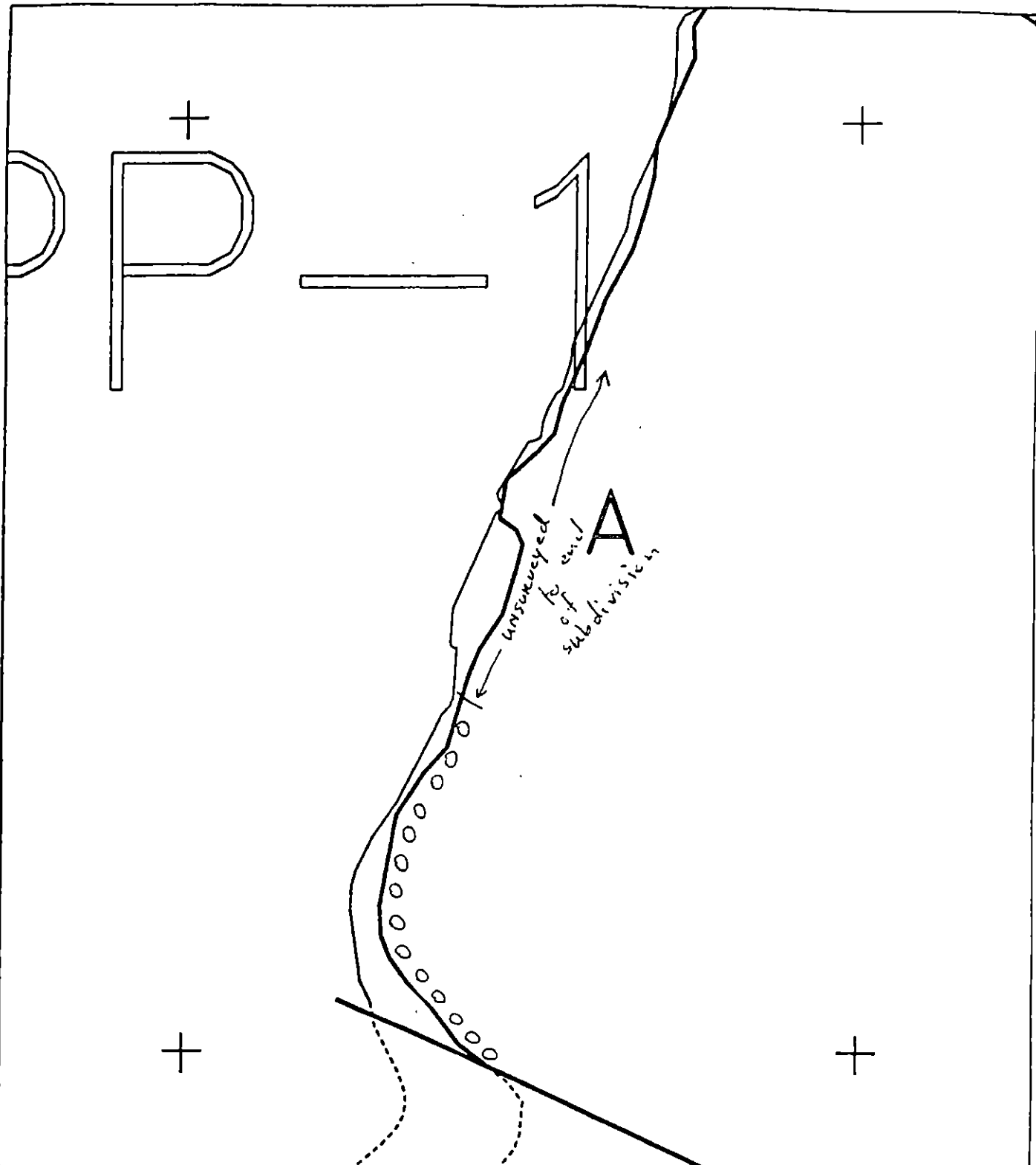
Bull Kelp bed

NUKA

PASSAGE

0 30
METERS





XXXX	Wide	PP001 A	Subdivision Field Map
////	Medium	ADEC Subsegment Length: 1993m	Map Key: KENPP001Aa
----	Narrow	METERS	Name: <u>D.F. Fitzgerald</u>
TTTT	Very Light	0 200 400	Date: <u>PP-1</u>
0000	No Oil	AK State Plane Zone 4 appd01aa	Date Entered:

REVISOR: 17 MAY 1994
 REVISION: 17 MAY 1994

1991 MAYSAP EVALUATION

SEGMENT: PP 001 SUB: A 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: Richard Alan Oser 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: 6/1/91

ADEC [Signature]

FOSC [Signature]

EXXON [Signature]

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

USCG [Signature]

NOAA [Signature]

ADF&G MAYSAP comments on PP-1

Comments of Doug Hill (ADF&G)---These comments have been typed to prevent loss of the printed word on the "comment sheet" from fading through photo copying.

In the past (1990) finding the buried seam of mousse in the sandy creek bed has been hit and miss. Also in the past tarballs and tar patties were usually found for a couple hundred yards or so in the drift line on either side of the creek mouth. On this survey only one 5 cm X 5 cm patty of mousse was observed on the creek's north bank.

There seems to have been more sand deposited in the creek bed this past winter than was deposited in the of 1989-90. Also much of the heavily oiled wood that was removed in 1989 has been replaced with new drift wood.

It will be interesting to see if oil emerges with increasing temperatures and summer runoff which will probably erode the stream banks and deposited berm.

The area is frequented by land otters and shorebirds. The area is also within Kachemak Bay Wilderness Park.

Recommend resurveying the site in late June or early July.

ADEC

NAME

D. Hill of ADFG

SIGNATURE

☐ NTR In the past (1990) finding the buried seam of mousse in the sandy creek bed has been hit and miss. Also in the past, tarballs and tar patties were usually found a couple hundred yards or so in the drift line on either side of the creek mouth. On this survey only one 8.5cm x 5cm patty of mousse was observed on the creek's north bank. There seems to have been more sand deposited in the creek bed this past winter than was deposited in the winter of 1989-90. Also much of the heavily oiled wood that was removed in 1989 has been replaced with new drift wood. It will be interesting to see if the oil emerges with increasing temperatures and summer runoff which will probably erode the stream banks and deposited berm. The area is frequented by land otters and shorebirds. The area is also within Kachemak Bay Wilderness Park.

Recommend resurveying the site in late June or early July.

SEE Attached Typed Comments - typed to prevent print from being lost through photocopy.

EXXON

NAME

R. Coulter

SIGNATURE

Rep R. Coulter

☒ NTR AGENCY MONITORS NOTED THAT THE STREAM IN THIS SUBDIVISION IS NOT AN AWAAD STREAM. THE AREA AROUND THE STREAM MOUTH IS A NATURAL REPOSITORY. A LARGE COLLECTION OF TREES, LOGS, TRASH AND DEBRIS LINED THE BACKSHORE AREA AS WELL AS THE STREAM BED. THE STREAM BED WAS DRY AND FILLED WITH SAND. ONE MOUSSE PATTY WAS FOUND AND REMOVED. SIX PITS IN AND NEAR THE CREEK BED REVEALED NO OIL. THERE IS NOTHING TO DO AT THIS SUBDIVISION.

LANDMANAGER

NAME

J. JohnsonOF ADNR

SIGNATURE

☒ NTR

I concur with ADFG, USCG and NOAA comments, though I recommend periodic re-survey to monitor possible future emergence of buried mousse. We need to be flexible on this site. It is within Kachemak Bay State Park, legislatively established for its scenic qualities, and therefore deserves to be watched.

USCG/NOAA

NAME

Chief Jensen / G. SHEGENAKA

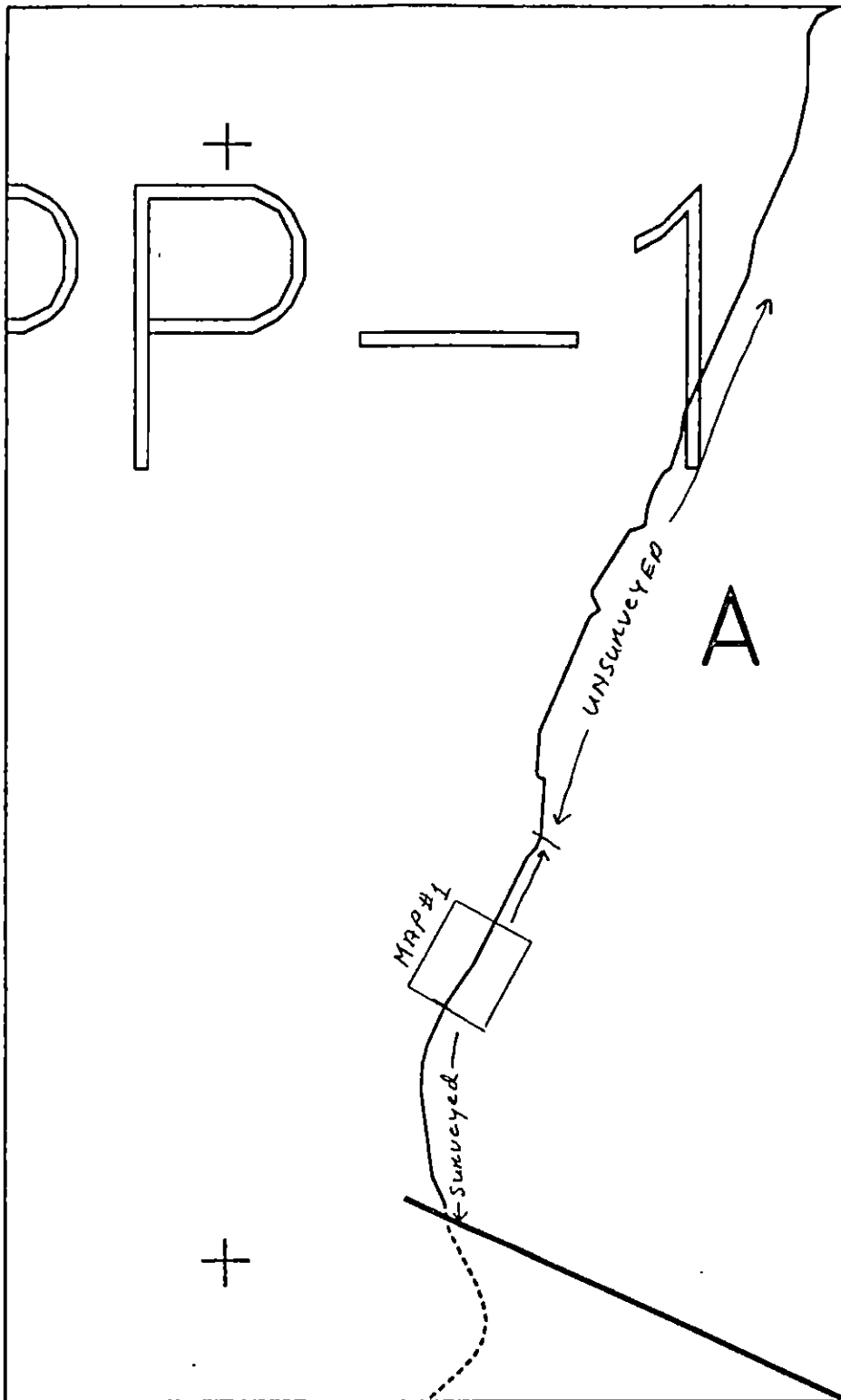
SIGNATURE

☒ NTR

There is no longer any detectable oil present on the water, adjoining shorelines, or places where it is likely to reach the water again.

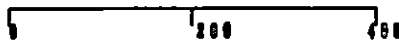
THE FOCUS OF THIS VISIT WAS A STREAM THAT HAD BEEN IDENTIFIED AS ANADROMOUS BUT AT THE TIME OF THE SURVEY WAS NOT FLOWING AND SHOWED SIGNS OF HAVING BEEN DRY FOR SOME TIME. THE SHORELINE ON BOTH SIDES OF THE STREAM FOR SOME DISTANCE EACH WAY, AND THE STREAM BED ITSELF, WERE FINE SAND. RIVER OTTER TRACKS AND CAT WERE PLENTIFUL IN THE SAND; NEAR THE STREAM COURSE, BEAR TRACKS WERE OBSERVED. A LARGE AMOUNT OF DRIFTWOOD DEBRIS HAS COLLECTED IN THE LOWER PORTION OF THE STREAM BED. ALTHOUGH ADNR REP JOHNSON SAYS THIS BEACH WAS SEVERELY OILED, THE ONLY OIL RESIDUE OBSERVED ON THE SURFACE AND IN SEVERAL PITS DUG TO DEPTHS OF ABOUT 1m WAS ONE SMALL MOUSSE PATTY FOUND ON THE NORTH BANK OF THE STREAM. NO OTHER OIL WAS FOUND.

revised 5/16/91 LG
REVISED CG 17 MAY



PP001 A

METERS



AK State Plane Zone 4
up to 1000

Subdivision Field Map

Map Key: KENPP001Aa

Name: O. Fitzgerald

Date: 13 May 1991

EVEGREENS
PHOTO SITES

SKETCH MAP (OG)
D.M. FITZGERALD
13 MAY 1991
800-845

KENAI
PENINSULA

SAND DUNES

EPHEMERAL
STREAM

PILED LOGS
AND TRASH

1 MOUSSE PATTY
PICKED UP BY
VECO WORKER

PETROF
POINT

MLW

NUKA
PASSAGE

0 30
METERS



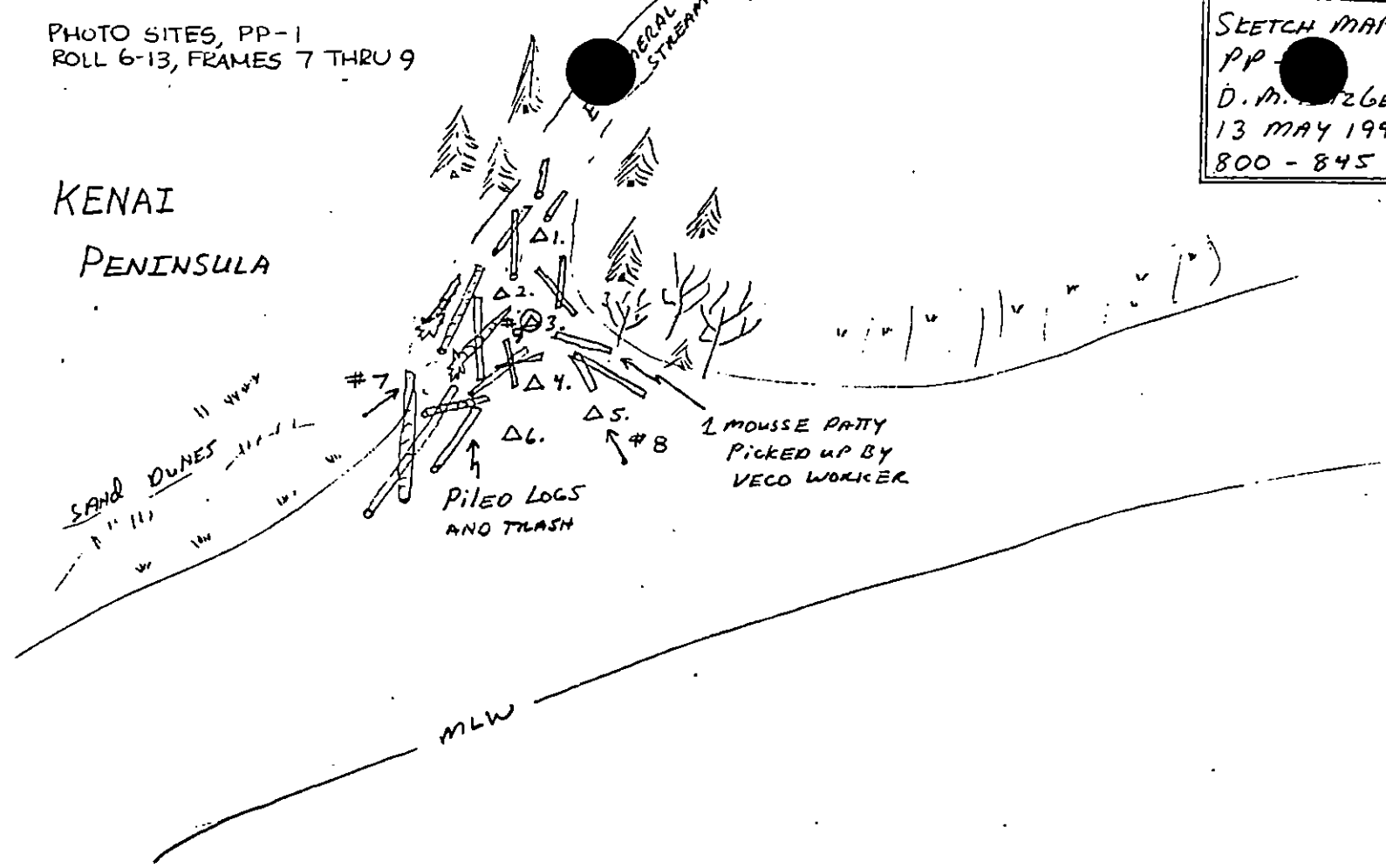
Reviewed 5/11/91 LK
REVIEWED CD 17 MAY

EVERGREENS
100' W G
PHOTO SITES

PHOTO SITES, PP-1
ROLL 6-13, FRAMES 7 THRU 9

SKETCH MAP (OG)
PP-1
D.M. FITZGERALD
13 MAY 1991
800-845

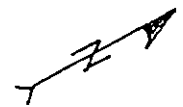
KENAI
PENINSULA



PETROF
POINT
←

0 30
METERS

NUKA
PASSAGE



REVIEWED 5/11/91 KG
REVIEWED CB 17 MAY

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 6

DATE 5/13/91

SEGMENT # PP-001

TIDAL HEIGHT (Range) -2.2 to -1.0

DIVISION

BIOLOGIST T.R. Schroeder

SEA STATE Calm

WIND SPEED/DIRECTION Calm

PHOTOGRAPHS: ROLL #

FRAME #

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

The beach area around the supposed anastomosing stream is comprised of fine sand, which is relatively providing a very harsh environment for most plants and animals. A large well bed exists offshore approximately 20 yards and extends along the shoreline 75% of the beach segment. A bouldered patch located 100 yards north of the stream location is the first stable area, which supports a variety of algae and intertidal organisms.

No water was present in the (anastomosing) stream in spite of heavy spring water runoff in the area. The stream area was completely filled with logs and debris and no spawning gravel was observed in the area. The stream obviously is not a major salmon producer.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

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

MARINE MAMMALS

OBSERVED

LAND MAMMALS

SPECIES

OBSERVED

Sea Otters	1	beach and river	
Marine Mammals (specify)		other tracks	
Land Mammals (specify)		long extinct tracks	

Shoreline subdivision map showing important biological features attached.

EVENGREENS
100' = G
PHOTO SITES

BIO. Comments
included.
T. R. Schroeder

SKETCH MAP (OG)
PP
D. M. FITZGERALD
13 MAY 1991
800 - 845

KENAI
PENINSULA

EPHEMERAL
STREAM

1 MOUSSE PARTY
PICKED UP BY
VECO WORKER

PILED LOGS
AND TRASH

Boulder patch w/ fucus
kelp, laminaria, littorina
snails and limpets.
First stable substrate
on beach segment.

PETROF
POINT
←

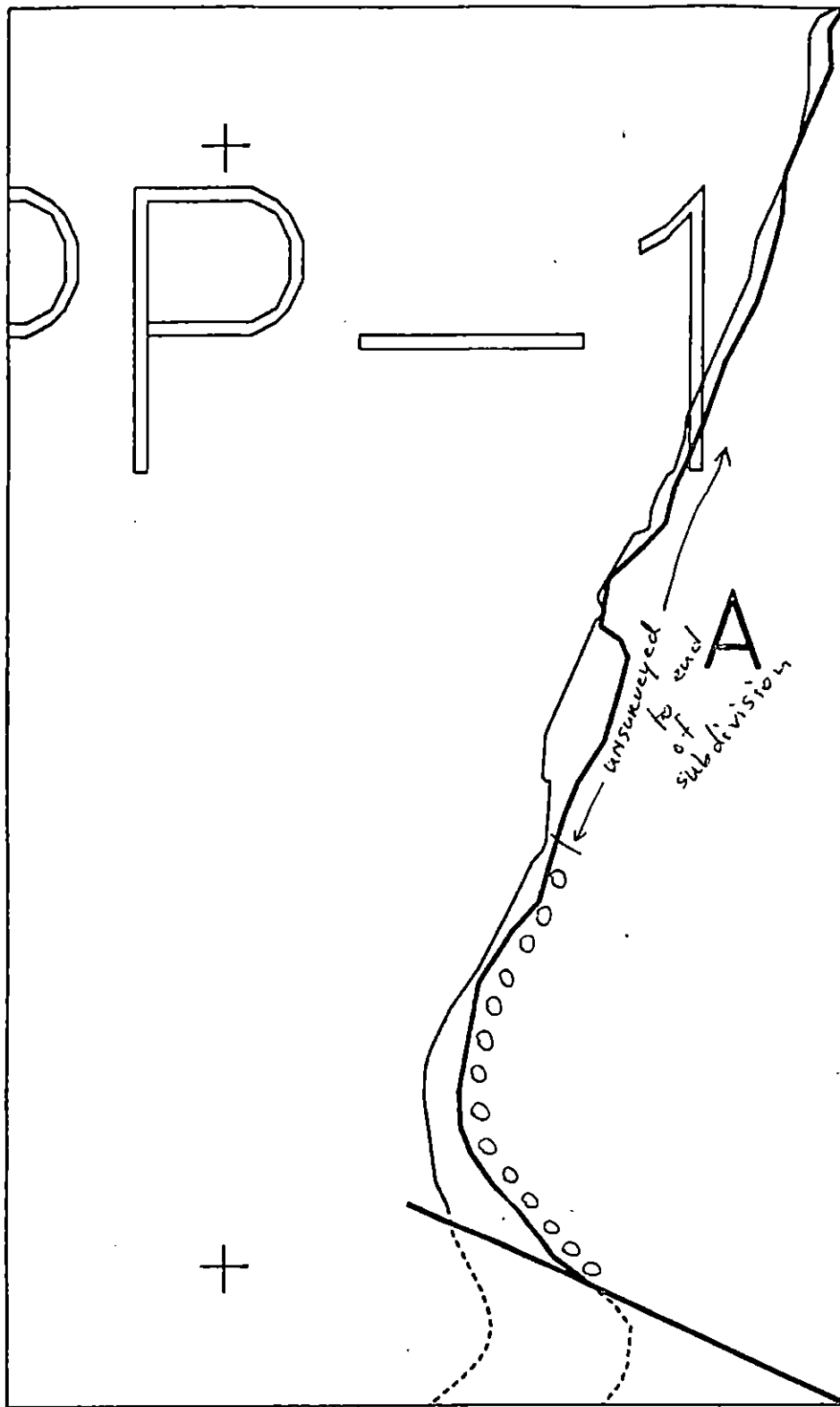
MLW
Barren Sand Beach

Bull Kelp bed

NUKA
PASSAGE

0 30
METERS





XXXX	Wide	PP001 A ADEC Subsegment Length: 1993m METERS 0 200 400 AK State Plane Zone 4 app001a	Subdivision Field Map Map Key: KENPP001Aa Name: <u>D. Fitzgerald</u> Date: <u>PP-1</u> Date Entered:
////	Medium		
----	Narrow		
TTTT	Very Light		
0000	No Oil		

reviewed 5/16/91 KCG
REVISED CB 17 MAY

REGION: KENAI

SEGMENT: ST/PY-01

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ PY-01 SUBDIVISION A (1 OF 1) DATE 4/26/90

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 178 m: Medium 154 m: Narrow 0 m: V.Light 211 m: No Oil 3921 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 15 cm

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 HOMER ECOLOGICAL CONSTRAINTS

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

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

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

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

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

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

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

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

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

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

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

1H Remote release site

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

AGENCY CONTACT PERSON: 1E

ADF&G Larry Peltz 424-3214

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

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

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

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

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

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

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

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

Contact ADF&G for confirmation - dates and locations may vary. Restrict boat traffic to essential minimum. Avoid damage to 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

✓ 5R

Seabird colony (5/1 to 9/1)

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

ADF&G Tom Roth 267-2206

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

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

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

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

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

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

6Y Special use destination

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

7HH Finfish harvesting

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

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 001 SUBDIVISION: A DATE Apr. 26, 1990~~DDA~~
~~ESCG~~NAME DONALD A. MACDONALD SIGNATURE Donald A. MacDonald☐ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

The segment is located on the southwest shore of Ragged Island and is largely subjected to high wave action. Most of the segment had very light to no oil, as beach had moderate oiling with cover extending well up into the ~~segment~~ supra zone on cliff face. Marine mammals are present in the area. About 80% of the segment was damaged from the ship with team members going ashore at five pocket beaches.

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

COMMENTS

Mostly scattered coat on bedrock + boulders in small pocket beaches in the southern end of PY-01. Area where warm water wash was done last year looks much better. I agree with all data on SSAT Forms.

~~LAND MANAGER - USFWS~~NAME Mary Portner SIGNATURE Mary Portner☐ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

Oil persists in this segment on several pocket beaches. Most surface coat is dry and tarry or present on vertical rock faces and will be difficult to remove with current treatment methods. Other cover, coat and stain is present beneath the surface layer of cobbles and boulders especially where warm water wash was utilized as a treatment method last year. There is some

SHORELINE OILING SUMMARY

REVISION NO. 04/13/88

OG Sawyer NOAA MacDonald SEGMENT ST/ Py-1
 BIO Carr LAND REP Partner SUBDIVISION A (1 OF 1)
 N Boyer ADEC Reed TIME 08:25 to 10:40
 NO. 18 TIDE LEVEL -3.5 to +2.0 DATE Apr 1 25 1990
 EST. SUBDIVISION LENGTH: 5/81 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☐ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: N to S
 SURFACE SEDIMENTS: R 95 % B 5 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Lang 10 % Hang 5 % Vert 85 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 125 m M 120 m N 0 m VL 270 m NO 4666 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	TC	TS	TP	TR	ST	ST	ST	ST	ST	ST	ST	ST	SU	U	M	U
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT																
STAIN																
MOUSSE																
PATTIES																
BALLS																
FILM																
NO OIL																

PAVEMENT H 6 1 sq. m by 5 cmPATTIES / TARBALLS 0 BAGS

NEAR SHORE SHEEN? NO BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS?

