OIL SPILL PUBLIC INFO. CENTER
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1991
v.21

[Shoreline evaluations, 1991].

Prince William Sound AB-51 to AP-40

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REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/AB-51

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ AB-51 SUBDIVISION A (1 OF 1) DATE 4/2/90

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)
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 1376 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 _____ FOSC:_____ DATE:_____
NOAA _____
USCG _____

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 unoiled 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 / AB 51 SUBDIVISION: A DATE 4-3-90

USCG
NAME Alec J. McMahon SIGNATURE [signature]

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

1. No Oil present.

ADEC
NAME GREG WINTER SIGNATURE [signature]

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

No oil observed.

LAND MANAGER
NAME Mike Bennett ADNR SIGNATURE Mike Bennett

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

No oiling present on segment.

SHORELINE OILING SUMMARY

REVISION NO. 08-22-90

SG D. FitzGerald USCG J. McMahon SEGMENT ST/ AB-51
SO D. Raider LAND REP M. Bennett SUBDIVISION A
EXXON S. Norman ADEC G. Winter TIME 14:40 to 15:00
TEAM NO.: 15 TIDE LEVEL: 40 to 50 cm above low DATE Apr 1 2 / 90
EST. SUBDIVISION LENGTH: 1616 m ☐ Sun ☑ Clouds ☐ Fog ☑ Rain ☑ Snow
UPLANDS DESCRIPTION: ☐ Grass ☑ Forest ☑ Rock
SURVEYED FROM: ☒ Foot ☐ Boat ☒ Helo WORKING DIRECTION: clockwise around island to
SURFACE SEDIMENTS: R 35 % B 50 % C 15 % P ___ % G ___ % S ___ % M ___ % V ___ %
SLOPE: Lang ___ % Hang 50 % Vert 50 % WAVE EXPOSURE: ☐ Low ☐ Med ☑ High
OIL CATEGORY LENGTH: W ___ m M ___ m N ___ m VL ___ m NO 1616 m

SURFACE OIL

No oil observed

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	IC	IB	IP	IS						SU	UI	MI	LI
ASPHALT PAVEMENT													
POOLED													
COVER													
COAT													
STAIN													
MOUSSE													
PATTIES													
TARBALLS													
FILM													
NO OIL										X	X	X	X

PAVEMENT: H F S ___ sq. m by ___ cm (None observed)

PATTIES / TARBALLS ___ BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED ☐ YES ☐ NO

TYPE ___

#BAGS ___

Photographs:

Roll No. ___

Frames ___

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL	BELOW		OIL / FILM COLOR					PIT ZONE				ANA	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO	(TOS-COS)	UO	UO						SU	UI	MI	LI		
							-													
							-													
							-													
							-													
							-													
							-													

COMMENTS Priority 2

- Helicopter survey of island with one landing on the major cobble-boulder beach
- No oil was found on the beach or anywhere along the island
- the high wave energy of the island has likely promoted cleaning if oil did impact this region

ADEC [illegible]

[illegible] 4/2/90

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / AB051 (Agnes-Base) Subdivision A Date (mo / day / yr) 4/2/90

Time (24 hr) 14:50 Biologist DANIEL RAIDER

(A) Substrate type and % of segments:
(1) Bedrock 35 (2) Boulder 50 (3) Cobble 15 (4) Pebble ____ (5) Sand ____ (6) Silt ____

(B) Overall % cover of biota (% of segment): Dense 15 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:
Roll No. 3
Frames 1+2

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

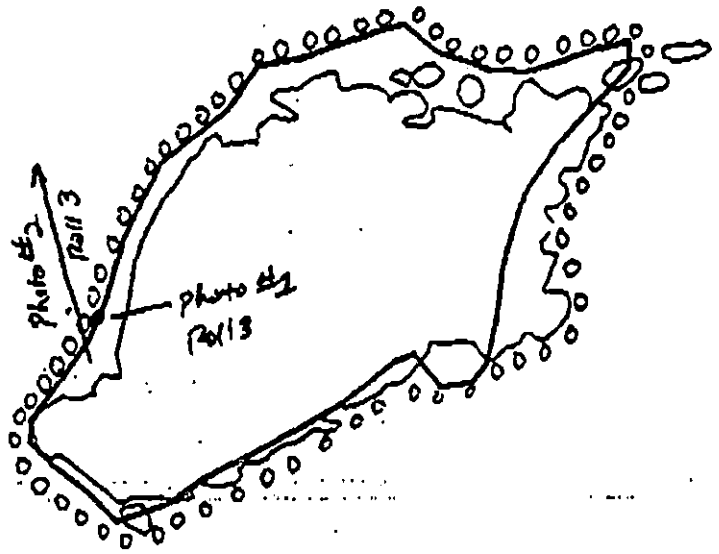
Wildlife Observations/ General Comments:
This refers only to a small section (~50 meters) of the island that we surveyed

Ecological Considerations: Priority 1

3N Harbor Seal pupping 5/15 - 7/1
3P Sea lion pupping 5/15 - 7/1
3O Harbor seal molting 8/15 - 9/15
3Q Seal lion molting 8/15 - 9/15

} no positive I.D.

AB-51



ADEC GW

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

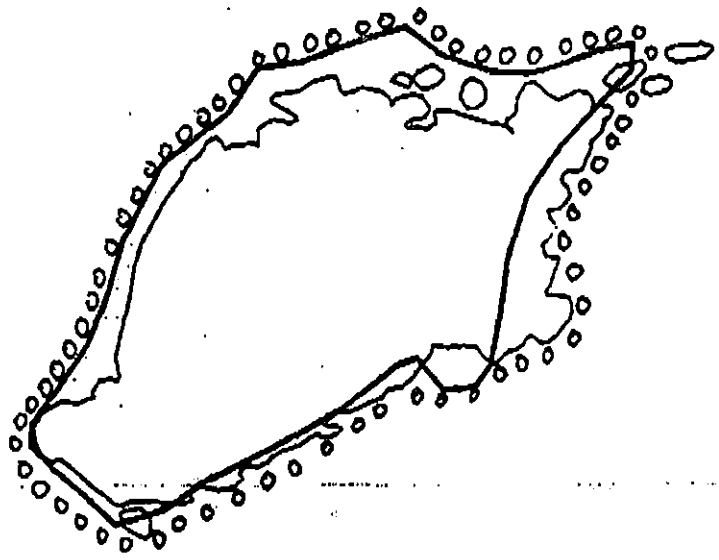
AB-51

Total Segment Length: 1376

0 100 200 300
METERS

Map Key: PWS-1
Name: Fitzgerald
Date: 2 Apr 90
Data Entered:

AB-51



ADEC GW

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

AB-51

Total Segment Length: 1376

0 100 200 300
METERS

Map Key: PWS-1
Name: Fitzgerald
Date: 2 Apr 90
Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ AB-51 SUBDIVISION A (1 OF 1) DATE 4/2/90

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)
See attached Ecological Constraint sheet for specific constraints and contacts.

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

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

SHPO SIGNATURE: Charles E Holman DATE: 4/20/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 1376 m
Subsurface Oil Observed: Yes____ No X Maximum Depth_____

RECOMMENDATIONS:

X No Treatment Recommended
_____Treatment Recommended
_____Manual Pickup
_____Bioremediation
_____Tarmat: _____Breakup
_____Removal

_____Snare/Absorbent Booms
_____Oil Snares (pom poms)
_____Absorbents (pads,rolls,etc)
_____Spot Washing:_____Wands
_____ Beach Cleaner
_____Other (see comments)

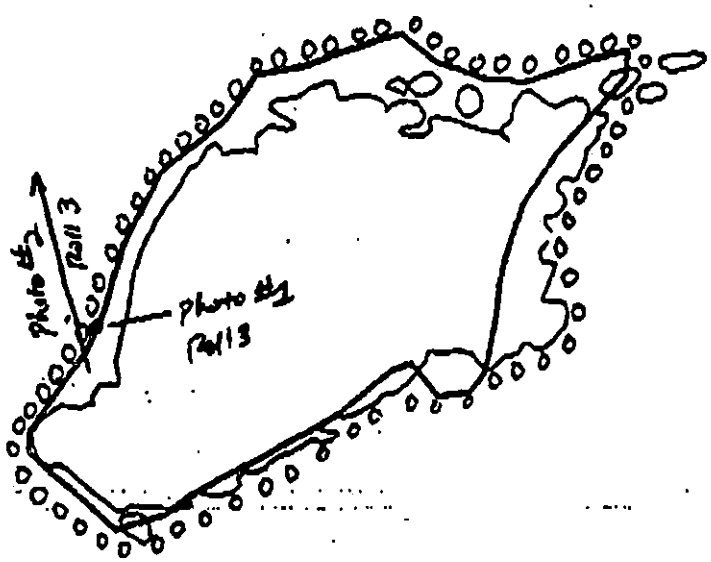
COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: 4/20/90.
ADEC ART WEINER Art Weiner
EXXON ANDY TEAL Andy Teal
NOAA Burl Wescott Burl Wescott
USCG KENNETH KEANE Kenneth Keane

FOSC: [illegible] DATE: 4-26-90

AB-51



ADEC GN

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

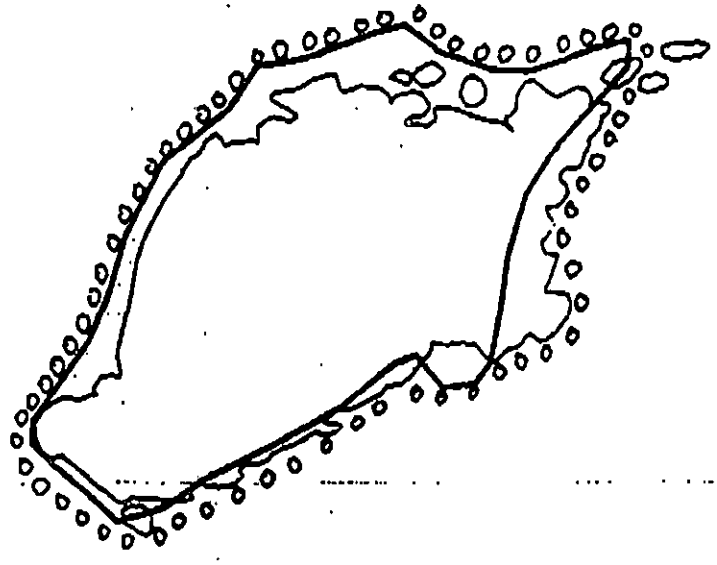
AB-51

Total Segment Length: 1376

0 100 200 300
METERS

Map Key: PWS-1
Name: Fitz Berald
Date: 2 Apr 90
Data Entered:

AB-51



ADEC GW

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

AB-51

Total Segment Length: 1376

0 100 200 300
METERS

Map Key: PWS-1
Name: Fitzgerald
Date: 2 Apr 90
Data Entered:

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/AE-01

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ AE-01 SUBDIVISION A (1 OF 1) DATE 4/22/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
No specific ecological constraints identified. Field ecologist noted recreational uses.

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 17 m: V.Light 123 m: No Oil 249 m
Subsurface Oil Observed: Yes____ No X Maximum Depth_____

RECOMMENDATIONS:

____No Treatment Recommended
X Treatment Recommended
____Manual Pickup
X Bioremediation
____Tarmat Removal

____Snare/Absorbent Booms
____Oil Snares (pom poms)
____Absorbents (pads,rolls,etc)
____Spot Washing:_____Wands
____Beach Cleaner
____Other (see comments)

COMMENTS: Recommend bioremediation in areas shown on sketch map. No specific ecological time constraints identified.

TAG COMMENTS:_____

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

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 Suzomoto 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 unoiled 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)
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 Rothy 267-2206

5T All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
Restrict air traffic and all disturbance to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

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

7Z Subsistence area: Salmon harvesting (5/1 to 9/30)
7HH Finfish harvesting
7II Deer harvesting (8/15 to 2/28)
7JJ Invertebrate harvesting
Contact ADF&G and appropriate Native Corporation for specific dates, locations, and constraints. Restrict boat and air traffic and beach disturbance to essential minimum. If plans for treatment include methods such as hot water wash or application of Inipol which might affect intertidal or nearshore oil or toxicity levels, contact ADF&G and appropriate Native Corporation for authorization - see Native Corporation Contact List for each Native Corporation's contact person.
AGENCY CONTACT PERSON: ADF&G Jim Fall 267-2359

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / AE / SUBDIVISION: A DATE 4/22/90

USCG
NAME Randolph W Hubbard SIGNATURE [signature]

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED
COMMENTS oil [redacted] bands
1, small amt found along water line rocky cliff.

ADEC
NAME Patrick J. Endres SIGNATURE Patrick J. Endres

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

One area on segment approx. 100 m. from the start, listed by OA as CV/P (80%), is a candidate for removal of spruce needles/cover. Other areas I do not recommend treatment.

LAND MANAGER
NAME MARSHA MARTIN / DNR SIGNATURE Marsha Martin

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED
COMMENTS FOR AREA with ½ meter band. Popular Kayak area.

REVISION NO. 08/21/89

SHORELINE OILING SUMMARY

REVISION NO. 04/10/90

OG Reimer USCG Hubbard SEGMENT ST/ QE1
BIO Zamora LAND REP M. Martin SUBDIVISION A (1 OF 1)
EXXON Arbuckle ADEC ENDRES TIME 18:02 to 18:52
TEAM NO. 16 TIDE LEVEL +0.5 to +1 DATE 4 / 22 / 90
EST. SUBDIVISION LENGTH: 459 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
SURVEYED FROM: ☐ Foot ☐ Boat ☐ Helo WORKING DIRECTION: South to North
SURFACE SEDIMENTS: R 40 % B 10 % C 20 % P 25 % G 5 % S 0 % M 0 % V 0 %
SLOPE: Lang 60 % Hang 30 % Vert 10 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
OIL CATEGORY LENGTH: W 0 m M 0 m N 20 m VL 160 m NO 279 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ASPHALT PAVEMENT													
POOLED													
COVER			X	✓		✓/X					X/✓		
COAT				X		X					X		
STAIN													
MOUSSE													
PATTIES				X				X				X	
TARBALLS													
FILM													
NO OIL										X			X

PAVEMENT H F S 0 sq. m by 0 cm
PATTIES / TARBALLS 0.1 BAGS
NEAR SHORE SHEEN? (NO) SR RW SL TL

OILED DEBRIS	AMOUNT SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS? YES ☐ NO ☒
TYPE 0
#BAGS 0

Photographs:
Roll No. _____
Frames NONE

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm)	BELOW		OIL / FILM COLOR					PIT ZONE				ANA	SHEEN (Y/N)	▼	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	MO		UO	UO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	SU	UI	MI	U				
1	20					X	-									X						P-P
2	40					X	-									X						P-P
3	30					X	-									X						P-P
4	20					X	-									X						P-P
							-															
							-															

COMMENTS Irregular coastline with alternating steep to vertical rock cliff and low angle pocket pebble, cobble, scattered boulder beaches. The oiling consists of sporadic splatters of oil along the rocky sections of the segment near the high tide line. One discontinuous band (bathtub ring) of oil 1/2 meter wide and 20 meters long was found on a rocky point in the southern end of the segment.

REVIEWED [illegible] DATE 4/25/90

OG Reimer

SEGMENT ST/ AE1

SUBDIVISION A

DATE 4 / 22 90

CHECKLIST

- Areas
- Approx. Scale
- Graphic Body
- Oil Char.
  - Width
  - Length
  - % Cover
- Substrate Character
- Est. Impact
- Site
- Photo Location(s)
- Photo(s)
- PS Location(s)
- Photo Location(s)

LEGEND

1 ▲ Pt - No Subsurface Oil

2 ▲ Pt - Subsurface Oil

CT/C Continuous Distribution

CT/B Broken Distribution

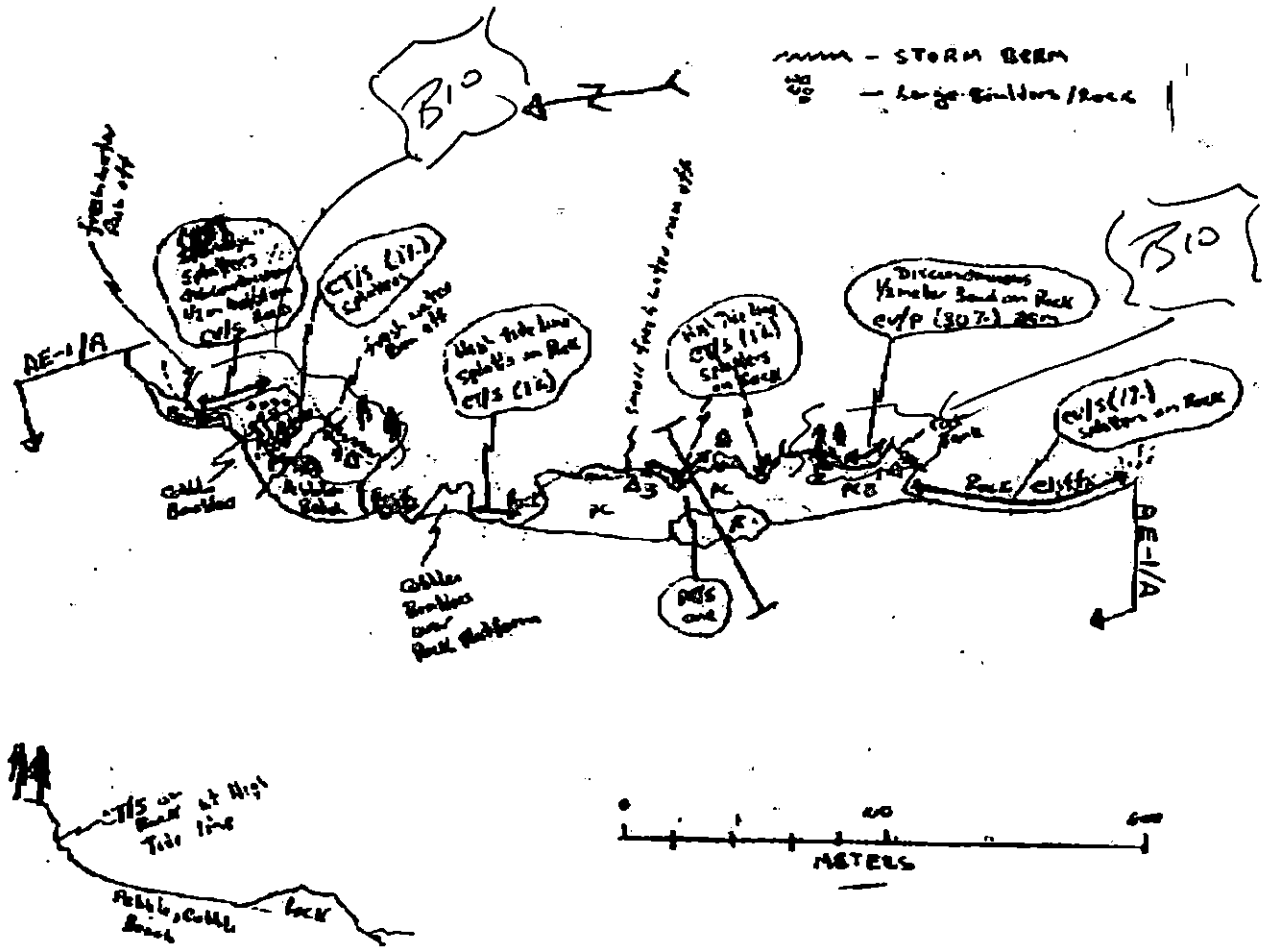
CT/P Patchy Distribution

CT/S Splashed Distribution

OOO Oiled Vegetation

Photo location, direction, and number

SKETCH MAP



Oil Character Length (m): AP 0 FO 0 CV 130 CT 50 ST 0 MS 0 PT 1 TB 0 FL 0 NO 279

3/33

5/33

SHORELINE ECOLOGICAL SUMMARY

Segment ST / AF 1 (1505 ON) Subdivision — Date (mo / day / yr) 4 / 21 / 90

Time (24 hr) 1852 OFF Biologist TONY ZAMORA

(A) Substrate type and % of segments:
(1) Bedrock 40 (2) Boulder 10 (3) Cobble 20 (4) Pebble 20 (5) Sand — (6) Silt —

(B) Overall % cover of biota (% of segment): Dense 80 Moderate 20 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 1U	Dense 1M	Dense 1L	Moderate 1U	Moderate 1M	Moderate 1L	Sparse 1U	Sparse 1M	Sparse 1L	Rare 1U	Rare 1M	Rare 1L
2	2	2	X	X	X	2	2	2	2	2	2
3	3	3	3	3	3	X	X	X	3	3	3
4	4	4	4	3	4	4	4	4	4	X	X
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

MYTILUS

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

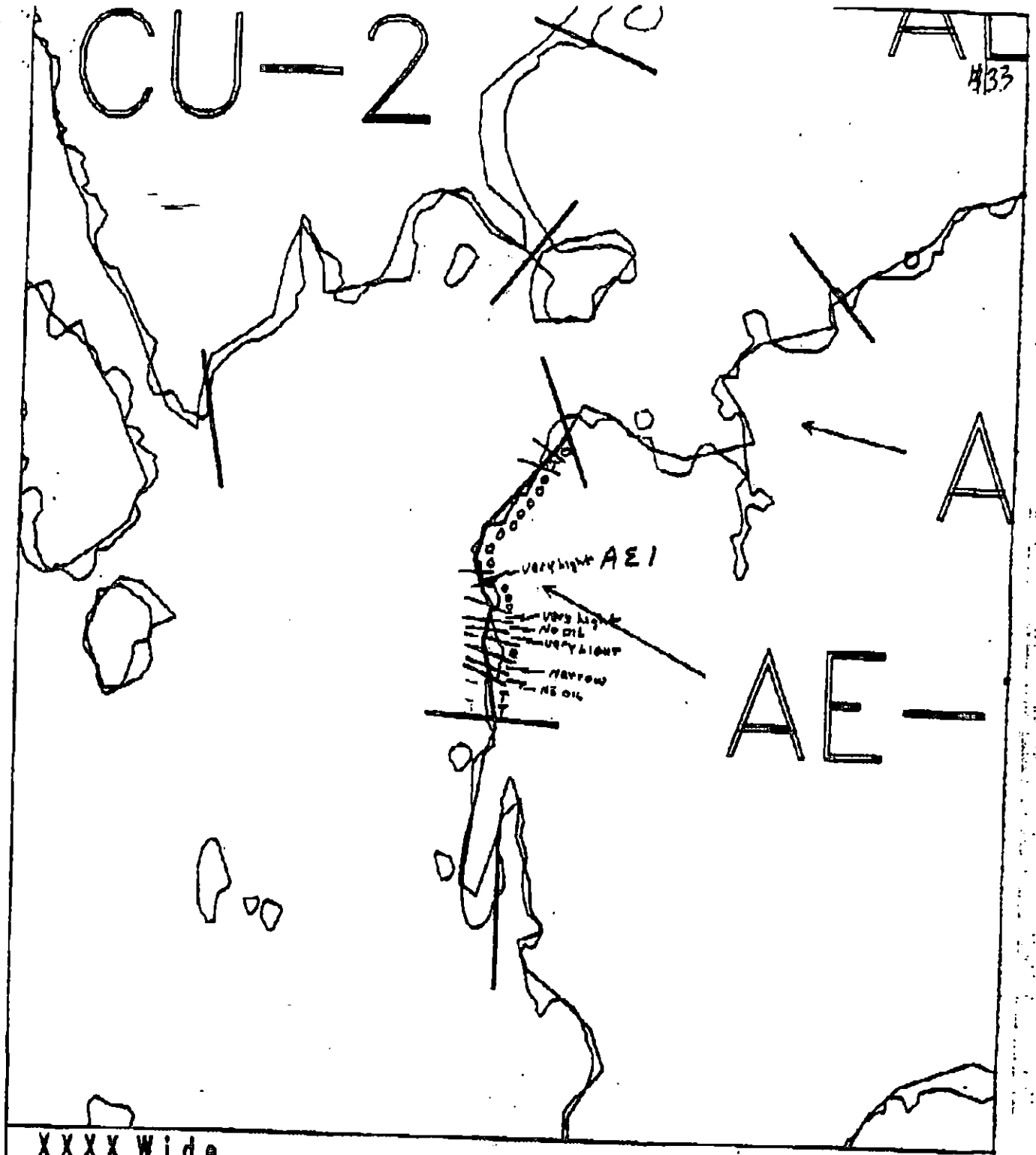
Dense 1U	Dense 1M	Dense 1L	Moderate 1U	Moderate 1M	Moderate 1L	Sparse 1U	Sparse 1M	Sparse 1L	Rare 1U	Rare 1M	Rare 1L
X	2	2	X	X	X	2	2	2	2	2	2
3	3	3	X	3	3	3	X	X	3	3	3
4	4	4	4	4	4	4	4	4	4	X	X
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

Wildlife Observations/ General Comments:
DENSE ROCKY SHORE COMMUNITY, VERY LOW MORTALITY OBSERVED. VERY DENSE NEW BARNACLE GROWTH IN MYTIL AS WELL AS NEW GROWTH OF FUCUS, LITTORINES & BUCCINUM.

Ecological Considerations:
LOW.

(NOTE: NO BIO SKETCH FOR THIS SEGMENT, PHOTO LOCATIONS ON OG MAP)



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

AE-1

ADEC Segment Length: 385m

0 100 200 300
METERS

Map Key: PWS-2
Name: Reimer
Date: 4/22/90
Date Entered:

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT AE-1 SUBDIVISION A (1 of 1)

WORK WINDOW	
Manual Pickup	OPEN
Bioremediation	OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

No time-dependent ecological constraints.

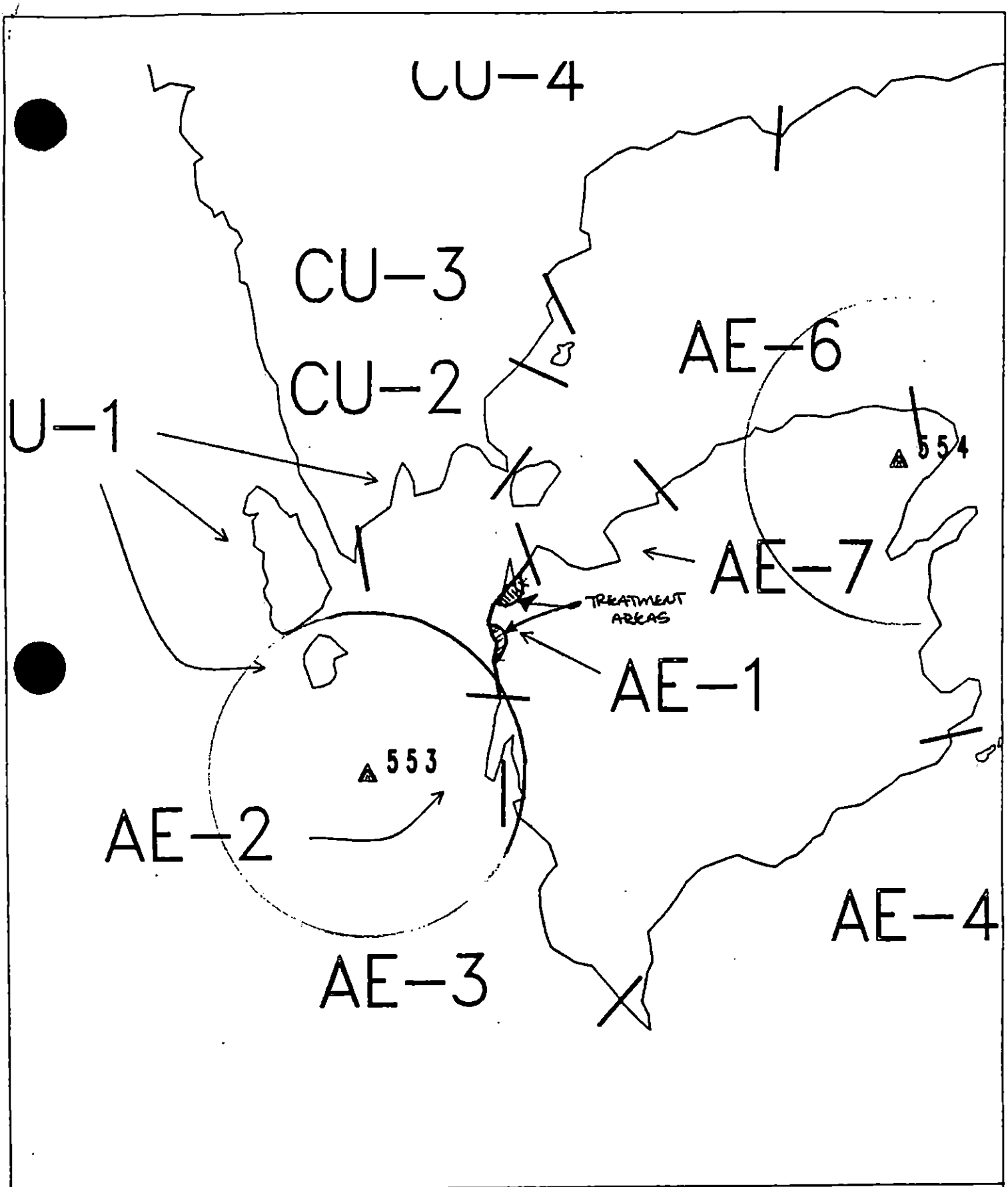
OTHER ECOLOGICAL CONSIDERATIONS

Avoid disturbance or damage to unoiled biota and substrate.

TAG ADDENDUM DATE 5/16/90.
ADEC Art Weiner Art Weiner
EXXON Andy Tear
NOAA Gary Petrone
USCG G.A. Reiter G.A. Reiter

FOSC _____ DATE 5-17-90

Prepared by: WK Date: 5/14/90



Exxon Company, USA
Map Key: PWS-AE-1
M 10 1990

ECOLOGY MAP
SEGMENT AE-1
SUBDIVISION A (1 of 1)

METERS

★ Seabird Colony
▲ Eagle Nest

1 inch = 1084 feet

SHORELINE EVALUATION

SEGMENT ST/ AE-01 SUBDIVISION A (1 OF 1) DATE 4/22/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
No specific ecological constraints identified. Field ecologist noted recreational uses.

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: 5/3/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 17 m: V.Light 123 m: No Oil 249 m
Subsurface Oil Observed: Yes ____ No X Maximum Depth ____

RECOMMENDATIONS:

____ No Treatment Recommended
X Treatment Recommended
X Manual Pickup
X Bioremediation
____ Tarmat Removal

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

COMMENTS: Recommend bioremediation in areas shown on sketch map. No specific ecological time constraints identified.

TAG COMMENTS: MANUAL PICKUP OF TAR PATTIES INDICATED ON SKETCH
MONITORS TO ASSESS

TAG APPROVAL DATE: 5/3/90.
ADEC Art Weiner [signature]
EXXON Amy Tex [signature]
NOAA Gary Petrie [signature]
USCG Kenneth Krone [signature]

FOSC: [signature] DATE: 5-8-90

SHORELINE EVALUATION

SEGMENT ST/ AE-01 SUBDIVISION A (1 OF 1) DATE 4/22/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
No specific ecological constraints identified. Field ecologist noted recreational uses.

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: 5/3/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 17 m: V.Light 123 m: No Oil 249 m
Subsurface Oil Observed: Yes ____ No X Maximum Depth ____

RECOMMENDATIONS:

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

COMMENTS: Recommend bioremediation in areas shown on sketch map. No specific ecological time constraints identified.

TAG COMMENTS: MANUAL PICKUP OF TAR PATTIES INDICATED ON SKETCH
MONITORS TO ASSESS

TAG APPROVAL DATE: 5/3/90.
ADEC Art Weiner [signature]
EXXON Amy Tear [signature]
NOAA Gary Petrie [signature]
USCG Kenneth Keane [signature]

FOSC: [signature] DATE: 5-8-90

OG Reimer

SEGMENT ST/ AE1

SUBDIVISION A

DATE 4 / 22 90

CHECKLIST

- Pit Areas
- Approx. Scale
- Graphic Scale
- Oil Bar
- Width
- Length
- % Cover
- Substrate Character
- Est. HWL/LWL
- SCL
- Profile Location(s)
- Profile(s)
- Pit Location(s)
- Photo Location(s)

LEGEND

1 ▲ Pit - No Measurable Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

CT/B Broken Distribution

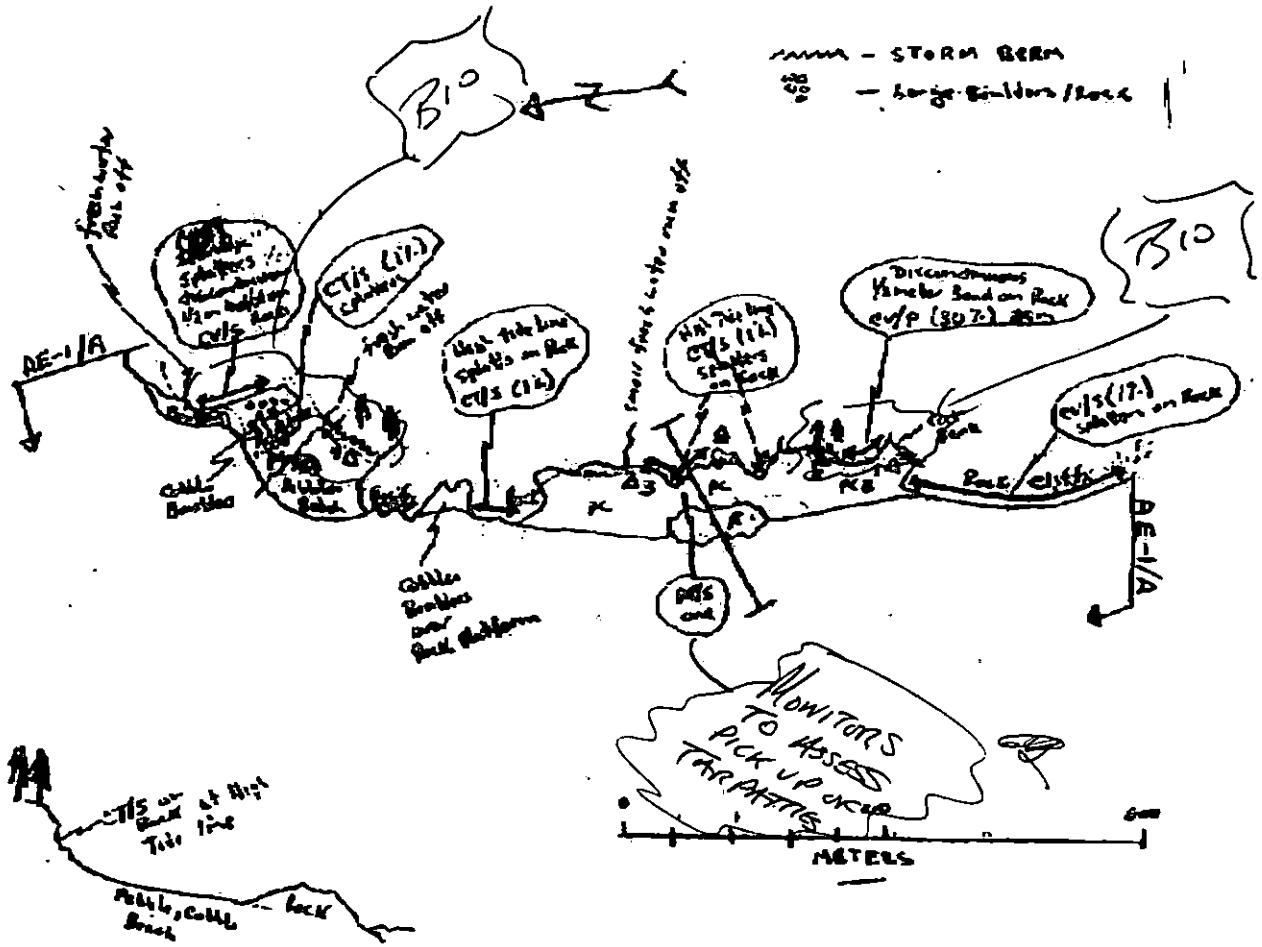
CT/P Patchy Distribution

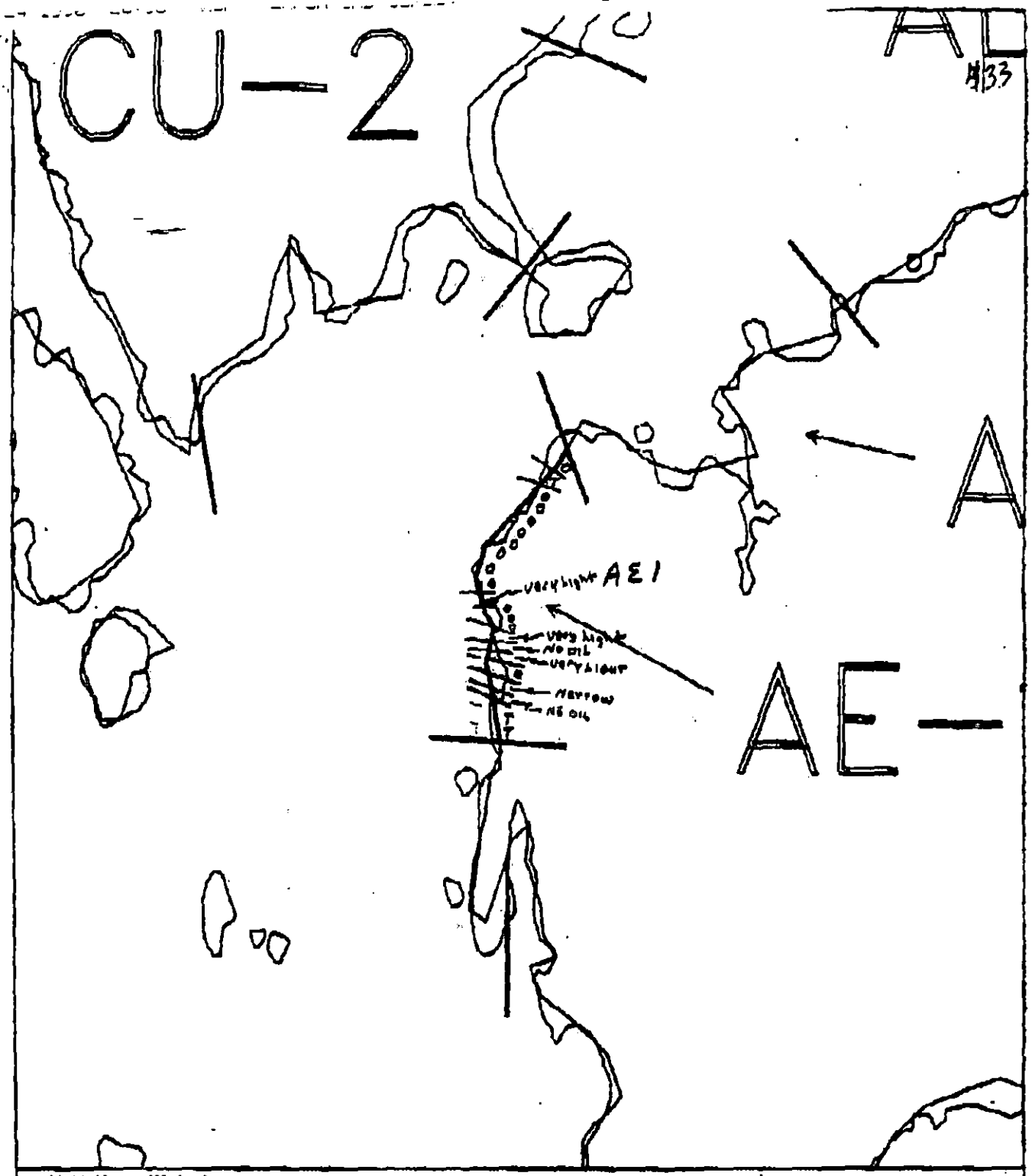
CT/S Scattered Distribution

Oiled Vegetation

Photo location, direction, and number

SKETCH MAP


BIO
STORM BERM
Large Boulders/Rock
AE-1/A
Cobble Boulders
Cobble Boulders near Rock Bulkhead
CT/S (1%) splashes
CT/S (1%) splashes on Rock
CT/S (1%) splashes on Rock
Discontinuous Kamelia Band on Rock cv/p (30%)
cv/s (1%) splashes on Rock
Rock cliffs
Rock
Rock
Rock



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

AE-1

ABEC Segment Length: 380m

0 100 200 300
METERS

Map Key: PWS-2
Name: Reimer
Date: 4/22/90
Date Entered:

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/AE-02

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ AE-02 SUBDIVISION A (1 OF 1) DATE 4/22/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1) nest located within 400m.

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 11 m: Narrow 24 m: V.Light 45 m: No Oil 206 m
Subsurface Oil Observed: Yes X No____ Maximum Depth 15 cm

RECOMMENDATIONS:

____No Treatment Recommended
X Treatment Recommended
X Manual Pickup
X Bioremediation
____Tarmat Removal

____Snare/Absorbent Booms
____Oil Snares (pom poms)
____Absorbents (pads,rolls,etc)
____Spot Washing:____Wands
____Beach Cleaner
____Other (see comments)

COMMENTS: Recommended treatment includes 1) manual pickup of mousse 2) manual raking of storm berm followed by bioremediation in area shown on attached sketch map. Work should be conducted after 6/1 with approval of USFWS regarding eagle nest.

TAG COMMENTS:_____

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

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

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 Suzomoto 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 unoiled 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)
3[illegible]Q **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

5[illegible] **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)**
[illegible]J **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 / AE 2 SUBDIVISION: A DATE 4/22/90

USCG
NAME [illegible] SIGNATURE [illegible]

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

1. Oil found in many chopped areas on the beach.

ADEC
NAME Patrick J. Endres SIGNATURE Patrick J. Endres

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

1.) Manual removal of mousse saturated sediments (1-5cm) around pit # 3 (see OG comments)

2.) Perhaps flattening out the tide berm (at about +12ft.) with a rake would expose the oiling and then bioremediation of that area is a possibility. (see OG comments for dimensions: pit #4)

3) Oil band (cover) on rock face (near pit #4) has up to 1cm thick of oiled spruce needles. Spot washing would remove them along with the cover but retrieval may be difficult. Scraping or brushing the needles off is an option.

LAND MANAGER
NAME MARSHA MARTIN SIGNATURE Marsha Martin

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS
AGREE with DEC comments

AE

SHORELINE OILING SUMMARY

REVISION NO. 04/1/90

11/33

OG Ramsey USCG Hebbard SEGMENT ST/ A & 2
BIO Zimmerman LAND REP/ M. MARTIN SUBDIVISION A (1 OF 1)
EXXON Brinkley ADEC ENDRES TIME 13:30 to 13:00
TEAM NO. 16 TIDE LEVEL +1 to +0.5 DATE 4 / 23 / 90
EST. SUBDIVISION LENGTH: 320 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: South to North
SURFACE SEDIMENTS: R 40 % B 5 % C 20 % P 35 % G 0 % S 0 % M 0 % V 0 %
SLOPE: Long 60 % Hang 40 % Vert ___ % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
OIL CATEGORY LENGTH: W 0 m M 70 m N 25 m VL 40 m NO 245 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	IC	A	P	R						SW	W	M	U
ASPHALT PAVEMENT													
POOLED													
COVER		X		✓		X		X			X		
COAT													
STAIN													
MOUSSE			X					X			X		
PATTIES													
TARBALLS													
FILM													
NO OIL										X		X	X

PAVEMENT H F S 0 sq. m by 0 cm

PATTIES / TARBALLS 0 BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS? YES ☐ NO ☒

TYPE 0

#BAGS 0

Photographs:

Roll No. ST-16-10

Frames 2-6

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL	BELOW		OIL / FILM COLOR					PIT ZONE				ANA	SHEEN (MM)	▼	SURFACE-SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UG						SW	W	M	U				C C C
1	8					X	•									X						C-S/MC
2	20					X	•										X					P-PG
3	15					X	•									X						P-Peat
4	20		X				5-18		X		X					X						P-PS
							•															
							•															

COMMENTS A short section of coastline bounded on either end by steep rock cliff. The central portion of the segment is fronted by a pebble, cobble and scattered boulder beach, with rock cliff in the back shore. Two near shore Rock islets are connected to the mainland forming Tombolos. The oiling is found at the north end of the segment, starting with sporadic splattes on the upper part of the beach. At the apex of the Tombolo, sheltered behind the island is a

REVIEWED [illegible] DATE 4/25/90

Continued next page

SHORELINE OILING SUMMARY (PAGE 2)

REVISION 04/13/90

SEGMENT ST/ AE 2 SUBDIVISION A (1 OF 1)

12

SUBSURFACE OIL (CONTINUED)

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CM)	BELOW		OIL / FILM COLOR					PIT ZONE				ANA	SHEEN (Y/N)	▼	SURFACE SUBSURFAC SEDIMENTS
		OP	OA	OL	OF	NO		UO	UO						SU	UI	MI	LI				

COMMENTS Patch of mousse (5m x 10m x 2-3 cm) with a 25% average. Continuing to the north around a small three curved rocky point a broken band of oil was found buried in a high water berm. The oil character was that of chocolate mousse mixed in with decaying organics and pebbles. The band extends for 20 meters ending at a rock cliff. A band of oil cover with a thick mat of evergreen needles extends for another 5 meters along the cliff as a bath tub ring 1m wide, at the same tidal height as the buried oil in the beach.

RT

REVIEWED YW DATE 4/25/90

OG Reimer

SEGMENT STA AE2

SUBDIVISION A

DATE 4 / 22 / 90

CHECKLIST

- ✓ Pit Areas
- Approx. Scale
- Sig/Sub Body
- Oil Dist.
  - Width
  - Length
  - % Cover
- Substrate Character
- Est. HWM/MB
- SPL
- Photo Location(s)
- Sketch(s)
- Pit Location(s)
- Photo Location(s)

LEGEND

1 ▲ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

CT/B Broken Distribution

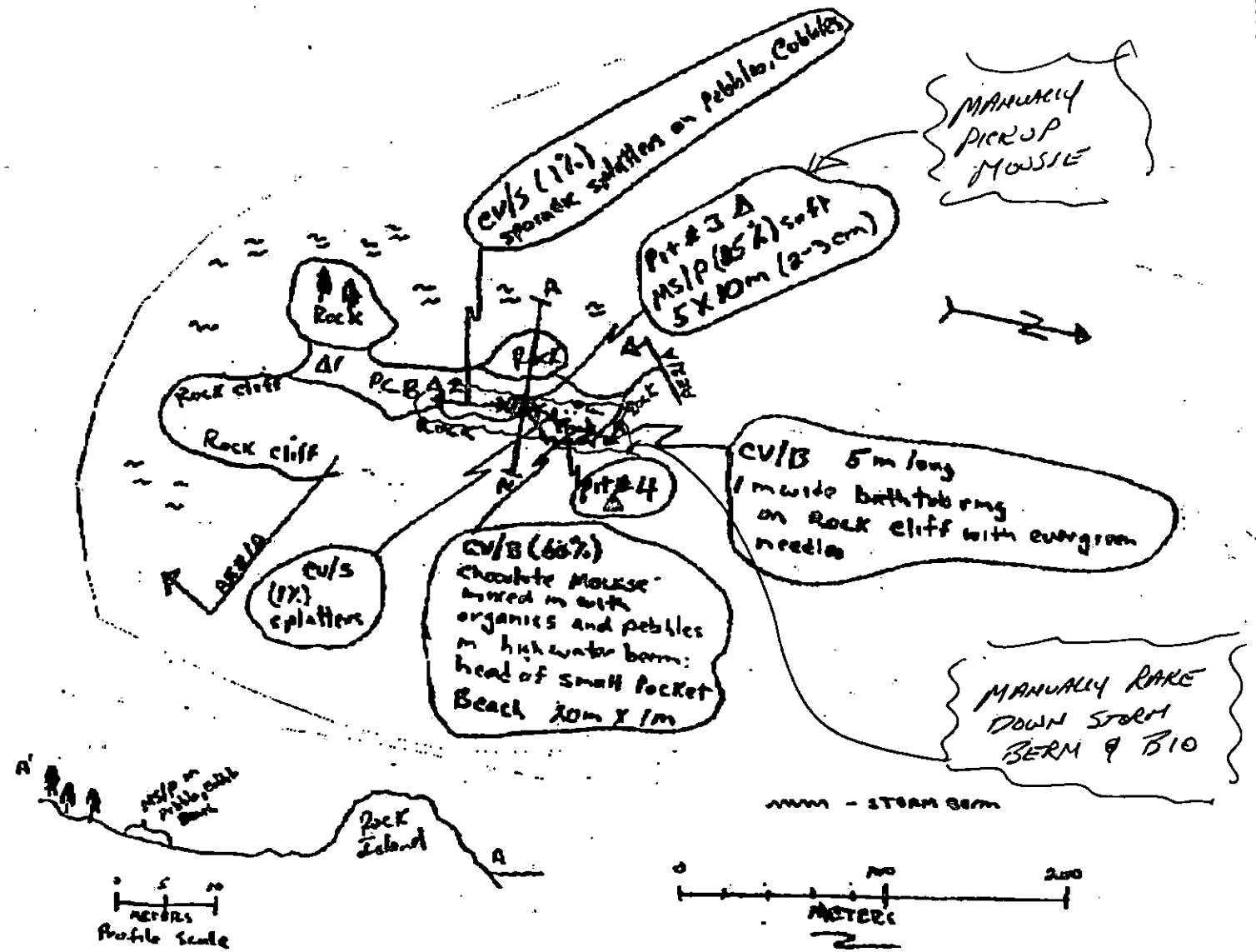
CT/P Patchy Distribution

CT/S Scattered Distribution

ooo Oiled Vegetation

1 Photo location, direction, and number

SKETCH MAP



Character Length (m): AP 0 PO 0 CV 65 CT 0 ST 0 MB 10 PT 0 TB 0 FL 0 NO 265

REVISION 13/33

SHORELINE ECOLOGICAL SUMMARY

Segment ST/ A&Z 1720 ON Subdivision — Date (mo / day / yr) 4/21/90

Time (24 hr) 1800 OFF Biologist TONY ZAMORA

(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 50 Moderate 20 Low —

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

Photographs: Roll No. ST-16-10 Frames 2-6

BARNACLES

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

NOT PRESENT

MYTILUS

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

NOT PRESENT

GASTROPODS

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

NOT PRESENT

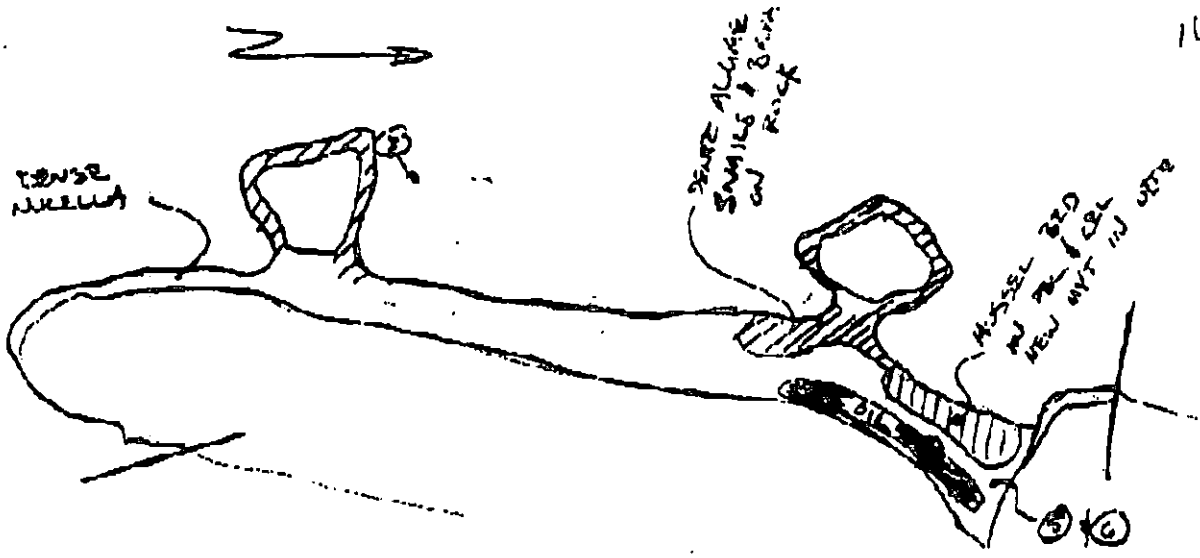
Wildlife Observations/ General Comments:

- EAGLE SPOTTED
- FAIRLY DENSE ROCKY SHORE COMMUNITY, VERY LOW MORTALITY EXCEPT FOR ABRASSION OF MUSSELS & BARNACLES FROM A FEW BOULDERS.
- VERY DENSE NEW BARNACLE GROWTH ON ROCK, BLDR, CBL, PBL & ON MUSSELS IN MITZ. NEW GROWTH OF FUCUS SEEN ON ROCK. NEW LITTORINES AS WELL AS EGGS. IN MITZ, JUVENILE MUSSELS (≈1 mm) IN UITZ AMONG PEBBLE & COBBLE.

- ECOLOGICAL CONSIDERATIONS: 6U, 7JJ

RJE

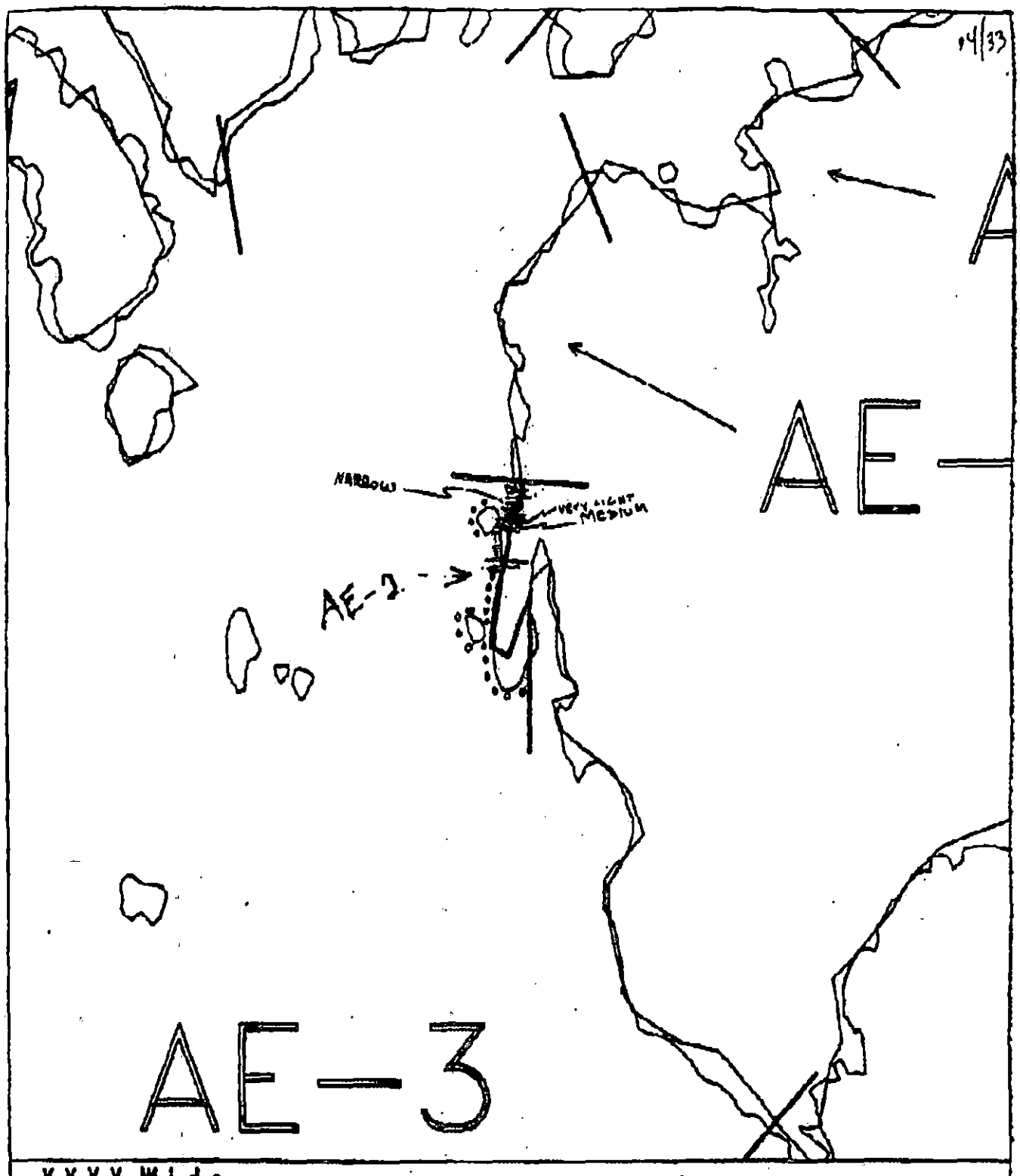
16/33



AE2

BIO SKETCH & PHOTO LOCATIONS

RTE



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

AE-2

ABEC Segment Length: 286m

0 100 200 300
METERS

Map Key: PWS-3
Name: Reimer
Date: 4/28/90
Data Entered:

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT AE-2 SUBDIVISION A (1 of 1)

WORK WINDOW	
Manual Pickup	OPEN
Bioremediation Manual Raking	OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

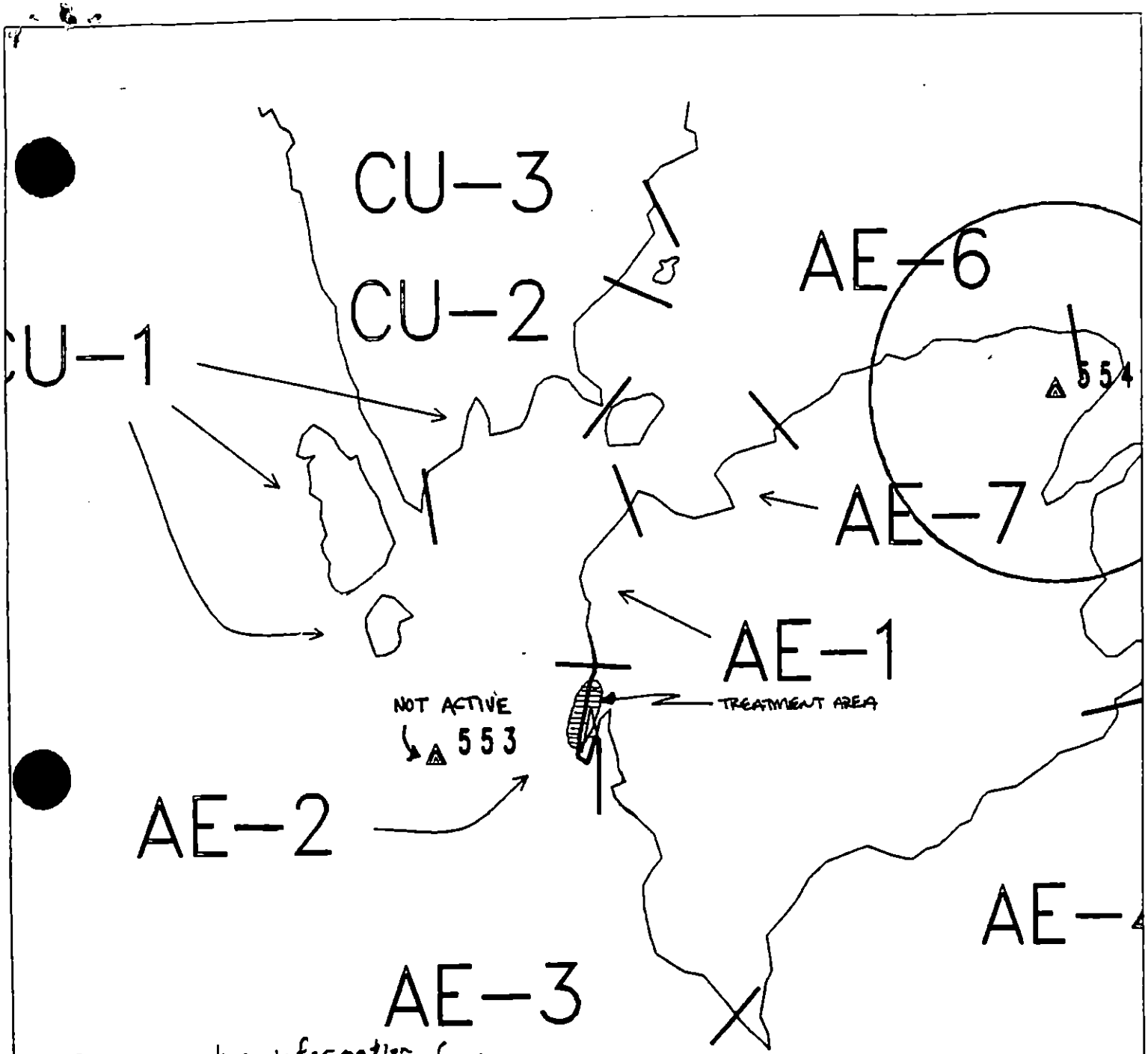
5T	Bald Eagle Nest	NO CONSTRAINT. USFWS 6/1/90 map indicates no active nest within 400m of Subdivision A work site.

OTHER ECOLOGICAL CONSIDERATIONS

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

TAG APPROVAL DATE 6/04/90
ADEC Ray Morris
EXXON Amoy Isa
NOAA Joseph C Jarvis
USCG
FOSC
DATE 6/4/90

Prepared By: Sandra Meyer
Date 6/2/90



Incorporates information from USFWS 6/1/90 active Bald Eagle nest maps.

EXXON

Exxon Company, USA
Map Key: PWS-AE-2
May 10, 1990

ECOLOGY MAP
SEGMENT AE-2
SUBDIVISION A (1 of 1)

METERS
0 324 648

★ Seabird Colony
▲ Eagle Nest

1 inch = 1063 feet

SHORELINE EVALUATION

SEGMENT ST/ AE-02 SUBDIVISION A (1 OF 1) DATE 4/22/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1) nest located within 400m.

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

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

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

OILING CATEGORIZATION:

Wide 0 m: Medium 11 m: Narrow 24 m: V.Light 45 m: No Oil 206 m
Subsurface Oil Observed: Yes X No ____ Maximum Depth 15 cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) manual pickup of mousse 2) manual raking of storm berm followed by bioremediation in area shown on attached sketch map. Work should be conducted after 6/1 with approval of USFWS regarding eagle nest.
See Addendum dated 6/2/90
AA 6/2

TAG COMMENTS:

TAG APPROVAL DATE: 5/4/90.
ADEC Art Weiner Art Weiner
EXXON Andy Tear
NOAA Gary Petrone
USCG G.A. Reiter
FOSC: ML DATE: 5-9-90

SHORELINE EVALUATION

SEGMENT ST/ AE-02 SUBDIVISION A (1 OF 1) DATE 4/22/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1) nest located within 400m.

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: 5/5/90

OILING CATEGORIZATION:

Wide 0 m: Medium 11 m: Narrow 24 m: V.Light 45 m: No Oil 206 m
Subsurface Oil Observed: Yes X No ____ Maximum Depth 15 cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) manual pickup of mousse 2) manual raking of storm berm followed by bioremediation in area shown on attached sketch map. Work should be conducted after 6/1 with approval of USFWS regarding eagle nest.

TAG COMMENTS: ____

TAG APPROVAL DATE: 5/4/90
ADEC ART WEINER [signature]
EXXON ANDY TEAL [signature]
NOAA Guy Petrone [signature]
USCG G.A. REITER [signature]

FOSC: [signature] DATE: 5-9-90

OG Reimer

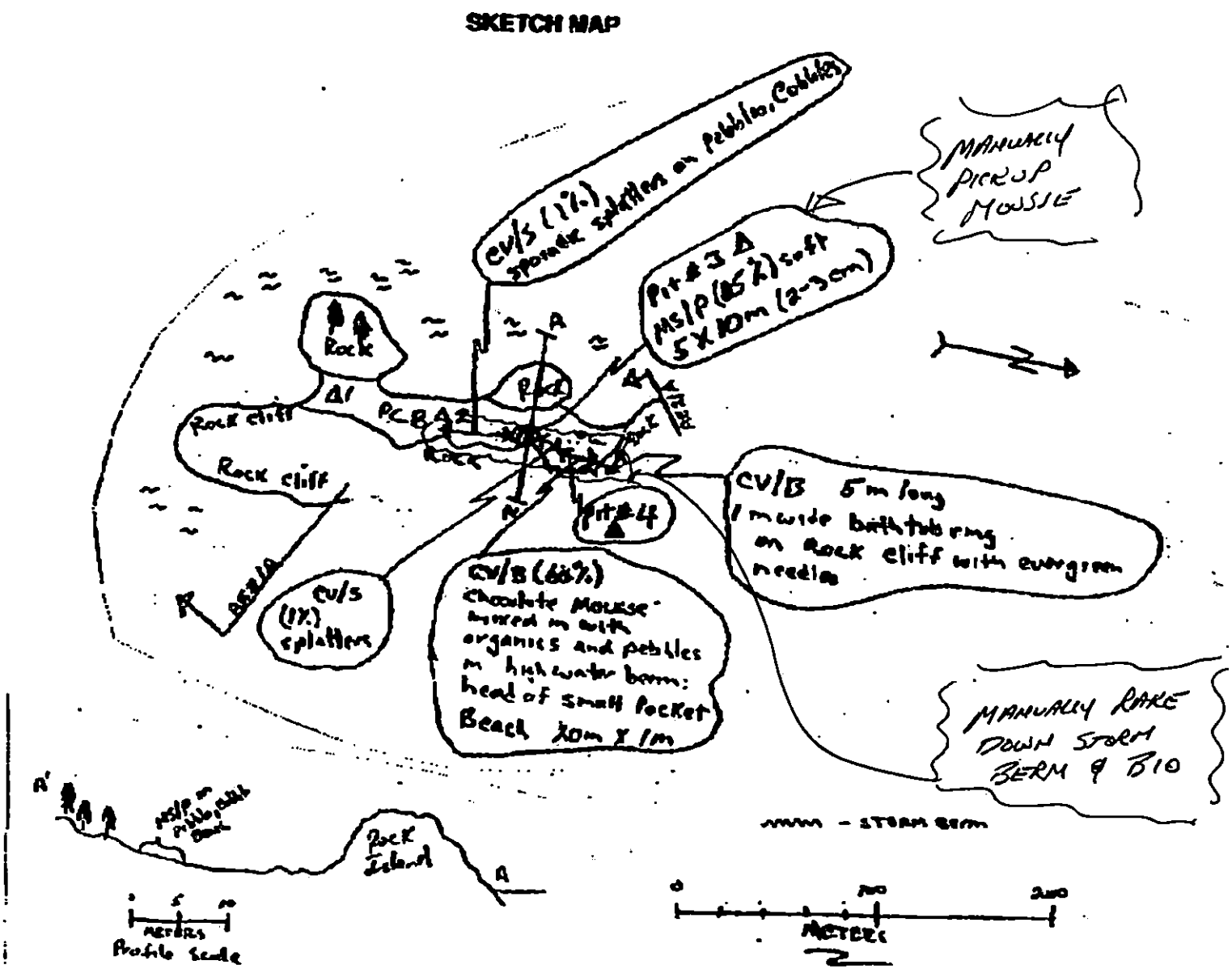
SEGMENT STA AE 2

SUBDIVISION A

DATE 4 / 22 90

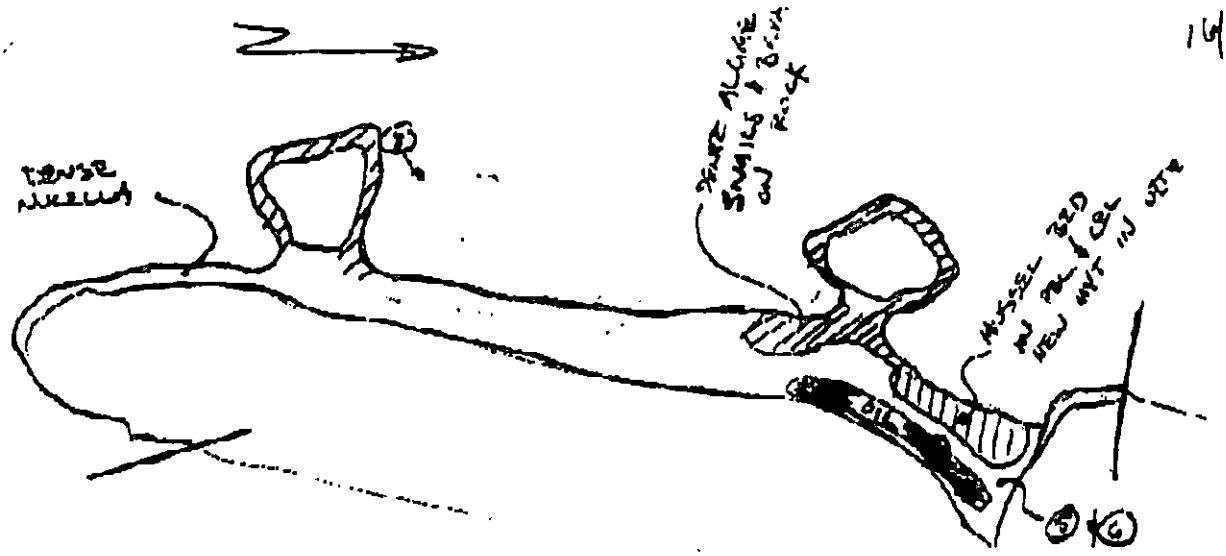
CHECKLIST

LEGEND



Character Length (m): AP 0 PO 0 CV 65 CT 0 ST 0 MS 10 PT 0 TB 0 FL 0 BIO 265

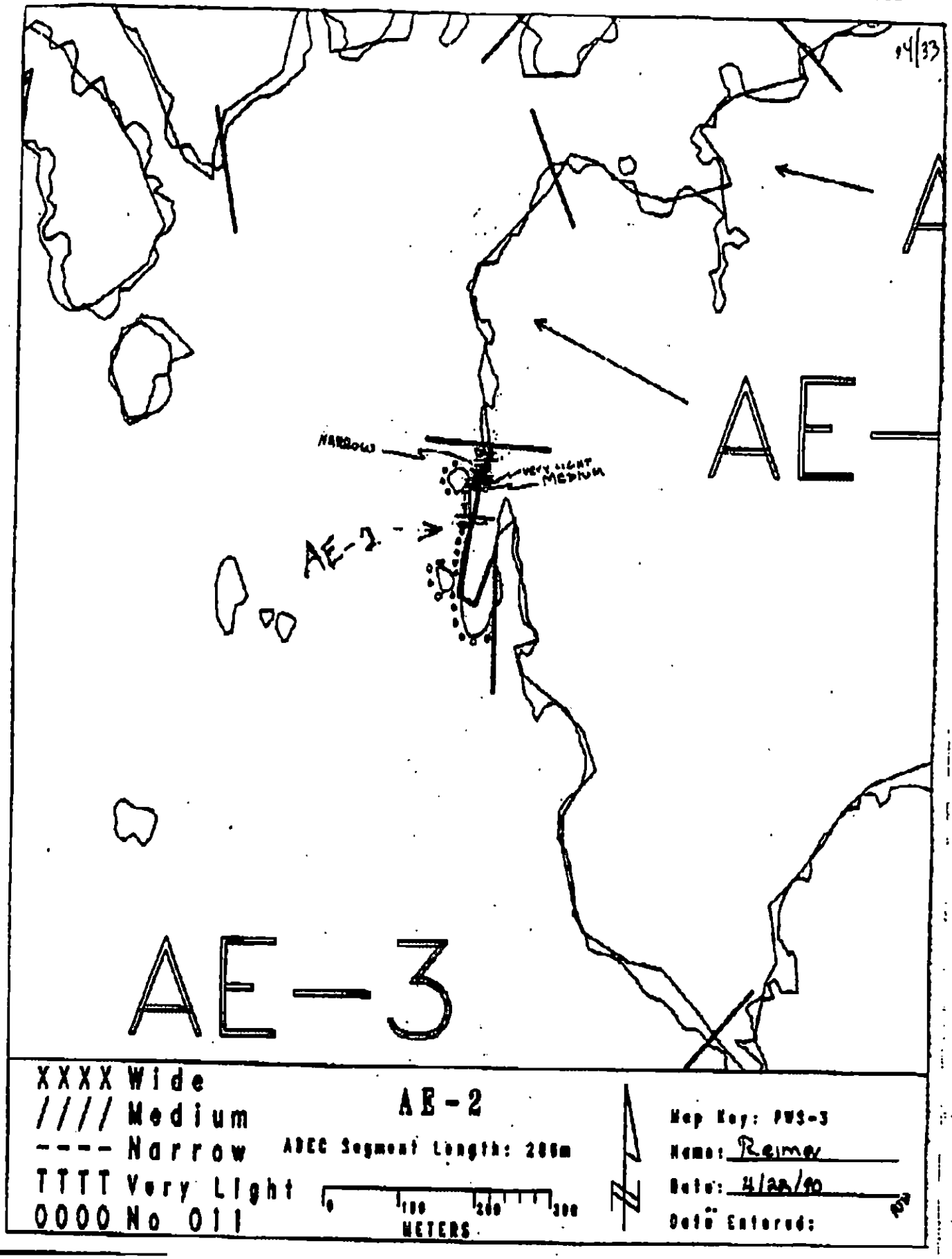
13/33



AE2

BIO SKETCH & PHOTO LOCATIONS

AE


#4/33
AE-
NARROW
VERY LIGHT
MEDIUM
AE-2
AE-3
XXXX Wide
//// Medium
---- Narrow
TTTT Very Light
0000 No Oil
AE-2
ABEC Segment Length: 285m
0
100
200
300
METERS
N
Map Key: PWS-3
Name: Reimer
Date: 4/28/90
Date Entered:

1991 MAYSAP EVALUATION

SEGMENT: AE 002 SUB: A REGION: PWS 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: _____ Date: _____

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

COMMENTS:
INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: _____ FOSC APPROVAL DATE: _____

ADEC _____ FOSC _____

EXXON _____

USCG _____

NOAA _____

ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

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

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 1 SEGMENT AE-002 SUBDIVISION A DATE 5/12/91

ADEC
NAME JEFF GINALIAS SIGNATURE [signature]

☒ NTR

ONLY REMAINING OIL IS OCCASIONAL SPLATTER NEAR SHALE BEDROCK UPRISE (SITE A2) AND COAT AT SITE (A1). TOO SMALL OF AN AMOUNT TO JUSTIFY TREATMENT.