YES ☐ - NO ☒TYPE -#BAGS 0

Photographs:

Roll No. -Frames NONE

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		UO	UC	ST	ST	ST	ST	ST	ST	ST	ST				
1	30						0.15														B-B, G.C
2	25																				B-C, B
3	25						0.10														B-C, B

COMMENTS ST/Py-1 consists almost entirely of bedrock cliffs, with the exception of a few small "pocket" beaches. The most significant oiling occurs in the southernmost part of this segment.

REVIEWED

BAT

DATE 29 Apr 90

OG Sayer
 SEGMENT ST/ PY1
 SUBDIVISION A
 DATE Apr 1 25 90

CHECKLIST

☐ N Area
☐ Approx. Scale
☐ Seafloor Bathymetry
☐ Oil Date
☐ Width
☐ Length
☐ % Cover
☐ Substrate Character
☐ Est. HYPLA WL
☐ SS
☐ Profile Location(s)
☐ Profile(s)
☐ PI Location(s)
☐ Photo Location(s)

LEGEND

1 Δ

PI - No Subsurface Oil

2 Δ

PI - Subsurface Oil

☐ CT/C
 Continuous Distribution

☐ CT/B
 Broken Distribution

☐ CT/P
 Patchy Distribution

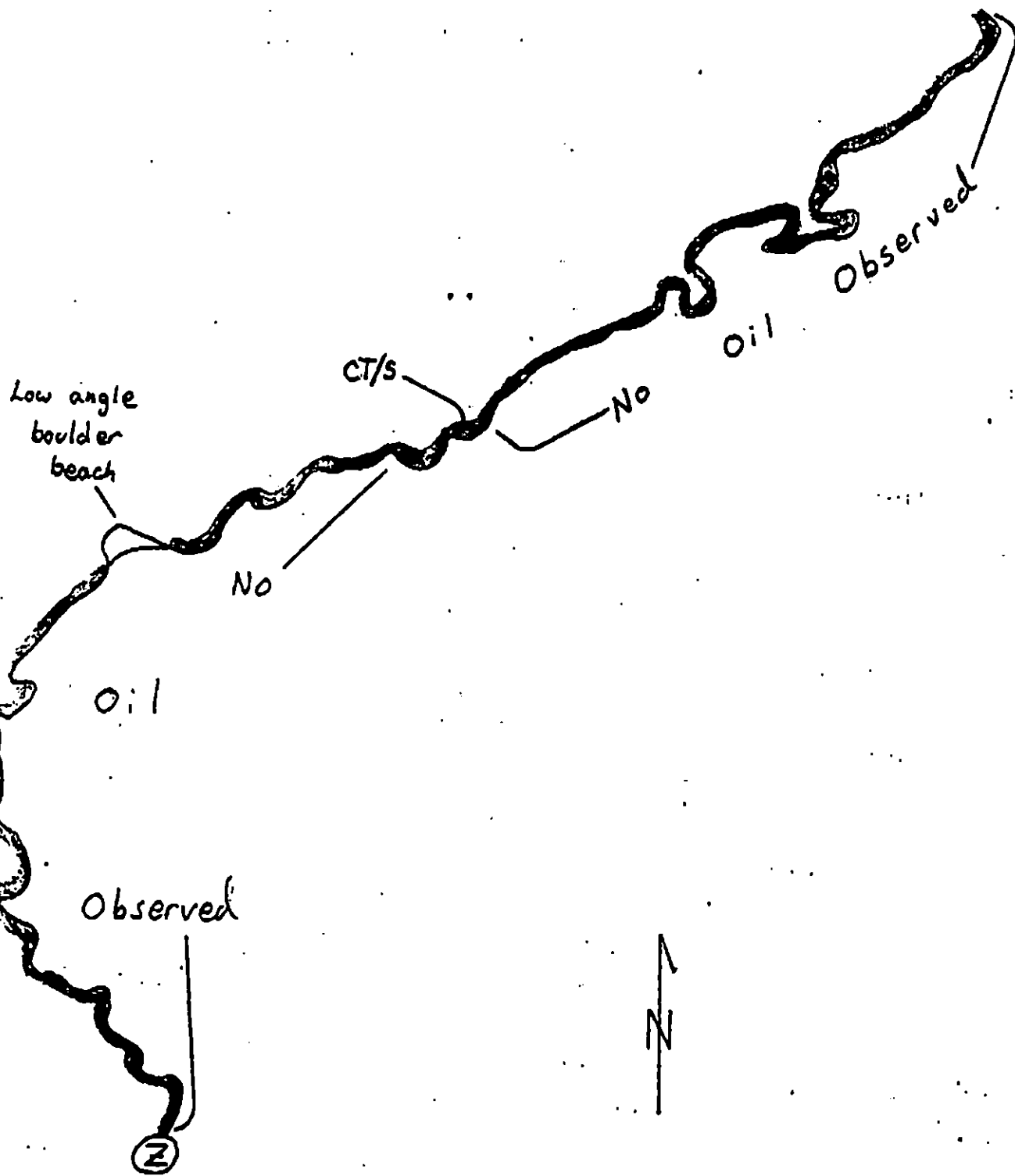
☐ CT/S
 Splashed Distribution

☐ OLR
 Oil Vegetation

1 Δ

Photo location, direction, and number

SKETCH MAP-A



OG Seaver
 SEGMENT STI, PY-1
 SUBDIVISION A

DATE Apr 125 90

CHECKLIST

☐ N Arrow
☐ Approx. Scale
☐ Seg/Sub Entry
☐ Oil Desc.
☐ Width
☐ Length
☐ % Cover
☐ Substrate Character
☐ Est. HML/LML
☐ SSL
☐ Profile Location(s)
☐ Profile(s)
☐ Pli Location(s)
☐ Photo Location(s)

LEGEND

1 Δ
 Pli - No Subsurface Oil

2 Δ
 Pli - Subsurface Oil

CT/C
 Continuous Distribution

CT/B
 Broken Distribution

CT/P
 Patchy Distribution

CT/S
 Splashed Distribution

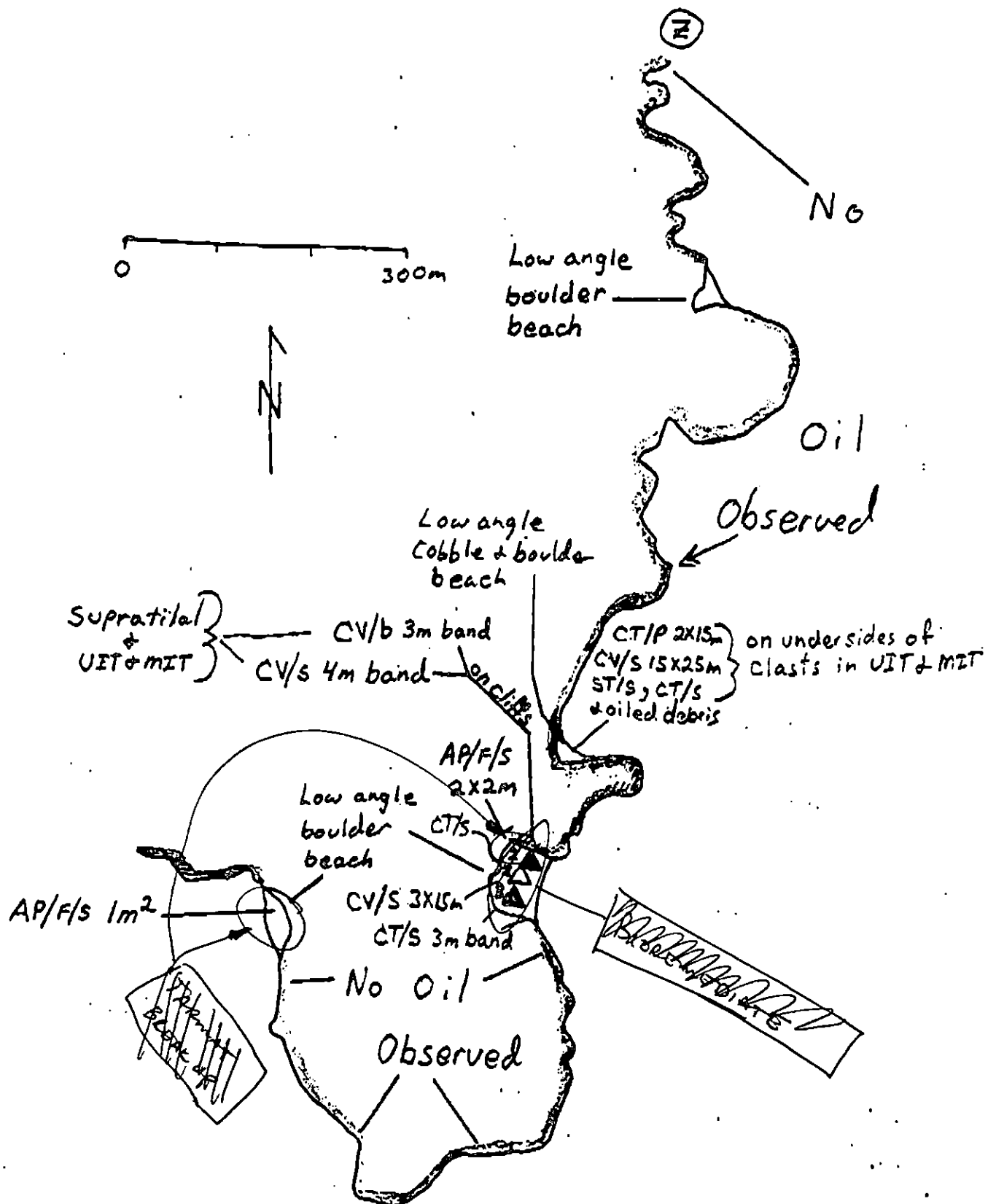
Oil Vegetation

Photo location, direction, and number

See Sketch Map-A

Oil Character Length (m): AP

SKETCH MAP-B



PT MS ST CT CV PO

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/85

Segment ST / PY-1 Subdivision A Date (mo / day / yr) 4-25-90
 Time (24 hr) 0830 Biologist MARK CARR

- (A) Substrate type and % of segments:
 (1) Bedrock _____ (2) Boulder _____ (3) Cobble _____ (4) Pebble _____ (5) Sand _____ (6) Silt _____
- (B) Overall % cover of biota (% of segment): Dense 70 Moderate 20 Low 10
- (C) Density, substrate preference (by number from A, above), & vertical zonation of major taxa: (upper-U; mid-M; low tidal-L); juveniles / adults (X), new settlement (3)

Photographs: _____
 Roll No. _____

Frames NONE

BARNACLES

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

MYTILUS

Dense			Moderate			Sparse			Rare			
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	NOT PRESENT IN UPPER AND LOWER TIDE ZONE
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

GASTROPODS

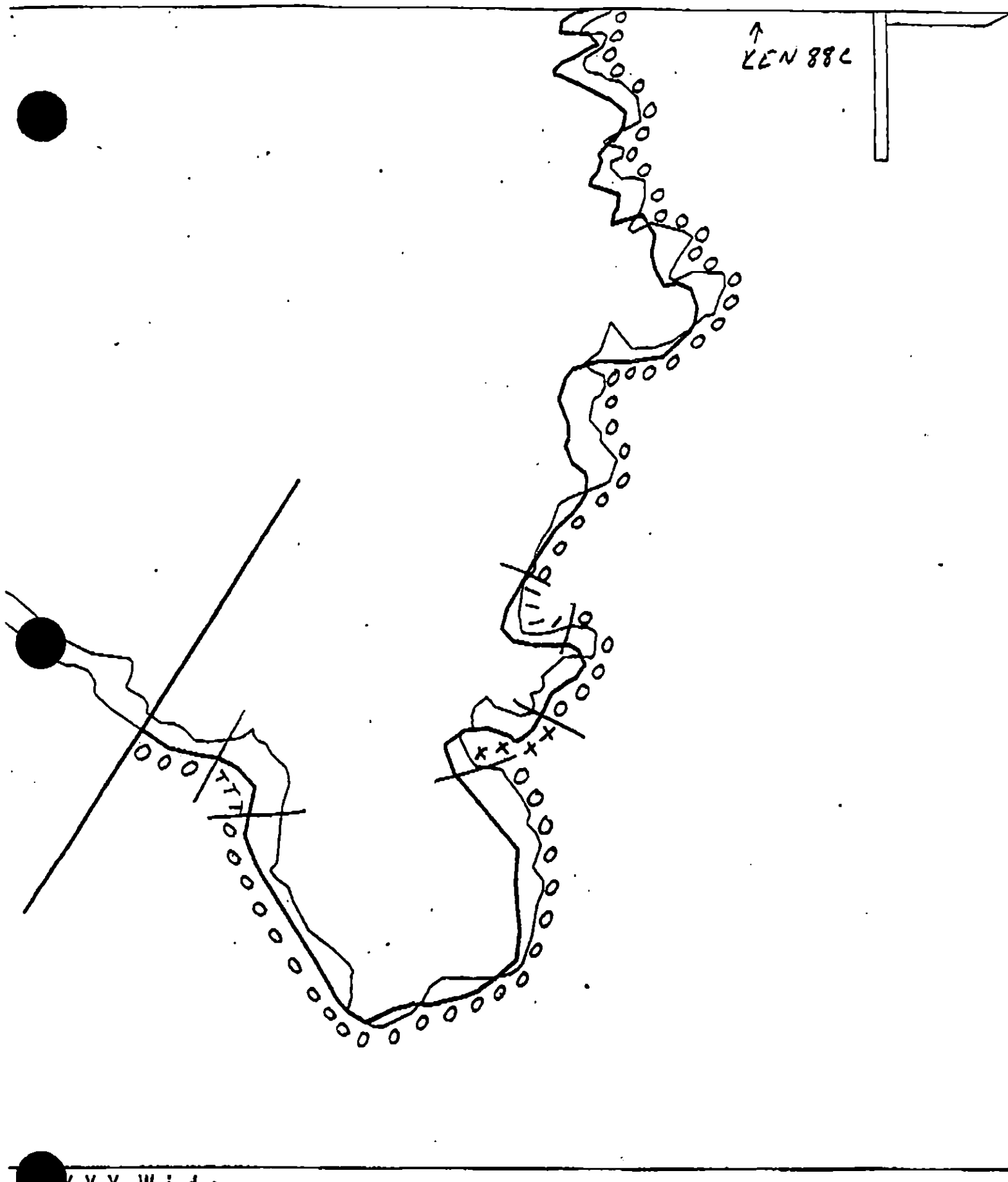
Dense			Moderate			Sparse			Rare			
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	NOT PRESENT
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

FUCUS

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

Wildlife Observations/ General Comments:

harlequin duck (24), Steller's sea lion (1), glaucous-winged gull (200),
 scoters (4), ruby-headed kinglet (song), sea otter (2), cormorant (2),
 Ecological Considerations: pigeon guillemot (1)
 400 (National Wildlife Refuge)



XXX Wide

//// Medium

--- Narrow

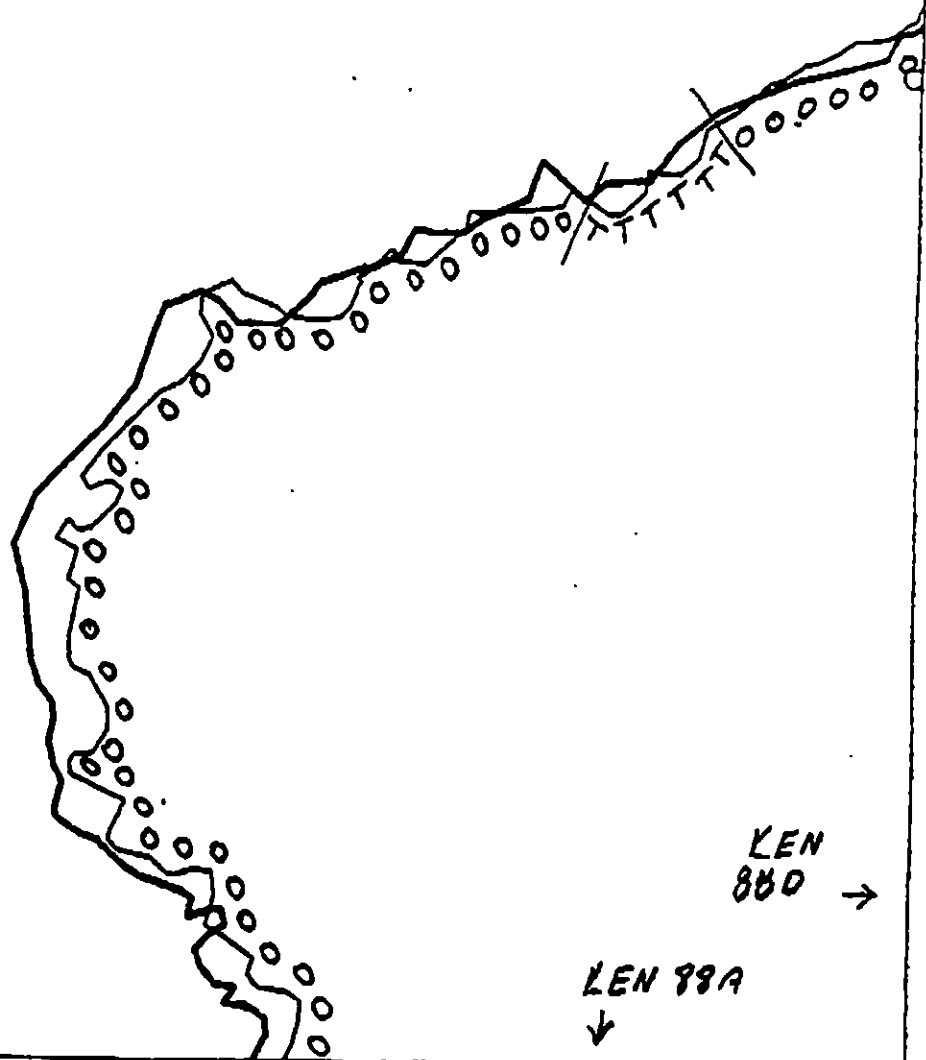
TTTT Very light

PY-1

ADEC Segment Length: 4463m

Map Key: KEN-88a

Name: SawyerDate: 4-25-90



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

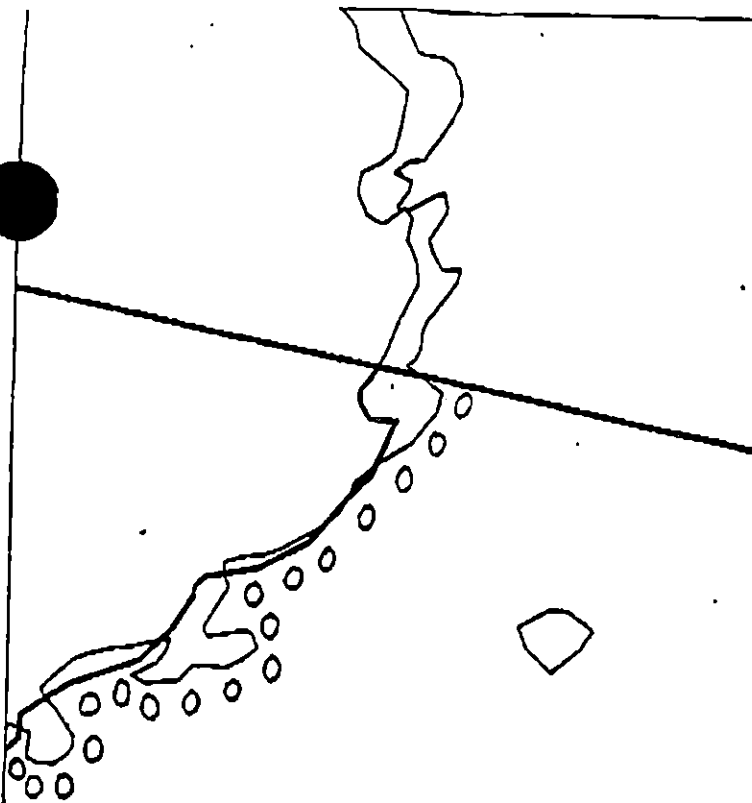
PY-1

ADEC Segment Length: 4463m

Map Key: KEN-88c

Name: Sawyer

Date: 4-25-90



← KEN
88C.

XXX Wide
/// Medium

PY-1

--- Narrow ADEC Segment Length: 4463m

TTTT Very Light

Map Key: KEN-88d

Name: Sawyer

Date: 4-25-90

SHORELINE EVALUATION

SEGMENT ST/ PY-01 SUBDIVISION A (1 OF 1) DATE 4/26/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

400 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 uncoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINT: If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact Exxon's Cultural Resource Program immediately (564-3274 (Anchorage) or 229-1508 (24 hrs.)).

or

SHPO SIGNATURE:

DATE:

OILING CATEGORIZATION:

Wide 178 m: Medium 154 m: Narrow 0 m: V.Light 211 m: No Oil 3921 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 15 cm

RECOMMENDATIONS:

~~X~~ No Treatment Recommended

Treatment Recommended

~~X~~ Manual Pickup

~~X~~ Bioremediation

X Tarmat Removal

Snare/Absorbent Booms

Oil Snares (pom poms)

____ Absorbents (pads, rolls, etc)

 Spot Washing: Wands

Beach Cleaner

_____Other (see comments)

COMMENTS:

TAG COMMENTS: MANUAL PICKUP OF TARMATS + DEBRIS AS INDICATED + BIOREMEDIATION AS INDICATED

TAG APPROVAL DATE: 5/8/90.

ADEC ART WEINER St. Louis

EXXON ANDY BAL Real

NOAA Gary Petras Gary Petras

USCG G.A. REITER / G.A. Ke...

FOSC:

DATE: 5-15-90

Bioremediation not authorized - coordinate treatment with USF+WL Rep.

OG Sher

SEGMENT ST/PY2

SUBDIVISION A

DATE Apr 1 25 90

CHECKLIST

- ☐ H Area
- ☐ Approx. Scale
- ☐ Sediment Body
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Ext. HYDRAUL.
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Pit Location(s)
- ☐ Photo Location(s)

LEGEND

1 Δ

PT - No Subsurface Oil

2 Δ

PT - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

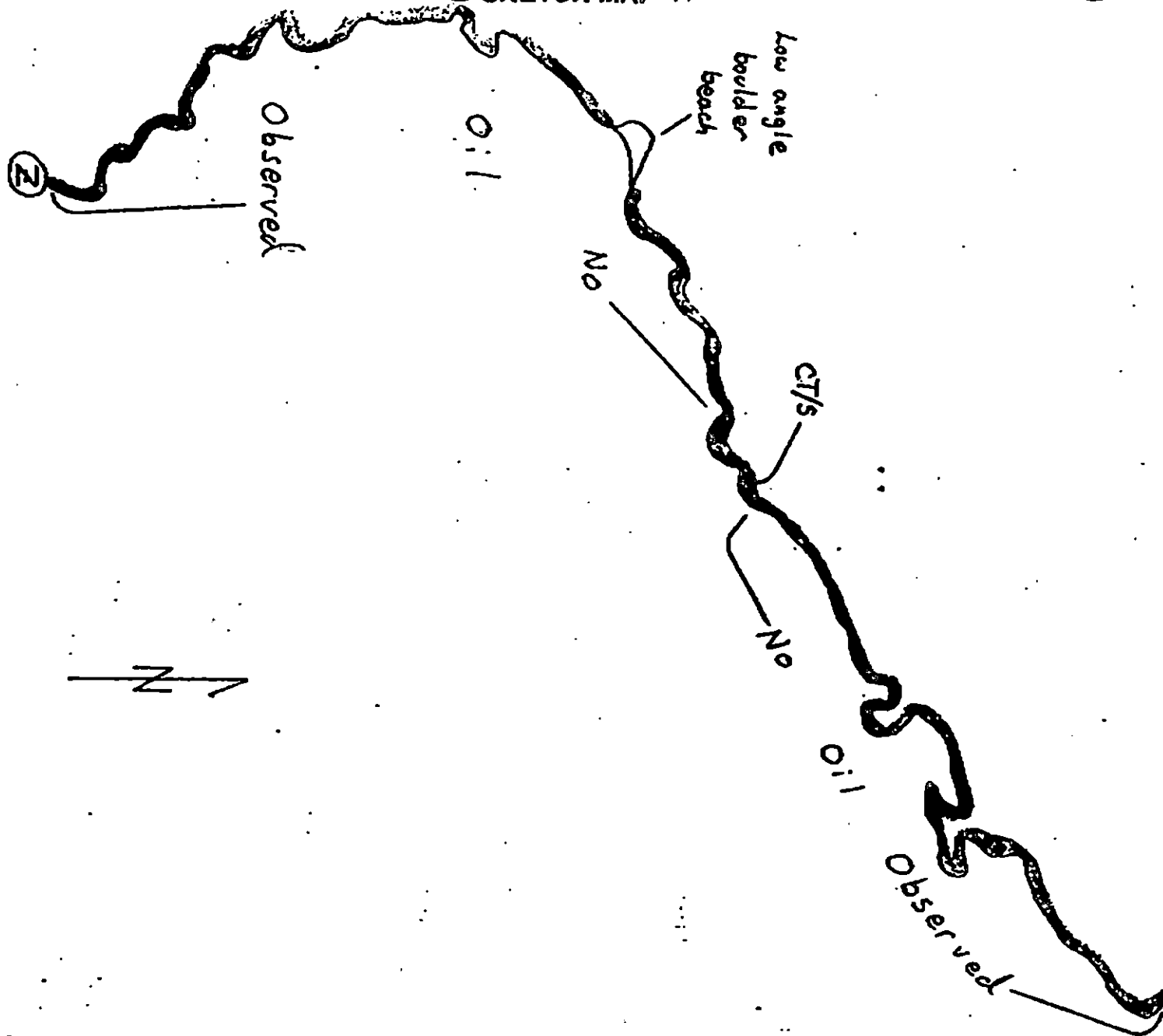
eee

Oiled Vegetation

1 →

Photo location, direction,
and number

SKETCH MAP-A



Oil Character Length (m): AP 3 PO 0 CV 75 CT 50 ST 0 MS 0 PT 0 TR 0 EI 0 ... (5000)

SKETCH MAP-8

0 300m



Low angle
boulder
beach

N

Oil

Observed

Low angle
Cobble & boulder
beach

Supratidal
+ UET + MIT

CV/b 3m band

CV/s 4m band

CT/P 2X15m
CV/S 15X25m
ST/S, CT/S
+ oiled debris

on undersides of
clasts in UET & MIT

MANUAL PICKUP OF
OILED DEBRIS

Low angle
boulder
beach

AP/F/S
2X2m

CT/S

MANUAL PICKUP OF
ASPHALT + BIOREMEDIATION

AP/F/S 1m²

CV/S 3X15m
CT/S 3m band

No Oil

Observed

MANUAL
REMOVAL OF
TARMAST.