EXXON
NAME RANDALL K. BOYER SIGNATURE Randall K. Boyer

☒ NTR

NO TREATABLE OIL ON THIS SUBDIVISION. MOSTLY FREE OF OILING WITH THE EXCEPTION OF A SMALL AREA OF COAT ON THE NORTHERN BOUNDARY OF THE SUBDIVISION. MUSSELS FUCUS AND OTHER BIOTA APPEAR HEALTHY. DUCKS WERE SEEN NEARBY. THIS SUBDIVISION SHOULD NOT BE REASSESSED.

LANDMANAGER
NAME MARSHA HALL OF DNR SIGNATURE Marsha Hall

☒ NTR

Minimal oiling.

MH

USCG/NOAA
NAME SCHULTZ / CHILDS SIGNATURE [signature]

☒ NTR NOTHING OF SIGNIFICANCE REMAINS, + WOULD CAUSE MORE ENVIRONMENTAL HARM TO ATTEMPT RECOVERY THAN THE OIL TO BE RECOVERED.

SURFACE OIL PRESENT AS A WEATHERED COAT ON VERTICAL ROCK WALL AT THE NORTHWESTMOST END OF SEGMENT & SEVERAL HIGHLY WEATHERED PATTIES IN PROTECTED CREVICES ALONG THE ROCK IN "A2". NO SUBSURFACE OIL OBSERVED.

MAYSAP SHORELINE OILING SUMMARY

TEAM NO. 1

OG G. MACDONALD BIO M. FAWCETT SEGMENT AE-2

ADEC J. GINANAS LANDMANAGER M. HALL for DNR SUBDIVISION A

EXXON R. BOYER USCG/NOAA SHULTZ / CHINDS DATE 5/12/91

TIME 07:40 to 08:10 TIDE LEVEL 0.0 ft. to +1.0 ft. ENERGY LEVEL: ☐ H ☐ M ☒ L

SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO WEATHER: ☐ SUN ☐ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

TOTAL LENGTH SHORELINE SURVEYED: 236 m NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE

EST. OIL CATEGORY LENGTH: W – m M – m N 3 m VL 1 m NO 232 m US 50 m

LOC	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO		V H M L	WIDTH m	LENGTH m	S	UI	MI	LI	
A1						P					R	H	1/2	3		X			
A2			S								BC	L	0.2	1.0		X			trace of patchy

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- 1 - 20 FRAMES 2-3

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
1	10							X	-		–		X				CP – PGV	peat
2	15							X	-		–			X			P – PGV	"
3	15							X	-		–				X		PC – PGMV	"

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

OG COMMENTS: Sheltered rocky shore w/ flaggy BC veneer over steeply dipping bedrock.

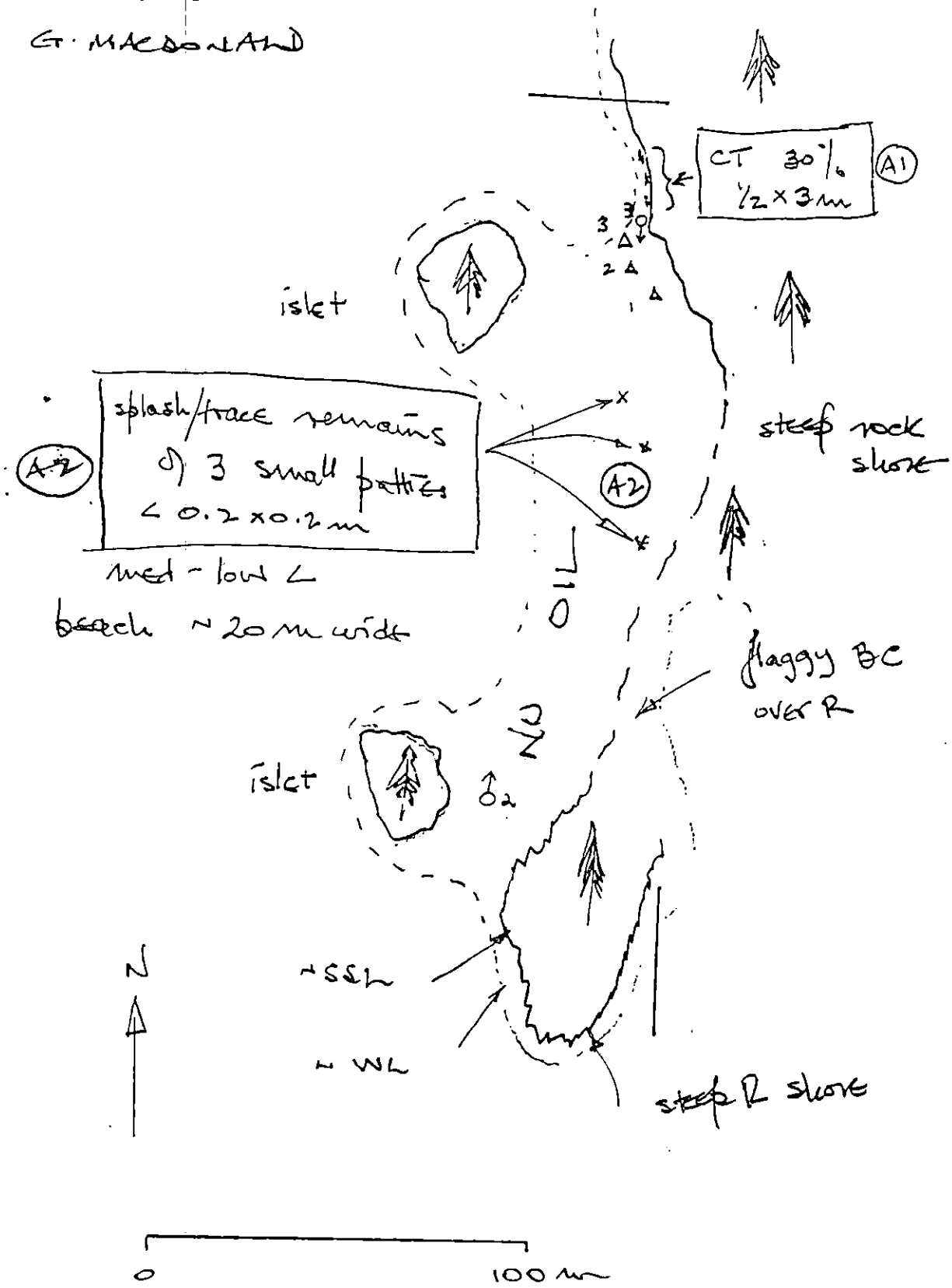
Surface oil only as 3 small remnant, slightly oiled patches and a short (3m) length of weathered CT on rock wall

SC revised

AE-2A

5.12.91

G. MACDONALD



EC reviewed J.N
REVIEWED

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1 DATE 12 May 91

SEGMENT # AE-2 TIDAL HEIGHT(Range) -0.5 to +0.5 ft

SUBDIVISION A BIOLOGIST Michael Fawcett

TIDE STATE 0.5ft WIND SPEED/DIRECTION SE 10 knots

PHOTOGRAPHS: ROLL # FRAME #

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

This subdivision has shale shingle beaches (P/C/R sediments) with bedrock outcrops and boulders at the ends. The bedrock & boulders have dense young rockweed up to about +11ft MLLW near the south end of the subdivision. Near the north end the walls have moderately dense barnacles (dense spat), limpets, and littorinids up to about +8ft, with more dense barnacles, algae (rockweed, Rhodomela, Ulva), mussels, etc further downshore. A dense mussel bed occupies the shingle beach downshore from the traces of SOR (about 10m downshore) --- dense barnacle spat + rockweed, littorinids, limpets, isopods nearer the SOR (5m downshore)

No eagle activity nor nest sighted at islet with charted active nest.

WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles		0	
Seabirds			
Waterfowl	2 canada goose, harlequin duck	82	
Gulls/kittiwakes	2 black-leg kitti, Glaucous-Gull	5	
Shorebirds	1 Least sandpiper	9	
Corvids			
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

0740 AE2 Fawcett
12 May 91

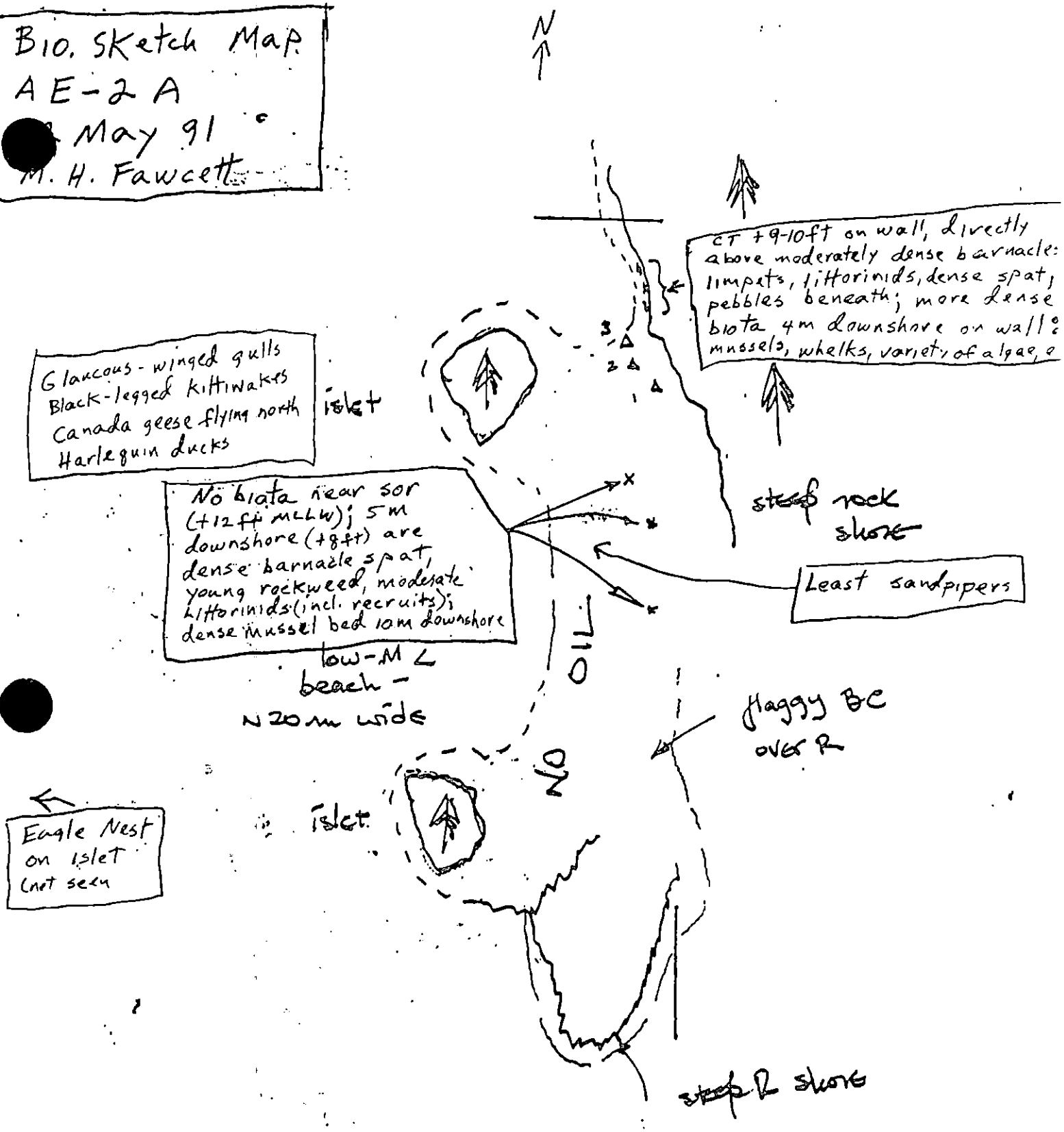
- stable shingle p/c/B
- dense rockweed along BR ~~sides~~ (depth +11
+ barnacles (<9ft)
- moderate mussel beds in shingle
w/ dense spat, moderate barnacles
(mostly on scales w/ Fucus -)
dense Littorina (+ recent), mod. limpets
9 Sandpiper (Least)
~ 80 Canada geese
- 2 harlequins, 1 lt Kitti, 3-4 GW gull
- trace of SOR near end of
segment in P/C ~ +12 ft -
no brots - about 5m downshore
+ 8 ft are dense spat, mod
Littorines, young Fucus, etc, & 5m
further down are mussels in bed
- Ct on wall +9-10 ft (green)
above mod. barnacles, limp, Litt, brot etc
dense spat - 4m downshore wall
brots more dense - mod Fucus
Rhodomela, Ulva, scattered
mussels - dense mussel bed
in P/C nearby

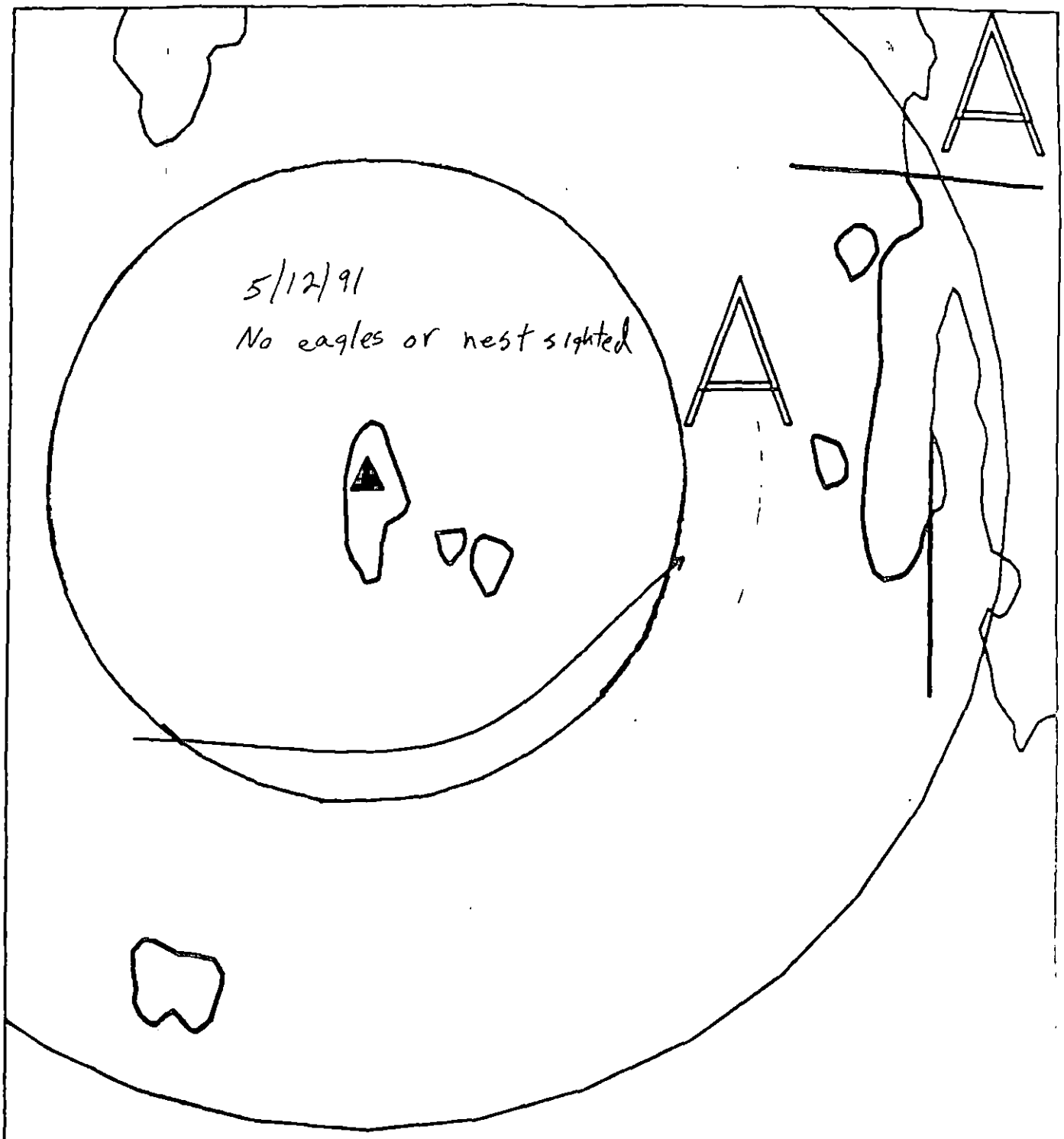
AE2 cont (5/12/91) Fawcett
LT2 below CT (15m downshore
@ +1ft) boulders have numerous
periwinkles, some Litt & Lanellaria
eggs, a few Thais eggs. 1 Glyanassa-
type snail - last up) - very dense spat
scattered young mussels, Cladophora,
a few N. emarg, Leptast, 1 Pycno
dep 0810

Arrive AE6 0.825 6
- rounded shale pebbles, f/c/B/
BR - dense Fucus on BR MTZ
LTZ, no spat in UTZ pebble
& gravel - very dense spat MTZ
LTZ - dense mussels MTZ on
BR
- no oil found - depart 0840
depart 0840

Ans Site 2 0843 - same habitat
pocket beach s/p/c/B/BR
- dense Fucus on east wall,
dense mussels on west, 0 to +8ft,
scattered Carotus & young Halosacca
below + leafy reds & Rhodo
- sparse N. emarg & Canaliculata

Bio. Sketch Map
AE-2A
May 91
M. H. Fawcett





AE002

Segment Reference Map

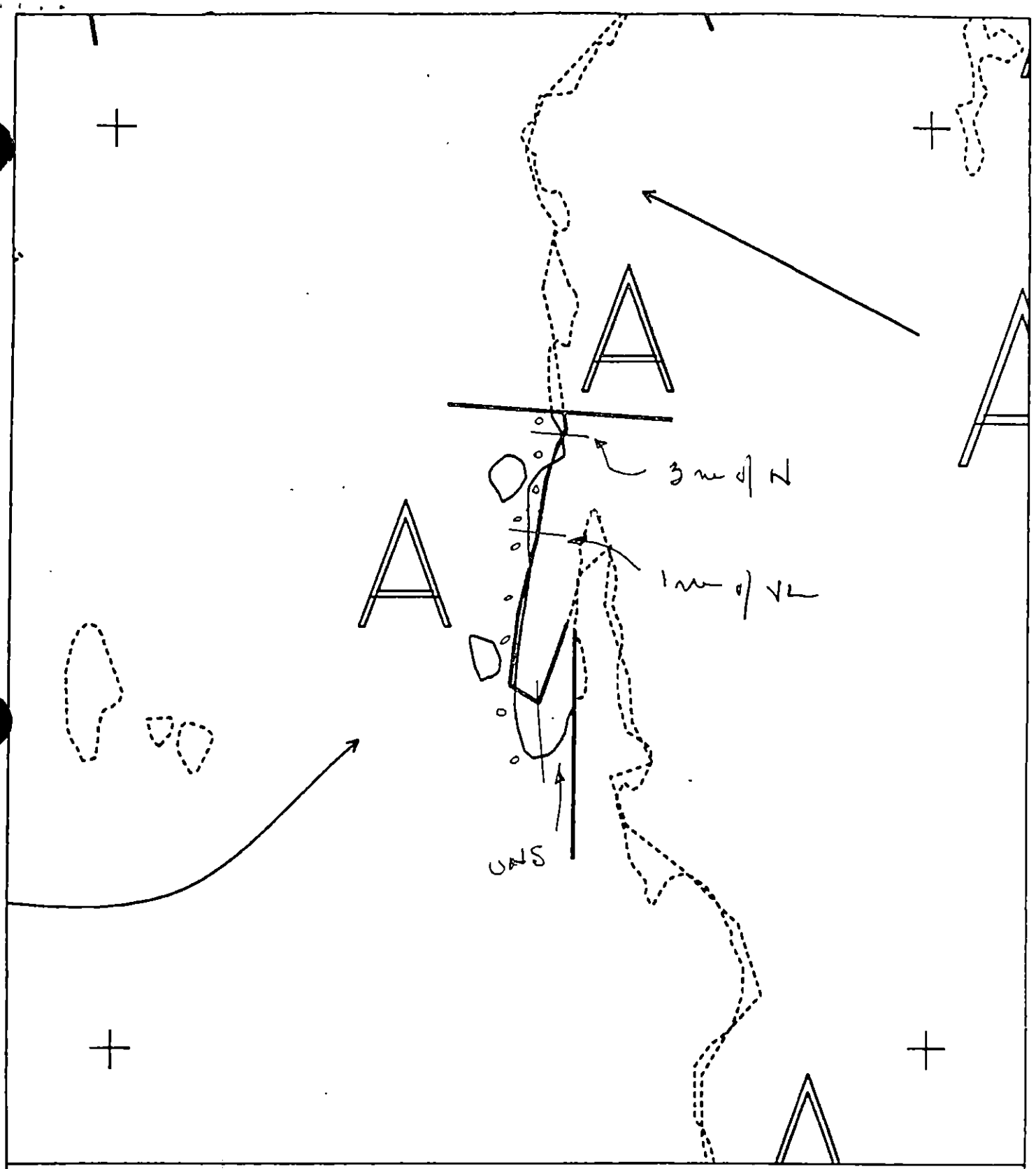
Map Key: PUSAE002

METERS

0 32 64

AK State Plane Zone 4

EAGLE NEST



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

AE002 A

ADEC Subsegment Length: 286m

METERS

0 100 200

AK State Plane Zone 4
pae002a

Subdivision Field Map
Map Key: PWSAE002A
Name: GM
Date: 5.12.91
Date Entered:

EF revised 5/14
REVIEWED CC 14 MAY
3

1991 MAYSAP EVALUATION

SEGMENT: AE 002 SUB: A REGION: PWS 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 Joan Dean Date: 5/24/91

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

COMMENTS:
INITIAL:

TAG:

FOSC:

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

ADEC

EXXON

USCG

NOAA

FOSC

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

ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

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

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 1 SEGMENT AE-002 SUBDIVISION A DATE 5/12/91

ADEC
NAME JEFF GINALIAS SIGNATURE [signature]

☒ NTR

ONLY REMAINING OIL IS OCCASIONAL SPLATTER NEAR SHALE BEDROCK UPRISE (SITE A2) AND COAT AT SITE (A1). TOO SMALL OF AN AMOUNT TO JUSTIFY TREATMENT.

EXXON
NAME RANDALL K. BOYER SIGNATURE Randall K. Boyer

☒ NTR

NO TREATABLE OIL ON THIS SUBDIVISION. MOSTLY FREE OF OILING WITH THE EXCEPTION OF A SMALL AREA OF COAT ON THE NORTHERN BOUNDARY OF THE SUBDIVISION. MUSSELS FUCUS AND OTHER BIOTA APPEAR HEALTHY. DUCKS WERE SEEN NEARBY. THIS SUBDIVISION SHOULD NOT BE REASSESSED.

LANDMANAGER
NAME MARSHA HALL OF DNR SIGNATURE Marsha Hall

☒ NTR

Minimal oiling.

MH

USCG/NOAA
NAME SCHULTZ / CHILDS SIGNATURE [signature] / [signature]

☒ NTR NOTHING OF SIGNIFICANCE REMAINS, + WOULD CAUSE MORE ENVIRONMENTAL HARM TO ATTEMPT RECOVERY THAN THE OIL TO BE RECOVERED.

SURFACE OIL PRESENT AS A WEATHERED COAT ON VERTICAL ROCK WALL AT THE NORTHWESTERMOST END OF SEGMENT & SEVERAL HIGHLY WEATHERED PATTIES IN PROTECTED CREVICES ALONG THE ROCK IN "A2". NO SUBSURFACE OIL OBSERVED.

MAYSAP SHORELINE OILING SUMMARY

TEAM NO. 1

OG G. MACDONALD BIO M. FAWCETT SEGMENT AE-2

ADEC J. GINANAS LANDMANAGER M. HALL for DNR SUBDIVISION A

EXXON R. BOYER USCG/NOAA SHULTZ / CHINAS DATE 5 / 12 / 91

TIME 07 : 40 to 08 : 10 TIDE LEVEL 0.0 ft. to +1.0 ft. ENERGY LEVEL: ☐ H ☐ M ☒ L

SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO WEATHER: ☐ SUN ☐ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

TOTAL LENGTH SHORELINE SURVEYED: 236 m NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE

EST. OIL CATEGORY LENGTH: W – m M – m N 3 m VL 1 m NO 232 m US 50 m

LOC	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO		V H M L	WIDTH m	LENGTH m	S	UI	MI	LI	
A1						P					R	H	1/2	3		X			
A2			S								BC	L	0.2	1.0		X			trace of patties

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- 1 - 20 FRAMES 2~3

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
1	10							x	-		–		x				CP – PGV	peat
2	15							x	-		–			x			P – PGV	"
3	15							x	-		–				x		Pc – PGMV	"

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

OG COMMENTS: Sheltered rocky shore w/ flaggy BC veneer over steeply dipping bedrock.

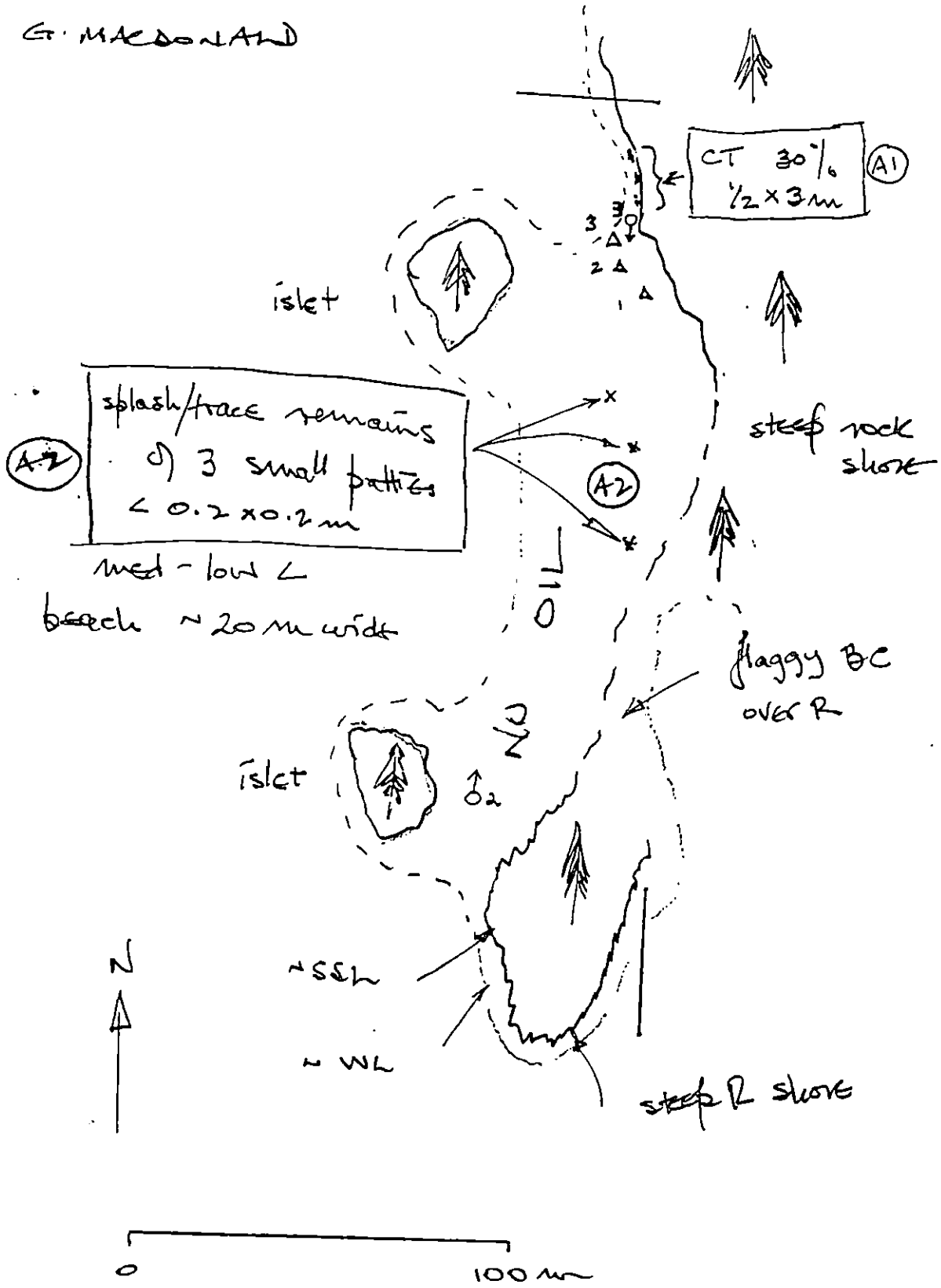
Surface oil only as 3 small remnant, slightly oiled patties and a short (3m) length of weathered CT on rock wall.

SC revised 5/14

AE-2A

5.12.91

G. MACDONALD



SK reviewed 5/14
REVIEWED CO 14 MAY

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1 DATE 12 May 91

SEGMENT # AE-2 TIDAL HEIGHT(Range) -0.5 to +0.5 ft

SUBDIVISION A BIOLOGIST Michael Fawcett

SEA STATE 0.5ft WIND SPEED/DIRECTION SE 10 knots

PHOTOGRAPHS: ROLL # FRAME #

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

This subdivision has shale shingle beaches (P/C/R sediments) with bedrock outcrops and boulders at the ends. The bedrock & boulders have dense young rockweed up to about +11ft MLLW near the south end of the subdivision. Near the north end the walls have moderately dense barnacles (dense spat), limpets, and littorinids up to about +8ft, with more dense barnacles, algae (rockweed, Rhodomela, Ulva), mussels, etc further downshore. A dense mussel bed occupies the shingle beach downshore from the traces of SOR (about 10m downshore) --- dense barnacle spat + rockweed, littorinids, limpets, isopods nearer the SOR (5m downshore)

No eagle activity nor nest sighted at islet with charted active nest.

WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles		0	
Seabirds			
Waterfowl	2 canada goose, harlequin duck	82	
Gulls/kittiwakes	2 black-leg kitti, Glw-Gull	5	
Shorebirds	1 Least sandpiper	9	
Corvids			
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

0740 AE2 Fawcett
12 May 91

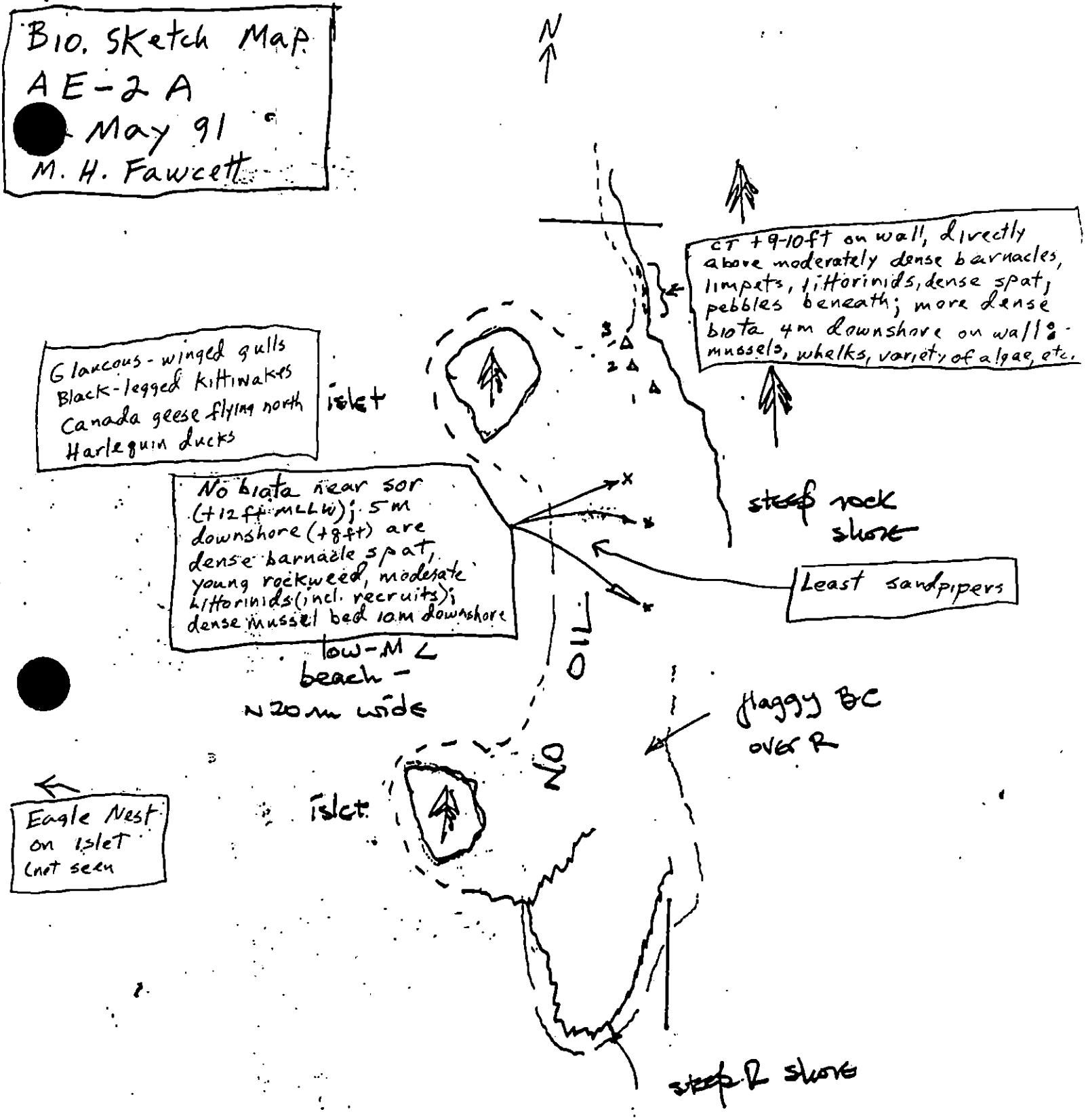
- shale shingle p/c/B
- dense rockweed along BR sides (mpt +1
+ boulder (<9ft)
- moderate mussel beds in shingle
w/ dense spot, moderate barnacle
(mostly on sides w/ Fucus -)
dense Littorina (welcomi), mod. limpets
9 Sandpiper (Least)
~ 80 Canada geese
- 2 harlequin, 1 ♂ Kitti, 3-4 GW gull
- trace of SOR near end of
seagrass in P/C ~ + 12 ft -
no brots - about 5 m downshore
+ 8 ft are dense spot, mod
Littorines, young Fucus, etc, + 5 m
further down are mussels in bed
- Ct on wall + 9-10 ft (green)
above mod. barnacles, limp, litt, bot
dense spot - + m downshore wall
brots more dense - mod Fucus
Rhodomela, Ulva, scattered
mussels - dense mussel bed
in P/C nearby

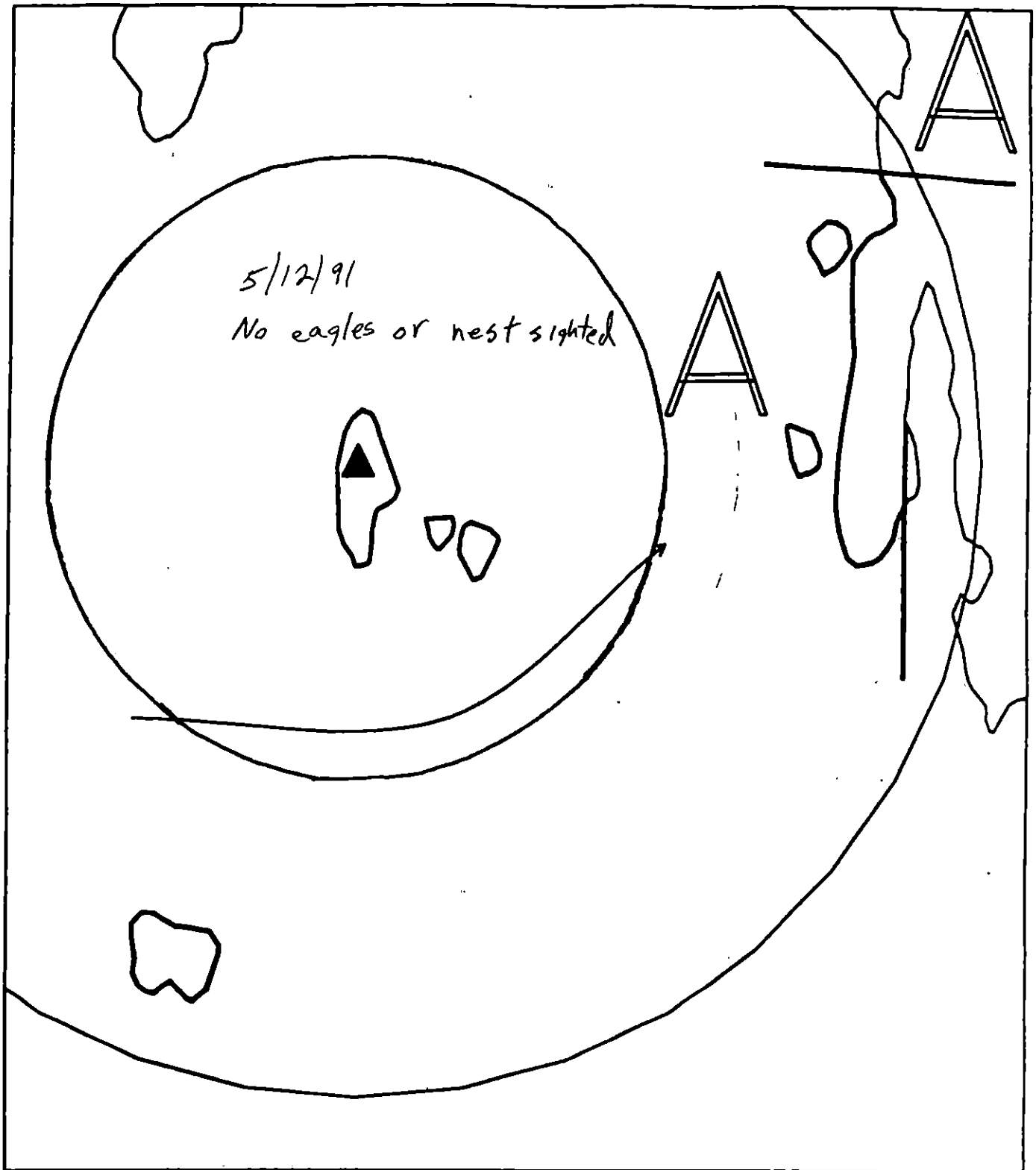
AE2 cont (5/12/91): Fauvett
LT2 below CT (15m offshore
@ +1ft) boulders have numerous
predlibodes, some Litt & Lanellidaria
eggs, a few Thais eggs. 1 Olyanassa-
type snail - look up) - very dense spat
scattered young mussels, Cladophora,
a few N. emarg, Leptast, 1 Pyrus
dep 0810

Arrive AE6 0825
- rounded shale pebbles, f/c/B/
BR - dense Fucus on BR MTZ
LTZ, no scots in LTZ pebble
& gravel - very dense spat MTZ
LTZ - dense mussels MTZ on
BR
- no oil found - depart 0840
depart 0840

ARS Site 2 0843 - same habitat
pocket beach c/p/c/B/BR
- dense Fucus on east wall,
dense mussels & barn on west, 0 to +8ft,
scattered carotus & young Halosacca
below + leafy reds & Rhodo
- sparse N. emarg canaliculata

Bio. Sketch Map
AE-2A
May 91
M. H. Fawcett





AE002

Segment Reference Map

Map Key: PWSAE002

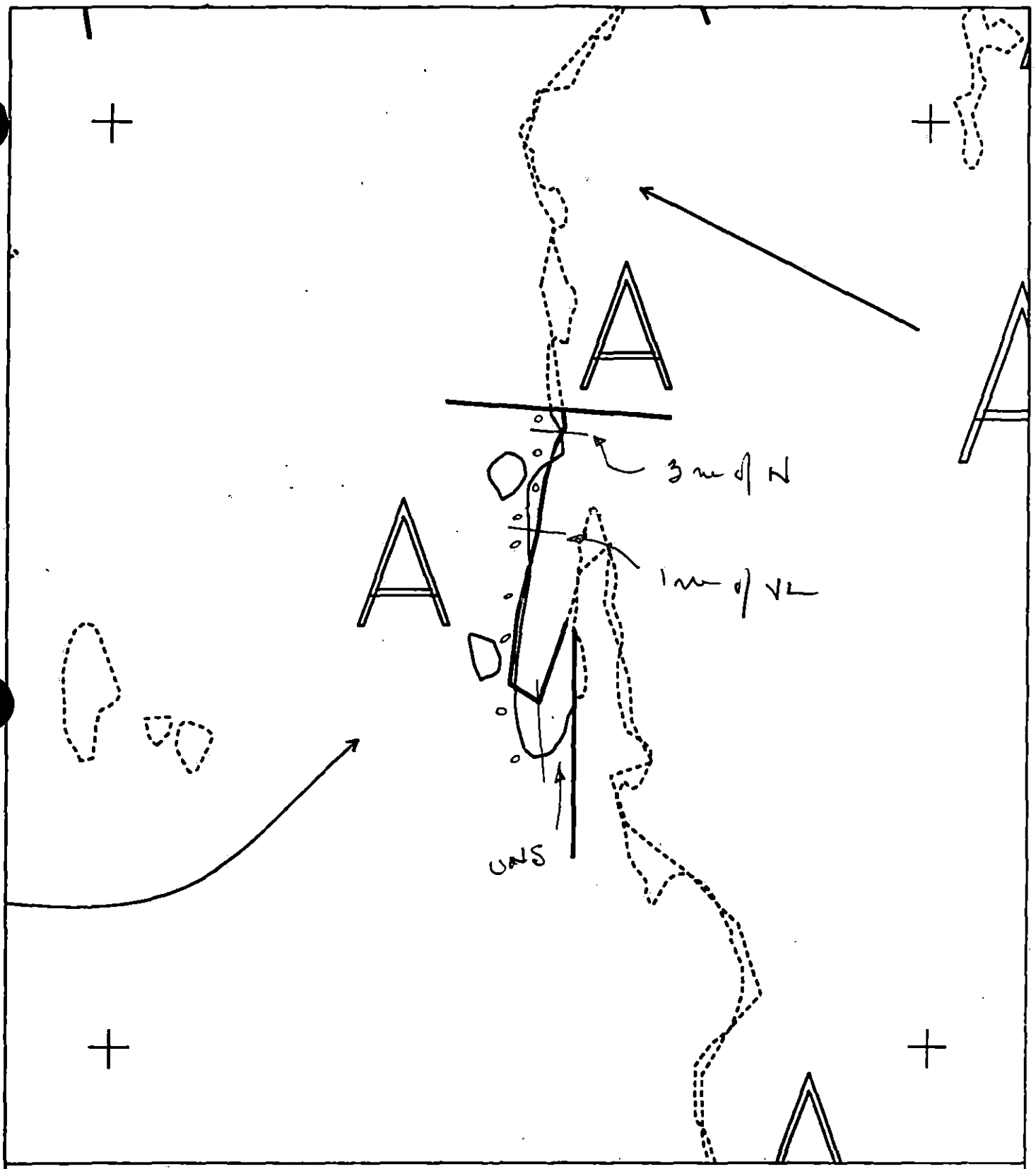
METERS

0 52 104

AK State Plane Zone 4
pwsk02

EAGLE NEST

M. FAWCETT
5/12/91
Team 1



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

AE002 A

ADEC Subsegment Length: 286m

METERS

0 100 200

AK State Plane Zone 4
pae002a

EXXON

Subdivision Field Map
Map Key: PWSAE002A
Name: GM
Date: 5.12.91
Date Entered:

EF revised 5/14
REVIEWED CO 14 MAY

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/AE-03

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ AE-03 SUBDIVISION A (1 OF 1) DATE 4/22/90

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

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

ARCHAEOLOGICAL CONSTRAINTS:
If 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 35 m: No Oil 883 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 _____ FOSC:_____ DATE:_____
NOAA _____
USCG _____

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 Suzomoto 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 unoiled 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 Rothy 267-2206

5T All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
Restrict air traffic and all disturbance to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

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

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

30

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / AE3 SUBDIVISION: A DATE 4/22/90

USCG
NAME Randolph W. Hubbard SIGNATURE [signature]

☑ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

ADEC
NAME Patrick J. Endres SIGNATURE [signature]

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS
Due to very minimal oiling no treatment recommended

LAND MANAGER
NAME MARSHA MARTIN / DNR SIGNATURE [signature]

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS NO COMMENT

SHORELINE OILING SUMMARY

REVISION NO. 04/13/90

22

OG Reimer USCG Hubbard SEGMENT ST/ AE 3
BIO ZAMURA LAND REP M. MARTIN (DNR) SUBDIVISION A (1 OF 1)
EXXON ARBUCKLE ADEC P. ENTRES TIME 15:45 to 17:07
TEAM NO. 16 TIDE LEVEL +4 to +4.5 DATE 4 / 22 / 90
EST. SUBDIVISION LENGTH: 1079 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: South to North
SURFACE SEDIMENTS: R 35 % B 20 % C 30 % P 15 % G 0 % S 0 % M 0 % V 0 %
SLOPE: Lang 30 % Hang 65 % Vert 5 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 75 m NO 1004 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	PC	PS	PP	PR						SU	UI	MI	LI
ASPHALT PAVEMENT													
POOLED													
COVER													
COAT				X		X					X		
STAIN													
MOUSSE													
PATTIES													
TARBALLS													
FILM													
NO OIL										X		X	X

PAVEMENT H F S 0 sq. m by 0 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

#BAGS

Photographs:

Roll No. ST-16-10

Frames 32-38

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	UC						SU	UI	MI	LI				
1	25					X	•									X						P - CC
2	20					X	•									X						P - P
3	20					X	•									X						P - PR
4	25					X	•									X						P - PGS
5	30					X	•										X				25	P - PGC
6	25					X	•									X						C - PGC

COMMENTS Predominantly a bedrock controled coastline with alternating sections of high angle to vertical bedrock cliff and moderate sloped bedrock platform mantled with cobbles and boulders, and pocket beaches of pebbles, cobbles and scattered boulders in the lower intertidal zone. The majority of this segment is exposed to at least moderate wave exposure as evidenced by well developed storm berms at the back of beaches. The exception to this is a sheltered cove at the north end of the segment which has extensive peat deposits and exposed

REVIEWED JW DATE 4/25/90

SHORELINE OILING SUMMARY (PAGE 2)

REVISION 06/13/90

SEGMENT ST/ A63 SUBDIVISION A (1 OF 1)

23/35

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	UO						SU	UI	MI	LI				
							-															
7	35					X	-									X						P-P
8	20					X	-											X				P-P
9	30					X	-									X					28	PC-GS
							-															
							-															
							-															
							-															
							-															
							-															
							-															
							-															
							-															
							-															

COMMENTS

NOEC RJE

REVIEWED TW DATE 4/25/90

Reim

GMENT ST/ AE-3

IBDIVISION A

ATE 4 / 22 90

HECKLIST

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

EGEND

1 ▲

1 - No Subsurface Oil

2 ▲

1 - Subsurface Oil

CT/C
nitious Distribution

CT/B
oken Distribution

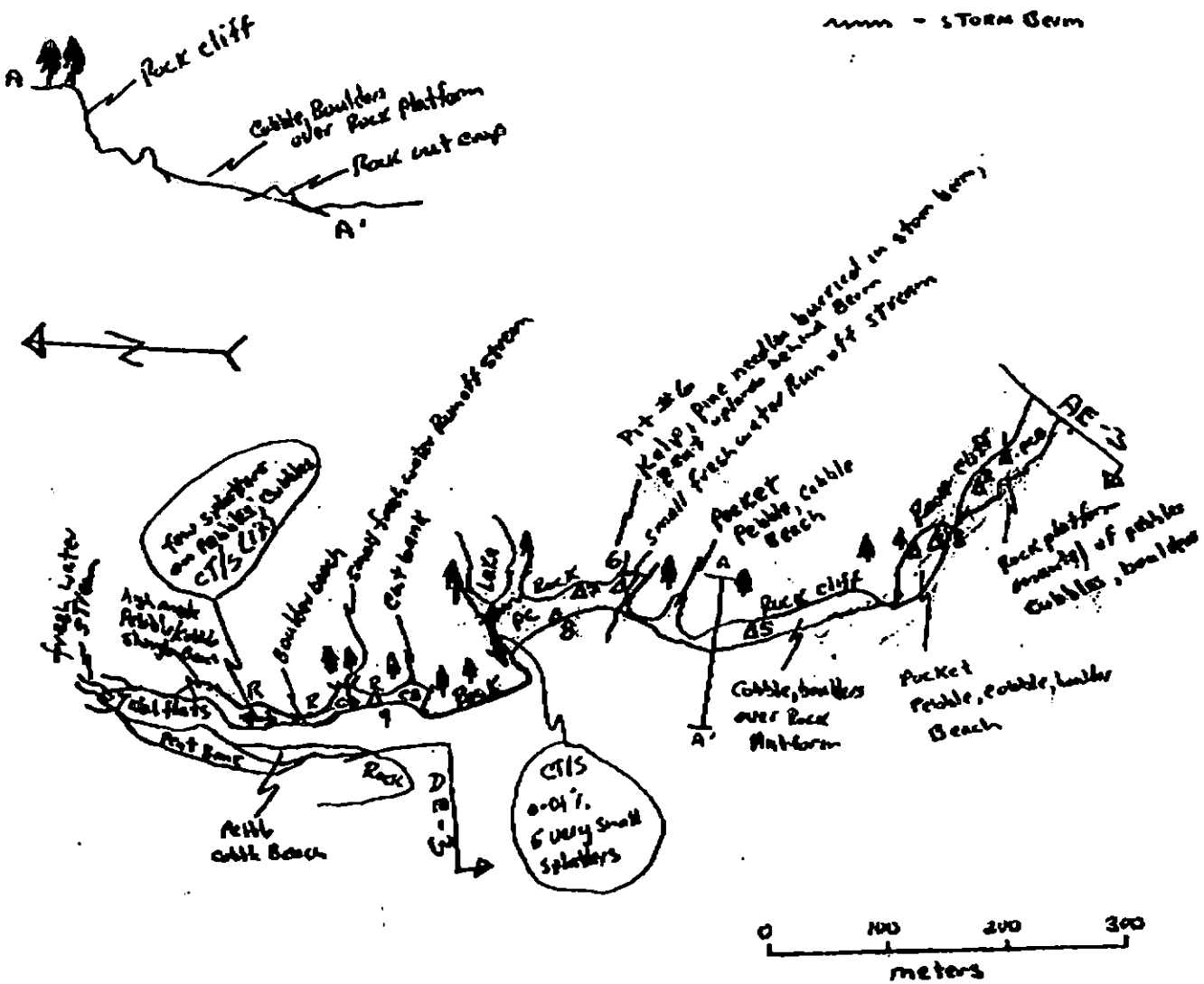
CT/P
achy Distribution

CT/S
ashed Distribution

eee
ed Vegetation

1
ote location, direction,
d number

SKETCH MAP



Character Length (m): AP 0 PO 0 CV 0 CT 75 ST 0 MS 0 PT 0 TB 0 FL 0 NO 1004

2/3

SHORELINE ECOLOGICAL SUMMARY

REVISION: 06/22/90

Segment ST / AG3 Subdivision A Date (mo / day / yr) 4/21/90

Time (24 hr) 1545 ON 1707 OFF Biologist TONY ZAMORA

(A) Substrate type and % of segments:
(1) Bedrock 35 (2) Boulder 20 (3) Cobble 30 (4) Pebble 15 (5) Sand — (6) Silt —

(B) Overall % cover of biota (% of segment): Dense 80 Moderate 20 Low —

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

Photographs:
Roll No. ST-16a-10
Frames 32-38

BARNACLES

Dense			Moderate			Sparse			Rare			
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	(2)	2	X	X	2	X	2	2	2	2	2	
3	(3)	3	X	3	3	X	X	3	3	3	3	NOT PRESENT
4	4	4	X	(4)	4	4	4	4	4	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	

MYTILUS

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

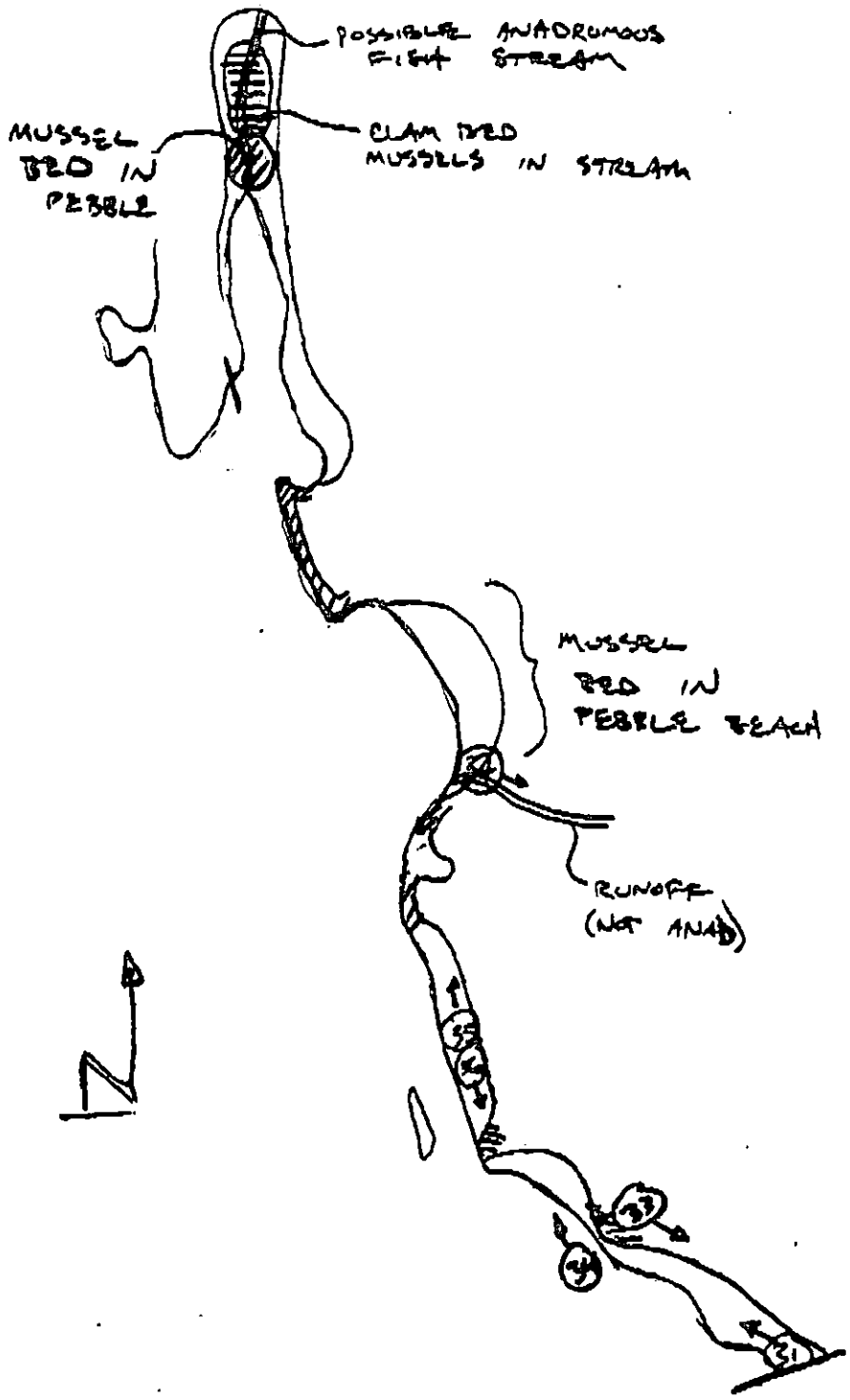
Wildlife Observations/ General Comments:
- 2 CORMORANTS SPOTTED
- FAIRLY DENSE ROCKY SHORE COMMUNITY, VERY LOW MORTALITY. OVERA VERY DENSE NEW BARNACLE GROWTH ON ROCK, BLDR, CBL, PBL & ON MUSSELS IN MITE. NEW GROWTH OF FUCUS; LITTORINES, & MYTILUS IN.

Ecological Considerations:

6W, 5T

- LOW INTERTIDAL ZONE WAS UNEXPOSED DURING SURVEY
- SMALL SHELTERED COVE AT NORTH END CONTAINS RICH CLAM TED (SAXOMUS [illegible])

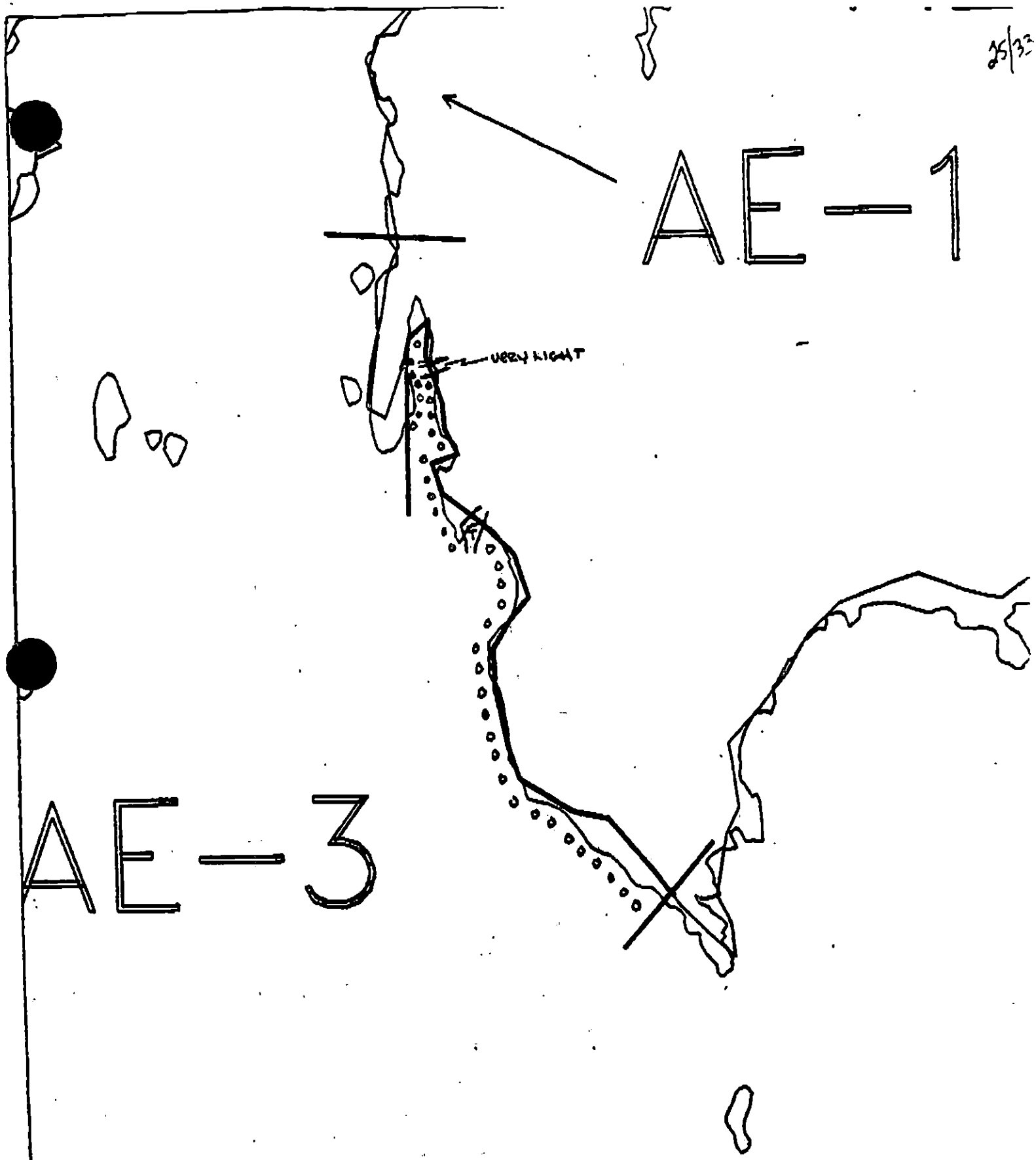
27/35



AE3

DTE ADEC

25/32



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

AE-3

ADEC Segment Length: 919m

Map Key: PWS-4
Name: Reimer
Date: 4/22/90

SHORELINE EVALUATION

SEGMENT ST/ AE-03 SUBDIVISION A (1 OF 1) DATE 4/22/90

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

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

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

SHPO SIGNATURE: [signature] DATE: 5/2/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 35 m: No Oil 883 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: 5/2/90.
ADEC ART WEBER [signature]
EXXON AMY GAL [signature]
NOAA Gary Pelsor [signature]
USCG KENNETH KEANE [signature]

FOSC: [signature] DATE: 5-9-90

G Reim

EGMENT ST/ AE-3

UBDIVISION A

ATE 4 / 22 90

CHECKLIST

- N-Arrow
- Approx. Scale
- Seg/Sub Bndry
- Oil Dist.
- Width
- Length
- % Cover
- Substrate Character
- Est. HWL/WL
- SSI
- Profile Location(s)
- Profile(s)
- Pit Location(s)
- Photo Location(s)

LEGEND

1 ▲

% - No Subsurface Oil

2 ▲

% - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

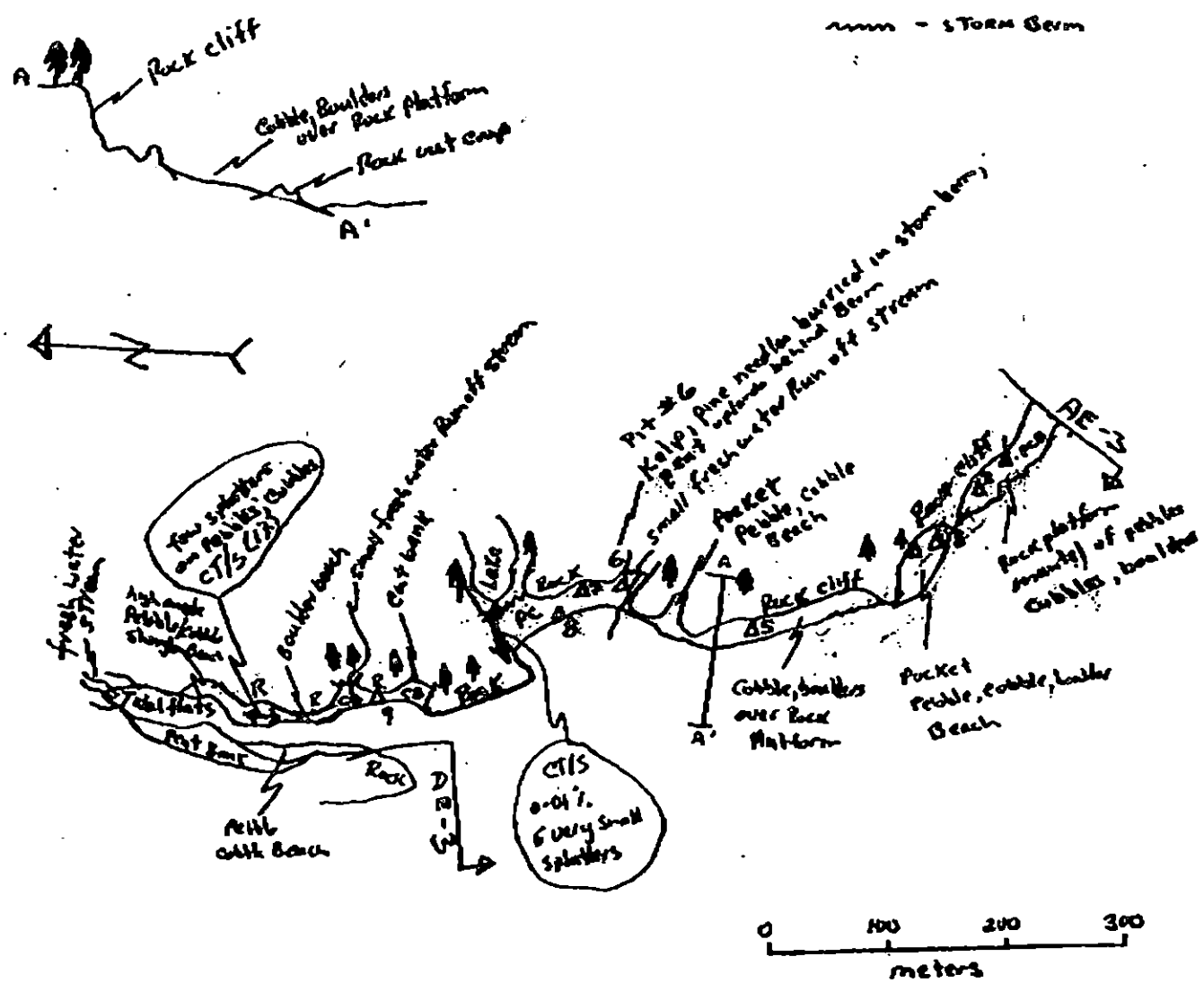
CT/S

Splashed Distribution

Mixed Vegetation

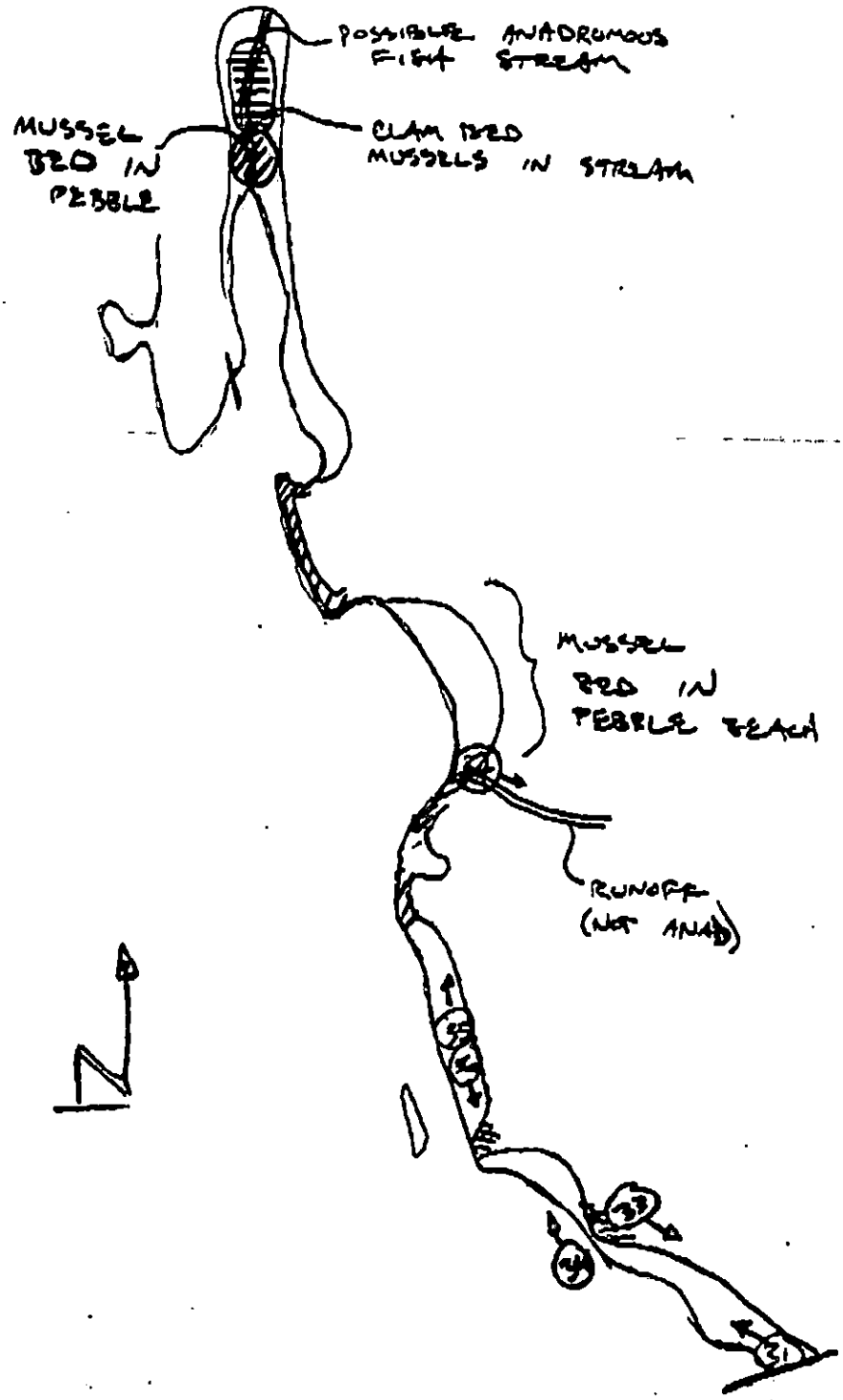
Photo location, direction, and number

SKETCH MAP



Character Length (m): AP 0 PO 0 CV 0 CT 75 ST 0 MS 0 PT 0 TB 0 FL 0 NO 1004

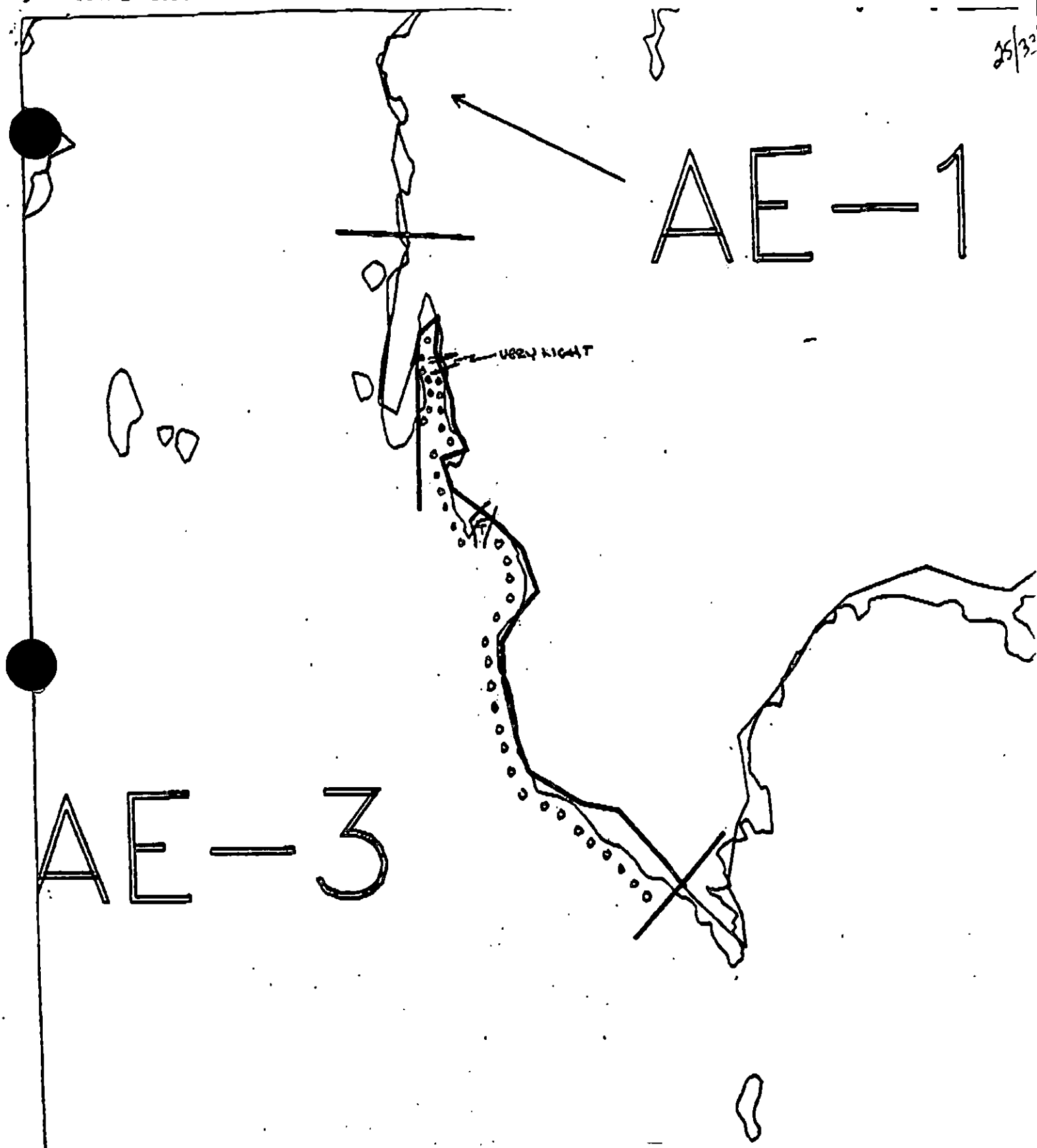
27/33



AE3

DATE ADDED

25/32



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

AE-3

ADEC Segment Length: 919m

0 100 200 300

Map Key: PWS-4
Name: Reimer
Date: 4/22/90
Date Entered:

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/AE-04

SUBDIVISIONS: A (1 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ AE-04 SUBDIVISION A (1 OF 2) DATE 4/20/90

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

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

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

SHPO SIGNATURE:_____ DATE:_____

OILING CATEGORIZATION:

Wide 18 m: Medium 37 m: Narrow 0 m: V.Light 73 m: No Oil 205 m
Subsurface Oil Observed: Yes X No____ Maximum Depth 15+cm

RECOMMENDATIONS:

____No Treatment Recommended	____Snare/Absorbent Booms
X Treatment Recommended	____Oil Snares (pom poms)
X Manual Pickup	____Absorbents (pads,rolls,etc)
X Bioremediation	____Spot Washing:____Wands
X Tarmat Removal	____Beach Cleaner
	____Other (see comments)

COMMENTS: Recommended treatment includes 1) removal of tarmats, 2) manual pickup of trash, and 3) bioremediate area of surface cover shown on attached sketch map. No specific ecological time constraints identified.