OG: Seal

SEGMENT: ST/PY-1

SUBDIVISION: A

DATE: Apr 125 90

CHECKLIST

- ☐ H Arrow
- ☐ Apprat. Scale
- ☐ Seg/Sub Entry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HMT/L/WL
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ PI Location(s)
- ☐ Photo Location(s)

LEGEND

1 Δ

PI - No Substrate Oil

2 Δ

PI - Substrate Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

Oil

Oil Vegetation

Photo location, direction, and number

See Sketch Map-A

Oil Character Length (m): AP

PO CV CT ST

NS

PT

VE

CT

CT

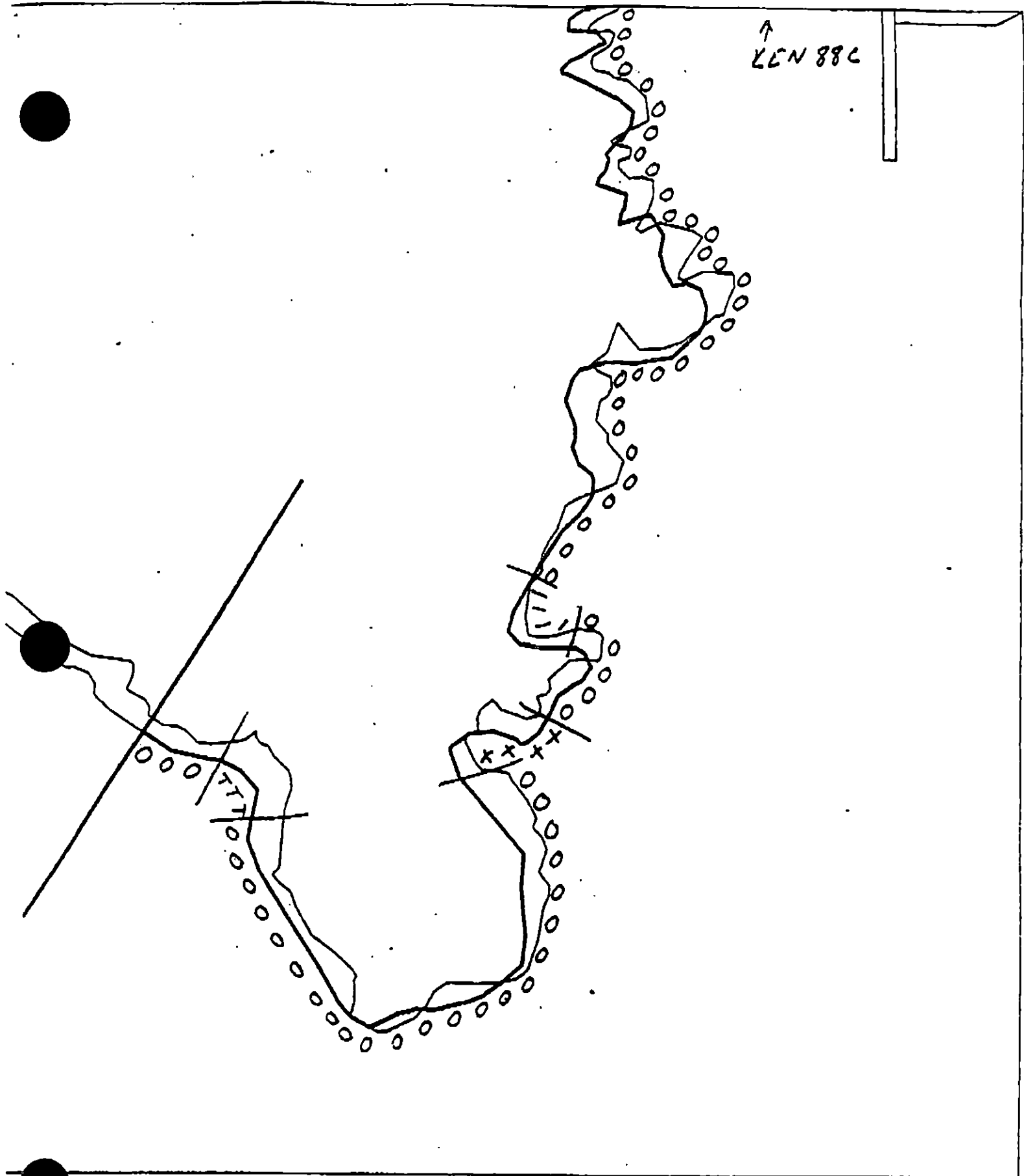
CT

CT

CT

CT

CT



XXX Wide

/// Medium

--- Narrow

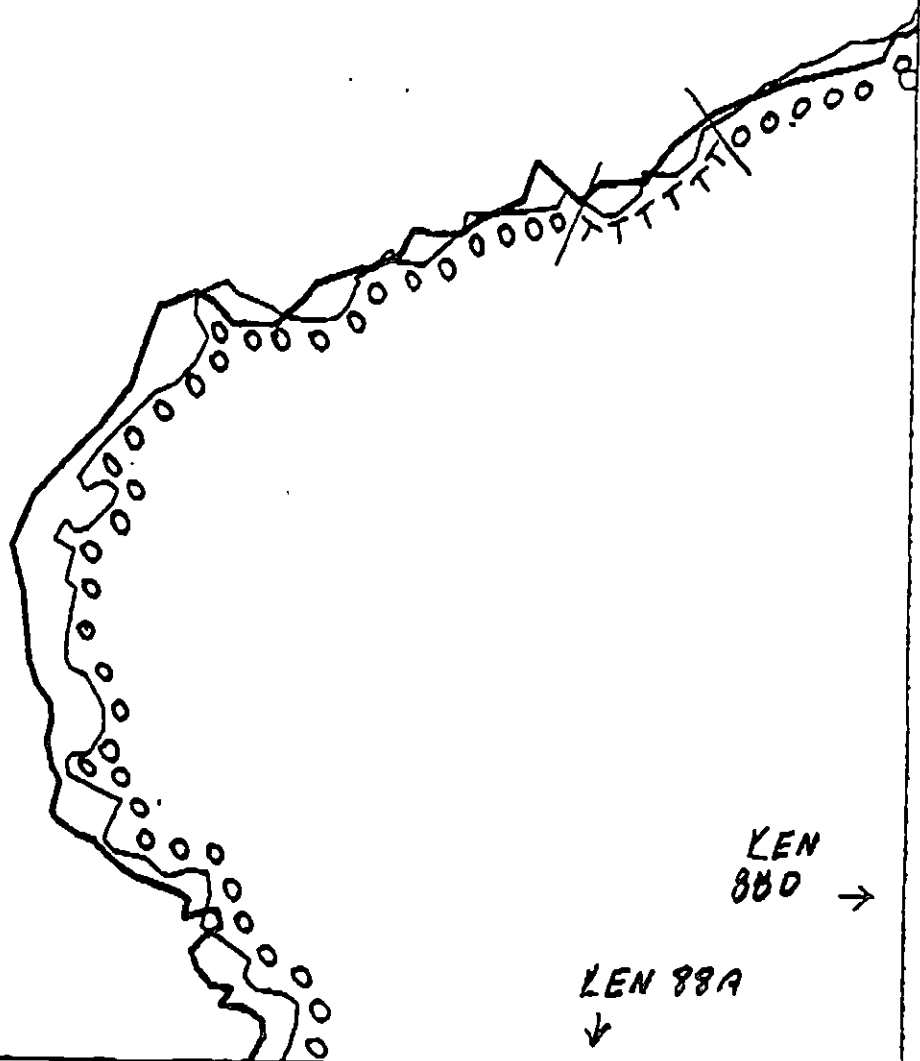
TTTT Very Light

PY-1

ADEC Segment Length: 4463m

Map Key: KEN-88a

Name: SawyerDate: 4-25-90



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

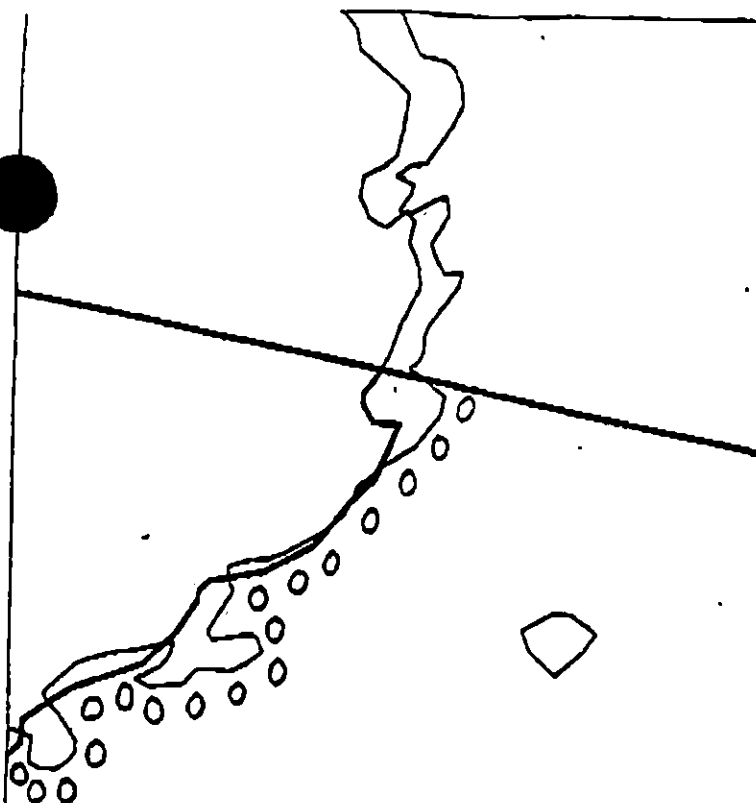
PY-1

ADEC Segment Length: 4463m

Map Key: KEN-88c

Name: Sawyer

Date: 4-25-90



← KEN
88C.

XXX Wide

//// Medium

---- Narrow

TTTT Very Light

PY-1

ADEC Segment Length: 4463m

Map Key: KEN-88d

Name: Sawyer

Date: 4-25-90



ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT PY-1 SUBDIVISION A (1 of 1)

WORK WINDOW

Manual Pickup
Tarmat Removal

CLOSED

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

5R Seabird Colony

Closed to all activities; work site is less than 800m from seabird colony.

OTHER ECOLOGICAL CONSIDERATIONS

If seabird colony constraint is removed, other ecological considerations will apply.

FOSC

A. Zampieri

Date

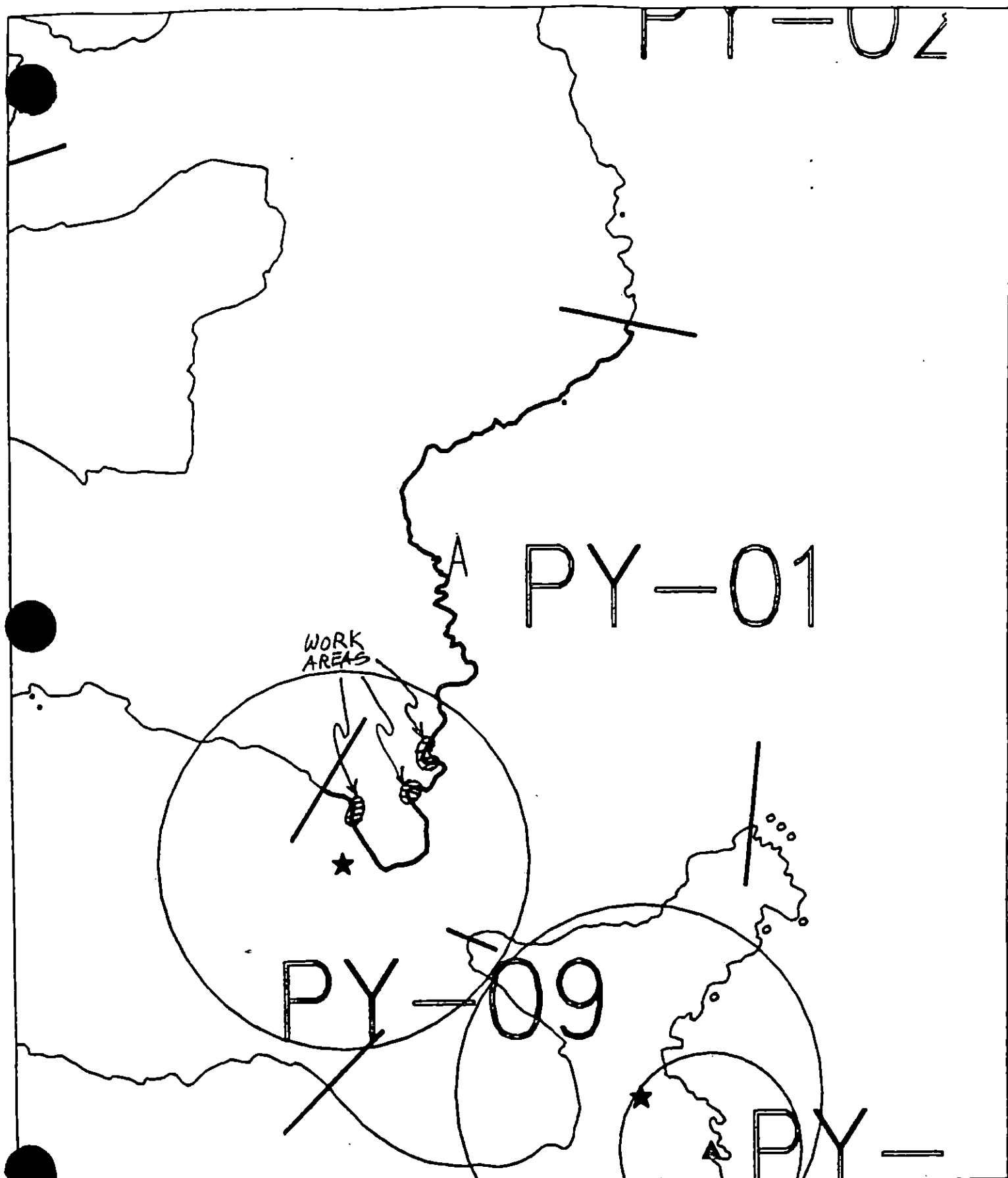
6/13/90

Prepared by

J. Phillips

Date

6/12/90



Exxon Company, USA



ECOLOGY MAP
SEGMENT PY-1
SUBDIVISION A (1-1-1)
UNCLASSIFIED

- ★ Seabird Colony
- ▲ Eagle Nest

SHORELINE EVALUATION

SEGMENT ST/ PY-01 SUBDIVISION A (1 OF 1) DATE 4/26/90

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 CONSTRAINT: If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact Exxon's Cultural Resource Program immediately (564-3274 (Anchorage) or 229-1508 (24 hrs.)).

or

SHPO SIGNATURE: [Signature] DATE: 5/10/90

OILING CATEGORIZATION:

Wide 178 m: Medium 154 m: Narrow 0 m: V.Light 211 m: No Oil 3921 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 Removal	☐ Beach Cleaner
	☐ Other (see comments)

COMMENTS: SFS CONSTRAINTS ADDENDUM dated 6/12/90 JPD

TAG COMMENTS: MANUAL PICKUP OF TARMATS + DEBRIS AS INDICATED +
BIOREMEDIATION AS INDICATED

TAG APPROVAL DATE: 5/8/90

ADEC ART WEINER

EXXON ANDY BAL

NOAA GARY PETRO

USCG G.A. REITER

FOSC: [Signature] DATE: 5-15-90

Bioremediation not authorized - coordinate treatment with USF+WL Rep.

REGION: KENAI

SEGMENT: ST/PY-02

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST, PY-02 SUBDIVISION A (1 OF 1) DATE 4/25/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

4QQ National Wildlife Refuge
5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 397 m: Medium 1275 m: Narrow 3214 m: V.Light 599 m: No Oil 5874 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 12 cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes manual pickup of tarmats, pooled oil and mousse followed by bioremediation in areas indicated on sketch map. Work should be conducted after 6/1 with approval of USFWS regarding eagle constraints.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

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

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

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

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

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

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

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

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

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

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

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

1H Remote release site

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

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

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

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

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

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

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

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

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

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

Contact ADF&G for confirmation - dates and locations may vary. Restrict boat traffic to essential minimum. Avoid damage to 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

30, 3Q Harbor seal and sea lion pupping (5/15 to 7/1)

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

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

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

ADF&G Don Calkins 267-2403

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

ADF&G Tom Roth 267-2206

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

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

6U 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

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

Page 1 of 2
 1/27/90

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / PY-002

SUBDIVISION: A

DATE Dec 25, 1990

NOAA
USCG

NAME

Donald A. MacDonald

SIGNATURE

Donald A. MacDonald

☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED - Manual cleaning

COMMENTS Heavy areas of oot and cover were found along with accumulations of mousse 15 cm and greater. This segment brought out serious problems with the shoreline oiling summary form. The list of surface oil characters mixes terms which describe the character of the oil with terms that describe the distribution of the oil. "Asphalt pavement", "mousse" and "tarballs" are terms which describe the character of the oil while "pooled", "cover", "oot", "stain", "patches" and "films" describe the vertical distribution of the oil (thickness) and "patches" describes horizontal distribution. In the past when mousse was observed it was listed as mousse although it could have been put down as oot, cover or pooled. The form does not agree with the oil cleaning SSAT form.

ADEC

NAME

JOHN R. REED

SIGNATURE

John R. Reed

☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

I am suggesting manual removal of pooled oil and mousse patches and asphalt pavements in this segment. All form of oiling characteristics persists in this segment. The OG map shows in detail where the oil persists. This oil should be easily removed with the use of shovels or hand tools. I agree with data on SSAT Forms.

LAND MANAGER

NAME

SIGNATURE

☐ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

FIELD SHORELINE COMMENT SHEET

SEGMENT ST. / PY-002 SUBDIVISION: A DATE Apr. 26, 1990

NOAA

H206

NAME Donald A. MacDonald SIGNATURE Donald A. MacDonald☐ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTEDCOMMENTS *continued.*

The area, as shown on sketch map B, when the thick deposit of mousse was reported on and among the boulders and in the stream, should be manually cleaned using shovel and trowel because a relatively large amount of oil could be picked up with a minimum of effort.

ADEC

NAME _____ SIGNATURE _____

☐ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

LAND MANAGER

NAME _____ SIGNATURE _____

☐ NO TREATMENT RECOMMENDED☐ TREATMENT SUGGESTED

COMMENTS

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / PE-02 SUBDIVISION: _____ DATE 4/26/90

ISCG

NAME _____

SIGNATURE _____

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ADEC

NAME _____

SIGNATURE _____

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

LAND MANAGER - USFWS

NAME Mary Partner

SIGNATURE

Mary Partner

☒ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

persists in this subdivision on several low angle boulder and cobble beaches, bedrock as asphalt pavement, pooled oil, cover, coat, stain, mousse and turbid. surface oil exists to at least a depth of 12 cm. A "bathtub ring" remains on sheer rock face in the eastern portion of the cove. Asphalt pavement, pooled oil, and turbid should be removed using hand tools including shovels, trowels, rakes, etc. In many cases cobbles and small boulders must be turned, mousse from the underside and removed from subsurface sediments. Oil persists in the interstices of boulders and cobbles. From points w/ extensive sand and trowels will be necessary to recover it. In several areas, mousse/s is visible and readily recoverable and should be treated. At the site indicated to enlargement (Sketch Map B) spot washing may be necessary in addition to enlargement. Due to the extent of oiling in this cove, a detailed map outlining areas to be treated will be provided by the land manager (USFWS). A USFWS

SHORELINE OILING SUMMARY

REVISION NO. 001200

OG Sawyer NOAR MacDonald SEGMENT ST/ PY2
 RIG Carr LAND REP Partner SUBDIVISION A (1 OF 1)
 ON Bayer ADEC Reed TIME 16:30 to 21:15 + 07:00 to 08:15
 TEAM NO. 18 TIDE LEVEL +6.0 to +4.0 to +2.0 to +3.0 DATE Apr 12/25/90
 EST. SUBDIVISION LENGTH: 12975 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 20 % C 5 % P 5 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 10 % Hang 0 % Vert 90 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 550 m M 1025 m N 3150 m VL 530 m NO 7720 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	IC	IS	IP	IR	1	2	3	4	5	SU	U	M	U
ASPHALT PAVEMENT													
POOLED													
COVER													
COAT													
STAIN													
MOUSSE													
PATTIES													
BALLS													
FILM													
NO OIL													

PAVEMENT H F (S) 45 sq. m by 4 cmPATTIES / TARBALLS 1 BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS?

YES ☒ NO ☐TYPE pom pom, oiled
sorbent pad, m.#BAGS 4

Photographs:

Roll No. ST-18-8Frames 27-34

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm)	BELOW		OIL / FILM COLOR					PIT ZONE				A N A	SHEEN (Y/N)	F	SURFACE-SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		US	UC	1	2	3	4	5	SU	U	M	U				
1	20						0-2															B-C, S, C
2	20						0-12															B-S, C
3	15																					C-S, G
4	20						0-5															B-P, G
5	10						0-5															B-C, S

COMMENTS

OG Wyer
 SEGMENT ST/ PY2
 SUBDIVISION A

DATE Apr 1 25 90

CHECKLIST

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

LEGEND

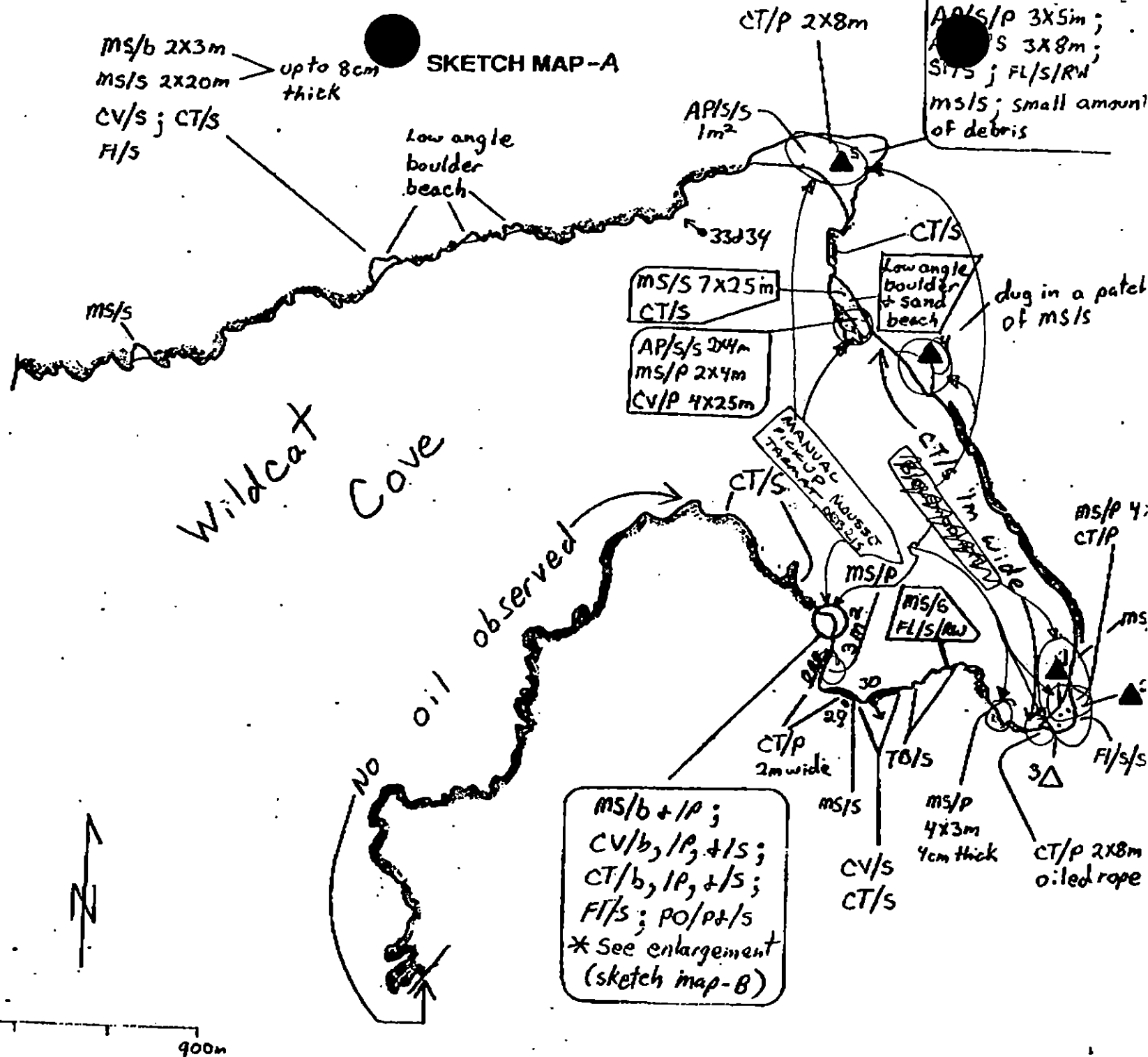
- 1 Δ
PI - No Subsurface Oil
- 2 Δ
PI - Subsurface Oil
- CT/C