TAG COMMENTS:_____

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

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / AE-4 SUBDIVISION: A DATE 4/20/90

USCG
NAME Randolph W. Hubbard SIGNATURE [signature]

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

1. Very small amount of oil throughout area covered.
2. The distance between oil founded and oil not seen the ratio are usually about 3 to 4 %

ADEC
NAME J. LYNN MARTIN SIGNATURE [signature]

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED
COMMENTS

AGREE WITH EXXON OPS. RECOMMENDATION FOR A SPOT WASH OF ROCK AT NORTH SIDE OF SEGMENT. I WOULD, HOWEVER SUGGEST A CLOSER STUDY BEFORE USE OF BIOREMEDIATION IN ARE BECAUSE OF LOW MORTALITY OF BIOTA IN AREA.
I ALSO AGREE WITH RECOMMENDATION FOR MANUAL REMOVAL OF ASPHALT AREAS AROUND TEST PIT #6.

LAND MANAGER
NAME MARSHA MARTIN / DNR SIGNATURE Marsha Martin

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

Agree with Recommendations - Remove tar mats and spot washing. High use Kayak area. Inquire as to past bioremediation treatment on this portion of segment, to see if only NOAA site to W was treated or not.

SHORELINE OILING SUMMARY

REVISION NO. 06/13/89

OG Reimer USCG Hubbard SEGMENT ST/ AE-4
BIO Zamora LAND REP M. MARTIN (DNR) SUBDIVISION A (1 OF 6)
EXXON Arbuckle ADEC L. MARTIN TIME 16:00 to 18:15
TEAM NO. 16 TIDE LEVEL +2 + 2.5 DATE 4 / 20 / 90
EST. SUBDIVISION LENGTH: 1000 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: North to South
SURFACE SEDIMENTS: R 60 % B 5 % C 15 % P 15 % G 5 % S 0 % M 0 % V 0 %
SLOPE: Lang 30 % Hang 70 % Vert 0 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
OIL CATEGORY LENGTH: W 200 m M 710 m N 0 m VL 100 m NO 210 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	rc	rs	rp	rs						su	ui	mi	ui
ASPHALT PAVEMENT		X	✓			X/✓					X/✓	X/✓	
POOLED													
COVER		✓		X		X/✓					✓/X	X	
COAT													
STAIN													
MOUSSE				X				X			X		
PATTIES				X				X			X		
TARBALLS													
FILM													
NO OIL										X			X

PAVEMENT H F (S) 680 sq. m by 3 cm

PATTIES / TARBALLS 2 BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT SM	MD	LG
Logs			
Vegetation			
Trash	X		
Debris			

DID YOU COLLECT DEBRIS? YES ☐ NO ☒

TYPE

#BAGS

Photographs:

Roll No. ST-16-11

Frames 7-11

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm-cm)	BELOW		OIL / FILM COLOR					PIT ZONE				ANA	SHEEN (Y/N)	▼	SURFACE-SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC						SU	UI	MI	UI		—	—	
1	20					X	-								X					—	—	P-M
2	45					X	-								X				X	—	—	P-Peat
3	15				X		5-15	X		X							X			Y	8	P-G Peat
4	30				X		6-10		X				X			X			—	—	—	P-PG
5	20					X	-										X					C-P, Peat
6	10		X				5-10	X					X			X						C-PGC

COMMENTS Sheltered embayment formed by nearshore Islands and pebble Tombolo feature. The Subsection is bounded by steep sloped rock with the exception of the Pebble beach @ the head. The nearshore Islands are connected by a wide tidal flat at low tide.
The oil in the subsection consists mainly of sporadic covers of oil on rocky areas. One area of heavier cover is found on the western side of the bay where a surface mantle of pebble and cobble overlie rock platform. Two areas of pavement are found at the head of the bay just to the [illegible] on the beach.

REVIEWED [illegible] DATE 4-23-90

SHORELINE OILING SUMMARY (PAGE 2)

REVISION 06/13/90

SEGMENT ST/ AE4 SUBDIVISION A (1 OF 3)

SUBSURFACE OIL (CONTINUED)

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CM)	BELOW		OIL / FILM COLOR					PIT ZONE				ANA	SHEEN (Y/N)	▼	SURFACE SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC						SU	UI	MI	U				
7	30					X	-								X							P - PG
8	35					X	-										X			Y	20	P - PGM
9	35					X	-											X			20	P - M
10	30					X	-										X				20	P - M
							-															
							-															
							-															
							-															
							-															
							-															
							-															
							-															
							-															
							-															

COMMENTS

REVIEWED JW DATE 4-23-90

OS Packet#

SEG[redacted]ST/ AE-4

SUBDIVISION A

DATE 4 / 20 90

SKETCH MAP

CHECKLIST

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

LEGEND

1 ▲ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

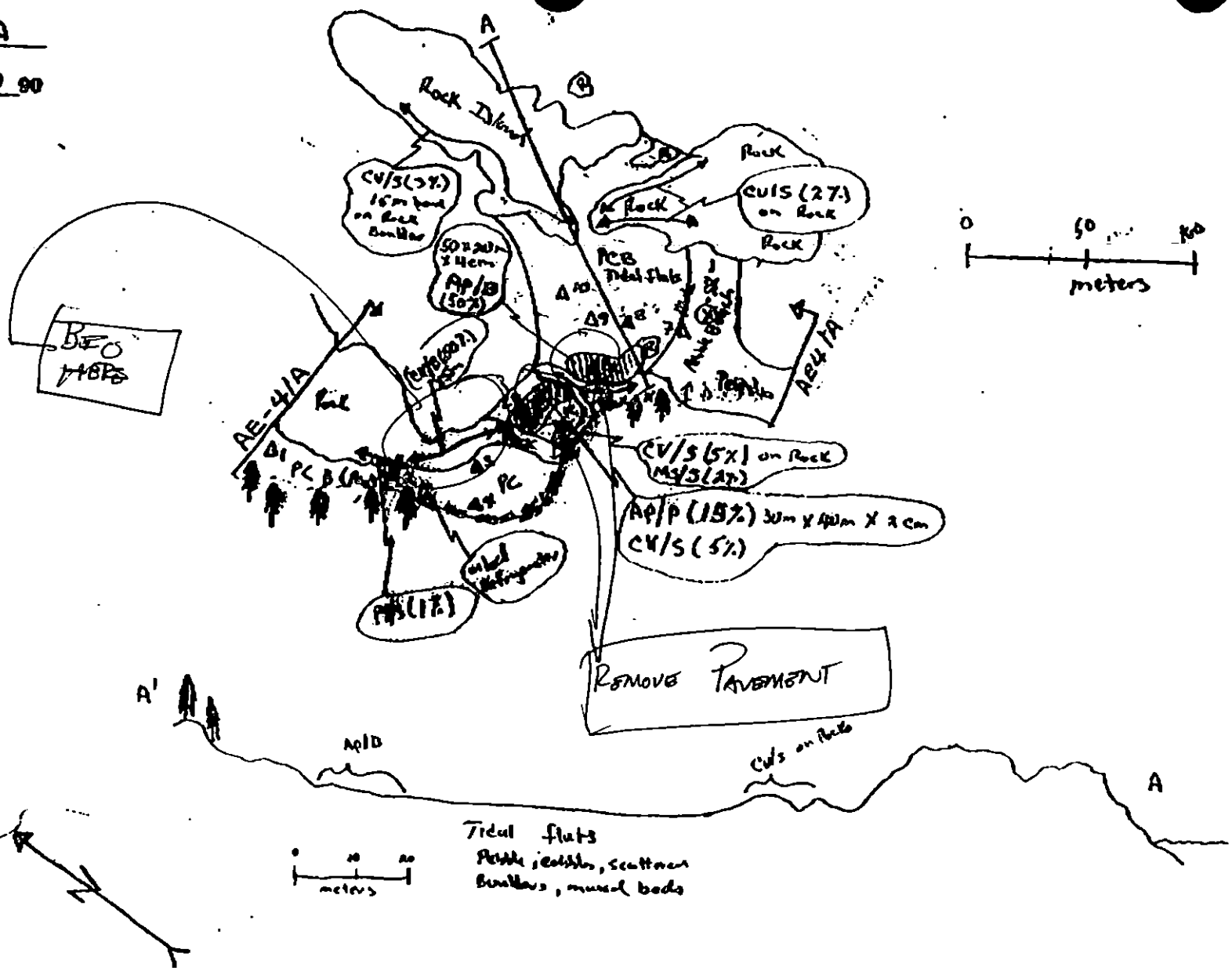
CT/B Broken Distribution

CT/P Patchy Distribution

CT/S Splashed Distribution

Oiled Vegetation

Photo location, direction, and number



Oil Character Length (m): AP 90 PO — CV 320 CT 44 ST — MS 75 PT 20 TB — FL — NO 210

REVISION 02/2000

180
500

6

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / AE 4 Subdivision A Date (mo / day / yr) 4/20/90

Time (24 hr) 1530 ON 1830 OFF Biologist TONY ZAMORA

(A) Substrate type and % of segments:
(1) Bedrock 60 (2) Boulder 5 (3) Cobble 15 (4) Pebble 20 (5) Sand — (6) Silt —

(B) Overall % cover of biota (% of segment): Dense 50 Moderate 40 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-16-11
Frames 7 - 11

BARNACLES

Dense			Moderate			Sparse			Rare			
X 1U	X 1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	X	X	2	2	2	2	2	2	2	
3	3	3	3	X	3	3	3	3	3	3	3	NOT PRESENT
4	4	4	4	4	4	4	X	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	X 1M	1L	X 1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	X	2	2	2	2	2	
3	3	3	3	3	3	X	3	3	3	X	3	NOT PRESENT
4	X	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	X 1M	1L	X 1U	X 1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	X	X	2	2	2	2	2	2	2	
3	3	3	X	X	3	3	3	3	3	3	3	NOT PRESENT
4	4	4	X	4	4	4	X	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	X 1M	1L	1U	1M	1L	X 1U	1M	1L	1U	1M	1L	
2	X	2	2	2	2	X	2	2	2	2	2	
3	3	3	3	3	3	3	X	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:
-DEAD OTTER CARCASS - NO VISIBLE OIL. DEAD COD (FRESH).
-3 CORMORANTS

Ecological Considerations: GU, FSS

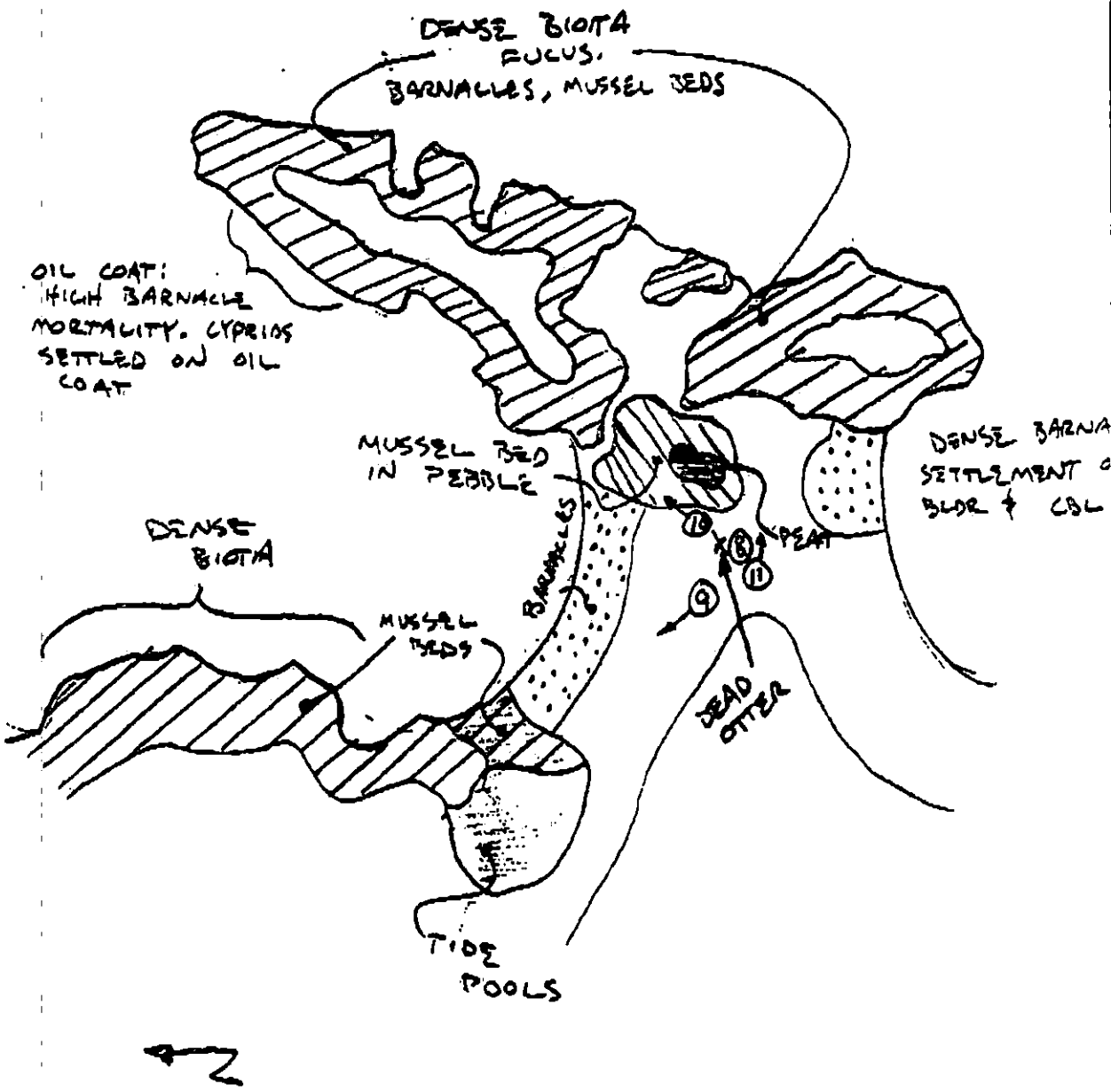
AE 4

- RICH & APPARENTLY HEALTHY EXPOSED ROCKY SHORE COMMUNITY. DENSE MYTILUS BEDS PRESENT ON ROCK OUTCROP & WITHIN PROTECTED PEBBLE ZONE BEHIND ROCK. DENSE BARNACLE & FUCUS COVERAGE ON ROCK.

- DIVERSE ALGAE IN MI - RHODEMELA, ENDOCLADIA, HALOSACCION, RALFSIA, ULVA, CORALINES.

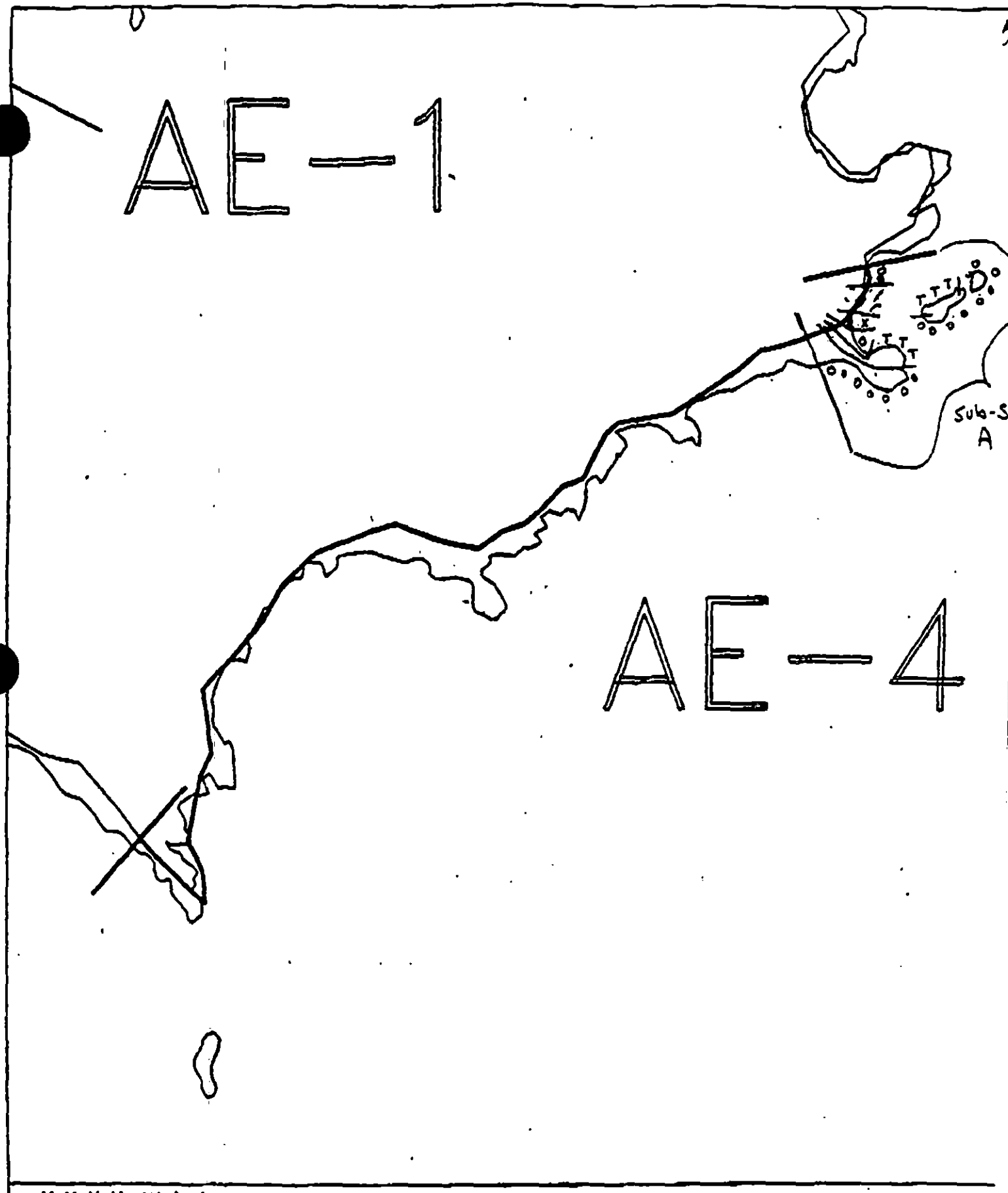
- HEAVY RESETTLEMENT OF BARNACLES - RECENT, ~80% ARE NOT YET METAMORPHOSED. SOME SEEN SETTLED ON OIL COAT IN UI (STILL CYPRIS) BUT NOT IN DENSE AGGREGATIONS AS THEY ARE IN LOWER ZONES. JUVENILE MYTILUS SEEN BUT NOT < 5 mm. NEW FUCUS GROWTH SEEN NEAR BUT NOT ON OIL COAT.

- HIGH ~70 MORTALITY OF OIL COATED BARNACLES ON ROCK IN UI. LOW MORTALITY OF UNOILED BARNACLES.



AE4 - A

BIO SKETCH + PHOTO LOCATIONS



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

AE-4/A

ADEC Segment Length: 1378m

0 100 200 300

Map Key: PWS-5
Name: Reimer
Date: 4/20/90
Date Entered:

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/AE-04

SUBDIVISIONS: B (2 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ AE-04 SUBDIVISION B (2 OF 2) DATE 4/21/90

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

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Small stream noted by biologist in Subdivision B not catalogued as anadromous by ADF&G.

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 35 m: Medium 13 m: Narrow 136 m: V.Light 240 m: No Oil 833 m
Subsurface Oil Observed: Yes X No____ Maximum Depth 40+cm

RECOMMENDATIONS:

____No Treatment Recommended	____Snare/Absorbent Booms
X Treatment Recommended	____Oil Snares (pom poms)
X Manual Pickup	____Absorbents (pads,rolls,etc)
X Bioremediation	____Spot Washing:____Wands
X Tarmat Removal	____Beach Cleaner
	____Other (see comments)

COMMENTS: Recommended treatment includes 1) removal of tarmats, 2) manual pickup of mousse and debris, and 3) bioremediation in areas of subsurface oil. No specific ecological time constraints identified.

TAG COMMENTS:_____

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

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / AE-4 SUBDIVISION: B DATE 4/21/90

USCG
NAME Randolph W Hubbard SIGNATURE [signature]

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED
COMMENTS

1. Oil mat located among rock beds, difficult to get some times.
2. Oil found were sporadic or patchy and occasionally debris covered or stained w/oil.

ADEC
NAME J. LYNN MARTIN SIGNATURE [signature]

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED
COMMENTS

MANUAL REMOVAL OF ASPHALT AREAS AND SPARATIC MOUSSE THROUGHOUT SEGMENT. MOST OF THE COVERS AND COATS APPEAR ON THE LANDWARD SIDE OF ROCKS, WITH THE EXCEPTION OF THE SPARATIC 1m X 5m (5%) COAT AT THE EAST END (BEGINNING) OF SEGMENT. BIOREMEDIATION. SHOULD NOT BE USED IN AREA DUE TO THE FACT THAT THE BIOTA IN AREA HAS A VERY LOW MORTALITY, AND THE LONG TERM EFFECTS OF BIOREMEDIATION IS STILL YET UNKNOWN

LAND MANAGER
NAME MARSHA MARTIN / DNR SIGNATURE [signature]

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

PWS USE: harvest area purse seine hook off. Was treated on 8-28-89 using bioremediation - do not know if this applies strictly to NOAA site. Popular Kayaking spot. Advise Against bioremediation.

SHORELINE OILING SUMMARY

REVISION NO. 04/13/90

15

OG Reimer USCG Hubbard SEGMENT ST/ AE-4
BIO Zamora LAND REP M. Martin (DNR) SUBDIVISION B (2 OF 3)
EXXON [illegible] ADEC L. Martin TIME 14:00 to 17:15
TEAM NO. 16 TIDE LEVEL +6 to +1 DATE 4 / 21 / 90
EST. SUBDIVISION LENGTH: 1745 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: NE to SW
SURFACE SEDIMENTS: R 50 % B 5 % C 20 % P 25 % G 0 % S 0 % M 0 % V 0 %
SLOPE: Lang 40 % Hang 60 % Vert 10 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
OIL CATEGORY LENGTH: W 45 m M 20 m N 240 m VL 320 m NO 1150 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	/C	/B	/P	/S						SU	LI	MI	LI
ASPHALT PAVEMENT	X					X						X	
POOLED													
COVER		✓	X	o		X✓ o				✓	✓X o	X✓ o	
COAT			X	✓		✓/X					✓/X	✓/X	
STAIN													
MOUSSE			X	✓				X/✓			X/✓	X/✓	
PATTIES				X				X			X		
TARBALLS													
FILM													
NO OIL													X

PAVEMENT H F (S) 96 sq. m by 5 cm

PATTIES / TARBALLS 5 BAGS

NEAR SHORE SHEEN? NO BR RW (SL) TL

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

DID YOU COLLECT DEBRIS? YES ☐ NO ☒

TYPE

#BAGS

Photographs:

Roll No. ST-16-10

Frames 19-23

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CM)	BELOW		OIL / FILM COLOR					PIT ZONE				ANA	SHEEN (Y/N)	▼	SURFACE-SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC						SU	LI	MI	LI				
1	45					X	-									X				-		P-PG
2	50					X	-										X			-		P-G
3	45					X	-											X		-		P-PG
4	70					X	-									X				-		P-G Peat
5	50					X	-										X			-	45	P-GP
6	30					X	-								X					-		C-CP

COMMENTS Irregular section of coastline with alternating sections of Rock cliff, steep face jagged rock platform and high energy beaches. most of the beaches are in behind near shore rocky areas and/or are perched on top of low Rock platform and are Comprised of pebbles, cobbles and scattered boulders. the oiling along this Subsection is comprised of mostly sporadic coats and covers on the sides of rock cliffs and across patchy boulder areas. Associated with many of these are sporadic (1-5%) mousse patches on beaches or in crevices in rock

REVIEWED JW DATE 4-23-90

Continued next page

SUBSURFACE OIL (CONTINUED)

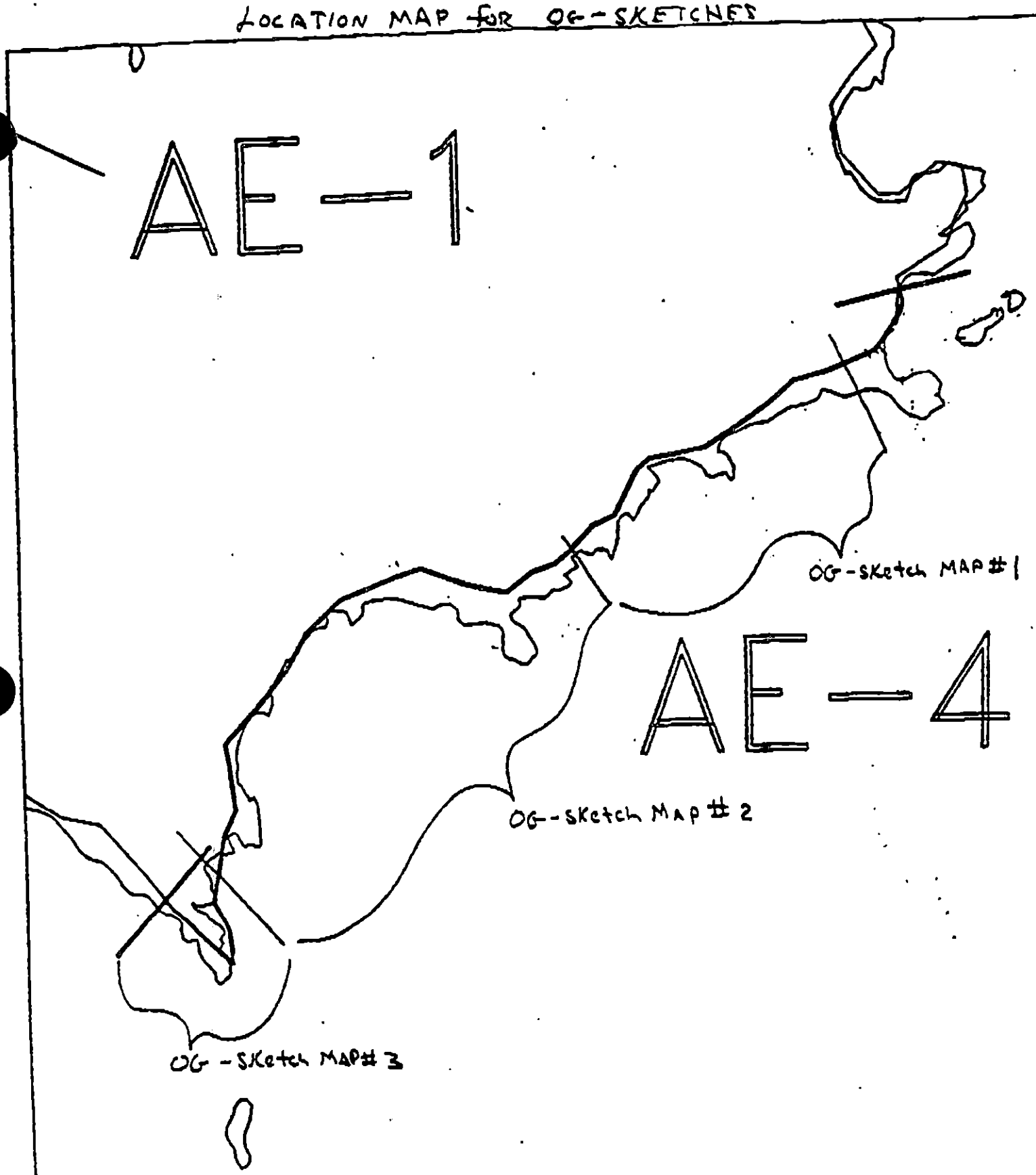
PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CM)	BELOW		OIL / FILM COLOR					PIT ZONE				ANA	SHEEN (Y/N)	▼	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC						SU	UI	MI	U				
7	30					X	-										X					P - G
8	35					X	-									X						P - P
9	45					X	-										X					P - GPC
10	50					X	-									X						P - P
11	40					X	-									X				N	38	P - P
12	20		X				5 - 20	X					X			X						P - P
13	20		X				5 - 20	X					X			X						P - PG
14	40					X	-											X				P - PG
15	25					X	-								X							P - P
16	40		X				30 - 40	X					X			X						P - PG
17	35					X	-										X					P - PC
18	40					X	-									X						P - PCG
19	50					X	-									X						PC - PG
20	20				X		5 - 6		X				X					X				PG - Peat

COMMENTS There were two areas of heavier concentrations. (1) the NOAA Test site which had a Broken cover of oil associated with a section of friable vertical bedded shale and overlying pebbles. This area also had a higher concentration of mousse on the leeward side of Island. (2) an area again in behind a nearshore Island at the western end of map #2. There was another section of friable shale which appears to hold the oil, and a 12 x 8 m patch of pavement overlying a peat deposit in a depressed section of the beach.

A larger accumulation of oiled debris was found at the head of a surge channel (map #3). The water at the base of this channel showed some silver sheen. The large beach just to the east of this (map #2) also has considerable drift, much of which is oiled.

REVIEWED JW DATE 4-23-90

LOCATION MAP FOR OG-SKETCHES



OG Reimer

SEGMENT [redacted]E 4

SUBDIVISION B -MAP #1

DATE 4 / 21 90

[redacted]TCH MAP (1)

CHECKLIST

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

LEGEND

1 ▲ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

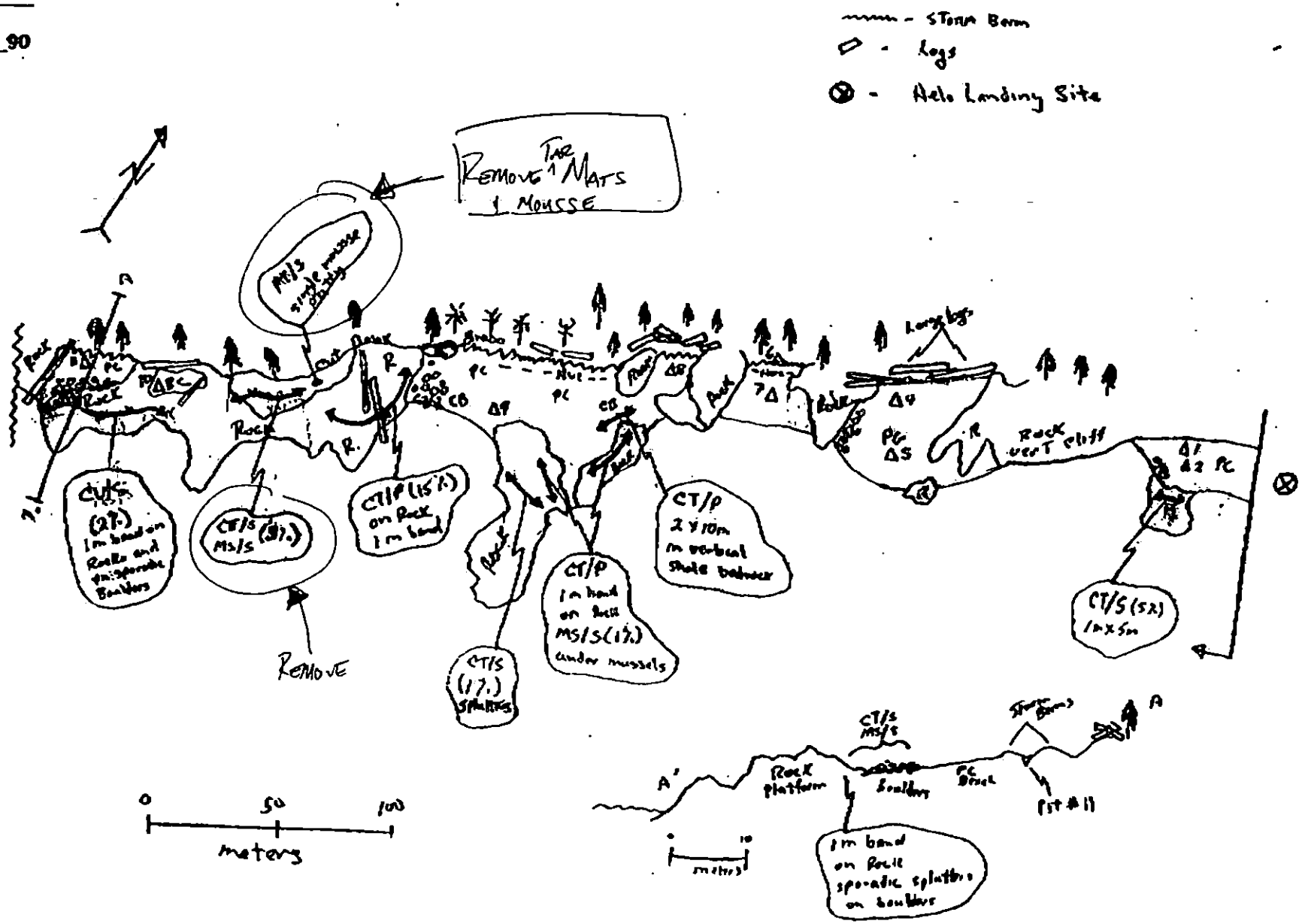
CT/B Broken Distribution

CT/P Patchy Distribution

CT/S Splashed Distribution

Oiled Vegetation

1 ⊕ Photo location, direction, and number



Oil Character Length (m): AP 1 PO — CV 60 CT 195 ST — MS 80 PT 1 TB — FL — NO 260

REVISION:

OG Reimer

SEGMENT S[redacted]4

SUBDIVISION B - map #2

DATE 4 / 21 90

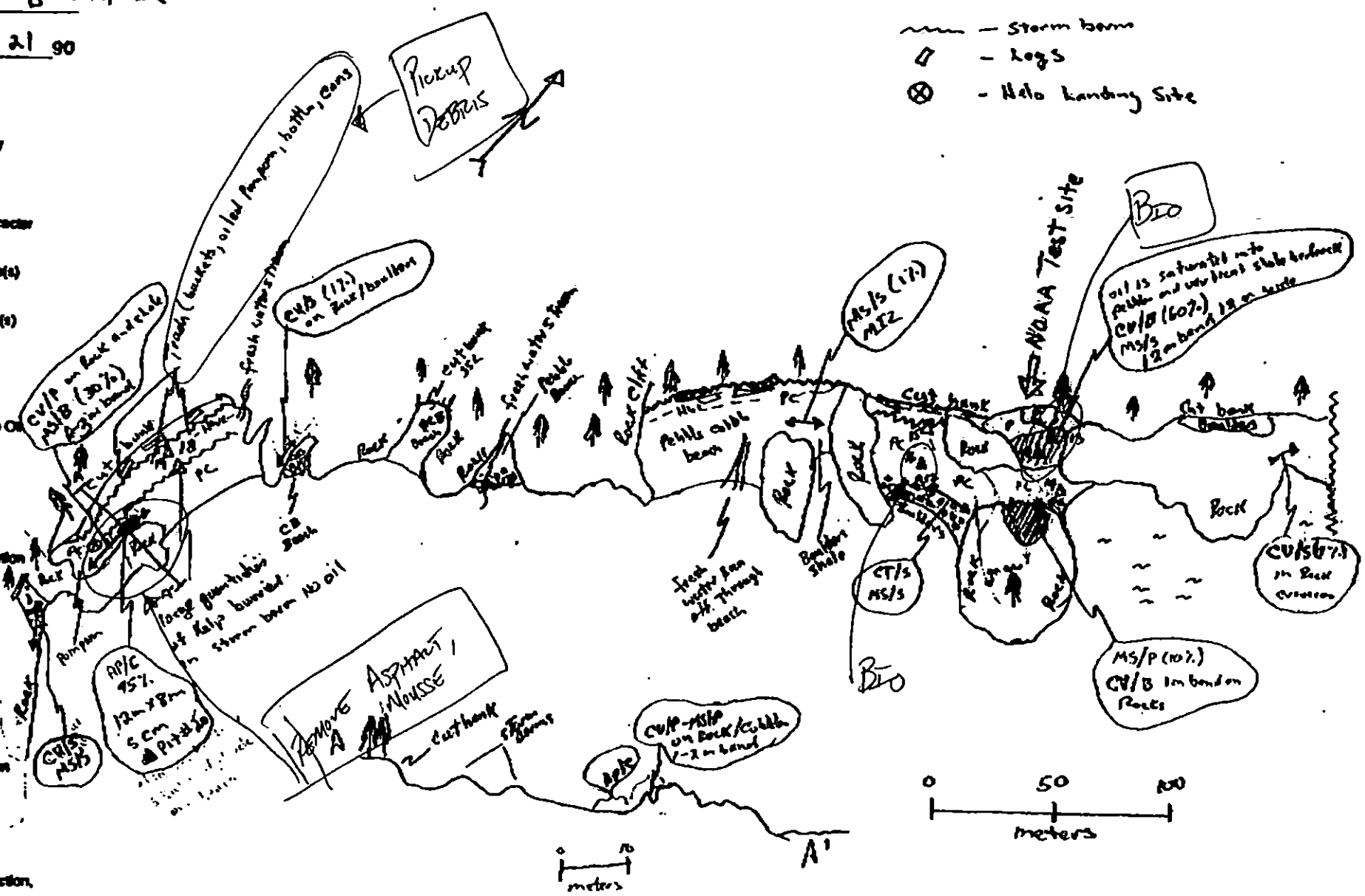
SKETCH MAP (2)

CHECKLIST

- ✓ N Arrow
- Approx. Scale
- Veg/Sub Bndry
- ✓ Oil Dist.
- Width
- Length
- % Cover
- ✓ Substrate Character
- ✓ Est. HWL/LWL
- ✓ Slope
- ✓ Profile Location(s)
- Profile(s)
- Pit Location(s)
- Photo Location(s)

LEGEND

- 1 △ Pit - No Subsurface Oil
- 2 ▲ Pit - Subsurface Oil
- CT/C Continuous Distribution
- CT/B Broken Distribution
- CT/P Patchy Distribution
- CT/S Splashed Distribution
- Oiled Vegetation
- 1 ⊕ Photo location, direction, and number



Oil Character Length (m): AP 12 PO — CV 100 CT 20 ST — MS 90 PT - TB - FL - NO 718

REVISION 6/27/90

OG Reisner

SEGMENT S[redacted]-4

SUBDIVISION B - map #3

DATE 4 / 21 90

S[redacted]CH MAP (3)

CHECKLIST

- ✓ N Arrow
- ✓ Approx. Scale
- ✓ Slip/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 ▲ PR - No Subsurface Oil

2 ▲ PR - Subsurface Oil

CT/C Continuous Distribution

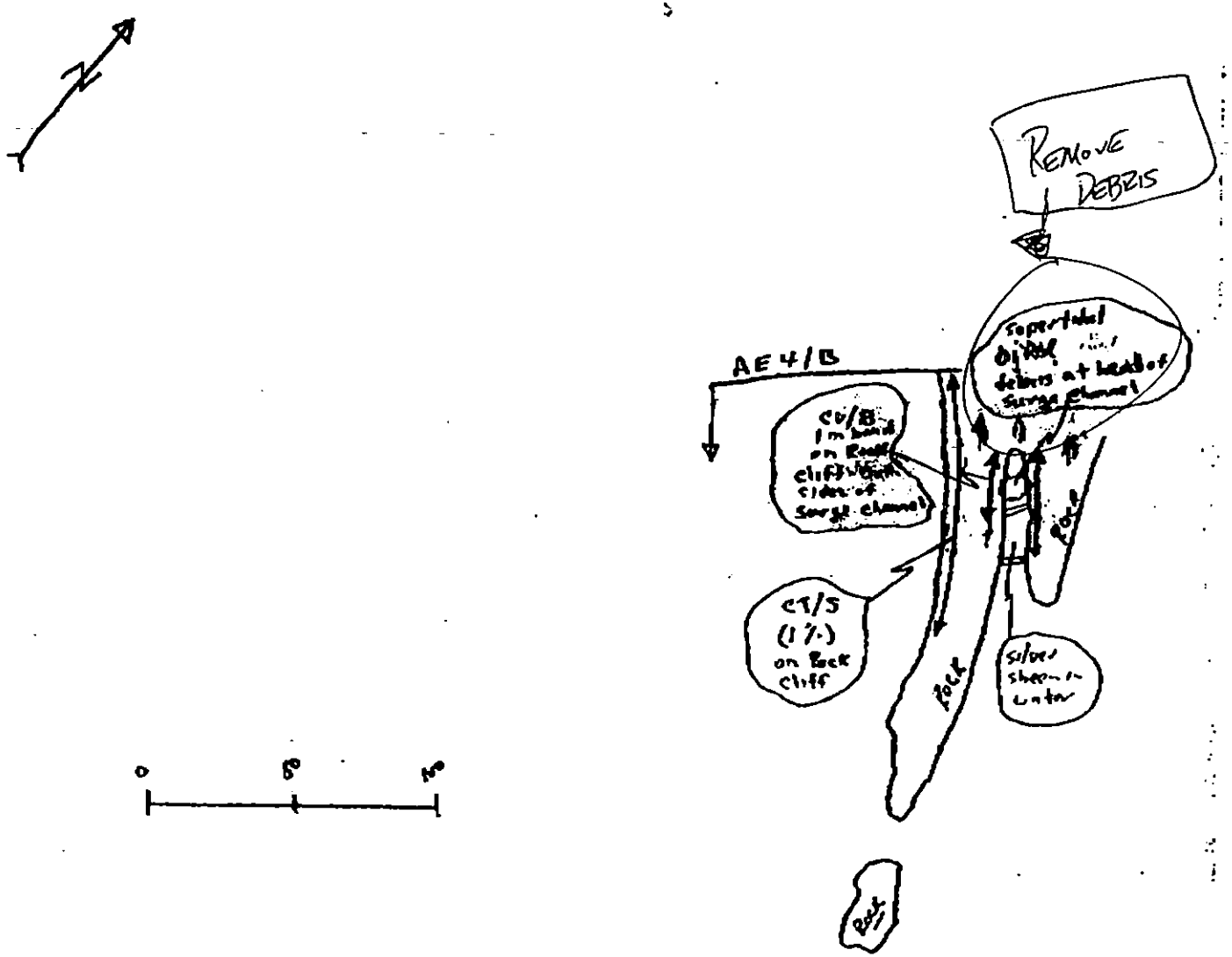
CT/D Broken Distribution

CT/P Patchy Distribution

CT/S Splashed Distribution

Oiled Vegetation

Photo location, direction, and number



Oil Character Length (m): AP — PO — CV 50 CT 100 ST — MS — PT — TB — FL — NO 110

REVISIONS

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / AE 4 Subdivision B Date (mo / day / yr) 4/21/90

Time (24 hr) 1400 ON 1715 OFF Biologist TONY ZAMORA

(A) Substrate type and % of segments:
(1) Bedrock 50 (2) Boulder 5 (3) Cobble 20 (4) Pebble 25 (5) Sand — (6) Silt —

(B) Overall % cover of biota (% of segment): Dense 80 Moderate 20 Low —

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

Photographs: Roll No. ST-16-10 Frames 19-23

BARNACLES

Dense			Moderate			Sparse			Rare			
1U	(1M)	1L	X	X	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	(2)	2	2	X	2	2	2	2	
3	3	3	3	(3)	3	3	X	3	3	3	3	NOT PRESENT
4	4	4	4	4	4	4	4	4	4	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	

MYTILUS

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

GASTROPODS

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

Wildlife Observations/ General Comments:
- SEAGULLS, DUCKS, EAGLE, OTTER
- VERY HVY BARACLE SETTLEMENT ON ROCK & BLDR OVER ENTIRE SEG.
- OVERALL - RICH AND APPARENTLY HEALTHY BIOTA.

Ecological Considerations: GU, FJS

(SEE ATTACHED NOTES)

BIO - NOTES

AE 4 - B

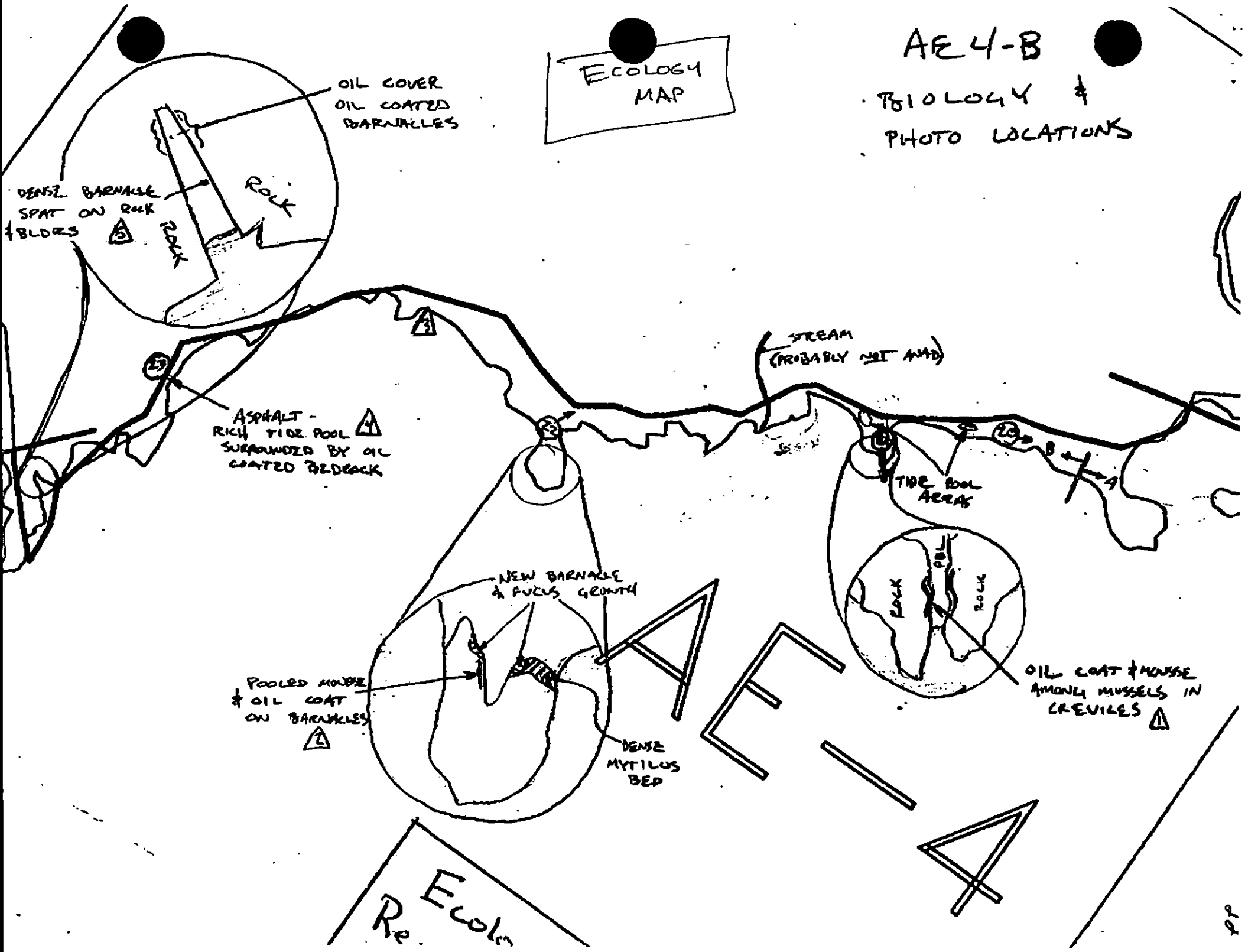
1. OIL COAT ON BEDROCK. MOUSSE THICK AMONG BISSAL THREADS OF MUSSELS IN CREVICES. NO OBVIOUS MORTALITY OF MUSSELS NOR OF LITTORINES AMONG MUSSELS. JUVENILE MYTILUS (SMALLEST ~ 5 mm) IN OIL. FUCUS SPORE & BARNACLE SPAT NEAR OIL.

2. POOLED MOUSSE & OIL COAT. BARNACLES - NO SPAT ON OIL. MODERATE FLUSH AREA (POCKET BEHIND ROCK POINT) INAPPROPRIATE FOR INDPOL? HEALTHY BIOTA AT NEAR EDGES INCLUDING NEW FUCUS, BARNACLE SPAT (DENSE), AND DENSE MYTILUS BEDS.

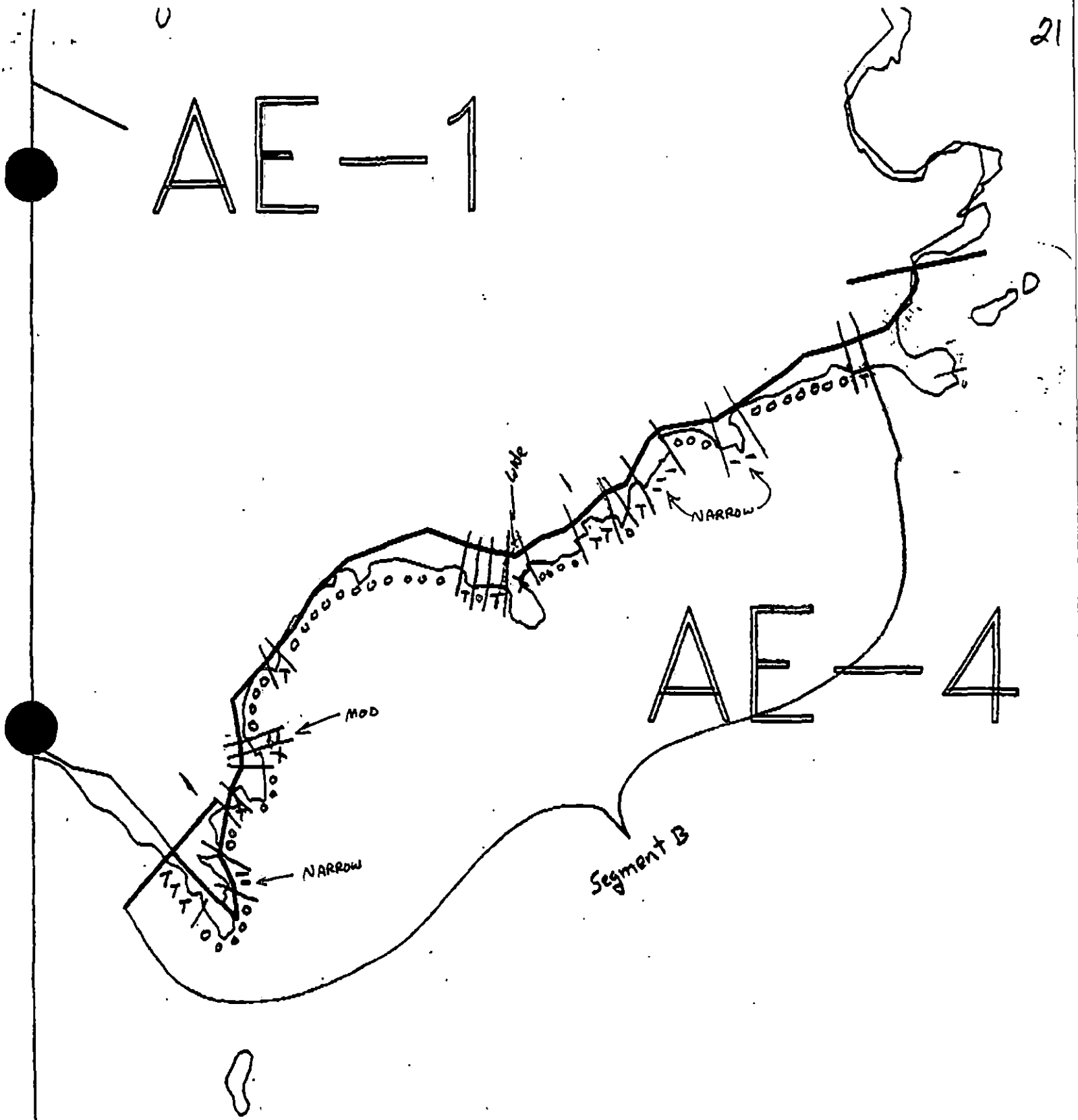
3. HVY MUSSEL REMOVAL FROM ROCK (INDICATED BY DENSE BISSAL THREADS). RECOLONIZATION BY DENSE BARNACLE SPAT

4. ASPHALT, TAR ON SHALE OUTCROP. ENTEROMORPHA NEAR BUT NOT ON OIL. DEAD FUCUS BUT NOT ON OIL. IN MITE POOL SURROUNDED BY OILED SHALE: THICK ENDOCLADIA, ENTEROMORPHA & LITTORINES

5. OIL ON ROCK INSIDE SURGE CHANNEL. LOW (~5-10%) MORTALITY OF BARNACLES BUT ADULTS SPARSE. DENSE SPATS THOUGH. NO MUSSEL MORTALITY OBSERVED.


AE 4-B
BIOLOGY & PHOTO LOCATIONS
ECOLOGY MAP
OIL COVER
OIL COATED BARNACLES
DENSE BARNACLE SPAT ON ROCK & BLDRS
ROCK
ROCK
ASPHALT - RICH TIDE POOL SURROUNDED BY OIL COATED BEDROCK
STREAM (PROBABLY NOT ANAD)
TIDE POOL AREAS
ROCK
POOL
ROCK
OIL COAT & MOUSSE AMONG MUSSELS IN CREVICES
NEW BARNACLE & FUCUS GROWTH
POOLED MOUSSE & OIL COAT ON BARNACLES
DENSE MYTILUS BED
Ecolo
Re

21



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

AE-4/B

ADEC Segment Length: 1378m
2145'

0 100 200 300
METERS

Map Key: PWS-5
Name: Reimer
Date: 4/21/90
Data Entered:

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT AE-4 SUBDIVISION A (1 of 2)

WORK WINDOW	
Manual Pickup Tarmat Removal	OPEN
Bioremediation Spot Washing	OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

No ecological time constraints.

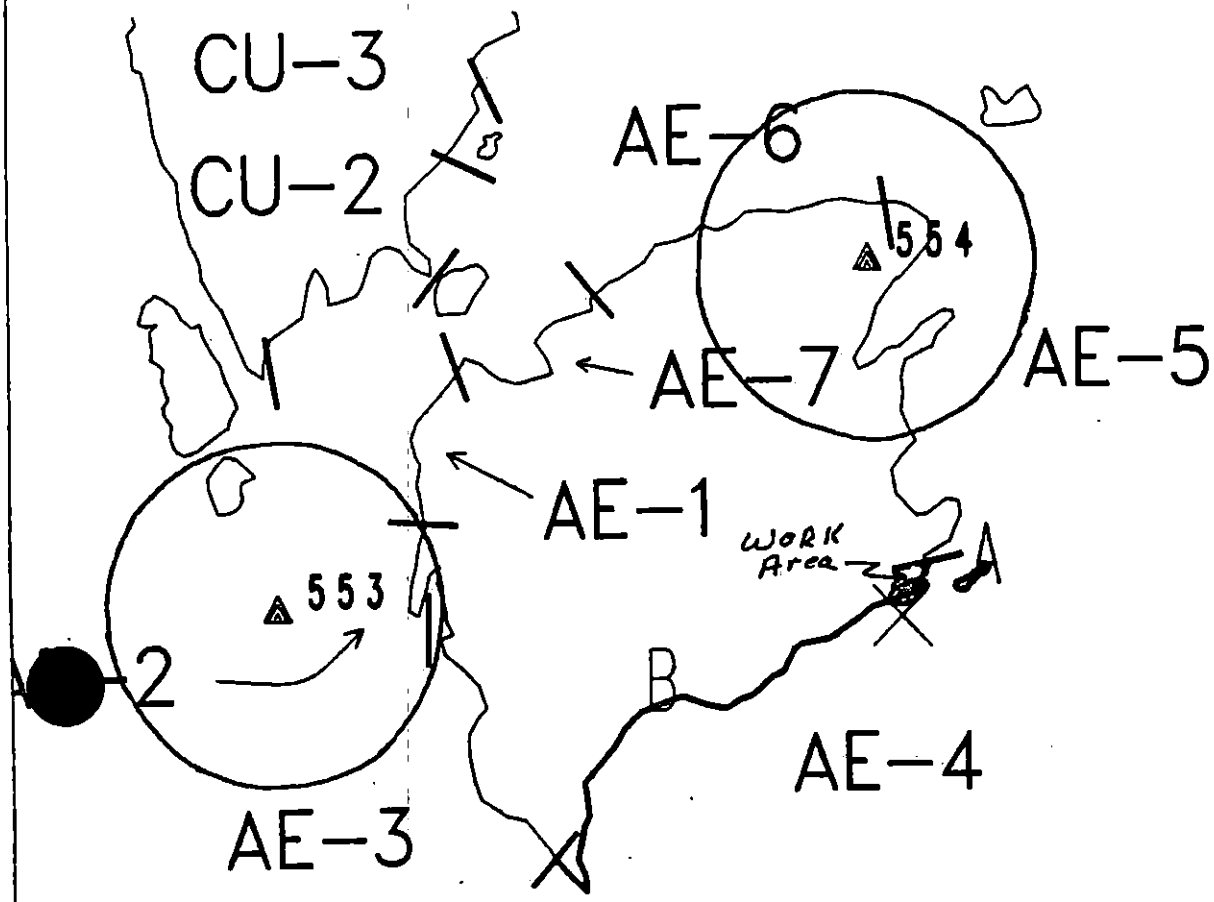
OTHER ECOLOGICAL CONSIDERATIONS

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

TAG APPROVAL DATE 5/29/90.
ADEC Art Weiner Art Weiner
EXXON Amy Tsai
NOAA Robert Ruesch
USCG G.A. Breiter G.A. Breiter

FOSC [signature] DATE MAY 29 1990

Prepared By: Linda Mayer WTK Date 5/28/90



EXXON

Exxon Company, USA
Map Key: PWS-AE-4
May 10, 1990

ECOLOGY MAP
SEGMENT AE-4
SUBDIVISION A (1 of 2)

METERS
0 455 910

★ Seabird Colony
▲ Eagle Nest

1 inch = 1492 feet

SHORELINE EVALUATION

SEGMENT ST/ AE-04 SUBDIVISION A (1 OF 2) DATE 4/20/90

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

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

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

SHPO SIGNATURE: [illegible] DATE: 5/17/90

OILING CATEGORIZATION:

Wide 18 m: Medium 37 m: Narrow 0 m: V.Light 73 m: No Oil 205 m
Subsurface Oil Observed: Yes X No ____ Maximum Depth 15+cm

RECOMMENDATIONS:

____ No Treatment Recommended
X Treatment Recommended
X Manual Pickup
X Bioremediation
X Tarmat 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 1) removal of tarmats, 2) manual pickup of trash, and 3) bioremediate area of surface cover shown on attached sketch map. No specific ecological time constraints identified.

TAG COMMENTS: SPOT WASH AS REQ'D PRIOR TO BIO IN AREA INDICATED.

TAG APPROVAL DATE: 5/12/90.
ADEC Art Weiner [illegible]
EXXON Amy Tex [illegible]
NOAA Gary Peterson [illegible]
USCG D.D. Rome [illegible]

FOSC: [illegible] DATE: 5-15-90

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT AE-4 SUBDIVISION B (2 of 2)

WORK WINDOW	
Manual Pickup Tarmat Removal	OPEN
Bioremediation Manual Raking	OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

No ecological time constraints.

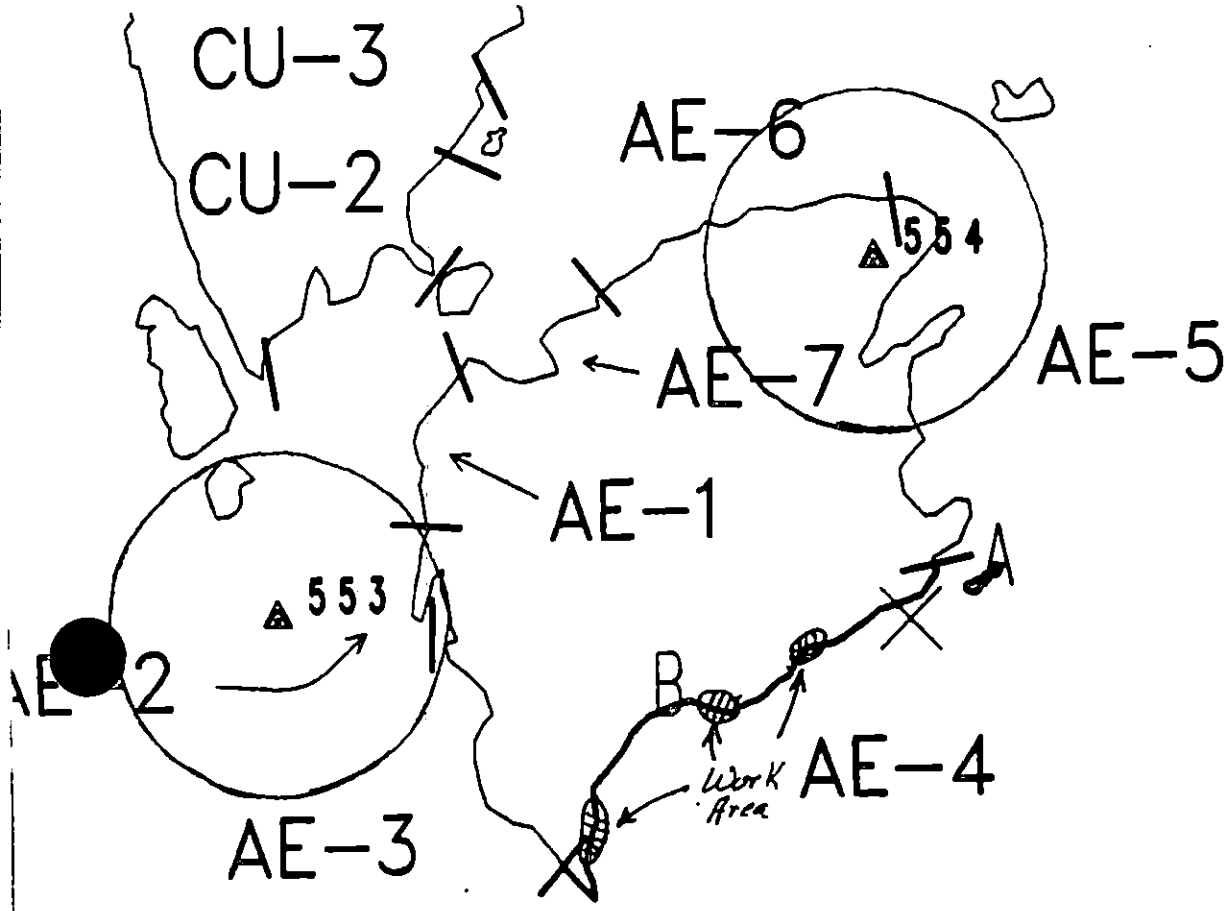
OTHER ECOLOGICAL CONSIDERATIONS

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

TAG APPROVAL DATE 5/29/90.
ADEC ART WEINER
EXXON ANDY TEAL
NOAA B WESCOTT
USCG G.A. REITER

FOSC _____ DATE MAY 29 1990

Prepared By: Andrea Meyer UX Date 5/28/90



EXXON

Exxon Company, USA
Man Kent PMS-AE-4

ECOLOGY MAP
SEGMENT AE-4
SUBDIVISION B (2 of 2)
METERS

★ Seabird Colony
▲ Eagle Nest

SHORELINE EVALUATION

SEGMENT ST/ AE-04 SUBDIVISION B (2 OF 2) DATE 4/21/90

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

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Small stream noted by biologist in Subdivision B not catalogued as anadromous by ADF&G.

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: Walter E. Hoime DATE: 5/14/90

OILING CATEGORIZATION:

Wide 35 m: Medium 13 m: Narrow 136 m: V.Light 240 m: No Oil 833 m
Subsurface Oil Observed: Yes X No ____ Maximum Depth 40+cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) removal of tarmats, 2) manual pickup of mousse and debris, and 3) bioremediation in areas of subsurface oil. No specific ecological time constraints identified.

TAG COMMENTS: MANUAL RAKING IF FEASIBLE IN AREA OF TP16 TO EXPOSE SUBSURFACE OIL PRIOR TO BIO.