Continuous Distribution
- CT/B

Broken Distribution
- CT/P

Patchy Distribution
- CT/S

Splashed Distribution
- eee
Oiled Vegetation
- $\bullet$
Photo location, direction, and number



Oil Character Length (m): AP 20 PO 10 CV 120 CT 350 FI 50 PO 70

OG S. yer

SEGMENT ST/ PY2

SUBDIVISION A (part of)

DATE Apr 125 90

CHECKLIST

- ☐ H Area
- ☐ Appr. Scale
- ☐ Seg/Sub Bndry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HW/LW
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Photo Location(s)

LEGEND

1 Δ

PI - No Surface Oil

2 Δ

PI - Surface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

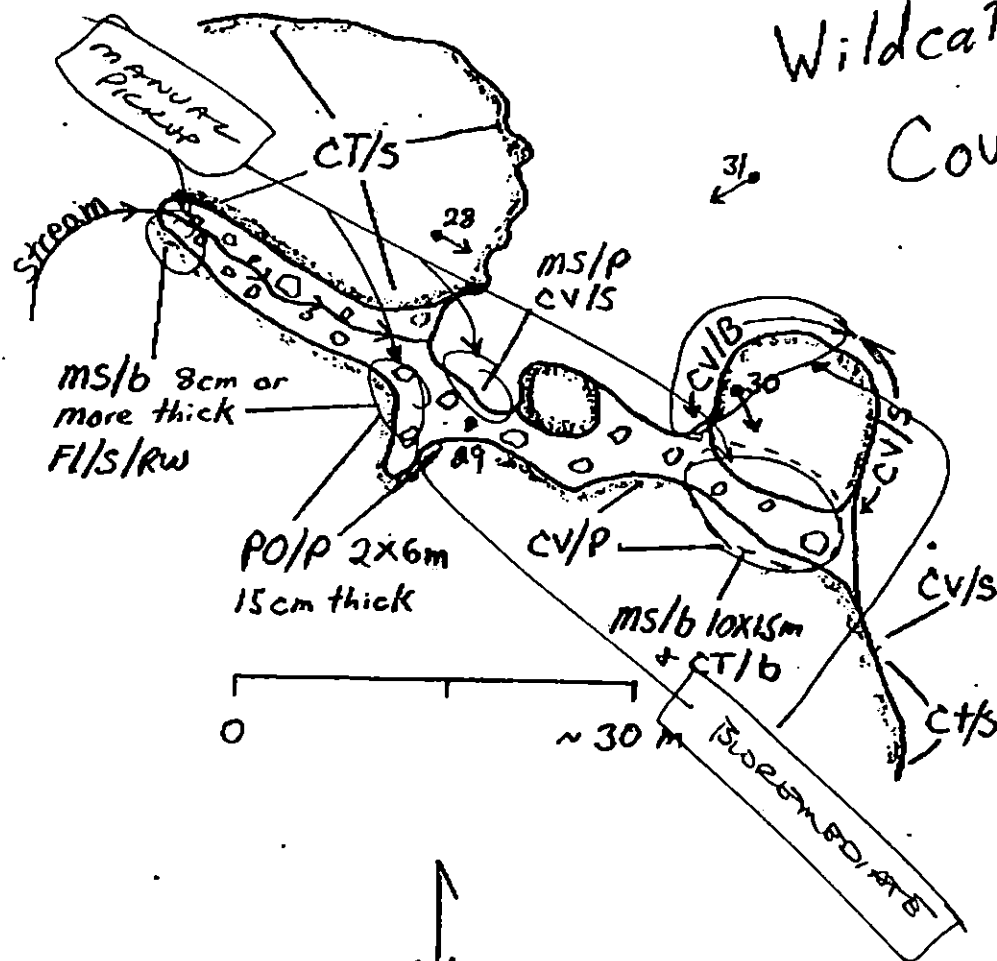
lll

Oiled Vegetation

1 $\Rightarrow$

Photo location, direction,
and number

SKETCH MAP-B



See Map A

Oil Character Length (m): AP

PO

CV

CT

ST

MS

PT

TD

FI

NO

SHORELINE ECOLOGICAL SUMMARY

Segment ST / PY-2 Subdivision A Date (mo / day / yr) 4-23-90
 Time (24 hr) 4-23 (1630) 4-24 (0700) Biologist MARK CARR

- (A) Substrate type and % of segments:
 (1) Bedrock _____ (2) Boulder _____ (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: ST-18-8
 Roll No. ST-18-8

Frames 27-34

BARNACLES

	Dense			Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
Bed	2	2	X	2	2	2	2	2	X	2	2	2	
Bould	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	
Bed	2	2	2	2	2	2	2	2	2	2	2	2	NOT PRESENT IN WATER
Bould	3	3	3	3	3	3	3	3	3	3	3	3	& LOWER TIDAL 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	
Bed	2	2	2	2	2	2	2	2	X	2	2	2	
Bould	3	3	3	3	3	3	3	3	3	3	3	3	NOT PRESENT
	4	4	4	4	4	4	4	4	4	4	4	4	
	5	5	5	5	5	5	5	5	5	5	5	5	
	6	6	6	6	6	6	6	6	6	6	6	6	

FUCUS

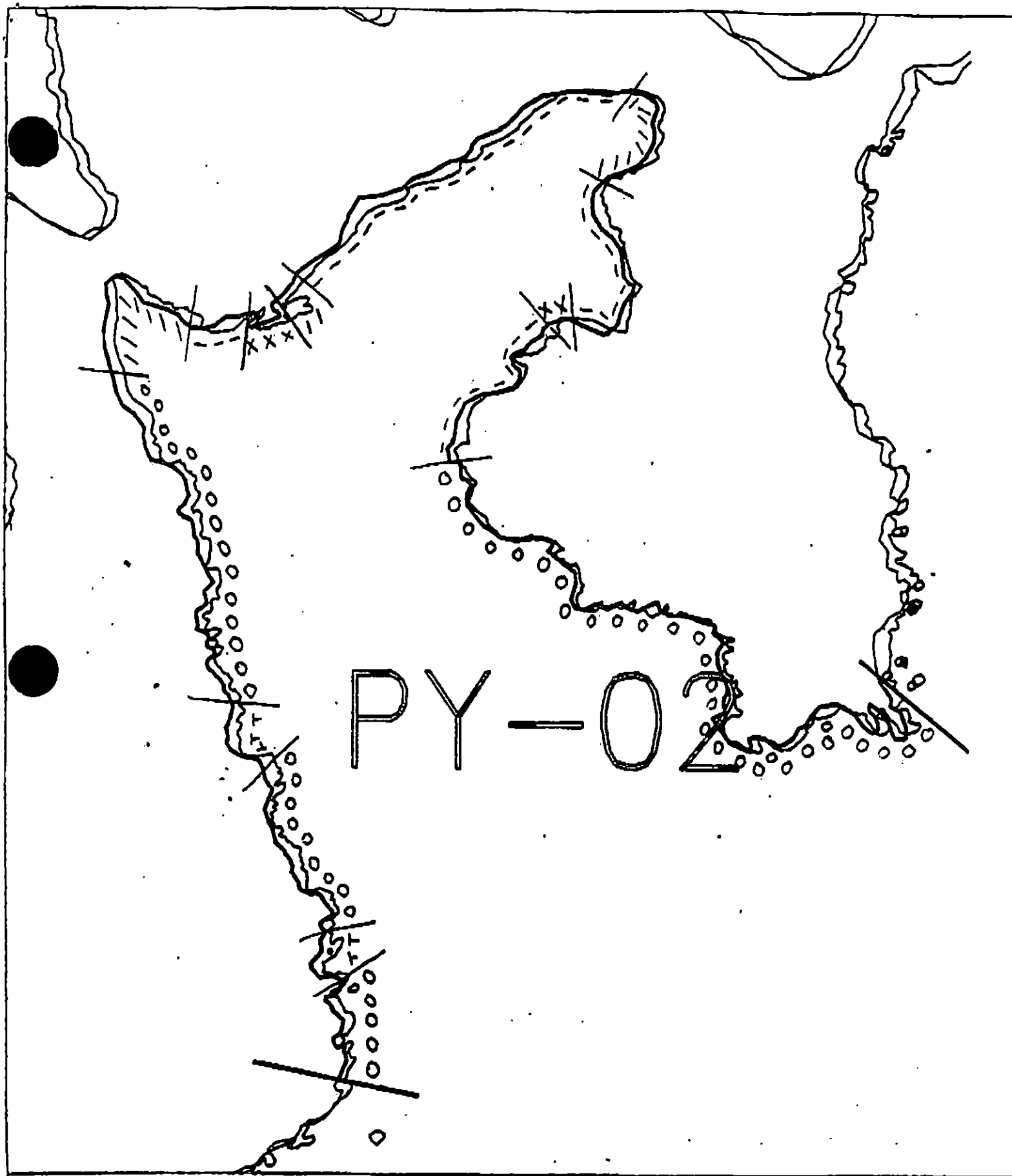
	Dense			Moderate			Sparse			Rare			
	1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
Bed	2	2	2	2	2	2	2	2	X	2	2	2	
Bould	3	3	3	3	3	3	3	3	3	3	3	3	NOT PRESENT
	4	4	4	4	4	4	4	4	4	4	4	4	
	5	5	5	5	5	5	5	5	5	5	5	5	
	6	6	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments:

Sea otter (3), harlequin ducks (3), oyster catcher (2), bald eagle (2) mature, river otter (1)

Ecological Considerations:

ST (bald eagle nest), 499 (National Wildlife Refuge)



XXXX Wide

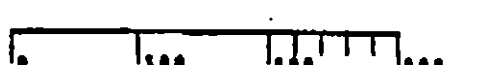
//// Medium

---- Narrow

TTTT Very Light

PY-2

ADEC Segment Length: 11359m



Map Key: KEN-90a

Name: Sawyer

Date: 4-25-90

SHORELINE EVALUATION

SEGMENT ST/ PY-02 SUBDIVISION A (1 OF 1) DATE 4/25/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

4QQ National Wildlife Refuge

5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: J. Paul M. McManus

DATE: 5/8/90

OILING CATEGORIZATION:

Wide 397 m: Medium 1275 m: Narrow 3214 m: V.Light 599 m: No Oil 5874 m
Subsurface Oil Observed: Yes X No Maximum Depth 12 cm

RECOMMENDATIONS:

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

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

COMMENTS: Recommended treatment includes manual pickup of tarmats, pooled oil and mousse followed by bioremediation in areas indicated on sketch map. Work should be conducted after 6/1 with approval of USFWS regarding eagle constraints.

TAG COMMENTS: MONITORS TO PAY PARTICULAR ATTENTION TO APPLICATION OF BIOREMEDIATION TO AVOID THE DENSE INTERIOR BIOTA. IF MANUAL REMOVAL OF MOUSSE IS NOT POSSIBLE DUE TO INACCESSIBILITY SPOT WASH WITH OIL SNARE.

TAG APPROVAL DATE: 5/8/90

ADEC ART WENNER Art Wenner
EXXON ANDY BAZ Andy Baz
NOAA GARY PATRICE Gary Patrice
USCG G.A. FELTER G.A. Felter

FOSC: My L

DATE: 5-12-90

Bioremediation not authorized

OG Wyer
 SEGMENT ST/ PY 2
 SUBDIVISION A

DATE Apr 1 25 90

CHECKLIST

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

LEGEND

1 Δ
 PI - No Subsurface Oil

2 Δ
 PI - Subsurface Oil

CT/C
 Continuous Distribution

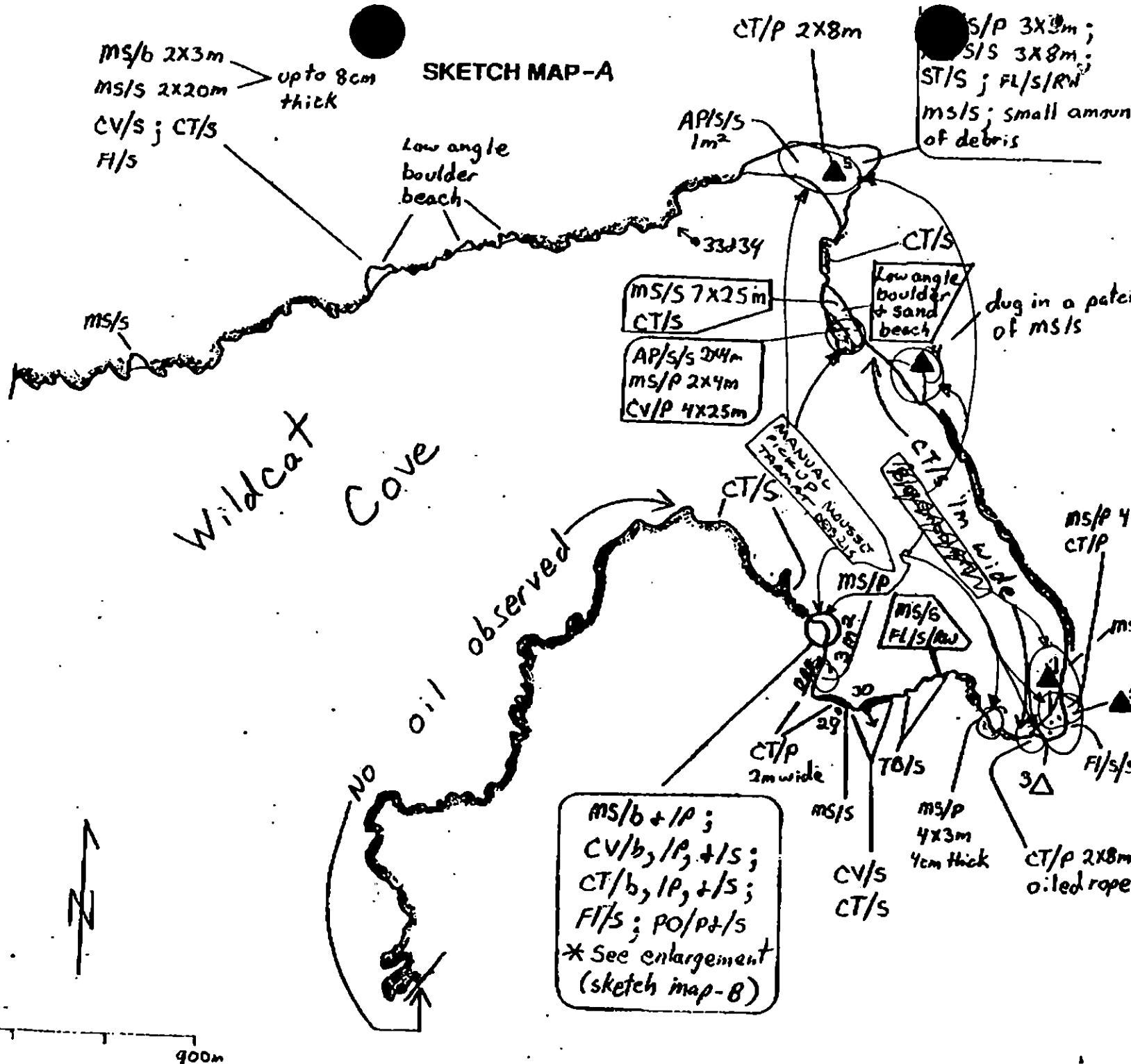
CT/B
 Broken Distribution

CT/P
 Patchy Distribution

CT/S
 Splashed Distribution

eee
 Oiled Vegetation

Photo location, direction, and number



OG Wyer

SEGMENT ST/ PY2

SUBDIVISION A (part of)

DATE Apr 125 90

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Bdry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. H/W/L/V/L
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Photo Location(s)

LEGEND

1 Δ

PT - No Subsurface Oil

2 Δ

PR - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

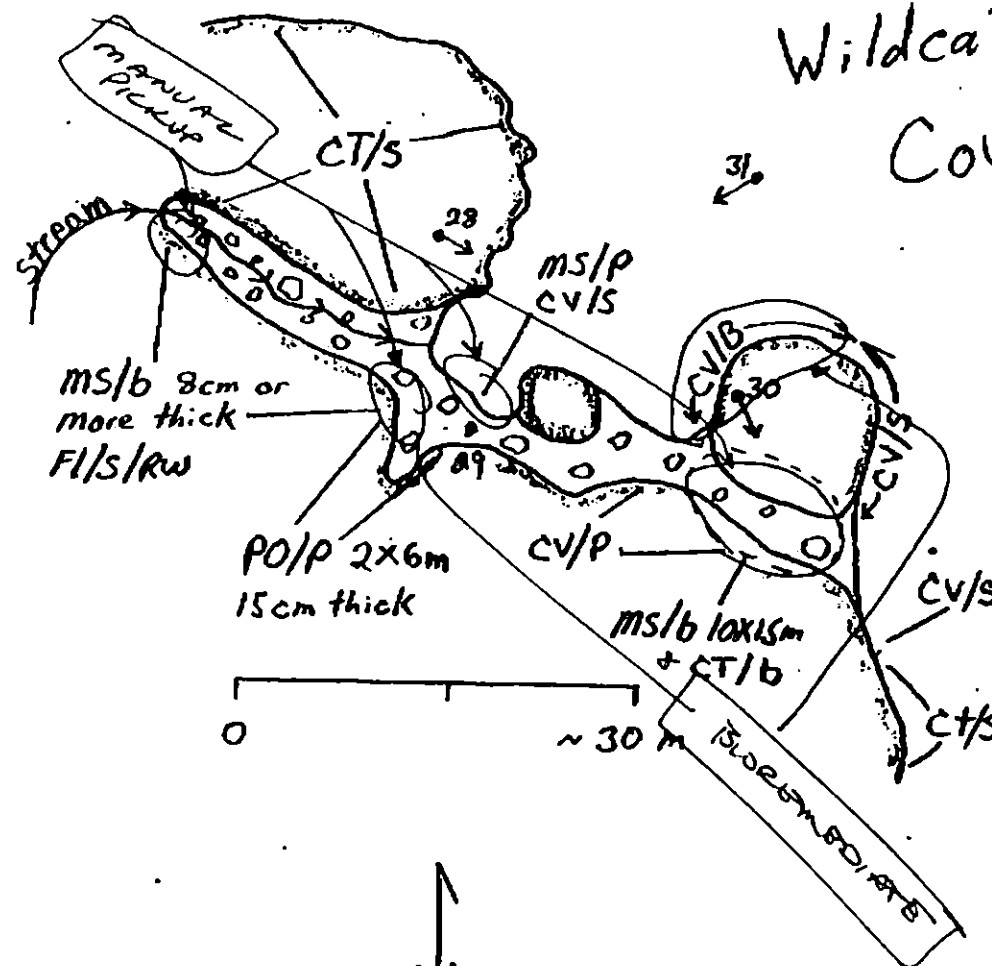
Splashed Distribution

Oil Vegetation

1 →

Photo location, direction,
and number

SKETCH MAP-B



Wildcat
Cove

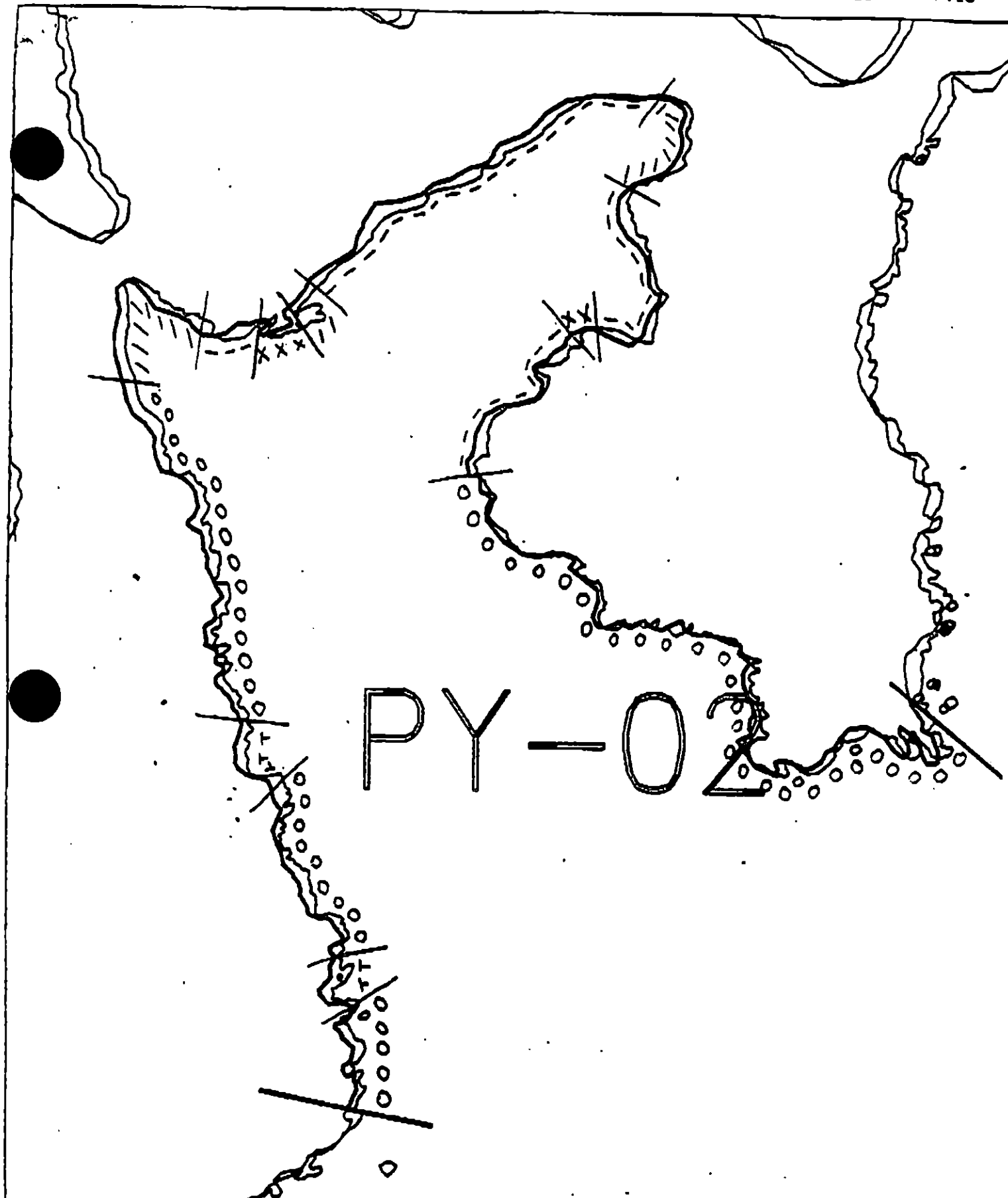
See Map A

Oil Character Length (m): AP PO CV CT ST MS PT TB

FL

NO

REVISION: 02/01/00



XXXX Wide

/// Medium

---- Narrow

TTT Very Light

OOO No Oil

PY-2

ADEC Segment Length: 11359m

0 500 1000 1500

Map Key: KEN-90a

Name: SawyerDate: 4-25-90

Data Entered:

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: *Charles H. Jones* DATE: 5/5/90

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:

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

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 5/4/90
ADEC *Art Weimer* *Art Weimer*
EXXON *Andy Teal* *Andy Teal* FOSC: *W L* DATE: 5-9-90
NOAA *Gary Petras* *Gary Petras*
USCG *G.A. Pfeiffer* *G.A. Pfeiffer*

OG Sau

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
- ☐ Ext. HML/LWL
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Pk Location(s)
- ☐ Photo Location(s)