TAG APPROVAL DATE: 5/12/90.
ADEC Art Weiner Art Weiner
EXXON Andy Tsai
NOAA Gary Petrone
USCG D.D. ROME

FOSC: ML DATE: 5-15-90

SHORELINE EVALUATION

SEGMENT ST/ AE-04 SUBDIVISION A (1 OF 2) DATE 4/20/90

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

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

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

SHPO SIGNATURE: [signature] DATE: 5/14/90

OILING CATEGORIZATION:

Wide 18 m: Medium 37 m: Narrow 0 m: V.Light 73 m: No Oil 205 m
Subsurface Oil Observed: Yes X No ____ Maximum Depth 15+cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) removal of tarmats, 2) manual pickup of trash, and 3) bioremediate area of surface cover shown on attached sketch map. No specific ecological time constraints identified.

TAG COMMENTS: SPOT WASH AS REQ'D PRIOR TO BIO IN AREA INDICATED

TAG APPROVAL DATE: 5/12/90.
ADEC ART WEINER [signature]
EXXON ANDY TEAL [signature]
NOAA Gary Peterson [signature]
USCG D.D. ROME [signature]

FOSC: [signature] DATE: 5-15-90

SKETCH MAP

SEGMENT AE-4

SUBDIVISION A

DATE 4 / 30 90

CHECKLIST

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

LEGEND

1 ▲ PR - No Subsurface Oil

2 ▲ PR - Subsurface Oil

CT/C Continuous Distribution

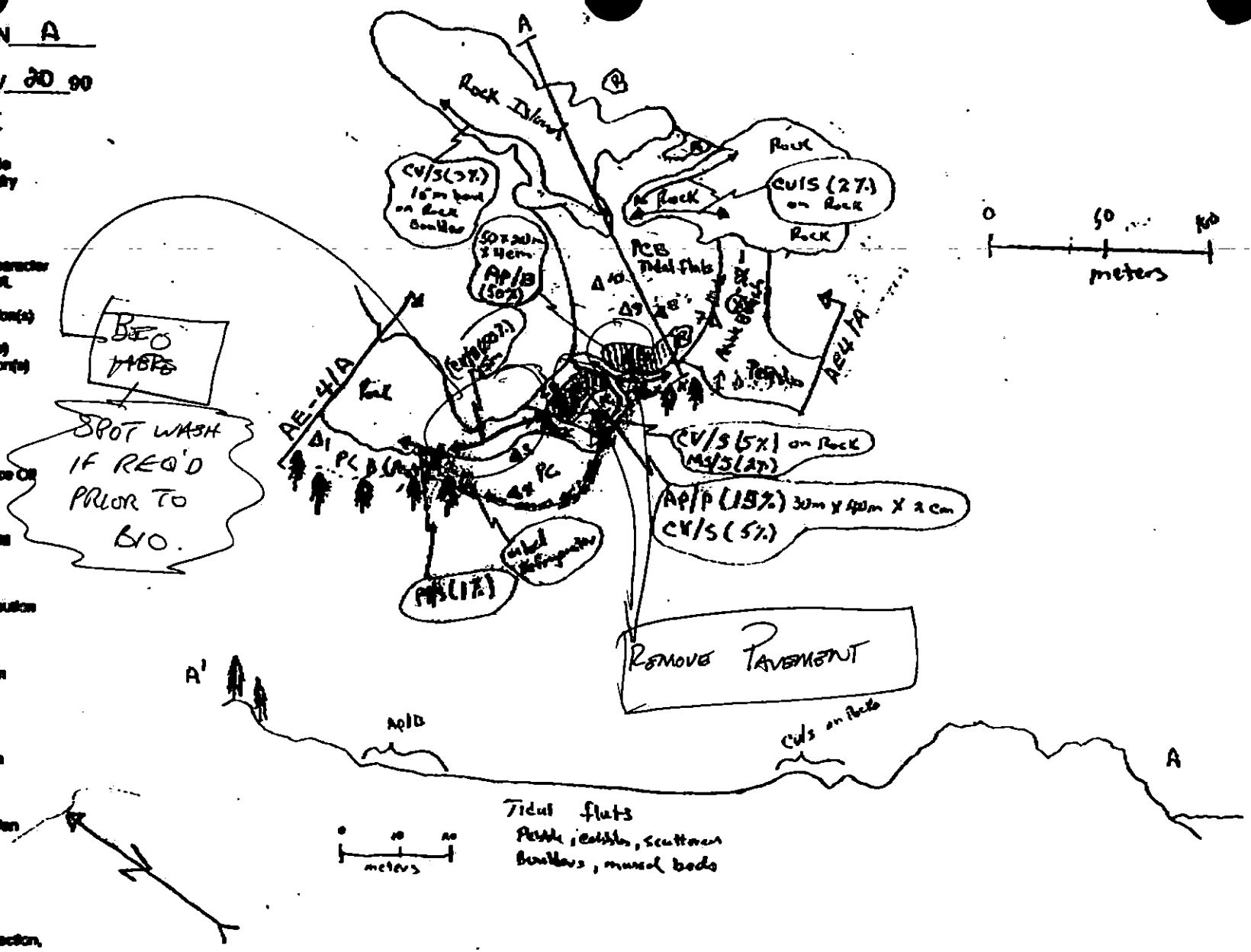
CT/B Broken Distribution

CT/P Patchy Distribution

CT/S Splashed Distribution

Oiled Vegetation

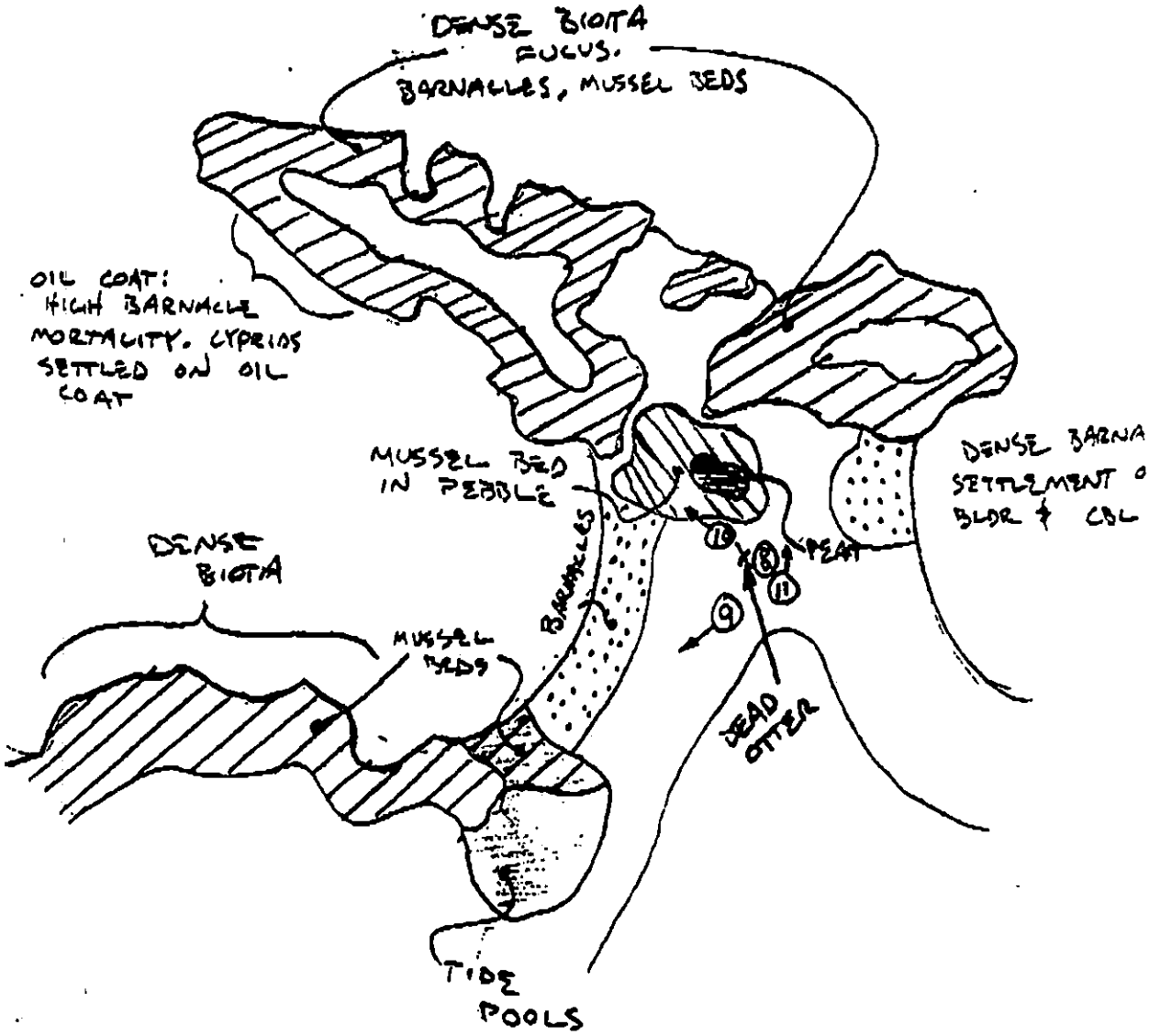
Photo location, direction, and number



Oil Character Length (m): AP 90 PO — CV 320 CT 41 ST — MS 75 PT 20 TB — FL — NO 210

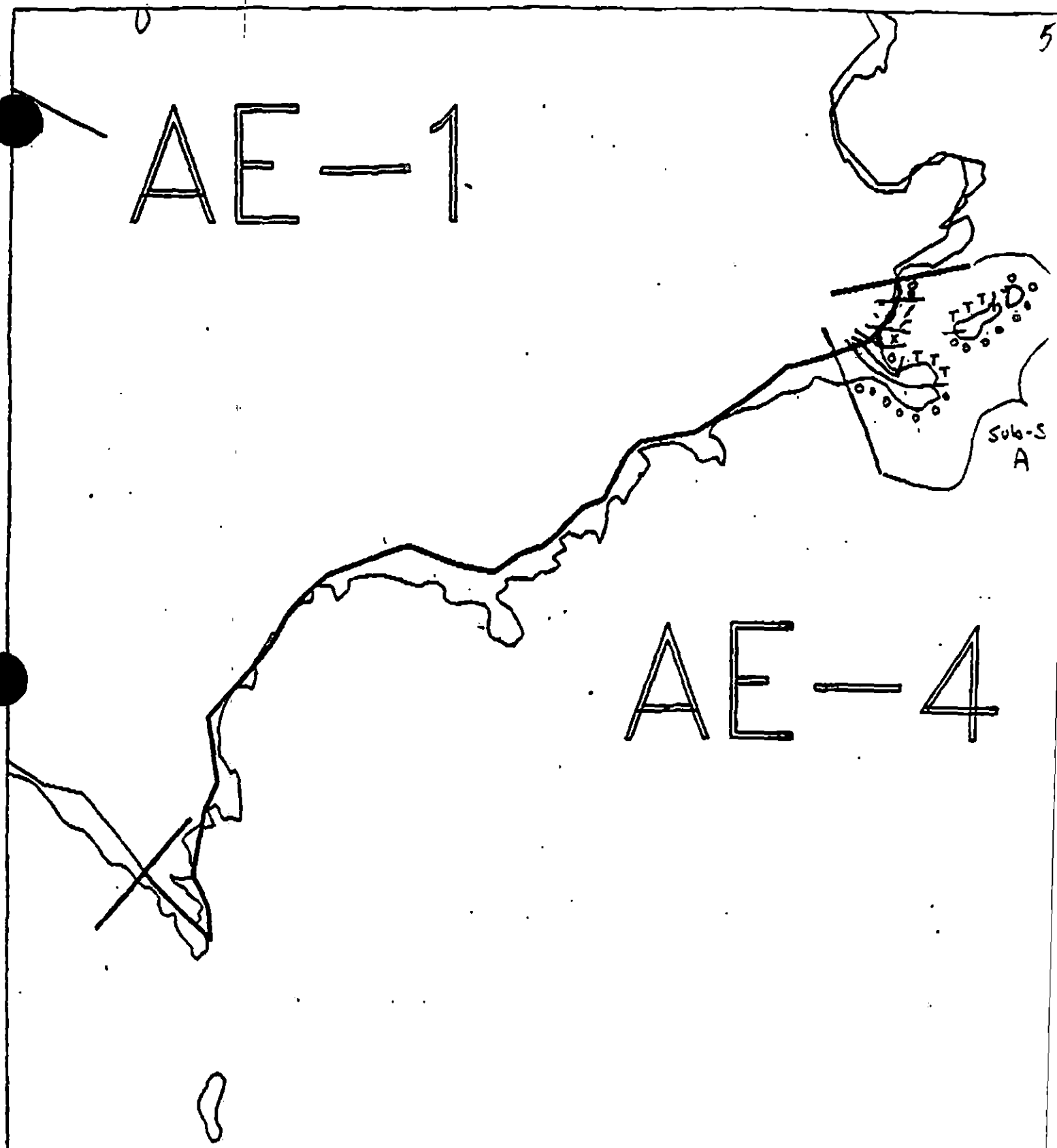
REVISION 03/2000

180
500



AE 4 - A

BIO SKETCH + PHOTO LOCATIONS



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

AE-4/A

ADEC Segment Length: 1378m

Map Key: PWS-S

Name: Reimer

Date: 4/20/90

Date Entered:

SHORELINE EVALUATION

SEGMENT ST/ AE-04 SUBDIVISION B (2 OF 2) DATE 4/21/90

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

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Small stream noted by biologist in Subdivision B not catalogued as anadromous by ADF&G.

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: 5/14/90

OILING CATEGORIZATION:

Wide 35 m: Medium 13 m: Narrow 136 m: V.Light 240 m: No Oil 833 m
Subsurface Oil Observed: Yes X No ____ Maximum Depth 40+cm

RECOMMENDATIONS:

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

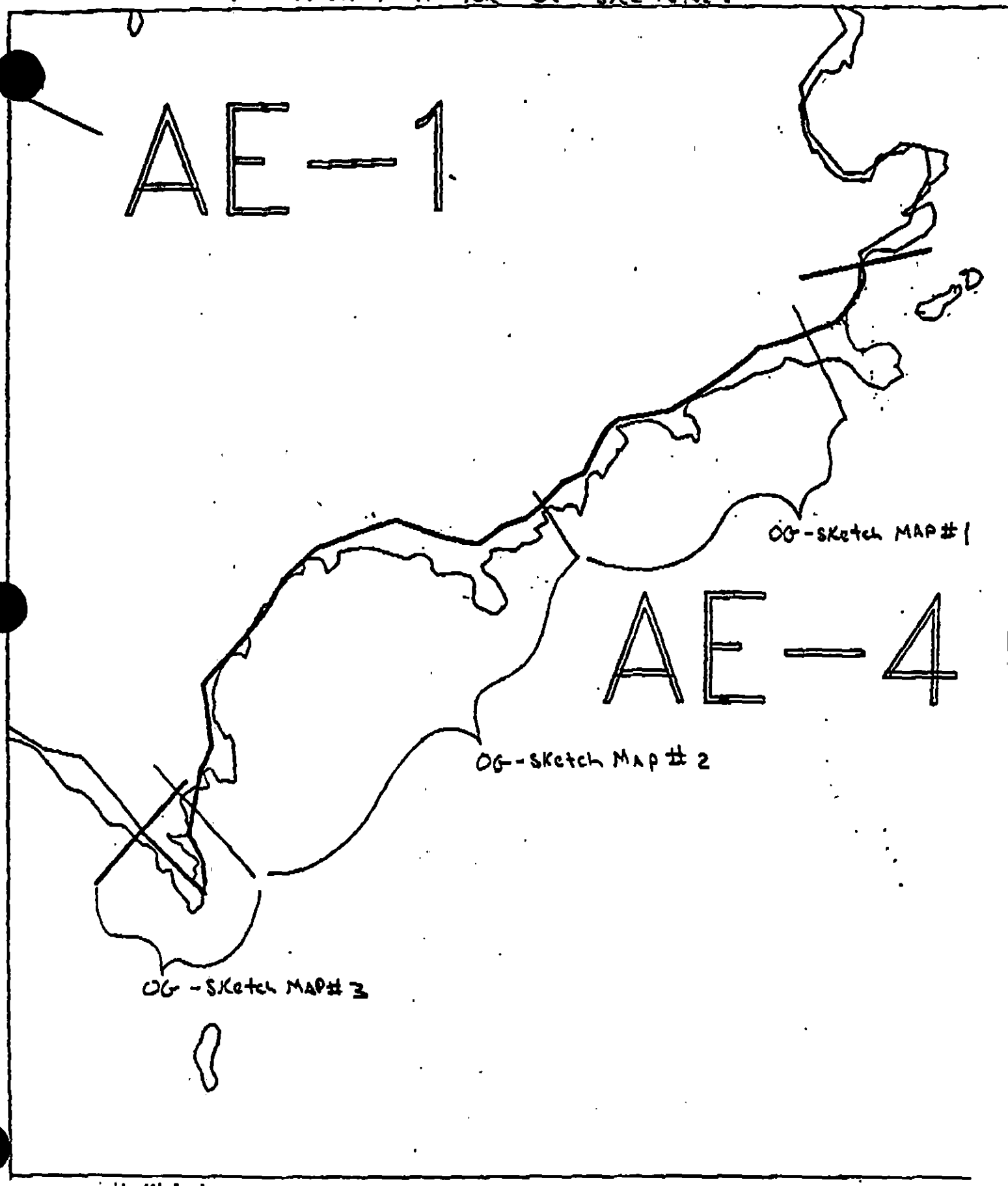
COMMENTS: Recommended treatment includes 1) removal of tarmats, 2) manual pickup of mousse and debris, and 3) bioremediation in areas of subsurface oil. No specific ecological time constraints identified.

TAG COMMENTS: MANUAL RAKING IF FEASIBLE IN AREA OF TP16 TO EXPOSE SUBSURFACE OIL PRIOR TO BIO.

TAG APPROVAL DATE: 5/12/90.
ADEC ART WEINER [signature]
EXXON ANDY TGAL [signature]
NOAA Gary Petrasi [signature]
USCG D.D. ROME [signature]

FOSC: [signature] DATE: 5-15-90

LOCATION MAP for OG-SKETCHES



OG Kemper

SEGMENT AE 4

SUBDIVISION B - MAP #1

DATE 4 / 21 90

SKETCH MAP (1)

CHECKLIST

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

LEGEND

1 ▲ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

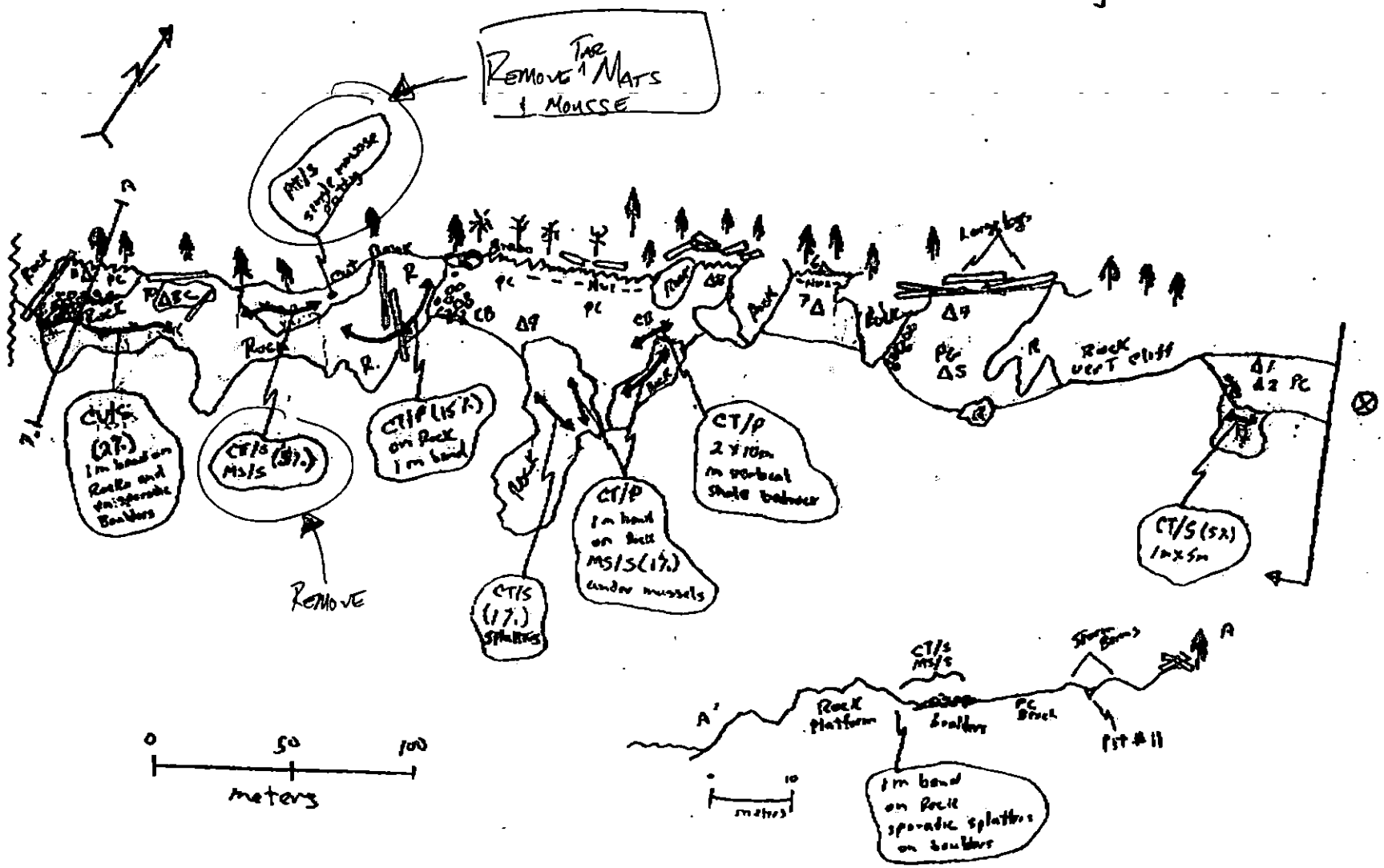
CT/B Broken Distribution

CT/P Patchy Distribution

CT/S Splashed Distribution

Oiled Vegetation

1 Photo location, direction, and number



Oil Character Length (m): AP i PO — CV 60 CT 195 ST — MS 80 PT 1 TB — FL — NO 260

REVISION 02/2000

OG Rei[redacted]

SEGMENT S[redacted]E 4

SUBDIVISION B - map #2

DATE 4 / 21 90

CHECKLIST

- ✓ N Arrow
- Approx. Scale
- Seg/Sub Bndry
- ✓ Oil Dist.
- Width
- Length
- % Cover
- ✓ Substrate Character
- Est. HWL/LWL
- ✓ Soil
- ✓ Profile Location(s)
- Profile(s)
- Pit Location(s)
- Photo Location(s)

LEGEND

1 ▲ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

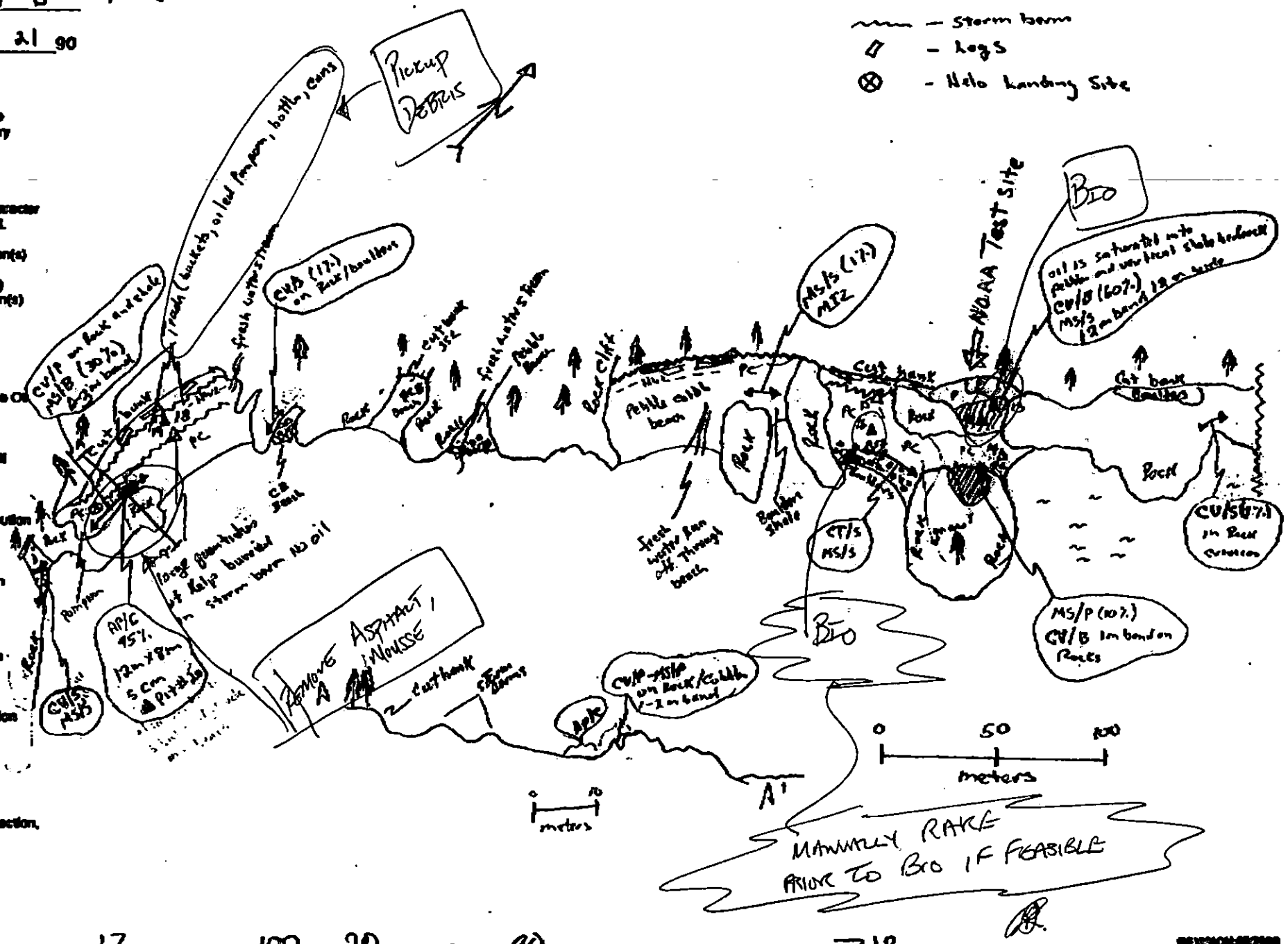
CT/B Broken Distribution

CT/P Patchy Distribution

CT/S Splashed Distribution

Oiled Vegetation

1 Photo location, direction, and number



Oil Character Length (m): AP 12 PO — CV 100 CT 20 ST — MS 90 PT - TB - FL - NO 718

REVISION 05/2000

940

OO Reimer

SEGMENT AE-4

SUBDIVISION B - map #3

DATE 4 / 21 90

TCH MAP (3)

CHECKLIST

- ✓ Arrow
- ✓ Approx. Scale
- ✓ Sig/Sub Bndry
- ✓ Oil Dist.
- Width
- Length
- % Cover
- ✓ Substrate Character
- Est. HWL&WL
- SSL
- Profile Location(s)
- Profile(s)
- Pit Location(s)
- Photo Location(s)

LEGEND

1 ▲ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

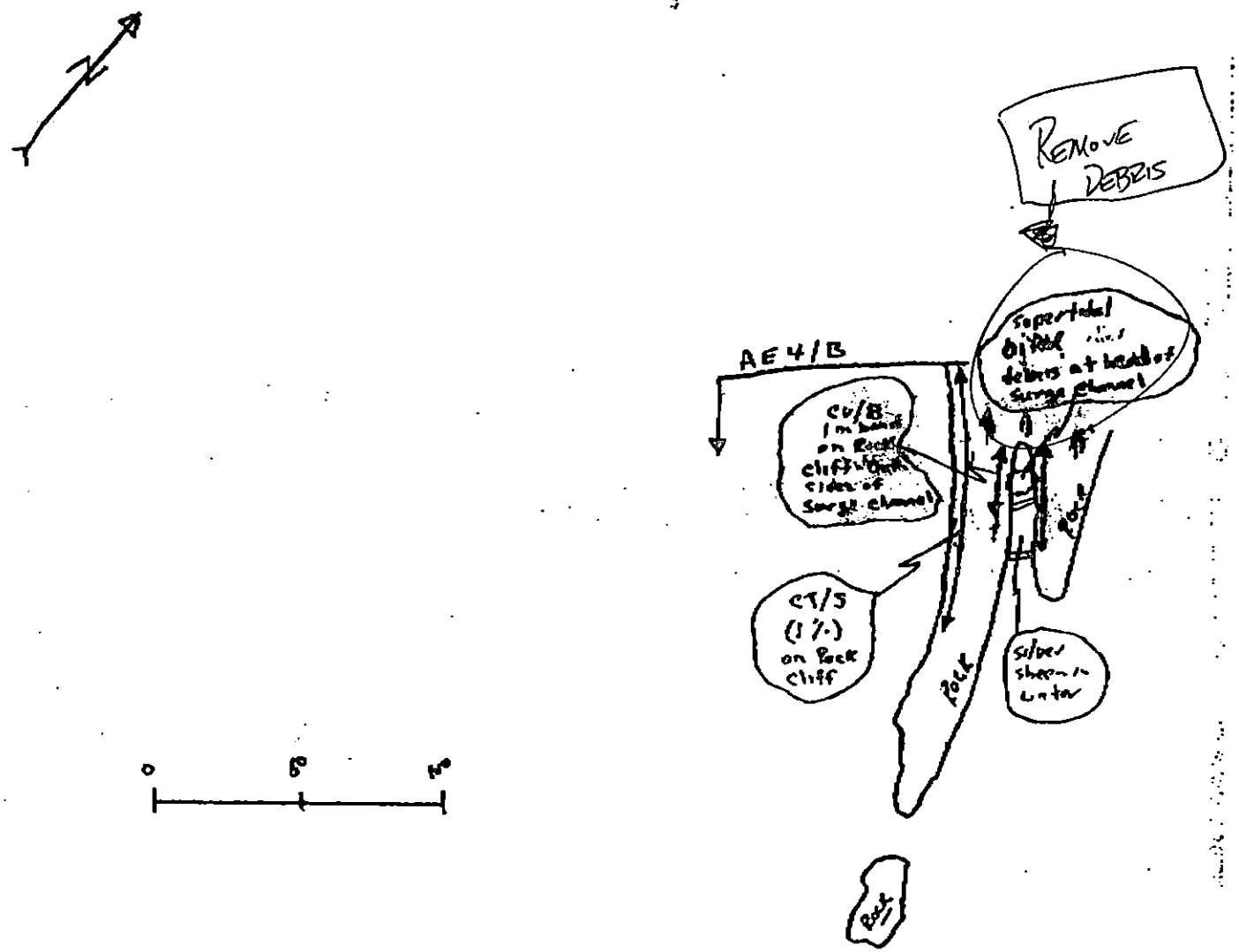
CT/B Broken Distribution

CT/P Patchy Distribution

CT/S Splashed Distribution

Oiled Vegetation

Photo location, direction, and number



Oil Character Length (m): AP — PO — CV 50 CT 100 ST — MS — PT — TB — FL — NO 110

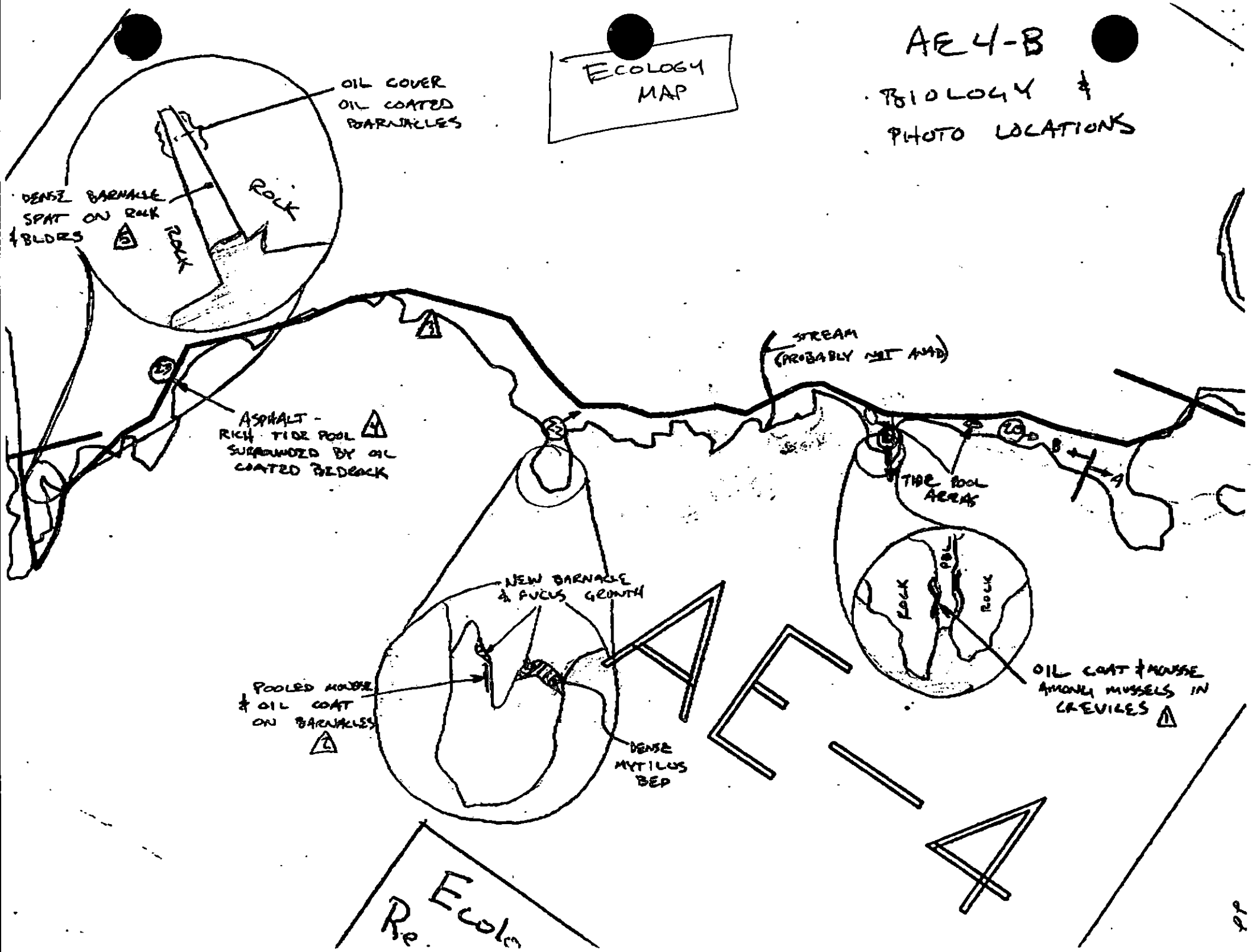
REVISIONS

260

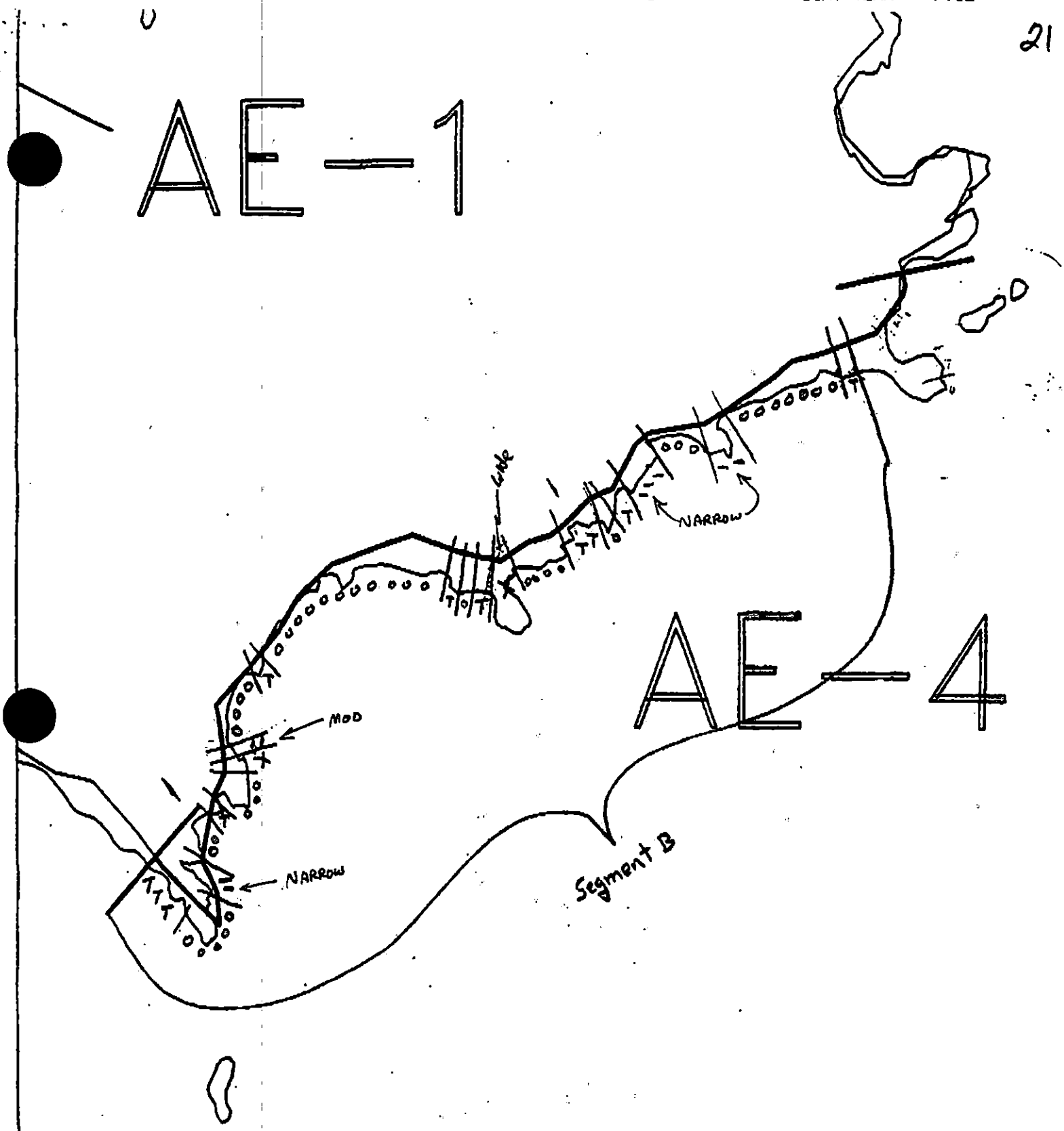
AE 4-B

ECOLOGY MAP

· BIOLOGY & PHOTO LOCATIONS



21



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

AE-4/B

ADEC Segment Length: 1378m
2145'

0 100 200 300
METERS

Map Key: PWS-5
Name: Reimer
Date: 4/21/90
Data Entered:

1991 MAYSAP EVALUATION

SEGMENT: AE 004 **SUB:** A **REGION:** PWS **SURVEY DATE:** 5/3/91

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 _____

EXXON VALDEZ FIELD SHORELINE COMMENT SHEET

TEAM NO. 1 SEGMENT AE-4 SUBDIVISION A DATE 5/3/91

ADEC
NAME JEFF GHORLIAS SIGNATURE [signature]

☐ NTR ☒ TREATMENT RECOMMENDED

MANUAL REMOVAL AT SITES A2, A3, A5 (SEE OG MAP). MOUSSE/ASPHALT READILY OBSERVABLE AT UIZ IN THESE AREAS. I RECOMMEND MANUAL REMOVAL BY SMALL CREW (3-5) WITH SHOVELS AND TROWELS. TILLING, W/OUT REMOVAL WOULD BE INEFFECTIVE, AS THESE AREAS APPEAR TO BE "QUIET ZONES" OF HIGH ENERGY BEACH, THUS OIL WOULD SETTLE BACK INTO SEDIMENTS. IN AREA BETWEEN SITES, INTER-TIDAL BIOTA INTERSPERSED WITH LOWER EXTENT OF OILING I WOULD LEAVE THIS ZONE (MIZ) ALONE. AT LOW TIDE, TREATMENT AREAS 60-80 YARDS FROM SHORE, THUS I WOULD TREAT AT A MID-TIDE, HIGH OR JUST BELOW.

EXXON
NAME FRANK A. BOX SIGNATURE [signature]

☐ NTR Due to the high energy of the beach, the oiling has dissipated to the point of a few patches of tar patties. No subsurface observed. A small area of coat. No action recommended on this segment.

LANDMANAGER
NAME MARSHA HALL OF DNR SIGNATURE [signature]

☐ NTR ☒ TREATMENT

MANUAL REMOVAL of A2 & A3. MANUAL removal in area A1 & A6 by 2-4 workers. MS is patchy & on top of peat layer — sensitive. MANUAL work in area A5. This area is frequently visited, recreational island. SEE profile X-Y.

USCG/NOAA
NAME JORDAN CHILDS SIGNATURE [signature]

☐ NTR This is a moderate to high energy site. Treatment needed at A3, A5 and A6. Do not recommend treatment in A1 because of the sensitive peat area and negative impact of trampling on the diverse biota.

LARGE ROCKY TIDAL FLAT — COMPOSED OF A BEDROCK FRAME OVER LAIN BY PEAT - THE SURFACE CONSISTS OF BOULDERS, COBBLES, & PEBBLES OVER THE PEAT. NO SUBSURFACE OIL WAS PRESENT BUT SURFACE OIL AS AP PATTIES, INDESTITIAL MS & SOR WERE PRESENT FROM THE MID INTERTIDAL THRU THE UPPER INTERTIDAL. THESE WERE PATCHY & CONFINED TO "PROTECTED" AREAS BEHIND B & C.

MAYSAP SHORELINE OILING SUMMARY

TEAM NO. 1

OG G. MACDONALD BIO M. FAWCETT SEGMENT AE-4

ADEC J. GINALAS LANDMANAGER M. HALL for DNR SUBDIVISION A

EXXON F. Box USCG/NOAA JENSEN/CHILDS DATE 5 / 3 / 91

TIME 09 : 15 to 10 : 15 TIDE LEVEL +1.0 ft. to +1/4 ft. ENERGY LEVEL: ☐ H ☒ M ☐ L

SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO WEATHER: ☐ SUN ☐ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

TOTAL LENGTH SHORELINE SURVEYED: 333 m NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE

EST. OIL CATEGORY LENGTH: W — m M 60 m N — m VL 80 m NO 193 m US — m

LOC	SURFACE OIL CHARACTER AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO	SURFACE SEDIMENT TYPE	SHORE SLOPE V H M L	AREA WIDTH m	AREA LENGTH m	ZONE S	UI	MI	LI	NOTES
A1			T	S		T					CBMR	L	15	35		X			lo-hi SOL - "patches"
A2		S				T					CPR	M	2½	55		X			
A3	P										BCM	L	3	30			X		
A4			T	T		T					RBCM	M	5	50		X	X		lo SOL
A5	P	P						T			CBR	L	3	30		X	X		
A6	S	S				S					RGM	L	6	75		X	X		
A7						T					H		½	30		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- 1 - 16 FRAMES 1 ~ 9

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER OP	HOR	MOR	LOR	OF	TR	NO	OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE S	UI	MI	LI	SURFACE-SUBSURFACE SEDIMENTS	NOTES
1	15							X	-		–			X			P-PGV	peat
2	25							X	-		–		X				P-P	
3	30							X	-		–			X			P-PG	
4	20							X	-		–		X				P-PGV	peat
5	15							X	-		10	N		X			CP-MPV	peat
6	15							X	-		3	N			X		CB-GMVR	peat
7	20							X	-		–			X			CP-GV	peat
8	10							X	-		–			X			PC-GV	peat
9	25							X	-		5	N				X	CP-MVR	peat

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

OG COMMENTS: Rocky shore w/ broad embayment. Surface oil only as remnant (MS, AB, SOR) — patches in MITZ & HITZ; local patches ≤ 3cms thick, sometimes trapped on splintery bedrock. Peat layer underlies most sediments. Average overall dimensions for oil cover: 15 x 250 m @ <10%.

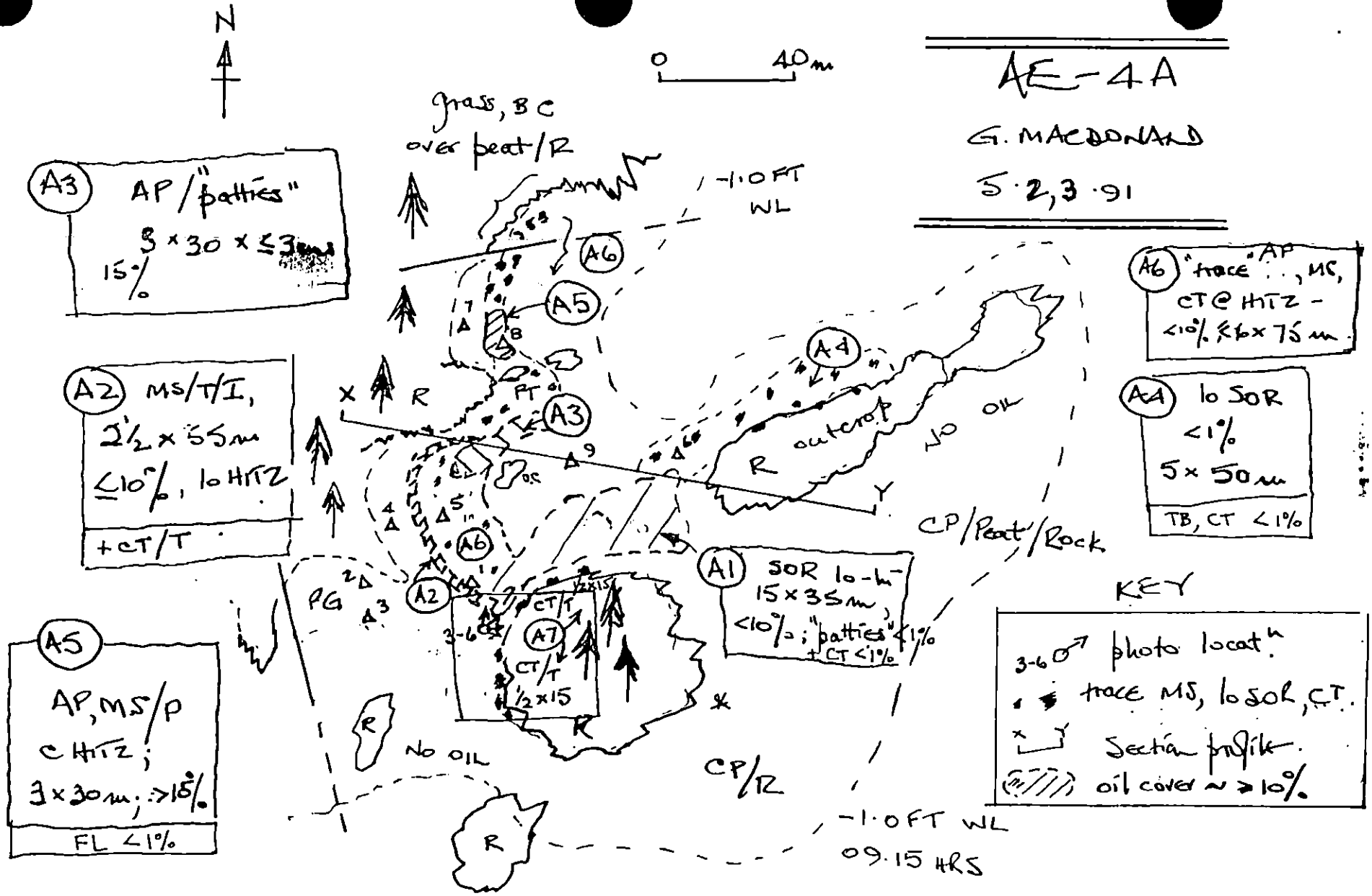
SC revised 5/6

REVIEWED CG 11MA

AE-4A

G. MACDONALD

5·2,3·91



Note: > 20 shallow pits were dug to assess subsurface oil; peat @ 0-15cms was typical throughout, usually blanketing bedrock. No SUBSURFACE OIL

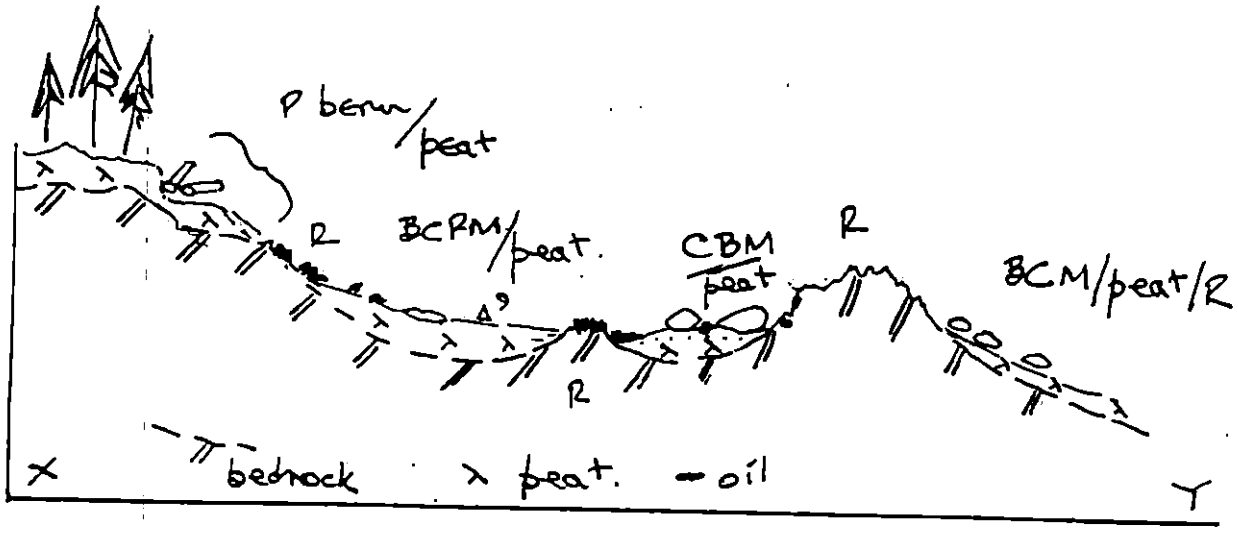
EK revised 5/6

AE-4A

G.M 5.3.91

PROFILE X-Y

peat found within 15 cms depth - typical.



The oil is surficial, and is stranded on a relatively thin layer of sediments which cover an emerging drowned peat layer. The peat probably blankets bedrock. The substrate is delicate so traffic should be minimised in the likelihood of further treatment.

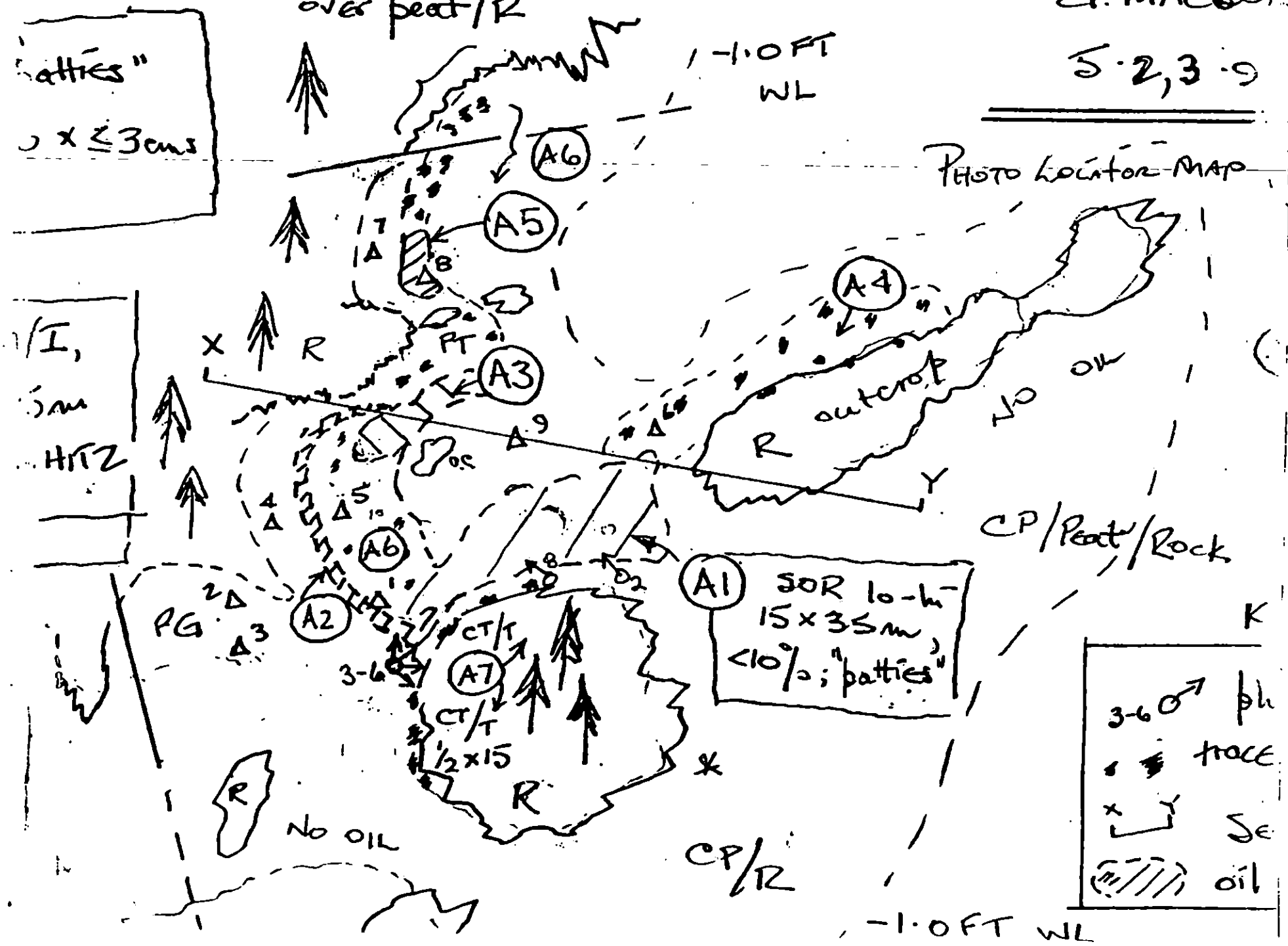
3

EC reviewed 5/x

REVIEWED CO 11 MAY

AE-4A
G. MACDO
5·2,3·9

PHOTO LOCATOR MAP



NAISAP BIOLOGICAL SUMMARY FORM

TEAM # 1	DATE 3 May 91
SEGMENT # AE 004	TIDAL HEIGHT (Range) +0.5 to +2.0
SUBDIVISION A	BIOLOGIST Michael Fawcett
SEA STATE 1 ft	WIND SPEED/DIRECTION NE 10 knots
PHOTOGRAPHS: ROLL #	FRAME #

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

This subdivision observed briefly at +9ft tide on 2 May, re-surveyed today at lower tide to get more accurate description of oiling and biota. It is a moderate to high energy site with partial protection from NE fetch provided by a large bedrock outcrop (A4 on sketch map). The site contains vertical and low-angle bedrock but most of the habitat near and downshore of residual oil is muddy sand substrate with some exposed peat, overlain by scattered shale boulders, cobble, and shingle-like pebbles. The tops and sides of boulders and cobble in MTZ-LTZ and to a lesser extent, UTZ, areas are occupied by the typical dominant organisms in this region: barnacles, rockweed, mussels, and littorinids. The mussels are mostly lodged around the bases of boulders, and in some areas form dense beds in shingle areas. Both old (pre-spill) and newly recruited mussels are present. Very dense barnacle spat and unattached cyprids have settled on every available hard surface in MTZ, as we have observed at other sites recently. Numerous cryptic species live beneath the boulders in MTZ-LTZ, including hermit crabs, starfish (Leptasterias), sea urchins (Strongylocentrotus droebachiensis), pricklebacks (fish), isopods, amphipods, whelks, limpets (Notoacmea persona in higher areas, N. scutum, Collisella pelta, and C. paradigitalis lower on shore. Treatment scenarios should consider the negative impacts of trampling and other disturbance on the diverse biota in the middle and lower intertidal zones at this site, while asphalt and mousse in UTZ at +8-10ft could be manually removed with little impact at that level. Significant disturbance to lower zones could result from intense activity. Manual removal of SOR lower on shore, as in area (A1) on sketch is contra-indicated, as mussels, barnacles, and other organisms are growing within and on the weathered oil residue.

WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

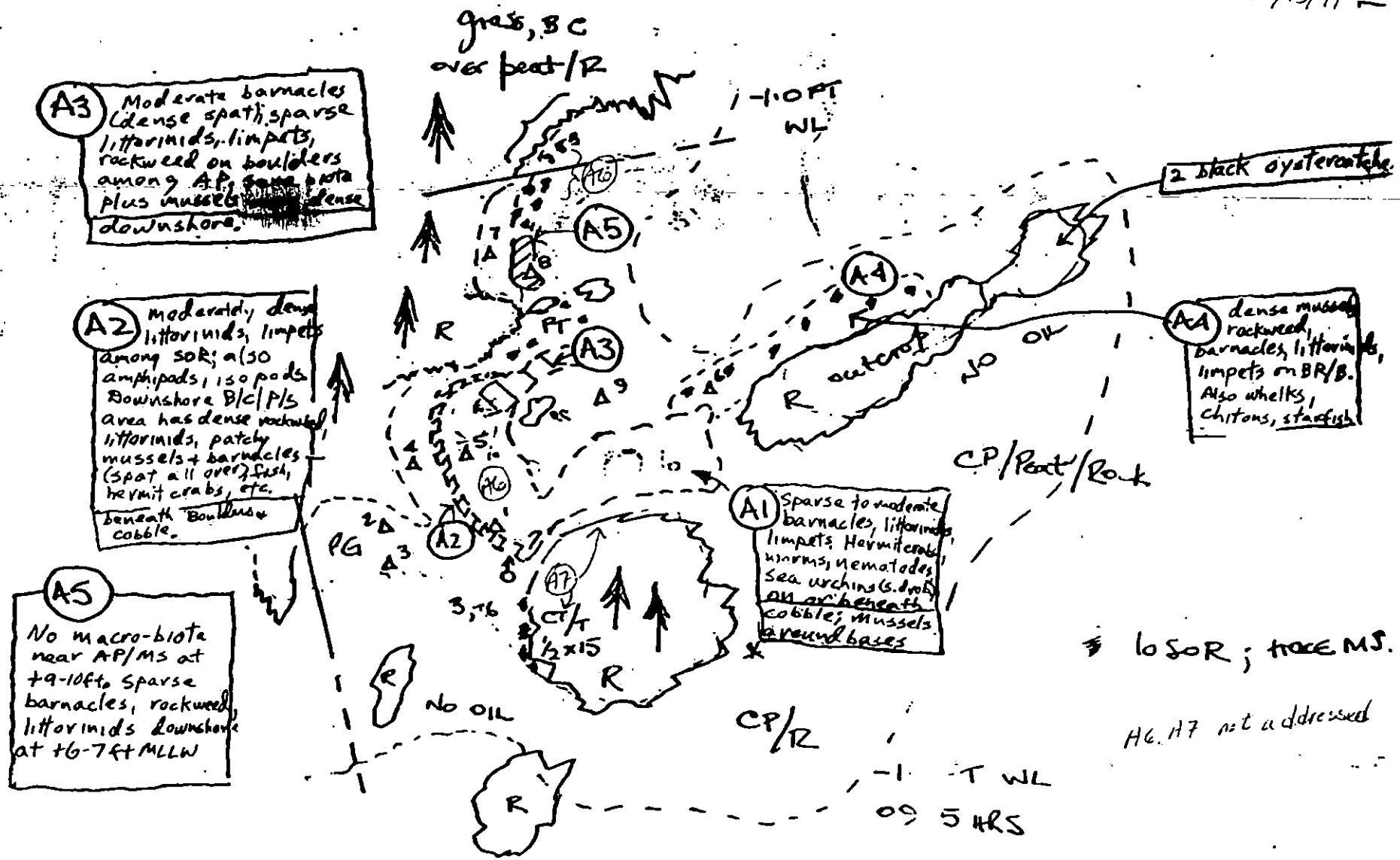
BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			pricklebacks
Seabirds			
Waterfowl	1 Canada goose	~ 70 flying over	
Gulls/kittiwakes			
Shorebirds	1 (black oystercatcher)	2 (pair)	
Corvids			
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

REVIEWED CB 11 MAY

AE-004A
MAP
FAWCETT
5/3/91

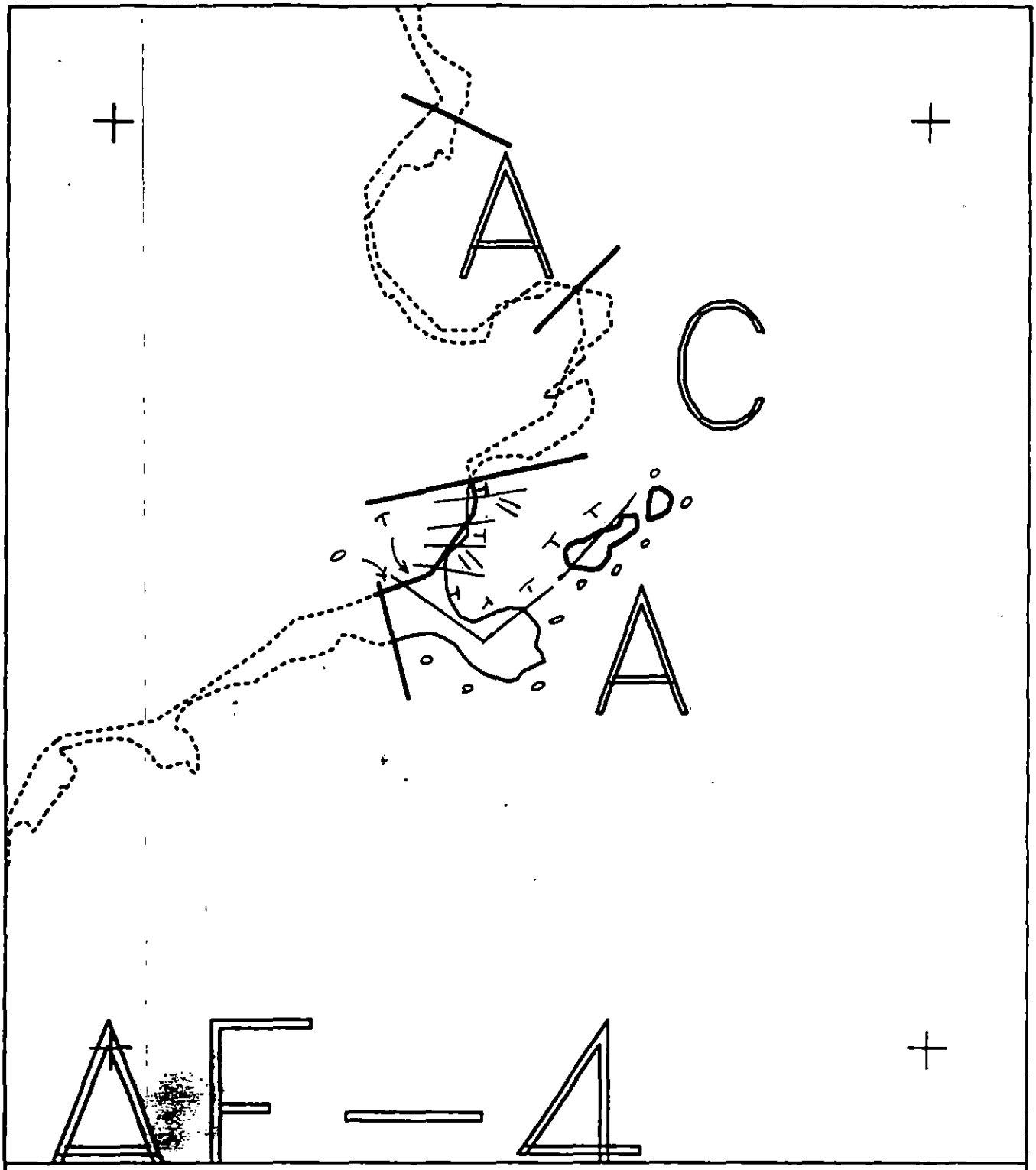


REVIEWED CO 11 MAY

3 May 91 AE4-A Fawcett
re-survey arr 0915 tide -1.3
- Island exposed - dense mussel beds around base, dense rockweed, barn lift, limp all around on BR and boulders - main SOR area goes down to patches at ~ +3 ft in flat area with boulders/cobble on pebble/gravel - patches of dense mussels all over, very dense barnacle spat, dense littorinids + eggs, moderate young limpets patchy Rockweed (dense on BR low exposed areas) - prickleback, cockles, hermit crabs, whelks - overall moderately dense biota, not as rich as some similar areas, but appears healthy, sediment accum - isopods, scattered small sea urchins, Halosaccion, Lithothamnion, Rhodomela, Peat throughout area beneath surface or at surface
I see no benefit to attempting to clean LTZ as residual oil appears + I. to impact now, and removing it will cause trampling, disturbance and direct removal of mussels etc that are alive and growing even though embedded in the weathered oil or growing on top of it
- scattered surfgrass in pools
worst SOR at about +9-10 ft in no biota zone, especially at MF zone on Graham's map

Fucus, Dermasterias, Pycno LTZ
70 glass flowers

depart 1015



XXXX	Wide	**AE004 A**	Subdivision Field Map
////	Medium	ADEC Subsegment Length: 333m	Map Key: PWSAE004A
----	Narrow	METERS	Name: GM
TTTT	Very Light	0 100 200	Date: 5·3·91
0000	No Oil	AK State Plane Zone 4 pcs004a	Date Entered:

5

ES revised 5/6

REVIEWED CO 11 MAY

1991 MAYSAP EVALUATION

SEGMENT: AE 004 **SUB:** B **REGION:** PWS **SURVEY DATE:** 5/2/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) OPEN

Ecological/Constraints (see page two for details) None

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

SHPO Signature: _____ Date: _____

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

COMMENTS:
INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: _____ **FOSC APPROVAL DATE:** _____

ADEC _____ FOSC _____

EXXON _____

USCG _____

NOAA _____

TEAM NO. 1 SEGMENT AE-4 SUBDIVISION B DATE 5/3/91

ADEC
NAME JEFF GRAHAM SIGNATURE [signature]

☒ NTR I DO NOT BELIEVE TREATMENT WOULD BE EFFECTIVE.

REMAINING MOUSSE IS TRAPPED IN SQUIRRELS OF BEDROCK ~~SLATE~~, SLATE, WHICH WOULD BE EXTREMELY DIFFICULT TO REMOVE, AND AMOUNT RECOVERED WOULD BE MINIMAL. THIS RESULTS IN AESTHETIC SCAR ON BEACH, WHICH IS ACCESSIBLE TO RECREATIONISTS. IF TREATMENT IS AUTHORIZED, MANUAL REMOVAL WITH SMALL CREW & TROWELS WOULD BE SUGGESTED METHOD. WHILE MUCH OF BEACH IS HIGH ENERGY, REMAINING MOUSSE (SITES A2, A4, A5) IS BEHIND BEDROCK. UPRISE & LIGHT ENERGY. TILLING OR RELEASE OF OIL W/OUT RECOVERY WOULD RESULT IN ITS RESETTLING ON BEACH

EXXON
NAME FRANK Box SIGNATURE [signature]

☑ NTR Intermittent splashy crats with some evidence of light subsurface. Not enough oil found on the segment to warrant activity of clean-ups. High energy beach should continue to improve nicely.

LANDMANAGER
NAME MARSHA HALL OF DNR SIGNATURE Marsha Hall

☐ NTR ☑ + treatment

MANUAL removal of mousse which extends slightly up & under toe of storm berm at AREA A1. MANUAL at A2 A3 & A4 & A5. Much recreational activity on Island.

USCG/NOAA
NAME Jensen [redacted] SIGNATURE [signature] 1/22

☒ NTR Further removal operations would cause more environmental harm than oil to be removed.

HIGH ENERGY ROCKY SHORELINE CONTAINING POCKETS BERMS OF R&P on PC-MS/I & CT/T WERE FOUND IN CREVICES FORMED BY BROKEN UP "SLATES" HIGH ANGLE BEDROCK OUTCROPS. ONLY SUBSURFACE OIL FOUND WAS TR @ A-2.

NATIONAL SHORELINE SURVEY COMMITTEE

PAGE ___ OF ___

TEAM NO. 1

OG G. MACDONALD BIO M. FAWCETT SEGMENT AE-4

ADEC J. GINANJAS LANDMANAGER M. HALL for DNR SUBDIVISION B

EXXON F. Box USCG/NOAA JENSEN / CHILDS DATE 5 / 2 / 91

TIME 13 : 30 to 14 : 45 TIDE LEVEL +4½ ft. to +7½ ft. ENERGY LEVEL: [X] → [ ] M [ ] L

SURVEYED FROM: [X] FOOT [ ] BOAT [ ] HELO WEATHER: [ ] SUN [ ] CLOUDS [ ] FOG [X] RAIN [ ] SNOW

TOTAL LENGTH SHORELINE SURVEYED: 1,197 m NEAR SHORE SHEEN: [ ] BR [ ] RB [ ] SL [X] NONE

EST. OIL CATEGORY LENGTH: W — m M — m N 3 m VL — m NO 1 m US 60 m

LOC	SURFACE OIL CHARACTER AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO	SURFACE SEDIMENT TYPE	SHORE SLOPE V H M L	AREA WIDTH m	AREA LENGTH m	ZONE S	UI	MI	LI	NOTES
A1		S				T					PG	M	1	30		X			
A2		P				S					R	M	2	3		X			
A3						S					R	H	½	3		X			
A4		S				S					R	M	2½	6		X			
A5		T				T					PGR	M	2	3		X			
A6		T				T					RPG	M	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- 1 - 15 FRAMES 19~27

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER OP	HOR	MOR	LOR	OF	TR	NO	OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE S	UI	MI	LI	SURFACE-SUBSURFACE SEDIMENTS	NOTES
1	40							X	-					X			PB-PG✓	peat
2	20					X	X		5-7	Y	15	S			X		P-PG	
3	20							X	-		-			X			P-PG	
4	20							X	-		15	N			X		P-PG	

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

OG COMMENTS: Ragged, scalloped rocky shore w/ PG, PB pockets. Surface oil as MS/I & CT/T @ HTZ, retained on splintery bedrock traps.

Trace subsurface oil @ (A2), probably as remnant of adjacent mousse band.

SE raised 5/6

REVISED CC 11 MAY

TEAM NO. [illegible]

NATURAL SHORELINE CLEANUP SUMMARY (NSHL)

PAGE ___ OF ___

SEGMENT AE-4 SUBDIVISION B DATE 5/2/91

OG COMMENTS: G. MacDonald

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER OP	HOR	MOR	LOR	OF	TR	NO	OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE S	UI	MI	LI	SURFACE-SUBSURFACE SEDIMENTS	NOTES
									-									
5	20							X	-		–			X			P-P	
6	15							X	-		–				X		P-PG	
7	15							X	-		–			X			PC-PC	
8	30							X	-		–				X		PC-GC	
									-									
9	20							X	-		–			X			P-GPV	peat.
10	30							X	-		–			X			P-GPV	peat.
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SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

2

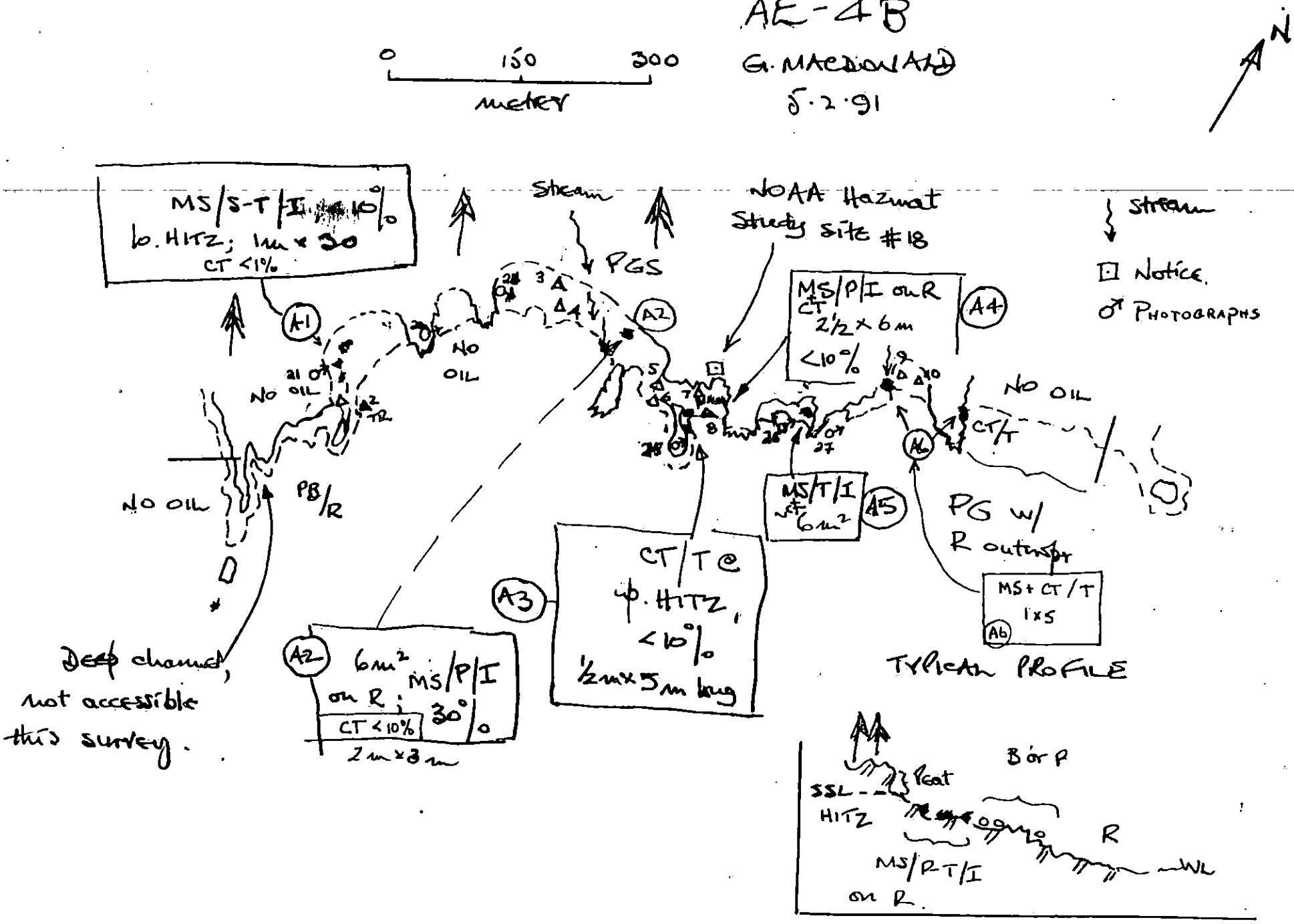
EC Reviewed May 6

REVIEWED - 6 11 M.

AE-4B

G. MACDONALD

5.2.91



ET revised, May 6

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1 DATE 2 May 91

SEGMENT # AE004 TIDAL HEIGHT(Range) +5.0 to +7.2 ft

SUBDIVISION B BIOLOGIST M.H. Fawcett

SEA STATE 2 1/2 ft WIND SPEED/DIRECTION NE 15-25 knots

PHOTOGRAPHS: ROLL # FRAME #

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

This subdivision consists of rugged, exposed rocky shoreline with small pocket beaches of mostly unstable small sediments. Patches of residual oil occur at about the same UTZ level throughout subdivision, inshore from most biota. Bedrock and boulders in MTZ-LTZ generally have dense young rockweed, mussels, and barnacles, plus patches of older specimens and mixed-age limpets and littorinids. Tidepools in MTZ have typically rich assortment of algae, crustaceans, chitons, limpets, anemones, fishes, etc.

See accompanying sketch map for descriptions of dominant biota near each sub-site.

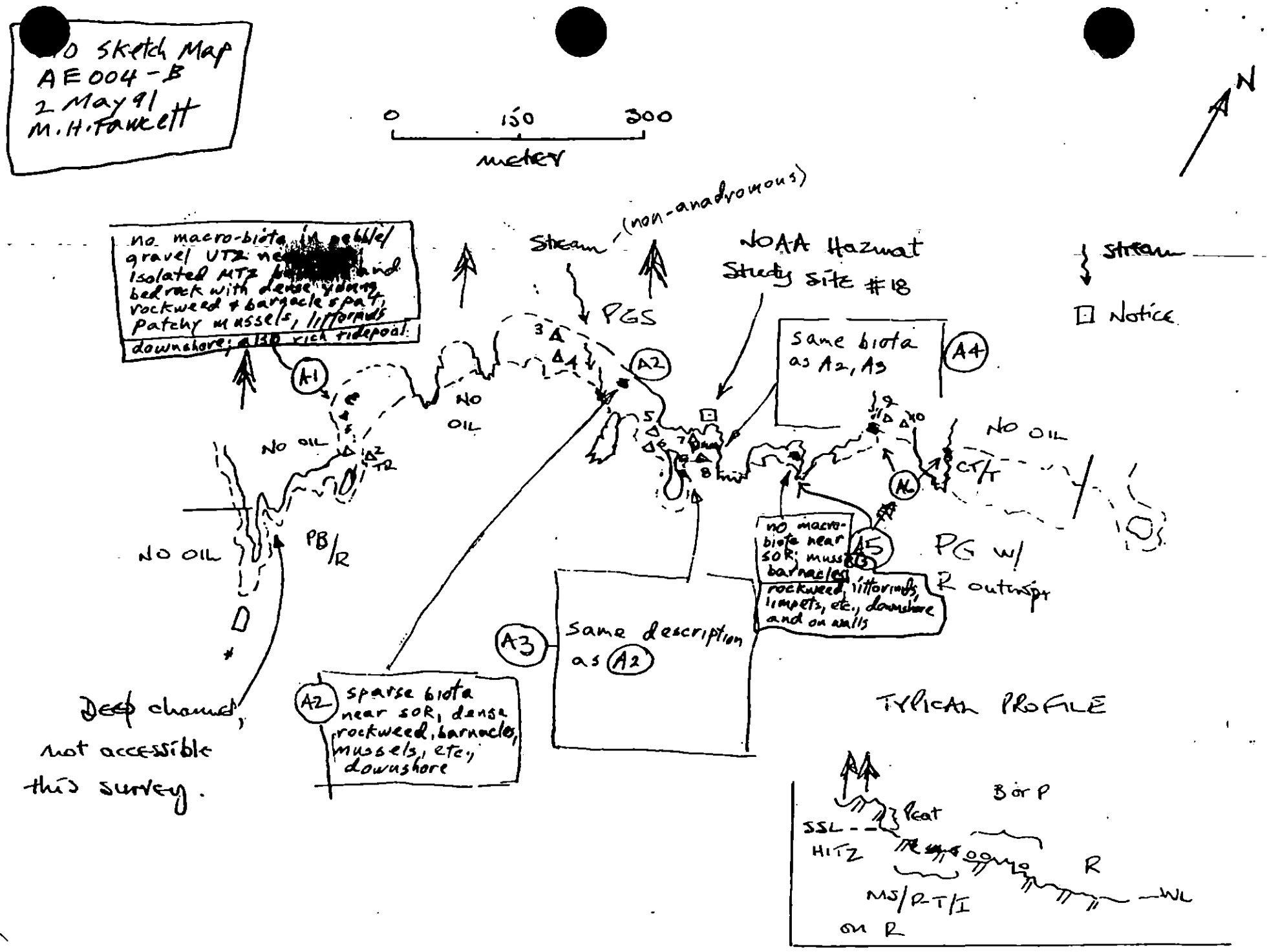
WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	
Seabirds	1 (pigeon guill.)	3	
Waterfowl	2 (harlequins & unid.)	15	
Gulls/Kittiwakes	1 (bl. kittiwake)	7	
Shorebirds			
Corvids			
Other Birds	1 northern harrier	1	

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	1 feeding		
Pinnipeds(specify)	1 harbor seal		
Whales(specify)			

Shoreline subdivision map showing important biological features attached.

REVIEWED CA MAY


0 Sketch Map
AE004-B
2 May 91
M.H. Fawcett
0 150 300
meter
N
Stream (non-anadromous)
NOAA Hazmat Study site #18
Stream
Notice
no macro-biota in pebble/gravel UTZ near [redacted] isolated MTZ [redacted] and bedrock with dense young rockweed & barnacle spat, patchy mussels, littorinids downshore; algae rich tidepool.
A1
PGS
A2
NO OIL
NO OIL
NO OIL
PB/R
Same biota as A2, A3
A4
NO OIL
CT/T
A5
PG w/ R outcrops
no macro-biota near SOR; mussels, barnacles, rockweed, littorinids, limpets, etc., downshore and on walls
A3
Same description as A2
A2 sparse biota near SOR, dense rockweed, barnacles, mussels, etc., downshore
Deep channel, not accessible this survey.
TYPICAL PROFILE
B or P
Peat
SSL
HITZ
R
MS/P-T/I
on R
WL

AE 5 B (cont) 2 May 91 Fawcett

B Rd boulders near eagle nest have dense spat, most still obviously cyprids - also patchy dense older Balanus & chthamalus

- dense mussels in crevices
- cyprids not cemented to rock yet
- 2 Jays near nest

Tiny new Fucus + spat, little

- max trace SOR on exposed side of point near eagle nest

(- biggest patch of SOR 1 m²
10 m north of - worms in only N personal litt under boulders nearby -

End segment 1310

AE 4-B 2 May 91 Fawcett

1330 hours

1 eagle in tree at point
- 6 harlequin ducks
9 - small ducks unidentified
1 harbor seal
1 pigeon guillemot

high energy beach G/P - no bird
a few boulders behind beach on backshore
very dense young Fucus on BS
dense spat
patchy mussels, little
rich pools - some band of habitat to end of subareas

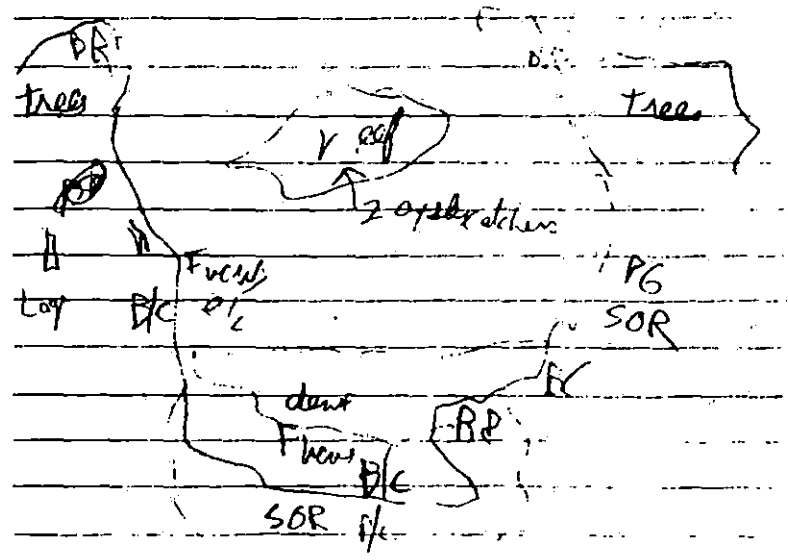
End 1445

1 sea otter feeding
3 pigeon guillemot

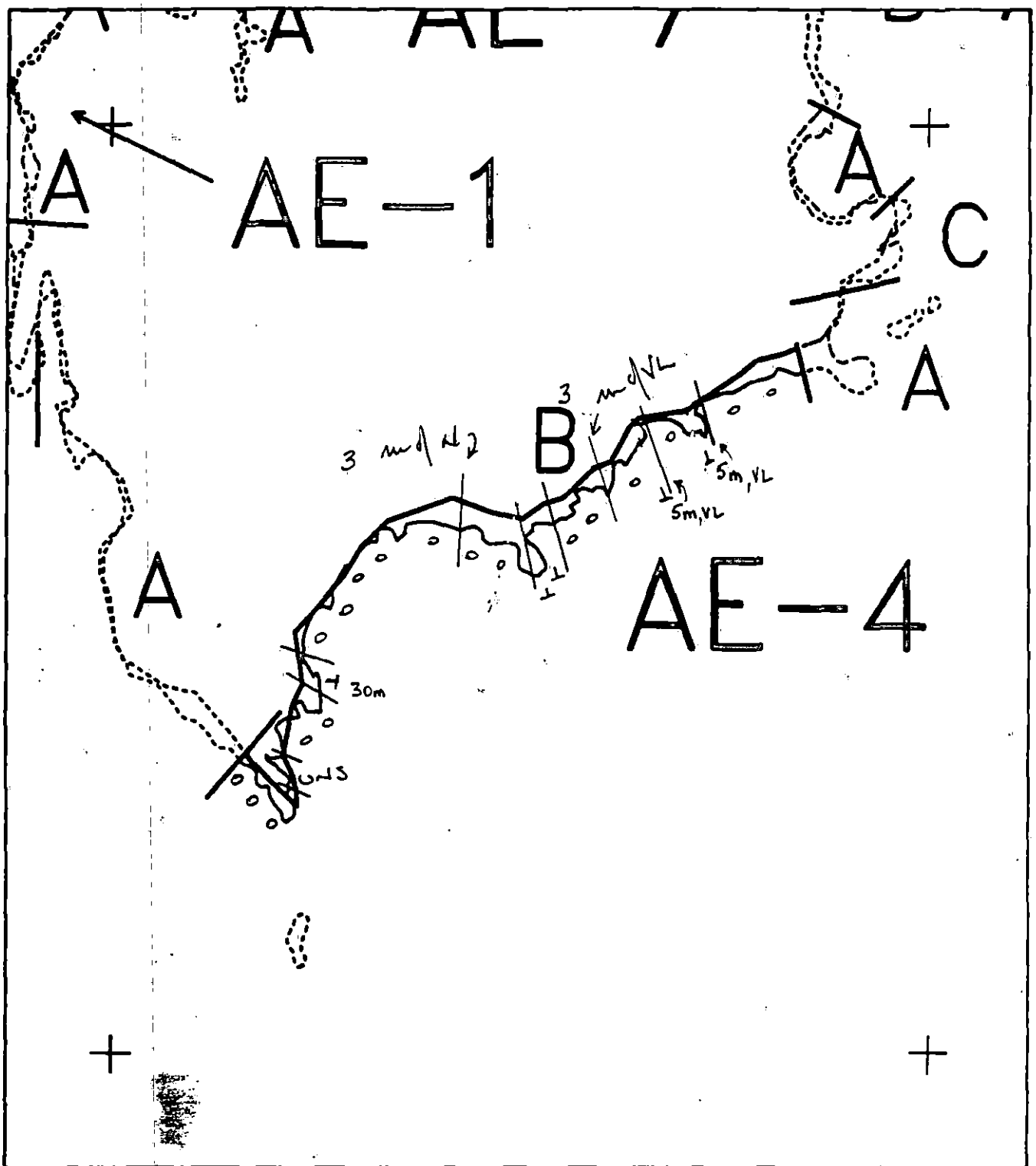
1510 hrs
On trip back to ship along shore of applegate Island saw 7 black-legged Kittiwakes
2 pigeon guillemots
1 northern harrier hunting

1445hrs AE4-~~B~~A - Fawkett
2 May 91

Bright moderate - high energy exposed to NE fetch, partially sheltered by 14 ft high reef offshore
- SOR in shale c/B facing reef, among limpets, littorines + 8-9 ft - dense Fucus below - 30 geese & Cow bx



End 1500 hrs - to be continued again at lower tide stage



XXXX	Wide	AE004 B	Subdivision Field Map
////	Medium	ADEC Subsegment Length: 1257m	Map Key: PWSAE004B
----	Narrow	METERS	Name: GM
TTTT	Very Light	0 200 400	Date: 5.2.91
0000	No Oil	AK State Plane Zone 4 pwa004b	Date Entered:

4

ET revised, May 6
REVIEWED CE 11 MAY

1991 MAYSAP EVALUATION

SEGMENT: AE 004 SUB: B REGION: PWS SURVEY DATE: 5/2/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) OPEN

Ecological/Constraints (see page two for details) None

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

SHPO Signature: Rachel Joan Dan Date: 5/21/91

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

COMMENTS:
INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: MAY 21 1991 FOSC APPROVAL DATE: 5/23/91

ADEC

EXXON

USCG

NOAA

FOSC

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

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 1 SEGMENT AE-4 SUBDIVISION B DATE 5/3/91

ADEC
NAME JEFF GIMMLAS SIGNATURE [signature]

☒ NTR I DO NOT BELIEVE TREATMENT WOULD BE EFFECTIVE.
REMAINING MOUSSE IS TRAPPED IN SPLINTERS OF BEDROCK ~~SLATE~~, SLATE, WHICH WOULD BE EXTREMELY DIFFICULT TO REMOVE, AND AMOUNT RECOVERED WOULD BE MINIMAL. THIS RESULTS IN AESTHETIC SCAR ON BEACH, WHICH IS ACCESSIBLE TO RECREATIONISTS. IF TREATMENT IS AUTHORIZED, MANUAL REMOVAL WITH SMALL CREW & TROWELS WOULD BE SUGGESTED METHOD. WHILE MUCH OF BEACH IS HIGH ENERGY, REMAINING MOUSSE (SITES A2, A4, A5) IS BEHIND BEDROCK UPRISE & LIGHT ENERGY. TILLING OR RELEASE OF OIL W/OUT RECOVERY WOULD RESULT IN ITS RESETTLING ON BEACH

EXXON
NAME FRANK Box SIGNATURE [signature]

☑ NTR Intermittent splashy crats with some evidence of light subsurface. Not enough oil found on the segment to warrant activity of clean-up. High energy beach should continue to improve nicely.

LANDMANAGER
NAME MARSHA HALL OF DNR SIGNATURE Marsha Hall

☐ NTR ☑ treatment
MANUAL removal of mousse which extends slightly up & under toe of storm berm at AREA A1. MANUAL but A2 A3 & A4 & A5. Much recreational activity on Island.

USCG/NOAA
NAME Jensen/Childs SIGNATURE [signature]

☒ NTR Further removal operations would cause more environmental harm than oil to be removed.

HIGH ENERGY ROCKY SHORELINE CONTAINING POCKETS BELOW OF "RIP" ON PG MS/I & CT/T WERE FOUND IN CREVICES FORMED BY BROKEN UP "SLATES" HIGH ANGLE BEDROCK OUTCROPS. ONLY SUBSURFACE OIL FOUND WAS TR @ A-2.

MAYSAP SHORELINE OILING SUMMARY

TEAM NO. 1

OG G. MACDONALD BIO M. FAWCETT SEGMENT AE-4

ADEC J. GINANJAS LANDMANAGER M. HALL for DNR SUBDIVISION B

EXXON F. Box USCG/NOAA JENSEN / CHILDS DATE 5 / 2 / 91

TIME 13 : 30 to 14 : 45 TIDE LEVEL +4½ ft. to +7½ ft. ENERGY LEVEL: [X] H [ ] M [ ] L

SURVEYED FROM: [X] FOOT [ ] BOAT [ ] HELO WEATHER: [ ] SUN [ ] CLOUDS [ ] FOG [X] RAIN [ ] SNOW

TOTAL LENGTH SHORELINE SURVEYED: 1,197 m NEAR SHORE SHEEN: [ ] BR [ ] RB [ ] SL [X] NONE

EST. OIL CATEGORY LENGTH: W — m M — m N 3 m VL — m NO 1 m US 60 m

LOC	SURFACE OIL CHARACTER AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO	SURFACE SEDIMENT TYPE	SHORE SLOPE V H M L	AREA WIDTH m	LENGTH m	ZONE S	UI	MI	LI	NOTES
A1		S				T					PG	M	1	30		X			
A2		P				S					R	M	2	3		X			
A3						S					R	H	½	3		X			
A4		S				S					R	M	2½	6		X			
A5		T				T					PG R	M	2	3		X			
A6		T				T					R PG	M	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- 1 - 15 FRAMES 19-27

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER OP	HOR	MOR	LOR	OF	TR	NO	OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE S	UI	MI	LI	SURFACE-SUBSURFACE SEDIMENTS	NOTES
1	40							X	-					X			PB-PG V	peat
2	20					X	X		5 - 7	Y	15	S			X		P-PG	
3	20							X	-		–			X			P-PG	
4	20							X	-		15	H			X		P-PG	

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

OG COMMENTS: Ragged, scalloped rocky shore w/ PG, PB pockets. Surface oil as MS/I & CT/T @ HTZ, retained on splintery bedrock traps.

Trace subsurface oil @ (A2), probably as remnant of adjacent mousse band.

SS raised 5/6

REVISED CO 11 MAY

MAYSAP SHORELINE OILING SUMMARY (cont.)

TEAM NO. 1

SEGMENT AE-4 SUBDIVISION B DATE 5/2/91

OG COMMENTS: G. MacDonald

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO				B R S N	S	UI	MI	LI		
									-									
5	20							X	-		–			X			P-f	
6	15							X	-		–				X		P-PG	
7	15							X	-		–			X			PC-PC	
8	30							X	-		–				X		PC-GC	
									-									
9	20							X	-		–			X			P-GPV	peat.
10	30							X	-		–			X			P-GPV	peat.
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SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

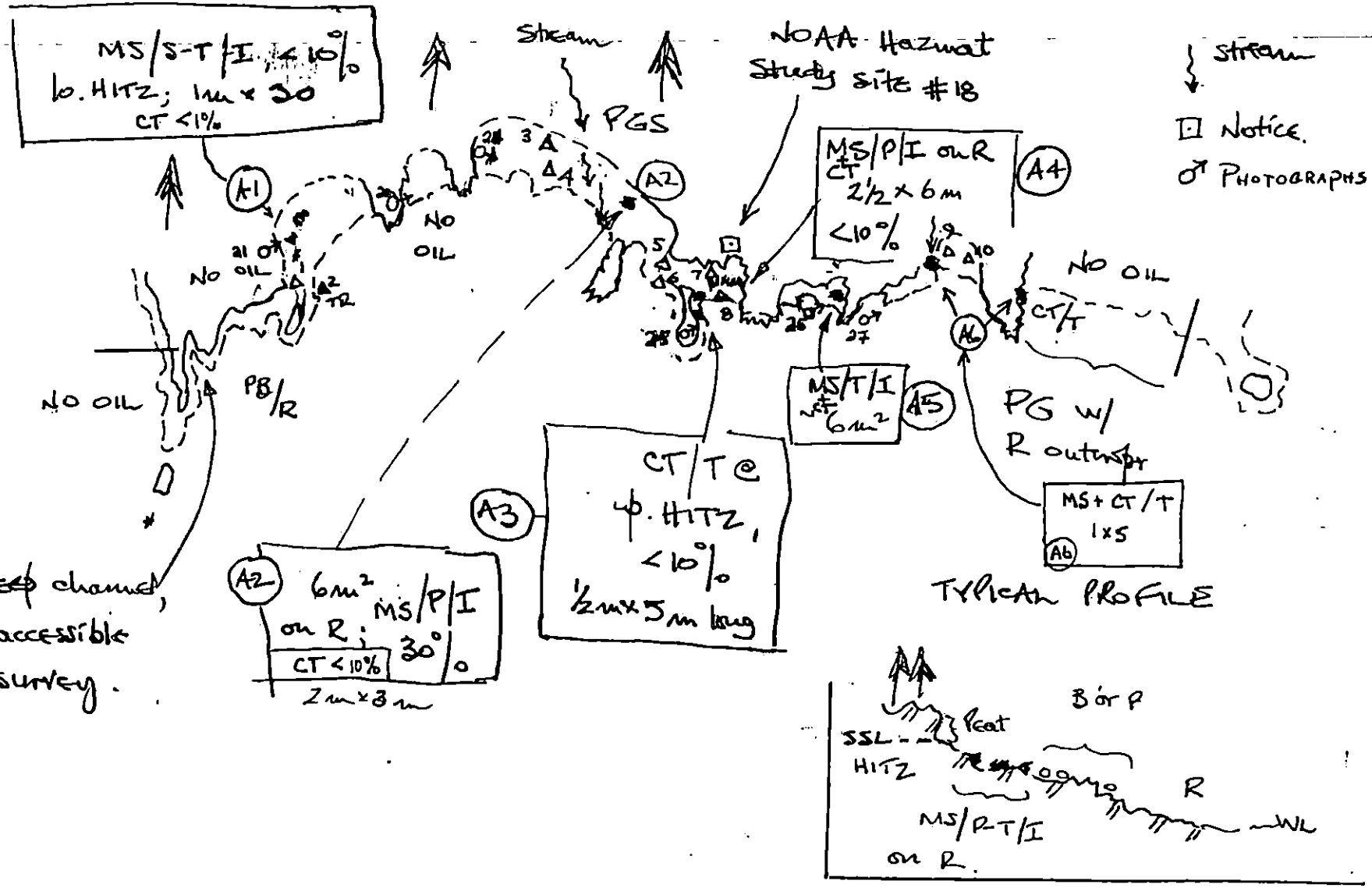
2

ES reviewed, May 6
REVIEWED CB 11 MA

AE-4B

G. MACDONALD
5.2.91

0 150 300
meter



ET revised, May 6
REVIEWED CR 11 MAY

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1 DATE 2 May 91

SEGMENT # AE004 TIDAL HEIGHT(Range) +5.0 to +7.2 ft

SUBDIVISION B BIOLOGIST M.H. Fawcett

SEA STATE 2 1/2 ft WIND SPEED/DIRECTION NE 15-25 knots

PHOTOGRAPHS: ROLL # FRAME #

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

This subdivision consists of rugged, exposed rocky shoreline with small pocket beaches of mostly unstable small sediments. Patches of residual oil occur at about the same UTZ level throughout subdivision, upshore from most biota. Bedrock and boulders in MTZ-LTZ generally have dense young rockweed, mussels, and barnacles, plus patches of older specimens and mixed-age limpets and littorinids. Tidepools in MTZ have typically rich assortment of algae, crustaceans, chitons, limpets, anemones, fishes, etc.

See accompanying sketch map for descriptions of dominant biota near each sub-site.

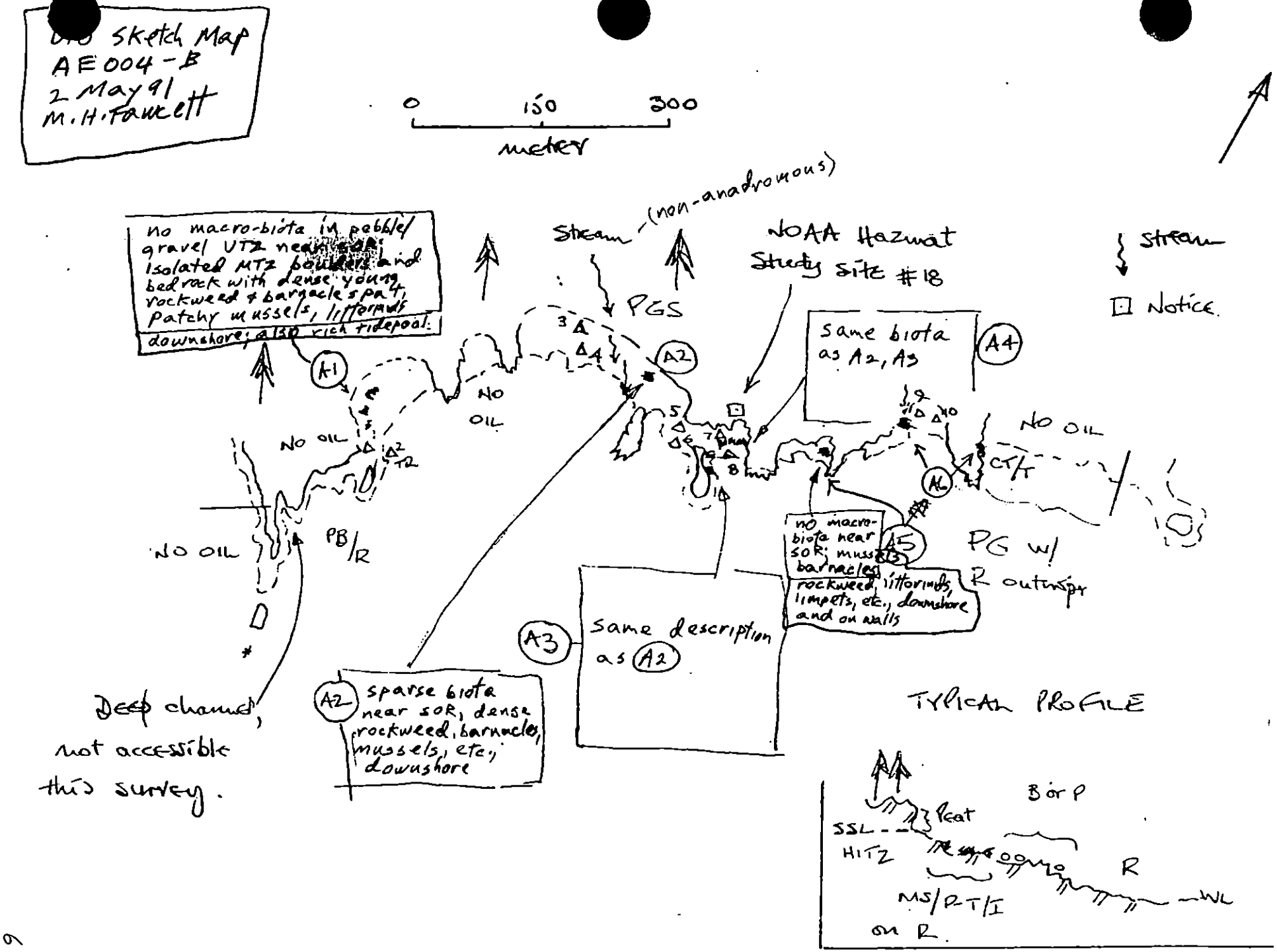
WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	
Seabirds	1 (pigeon guill.)	3	
Waterfowl	2 (harlequins & unm.)	15	
Gulls/Kittiwakes	1 (bl. kittiwake)	7	
Shorebirds			
Corvids			
Other Birds	1 northern harrier	1	

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	1 feeding		
Pinnipeds(specify)	1 harbor seal		
Whales(specify)			

Shoreline subdivision map showing important biological features attached.

REVIEWED CE 11 MAY


Sketch Map
AE004-B
2 May 91
M.H. Fawcett
0 150 300
meter
N
no macro-biota in pebble/gravel UTZ near SOR; isolated MTZ boulders and bedrock with dense young rockweed & barnacles, patchy mussels, littorinids downshore; also rich tidepool.
A1
Stream (non-anadromous)
NOAA Hazmat Study site #18
PGS
A2
NO OIL
NO OIL
NO OIL
PB/R
Same biota as A2, A3
A4
NO OIL
CT/T
A5
no macro-biota near SOR; mussels, barnacles, rockweed, littorinids, limpets, etc., downshore and on walls
PG w/ R outcrops
A3
Same description as A2
A2 sparse biota near SOR, dense rockweed, barnacles, mussels, etc., downshore
Deep channel, not accessible this survey.
Stream
Notice
TYPICAL PROFILE
B or P
Peat
SSL
HITZ
R
MS/PT/I
on R
WL

AE 5 B (cont) 2 May 91 Fawcett

B Rd boulders near eagle nest have very dense spat, most still obviously cyprids - also patchy dense older Balanus & Chtham. B Californicus, & Tvas

- dense mussels in crevices
- cyprids not cemented to rock yet
- 2 Jays near nest

Tiny new Fucus + spat, little

- near trace SOR on exposed side of point near eagle nest
- biggest patch of SOR (1 m²) 10 M North of - worms in ocl, Nperoxa & little under boulders nearby -

End segment 1310

AE 4-B 2 May 91 Fawcett

1330 hours

1 eagle in tree at point

- 6 harlequin ducks

9 - small ducks unidentified

1 harbor seal

1 pigeon guillemot

high energy beach G/P - no bit

a few boulders band big on backup

very dense young Fucus on BR

dense spat

patchy mussels, little

rich pools - some bands of habitat to end of subarea

End 1445

1 sea otter feeding

3 pigeon guillemot

1510 hrs

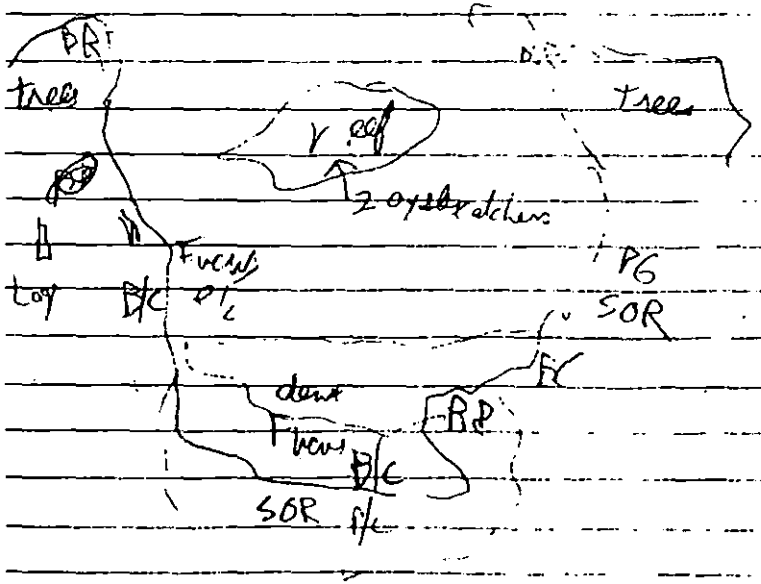
On trip back to ship along shore of applegate Island saw 7 black-legged Kittiwakes

2 pigeon guillemots

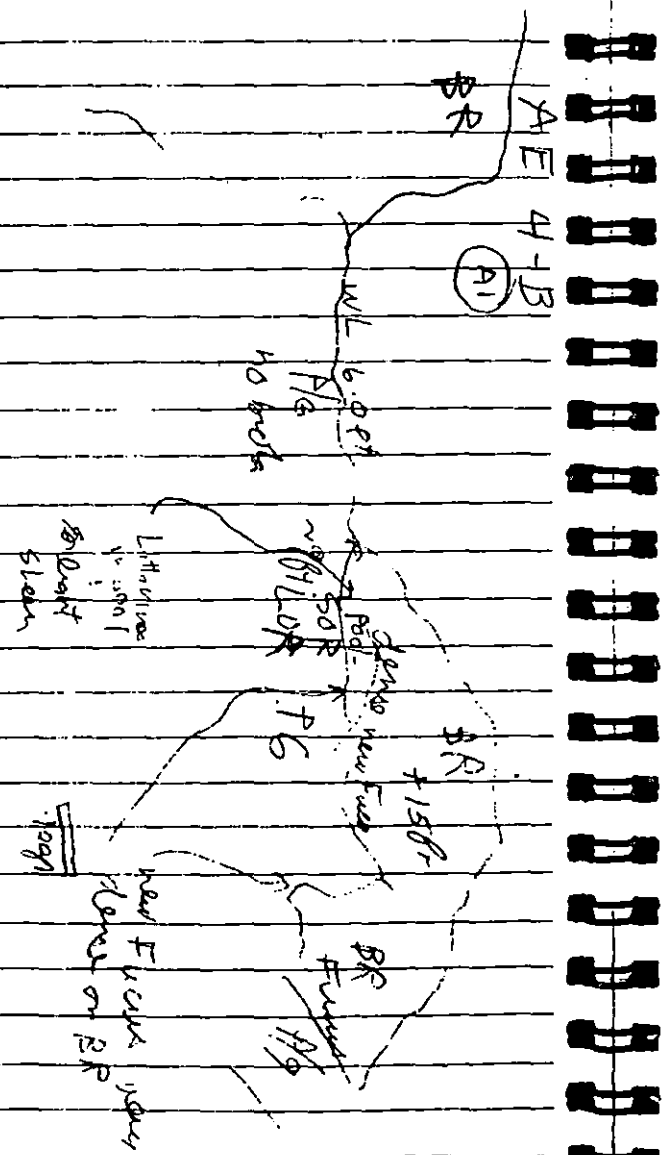
1 northern harrier hunting

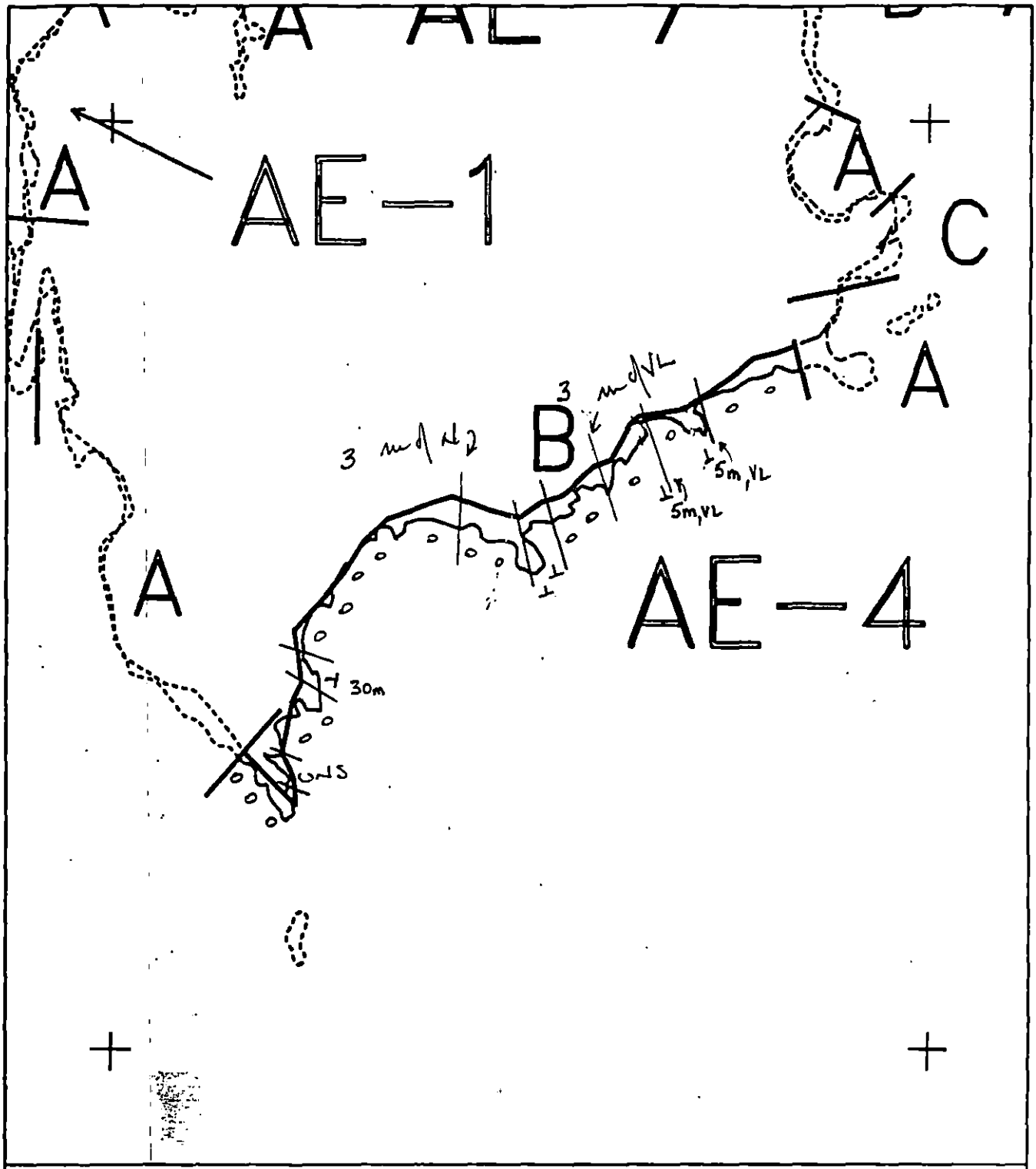
1445hrs AE4-~~B~~A - Fawcett
2 May 91

Bright moderate - high energy exposed to NE fetch, partially sheltered by 14 ft high reef offshore
- SOR in shale c/B facing reef, among limpets, Littorines + 8-9 ft - dense Fucus below - 30 geese flew by



End 1500 hrs - to be continued again at lower tide stage





XXXX	Wide	AE004 B	Subdivision Field Map
////	Medium	ADEC Subsegment Length: 1257m	Map Key: PWSAE004B
----	Narrow	METERS	Name: GM
TTTT	Very Light	0 200 400	Date: 5.2.91
0000	No Oil	AK State Plane Zone 4	Date Entered:

pae004b

4

ET revised, May 6
REVIEWED CE 11 MAY

1991 MAYSAP EVALUATION

SEGMENT: AE 004 SUB: A REGION: PWS SURVEY DATE: 5/3/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) OPEN

Ecological/Constraints (see page two for details) None

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find, and **contact Exxon's Cultural Resource Program immediately: 564-3276; 564-3657; (Anchorage) or 229-1514 (24 hrs.).** RD

Rachel Dan Dale 5/21/91

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

COMMENTS:
INITIAL:

TAG: MANUAL PICKUP OF EASILY ACCESSIBLE AP + MOUSSE AT LOCATIONS A_2 A_3 + A_5. APPLY CUSTOMBLEN FOLLOWING MANUAL PICKUP. B

FOSC:

TAG APPROVAL DATE: MAY 21 1991 FOSC APPROVAL DATE: 5/25/91

ADEC

EXXON

USCG

NOAA

FOSC

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

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 1 SEGMENT AE - 4 SUBDIVISION A DATE 5 / 3 / 91

ADEC
NAME JEFF GINALIAS SIGNATURE [signature]

☐ NTR ☒ TREATMENT RECOMMENDED

MANUAL REMOVAL AT SITES A2, A3, A5 (SEE OG MAP). MOUSSE/ASPHALT READILY OBSERVABLE AT UITZ IN THESE AREAS. I RECOMMEND MANUAL REMOVAL BY SMALL CREW (3-5) WITH SHOVELS AND TROWELS. TILLING, W/OUT REMOVAL WOULD BE INEFFECTIVE, AS THESE AREAS APPEAR TO BE "QUIET ZONES" OF HIGH ENERGY BEACH, THUS OIL WOULD SETTLE BACK INTO SEDIMENTS. IN AREA BETWEEN SITES, INTER-TIDAL BIOTA INTERSPERSED WITH LOWER EXTENT OF OILING. I WOULD LEAVE THIS ZONE (MITZ) ALONE. AT LOW TIDE, TREATMENT AREAS 60-80 YARDS FROM SHORE, THUS I WOULD TREAT AT A MID-TIDE TIME OR JUST BELOW.

EXXON
NAME FRANK A. BOX SIGNATURE Frank A. Box

☐ 2 NTR Due to the high energy of the beach, the oiling has dissipated to the extent of a few patches of tar patties. No subsurface observed. A small area of coat. No action recommended on this segment.

LANDMANAGER
NAME MARSHA HALL OF DNR SIGNATURE Marsha Hall

☐ NTR ☒ TREATMENT

MANUAL REMOVAL of A2 & A3. MANUAL removal in area A1 & A6 by 2-4 workers. MS is patchy & on top of peat layer — sensitive. MANUAL work in area A5. This area is frequently visited, recreational island. SEE profile X-Y.

USCG/NOAA
NAME Jensen / CHILDS SIGNATURE [signature]

☐ NTR This is a moderate to high energy site. Treatment needed at A3, A5, and A6. Do not recommend treatment in A1 because of the sensitive peat area and negative impact of trampling in the diverse biota.

LARGE ROCKY TIDAL FLAT — COMPOSED OF A BED ROCK FRAME OVERLAIN BY PEAT - THE SURFACE CONSISTS OF BOULDERS, COBBLE, & PEBBLES OVER THE PEAT. NO SUBSURFACE OIL WAS PRESENT BUT SURFACE OIL AS AP PATTIES, INTERSTITIAL MS & SOR WERE PRESENT FROM THE MID INTERTIDAL THRU THE UPPER INTERTIDAL. THESE WERE PATCHY & CONFINED TO "PROTECTED" AREAS BEHIND B & C.

MAYSAP SHORELINE OILING SUMMARY

TEAM NO. 1

OG G. MACDONALD BIO M. FAWCETT SEGMENT AE-4

ADEC J. GINALAS LANDMANAGER M. HALL for DNR SUBDIVISION A

EXXON F. Box USCG/NOAA JENSEN/CHILDS DATE 5/3/91

TIME 09:15 to 10:15 TIDE LEVEL +1.0 ft. to +1/4 ft. ENERGY LEVEL: ☐ H ☒ M ☐ L

SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO WEATHER: ☐ SUN ☐ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

TOTAL LENGTH SHORELINE SURVEYED: 333 m NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE

EST. OIL CATEGORY LENGTH: W — m M 60 m N — m VL 80 m NO 193 m US — m

LOC	SURFACE OIL CHARACTER AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO	SURFACE SEDIMENT TYPE	SHORE SLOPE V H M L	AREA WIDTH m	AREA LENGTH m	ZONE S	UI	MI	LI	NOTES
A1			T	S		T					CBMR	L	15	35		X			lo-hi SOL - "patches"
A2		S				T					CPR	M	2½	55		X			
A3	P										BCM	L	3	30			X		
A4			T	T		T					RBCM	M	5	50		X	X		lo SOL
A5	P	P						T			CBR	L	3	30		X	X		
A6	S	S				S					RCGM	L	6	75		X	X		
A7						T					H		½	30		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- 1 - 16 FRAMES 1 ~ 9

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER OP	HOR	MOR	LOR	OF	TR	NO	OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE S	UI	MI	LI	SURFACE-SUBSURFACE SEDIMENTS	NOTES
1	15							X	-		—			X			P-PGV	peat.
2	25							X	-		—		X				P-P	
3	30							X	-		—			X			P-PG	
4	20							X	-		—		X				P-PGV	peat
5	15							X	-		10	N		X			CP-MPV	peat
6	15							X	-		3	N			X		CB-GMVR	peat
7	20							X	-		-			X			CP-GV	peat
8	10							X	-		—			X			PC-GV	peat
9	25							X	-		5	N				X	CP-MVR	peat

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

OG COMMENTS: Rocky shore w/ broad embayment. Surface oil only as remnant (MS, AP, SOR) — patches in MITZ & HITZ; local patches ≤ 3 cms thick, sometimes trapped on splintery bedrock. Peat layer underlies most sediments. Average overall dimensions for oil cover: 15 x 250 m @ <10%.

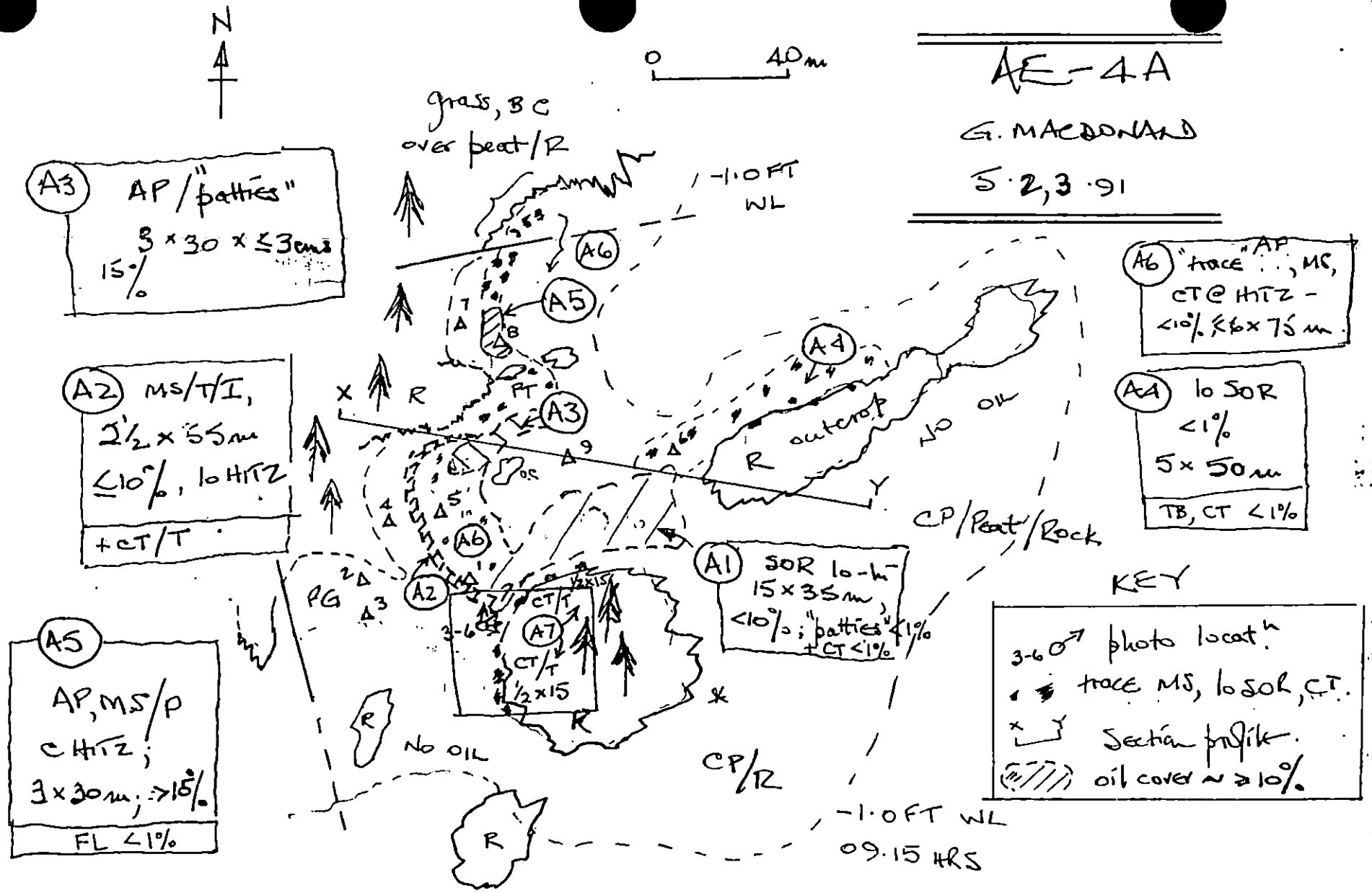
SC revised 5/6 1

REVIEWED CO 11 MA

AE-4A

G. MACDONALD

5·2,3·91



Note: >20 shallow pits were dug to assess subsurface oil; peat @ 0-15cms was typical throughout, usually blanketing bedrock. No SUBSURFACE OIL

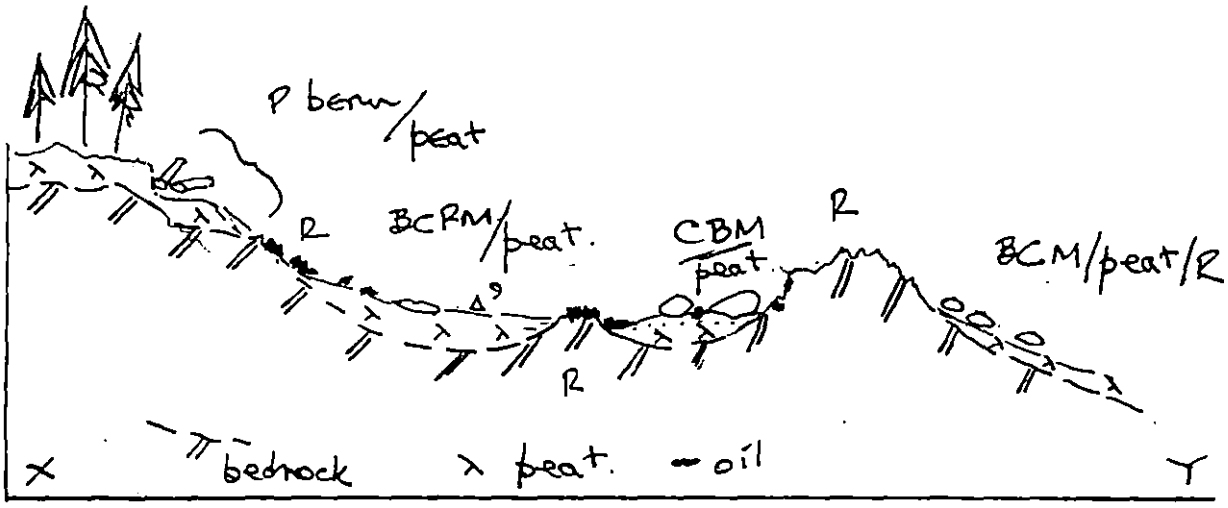
Er revised 5/6

AE-4A

G.M 5.3.91

PROFILE X-Y

peat found within 15 cms depth - typical.



The oil is surficial, and is stranded on a relatively thin layer of sediments which cover an emerging drowned peat layer. The peat probably blankets bedrock. The substrate is delicate so traffic should be minimised in the likelihood of further treatment.

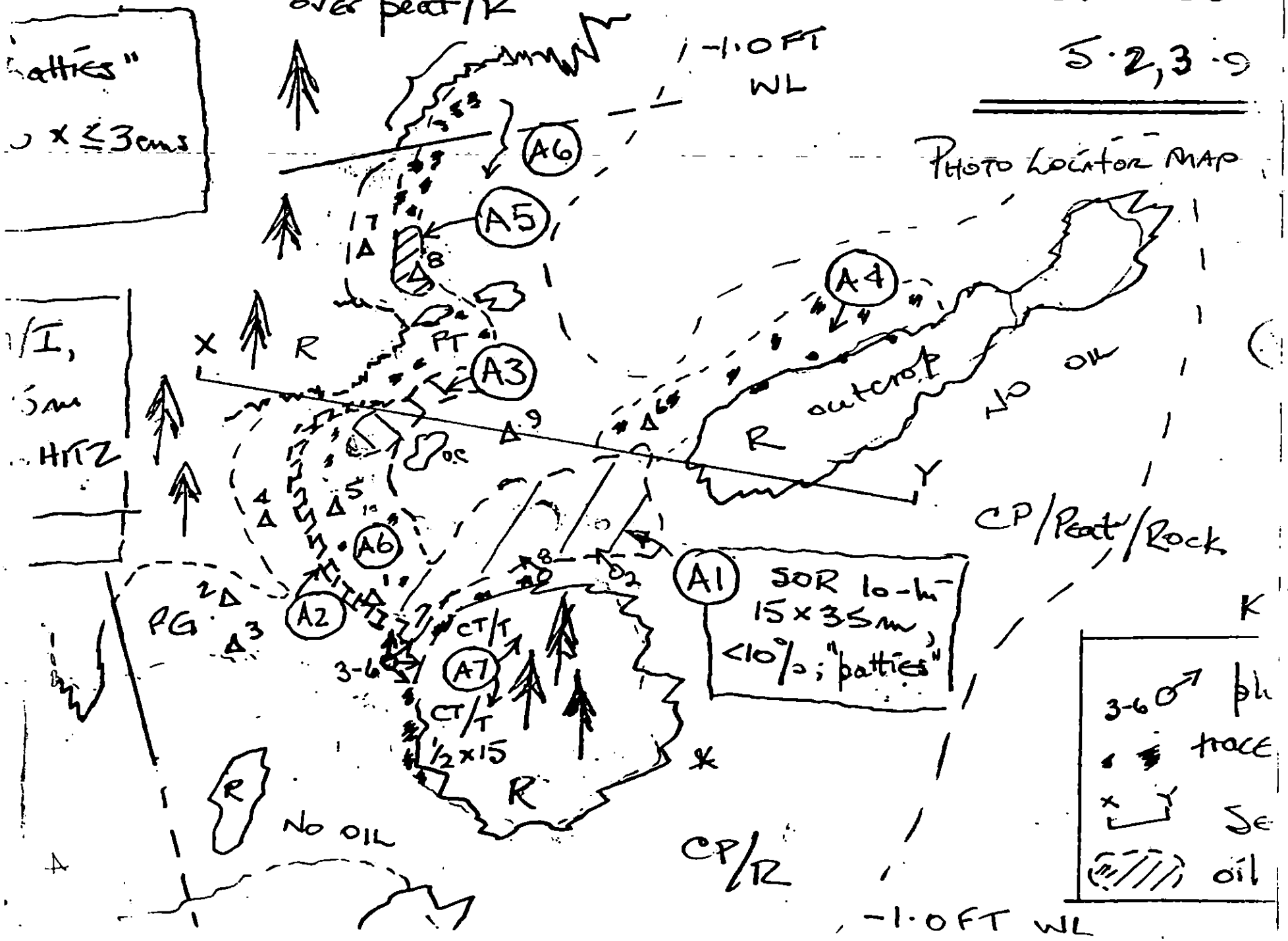
3

EC reviewed 5/4

REVIEWED CO 11 MAY

AE-4A
G. MACD
5·2,3·9

PHOTO LOCATOR MAP



MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1	DATE 3 May 91
SEGMENT # AE 004	TIDAL HEIGHT(Range) +0.5 to +2.0
SUBDIVISION A	BIOLOGIST Michael Fawcett
SEA STATE 1 ft	WIND SPEED/DIRECTION NE 10 knots
PHOTOGRAPHS: ROLL #	FRAME #

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):
this subdivision observed briefly at +9ft tide on 2 May, re-surveyed today at lower tide to get more accurate description of oiling and biota. It is a moderate to high energy site with partial protection from NE fetch provided by a large bedrock outcrop (A4 on sketch map). The site contains vertical and low-angle bedrock but most of the habitat near and downshore of residual oil is muddy sand substrate with some exposed peat, overlain by scattered skale boulders, cobble, and shingle-like pebbles. The tops and sides of boulders and cobble in MTZ-LTZ and to a lesser extent, UTZ, areas are occupied by the typical dominant organisms in this region: barnacles, rockweed, mussels, and littorinids. The mussels are mostly lodged around the bases of boulders, and in some areas form dense beds in shingle areas. Both old (pre-spill) and newly recruited mussels are present. Very dense barnacle spat and unattached cyprids have settled on every available hard surface in MTZ, as we have observed at other sites recently. Numerous cryptic species live beneath the boulders in MTZ-LTZ, including hermit crabs, starfish (Leptasterias), sea urchins (Strongylocentrotus drobachiensis), pricklebacks (fish), isopods, amphipods, whelks, limpets (Notoacmea persona in higher areas, N. scutum, Collisella pelta, and C. paradigitalis lower on shore. Treatment scenarios should consider the negative impacts of trampling and other disturbance on the diverse biota in the middle and lower intertidal zones at this site, while asphalt and mousse in UTZ at +8-10ft could be manually removed with little impact at that level, significant disturbance to lower zones could result from intense activity. Manual removal of SOR lower on shore, as in area (A1) on sketch is contra-indicated, as mussels, barnacles, and other organisms are growing within and on the weathered oil residue.

WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

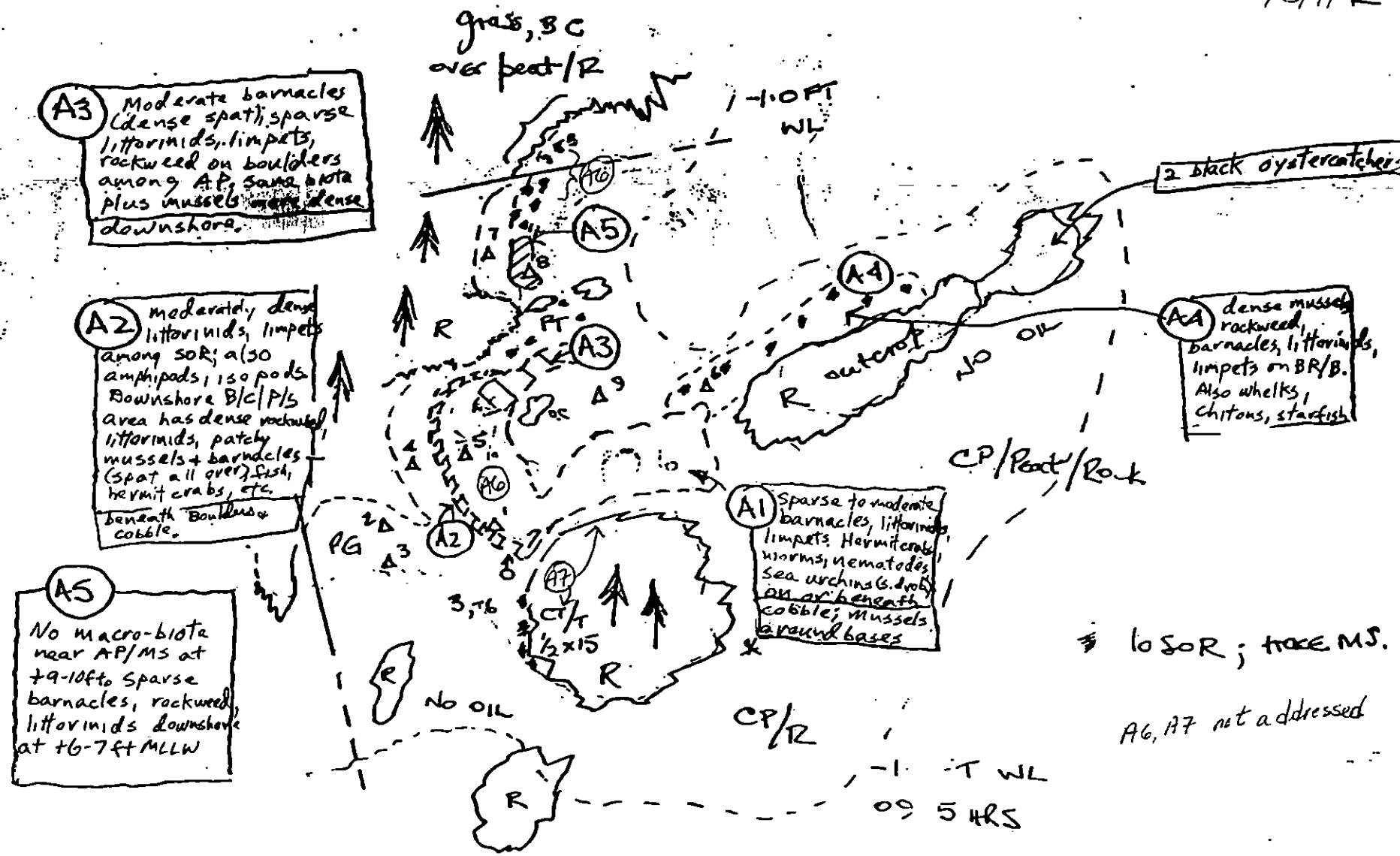
BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			pricklebacks
Seabirds			
Waterfowl	1 Canada goose	~ 70 flying over	
Gulls/kittiwakes			
Shorebirds	1 (black oystercatcher)	2 (pair)	
Corvids			
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

REVIEWED CB 11 MAY

AE-004H
NO MAP
FAWCETT
5/3/91



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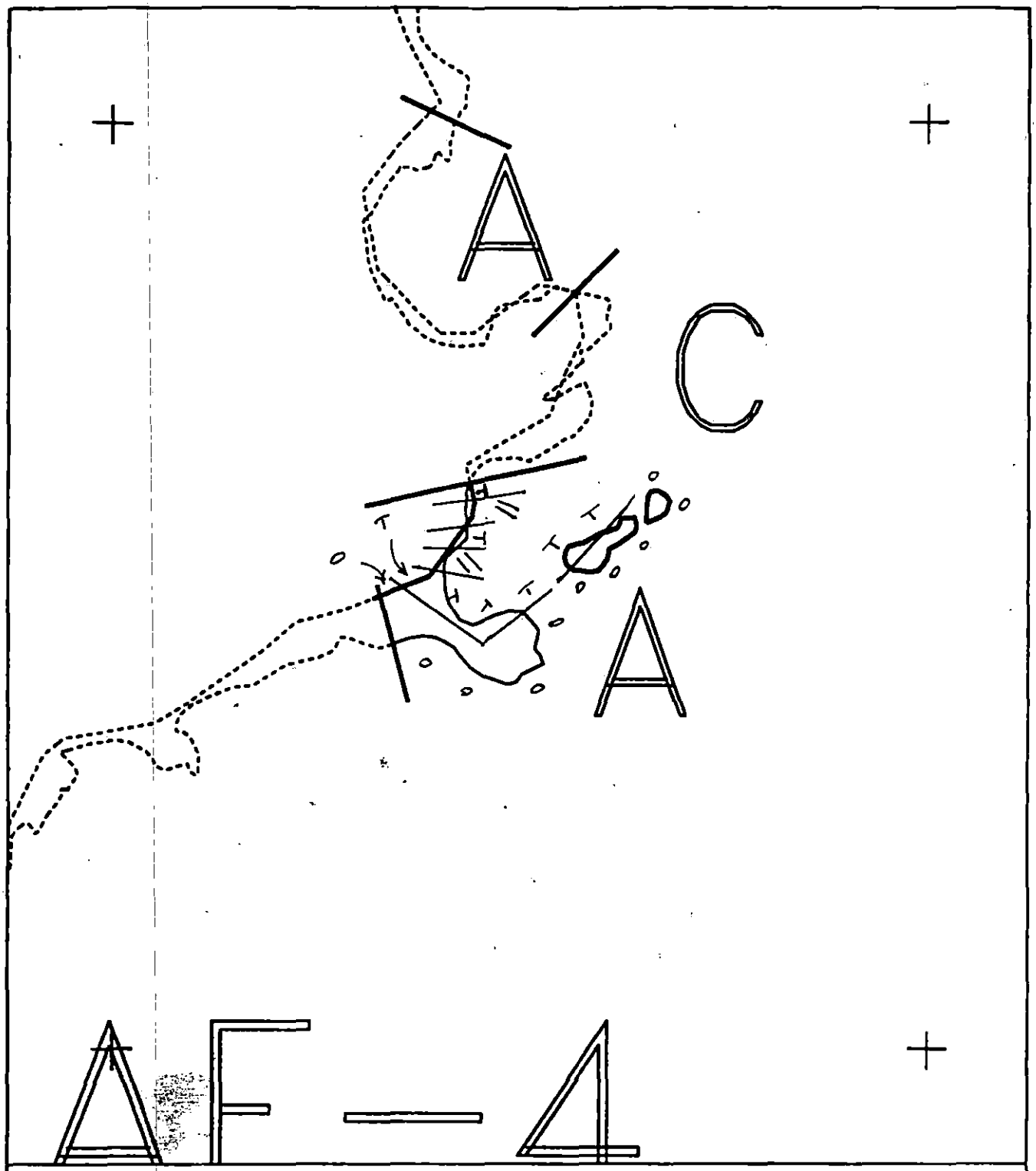
3 May 91 AE 4-A Fawcett
re-survey arr 0915 tide -1.3
- island exposed - dense mussel beds around base, dense rockweed, barn lift, limp all around on BR and boulders - main SOR area goes down to patches at ~ +3 ft in flat area with ~~no~~ boulders/cobble on pebble/gravel - patches of dense mussels all over, very dense barnacle spat, dense Littorinids + eggs, moderate young limpets patchy Rodwaed (dense on BR low ~~the~~ paused areas) - prickleback cockles, hermit crabs, whelks - overall moderately dense biota, not as rich as some similar areas, but appears healthy, recruitment occurring - isopods, scattered small sea urchins Halosaccion, Lithothamnion, Rhodomela ~~a~~ Peat throughout area beneath surface or at surface
I see no benefit to attempting to clean LTZ as residual oil appears + [illegible] impact now, and removing it will cause trampling, disturbance and direct removal of mussels etc that are alive and growing even though embedded in the weathered oil or growing on top of it
- scattered surfgrass in pools
worst SOR at about +9-10 ft in no biota zone, especially at MF zone on Graham's map

Fala, Dermasterias, Pycno LTZ
70 geese flew over

depart 1015



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

AE004 A

ADEC Subsegment Length: 333m

METERS

0 100 200

AK State Plane Zone 4
pas004a

EXXON

Subdivision Field Map
Map Key: PWSAE004A
Name: GM
Date: 5.3.91
Date Entered:

5

ES revised 5/6
REVIEWED CO 11 MAY

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/AE-05

SUBDIVISIONS: A (1 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ AE-05 SUBDIVISION A (1 OF 2) DATE 4/5/9

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T 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. Bald eagle nest possibly within 400m of subdivision A.

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 223 m: Medium 81 m: Narrow 0 m: V.Light 0 m: No Oil 0 m
Subsurface Oil Observed: Yes X No____ Maximum Depth 30+ cm

RECOMMENDATIONS:

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

COMMENTS: Recommend tarmat removal and manual pick up of pooled oil, oiled debris (trash, vegetation), and oiled logs (if more than 10% coverage and splash impact). Bioremediate areas indicated on sketch map. Work should be conducted after 6/1 and after contacting USFWS regarding status of eagle nest site in the area.