LEGEND

1 Δ

Pk - No Subsurface Oil

2 Δ

Pk - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

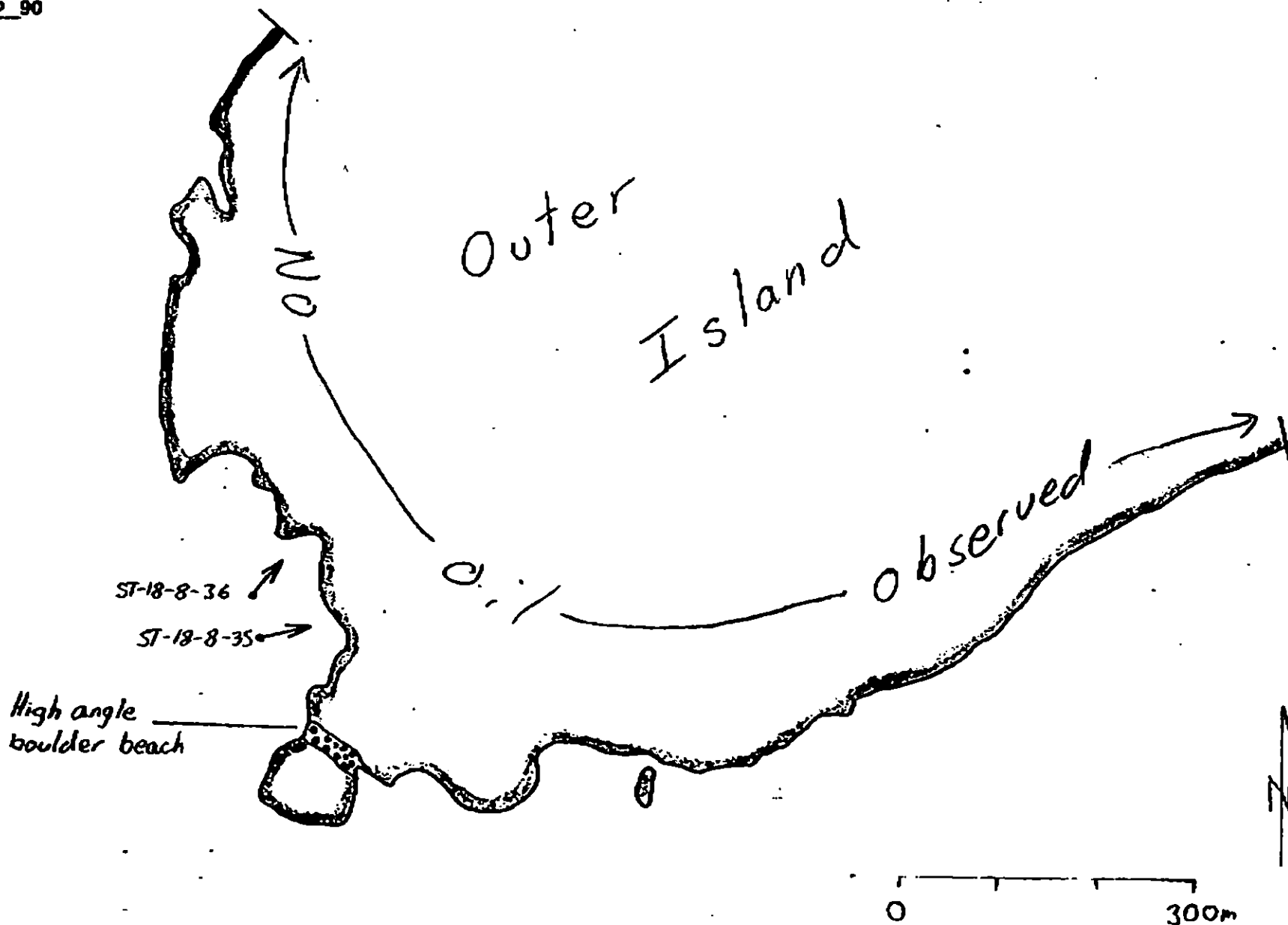
lll

Oiled Vegetation

1 →

Photo location, direction,
and number

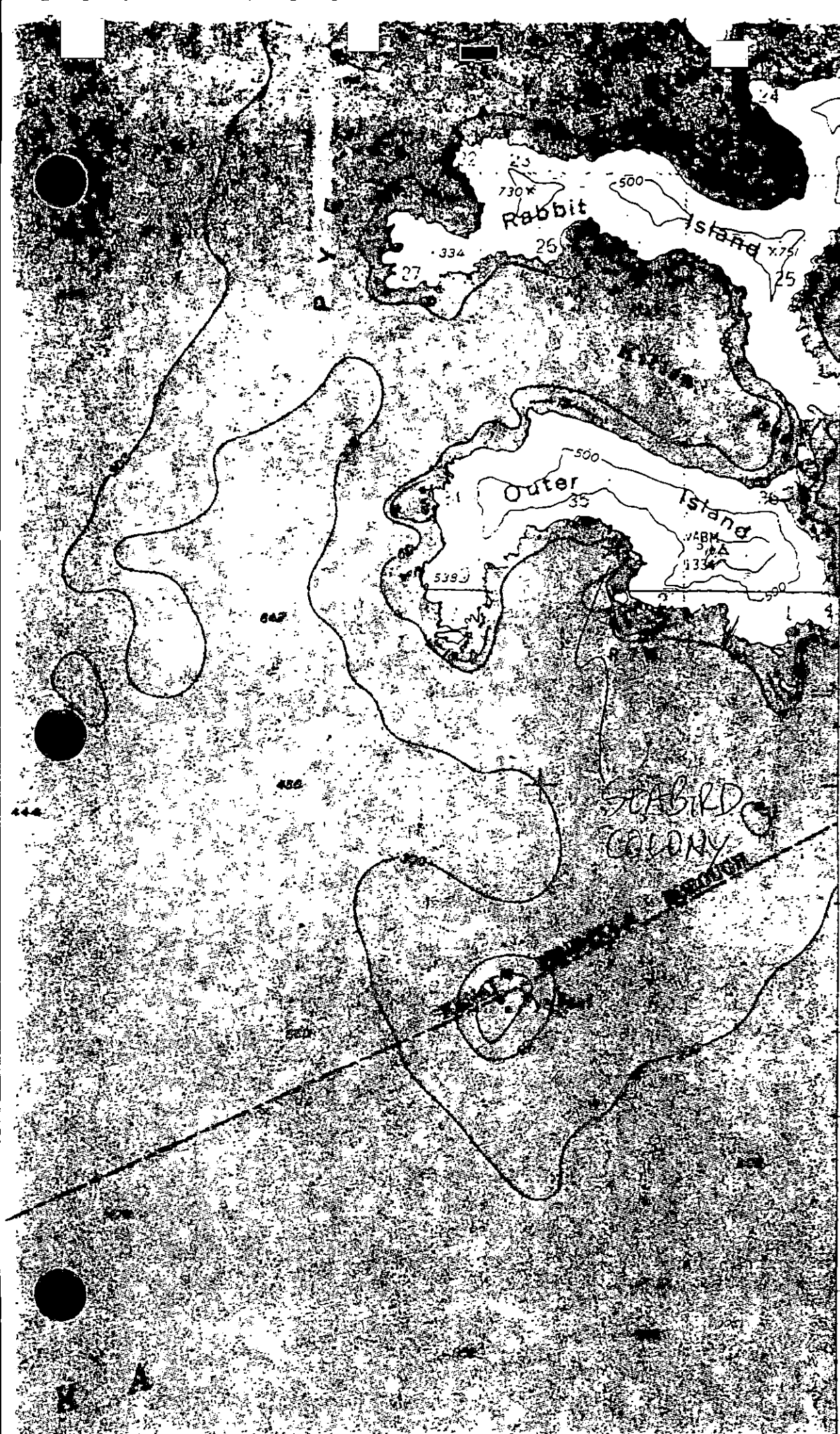
SKETCH MAP

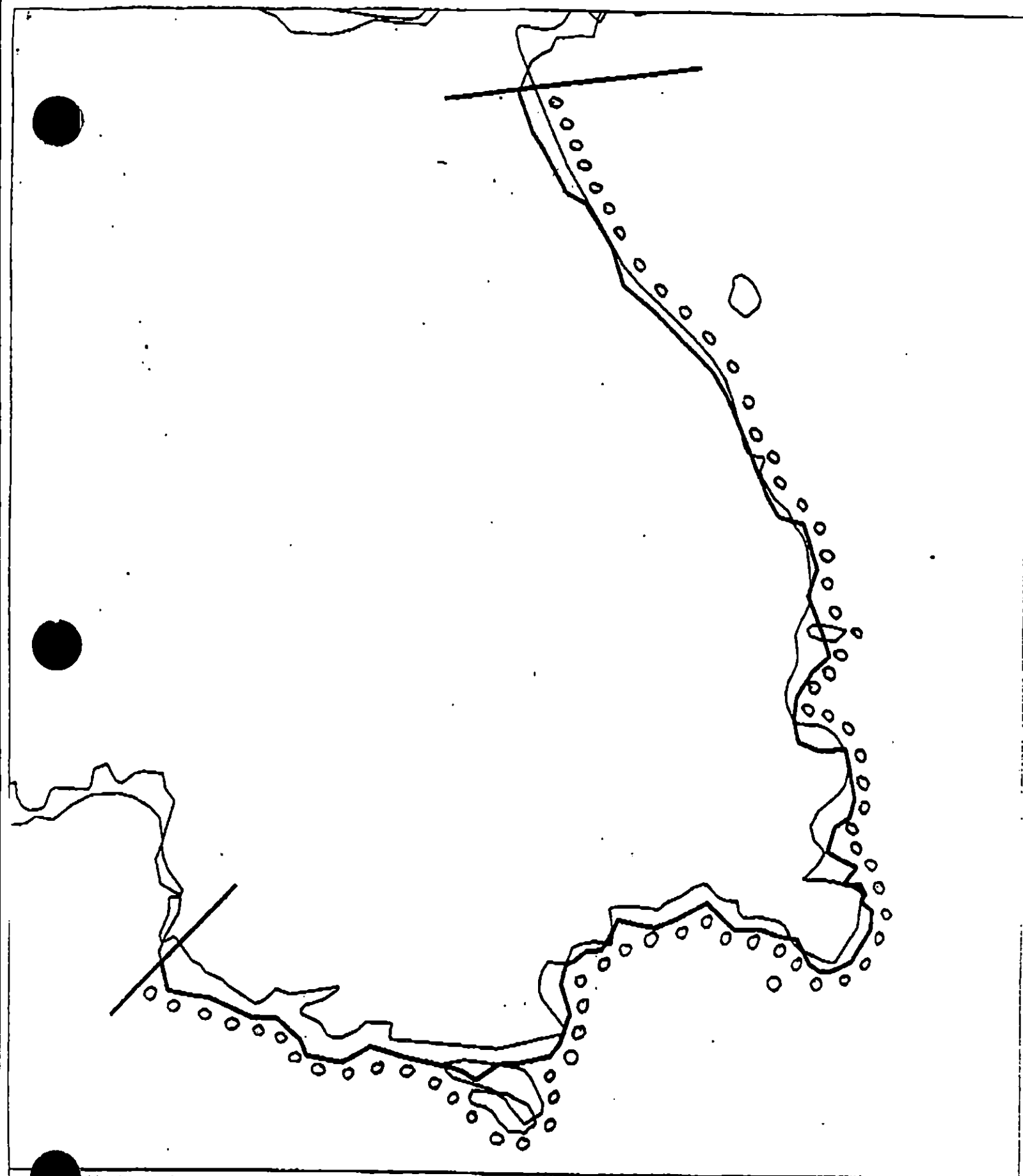


ECOLOGICAL MAP

3NP, 3CG
4GG
5R

PY-04





XXX Wide

/// Medium

--- Narrow

TTTT Very Light

PY-4

ADEC Segment Length: 2370m

Map Key: KEN-920

Name: SawyerDate: Apr. 25, 1990

1991 MAYSAP EVALUATION

KEMMI

SEGMENT: PY 002 SUB: A REGION: ~~ERS~~ SURVEY DATE: 5/12/91

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: Rachel Jan Doe Date: 5/24/91

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

N

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: MAY 24 1991

FOSC APPROVAL DATE: 5/29/91

ADEC

FOSC

EXXON

USCG

NOAA

The State will evaluate the need for further treatment.

**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.

Py002A.

ADEC CLARA S. Crosby.

Survey was conducted on cold-rainy day -
MS was observed to be lt. Brown & of a
padding consistency -

Treatment is suggested for sites/locations
#1, 2, 5, 6, 7. Manual removal of MS using hand
trawls/shovels & pompoms. is recommended.
Significant oiling occurs at M to U intertidal
& impact to L intertidal should be minimized.

MS is accessible at SITES 2, 6 on lowlying
Bedrock - pooled in crevasses.

Sites 1 & 5. would require rolling of C/sm B.
to access MS - Although it is also present - pooled
in Bedrock.

Site #7. Removal at this site would be labor
intensive - although suggest removal of fairly
accessible MS. -

This beach is fairly high energy. w/ lg B/c.
Bedrock. MS is in protected areas behind
B/c -

One area on west shore w/ previous oiling data -
was not observed -

MAYSAP FIELD SHORELINE COMMENT SHEET

P4002-A 1/2

TEAM NO. 4 SEGMENT P4 - 002 SUBDIVISION A DATE 7/4/12/91

ADEC

NAME CLARA S. Crosby

SIGNATURE

Clara S. Crosby☐ NTR☒ TREATMENT RECOMMENDED.See attached:

EXXON

NAME George P. Stiles

SIGNATURE

George P. Stiles 5/12/91☐ NTR

The mouse throughout the segment is very weathered and inert. If clean up is recommended it would be for cosmetic reasons. The work would be with hand tools and must be performed early on before the summer heat. The large boulders throughout the segment will hinder the success of any cleanup performed.

LANDMANAGER

NAME JOHN P. HARDISTER OF USFWS

SIGNATURE

John P. Hardister 5/13/91☐ NTR

Manual removal of mouse with tools/shovels and absorbent towels is recommended for the most heavily oiled sections of the segment. Cleanup would be labor intensive because of the nature of the terrain (cobble-boulder-bedrock) and safety for workers should also be a strong consideration for the cleanup operation. Thus, the most readily accessible areas with the most oil should be considered for cleanup.

USCG/NOAA

NAME CWO2 DONALD A. MACDONALD

SIGNATURE

Donald A. MacDonald☒ NTR

Although there are sporadic patches of TP & TO and very sporadic "mouse like" patches immersed in bedrock, clean-up measures would be excessively costly in view of their insignificant contribution to minimizing a threat to the public health or environment.

VORP/ DONALD A. MACDONALDDonald A. MacDonald

MAYSAP SHORELINE OILING SUMMARY

PAGE 2 OF 28TEAM NO. 4OG J. M. SempelsBIO J. BarrySEGMENT PY.002ADEC Clare CrosbyLANDMANAGER John Haddister FOR USFWSSUBDIVISION AEXXON George P. StilesUSCG/NOAA McMahon/McDonaldDATE MAY 12 1991TIME 06:21 to 10:07TIDE LEVEL -1.3 ft. to +5.5 ft.ENERGY LEVEL: ☒ H ☒ M ☐ LSURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELOWEATHER: ☐ SUN ☒ CLOUDS ☐ FOG ☒ RAIN ☐ SNOWTOTAL LENGTH SHORELINE SURVEYED: 850 mNEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONEEST. OIL CATEGORY LENGTH: W m M 212 m N - m VL 545 m NO 93 m US 1050 m

L O C	SURFACE OIL CHARACTER										SURFACE SEDIMENT	SHORE SLOPE	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO			TYPE	VHML	WIDTH	LENGTH	S	UI	
											m	m							
A1		P									Bd cb	M	3	10		*			See maps
		P									Bd cb	M	3	15		*			
					S	S	S				" "	M	4	50		*			
A2		P			P	P					Bd/Bd	M	4	150		*			"
A3					T	T					" "	"	4	100		*			
A4						T					" "	M	2	100		*			"
A5		S				S					" "	M	4	40		*			
A6		P									" "	L	4	30		*			
		P									" "	L	2	7		*			
				T		T					" "	L	4	40		*			
A7		S										M	15	10		*	*		
		S			S	S					" "	M	4	40		*			

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

MAYSAP-4.1 to 24, MAYSAP-4.1 to 3

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

PHOTO ROLL # MAYSAP-

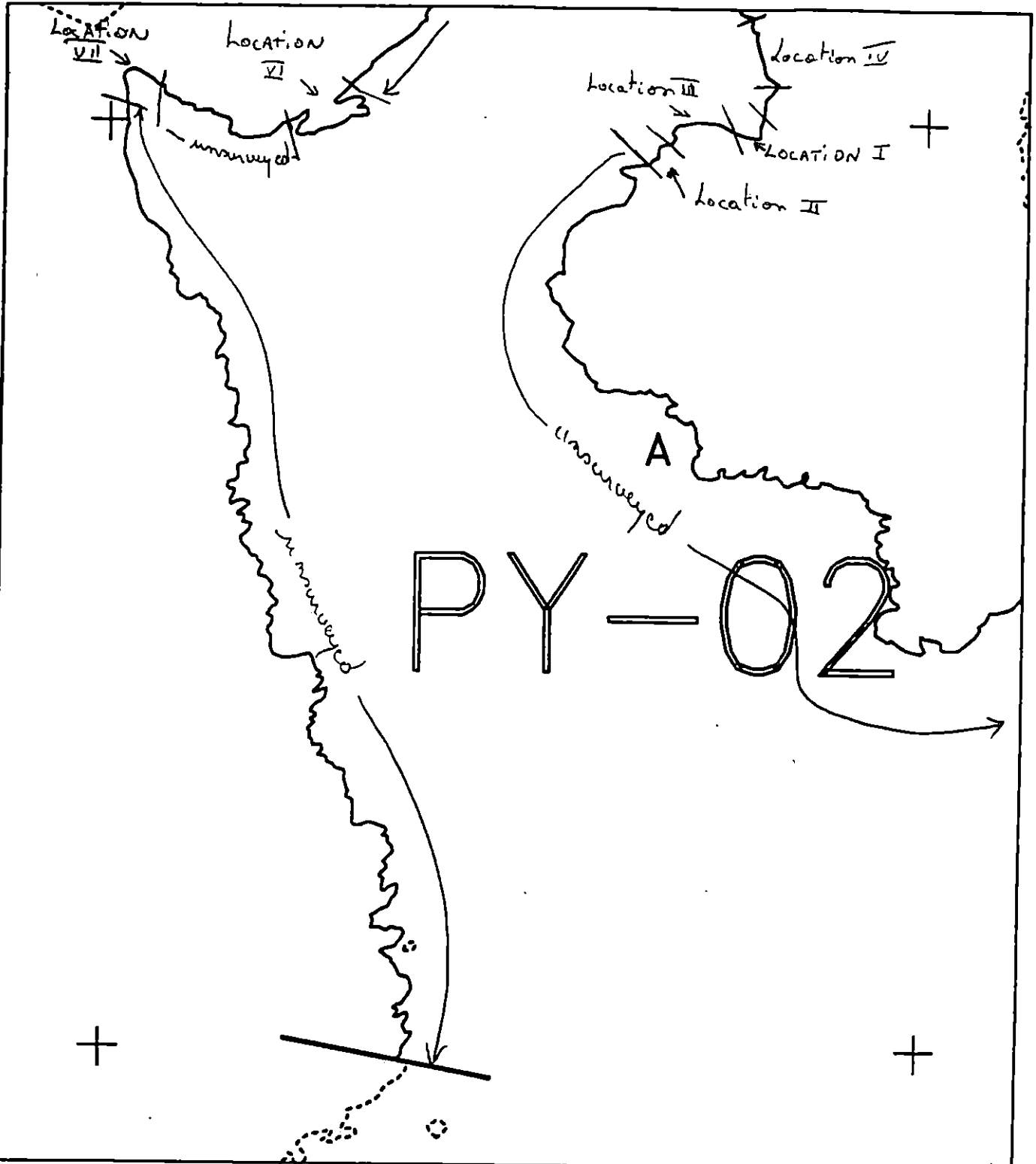
FRAMES

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE- SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		

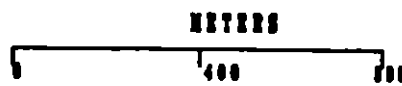
SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS: Subdivision PY.002.A consists mostly of steep bedrock shoreline sometimes with short patches of boulder or boulder/cobble talus. Seven locations known to have been oiled were surveyed. The rest was not surveyed and probably include some very light oil. The exact distribution and quantities of oil are very difficult to determine because of the abundance of very large boulders and the frequent boulder/cobble cover.

revised 5-16-91 gq
C. A. S. S. S. S.



PY002 A



AK State Plane Zone 4
697002a

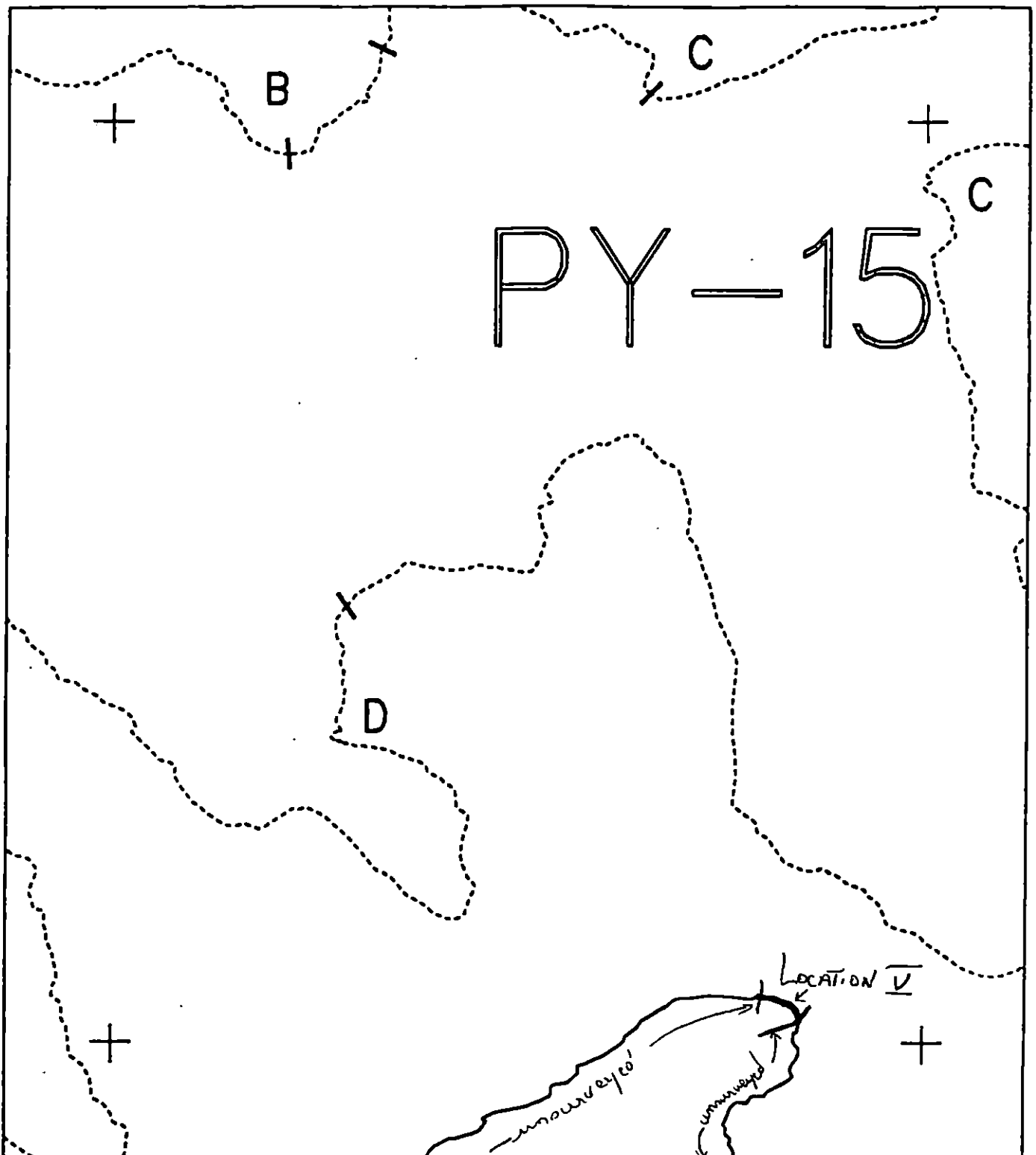
Subdivision Field Map

Map Key: KENPY002Aa

Name: J. M. Sempels

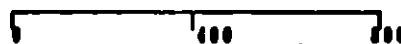
Date: May 12/91

reviewed 5.16.91 gy
E reviewed 5/16



PY002 A

METERS



AK State Plane Zone 4
89700200

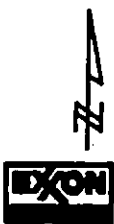
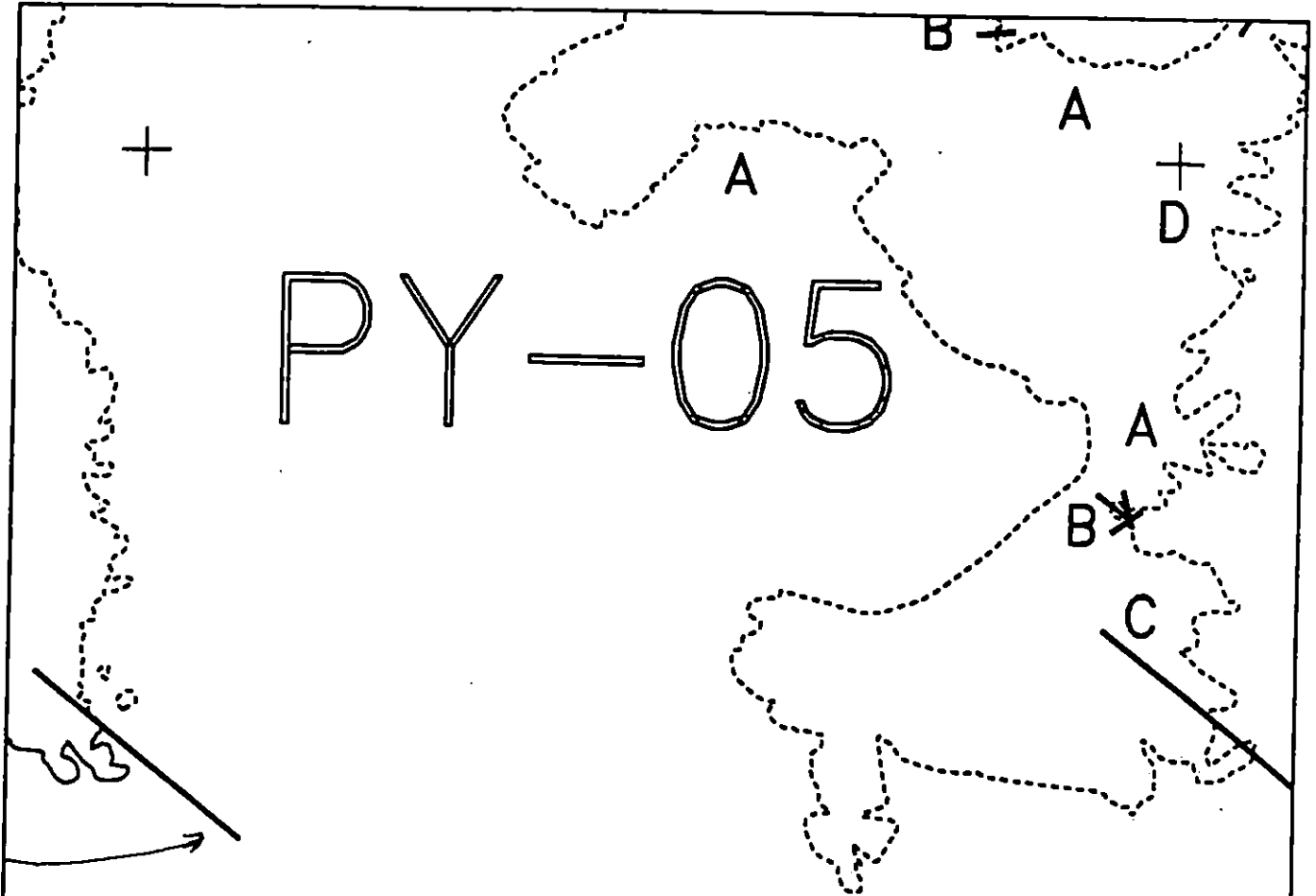
Subdivision Field Map