TAG COMMENTS:_____

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

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 unoiled intertidal and subtidal algae and seagrass. Contact ADF&G for specific dates and locations.	
3N, 3P 3O, 3Q	Harbor seal and sea lion pupping (5/15 to 7/1) Harbor seal and sea lion molting (8/15 to 9/15) Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts.	
5R	Seabird colony (5/1 to 9/1) Restrict air traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance. Contact ADF&G and USFWS prior to treatment.	
5S	Shorebird/waterfowl concentration (4/1 to 5/15) Restrict all activity to essential minimum, especially air traffic.	
5T	All Bald Eagle nests (3/1 to 6/1) Active Bald Eagle nests (3/1 to 9/1) Restrict air traffic to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.	
6U	Recreation:	Tent sites (6/1 to 9/15)
6V		Anchorages (6/1 to 9/15)
6W		Forest Service cabins (6/1 to 9/15)
6X		Lodge (6/1 to 9/15)
6Y		Special use destination
7Z	Subsistence area:	Salmon harvesting (5/1 to 9/30)
7HH		Finfish harvesting
7II		Deer harvesting (8/15 to 2/28)
7JJ		Invertebrate harvesting
	For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.	

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / AE-05 SUBDIVISION: A- 1 of 1 DATE 04/05/90

USCG
NAME David S. Thomas SIGNATURE [signature]

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

ADEC
NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

[OBSERVED WINTER LOCAL RESPONSE CREW (8 workers from Whittier - ABOARD F/V FALLS BAY HANA Cove) removing Asphalt (Type A clean-up). Spoke w/ Tom Starr - refered me to, Lynda Hyce - 472-2345] Suggest Mechanical clean-up AT S. Southern N. ends of Beach - Pooled Mousse - Bedrock Base % Manual pickup of Asphalt. Sheen noted throughout Beach - (Silver to Brown), OR in Supratidal - Cobble/Pebble - to vegetation - Beach is very heavily oiled - requires - intensive clean-up - entire sub Access to beach by LCM available at High Tides - low energy strong odor

LAND MANAGER
NAME MARSHA MARTIN / DNR SIGNATURE Marsha Martin

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED !!!
COMMENTS

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG Rick GILLIE USCG BM 1 Thomas SEGMENT ST/ AE-05
BIO DAVE Lobse LAND REP Marsha Martin SUBDIVISION A-1 of 2
EXXON FRANK Doy ADEC Clara Crosby (ADNR) TIME 13:50 to 14:50
TEAM NO.: 13 TIDE LEVEL: +6 to +4 DATE 04 / 05 / 90
EST. SUBDIVISION LENGTH: 320 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☒ Snow
UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☐ Rock Snow
SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: S to N
SURFACE SEDIMENTS: R 20 % B 10 % C 30 % P 30 % G 10 % S 0 % M 0 % V 0 %
SLOPE: Lang 80 % Hang 10 % Vert 10 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
OIL CATEGORY LENGTH: W 200 m M 120 m N 0 m VL 0 m NO 0 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	/C	/S	/P	/S	BR/BK	RW/PK	GY/SL	DBR/TL	LBR	SU	UI	MI	LI
ASPHALT PAVEMENT	X		✓			X✓					✓	X	
POOLED	X								X		X		
COVER	X			✓					X✓		X		✓
COAT	X✓		X			✓		XX		✓		XX	
STAIN													
MOUSSE	X	✓							X✓		X	✓	
PATTIES													
TARBALLS													
FILM	X					X						X	X
NO OIL													

PAVEMENT: H F (S) 100 sq. m by 5 cm
PATTIES / TARBALLS 1 BAGS
NEAR SHORE SHEEN? NO BR (RW) SL TL

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

DEBRIS COLLECTED ☐ YES ☒ NO
TYPE N/A
#BAGS N/A

Photographs:
Roll No. ST-13-2
Frames 25-29

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CM)	BELOW		OIL / FILM COLOR					PIT ZONE				ANA	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	BR/BK	RW/PK	GY/SL	DBR/TL	LBR	SU	UI	MI	LI		
1	15				X		5-15		X		X					X				G, P, R
2	30		X				5-30	X			X				X					P, G, V
3	20	X					5-10		X				X			X				P, G, S
4	30		X				5-30	X			X					X				G, S, P
5	30				X		5-30	X			X						X			D, G

COMMENTS
① OILING: "WIDE" OILING OVER MOST OF BEACH IN PROTECTED COVE. EXTENSIVE SUB-SURFACE OIL

REVIEWED _____ DATE _____

OG Rick[redacted]TILLIE

SEGMENT ST/ [redacted]E-5

SUBDIVISION A, 1 of 2

DATE 04, 05 90

CHECKLIST

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

LEGEND

1 ▲ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

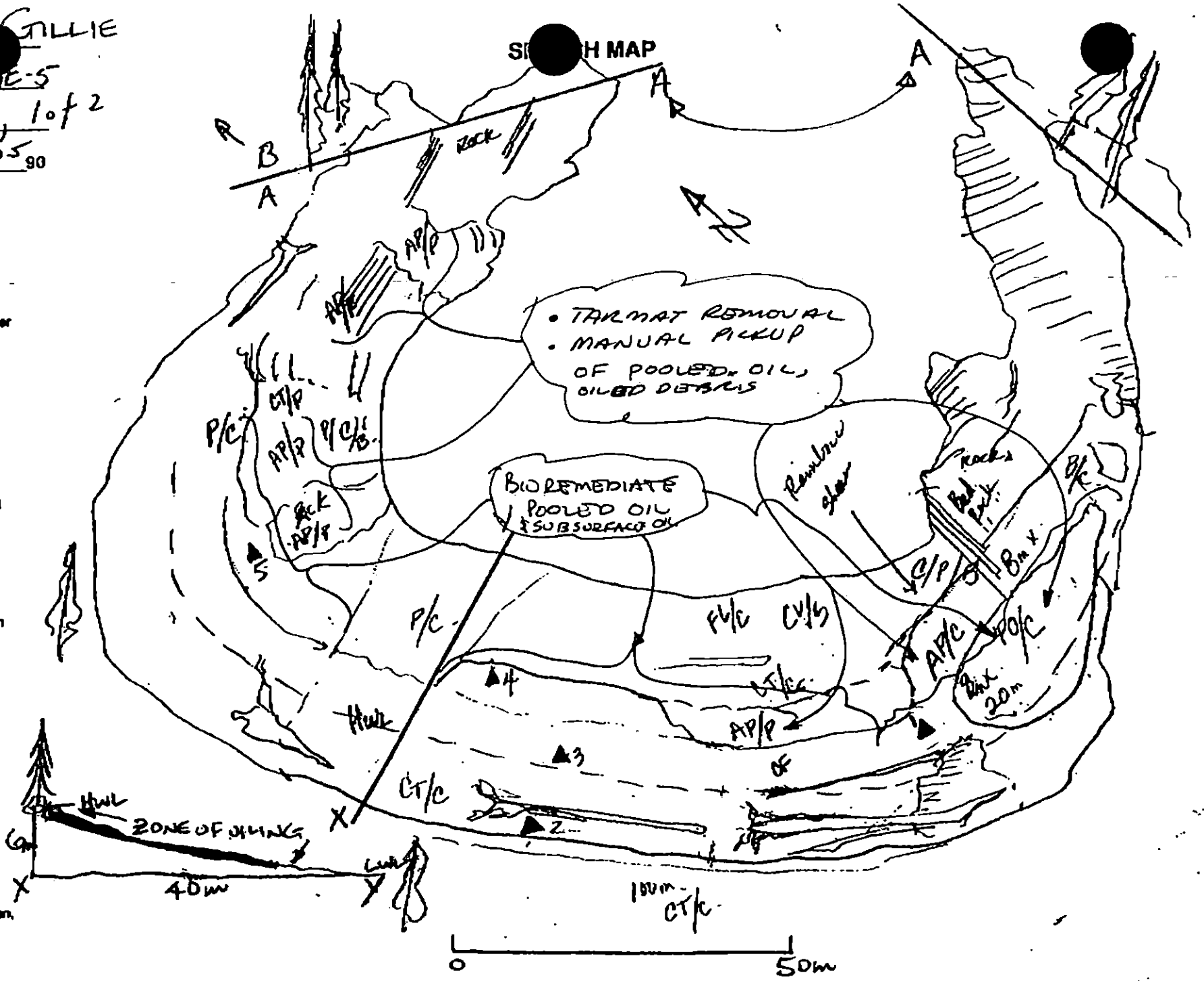
CT/B Broken Distribution

CT/P Patchy Distribution

CT/S Splashed Distribution

Oiled Vegetation

1 Photo location, direction, and number



Oil Character Length (m): AP 100 PO 40 CV 50 CT 200 ST ____ MS 40 PT ____ TB ____ FL 200 NO 0

REVISION: 08/28/90

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / AE 005 Subdivision A Date (mo / day / yr) 4-5-90

Time (24 hr) 14:00 Biologist David Cohen

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

(B) Overall % cover of biota (% of segment): Dense 5 Moderate 25 Low 70

(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-13-2
Frames 25-29

BARNACLES

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

MYTILUS

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

GASTROPODS

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:

See page 2

Ecological Considerations:

2 mature and 1 immature bald eagle sited in area.
No nests were observed

Shoreline Ecological Summary

Segment ST-AE005 Subdivision A 4-5-90

Biologist - David Lohse

Wildlife Observations/General Comments

1. low intertidal not sampled
2. present in mid-intertidal: Ulva, Enteromorpha, unidentified "branching" red algae

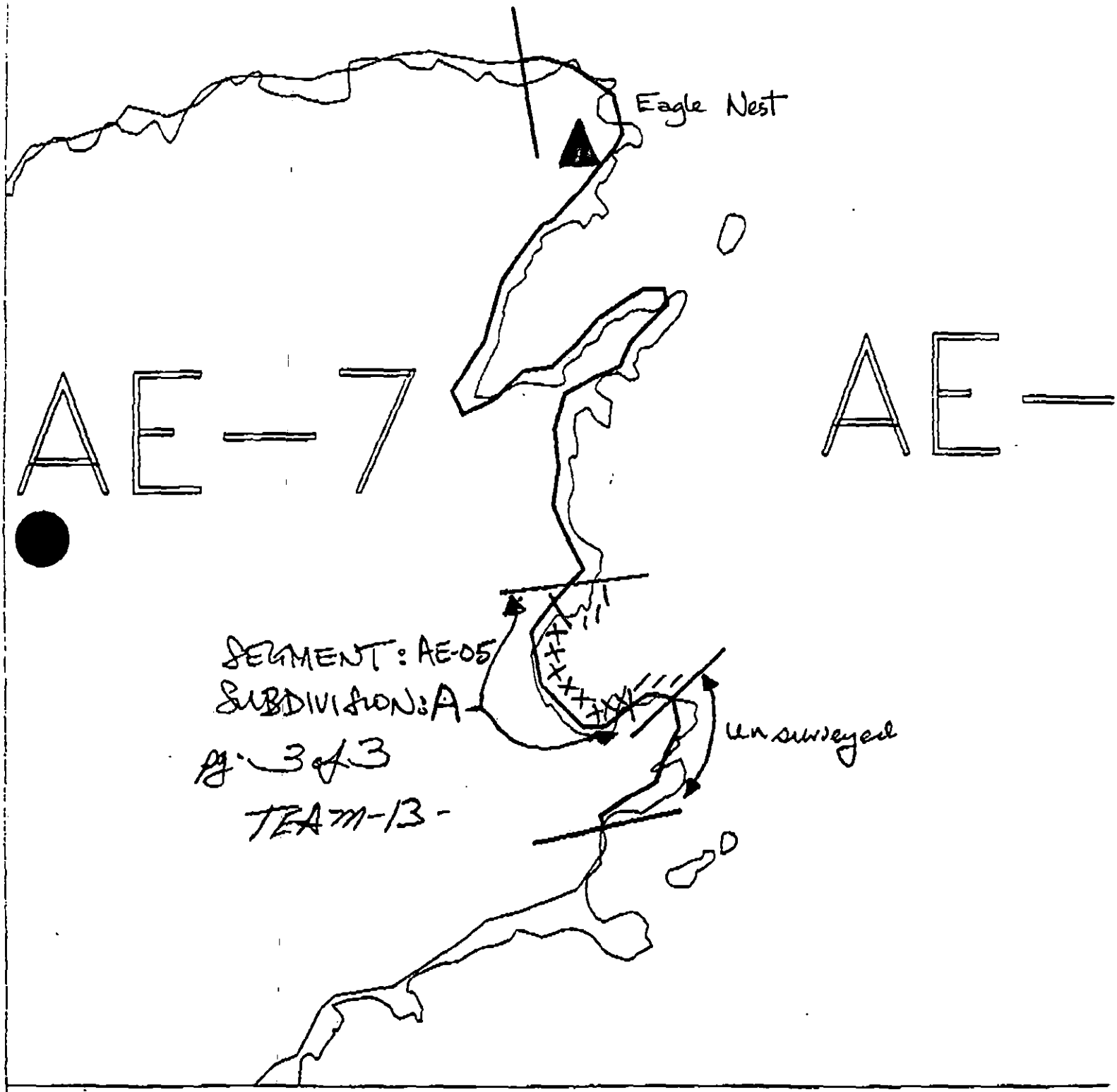
   high intertidal: Enteromorpha
3. many dead mussel shells found in high intertidal
4. several dead squid found washed up in mid-intertidal
5. Oil found covering barnacles on high intertidal boulders, mid bedrock

(There was 50-75% barnacle mortality on high intertidal boulders, and ~75% mortality of barnacles on high intertidal bedrock. There was 25% mortality of mid intertidal bedrock

3

E-6

ECOLOGY MAP



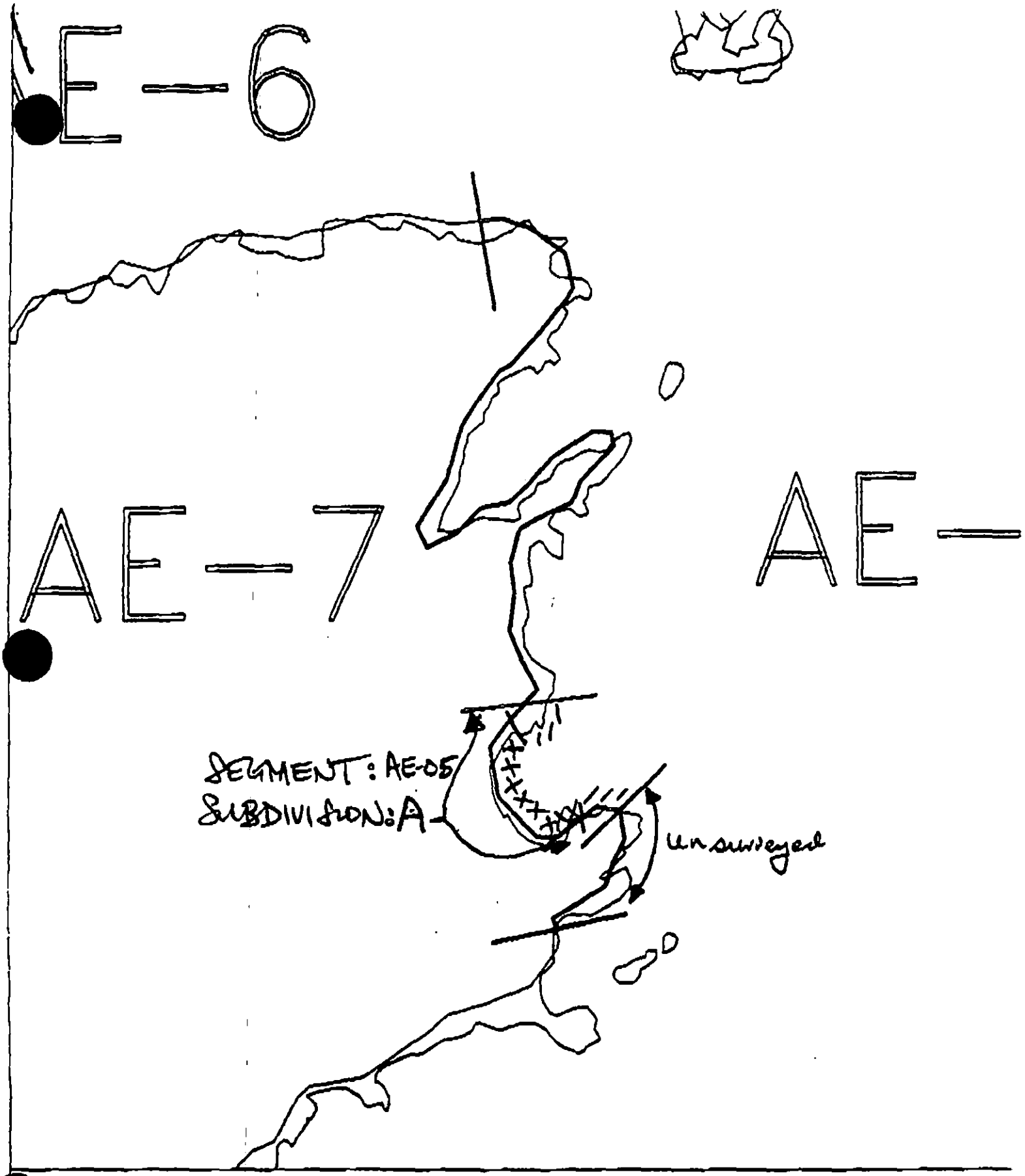
XXXX Wide
//// Medium
---- Narrow
TTTT Very Light

AE-5

ADEC Segment Length: 1639m

0 100 200 300

Map Key: PWS-6
Name: FRANK Box
Date: 4-5-90
Data Entered:



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

AE-5

ADEC Segment Length: 1639m

0 100 200 300

Map Key: PWS-6

Name:

Date:

Date Entered:

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/AE-05

SUBDIVISIONS: B (2 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ AE-05 SUBDIVISION B (2 OF 2) DATE 4/5/9

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T 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. Restrict air traffic to essential minimum. Air approach and takeoff from and to seaward only. Contact USFWS prior to treatment.

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 38 m: Medium 293 m: Narrow 130 m: V.Light 699 m: No Oil 0 m
Subsurface Oil Observed: Yes X No____ Maximum Depth 14+ cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) manual tarmat removal, 2) manual pick up of oiled debris, 3) bioremediation of areas shown on attached sketch map. Work should be conducted after 6/1 based on eagle nest constraints, after approval by USFWS regarding eagle nest.

TAG COMMENTS:_____

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

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 unoiled 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 / AE-05 SUBDIVISION: B - 1 of 2 DATE 04/05/90

USCG
NAME David S. Thomas SIGNATURE [signature]

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

ADEC
NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS
Heavily oiled area - Bedrock Base - Mechanical clean-up, - Steam of CT, Manual removal of AP - 4x20m area of AP/B & CT/C is in v low energy area.
→ in protected pocket - strong odor.

LAND MANAGER
NAME MARSHA MARTIN/DNR SIGNATURE Marsha Martin

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG Rick GILLIE USCG BM 1 Thomas SEGMENT ST/ AE-05
BIO DAVE Lohse LAND REP Marsha Martin SUBDIVISION B- 1 of 2
EXXON FRANK Cox ADEC Clara Crosby (ADNR) TIME 15:00 to 16:30
TEAM NO.: 13 TIDE LEVEL: +4 to +2 DATE 04/05/90
EST. SUBDIVISION LENGTH: m 1500 ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☒ Snow
UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☐ Rock Snow
SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: S to N
SURFACE SEDIMENTS: R % B 20 % C 20 % P 10 % G 5 % S 0 % M 0 % V 0 %
SLOPE: Lang 20 % Hang 50 % Vert 30 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
OIL CATEGORY LENGTH: W 30 m M 300 m N 180 m VL 190 m NO 0 m

SURFACE OIL

CHARACTER	DISTRIBUTION /C	/B	/P	/S	OIL / FILM COLOR SBL/BR	DBL/RW	GY/SL	DBL/TL	LBR	IMPACTED ZONES SU	UI	MI	LI
ASPHALT PAVEMENT	X	✓	X	X				X			X	✓	
POOLED	X							X DL			X		
COVER													
COAT	X			✓				X ✓			X ✓		
STAIN													
MOUSSE													
PATTIES													
TARBALLS													
FILM													
NO OIL										X			X

PAVEMENT: H F (S) 200 sq. m by 5 cm
PATTIES / TARBALLS 1 BAGS
NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT SM	MD	LG
Logs			
Vegetation			
Trash	X		
Debris			

DEBRIS COLLECTED ☐ YES ☒ NO
TYPE ~~N/A~~ 0
#BAGS ~~N/A~~ 0

Photographs:
Roll No. N/A
Frames N/A

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER OP	OR	OL	OF	NO	OILED INTERVAL (CM-CM)	BELOW UO	UC	OIL / FILM COLOR SBL/BR	DBL/RW	GY/SL	DBL/TL	LBR	PIT ZONE SU	UI	MI	LI	ANA	SUBSURFACE SEDIMENTS
1	30					X	•									X				P
2	30					X	•										X			P/G/S
3	10	X					5-10		X				X			X				P
4	15				X		5-15		X				X			X				P
5	10 ~~15~~	X					5-10 ~~15~~		X		X					X				G
6	20					X	•									X				G

COMMENTS GENERAL ? DIL. ~~Neg on #4 and 5~~

① OILING: POCKETS OF "NARROW" TO "WIDE" OILING AT LOCATIONS OF ROCKY INLETS AND POCKET BEACHES.

② GEOMORPHOLOGY: ROCKY, IRREGULAR COASTLINE

REVIEWED DIL DATE 4/7/90

OG Rick[redacted]ollie

SEGMENT ST/ AE-05

SUBDIVISION B, 1 of 2

DATE 04/05/90

S[redacted]CH MAP

CHECKLIST

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

LEGEND

1 △ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

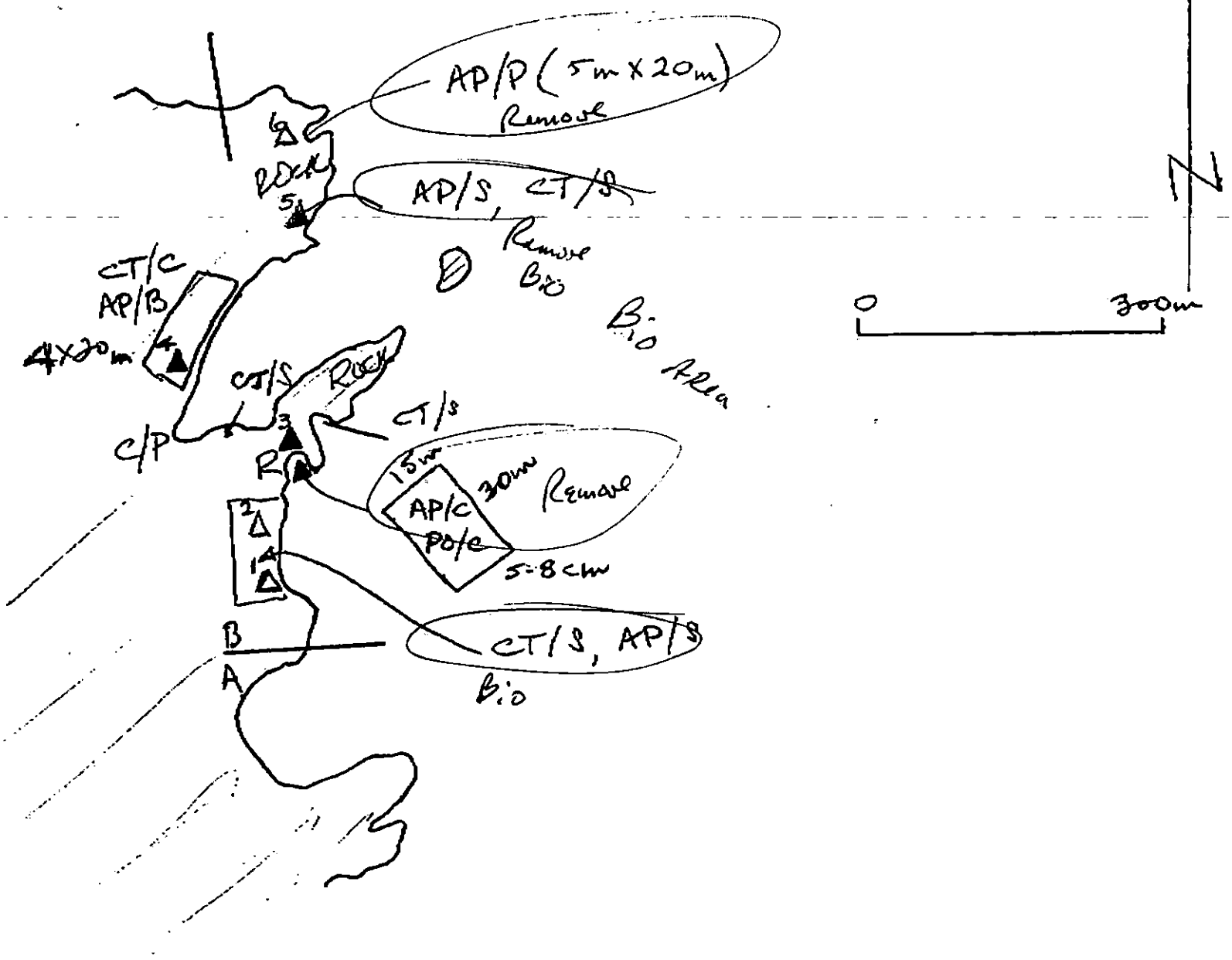
CT/B Broken Distribution

CT/P Patchy Distribution

CT/S Splashed Distribution

Oiled Vegetation

1 Photo location, direction, and number



Oil Character Length (m): AP 50 PO 15 CV ____ CT 100 ST ____ MS ____ PT ____ TB ____ FL ____ NO 1,335

REVISION:03/26/90

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / AE 005 Subdivision B Date (mo / day / yr) 4-5-90

Time (24 hr) 15:00 Biologist David Lohse

A) Substrate type and % of segments:
(1) Bedrock 45 (2) Boulder 20 (3) Cobble 20 (4) Pebble 10 (5) Sand 5 (6) Silt ____

(B) Overall % cover of biota (% of segment): Dense 15 Moderate 45 Low 40

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

See page 2

Ecological Considerations:

ST- none observed in this subdivision. However, see report on subdivision

1. Dense Fucus beds in mid intertidal at sites 5 and 6 (see 06 map) would be susceptible to foot traffic/disturbances.

Shoreline Ecological Summary

Segment ST-AE005 Subdivision B 4-5-90

Biologist: David Cohen

Wildlife Observations / General Comments

1. present in low intertidal: Ralfsia, coralline algae, Cladophora, Anthopleura, Enteromorpha

   mid intertidal: Anthopleura, Cladophora, coralline algae, Enteromorpha, Endocladia, Scytosiphon, Ectocarpus

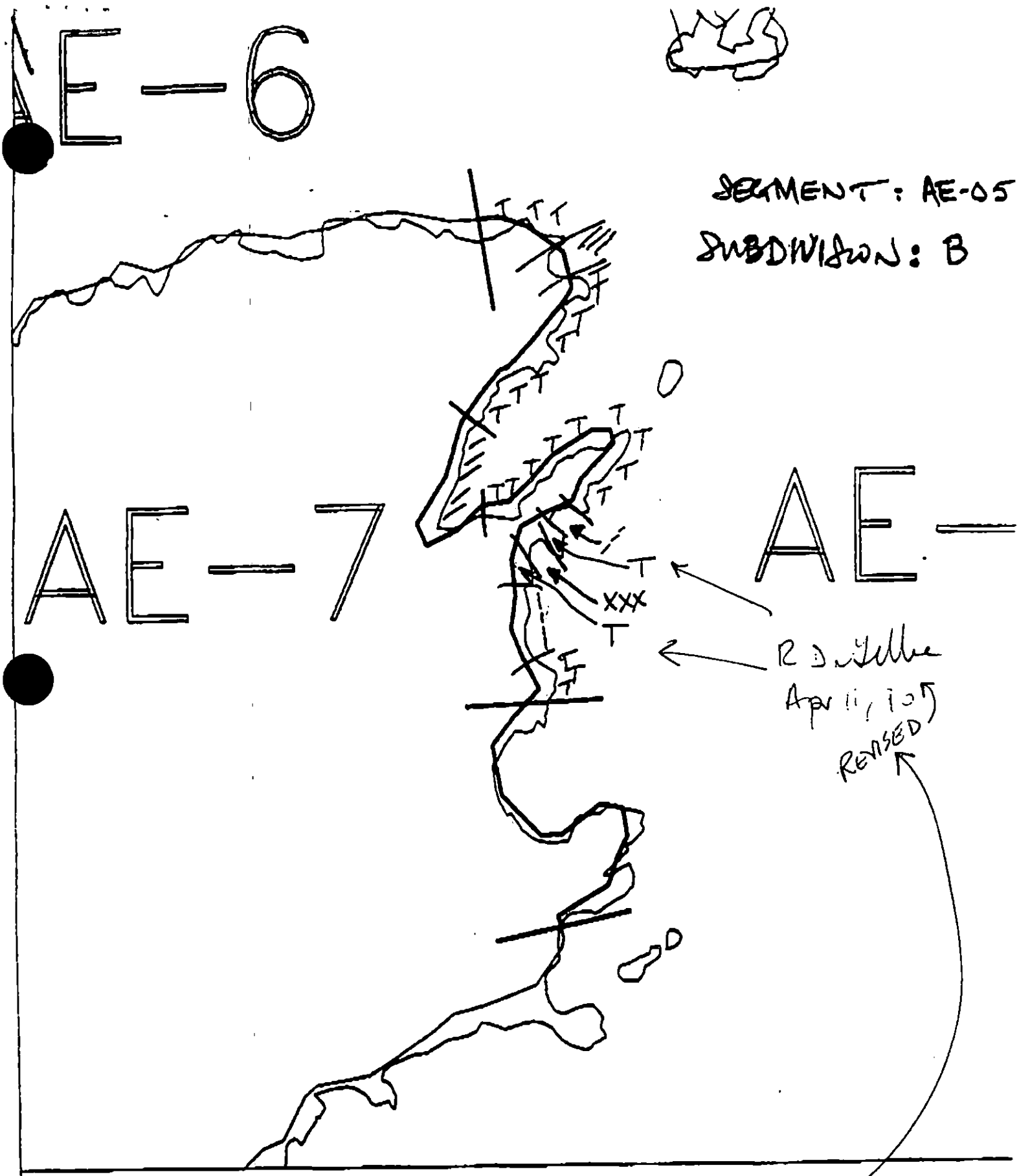
2. cormorant spotted in area

3. Some oil covered mussels on mid-intertidal bedrock and barnacles on high intertidal bedrock were observed

4. Patches of byssal threads found on mid-intertidal bedrock

5. 50% mortality of barnacles on high intertidal bedrock.

6. Enteromorpha dense in some areas (low intertidal boulders and cobble).



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

AE-5

ADEC Segment Length: 1639m

0 100 200 300

Map Key: PWS-6
Name: R. GILLIE
Date: 4/5/90
Data Entered:

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/AE-05

SUBDIVISIONS: C (3 OF 3)

SHORELINE EVALUATION

SEGMENT ST/ AE-05 SUBDIVISION C (3 OF 3) DATE 5/3/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T All Bald Eagle nests (3/1 to 6/1)
5T Active Bald Eagle nests (3/1 to 9/1)
Sensitivity code and general time constraints. See attached Ecological sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate.
Eagle nest > 400m from work area

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE:_____ DATE:_____

OILING CATEGORIZATION:

Wide 0 m: Medium 36 m: Narrow 0 m: V.Light 140 m: No Oil 0 m
Subsurface Oil Observed: Yes X No____ Maximum Depth 24cm

RECOMMENDATIONS:

____No Treatment Recommended	____Snare/Absorbent Booms
X Treatment Recommended	____Oil Snares (pom poms)
X Manual Pickup	____Absorbents (pads,rolls,etc)
X Bioremediation	X Spot Washing: X Wands
____Tarmat Removal	____Beach Cleaner
	____Other (see comments)

COMMENTS: Recommended treatment includes: 1) Manual removal of mousse and pooled oil, 2) Manual relocation of storm berm to MITZ, 3) Spot washing, and 4) Bioremediation of areas shown on attached sketch map.

TAG COMMENTS:_____

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

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 Suzomoto 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 unoiled 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 Rothy 267-2206

5T All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
Restrict air traffic and all disturbance to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

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

7Z Subsistance 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 / AE05 SUBDIVISION: C DATE 3 MAY 90

USCG
NAME MAURICE J. SHARPE SIGNATURE [signature]

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

ADEC
NAME Michael CUNNINGHAM SIGNATURE [signature]

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS
Pocket beach in mid segment contained cover of 2-5 cm oil emulsion which was rather soft and pliable in sunny exposure. No sheens observed. Approx 1000 sq Feet of surface contamination upto 9 inch high tide berm. Rich Biota in lower tide w/ barnacles & mussels. Manual pickup w/ spot washing followed by bioremediation however interlocking sediments will pose problems for cleanup crews. Flip boulders + wash. Note few oiled logs. No trash observed

LAND MANAGER
NAME _____ SIGNATURE _____

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

REVISION NO. 03/21/90

SHORELINE OILING SUMMARY

REVISION NO. 04-12-90

OG G. MACDONALD USCG R. SHARLE SEGMENT ST/ AE-5
BIO A. MEYER LAND REP — SUBDIVISION C (3 OF 3)
EXXON M. METER ADEC M. THOMAS TIME 14:00 to 15:30
TEAM NO. ANC. HELO. TIDE LEVEL +3 to +1 DATE 5 / 3 / 90
T. SUBDIVISION LENGTH: 150 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
LANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: S to N
SURFACE SEDIMENTS: R 95 % B TR % C 2 % P 3 % G TR % S — % M — % V — %
SLOPE: Lang 5 % Hang 45 % Vert 50 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
OIL CATEGORY LENGTH: W 0 m M 40 m N 0 m VL 110 m NO 0 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	/C	/B	/P	/S	SBL/BR	DBL/RW	GY/SL	DBR/TL	LBR	SU	UI	MI	LI
ASPHALT PAVEMENT													
POOLED				X				X			X		
COVER				X				X		X	X		
COAT				X		X		X		X	X		
STAIN													
MOUSSE				X					X		X		
PATTIES													
TARBALLS													
M													
OIL												X	X

PAVEMENT H F S 0 sq. m by 0 cm

PATTIES / TARBALLS 0 BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT SM	MD	LG
Logs	X		
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS?

YES ☐ NO ☒

TYPE 0

#BAGS 0

Photographs:

Roll No. —

Frames —

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CM)	BELOW		OIL / FILM COLOR					PIT ZONE				ANA	SHEEN (Y/N)	▼	SURFACE-SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	SBL/BR	DBL/RW	GY/SL	DBR/TL	LBR	SU	UI	MI	LI				
1	20					X	- - -								X					—	—	G, beat.
2	30		X				5-15		X				X		X					—	—	PCG
3	10					X	- - -									X				—	—	CBP/R
4	25		X		✓		5-24		X	X		✓			X					Y	23	PGM

COMMENTS Rugged rocky platform w/. low relief, steep outcrop. Steeply dipping outcrop has deep, tiered channels and a single deep cut channel as an oil trap. Surface oil as DBR, DBL tar; no visible [illegible]ITZ - SUTZ - CT, PO, MS, CV/S. Subsurface oil as OR, OF w/ oiled spruce needles in berm, ≤ 25 cm. in depth. Difficult access.

REVIEWED JW DATE 5/5/90

OG G. MCDONALD

SEGMENT AE-5

SUBDIVISION C

DATE 5 / 3 90

CHECKLIST

- ___N Arrow
- ___Approx. Scale
- ___Seg/Sub Bndry
- ___Oil Dist.
  - Width
  - Length
  - % Cover
- ___Substrate Character
- ___Est. HWL/LWL
- ___SSL
- ___Profile Location(s)
- ___Profile(s)
- ___Pit Location(s)
- ___Photo Location(s)

LEGEND

1 △ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

CT/B Broken Distribution

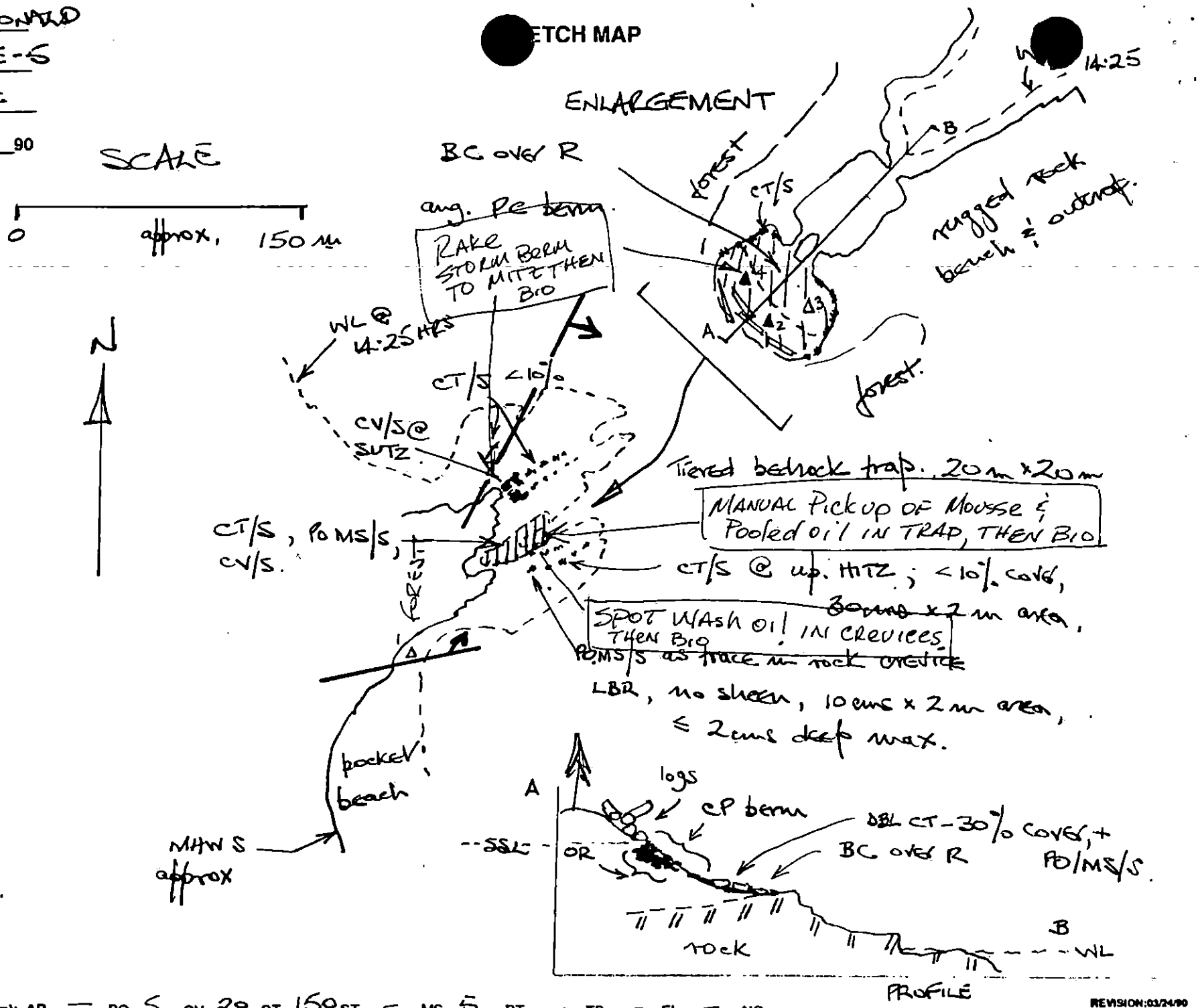
CT/P Patchy Distribution

CT/S Splashed Distribution

Oiled Vegetation

1 ●→ Photo location, direction, and number

SKETCH MAP



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

REVISION:03/24/90

SHORELINE ECOLOGICAL SUMMARY

Segment ST / AE ØØ5 Subdivision C (3 OF 3) Date (mo / day / yr) Ø5/Ø3/9Ø

Time (24 hr) 14Ø5-1525 Biologist A. MEYER

(A) Substrate type and % of segments:
(1) Bedrock 95 (2) Boulder ____ (3) Cobble 2 (4) Pebble 3 (5) Sand ____ (6) Silt ____

(B) Overall % cover of biota (% of segment): Dense 35 Moderate 15 Low 5Ø

(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)

Barnacles:

DENSE			MODERATE			SPARSE			RARE			
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	X	(X)	2	(2)	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	NOT PRESENT
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

Mytilus:

DENSE			MODERATE			SPARSE			RARE			
1U	X1M	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	NOT PRESENT
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

Gastropods:

DENSE			MODERATE			SPARSE			RARE			
1U	1M	1L	1U	X1M	(X1L)	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	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	

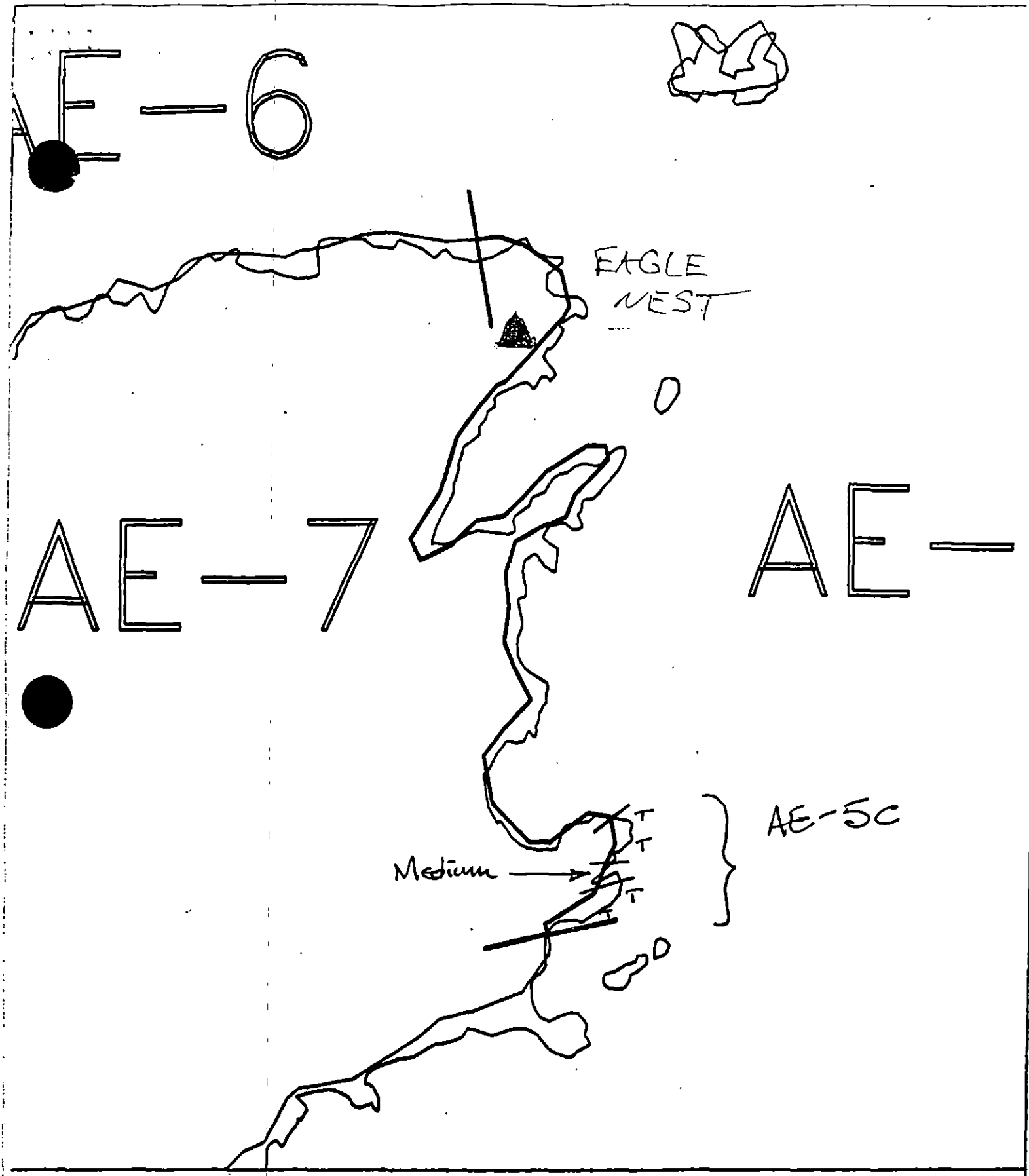
Fucus:

DENSE			MODERATE			SPARSE			RARE			
1U	X1M	X1L	1U	X1M	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	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	

No standard Ecological Constraints for Subdivision C of AE005. See Other Observations

Wildlife Observations: 7 Harlequin Ducks (4♂, 3♀); 7 Bonaparte Gulls; 1 Cormorant sp.; 3 Glaucous-winged Gulls; 25 Green-winged Teal; 2 Black Oystercatchers heard; Ruby-crowned Kinglets heard.

Other Observations: Rock outcrop rich with Fucus and Mytilus beds comprises majority of segment. Tiered bedrock below area where pits were dug had abundant healthy biota including Endocladia, Ulva, corralline algae, Halosaccion, amphipods, limpets, Littorina, Tonicella lineata, and Anthopleura. Sea stars (Pycnopodia, Evasterias, Pisaster) were common in the low tidal area; schools of fry were visible off shore. No oiling observed in the intertidal biota, which appeared healthy. Impacting the fucus, tidal pools and mussel beds should be avoided during treatment, with special attention to the rich biota in the [illegible]



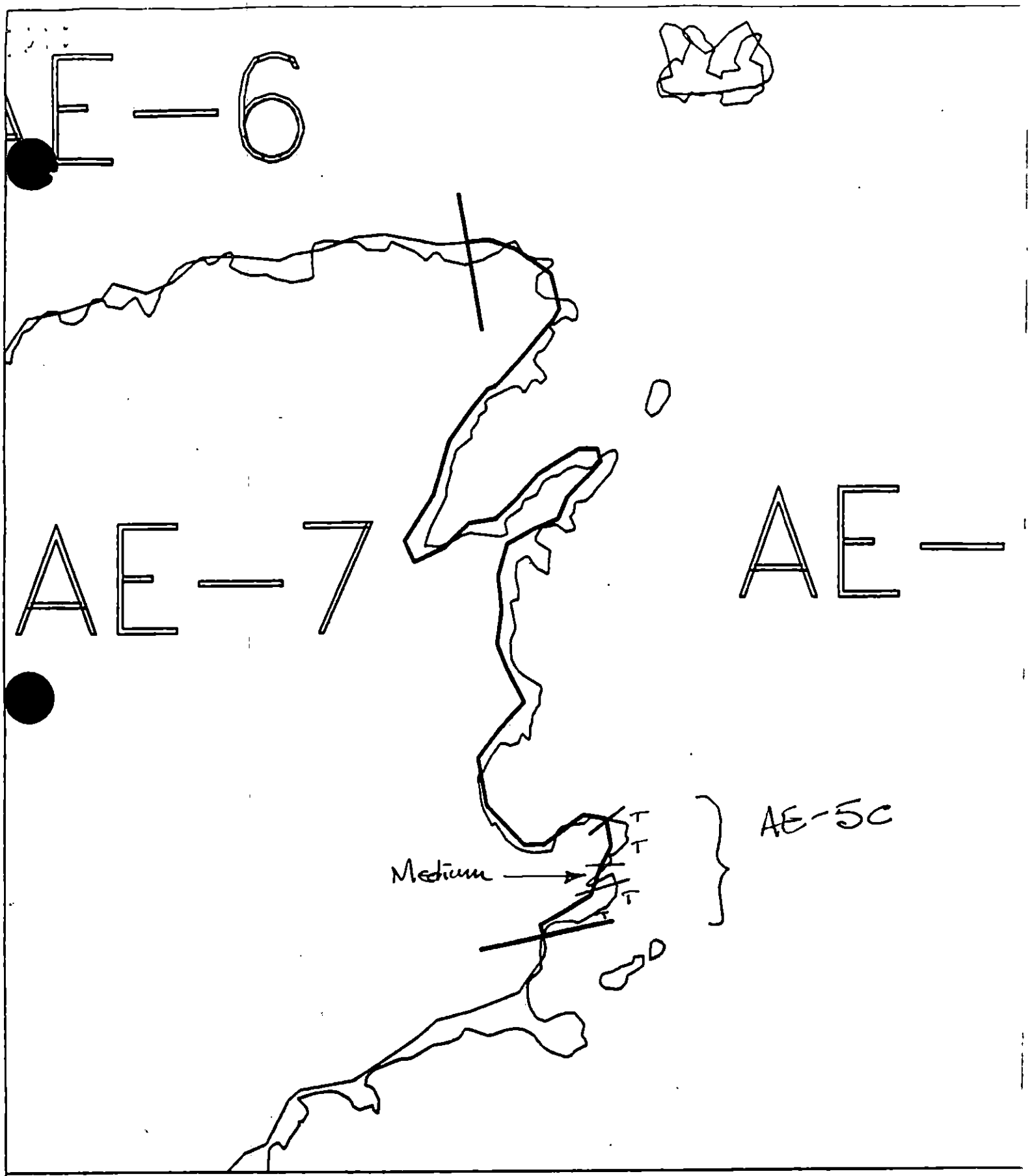
XXXX Wide
/// Medium
--- Narrow
TTTT Very Light
OOOO No Oil

AE-5

ADEC Segment Length: 1639m

0 100 200 300
METERS

Map Key: PWS-6
Name: G. MACDONALD
Date: 5.3.90
Data Entered:



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

AE-5

ADEC Segment Length: 1639m

0 100 200 300
METERS

Map Key: PWS-6
Name: G. MACDONALD
Date: 5·3·90
Data Entered:

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT AE-5 SUBDIVISION C (3 of 3)

WORK WINDOW	
Manual Pickup	OPEN
Bioremediation Other Approved Treatment 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 bald eagle impact assessment conducted on 5/10/90 by Mike Lockhart indicates no active nests within 400m of the work area.

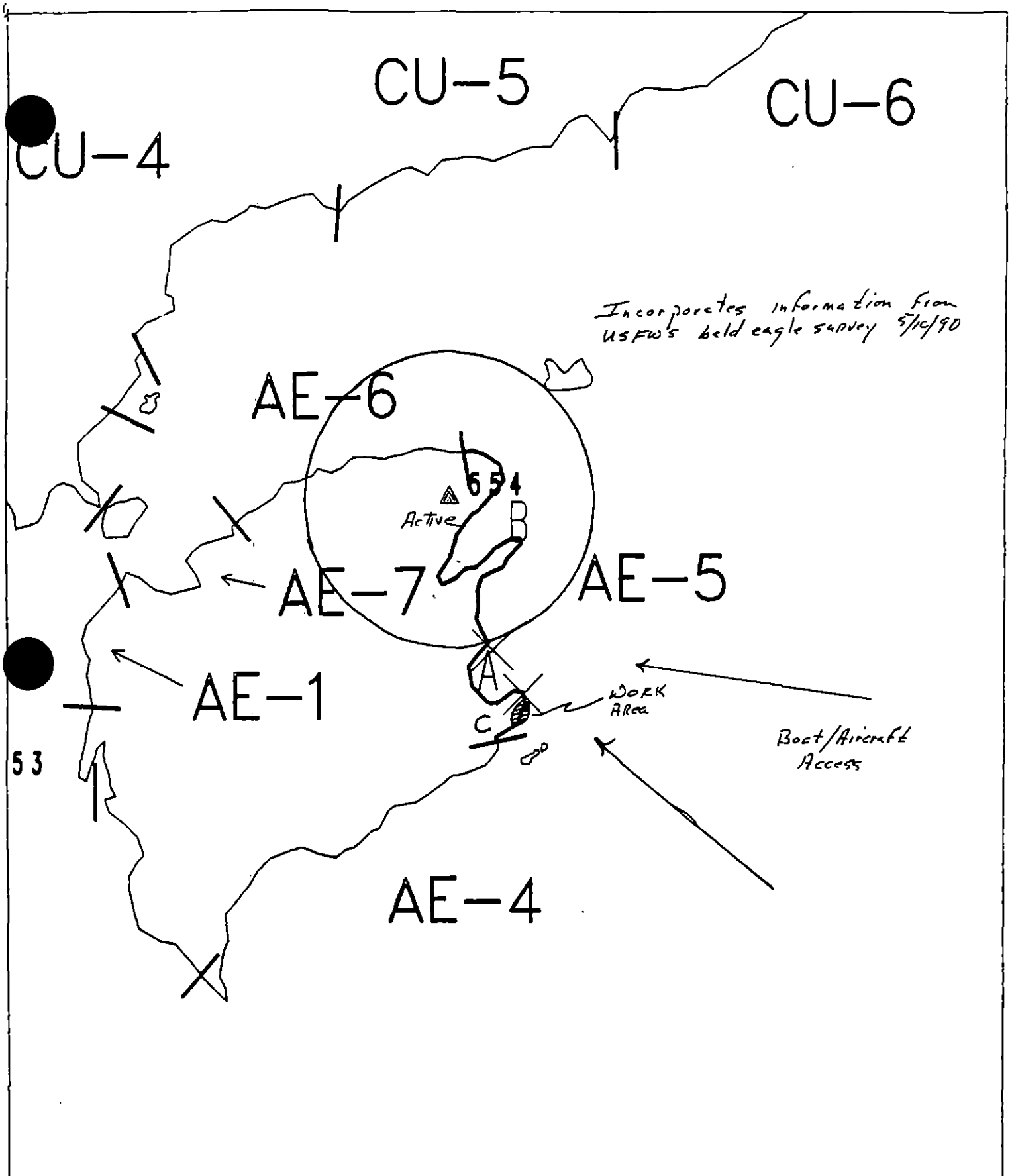
OTHER ECOLOGICAL CONSIDERATIONS

Approach from south or southeast. Restrict air traffic and all disturbance to essential minimum. No personnel or boat traffic within 400m of active nests. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from active nests. Avoid any unnecessary disturbance or damage to unoiled biota and substrate.

TAG APPROVAL DATE 6/04/90.
ADEC Ray Morris
EXXON Amy Gatz
NOAA Joseph Talbott
USCG G.H. Reiter

FOSC [signature] DATE 6/4/90

Prepared By: [signature] Date 6/2/90



EXXON

Exxon Company, USA
Map Key: PWS-AE-5
May 10, 1990

ECOLOGY MAP 6/1
SEGMENT AE-5
SUBDIVISION C (3 of 3)

METERS
0 356 712

★ Seabird Colony
▲ Eagle Nest

1 inch = 1168 feet

SHORELINE EVALUATION

SEGMENT ST/ AE-05 SUBDIVISION C (3 OF 3) DATE 5/3/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T All Bald Eagle nests (3/1 to 6/1)
5T Active Bald Eagle nests (3/1 to 9/1)
Sensitivity code and general time constraints. See attached Ecological sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate.
Eagle nest > 400m from work area

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: Pauline Dan Oan DATE: 5/18/90

OILING CATEGORIZATION:

Wide 0 m: Medium 36 m: Narrow 0 m: V.Light 140 m: No Oil 0 m
Subsurface Oil Observed: Yes X No ____ Maximum Depth 24cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes: 1) Manual removal of mousse and pooled oil, 2) Manual relocation of storm berm to MITZ, 3) Spot washing, and 4) Bioremediation of areas shown on attached sketch map.

USE SNARE BOOM + ABSORBENT BOOM TO CONTROL SHEENING

See Addendum dated 6/2/90 6/2

TAG COMMENTS: MONITORS TO ASSESS LOSS

TAG APPROVAL DATE: 5/17/90.
ADEC ART WEINER Art Weiner
EXXON Andy Tom
NOAA Gary Petrac
USCG G.A. REITER G.A. Reiter

FOSC: DATE: 5-23-90

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT AE-5 SUBDIVISION B (2 of 2)

WORK WINDOW	
Manual Pickup & Tarmat Removal Inside Active Eagle Nest Buffer Zone	CLOSED
Manual Pickup & Tarmat Removal Outside Active Eagle Nest Buffer Zone	OPEN
Bioremediation & Manual Raking Inside Active Eagle Nest Buffer Zone	CLOSED
Bioremediation & Manual Raking Outside Active Eagle Nest Buffer Zone	OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

5T **Bald Eagle Nest** USFWS bald eagle impact assessment conducted on 5/10/90 by Mike Lockhart indicates an active nest in the Subdivision. Subdivision is closed to manual pickup, tarmat removal, bioremediation and manual raking within the buffer zone established by USFWS. No constraint outside the buffer zone.

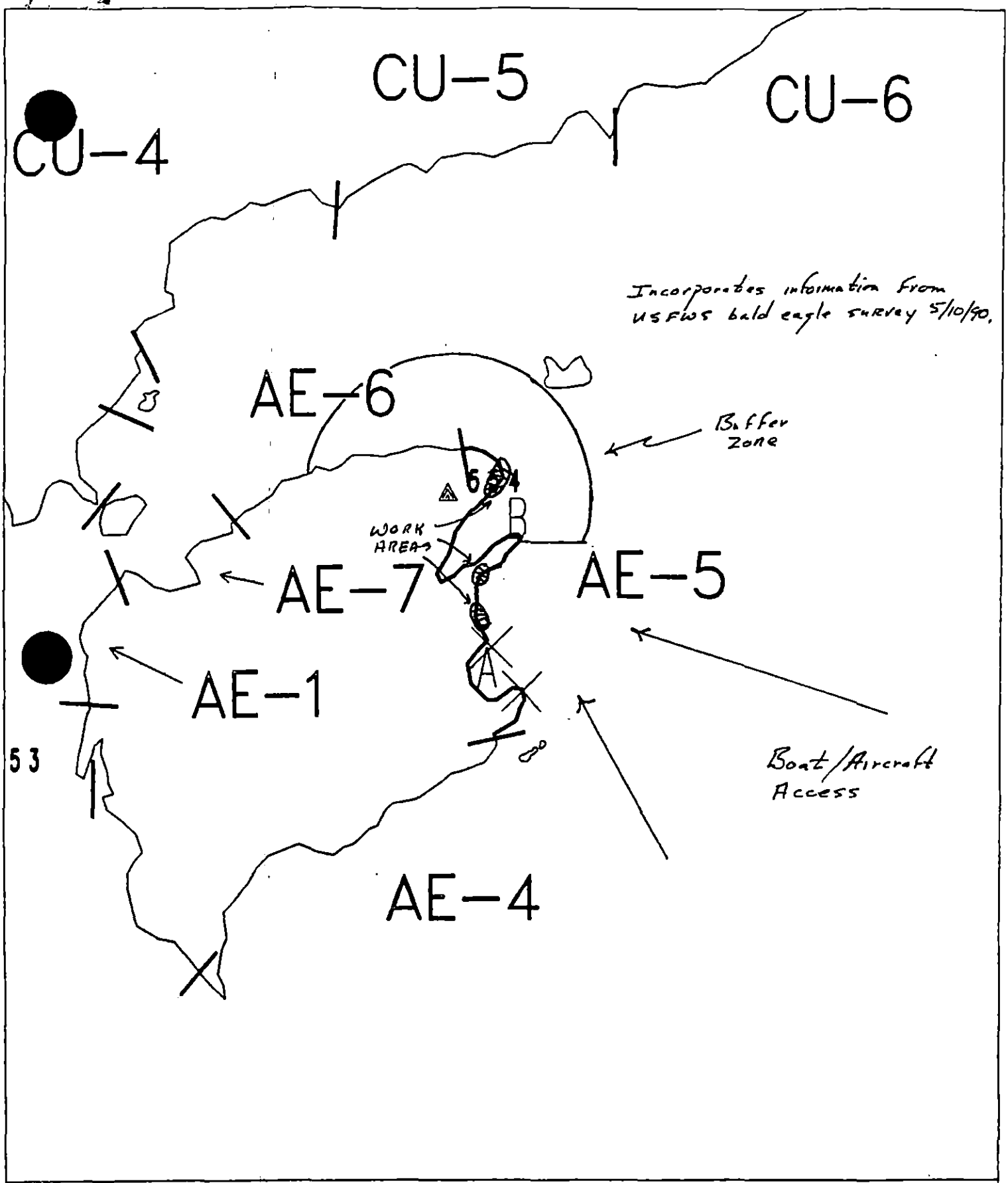
OTHER ECOLOGICAL CONSIDERATIONS

Use designated access routes. No personnel or boats within buffer zone established by USFWS. Restrict air traffic and all disturbance to essential minimum. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from active nests. Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Where possible, avoid the dense *Fucus* beds in the middle intertidal zone.

TAG APPROVAL DATE 6/01/90
ADEC Ray Morris
EXXON
for NOAA
USCG

FOSC D.D. Rome, CDR, USCG Date 6/2/90

Prepared by Carden Meyer WK Date 5/31/90



Exxon Company, USA
Map Key: PWS-AE-5
May 10, 1990

ECOLOGY MAP
SEGMENT AE-5
SUBDIVISION B (2 of 2)

METERS
0 356 712

★ Seabird Colony
▲ Eagle Nest

1 inch = 1168 feet

SHORELINE EVALUATION

SEGMENT ST/ AE-05 SUBDIVISION B (2 OF 2) DATE 4/5/9

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T 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. Restrict air traffic to essential minimum. Air approach and takeoff from and to seaward only. Contact USFWS prior to treatment.

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: 4/25/90

OILING CATEGORIZATION:

Wide 38 m: Medium 293 m: Narrow 130 m: V.Light 699 m: No Oil 0 m
Subsurface Oil Observed: Yes X No ____ Maximum Depth 14+ cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) manual tarmat removal, 2) manual pick up of oiled debris, 3) bioremediation of areas shown on attached sketch map. Work should be conducted after 6/1 based on eagle nest constraints, after approval by USFWS regarding eagle nest.
MANUAL RAKING IN AREA OF PIT 3+5 FOLLOWING TARMAT REMOVAL AND PRIOR TO BIO
AVOID WHERE POSSIBLE THE DENSE FUCUS BEDS IN THE MID ITZ / IN AREAS OF PITS 3+5.

TAG COMMENTS:
[SEE CONSTRAINT ADDENDUM DATED 5/31/90] WK

TAG APPROVAL DATE: 4/24/90.
ADEC ART WEINER [signature]
EXXON ANDY TOK [signature] FOSC: [signature] DATE: 5-3-90
NOAA Joseph Talbott [signature]
USCG M. J. HALL [signature]

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT AE-5 SUBDIVISION A (1 of 2)

WORK WINDOW	
Manual Pickup Tarmat Removal	OPEN
Bioremediation Manual/Mechanical Tilling/Raking Other Recommended Treatment	OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

5T	Bald Eagle Nest	NO CONSTRAINT. Bald eagle nest is in Subdivision B of Segment AE-5, and more than 400m from work site.

OTHER ECOLOGICAL CONSIDERATIONS

Avoid disturbance/damage to unoiled biota and substrate.

TAG ADDENDUM DATE 5/16/90.
ADEC Art Weiner Art Weiner
EXXON Andy Tan
NOAA Joseph Talbott J Talbott
USCG G.A. Reiter G.A. Reiter

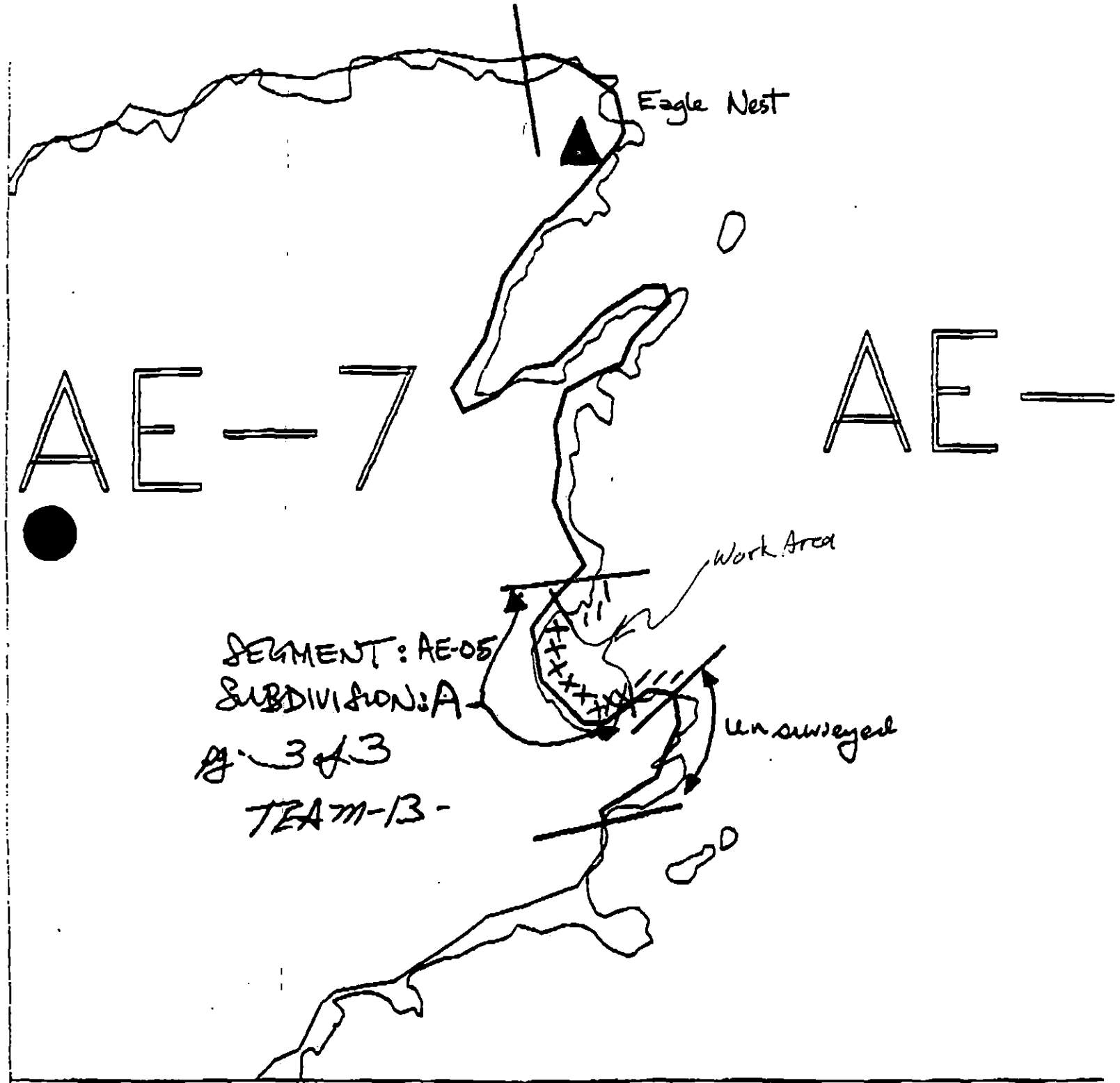
FOSC _____ DATE 5-17-90

Prepared by: WK Date: 5/15/90

3

-6

ECOLOGY MAP



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

AE-5

ADEC Segment Length: 1639m

0 100 200 300

Map Key: PWS-6
Name: ~~EGAN Bay~~
Date: 11-5-90
Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ AE-05 SUBDIVISION A (1 OF 2) DATE 4/5/9

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T 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. Bald eagle nest possibly within 400m of subdivision A.

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: 4/25/90

OILING CATEGORIZATION:

Wide 223 m: Medium 81 m: Narrow 0 m: V.Light 0 m: No Oil 0 m
Subsurface Oil Observed: Yes X No ____ Maximum Depth 30+ cm

RECOMMENDATIONS:

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

COMMENTS: Recommend tarmat removal and manual pick up of pooled oil, oiled debris (trash, vegetation), and oiled logs (if more than 10% coverage and splash impact). Bioremediate areas indicated on sketch map. Work should be conducted after 6/1 and after contacting USFWS regarding status of eagle nest site in the area.

See Addendum Dated 5/15/90 LOTK

TAG COMMENTS: MANUAL/MECHANICAL TILLING/RAKING PRIOR TO BIOREMEDIATION IN AREA INDICATED ON SKETCH.

FOLLOWING TILLING PLACE SHEEN RETENTION BOOMS IN THE MOUTH OF THE COVE. SNARE STRINGERS MAY BE REQUIRED ON THE SHORELINE

TAG APPROVAL DATE: 4/24/90.
ADEC ART WEINER [signature]
EXXON ANDY TEAR [signature] FOSC: [signature] DATE: 5-3-90
NOAA Joseph Talbott [signature]
USCG R. J. HALL [signature]

Comply with NFS request to return shoreline to natural contours after tilling treatment is completed.

SHORELINE EVALUATION

SEGMENT ST/ AE-05 SUBDIVISION A (1 OF 2) DATE 4/5/9

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T 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. Bald eagle nest possibly within 400m of subdivision A.

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

SHPO SIGNATURE: Charles E. Palmer DATE: 4/25/90

OILING CATEGORIZATION:

Wide 223 m: Medium 81 m: Narrow 0 m: V.Light 0 m: No Oil 0 m
Subsurface Oil Observed: Yes X No ____ Maximum Depth 30+ cm

RECOMMENDATIONS:

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

COMMENTS: Recommend tarmat removal and manual pick up of pooled oil, oiled debris (trash, vegetation), and oiled logs (if more than 10% coverage and splash impact). Bioremediate areas indicated on sketch map. Work should be conducted after 6/1 and after contacting USFWS regarding status of eagle nest site in the area.

TAG COMMENTS: MANUAL/MECHANICAL TILLING/RAKING PRIOR TO BIOREMEDIATION IN AREA INDICATED ON SKETCH

FOLLOWING TILLING PLACE SHEEN RETENTION BOOMS IN THE MOUTH OF THE COVE. SNARE STRINGERS MAY BE REQUIRED ON THE SHORELINE

TAG APPROVAL DATE: 4/24/90.
ADEC ART WEINER Art Weiner
EXXON Andy Gar
NOAA Joseph Talbott J C Talbott
USCG M. J. HALL

FOSC: [signature] DATE: 5-3-90
Comply with NFS request to return shoreline to natural contours after tilling treatment is completed.

OG Ric[redacted]TILLIE

SEGMENT ST/ AE-5

SUBDIVISION A, 1 of 2

DATE 04, 05 90

CHECKLIST

- ✓ N Arrow
- ✓ Approx. Scale
- ✓ Seg/Sub Bndry
- ✓ Oil Dist.
- Width
- Length
- % Cover
- ✓ Substrate Character
- ✓ Est. HWL/LWL
- SSI
- ✓ Profile Location(s)
- ✓ Profile(s)
- ✓ Pit Location(s)
- Photo Location(s)

LEGEND

1 ▲ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

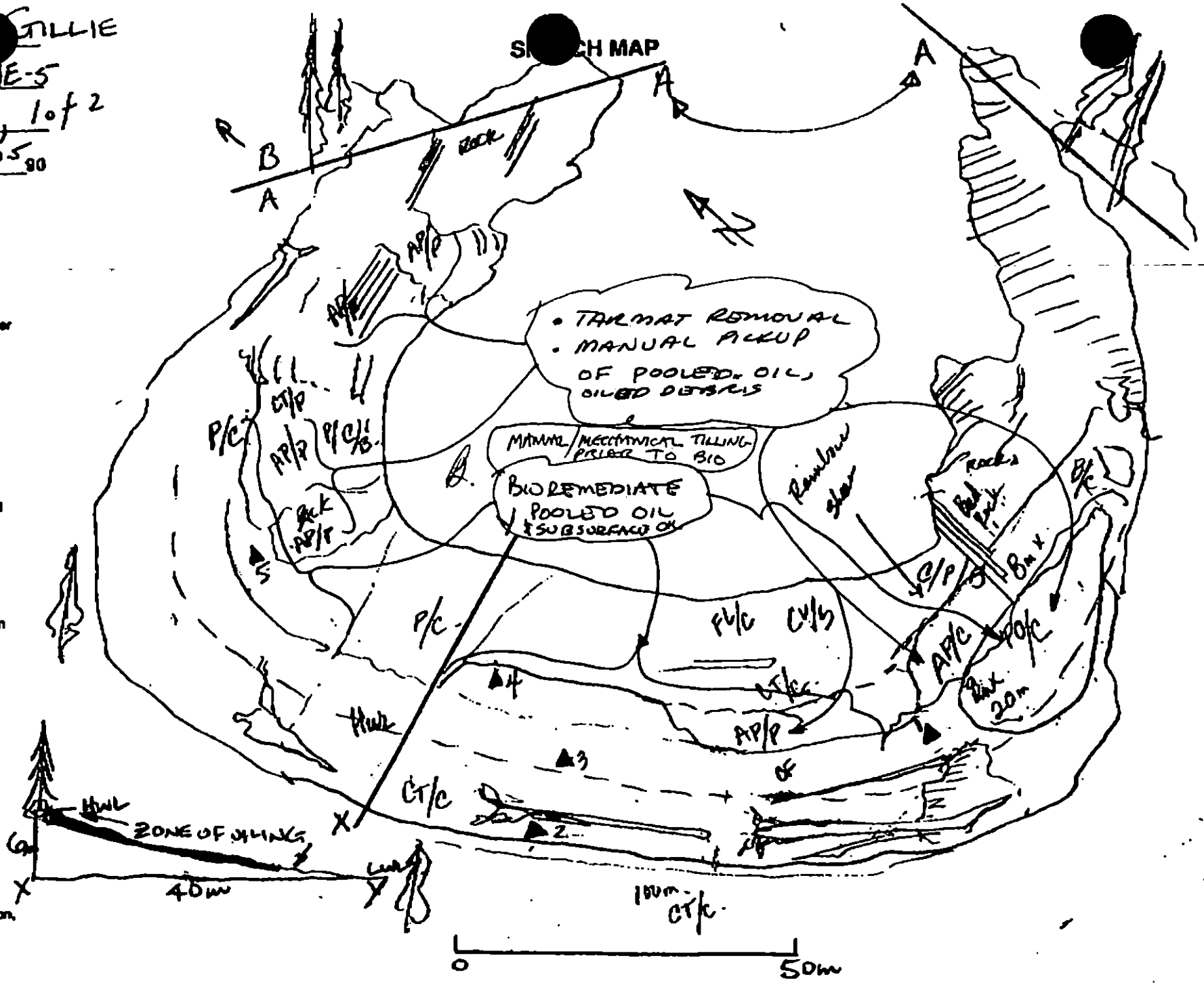
CT/B Broken Distribution

CT/P Patchy Distribution

CT/S Splashed Distribution

Oiled Vegetation

1 Photo location, direction, and number



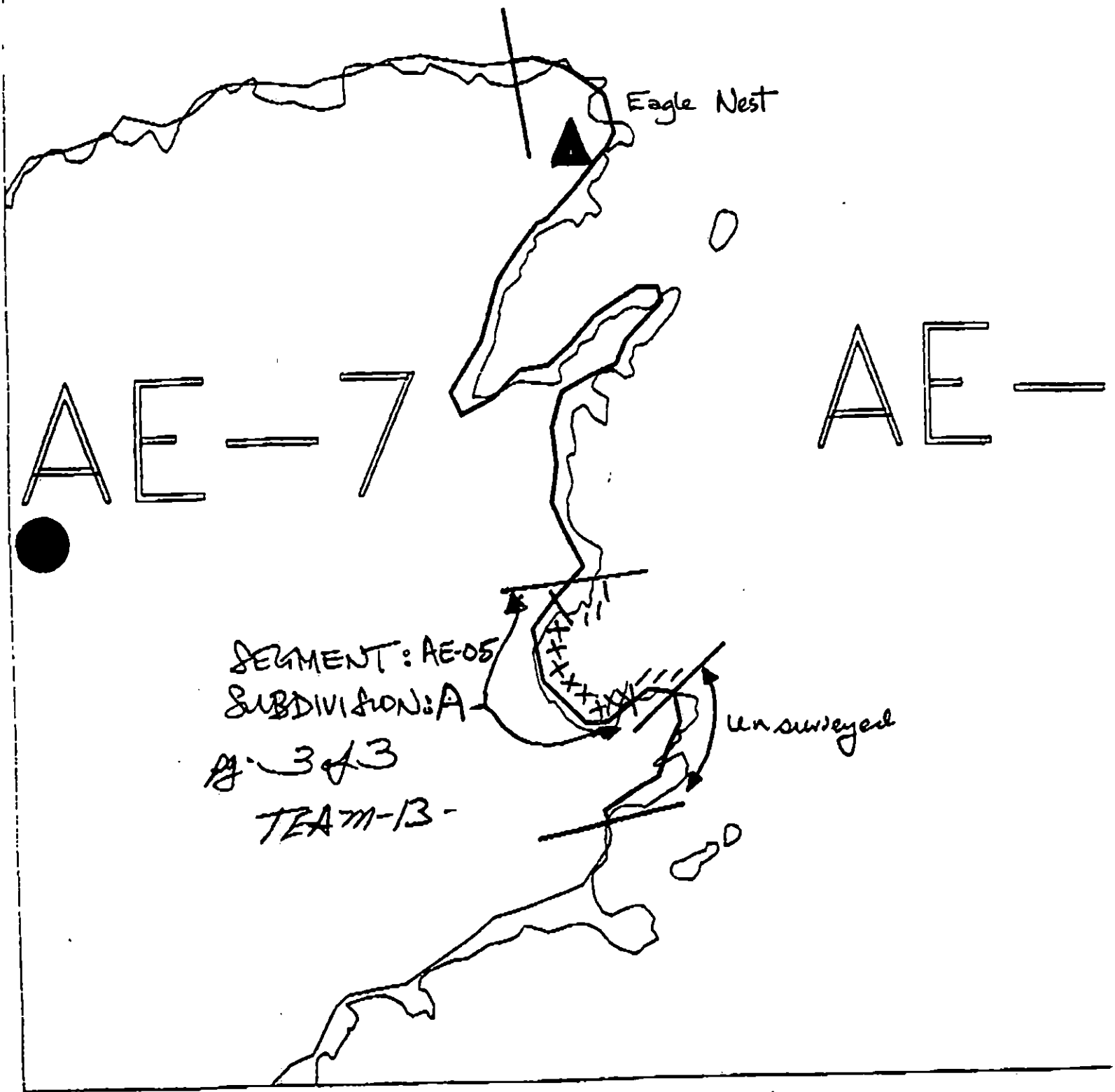
Oil Character Length (m): AP 100 PO 40 CV 50 CT 200 ST ____ MS 40 PT ____ TB ____ FL 200 NO 0

REVISION 6/93

3

E-6

ECOLOGY MAP



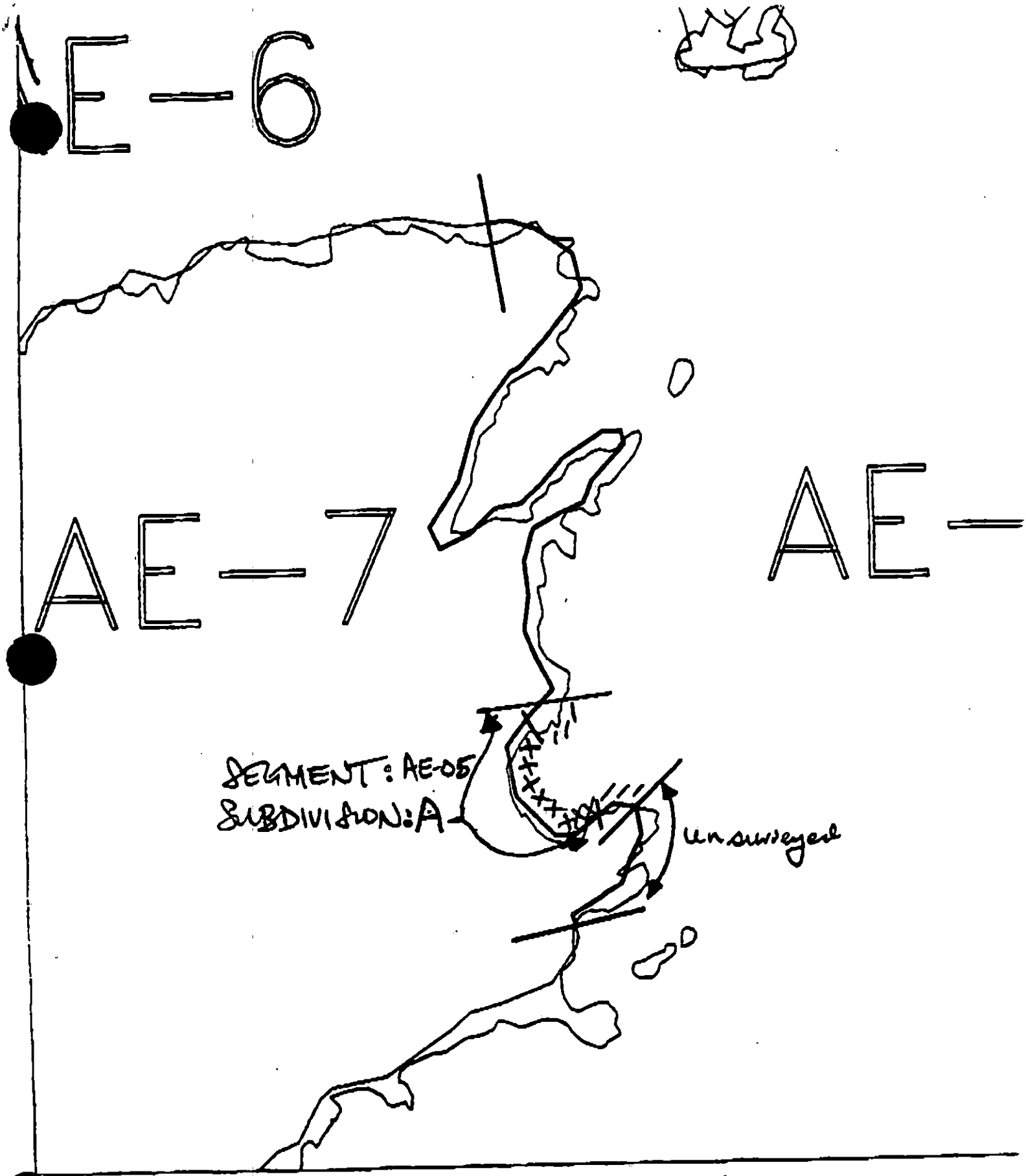
XXXX Wide
//// Medium
---- Narrow
TTTT Very Light

AE-5

ADEC Segment Length: 1639m

0 100 200 300

Map Key: PWS-6
Name: ~~FOAM Box~~
Date: 4-5-90
Data Entered:



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

AE-5

ADEC Segment Length: 1639m

0 100 200 300

Map Key: PWS-6

Name: _____

Date: _____

Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ AE-05 SUBDIVISION B (2 OF 2) DATE 4/5/9

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T 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. Restrict air traffic to essential minimum. Air approach and takeoff from and to seaward only. Contact USFWS prior to treatment.

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: 4/25/90

OILING CATEGORIZATION:

Wide 38 m: Medium 293 m: Narrow 130 m: V.Light 699 m: No Oil 0 m
Subsurface Oil Observed: Yes X No ____ Maximum Depth 14+ cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) manual tarmat removal, 2) manual pick up of oiled debris, 3) bioremediation of areas shown on attached sketch map. Work should be conducted after 6/1 based on eagle nest constraints, after approval by USFWS regarding eagle nest.
MANUAL RAKING IN AREA OF PIT 3+5 FOLLOWING TARMAT REMOVAL AND PRIOR TO BIO.
AVOID WHERE POSSIBLE THE DENSE FUCUS BEDS IN THE MID ITZ IN AREAS OF PITS 5+6.

TAG COMMENTS: ____

TAG APPROVAL DATE: 4/24/90.
ADEC ART WEINER [signature]
EXXON ANDY TOK [signature]
NOAA Joseph Talbot [signature]
USCG M. J. HALL [signature]
FOSC: [signature] DATE: 5-3-90

OG Rick[redacted]LLIE

SEGMENT ST/ AE-05

SUBDIVISION B, 1 of 2

DATE 04/05/90

CHECKLIST

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

LEGEND

1 ▲ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

CT/B Broken Distribution

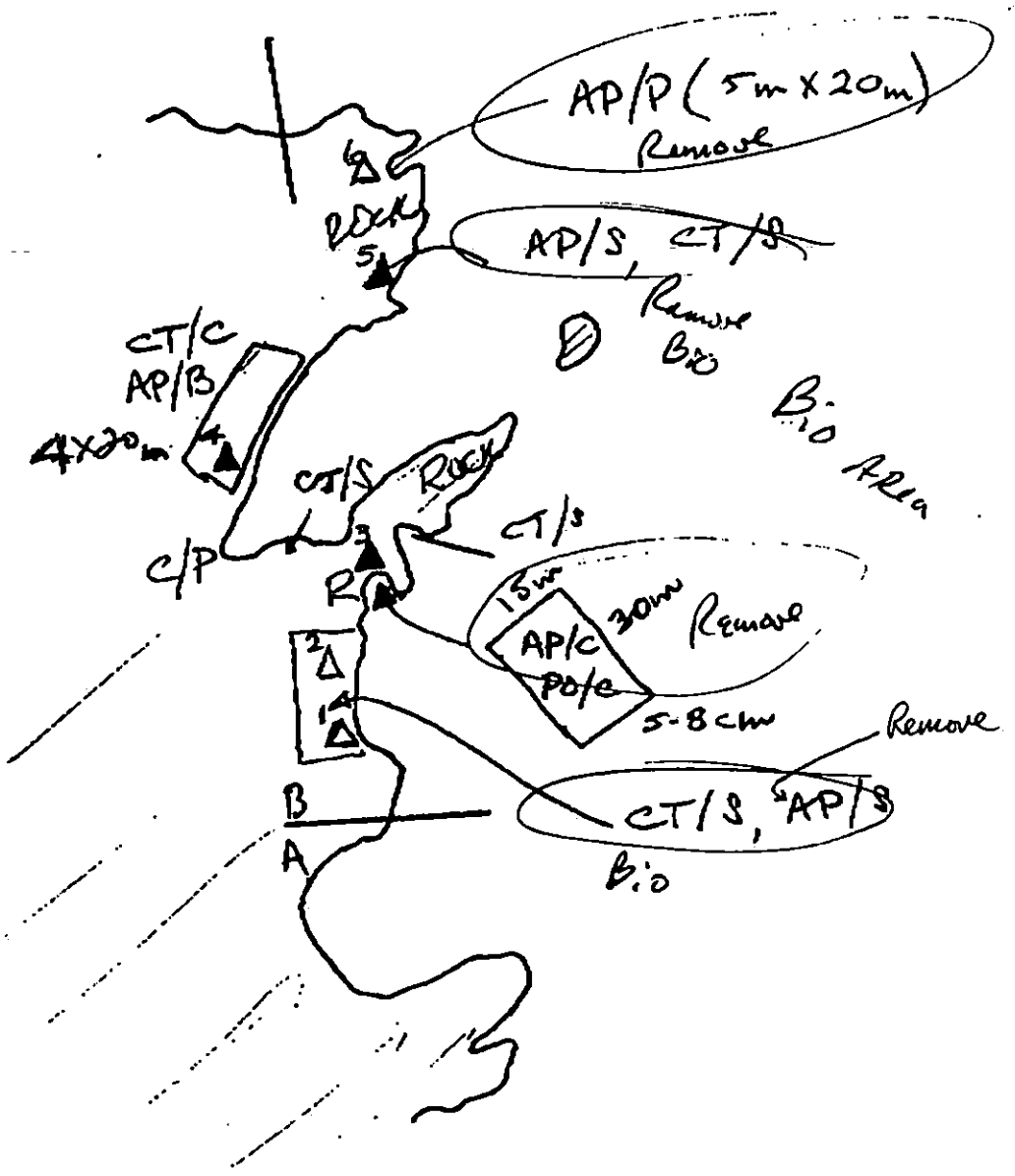
CT/P Patchy Distribution

CT/S Splashed Distribution

Oiled Vegetation

1 Photo location, direction, and number

SK[redacted]H MAP



0 300m

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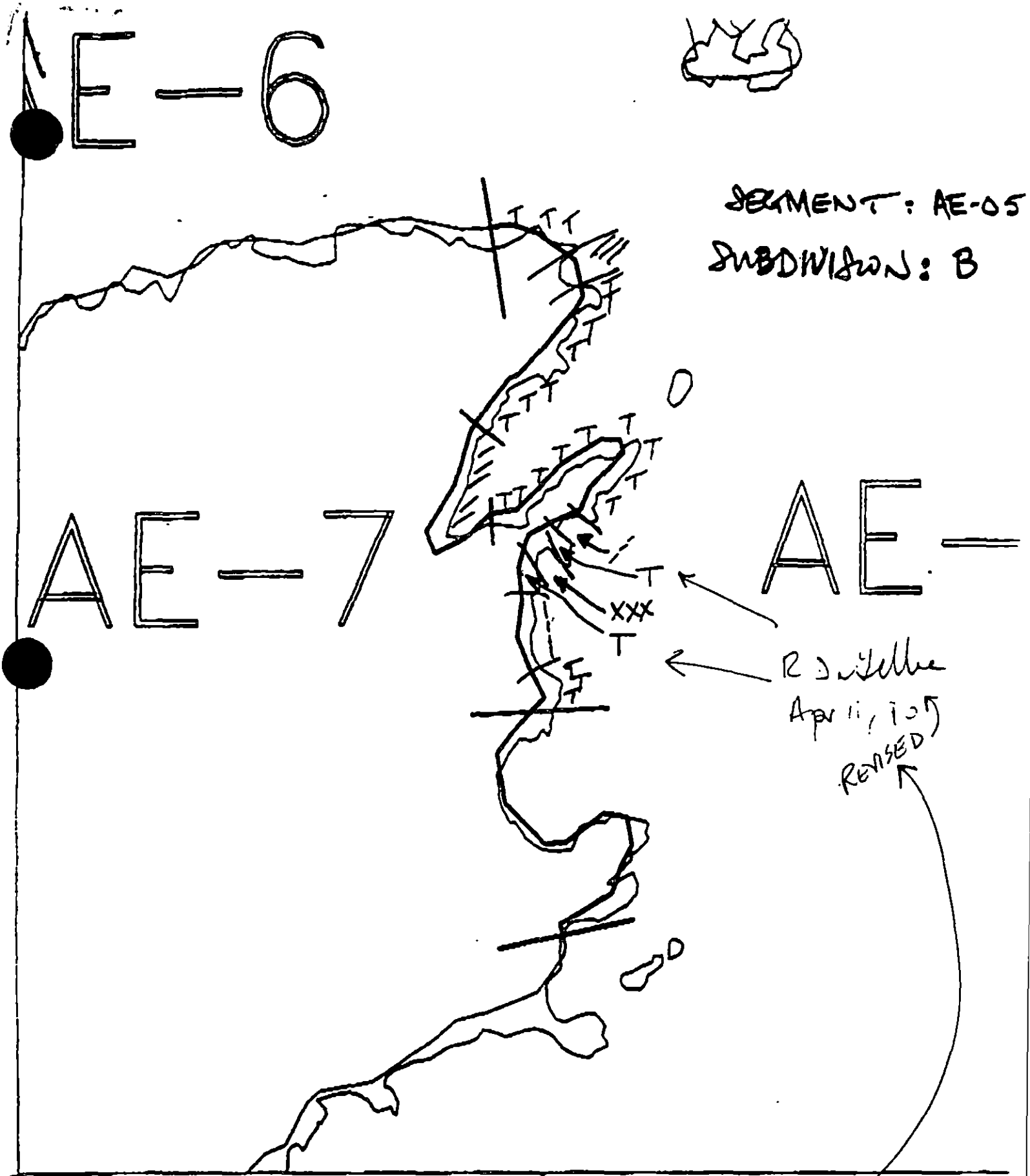


XXXX Wide
//// Medium
---- Narrow
TTTT Very Light

AE-5

ADEC Segment Length: 1639m

0 100 200 300

Map Key: PWS-6
Name: R. GILLIE
Date: 4/5/90
Date Entered:

SHORELINE EVALUATION

SEGMENT ST/ AE-05 SUBDIVISION C (3 OF 3) DATE 5/3/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T All Bald Eagle nests (3/1 to 6/1)
5T Active Bald Eagle nests (3/1 to 9/1)
Sensitivity code and general time constraints. See attached Ecological sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate.
Eagle nest > 400m from work area

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: Rachel Jean Orr DATE: 5/18/90

OILING CATEGORIZATION:

Wide 0 m: Medium 36 m: Narrow 0 m: V.Light 140 m: No Oil 0 m
Subsurface Oil Observed: Yes X No ____ Maximum Depth 24cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes: 1) Manual removal of mousse and pooled oil, 2) Manual relocation of storm berm to MITZ, 3) Spot washing, and 4) Bioremediation of areas shown on attached sketch map.

USE SNARE BOOM + ABSORBENT BOOM TO CONTROL SHEENING

TAG COMMENTS: MONITORS TO ASSESS LOGS

TAG APPROVAL DATE: 5/17/90.
ADEC ART WEINER Art Weiner
EXXON Andy Tom
NOAA Gary Petrac
USCG G.A. REITER G.A. Reiter

FOSC: [illegible] DATE: 5-23-90

OG G. MCDONALD

SEGMENT AE-5

SUBDIVISION C

DATE 5 / 3 90

CHECKLIST

- ___N Arrow
- ___Approx. Scale
- ___Seg/Sub Bndry
- ___Oil Dist.
  - Width
  - Length
  - % Cover
- ___Substrate Character
- ___Est. HWL/LWL
- ___SSL
- ___Profile Location(s)
- ___Profile(s)
- ___Pit Location(s)
- ___Photo Location(s)

LEGEND

1 △ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

CT/B Broken Distribution

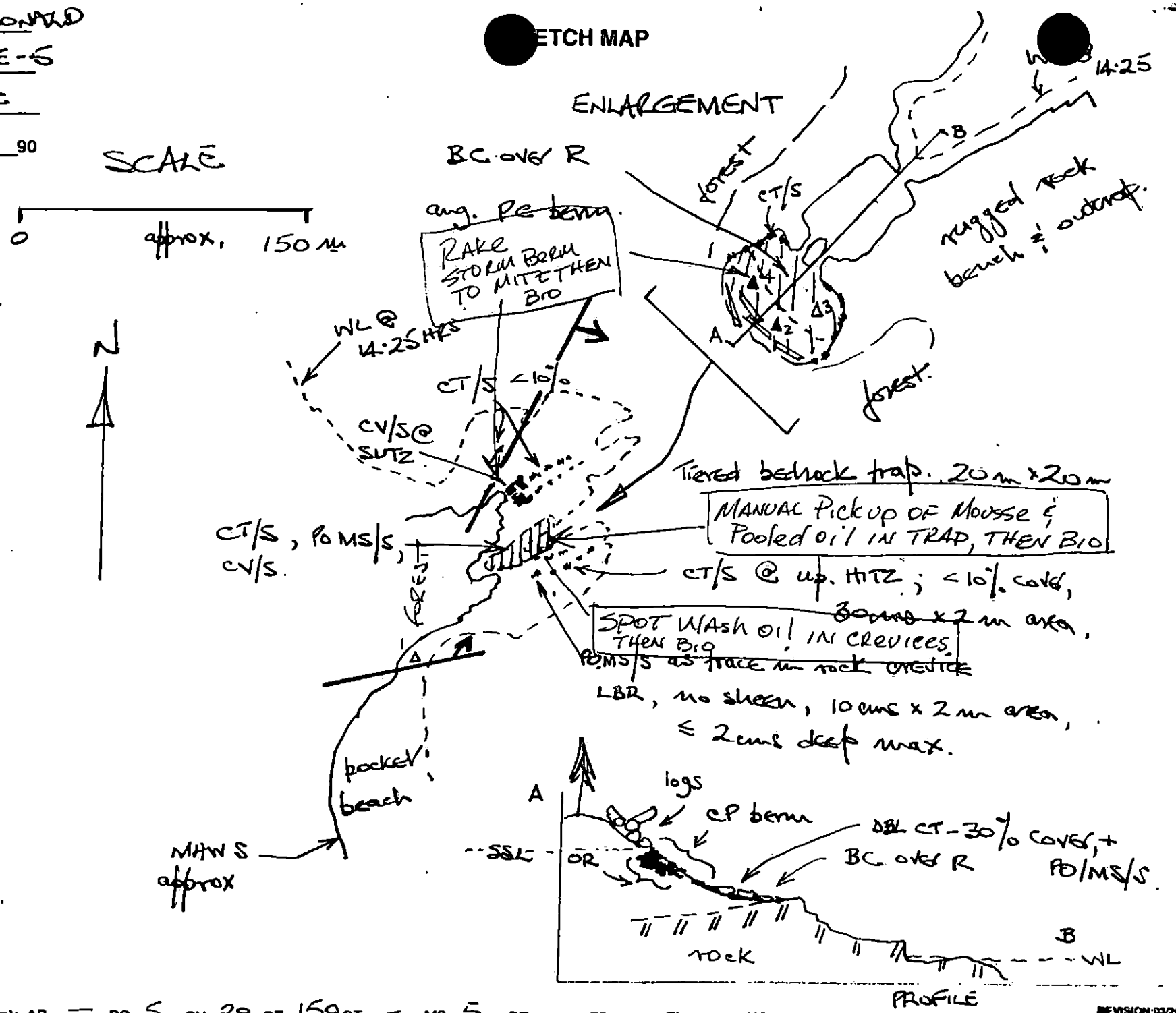
CT/P Patchy Distribution

CT/S Splashed Distribution

Oiled Vegetation

1 Photo location, direction, and number

SKETCH MAP



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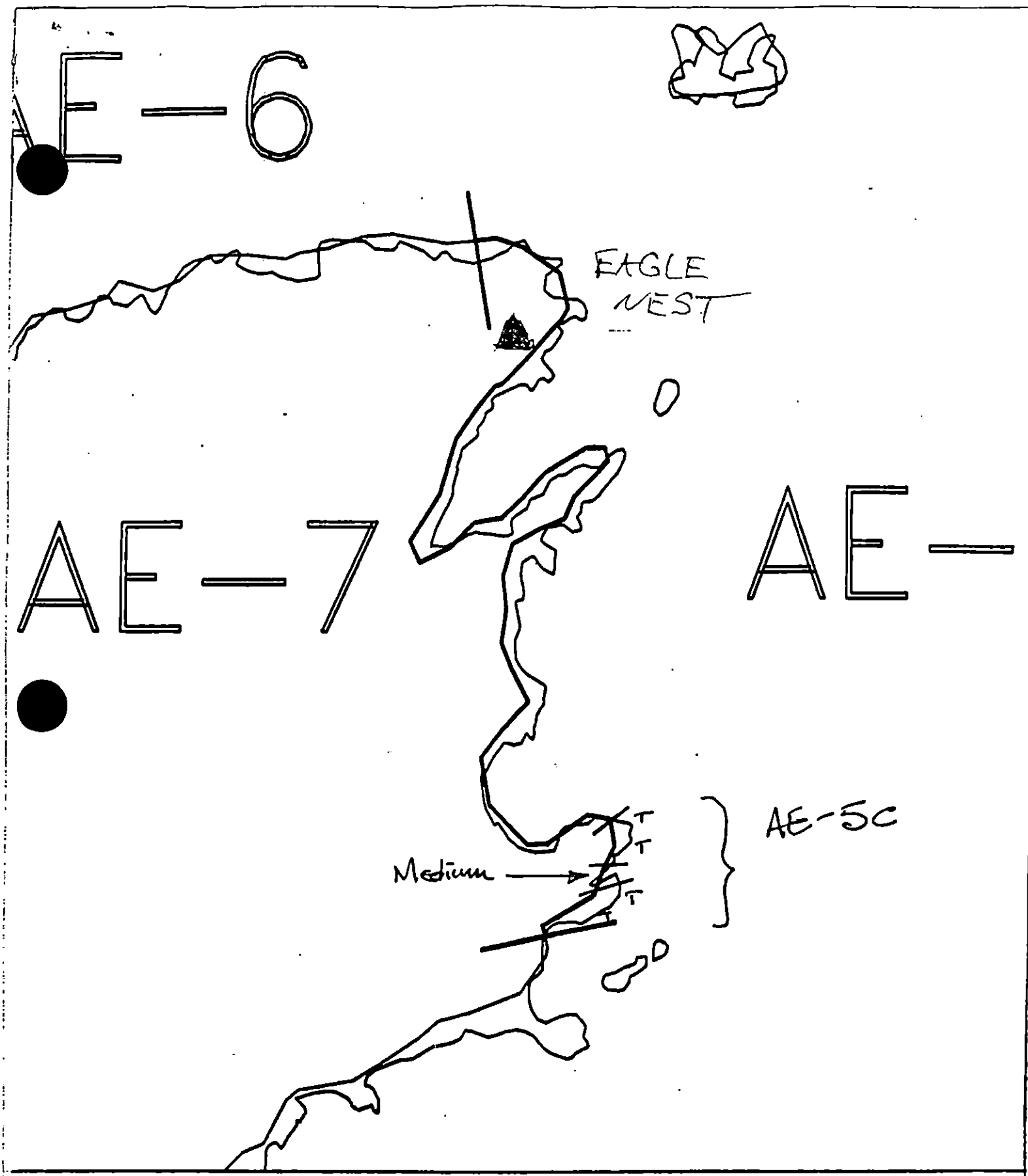
REVISION:03/24/90



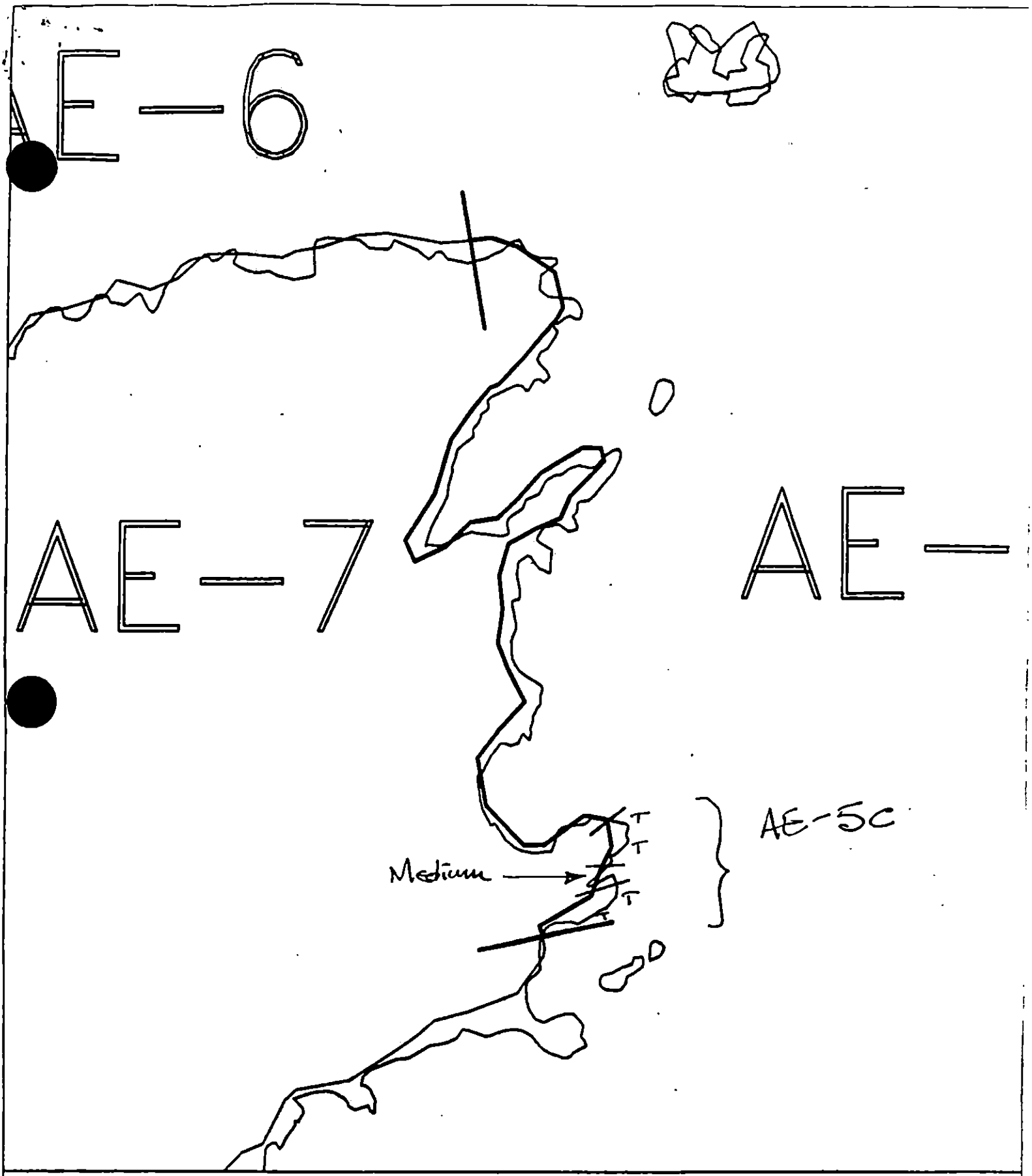
XXXX Wide
/// Medium
--- Narrow
TTTT Very Light
0000 No Oil

AE-5

ADEC Segment Length: 1639m

0 100 200 300
METERS

Map Key: PWS-6
Name: G. MACDONALD
Date: 5.3.90
Data Entered:



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

AE-5

ADEC Segment Length: 1639m

0 100 200 300
METERS

Map Key: PWS-6
Name: G. MACDONALD
Date: 5·2·90
Data Entered:

1991 MAYSAP EVALUATION

SEGMENT: AE 005 SUB: B REGION: PWS SURVEY DATE: 5/2/91

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.

TEAM NO. 1 SEGMENT AE-5 SUBDIVISION B DATE 5/3/91

ADEC
NAME JEFF GINALIAS SIGNATURE [signature]

☐ NTR ☒ TREATMENT RECOMMENDED

AT OG MAP SITES A1 & A3, READILY OBSERVABLE LOCALIZED AREAS OF MOUSSE / SOFT ASPHALT ALONG UITZ, IN A BAND 5-7m x 10-20 M. SMALL CREW (2-4 COULD MANUALLY REMOVE IN 1/2 DAY. OILING CONDITIONS NOT AS HEAVY AS NE-5 A. AREA APPEARS TO INCUR HIGHER LEVEL OF HUMAN ACTIVITY THAN MOST OTHERS

EXXON
NAME Frank A. Rox SIGNATURE [signature]

☑ NTR Splashy coat observed intermittently in segment. The subsurface oil was not observed. A few places of SOR in the form of asphalt patches. Heated occurrence of Biota and eagles observed on the North east side of segment.

LANDMANAGER
NAME MARSHA HALL OF DNR SIGNATURE Marsha Hall

☐ NTR ☑ TREATMENT A1: MANUALLY remove oiled sediments Along bedrock, (2 people) A3: MANUALLY remove and/or spot wash, or Agitate on incoming tide. A4: On south east side of estuary, there is patchy surface oil (A7) which needs to be removed. Two people would do. We sat there, out of the weather for lunch. High human use. A2: MANUAL removal, reassess for WASH.

USCG/NOAA
NAME Jensen Childs SIGNATURE [signature]

☒ NTR Rugged rocky shore line. Surface Oil only as MS Further removal operations would cause more environmental harm than oil to be removed.

No Subsurface oil observed – Surface oil as CT on Rock Faces – MS at High Tide Line in ALL SECTIONS.

TEAM NO. 1

OG G. MACDONALD BIO M. FANCEST SEGMENT AE-5

ADEC J. GINALIAS LANDMANAGER M. HALL for DNR SUBDIVISION B

EXXON F. BOX USCG/NOAA JENSEN / CHILDS DATE 5 / 2 / 91

TIME 11 : 00 to 13 : 10 TIDE LEVEL -0.2 ft. to +3.9 ft. ENERGY LEVEL: ☐ H ☒ M ☐ L

SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO WEATHER: ☐ SUN ☐ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

TOTAL LENGTH SHORELINE SURVEYED: 1079 m NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE

EST. OIL CATEGORY LENGTH: W - m M 30 m N 270 m VL 220 m NO 559 m US 80 m

LOC	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO		V H M L	WIDTH m	LENGTH m	S	UI	MI	LI	
A1		S				T					R	H	2	0.25		X			
A2	P					S					R	M	7	20		X			
A3		P				T					R CP		3	5		X			
A4		S				S		T			CP V	L	<3	40		X			peat.
A5		S				S					RCB	L	2	70		X			
A6						T					R	H	<1	100		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- 1 - 15 FRAMES 12-21

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	50							X	-		45	-		X			PG-PGV	peat
2	35							X	-		25	-			X		P-PG	
3	40							X	-		-			X			P-GP	
4	20							X	-		-				X		CP-GPR	
5	25							X	-		22	N				X	CPB-GC	
6	15							X	-		-		X				P-R	

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

OG COMMENTS: Rugged rocky shore w/ small CB pockets and a cove. Surface oil only, as MS & CT @ HITZ. MS as splash & patches on splintery bedrock; CT as splashes on rock walls and on grass & CP @ head of cove.

REVISED: F.W. 5/6/91

REVIEWED: MC 5/7/91

TEAM NO. 1

SEGMENT AE-5 SUBDIVISION B DATE 5/2/91

OG COMMENTS:

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE	CLEAN BELOW	H2O LEVEL	SHEEN COLOR	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO	cm-cm	Y/N	(cm)	B R S N	S	UI	MI	LI		
									-									
7	20							X	-		—		X				P-P	berm
									-									
8	30							X	-		—			X			P-P	
9	25							X	-		—				X		PC-GP	
10	20							X	-		5	N				X	CP-SP	
									-									
11	10							X	-		—				X		CP-PG	
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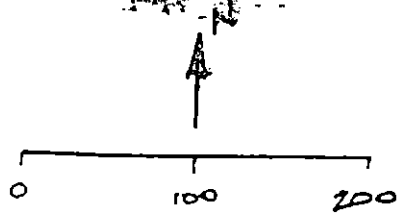
SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

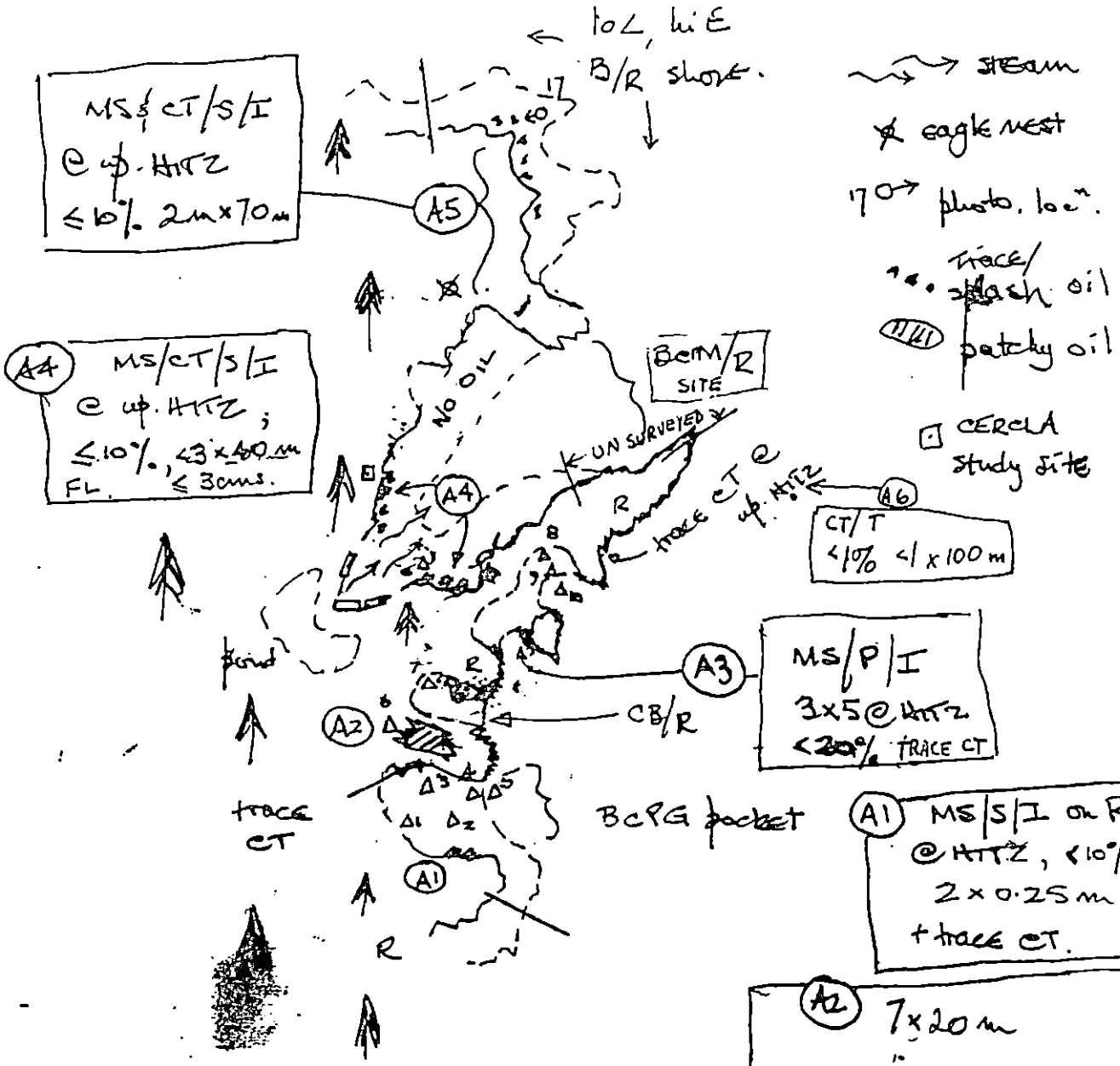
REVIEWED: F.W. 5/6/91

REVIEWED: MC 5/7/91

AE-5B

G. MACDONALD
5.2.91



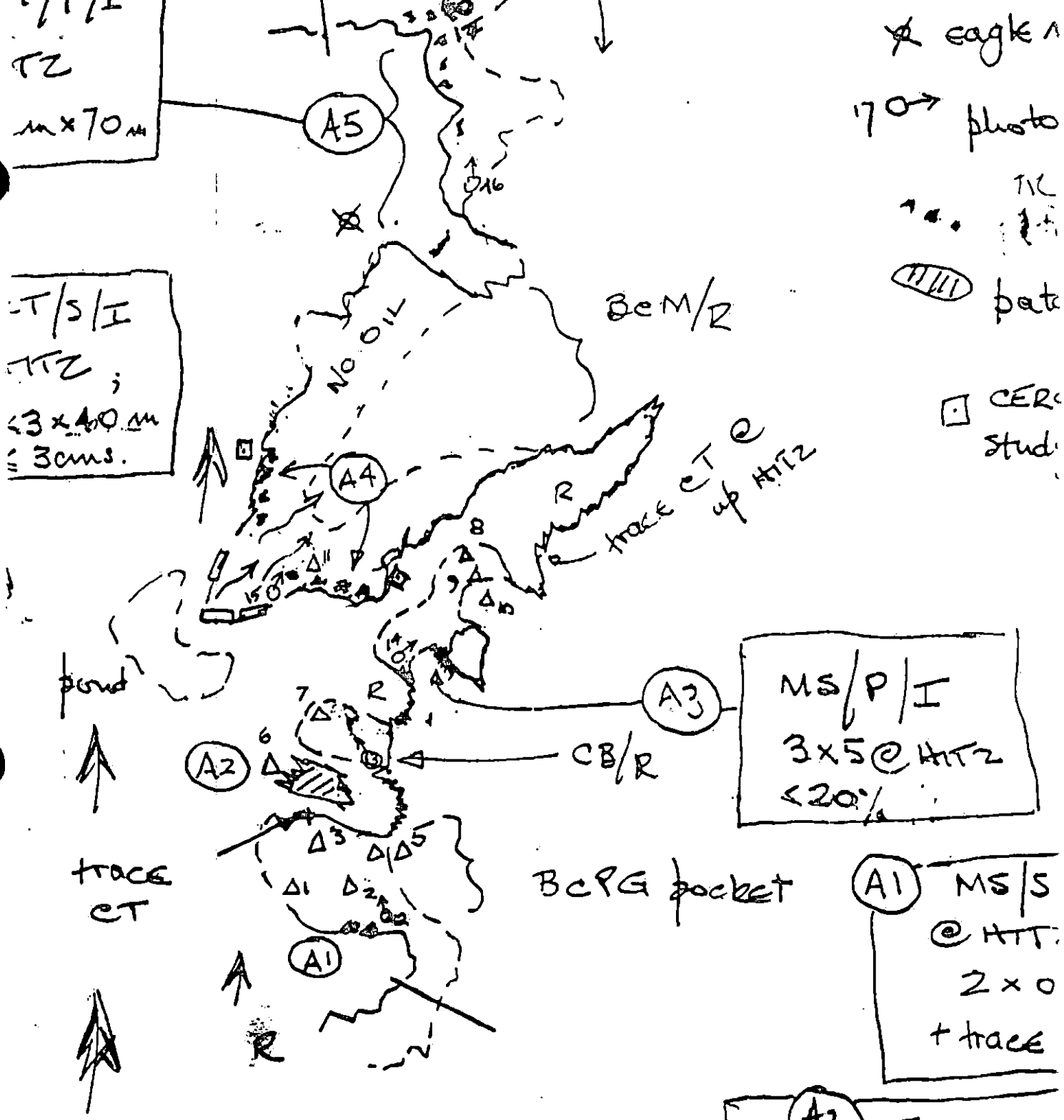


A2 7x20 m
AP/I on R,
@ HTTZ; 30%
<2 cms tk.
in R gullies; trace
CT/S, CT/T

EOS: 13.10 HRS

Note: Trace oil ST & CT grass @ Δ".

REVIEWED: MC 5/7/91
REVISED: F.W. 5/6/91



AE-5-B

PHOTO LOCATION MAP

REVIEWED: F.W. 5/6/91

SHORELINE SUBDIVISION SUMMARY FORM

TEAM # 1 | DATE 2 May 91

SEGMENT # AE 005 | TIDAL HEIGHT (Range) -0.2 to +3.0

SUBDIVISION B | BIOLOGIST Michael Fawcett

SEA STATE 3 ft | WIND SPEED/DIRECTION NE 15-25 knots

PHOTOGRAPHS: ROLL # | FRAME #

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

This subdivision consists of rugged bedrock gullies and channels lined with rockweed, barnacles and other organisms on LTZ-MTZ (and some UTZ) walls, with bedrock, shale shingle, or boulder substrates in pocket beaches and channel bottoms (with more mussels, rockweed, barnacles, littorinids, limpets, 6-armed starfish, etc). A pond drains via a small stream (small, but could support a few pink salmon) through a mudflat area at (A4) -- the stream channel and mudflats have infaunal clams, worms, echinoids, etc, and breeding littorinids, young and old rockweed, barnacles, and mussels, hermit crabs, isopods, and pricklebacks on and under boulders in stream channel and lying on mud. Very dense settlement of barnacle spat still underway near (A5), as the spat are still in cypris stage (movable larvae that have not yet cemented themselves to substrate). Five mature eagles circled us as crew ate lunch, but no eagle activity was observed near charted nest in 2½ hours of surveillance, so it is presumed to be inactive. Eagle activity seemed most intense about ½ km inland and southward from charted nest.

Descriptions of biota near each subdivision site are provided on accompanying sketch map

WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

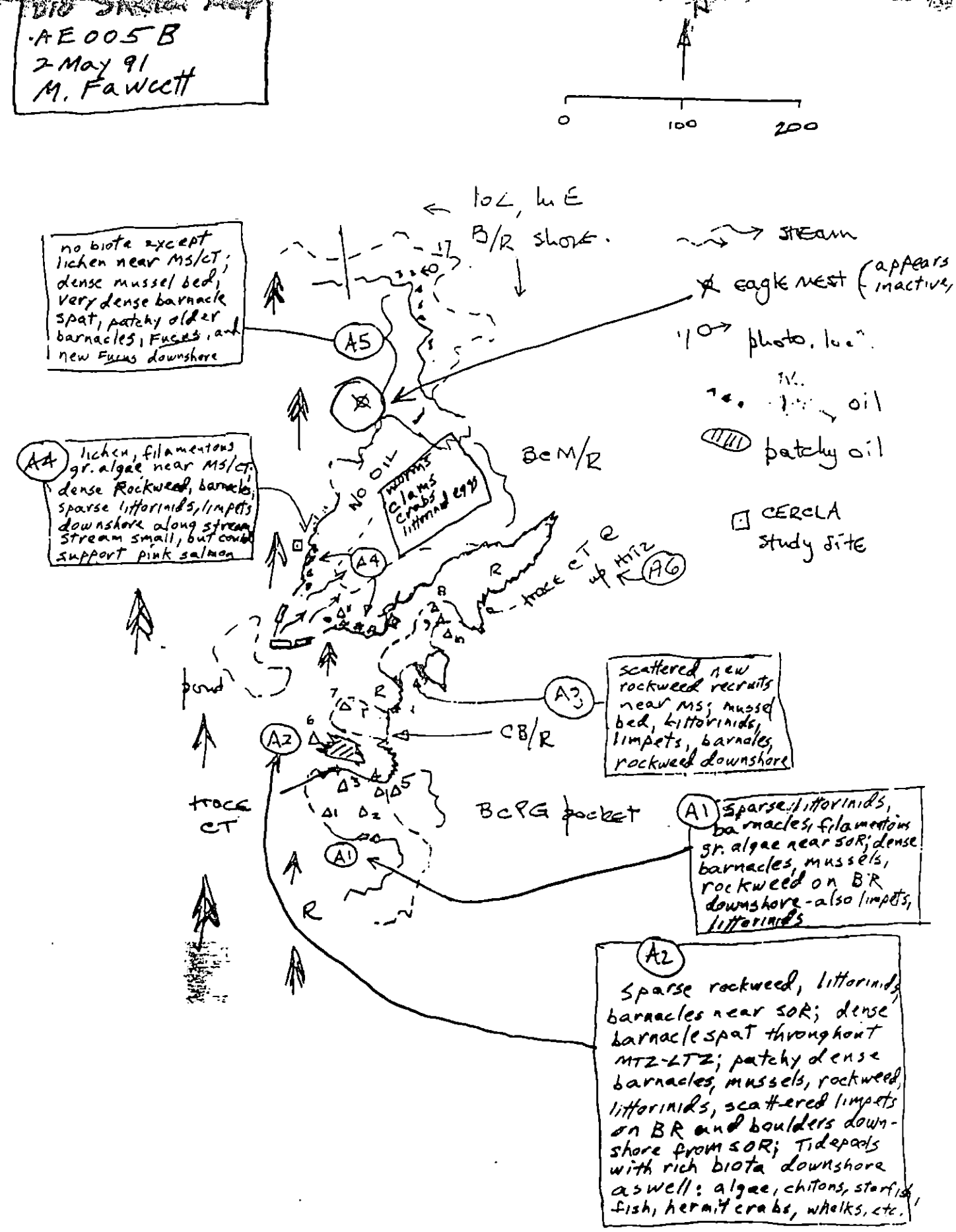
BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	5 (mature)	pricklebacks
Seabirds			
Waterfowl			
Gulls/Kittiwakes			
Shorebirds			
Corvids	1	Steller's jays	
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

REVIEWED: MC 5/7/91

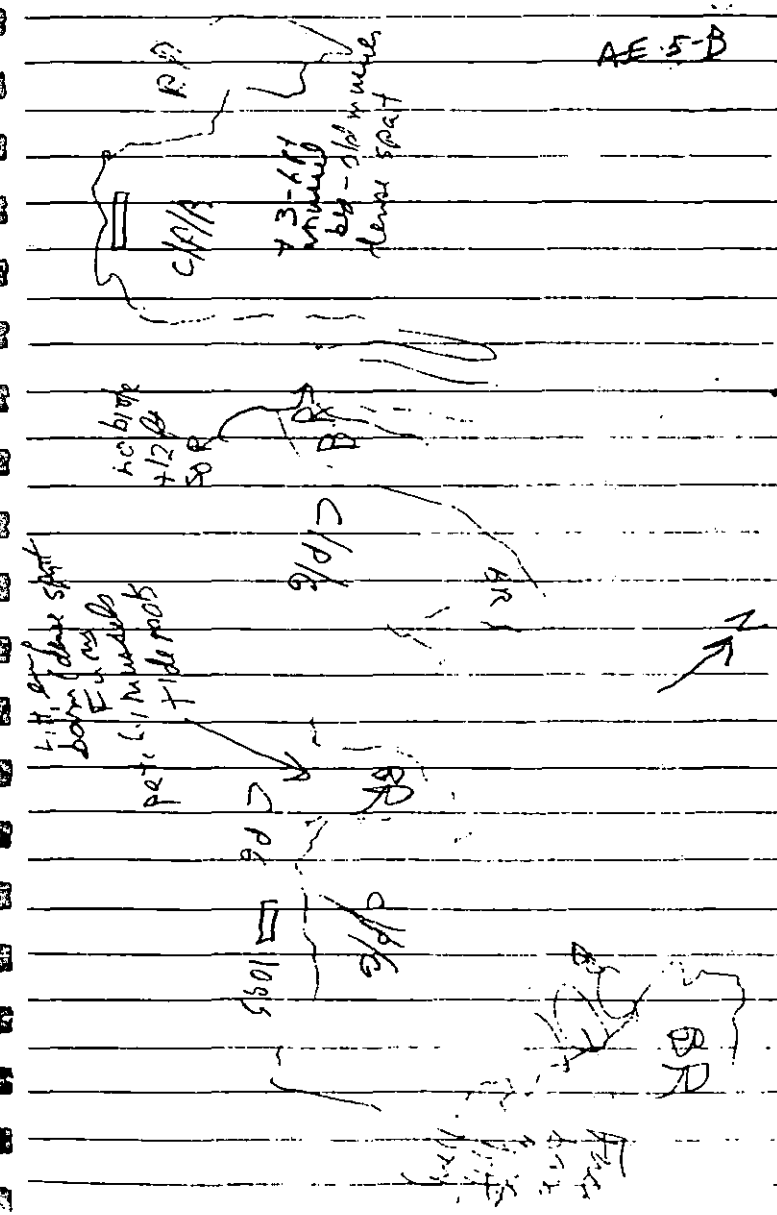
·AE005B
2 May 91
M. Fawcett



REVIEWED: MC 5/7/91 7

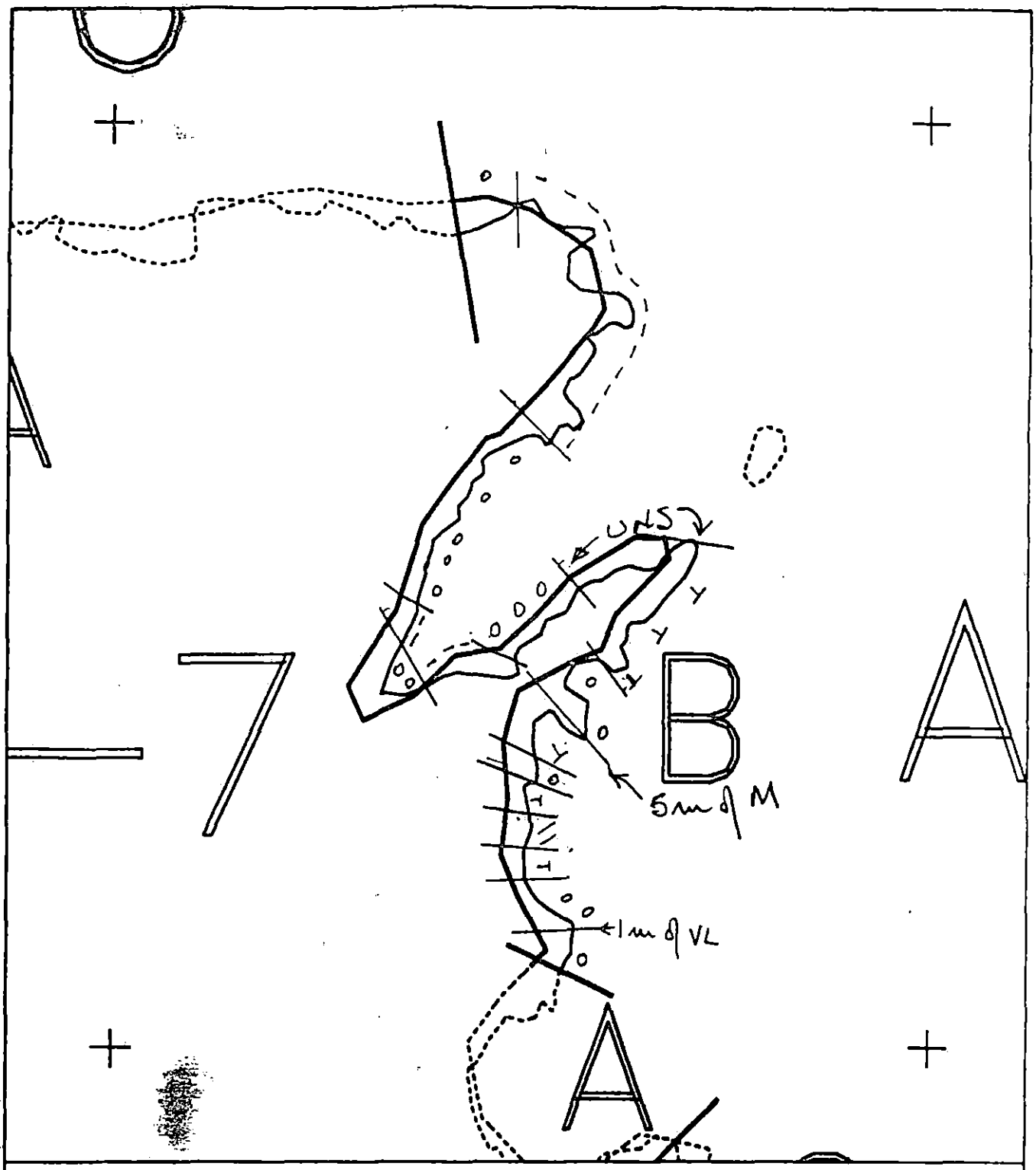
AE 5-B a/r 1045 Fawcett
2 May 91
high energy B/C/P
1 seal nearby
dap BR gullies, narrow creeks
& benches & surge channels,
then wider B/C/P/ beaches -
dense Fucus bar n (& spot) mussels,
etc on all BR +2 to +7 ft

Ernie Piper & others visited at
1100 hrs
2 eagles circling
- walked around point S of lagoon
pond, & creek at border of
segment 5 & 6 - can see eagle
nest charted at point where
5 meets 6 - appears inactive,
pair of eagles flying around
mostly 300m south & inland
1200 hrs - stopped for lunch
at lagoon/stream/pond
- 5 eagles circled around us
while eating lunch
- mussels dense among B/C all
around lagoon also [illegible]



AE5B (cont) 2 May 91 Fawcett

B R & boulders near eagle nest
have very dense spat, most still
obviously cyprids - also patchy
dense older Balanus & Chthamalus
& littorines, & Fucus
- dense mussels in crevices
- cyprids not cemented to rock yet
- 2 Jays near nest
Tiny new Fucus + spat, little
? mar trace SOR on exposed side
of pt. near eagle nest!
- highest patch of SOR (1 m?)
10M north of - worms in only
N personal little under boulders
nearby -
End segment 1310



XXXX	Wide	**AE005 B**	Subdivision Field Map
////	Medium	ADEC Subsegment Length: 1150m	Map Key: PWSAE005B
----	Narrow	METERS	Name: GM
TTTT	Very Light	0 100 200	Date: 5.2.91
0000	No Oil	AK State Plane Zone 4 pwae005b	Date Entered:

REVISED: F.W. 5/6/91
REVIEWED: MC 5/7/91

5

1991 MAYSAP EVALUATION

SEGMENT: AE005 SUB: A REGION: PWS SURVEY DATE: 4/2/91

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)	Y		
Manual Pickup (Check as Req.)	X		
Spot Washing			
Bio-Customblen Only	X		
Bio-Inipol/Customblen			
Other _____			
Other _____			

COMMENTS:
INITIAL: Manual pickup easily accessible AP/MS at locations A1, A2, A3, follow with Customblen.

TAG:

FOSC:

TAG APPROVAL DATE: _____ FOSC APPROVAL DATE: _____

ADEC _____ FOSC _____

EXXON _____

USCG _____

NOAA _____

SHORELINE FIELD SHORELINE CONDITION SURVEY

TEAM NO. 1 SEGMENT AE-5A SUBDIVISION A DATE 05/02/91

ADEC
NAME JEFF GIVALIAS SIGNATURE [signature]

☐ NTR ☒ TREATMENT RECOMMENDED

DIFFICULT TREATMENT BEACH. MAJOR REMAINING OIL IS AT SITES A2 & A3 (SOUTH SIDE). SURFACE OIL/MOUSSE TRAPPED IN VERTICAL SLATE BEDROCK LAYER. THE OIL HAS TRAPPED SOME SEDIMENTS AND SOME IS RECOVERABLE MANUALLY. I WOULD WORK AREA MANUALLY WITH TROWELS (CREW OF 4-6) TO REMOVE OR LOOSEN ALL POSSIBLE MOUSSE. I WOULD THEN SPOTWASH WITH WARM H_2O (LANDA UNIT) ON INCOMING TIDE, WITH A DELUGE FLUSH, BOOMING OFF RUNOFF WITH SNARE AND SORBENT BOOM AND RECOVERING FREED OIL WITH POM POMS, OR SIMILAR. THE EFFECT OF WASHING WOULD FREE MORE OIL FROM SLATE, WHICH EVEN IF IT SETTLES BACK DOWN, WOULD WEATHER BETTER THAN PRESENT. BIOLOGIST RECOMMENDS AGAINST INTRUSION, HOWEVER PROCEDURE REFERENCED ABOVE UTILIZED LAST SEASON ON SITE, WITH SOME SUCCESS. IF ONLY MANUAL USED, AREA SHOULD BE WORKED REPEATEDLY. AS AREA IS VERY UNIQUE AND HIGH RECREATION VALUE. PRESENTLY IS VERY UNSIGHTLY. NOTE: IF SHEEN PRODUCED DURING TREATMENT IT MUST BE CONTAINED, AS MANY SALMON FRY IN AREA LAST SEASON. A1 IS SIMILAR, ON SMALLER SCALE & SAME TREATMENT, NO TREATMENT (LIT) OF SEDIMENT.

EXXON
NAME FRANK BOX SIGNATURE [signature]

☐ NTR There is still some asphalt patches in the south east corner of this segment in the foliated shale bedrock that can be picked out, other than that the small cobble area has cleaned up nicely.

LANDMANAGER
NAME MARSHA HALL OF DNR SIGNATURE Marsha Hall

☐ NTR ☑ TREATMENT

Oiling condition heaviest at AREAS A_1 & A_2 & A_3. NEEDS Attention As this is highly visited beach. Much of it is MANUALLY recoverable. (40° And wet while on site.) Spot washing After MANUAL removal. MS looks alot like AP, but softer. Due to the Amount of sediments removed from A_4 AREA I am inclined to recommend leaving band there alone. Treat Areas A5 & A6 AS the AREAS on the south portion segment.

USCG/NOAA
NAME Jensen / Childs SIGNATURE [signature]

☐ NTR Treat with manual pickup sites A_2, A_3, A_4 (see sketch).

SUBSURFACE OIL OBSERVED IS HIGH IN THE SECTION (0-10cm) AND IS A SILVER SHEEN - VERY LIGHT. SUBSURFACE OIL IS MS, TRAPPED IN FABRECATED VERTICAL SLATE BEDROCK OUTCROPS. WHICH APPEARS TO PRESENT POTENTIAL PROBLEMS IN CLEANUP

MAYSAP SHORELINE OILING SUMMARY

TEAM NO. 1

OG G. MACDONALD BIO M. FAWCETT SEGMENT AE-5

ADEC J. GINAKAS LANDMANAGER M. HALL for DNR SUBDIVISION A

EXXON F. Box USCG/NOAA JENSEN / CHILDS DATE 5 / 2 / 91

TIME 09 : 20 to 10 : 45 TIDE LEVEL 0.0 ft. to 0.0 ft. ENERGY LEVEL: ☐ H ☒ M ☐ L

SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO WEATHER: ☐ SUN ☐ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

TOTAL LENGTH SHORELINE SURVEYED: 304 m NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE

EST. OIL CATEGORY LENGTH: W – m M ~~95~~ 125 m N 50 m VL ~~85~~ 55 m NO 74 m US – m

LOC	SURFACE OIL CHARACTER AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO	SURFACE SEDIMENT TYPE	SHORE SLOPE V H M L	AREA WIDTH m	AREA LENGTH m	ZONE S	UI	MI	LI	NOTES
A1		P				T		T			CGR	L	4	30		X			
A2		P									CR		3	45		X			
A3	P										CPR		2	40		X			
		P						T			CPR		14	50		X	X		
A4		P									PG		2	80		X			
A5		S									BCP		4	10		X			
A6		S						T			BC		2	10		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- 1 - 13 (1 - 14) FRAMES 1 ~ 11 (6 ~ 11)

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER OP	HOR	MOR	LOR	OF	TR	NO	OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE S	UI	MI	LI	SURFACE-SUBSURFACE SEDIMENTS	NOTES
1	15							X	-		12	N		X			CP-GP	
2	20							X	-		–		X				CPG-PGV	peat
3	10							X	-		–			X			CP-GC	
4	20							X	-		10	N	X				PG-PG	
5	25						X		0-7	Y	3	S		X			PG-GP	
6	25							X	-		3	N		X			PG-GP	
7	15							X	-		1	N			X		PG-GMV	peat
	CONTINUED ON P. 2								-									
									-									

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

OG COMMENTS: Deep pocket beach w/ sediments overlying peat on bedrock.

Surface oil as MS/I on splintery bedrock, notably @ south side of pocket. Rare silver sheen noted @ beach, where groundwater flushes out of beachface, probably over a peat layer.

REVISED ~~REVISED~~ 5/7/91 MG

EG revised May 6

TEAM NO. 1

SEGMENT AE-5A SUBDIVISION 1 DATE 5/12/91

OG COMMENTS: G. Macdonald

Subsurface oil limited to traces of silver sheening oil, within 10 cm of the surface. - in effect, all oil here is surficial.

The bedrock is a steeply dipping "shale" which weathers rapidly to splinters. This crevice-ridden bedrock provided a micro-scale trap for the MS, which remains in residence in the top few centimeters.