Map Key: KENPY002Ac

Name: JM Semple

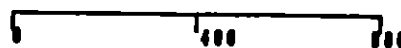
Date: May 12/91

reviewed 5.16.91 gy
ES reviewed 5/16



PY002 A

METERS



AK State Plane Zone 4
19780206

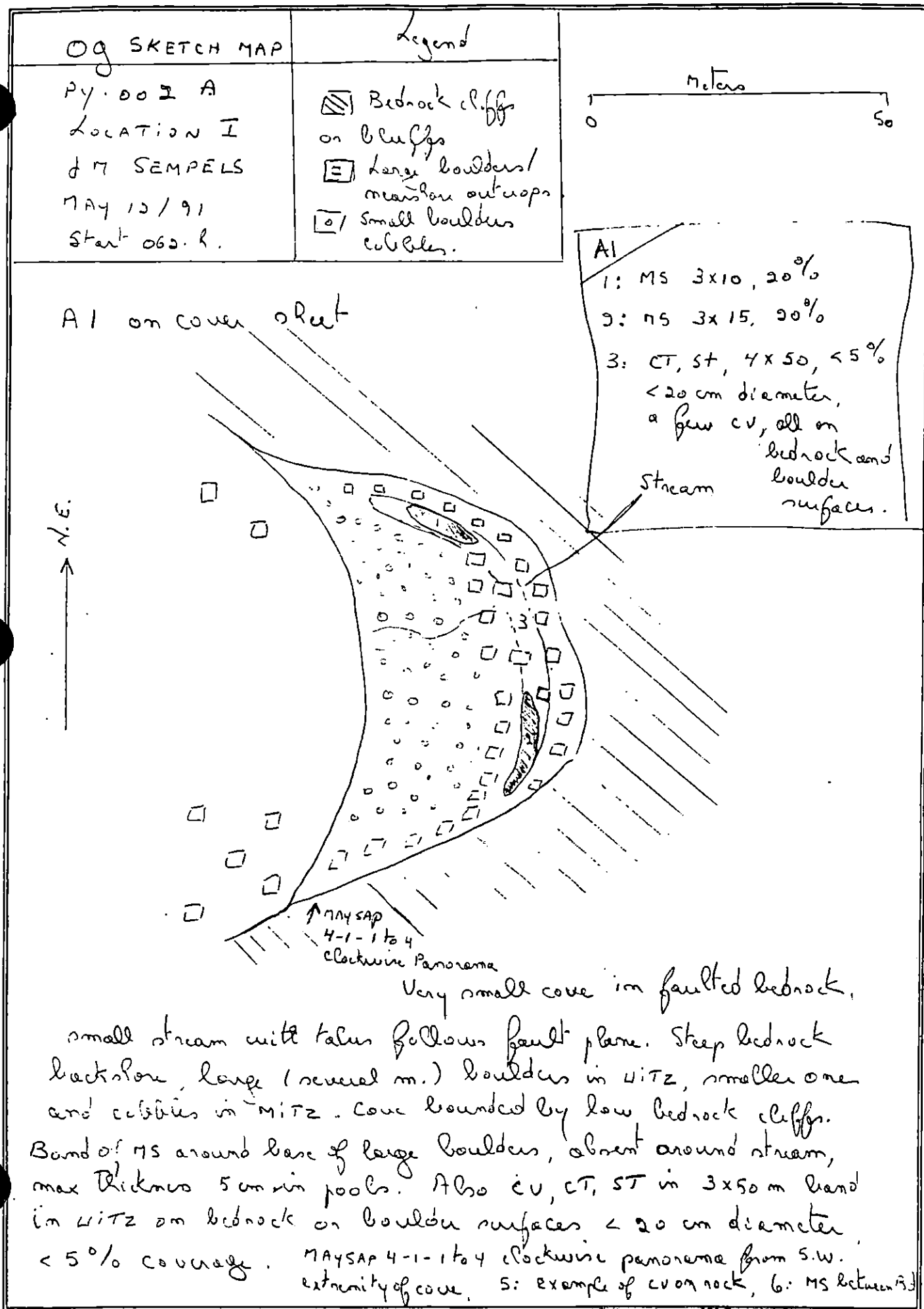
Subdivision Field Map

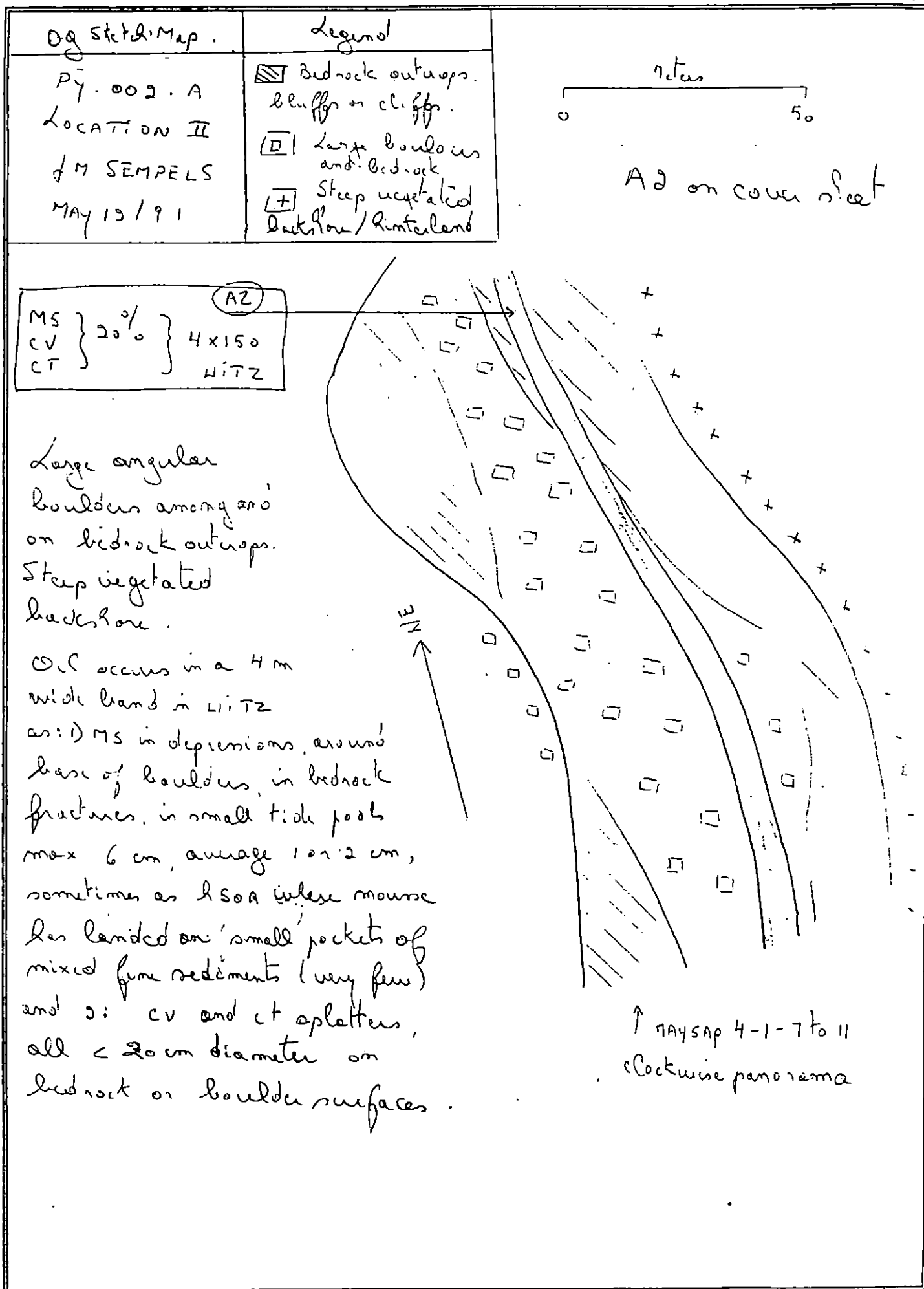
Map Key: KENPY002A6

Name: JM Sempel

Date: May 12/91

reviewed 5.16.91 gy
EC reviewed 5/16





Og Sketch Map	Legend
P4.002.A. Location III 17 Samples May 12 / 91	Rounded bedrock outcrops. Few large boulders. Steep vegetation Dakota / hinterland

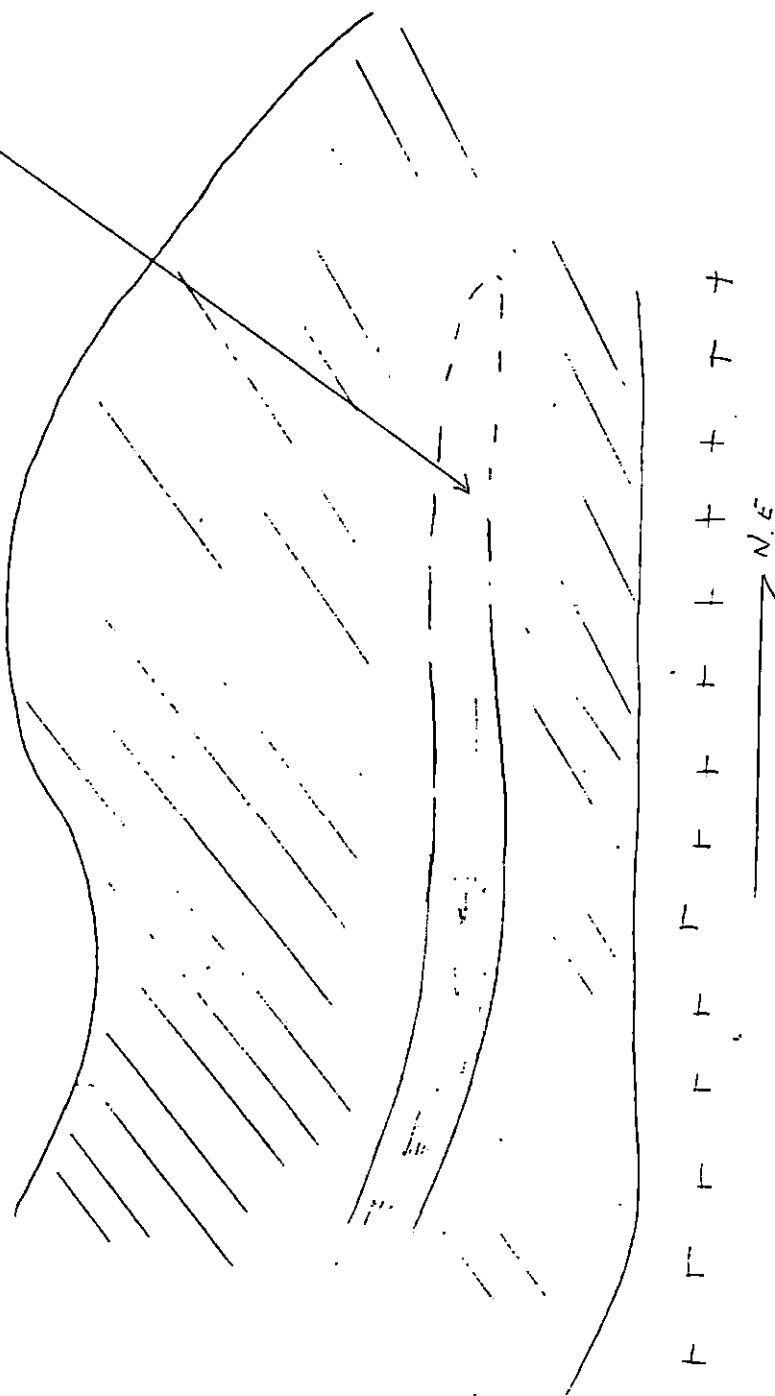
metres
0 50

A 3 in cover sheet

(A3)
 $\left. \begin{matrix} \text{CT} \\ \text{CV} \end{matrix} \right\} \left. \begin{matrix} < 20 \text{ cm} \\ \text{diam} \end{matrix} \right\} 4 \times 100 \left. \right\} < 1\%$

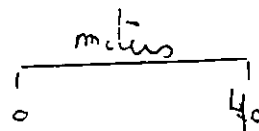
Shoreline made up of low rounded bedrock bluffs and nearshore outcrops. Few large angular boulders. frequent fractures in bedrock.

Oil occurs as few coats and covers, all less than 20 cm diameter coats on bedrock surfaces and covers at base of fractures. All within a 4 m wide band in Uitz, with less than 1% average coverage. Cover decreases from west to east when it disappears



Qg Sketd Map.	Legend
P4.002.A	 Low steep
Location IV	bedrock Few
dm Samples	large boulders
MAY 12/91	 Steep vegetated
	bedrock / hinterland

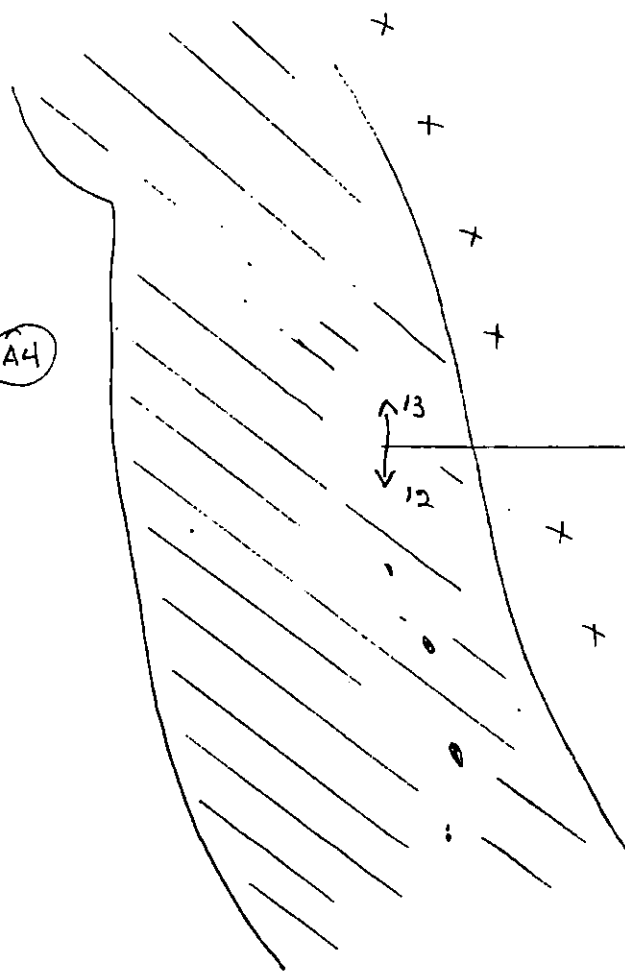
A4 on cover sheet.



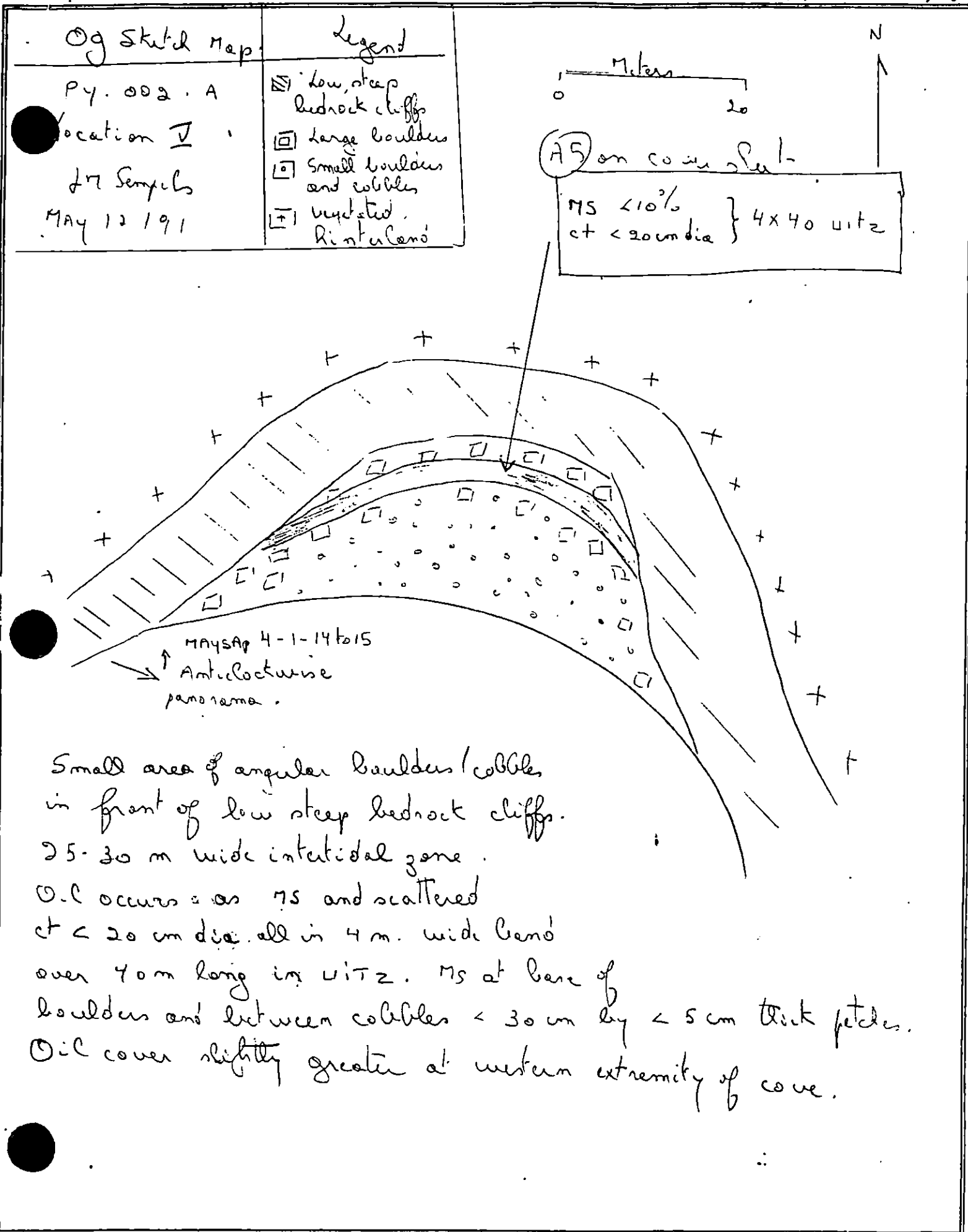
Shoreline of steep
bedrock bluffs occasionally
with a few large
angular boulders.

Very few st (<10%)
cobbles < 20 cm
dia on bedrock
surfaces. (1x100m)

1 large (400m dia)
house / rope pattice,
picked up.



MAYSAp 4-1-12/13



Og sketch map

Py. 002. A

LOCATION 6

J.M. SEMPELS

MAY 12/91

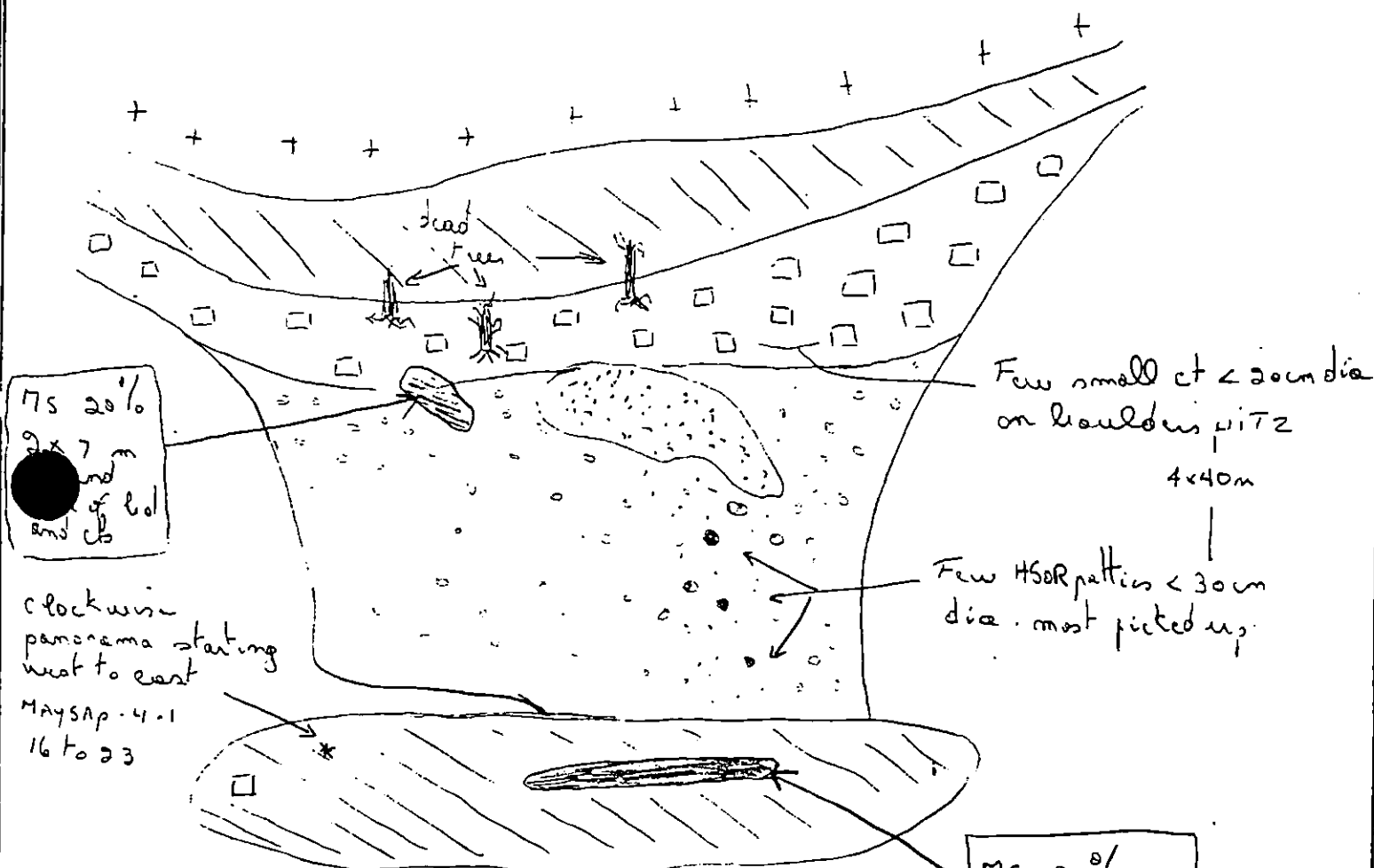
Legend

- Bedrock
- Large Boulders
- Cobble/Boulders
- Sand/gravel
- Vegetated
- Hinterland

metres
0 40

N

A6 on cover sheet



Area consists of a headland of low rounded bedrock elongated west-east, separated by a wide intertidal (~70m) zone of cobble/boulders/sand, from a steep bedrock cliffed hinterland fringed by a talus of very large angular boulders.

Diking occurs as: 1: 4x30m band of MS in fractured zone on bedrock headland
2: five H50R patters < 30cm dia
3: few ct splatters on boulder surface
and 4: 1 2x7m MS 20% patch around base of bedrock as shown above.

MS 20%

4 x 30 m

on bedrock

faulted area

max 5cm
thickness

MAYSAp 4-1.24

reviewed 5.16.91 JY
E5 revised 6/16

Og Skid Map

Legend

Py. 002. A

Location 7

17 Samples

May 12/91

-  Bedrock Suffs
-  Large Boulders
-  Boulder/Cobble
-  Step vegetation

Meters

0 30

(A7 on cover sheet)

N

1 large grease ball (not Exxon) Picked up.

MS, <10%

15 x 10

Abundant clean log debris.

MS } 5% } 4 x 40
CT }
CV }

in WITZ around
base of cb + Bd

MAYSAP 4.2.1

(close up of MS)

MAYSAP 4.2.2 to 3 gen. view of cove.

A 40m x 40m boulder cobble cove between
steep bedrock sides. Abundant clean log and large
angular boulders in WITZ. 2 major patches
of oil: 1: 4 x 40m band in WITZ of CT, CV,
and MS together 5% coverage (ct + cv on boulder
and bedrock surfaces, MS around base of boulders and in
bedrock fracture zones, all < 20cm diameter)

and 2: a much wider area on the western side of cove
of MS between boulders & cobbles sometimes as R50R or AP in top
5cm of sediments < 10% coverage binding blocks together in both WITZ
& outside. Exact distribution and coverage of oil impossible to determine
because of abundance of large boulders.

reviewed 5.16.91 gq
cccccccccccc

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 12, 1991	0615 - 1007
SEGMENT #	PY002	TIDAL HEIGHT (Range)	-1.3 => +5.5	
SUBDIVISION	A	BIOLOGIST	JIM BARRY	
SEA STATE	0-1 ft	WIND SPEED/DIRECTION	Variable 0-10, light rain	

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Location I - (A1)

This oiled location has patchy mousse in the upper zone of the intertidal. Biota are scarce directly in or adjacent to the oiled site, as they are at this tidal level throughout the area. Littorine snails are occasionally observed on mousse patties. Black lichen (*Verrucaria* sp.) is found slightly above and scattered around the oiled site. The abundance and diversity of biota increases towards the lower intertidal. Green and brown filamentous or film-like algae are moderately abundant slightly below (1-2 ft) the level of the oiling. Very near this level, branched red algae, mainly *Endocladia* sp., form a low turf on many boulders. Limpets and littorine snails are quite abundant in this zone, which grades in its lower extent to a zone dominated by barnacles (*Semibalanus cariosus* and *Balanus glandula*), with dense aggregations of dog whelks (*Nucella lima*; adults, juveniles). *Fucus* is sparse to moderately dense below and overlapping the barnacle zone. The lowest intertidal zones are thick with several species of red (*Palmeria*, *Membranoptera*, *Ptilota*), green (*Cladophora*, *Ulva*) and brown (*Alaria marginata*, *Laminaria dentigera*) algae, as well as a diverse community of invertebrates (isopods, amphipods, polychaete worms, limpets, chitons, sea stars, anemones, sponges, bryozoans).

This pocket beach is somewhat protected from large swell, but is clearly moderately exposed. Mussels are not abundant at this site, except for small patches scattered between boulders throughout the location. The high zones are nearly bare, with increasing abundance of algae towards the lower zones, and very rich and high cover of algae in the lowest intertidal zones and into the subtidal.

Manual Pickup was performed on this beach. Additional cleanup operations, if recommended, will have little or no adverse effect on the biotic communities at the location, owing to the location of the oil in the high intertidal zone.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	2	
Seabirds	5	60	
Waterfowl	2	8	
Gulls/Kittiwakes	2	25	
Shorebirds	1	5	
Corvids			
Other Birds	1	3	

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

Shoreline subdivision map showing important biological features attached.

PY002-A Biology Report, continued**Location II - (A2)**

Mousse patties at this location were present from the extreme upper intertidal to the lower edge of the upper zone, with the greatest oiling in the highest zone. At the highest level there was little biota in close proximity to the oil, or on any other substrata at that zone. The oiled locations slightly lower in the intertidal were among a sparse cover of green and brown filamentous algae. Otherwise, the zonation of the intertidal biota was similar to location I (above). This site was slightly more exposed than location I and has slightly higher diversity of species and greater dominance by large brown algae in the low intertidal zone (*Alaria marginata*), and bull kelp (*Nereocystis leutkeana*) offshore. Mussels are not present in great abundance, but are common as young juveniles (probably less than 1 year old) amongst *Fucus* and other turf-forming algae in the middle intertidal zone.

Manual cleanup was performed at this location. Additional cleanup will have no adverse effects on the biota at this location.

Location III - (A3)

Oiling here is similar to location II. Little biota, other than scattered black lichen, green algae, and a few littorine snails, is present in the vicinity of the oil. Littorines are, however, found directly on the mousse, though in lower density than adjacent sites with no oil. Here again, mussels are abundant as young juveniles amongst the turf-forming species of headland boulders and in small aggregations throughout the site. *Fucus*, barnacles, dog whelks (*Nucella*), littorines, and many species of red and brown algae are present as adults and juveniles.

Manual cleanup, if recommended, will likely not adversely impact the biota at this site, providing cleanup is limited to the upper intertidal zone.

Location IV - (A4)

This oiled site is similar to Location III, but is somewhat more exposed to waves. Oil is present as scattered patches of mousse, and as a scattered coat. Most of the oil is in the extreme high intertidal zone, where little biota normally occurs. Sparse patches of black lichen, green algae, and some sparse littorines, are present near the oil patches. Littorines are again found on the oiled areas, but in lower densities than adjacent areas on clean rock. At lower intertidal levels, the abundance and diversity of the biota increase. The general patterns of distribution are similar to those described above, with high cover of red and brown algae in the lowest zones, *Fucus* and barnacles in the middle zone, and scattered cover of red and green algae, as well as limpets, littorines, and barnacles above. Mussels are more abundant at this exposed location, and are present in quite dense patches on the middle to high zone of exposed headlands.

Manual cleanup of this site, if recommended, will likely not adversely affect the biota, providing cleanup is restricted to the upper zone.

Location V - (A5)

Oiled area at this location is similar to those at other sites. Little biota is present at the tidal level of the majority of the oil. Sparse littorine snails, barnacles, and limpets were present in the high zone at the oiled site. Some littorines and limpets were present on the oil. Scattered patches of filamentous green algae (*Urospora*?) and black lichen also were present near the oiled areas. Somewhat lower in the intertidal, but within 5 m or so of the oil, small patches of mussels, and filamentous red algae were common. In the middle zone, dog whelks (*Nucella lima*) were present in dense patches, with

PY002-A Biology Report, continued

high densities of acorn barnacles (*Balanus*) covering many cobbles. The lowest zone had dense red and brown algae, and the subtidal adjacent to the beach was covered by large brown algae. Sea stars, anemones and several other invertebrates (littorines, limpets, hermit crabs, chitons, isopods, and others) were quite abundant in the low zones.

This location is a cobble beach which is exposed to medium waves. The abundance of most species is low compared to bedrock outcrops, and cliffs located within the segment, but there still is a well developed community of biota at this location. No evidence of recent oil-related impacts are apparent.

Manual cleanup was performed during the survey. Additional treatment, if recommended, will likely not adversely affect the biota in at this location, unless cleanup is performed during the eagle breeding season, and the nest reported on the MAYSAP maps is nearby and active..

Location VI - (A6)

This location has several habitat types with varying degrees of oiling. Most of the oil is located along the upper intertidal zone where little biota is present (Area A). At area A, scattered littorine snails and limpets are present, with black lichen, sparse to moderate filamentous green algae (*Urospora*) and little else. At area B, (see sketch map), scattered patches of HSOR are present in a mussel bed in the middle to high zone. This is a sensitive habitat. In this cobble/pebble beach (see sketch map) mussels have consolidated the sediments into a fairly well formed mussel bed between the cobble. The observed HSOR patches were removed.

This beach is generally quite healthy looking. Most species are present in all life stages, and are recruiting and reproducing. Additional cleanup at this location should be restricted to areas A and C. Cleanup should **NOT** be performed on or around the mussel bed (area B) unless caution is used to pick up only obvious and small patties, with as little disturbance to the mussel bed as possible. Area C appears to need cleanup more than A or B. No adverse effects should occur from cleanup activities in these areas, so long as the cleanup impacts and activities are restricted from the more sensitive site.

Location 7 - (A7)

This is a fairly exposed pocket beach with the majority of the oil in the high to middle intertidal zone. Filamentous green algae is the most abundant organism near the oiled site. Littorine snails, limpets, and scattered patches of barnacles (*Balanus*) also are moderately abundant adjacent to the oil. Many cobbles are rolled by waves and thus have little biota on them. At the margins of the wave effects, more biota are abundant, with scattered patches of mussels, barnacles, and *Fucus* in the middle zones, and dense red algae in the lowest zones.

Manual cleanup was performed on this beach during the survey. Additional cleanup, if recommended, will not adversely affect the biota on the beach.

General Comments

The general condition of this long segment is very healthy. Much of the segment is exposed to high surf. Cobble beaches are highly disturbed by this wave action, resulting in little biota in habitats where cobble are mobilized by storms. In contrast, headlands and bedrock cliffs are highly exposed, but have a richer cover of biota. Low intertidal habitats generally have dense cover of red and brown algae. In the lowest zones and offshore in deeper water, several species of large kelps or brown algae are very abundant.

PY002-A Biology Report, continued

Recruitment was observed for most of the important species, though not as abundantly as was found on other beaches.

List of Common Species from PY002-A

A. Marine Plants

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

II. Marine Animals

1. Sponges - Porifera
Halichondria sp., Halichondria panicea, Ophlitaspongia pennata
2. Anemones
Anthopleura artemesia, Epiactis ritteri, Metridium senile, Urticina crassicornis,
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaetes -
Nereidae - Nereis spp.
Serpulidae -
Serpula sp., Crucigera sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles
Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs
Paguridae (hermit crabs), Oregonia gracilis, Pugettia sp.,
 - d. Isopods
Circana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
11. Mollusca
 - a. Chitons - Mopalia sp., M. mucosa, Katharina tunicata, Tonicella lineata,
 - b. Snails - Gastropods
Fusitriton oregonensis, Littorina scutulata, L. sitkana, L. keenae, Nucella lamellosa, N. lima, Searlesia dira
 - c. Limpets
Acmaea mitra, Lottia digitalis, L. persona, T. persona, T. scutum, Siphonaria thersites
 - e. Mussels and Clams
Agriodesma saxicola, Chlamys hastata, Hiatella arctica, Modiolus modiolus, Mytilus edulis, Pododesmus cepio, Prototheca staminea, Saxidomus giganteus

PY002-A Biology Report, continued

12. Echinoderms
 - a. Brittle Stars - Ophiolus sp., ?
 - b. Sea stars

Dermasterias imbricata, Leptasterias hexactis, 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 -

Bald Eagle	2
Mew Gull	3
Glaucous-winged Gull	5
Black legged Kittiwake	20
Surf Scoter	3
Western Sandpiper	5
Red necked phalarope	20
Barrow's Goldeneye	5
Harlequin Duck	3
Pelagic Cormorant	25
Pigeon Guillimot	10

BIO LOCATION - MAP

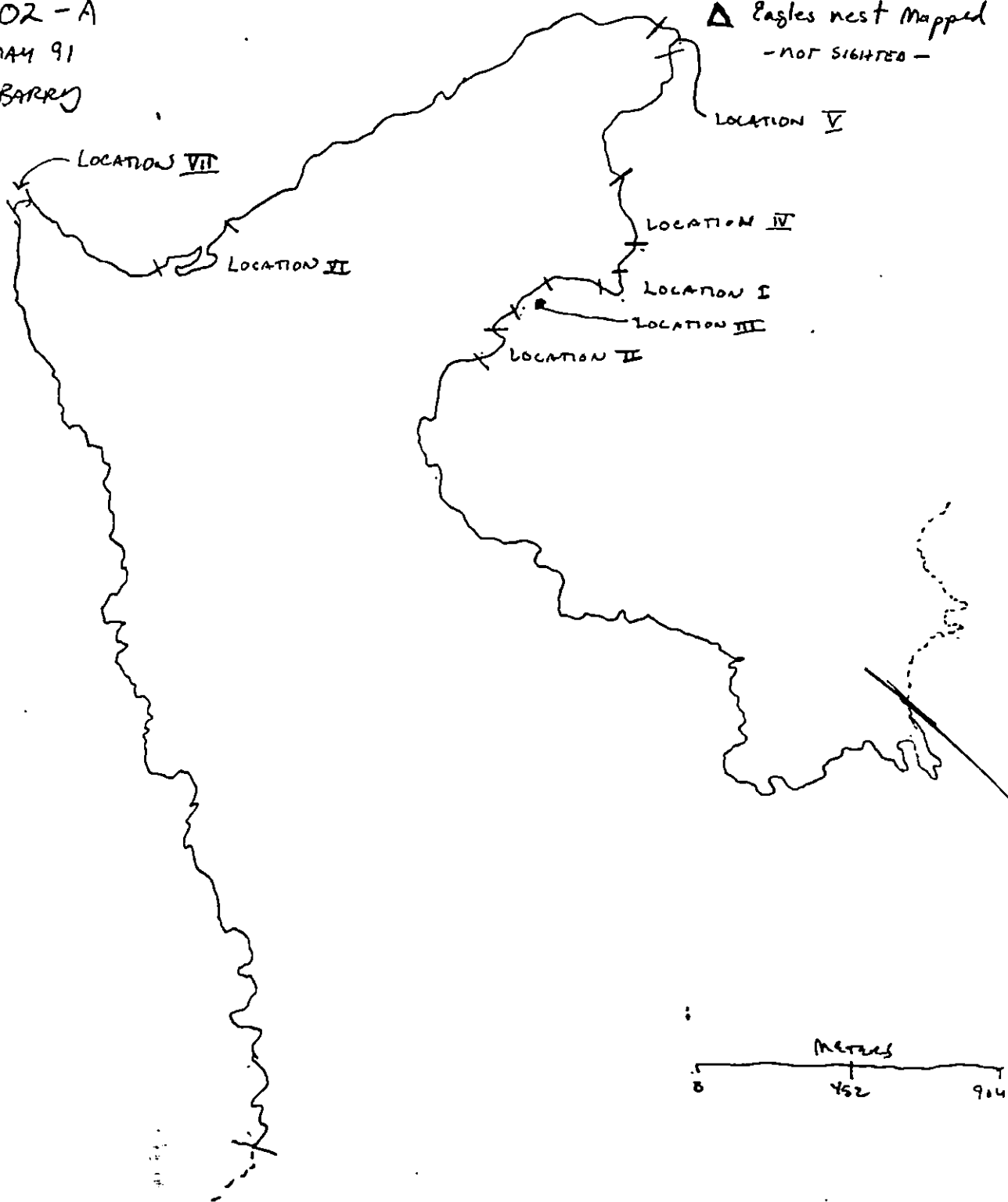
P4002-A

12 MAY 91

JP BARRY

P4002-A 24

△ Eagles nest mapped
- NOT SIGHTED -



BIO SKETCH MAP

P4002-A

LOCATION I

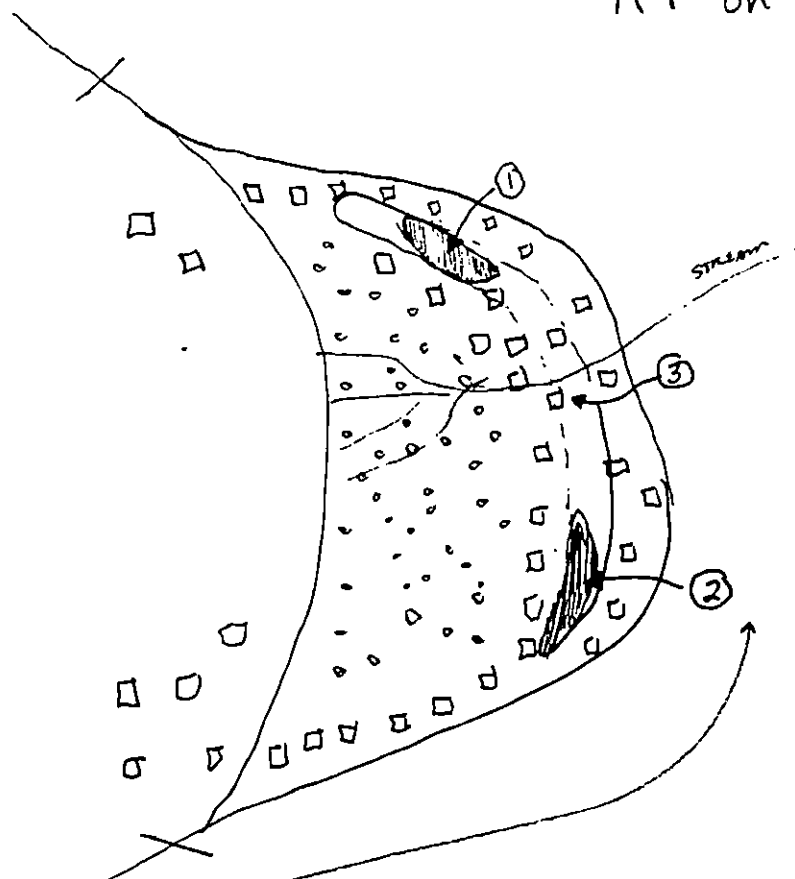
12 MAY 91

J P Barnes

- - Large Boulders / Nearshore Outcrops
- ▨ - Bedrock Cliffs
- ◻ - Small boulders / cobbles

0 meters 50

A1 on 06 map



1-3

Sparse biota near oil. Only a little black lichen. Slightly below (1-2 ft), filamentous or film-like green and brown algae are moderately abundant. Below this zone, algae and invertebrates increase in abundance, with moderate to dense littorines, limpets, and barnacles. The extreme low zones and subtidal habitat have dense brown algae.

BIO SKETCH MAP

P4002-A

LOCATION III

J.P. Barry

(2 MAY 1991)

- ▣ Bedrock Outcrops/bluffs or cliffs
- Large boulders and bedrock
- ⊕ Steep vegetated backshore

Meters

0 50

ms?
cv
ct } 20%

A.2

A2

OILED SITE -

SCATTERED BLACK LICHEN, GREEN FILM-LIKE ALGAE, & a few Littorine snails. Some Littorines present on oil, but are more abundant elsewhere.

lower zones

Dense red & brown algae in low zone. Fucus is moderate to dense in the middle zone. Barnacles in dense patches.

BIO SKETCH MAP

P4 002-A

LOCATION III

J P BARRY

12 MAY 1991

Legend

 Rounded Bedrock
outcrops, Large Boulders

 Steep Vegetated Upland

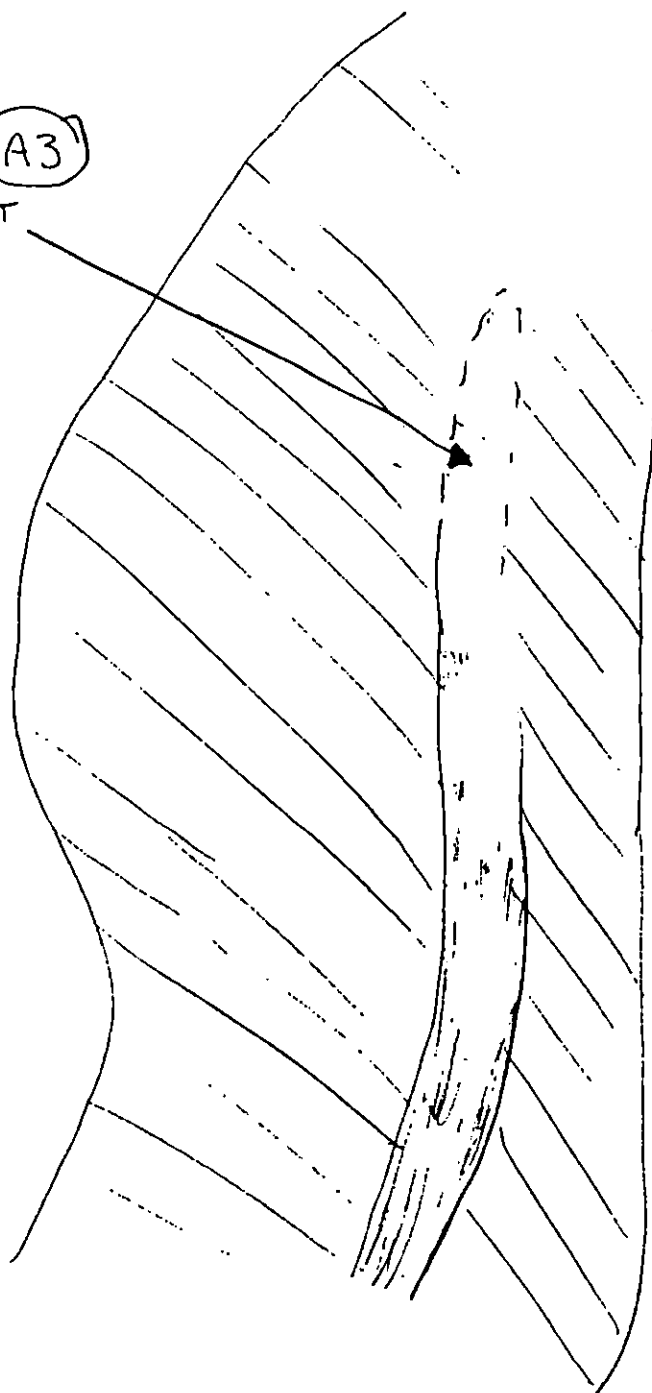
P4002-A

4/28

Meters
0 50

Little Biota near oil, or
generally present at this tidal
level. Black lichen, sparse
littering snails,
mussels, Fucus,
Red & brown algae. MANUAL
PICKUP, IF PERFORMED, WILL NOT
NEGATIVELY IMPACT THE
BIOTA AT THE OILED SITE.

A3
CT



BIO SKETCH MAP

PY002-A

LOCATION IV

Legend

 Low Steep Bedrock

 Upland Vegetation

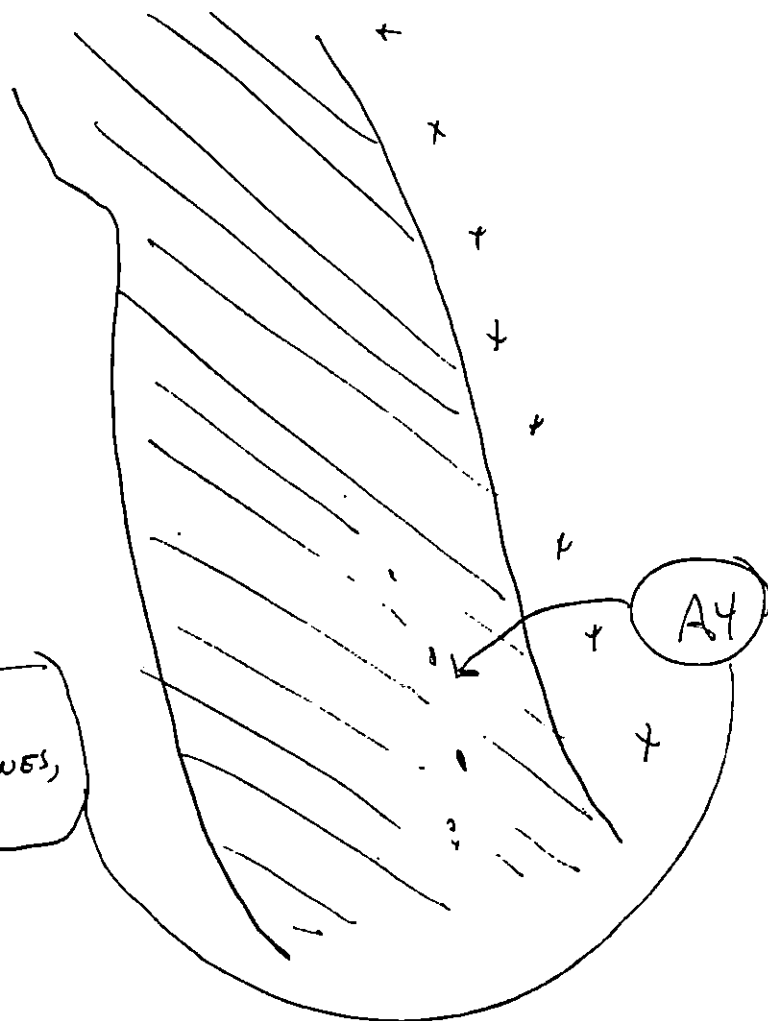
PY002-A 25/28

J P BARRY

12 MAY 97

metres
0 40

SPARSE BLACK LICHEN,
GREEN ALGAE, SPARSE LITTORINES,
LIMPETS.



BIO SKETCH MAP

PY002-A

LOCATION II

JP BARRY

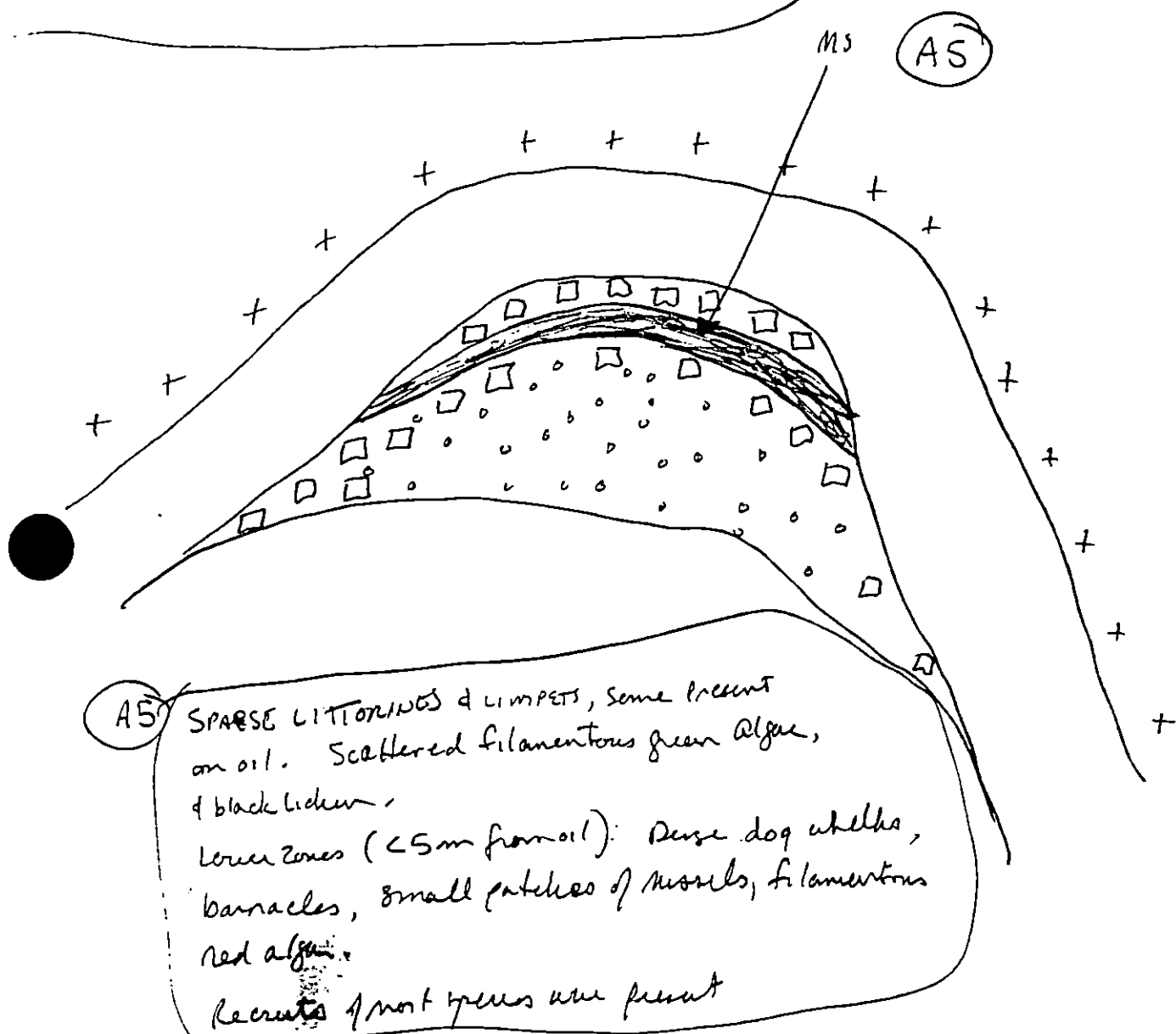
12 MAY 91

Legend

-  Low steep bedrock cliffs
-  LARGE BOULDERS
-  Small boulders / pebbles
-  Vegetation / Upland

PY002-A 26/28

Meters
0 20



* An Eagle nest is mapped near this location, but was not observed.

BIO SKETCH MAP

P4002-A

LOCATION 6

BARRY

12 MAY 91

- ▣ Bedrock
- LARGE BOULDERS
- Cobble/Boulders
- Sand/Gravel
- ⊕ Vegetated Highland

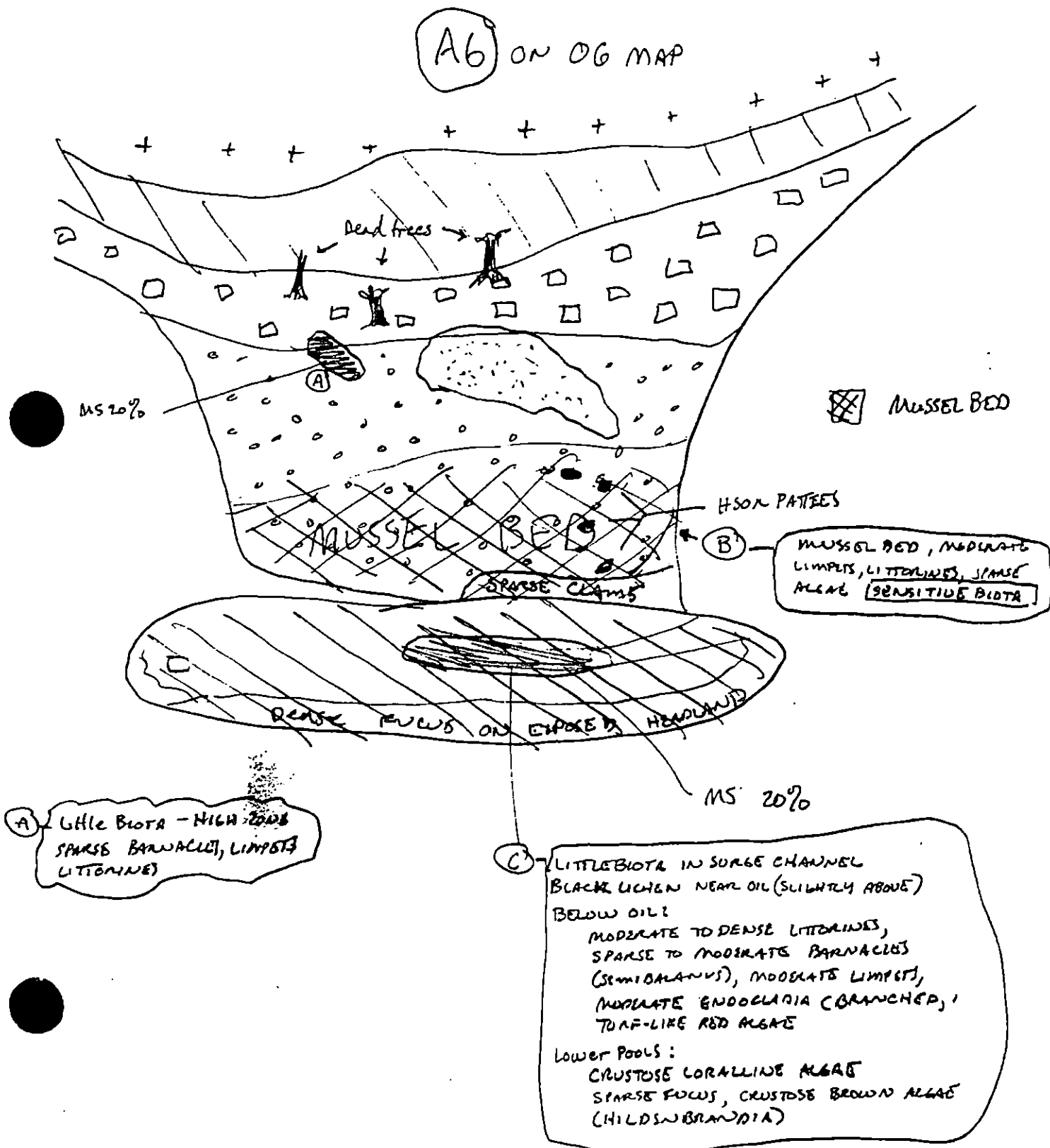
LOCATION 6

P4002-A

27/2

Meters
0 40

A6 ON OG MAP



BIO SKETCH MAP

Legend

-  Bedrock Cliffs
-  Large Boulder
-  Boulder/Cobble
-  Steep Vegetated Upland

Meters
0 20

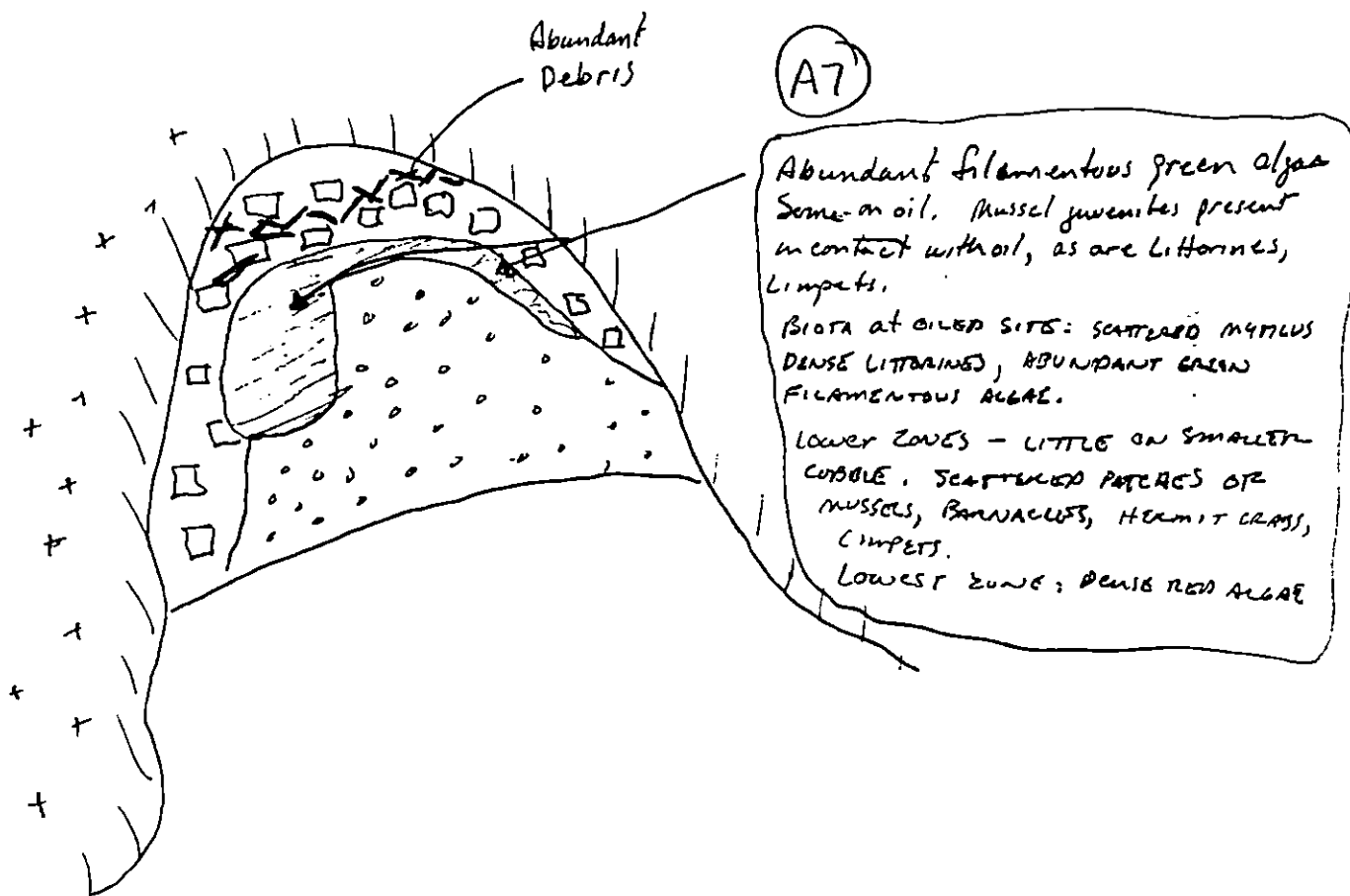
P4002-A 4/28

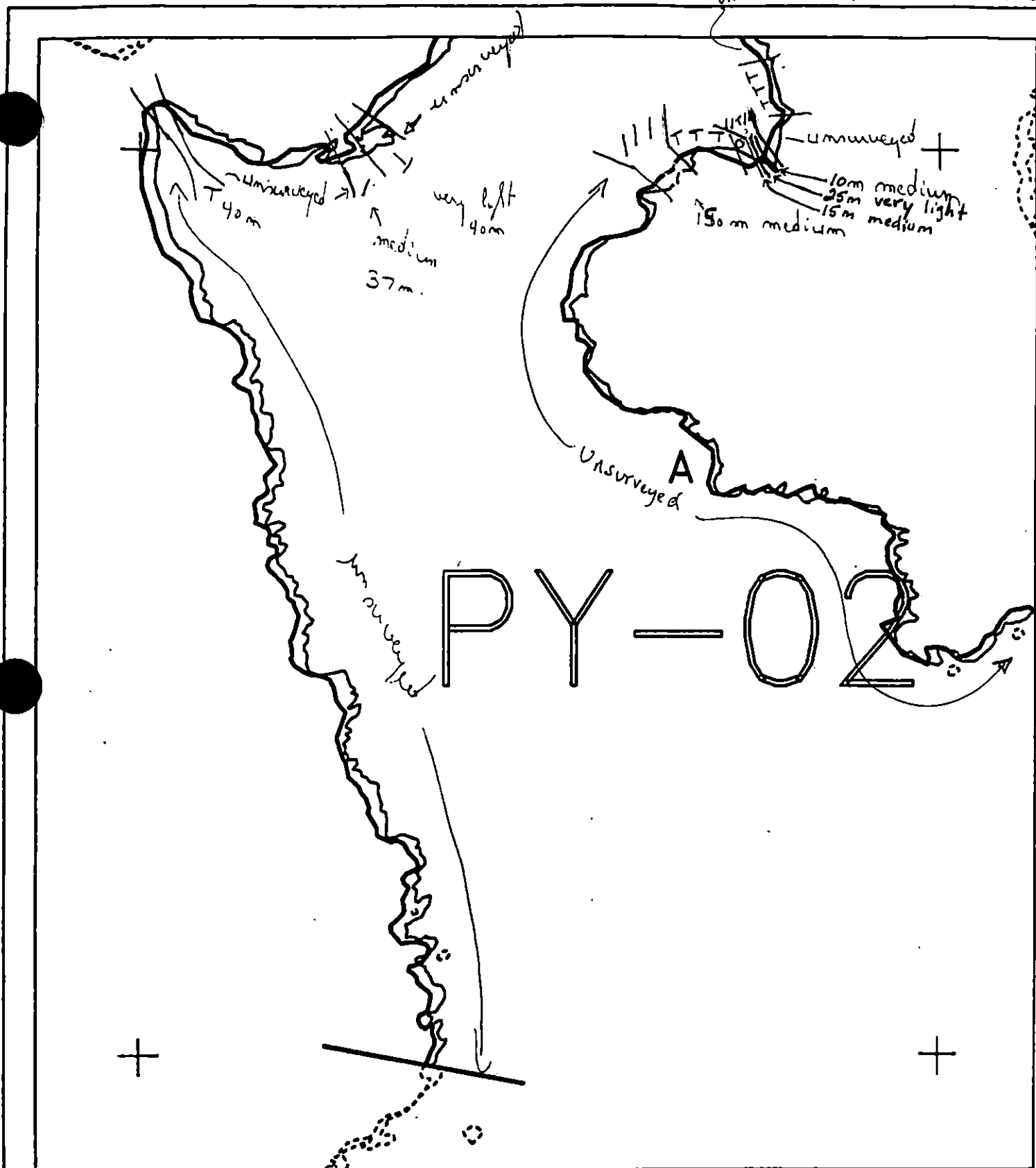
P4002-A

LOCATION 7

J P BARRY

17 MAY 1991



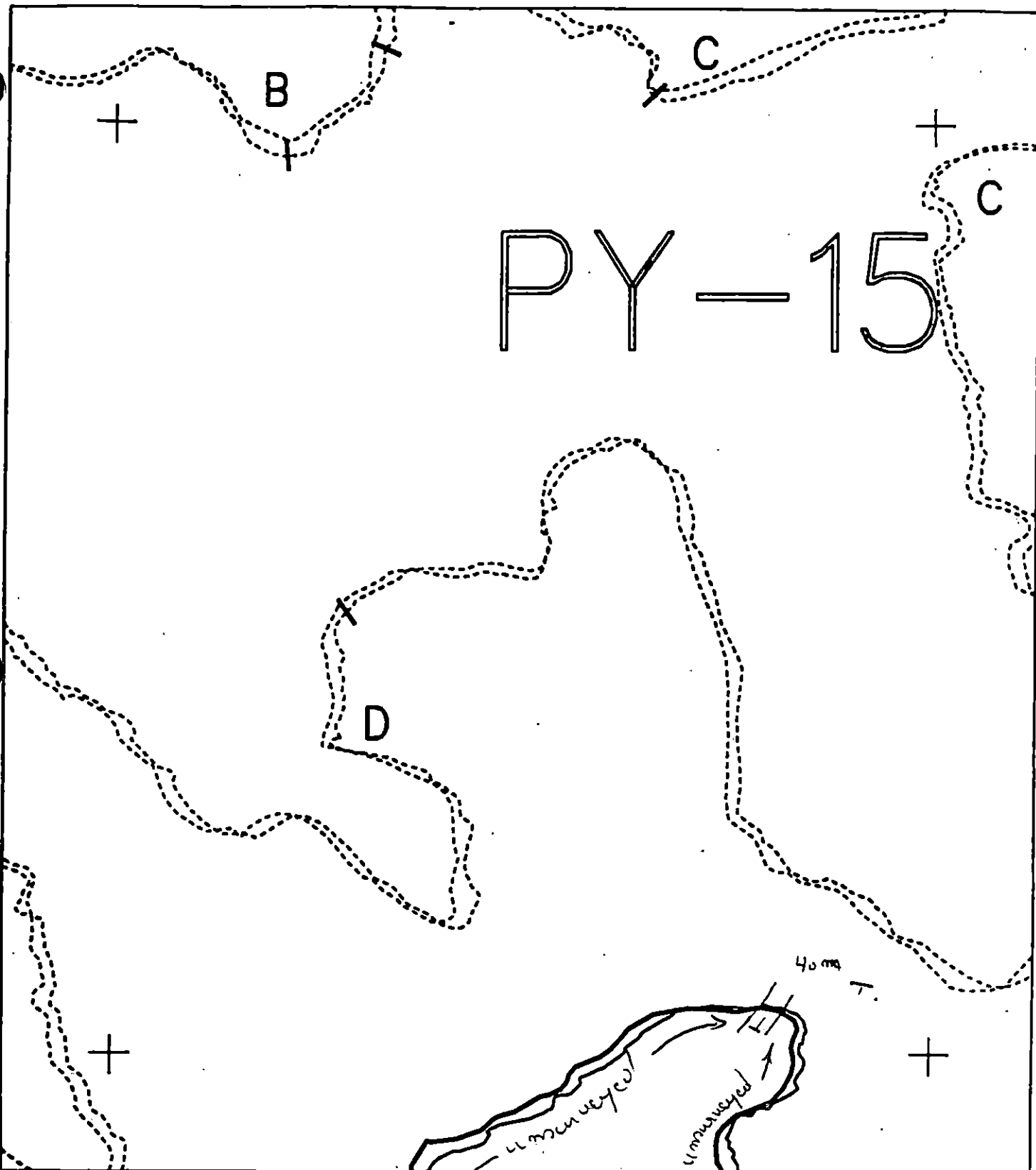


XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

PY002 A
 ADEC Subsegment Length: 11350m
 METERS
 0 400 800
 AK State Plane Zone 4
 apy002aa

Subdivision Field Map
 Map Key: KENPY002Aa
 Name: 17 Samples
 Date: MAY 12/91
 Date Entered:





PY-15

XXXX

Wide

PY002 A

Subdivision Field Map

////

Medium

ADEC Subsegment Length: 11359m

Map Key: KENPY002Ac

Narrow

METERS

Name: Jim Semple

TTTT

Very Light

0

400

800

Date: May 12/91

0000

No Oil

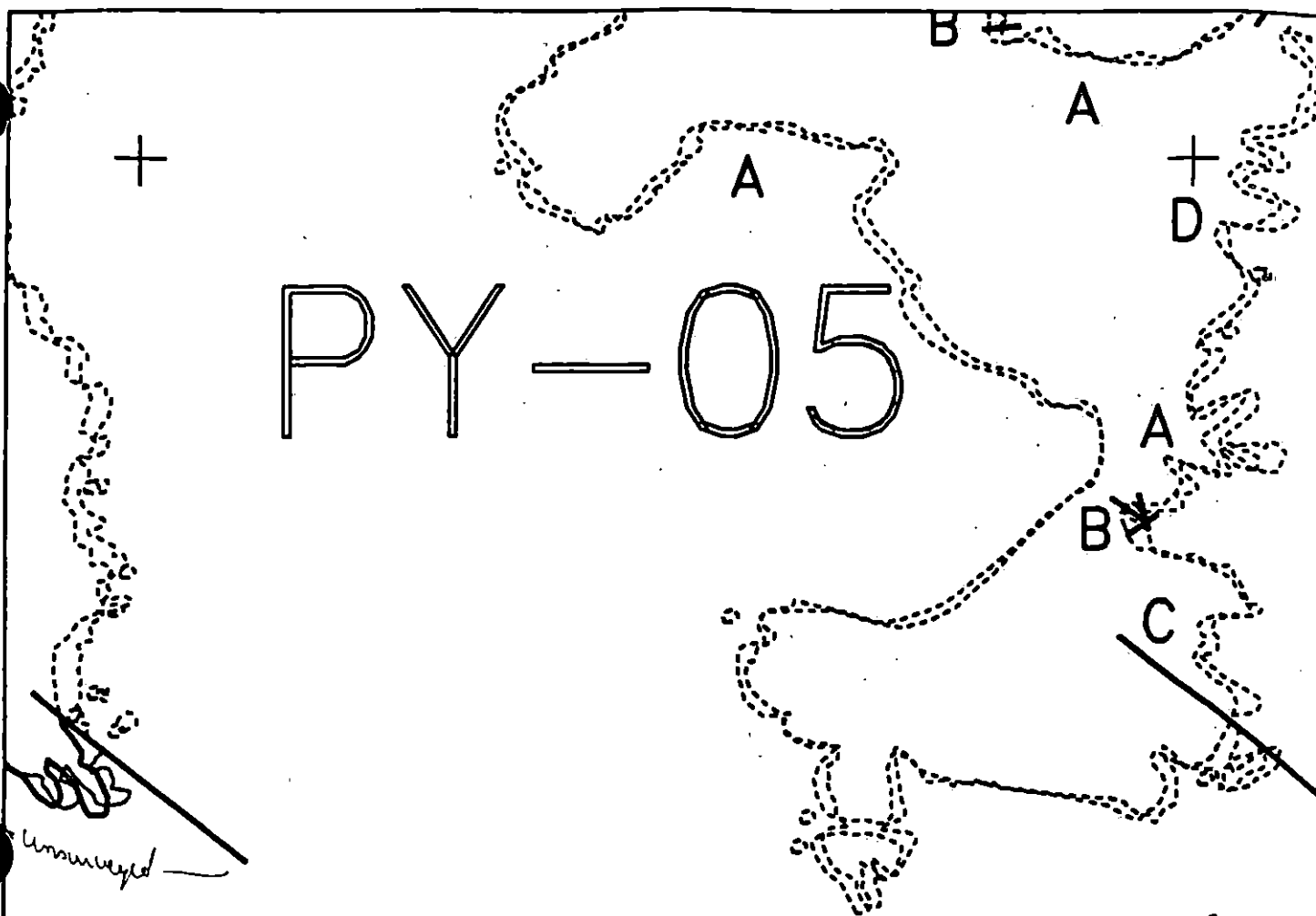
AK State Plane Zone 4

apv002ac



Data Entered:

PY-05



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

PY002 A
 ADEC Subsegment Length: 11359m
 METERS
 5 400 800
 AK State Plane Zone 4
 apy002ab

Subdivision Field Map
 Map Key: KENPY002Ab
 Name: J. M. Sempala
 Date: May 12/91
 Data Entered:



ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT PY-2 SUBDIVISION A (1 of 1)

WORK WINDOW

Manual Pickup
Tarmat Removal

OPEN

Spot Washing

OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

5T Bald Eagle Nest

NO CONSTRAINT. USFWS 6/1/90 map indicates no active nest within 400m of Subdivision A work site.

OTHER ECOLOGICAL CONSIDERATIONS

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

FOSC

[Signature]

Date

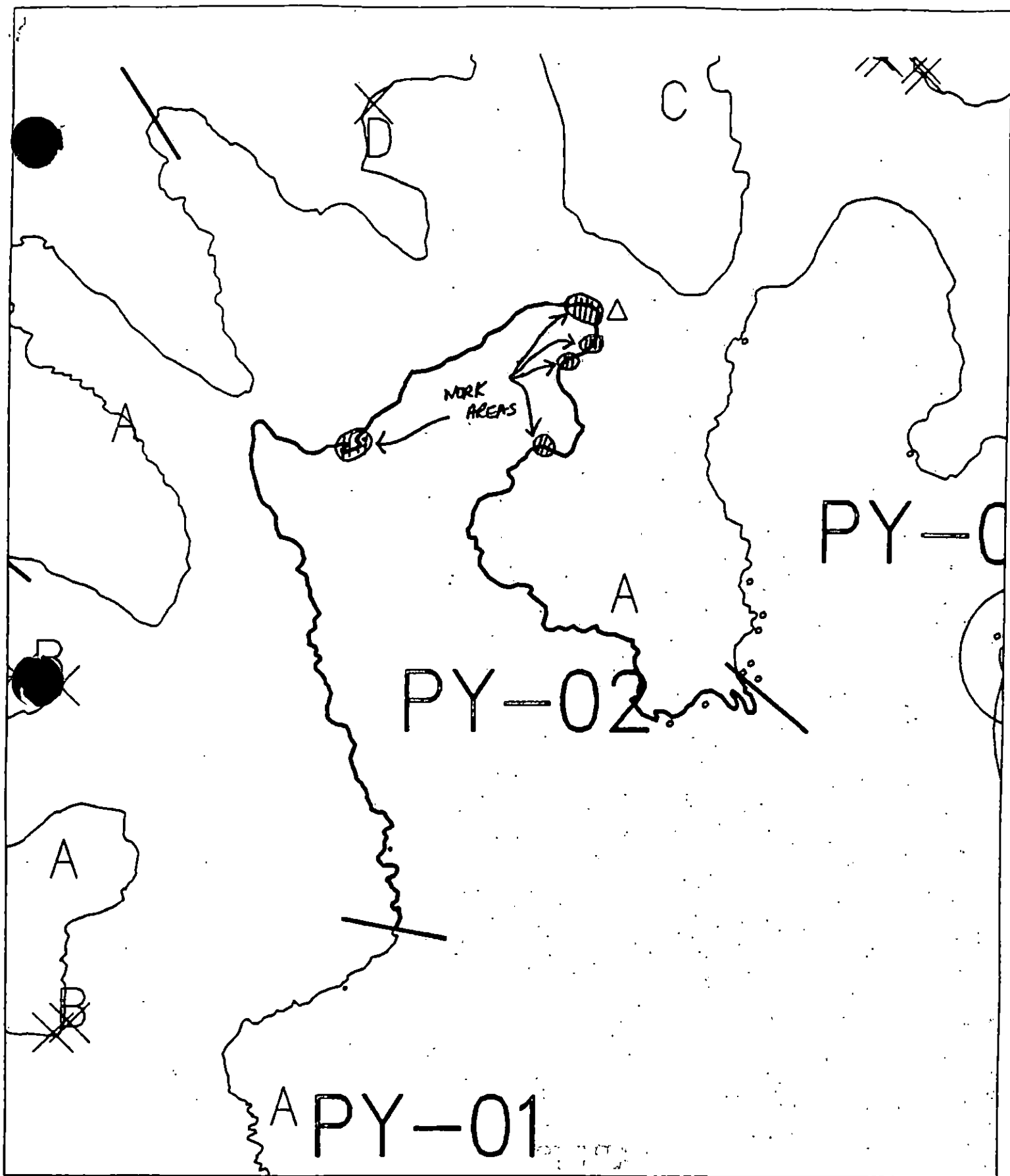
6/14/90

Prepared by

[Signature]

Date

6/14/90



Exxon Company, USA

Map Key: KEN-PY-2

June 10, 1990

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

0 738 1471

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

1 Inch = 2414 feet

ARLIS
Alaska Resources
Library & Information Services
Anchorage, AK