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE	CLEAN BELOW	H2O LEVEL	SHEEN COLOR	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO	cm-cm	Y/N	(cm)	B R S N	S	UI	MI	LI		
									-									
8	20							X	-		5	N	X				GP-PG	
9	25							X	-		2	N		X			PG-GP	
10	20							X	-		1	N			X		C-MV	peat.
11	10							X	-		-			X			BP-CPG	
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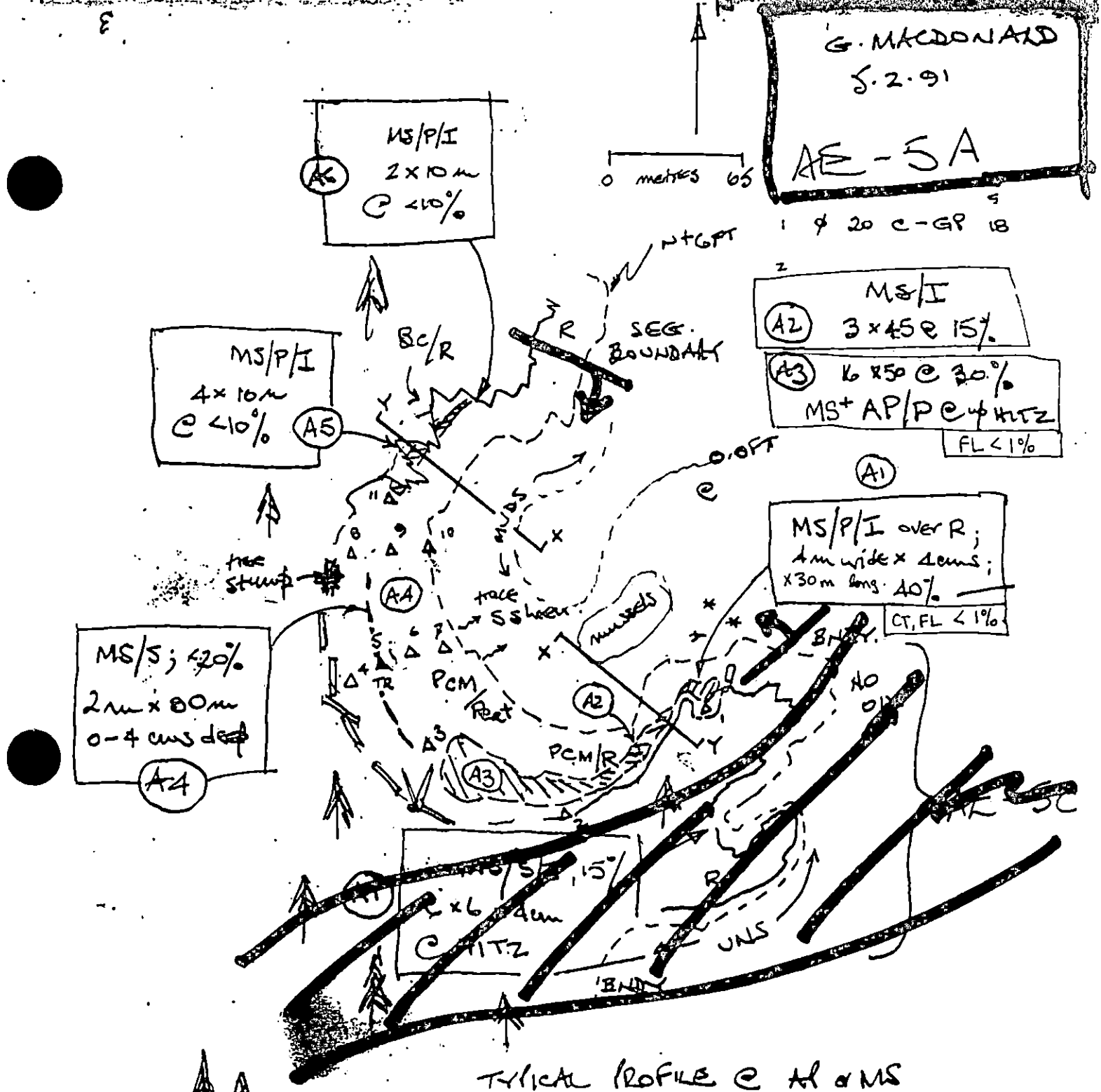
SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

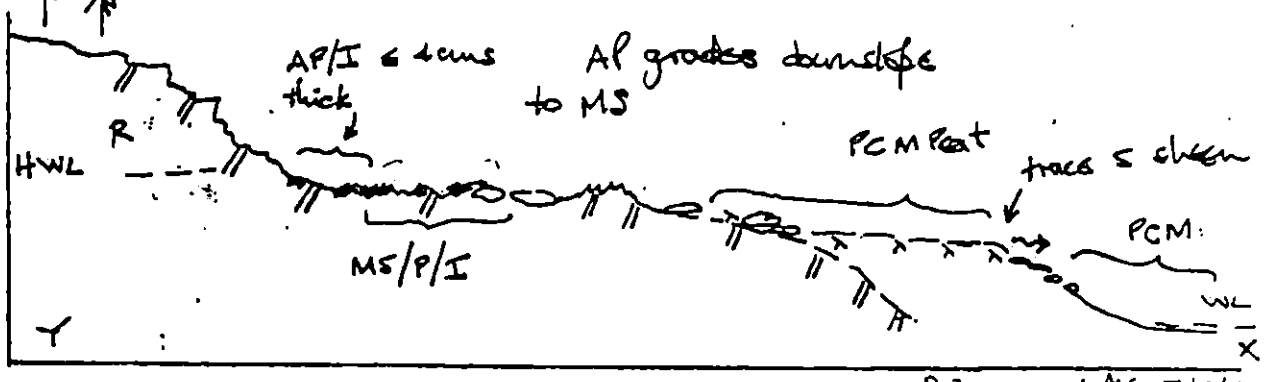
REVIEWED: 5/7/91
SG reviewed May 6

G. MACDONALD
5.2.91

AE-5A



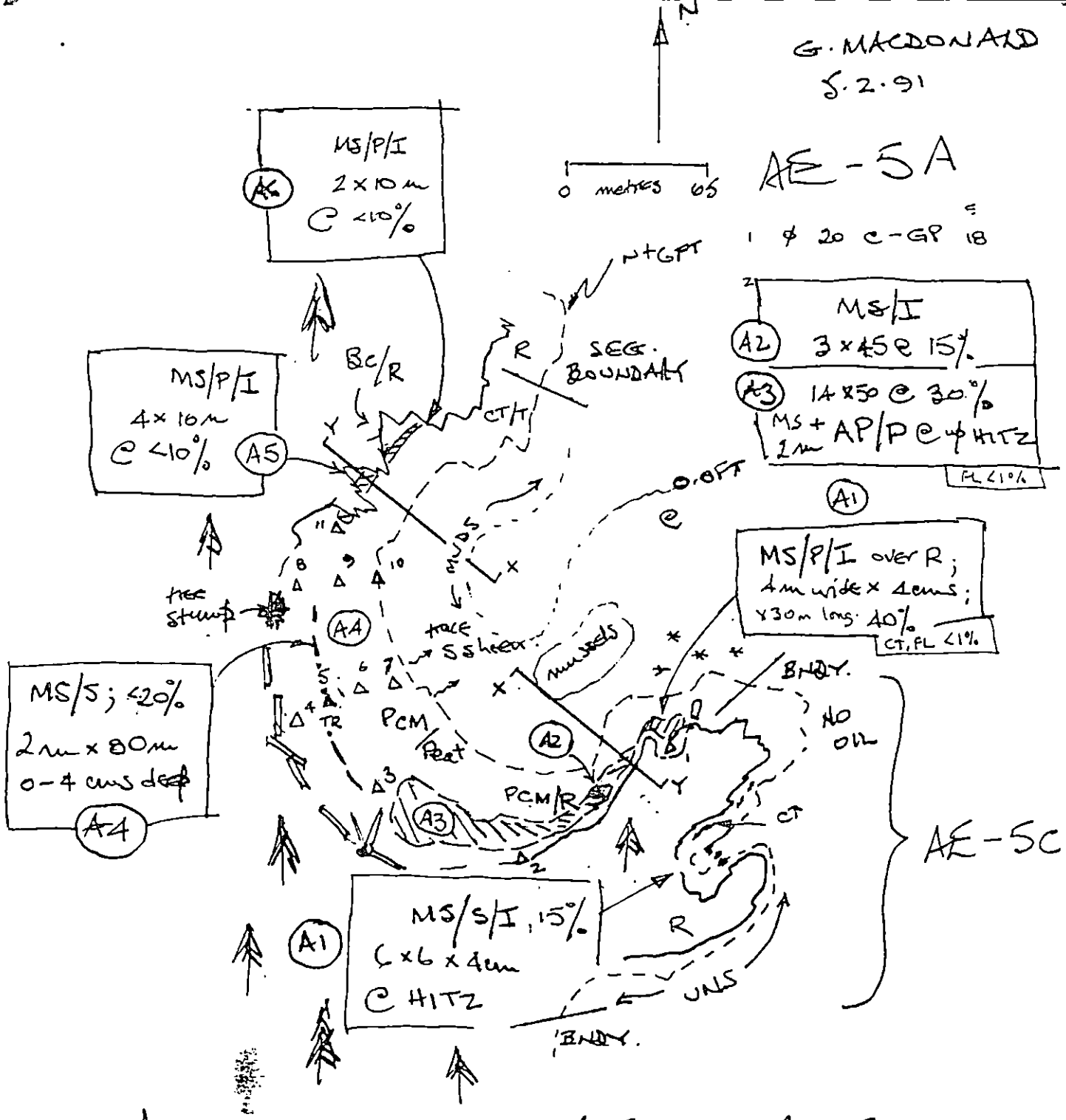
TYPICAL PROFILE C A1 & MS



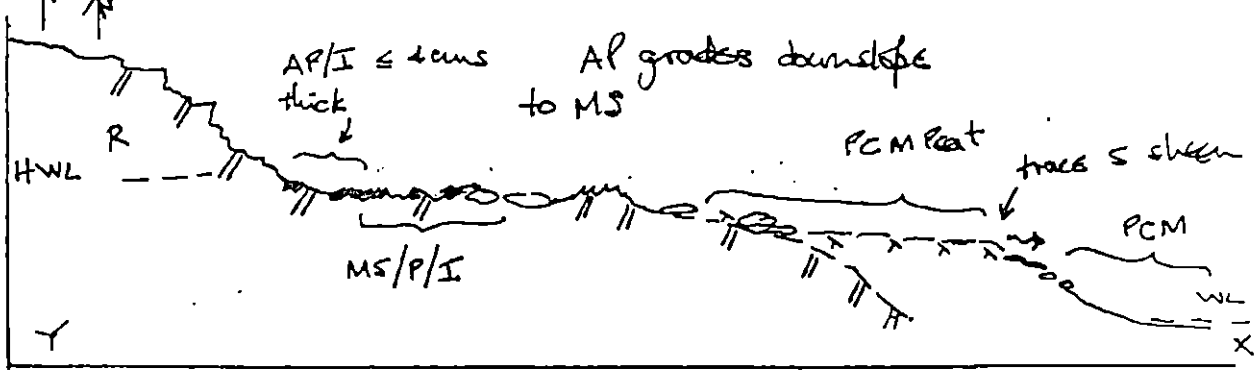
Reviewed: MC 5/7/91
Revised, May 6 85

G. MACDONALD
5.2.91

AE-5A



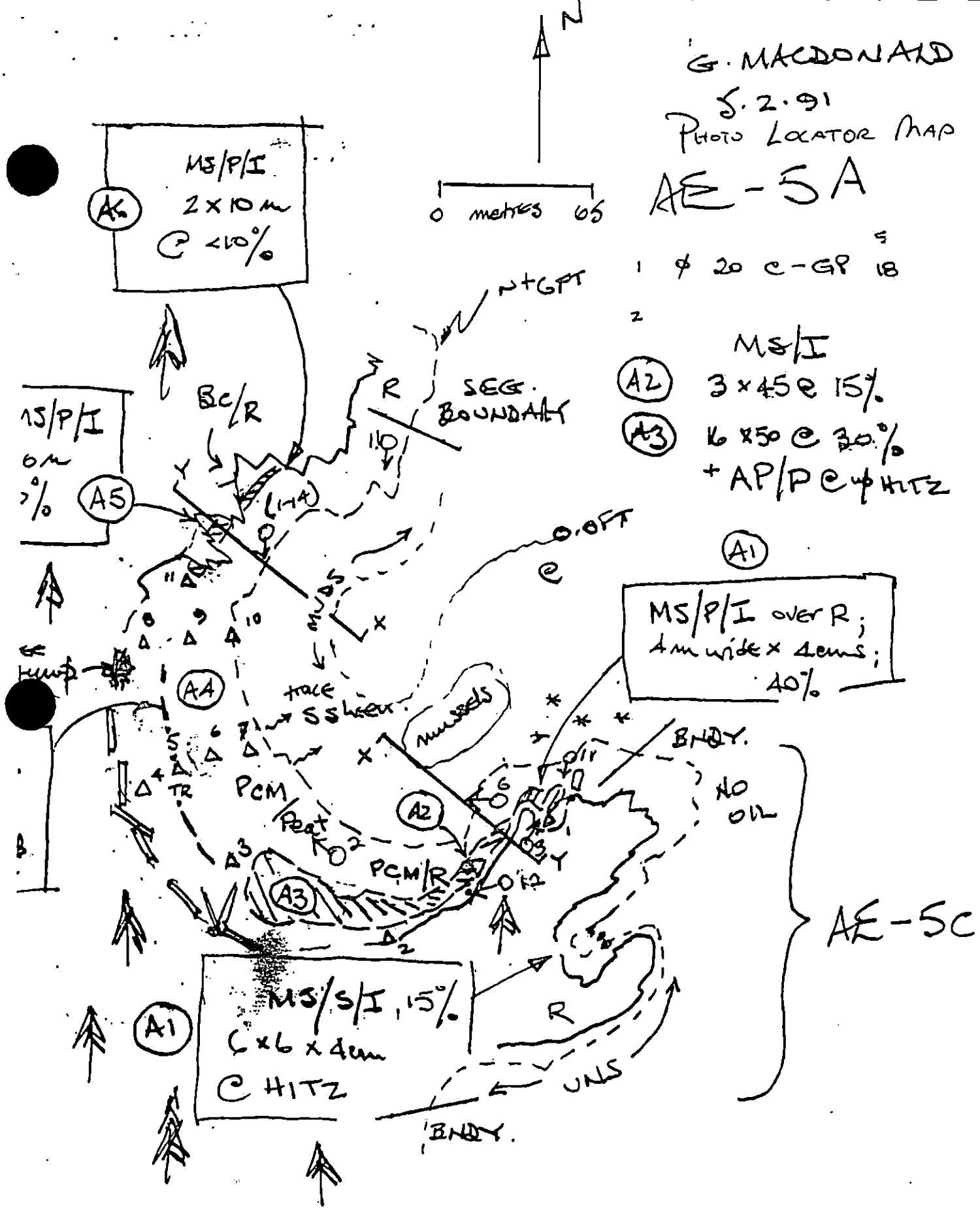
TYPICAL PROFILE @ A1 & MS



REVISED: MC 5/7/
EG revised, Mar

G. MACDONALD
5.2.91
PHOTO LOCATOR MAP

AE-5A



TYPICAL PROFILE C A1 & MS

5

KAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1 | DATE 2 May 91

SEGMENT # AE005 | TIDAL HEIGHT(Range) -0.5 to +1.0

SUBDIVISION A | BIOLOGIST M. H. Fawcett

SEA STATE 2 ft seas | WIND SPEED/DIRECTION NE 15-20 knots

PHOTOGRAPHS: ROLL # | FRAME #

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

Site A1 is a small gully (10m from wall to wall) with SOR in splintered shale in UT2-SUT2 zone from about +12 to +15ft MLLW. Little biota (filamentous algae, scattered littorinids and barnacles) exists in the SOR zone, but dense young rockweed, patches of dense mussels and barnacles, dense barnacle spat, dense hermit crabs, and breeding littorinids with egg masses occupy the boulder area downshore from the SOR; rockweed, barnacles, and mussels occupy bedrock walls.

Sites A2-A6 surround a central lagoon-mudflat area containing eelgrass and infaunal clams (at least 5 species), worms, moon snails (with egg collars), helmet crabs, and other soft-bottom animals. Numerous craters indicate sea otter clam-digging activity. This kind of habitat is relatively uncommon in PWS and is valuable as a foraging area for sea otters, shorebirds, and waterfowl. It is also sensitive to waste runoff and destruction of animal burrows or burial caused by mechanical disturbance and excessive sedimentation. The clams are only moderately abundant now, so it is not recommended that further disturbance be inflicted by any sort of intensive cleanup effort.

Descriptions of biota near the residual oil in sites A2-A6 are provided in the accompanying sketch

WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

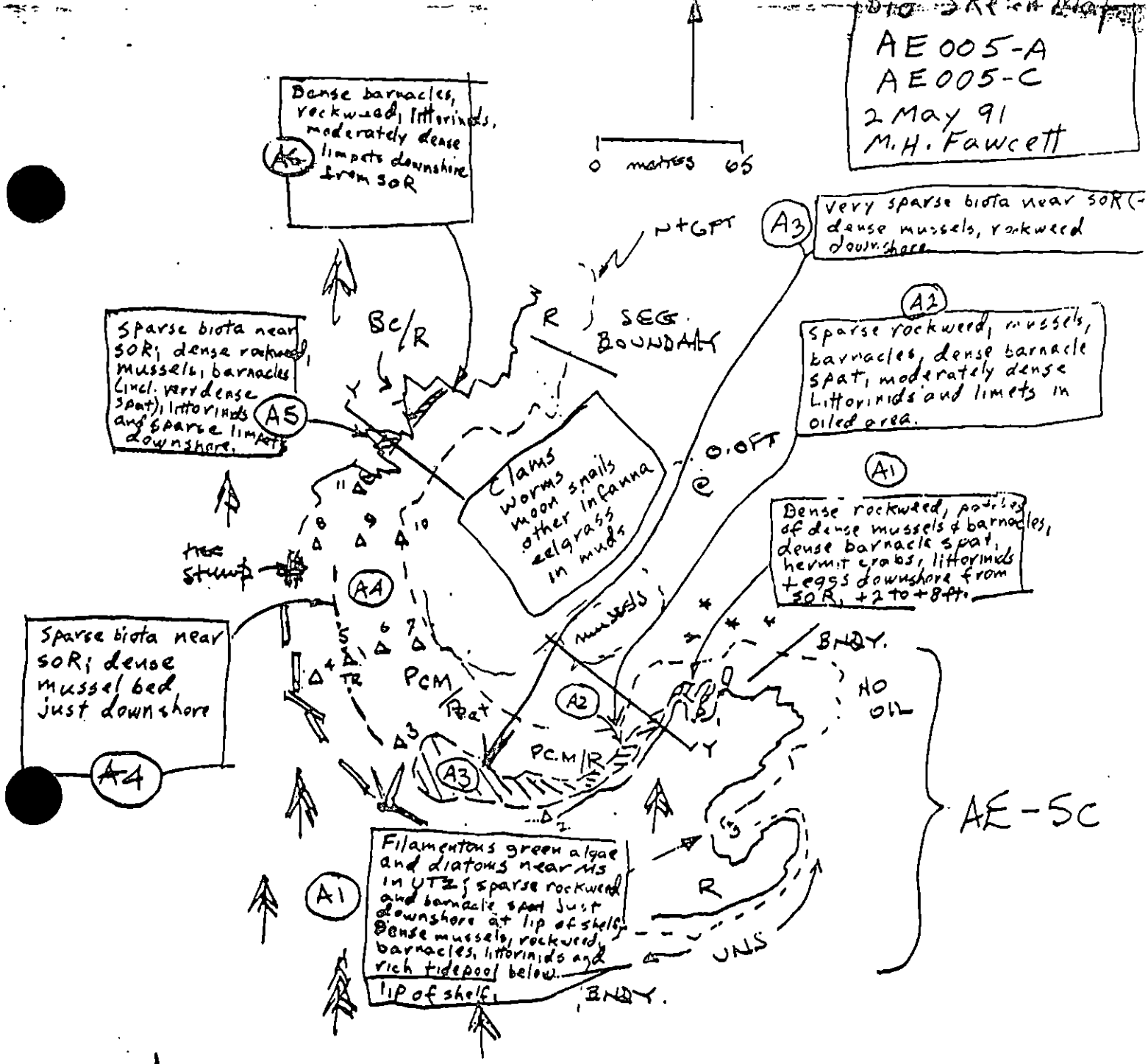
BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	pricklebacks
Seabirds			
Waterfowl			
Gulls/Kittiwakes			
Shorebirds			
Corvids	1 Steller's jay	1	
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	none observed, but ma	ny craters in clambeds	
Pinnipeds(specify)			
Whales(specify)		deer tracks on beach	

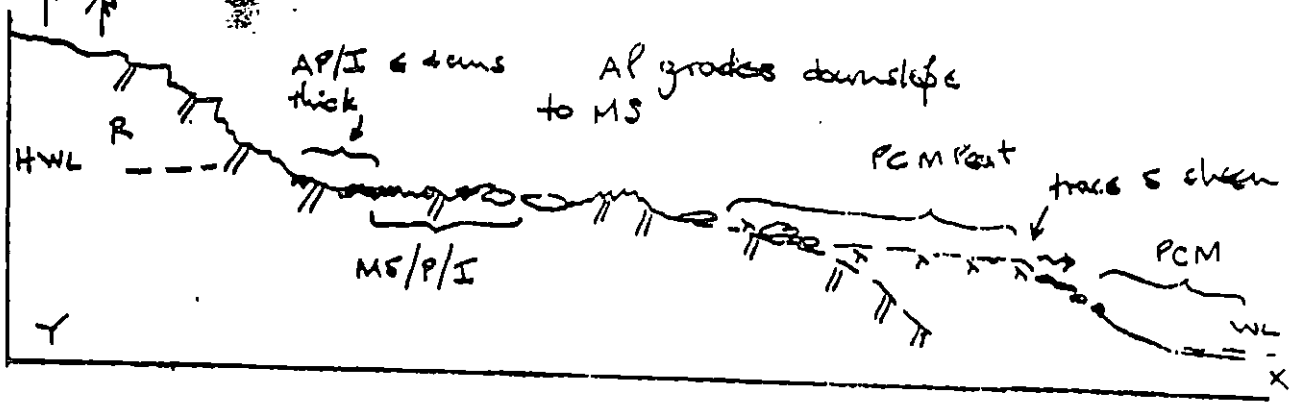
Shoreline subdivision map showing important biological features attached.

REVIEWED: MC 5/7/91

AE 005-A
AE 005-C
2 May 91
M.H. Fawcett



TYPICAL PROFILE @ A1 & MS

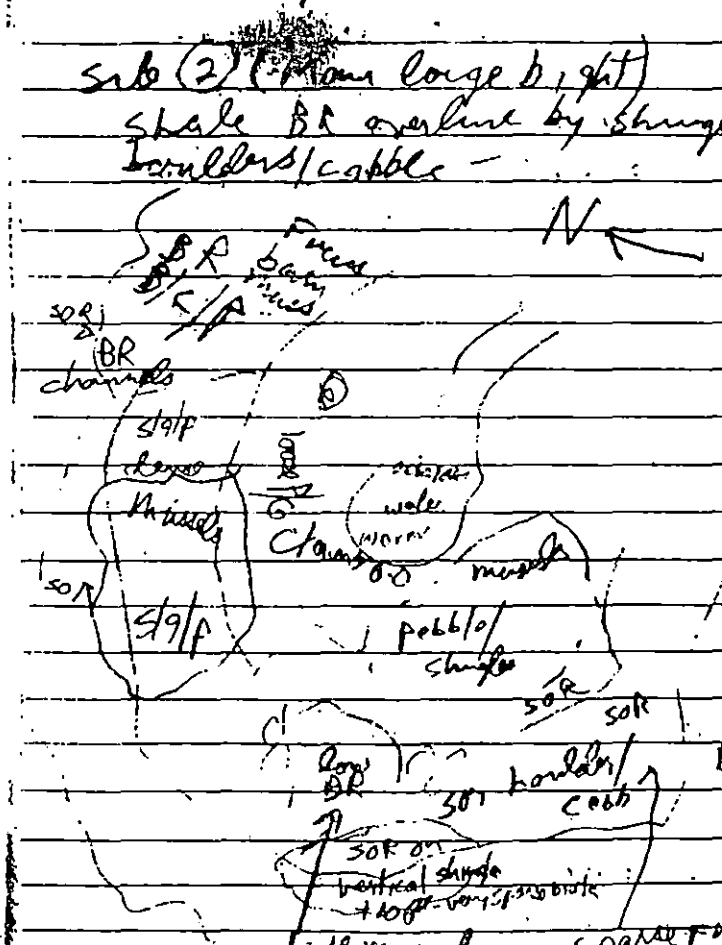


REVIEWED: MC 5/7/91

8

0940 AF 5A (cont) Fawcett
2 May 91

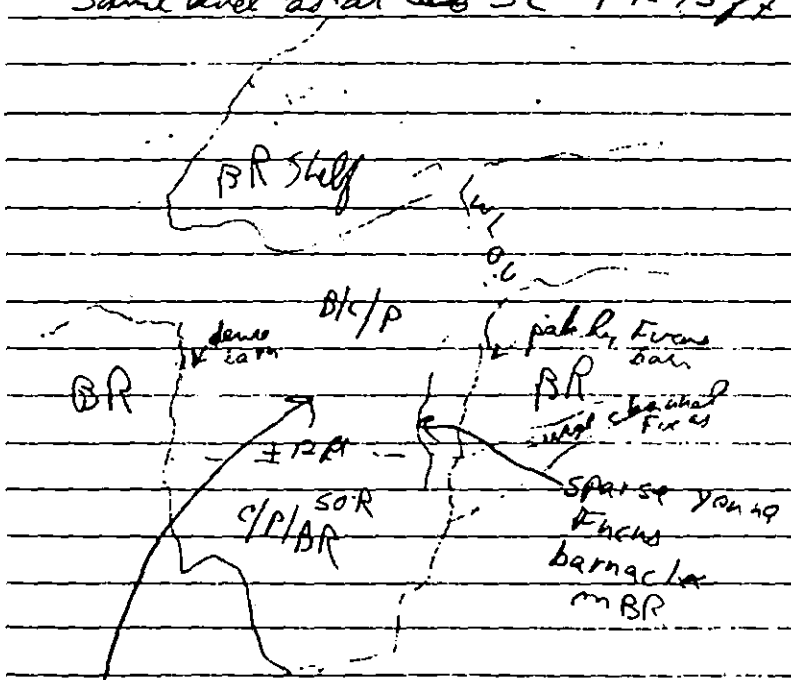
Site (2) (Main large bight)
Shale BR overlain by shingles
boulders/cobble –



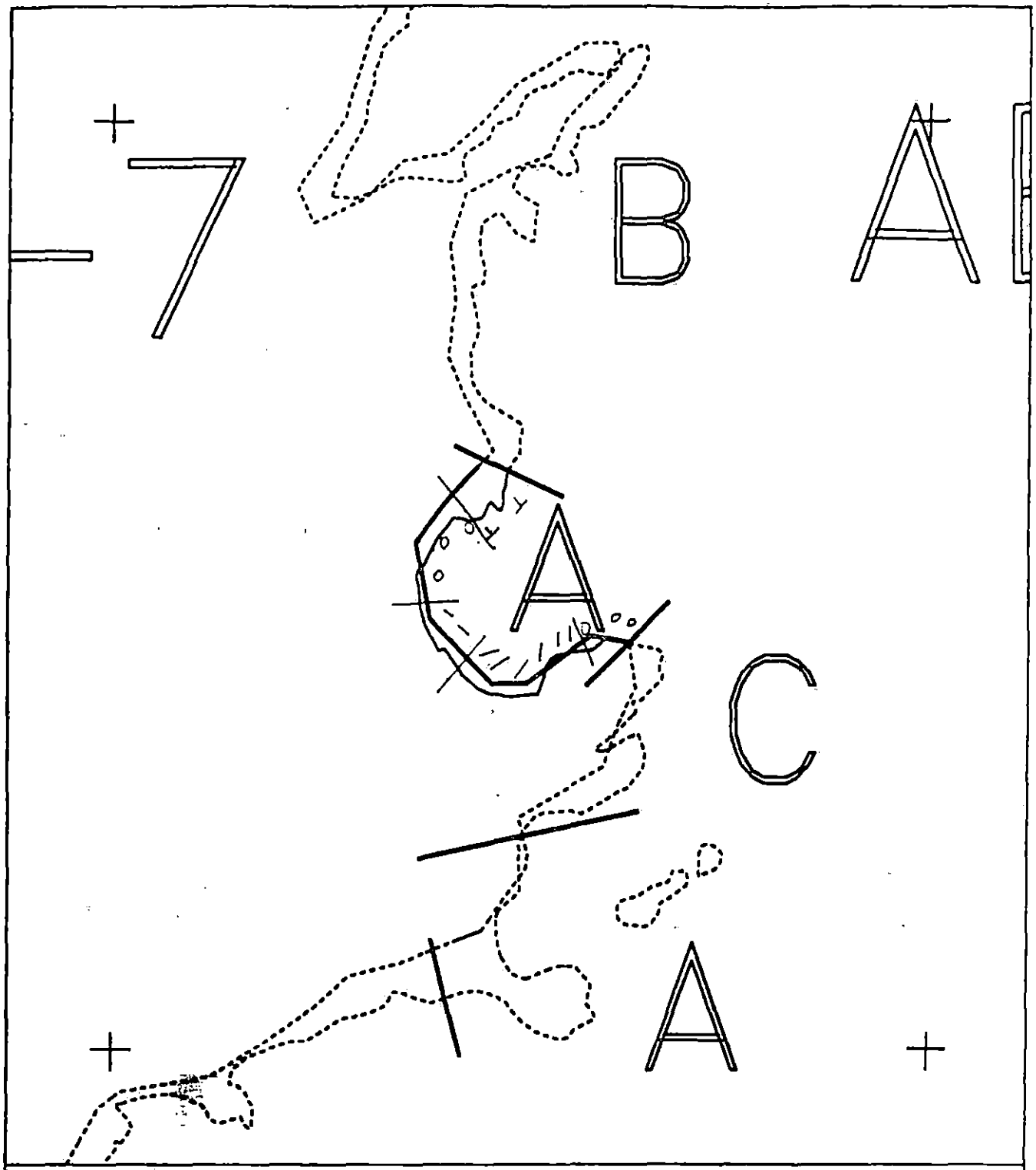
site 2 (cont) central mud/sand flat lagoon with moderately dense clams (Protothaca, Mya, Clinocardium, Schizothera – also eelgrass, zostera, scattered barnacles, mussels, Moon snails – SOR +5-10 ft above water & clam area – more washing of heavy tilling & E would run off into lagoon
1 eagle
1 Stellar's jay
10/0 hrs
buried oil nodules on south half of bay

lots of other crabs in clam beds – Lacuna eggs on eelgrass
Moon snail egg collars
small patches of SOR among big bedrock gullies on north side of lagoon, almost +8 ft – dense Fucus etc – 5-15 m transine – fish, littorinids, limp

0920 : start AF 5A Fawcett
Site 1 2 May 91
small (10m wide) gully
50 m shab splrakes UTZ-Saxo
same level as at ~~SC~~ 5C +12 x 5 ft



dense Fucus, patch, mussels, barn
dense spat all ones in Boulders
+2 - 9ft - dense hermit crabs
moderate littorines & eggs



XXXX	Wide	AE005 A	Subdivision Field Map
////	Medium	ADEC Subsegment Length: 304m	Map Key: PWSAE005A
----	Narrow	METERS	Name: G. M.
TTTT	Very Light	0 100 200	Date: 5.2.91
0000	No Oil	AK State Plane Zone 4 pse005a	Date Entered:

Revised ~~Reviewed~~. MC 5/7/91
6
ES reviewed, May 6

1991 MAYSAP EVALUATION

SEGMENT: AE 005 SUB: C REGION: PWS SURVEY DATE: 5/2/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

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

SHPO Signature: _____ Date: _____

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

COMMENTS:
INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: _____ FOSC APPROVAL DATE: _____

ADEC _____ FOSC _____

EXXON _____

USCG _____

NOAA _____

TEAM NO. 1 SEGMENT AE-5 SUBDIVISION C DATE 5/3/91

ADEC
NAME JEFF GINGRAS SIGNATURE [signature]

☒ NTR ACCESS PROBLEMS

AT UITZ ONE AREA OF HEAVY CONCENTRATION (6 x 6 m) MOUSSE SPREAD AMONGST/WITHIN BEDROCK. RUGGED, JAGGED ROCK - MANUAL INEFFECTIVE IN REACHING CREVICES IN ROCK; INACCESSIBLE AND TOO SMALL A BEACH FOR MECHANICAL. RICH BIOTA AT LITZ MAKES WASHING UNATTRACTIVE. BIOREMEDIATION WOULD PROVIDE LIMITED BENEFIT. AS BEACH PROBABLY NOT HIGH HUMAN USE AND OIL CONTAMINATION RELATIVELY ISOLATED, I RECOMMEND CUTTING LOSSES AND ALLOW NATURAL PROCESSES.

EXXON
NAME [illegible] SIGNATURE [illegible]

☑ NTR [illegible] amount of oil [illegible] the high intertidal zone. Not justifiable enough for intensive clean up action.

LANDMANAGER
NAME MARSHA HALL OF DNR SIGNATURE Marsha Hall

☐ NTR ☑ treatment

DUE to the FACT that this island is visited A great deal in summer, some MANUAL recovery should OCCUR. Two - Four people could remove the worst of it in A short time. It is surface oil in HITZ protected by rocks at lower tide level. If MANUAL recovery is not feasible, four people could rake/agitate zone on incoming tide & use pom poms.

USCG/NOAA
NAME Jensen SIGNATURE [signature]

☒ NTR cleanup measures would be excessively costly in view of their insignificant contribution to minimizing a threat to the public health or welfare, or the environment.

No SUBSURFACE OIL OBSERVED -- SURFACE OIL AS MS IN THE REAR OF THE CHANNEL - P AS CI ? S on the fully vertical walls.

OG G. MACDONALD BIO M. FAWCETT SEGMENT AE-5

ADEC J. GINALLS LANDMANAGER M. HALL for DNR SUBDIVISION C

EXXON F. BOX USCG/NOAA JENSEN / CHILDS DATE 5 / 2 / 91

TIME 08 : 45 to 09 : 15 TIDE LEVEL +1½ ft. to 0.0 ft. ENERGY LEVEL: [ ] H [ ] M [X] L

SURVEYED FROM: [X] FOOT [ ] BOAT [ ] HELO WEATHER: [ ] SUN [ ] CLOUDS [ ] FOG [X] RAIN [ ] SNOW

TOTAL LENGTH SHORELINE SURVEYED: 81 m NEAR SHORE SHEEN: [ ] BR [ ] RB [ ] SL [X] NONE

EST. OIL CATEGORY LENGTH: W — m M 6 m N — m VL ~~30~~ 10 m NO ~~45~~ 65 m US 95 m

LOC	SURFACE OIL CHARACTER AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO	SURFACE SEDIMENT TYPE	SHORE SLOPE V H M L	AREA WIDTH m	AREA LENGTH m	ZONE S	UI	MI	LI	NOTES
A1		P				:		T			RBP	M	6	6		X			
A2						S					R	M	<1	10	X	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- 1 - 15 FRAMES 4~5

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER OP	HOR	MOR	LOR	OF	TR	NO	OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE S	UI	MI	LI	SURFACE-SUBSURFACE SEDIMENTS	NOTES
1	15						X		5 - 9	Y	7	S			X		PC-R	
2	10							X	0 - 2	Y	6	B,R		X			BP-R	B globules
3	20						X		0 - 4	Y	15	S		X			BG-PG	
4	15					X	X		5 - 12	Y	10	S	X				PG-G	

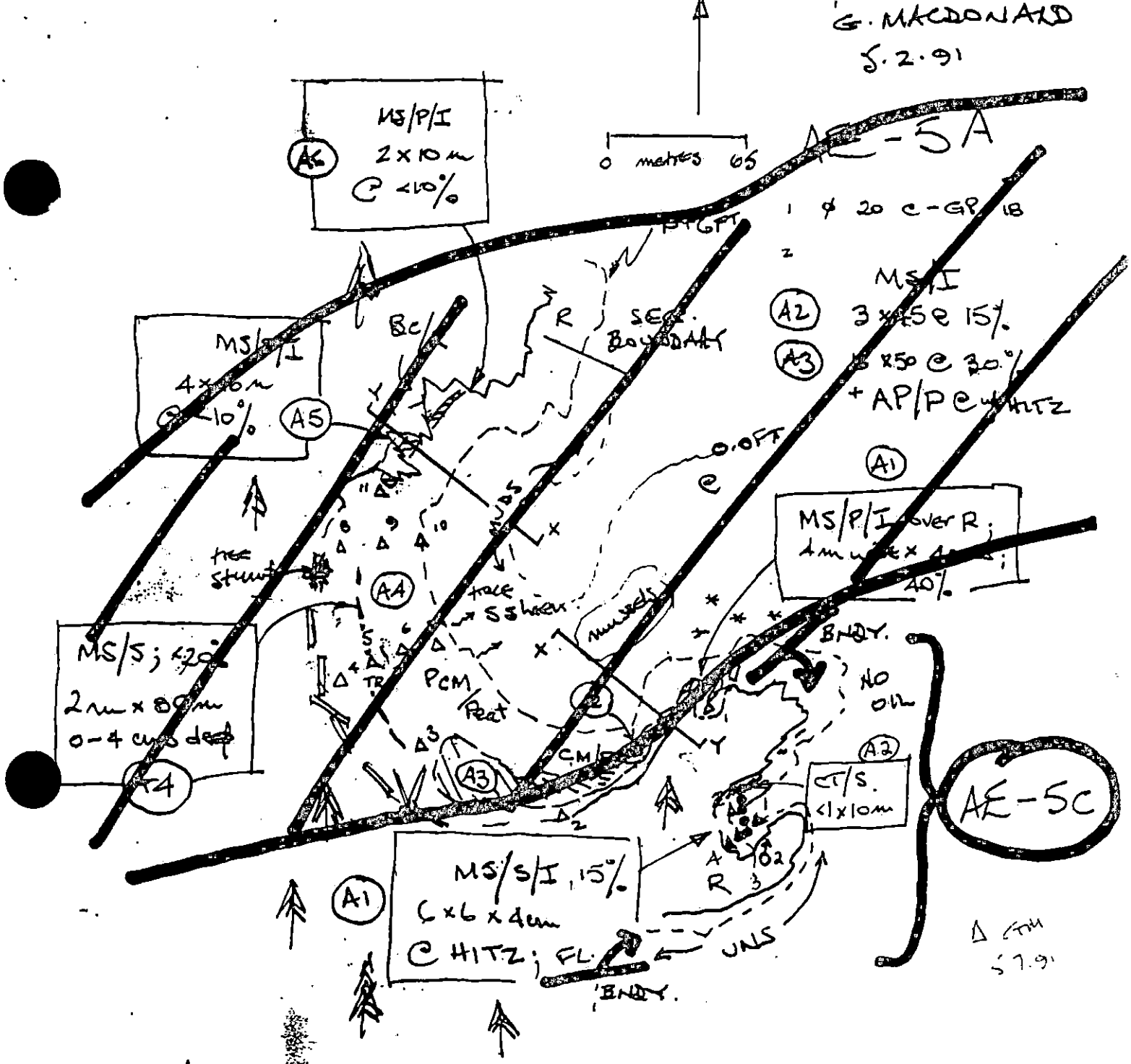
SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS: Rugged rock formation w/ deep channels in bedrock. Surface oil in channel trap es: MS/S/I & CT/S @ HTZ; 15%. (MS ~6 x 6m x 4mm.; CT <1 x 10m). Trace film on bare sediment. No Subsurface oil. Low E in channel; elsewhere, Hi.

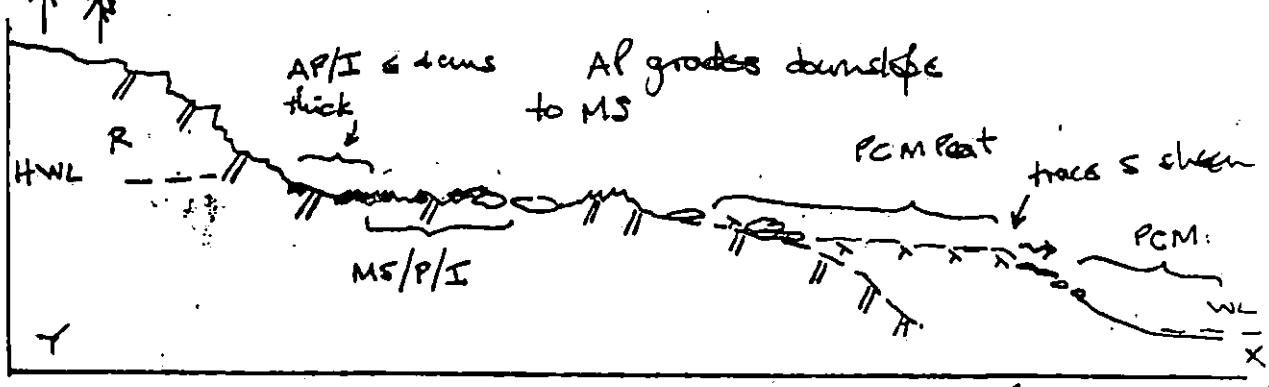
REVISED ~~REVIEWED~~: MC 5/7/91

FW/E6 revised : 6-7

G. MACDONALD
5.2.91



TYPICAL PROFILE @ A1 & MS



REVISIONS: MC 5/7/91
ET, FW, GM
revised 5/6-7

TEAM # 1 | DATE 2 May 91

SEGMENT # AE005 | TIDAL HEIGHT(Range) +0.5 to +1.2 ft MLLW

SUBDIVISION C | BIOLOGIST Michael Fawcett

SEA STATE 2 ft seas | WIND SPEED/DIRECTION NE 15-20 knots, rain

PHOTOGRAPHS: ROLL # | FRAME #

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

The area with residual oil in this subdivision is a high intertidal shelf covered with boulders, cobble, and pebbles, opening to the sea through a narrow crack that spills over the lip of the shelf at about +11 to 12 ft MLLW. The oil residue is mostly on the landward side of the shelf among filamentous green algae and diatoms. Sparse young rockweed and barnacle spat occupy the lip of the shelf just downshore from the oil residue. Below the lip is a vertical drop to a lower shelf with a large tidepool and steep bedrock walls. The tidepool has a well-developed community including coralline, leafy, and filamentous red algae, rockweed, and surfgrass, and barnacles, Littorinids, limpets, whelks, hermit crabs, fishes, anemones, starfish, chitons and other organisms. The rock walls have dense mussels, barnacles, Littorinids, rockweed, and rhodomela. Any cleanup involving runoff of wastes or heavy foot traffic could have negative impacts on the intertidal community below the UTZ shelf.

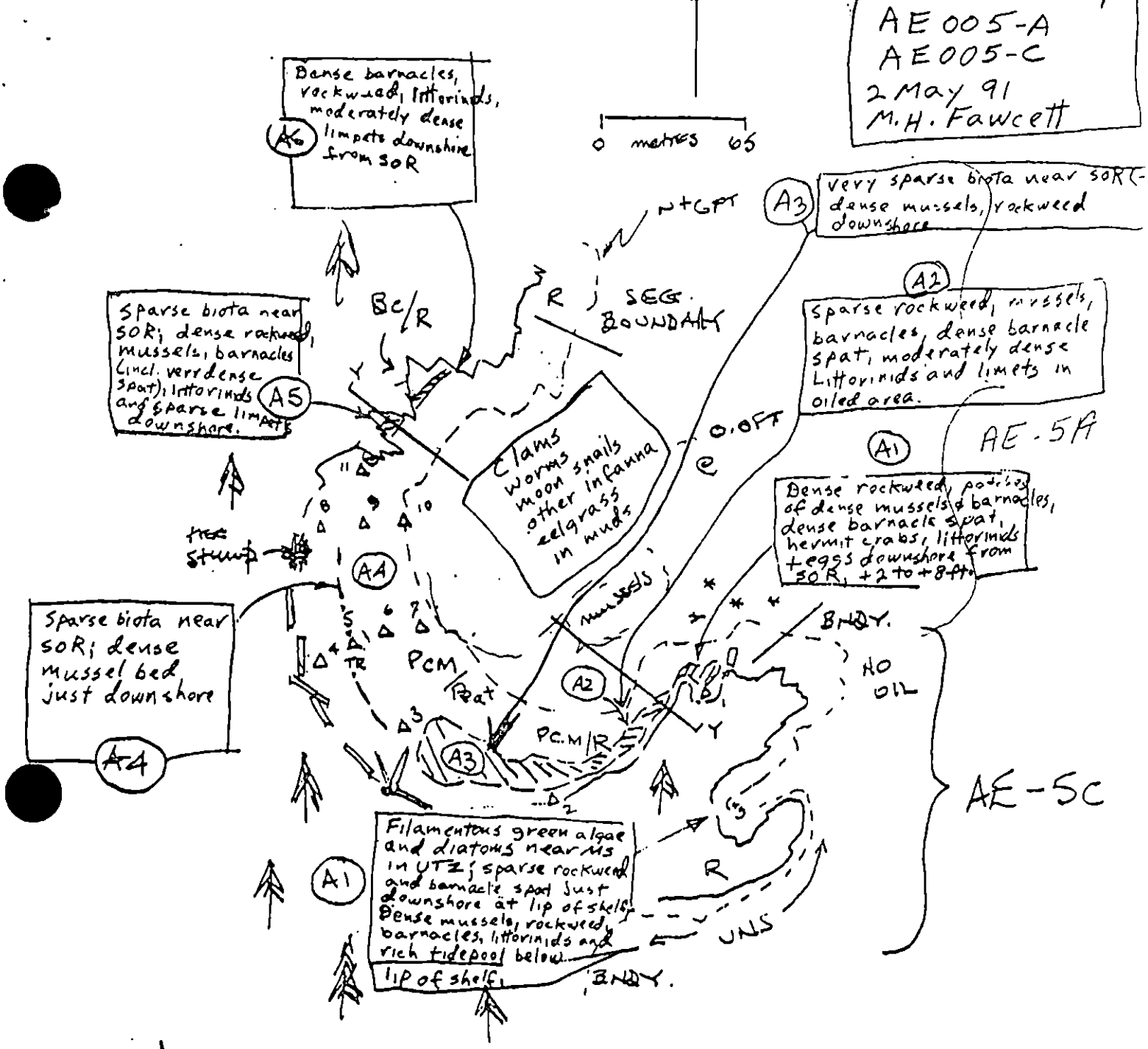
WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			pricklebacks
Seabirds			sculpins
Waterfowl			
Gulls/kittiwakes			
Shorebirds			
Corvids			
Other Birds			

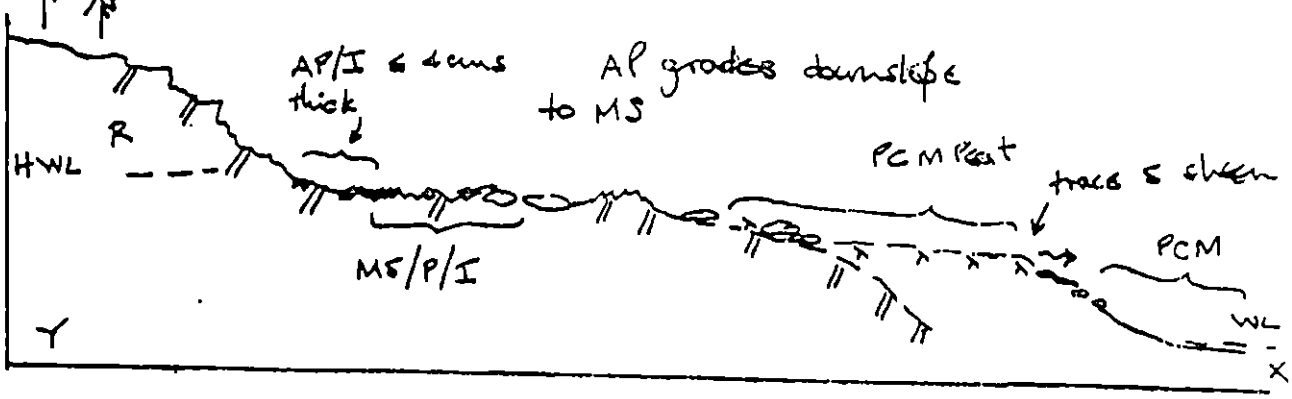
MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds(specify)			
Whales(specify)			

Shoreline subdivision map showing important biological features attached.

AE 005-A
AE 005-C
2 May 91
M.H. Fawcett



TYPICAL PROFILE @ AP & MS

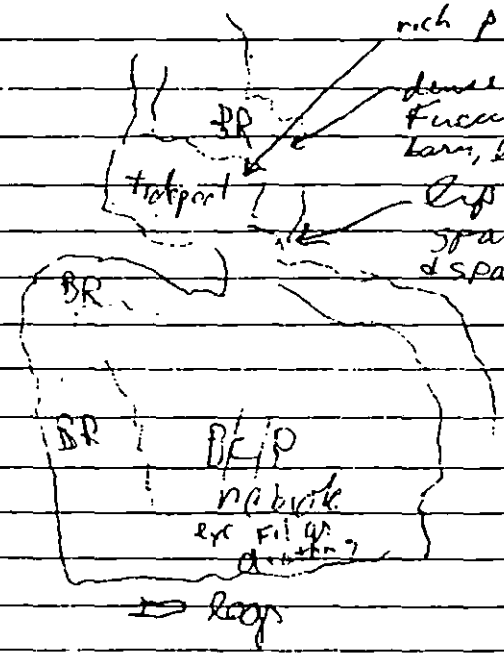


6

REVIEWED: MC 5/7/91

Rev'd 5/7/91 DM

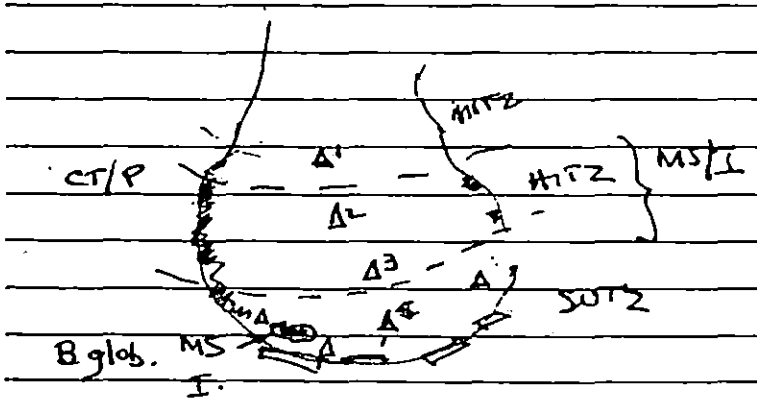
~~KN~~ AE 5-C Fawcett
2 May 91 arr 0845
seas 2 ft, swell 2 1/2 ft wind NE 20, rain
- Narrow crack opening to
UTZ shelf covered w/ shell
boulders/cobble/pebbles
The lip through which seawater
rises is ~ +11-12 ft - looks
like a tiny cir pool



5.2.91 AE SC 08:45

oiled site :

	d	oil %	lift	clean	Z	sh.
1	15	TR	7	Pe-R	Y	M S
2	10	MS/I	6	BP-K	Y	U BR < 5%
3	20	TR	15	Be-PG	Y	M S
4	15	TR	10	PG-G	Y	S tr.S.



splintery shale crevices and P trap MS/I + FL ≤ 4 cm deep

Q8 ≤ 15% total surface oil cover.

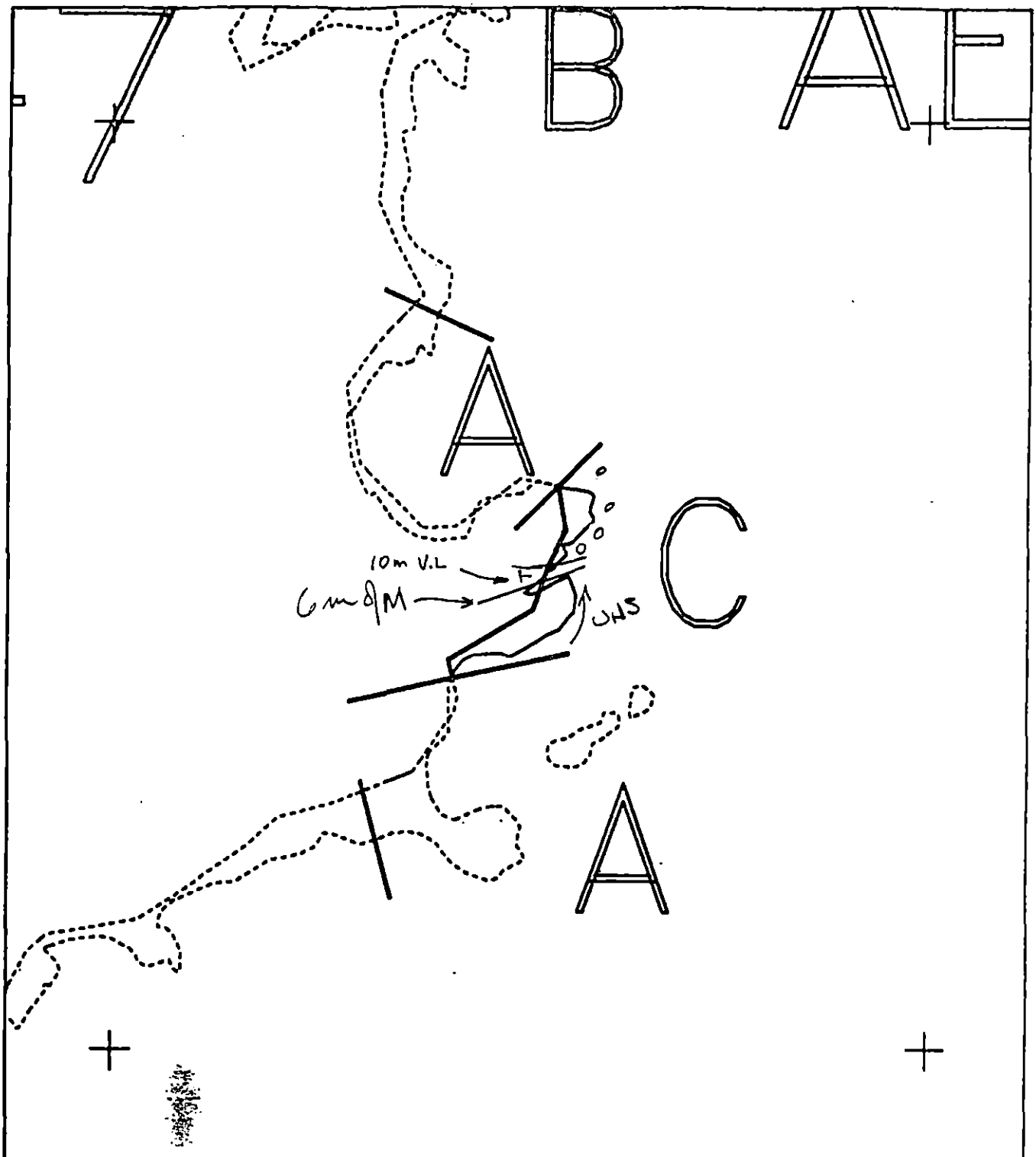
Effective treatment since 3/90.

Area ~ 6 x 6 m.

EOS 09.15

SB

13.10



XXXX	Wide	AE005 C	Subdivision Field Map
////	Medium	ADEC Subsegment Length: 170m	Map Key: PWSAE005C
----	Narrow	METERS	Name: GM
TTTT	Very Light	0 100 200	Date: 5.7.91
0000	No Oil	AK State Plane Zone 4 pwe005c	Date Entered:

4

FW revised 5/6
ET revised 5/7
MC RAVIENKO 5/7/

1991 MAYSAP EVALUATION

SEGMENT: AE 005 SUB: B REGION: PWS SURVEY DATE: 5/2/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) RESTRICTED 3/1 - 9/1

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

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find, and **contact Exxon's Cultural Resource Program immediately: 564-3276; 564-3657; (Anchorage) or 229-1514 (24 hrs.).**

Rachel Joan Baker 5/14/91

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

COMMENTS:
INITIAL:

TAG: MANUAL PICKUP OF EASILY ACCESSIBLE AP + MS IN AREAS A1 - 5.

FOSC:

TAG APPROVAL DATE: MAY 14 1991

ADEC

EXXON

USCG LT

NOAA

FOSC APPROVAL DATE: 5/20/91

FOSC

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

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.

MAYSAR FIELD SHORELINE COMMENT SHEET

TEAM NO. 1 SEGMENT AE-5 SUBDIVISION B DATE 6/3/91

ADEC
NAME JEFF GINALIAS SIGNATURE [signature]

☐ NTR ☒ TREATMENT RECOMMENDED

AT OG MAP SITES A1 & A3, READILY OBSERVABLE LOCALIZED AREAS OF MOUSSE / SOFT ASPHALT ALONG UITZ, IN A BAND 5-7m x 10-20m. SMALL CREW (2-4 COULD MANUALLY REMOVE IN 1/2 DAY. OILING CONDITIONS NOT AS HEAVY AS AE-5 A. AREA APPEARS TO INCUR HIGHER LEVEL OF HUMAN ACTIVITY THAN MOST OTHERS

EXXON
NAME Frank A. Cox SIGNATURE [signature]

☑ NTR Splashy coat observed intermittently in segment. The subsurface oil was not observed. A few places of SOR in the form of asphalt patches. Healthy resurgence of Biota and eagles observed on the North east side of segment.

LANDMANAGER
NAME MARSHA HALL OF DNR SIGNATURE Marsha Hall

☐ NTR ☑ TREATMENT A1: MANUALLY remove oiled sediments Along bedrock. (2 people) A3: MANUALLY remove and/or spot wash, or Agitate on incoming tide. A4: On south east side of estuary, there is patchy surface oil (A7) which needs to be removed. Two people would do. We sat there, out of the weather for lunch. High human use. A2: manual removal, reassess for WASH.

USCG/NOAA
NAME Jensen / Childs SIGNATURE [signature]

☒ NTR Rugged rocky shore line. Surface O.I only as MS Further removal operations would cause more environmental harm than oil to be removed.

No Subsurface oil observed - Surface oil as CT on Rock Faces - MS at High Tide Line in ALL SECTIONS.

MAYSAP SHORELINE OILING SUMMARY

PAGE 1 OF 1

TEAM NO. 1

OG G. MACDONALD BIO M. FANCEST

ADEC J. GINALIAS LANDMANAGER M. HALL for DNR

EXXON F. BOX USCG/NOAA JENSEN / CHILDS

SEGMENT AE-5

SUBDIVISION B

DATE 5 / 2 / 91

TIME 11 : 00 to 13 : 10 TIDE LEVEL -0.2 ft. to +3.9 ft. ENERGY LEVEL: ☐ H ☒ M ☐ L

SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO WEATHER: ☐ SUN ☐ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

TOTAL LENGTH SHORELINE SURVEYED: 1079 m NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE

EST. OIL CATEGORY LENGTH: W — m M 30 m N 270 m VL 220 m NO 559 m US 80 m

LOC	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO		V H M L	WIDTH m	LENGTH m	S	UI	MI	LI	
A1		S				T					R	H	2	0.25		X			
A2	P					S					R	M	7	20		X			
A3		P				T					R CP		3	5		X			
A4		S				S		T			CP V	L	<3	40		X			peat.
A5		S				S					RCB	L	2	70		X			
A6						T					R	H	<1	100		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- 1 - 15 FRAMES 12-1

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	50							X	-		45	-		X			PG-PGV	peat
2	35							X	-		25	-			X		P-PG	
3	40							X	-		-			X			P-GP	
4	20							X	-		-				X		CP-GPR	
5	25							X	-		22	N				X	CPB-GC	
6	15							X	-		-		X				P-R	

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

OG COMMENTS: Rugged rocky shore w/ small CB pockets and a cove. Surface oil only, as MS & CT @ HITZ. MS as splash & patches on splintery bedrock; CT as splashes on rock walls and on grass & CP @ head of cove.

REVISED: F.W. 5/6/91
R. RUNRUNS, MC 5/7/91

TEAM NO. 1

MATSAP SHORELINE OILING SUMMARY (CONT.)

PAGE ___ OF ___

SEGMENT AE-5 SUBDIVISION B DATE 5/2/91

OG COMMENTS:

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE	CLEAN BELOW	H2O LEVEL	SHEEN COLOR	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO	cm-cm	Y/N	(cm)	B R S N	S	UI	MI	LI		
									-									
7	20							X	-		—		X				P-P	berm
									-									
8	30							X	-		—			X			P-P	
9	25							X	-		—				X		PC-GP	
10	20							X	-		5	✓				X	CP-SP	
									-									
11	10							X	-		—				X		CP-PG	
									-									
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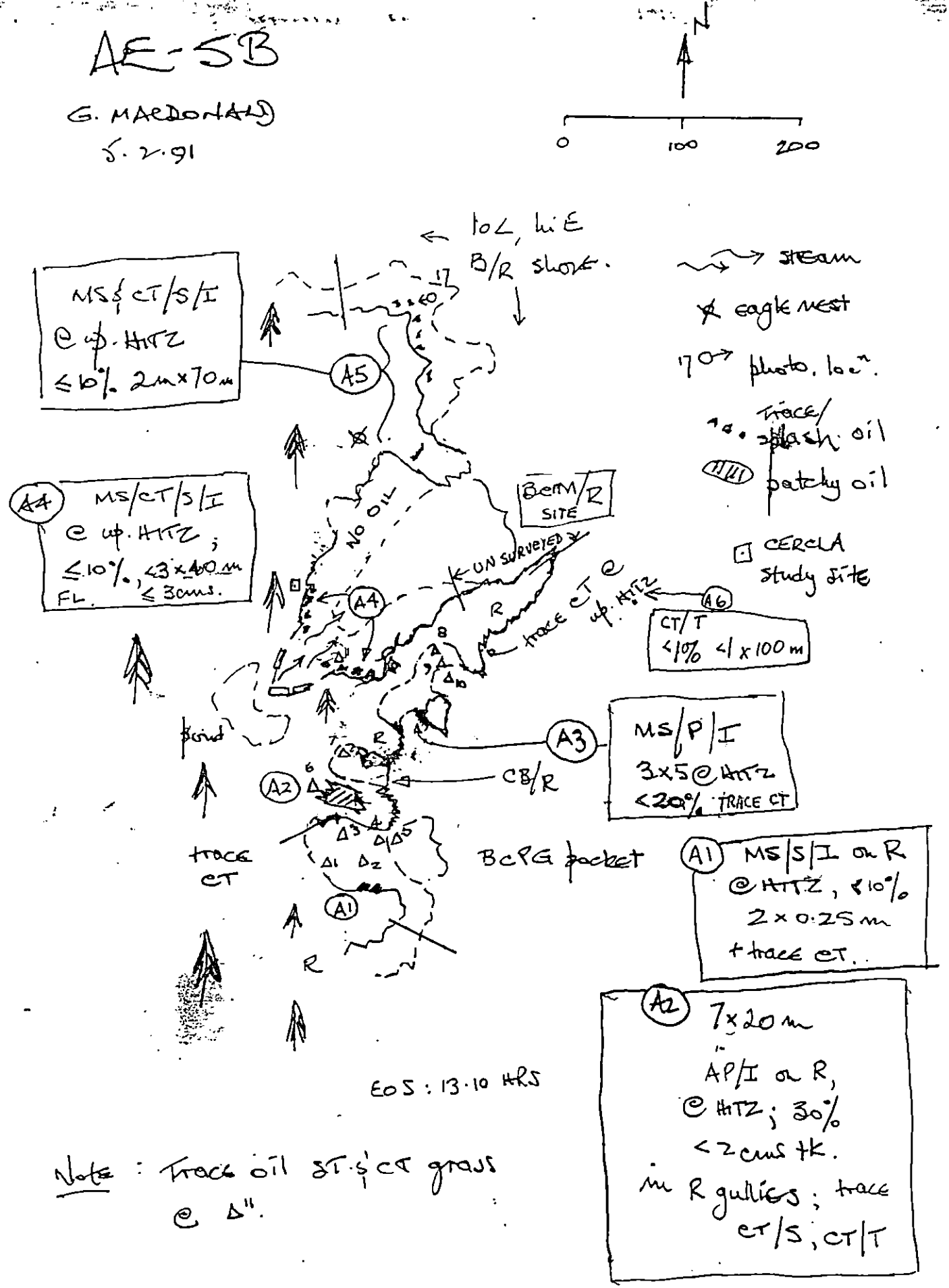
SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

REVIEWED: F.W. 5/6/91

RE-REVIEWED: MC 5/7/91

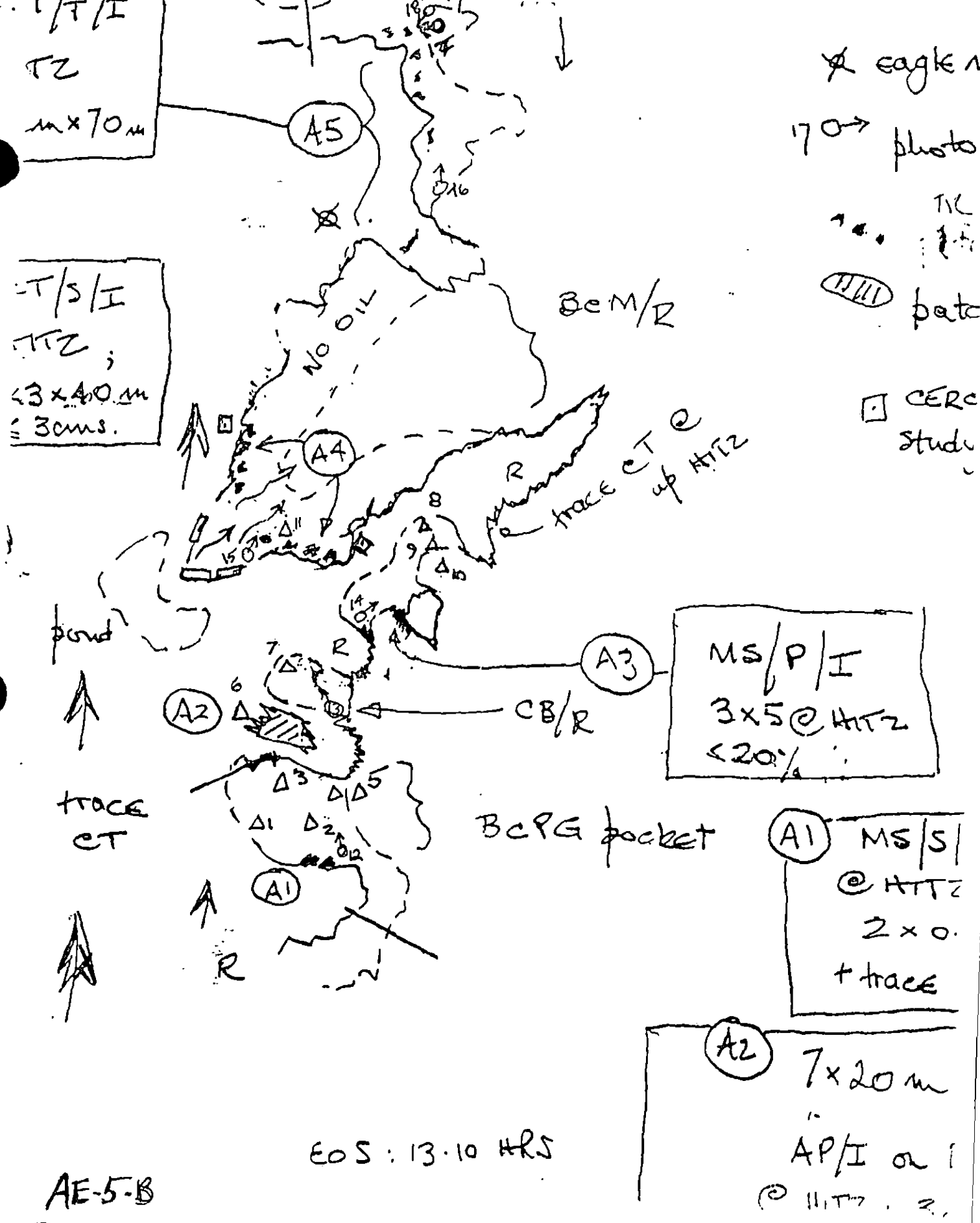
AE-5B

G. MACDONALD
5.2.91



Note: Trace oil ST.& CT grass @ Δ".

REVIEWED: MC 5/7/91
REVISED: F.W. 5/6/91



EOS : 13·10 HRS

AE-5-B

PHOTO LOCATION MAP :

REVIEWED: F.W. 5/6/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1 | DATE 2 May 91

SEGMENT # AE005 | TIDAL HEIGHT (Range) -0.2 to +3.0

SUBDIVISION B | BIOLOGIST Michael Fawcett

SEA STATE 3 ft | WIND SPEED/DIRECTION NE 15-25 Knots

PHOTOGRAPHS: ROLL # | FRAME #

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

This subdivision consists of rugged bedrock gullies and channels lined with rockweed, barnacles and other organisms on LTZ-MTZ (and some UTZ) walls, with bedrock, shale shingle, or boulder substrates in pocket beaches and channel bottoms (with more mussels, rockweed, barnacles, littorinids, limpets, 6-armed starfish, etc). A pond drains via a small stream (small, but could support a few pink salmon) through a mudflat area at (A4) -- the stream channel and mudflats have infaunal clams, worms, echinoids, etc, and breeding littorinids, young and old rockweed, barnacles, and mussels, hermit crabs, isopods, and pricklebacks on and under boulders in stream channel and lying on mud. Very dense settlement of barnacle spat still underway near (A5), as the spat are still in cypris stage (movable larvae that have not yet cemented themselves to substrate). Five mature eagles circled us as crew ate lunch, but no eagle activity was observed near charted nest in 2½ hours of surveillance, so it is presumed to be inactive. Eagle activity seemed most intense about ½ km inland and southward from charted nest.

Descriptions of biota near each subdivision site are provided on accompanying sketch map

WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

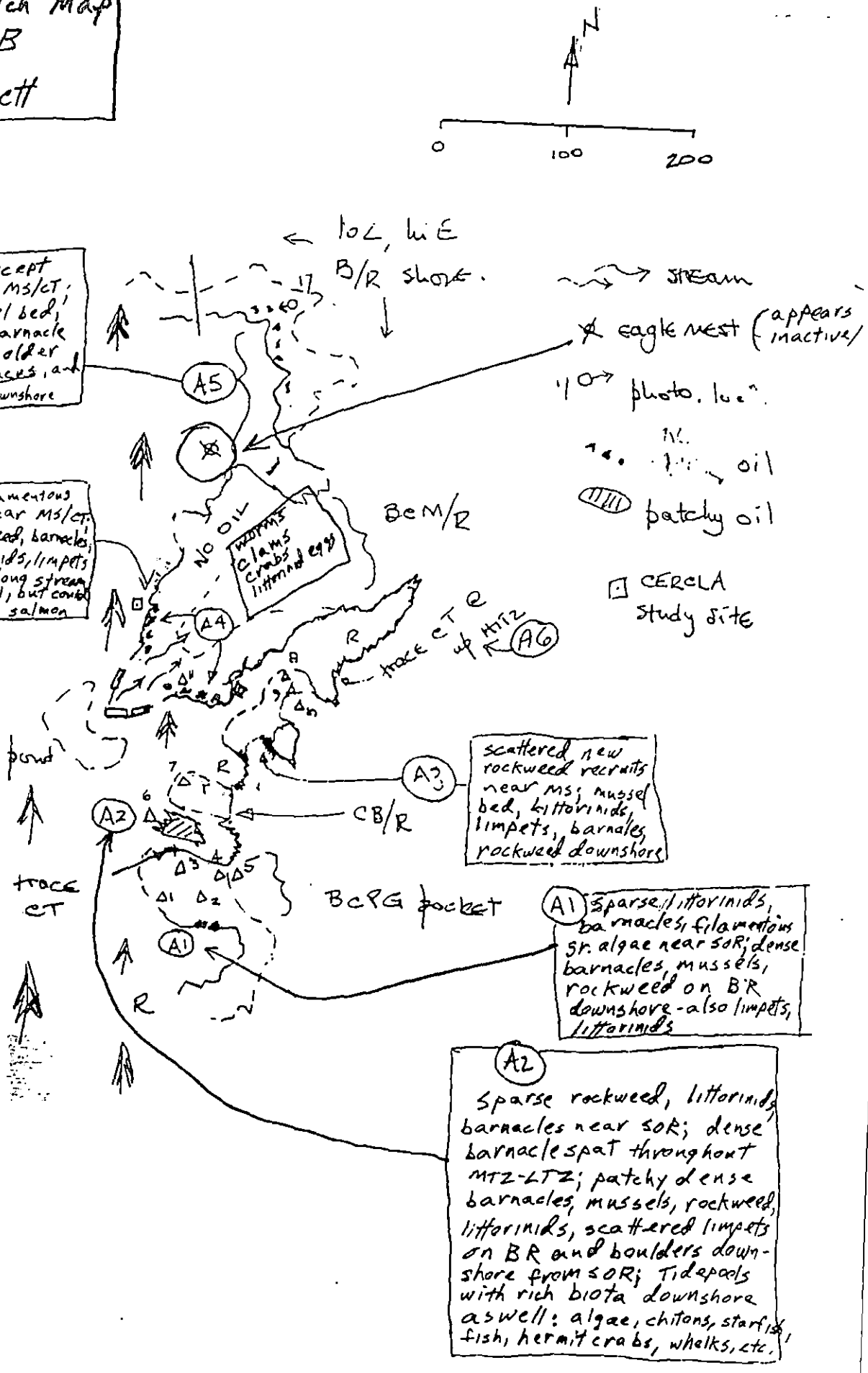
BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	5 (mature)	pricklebacks
Seabirds			
Waterfowl			
Gulls/kittiwakes			
Shorebirds			
Corvids	1	Steller's jays	
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

REVIEWED: MC 5/7/94

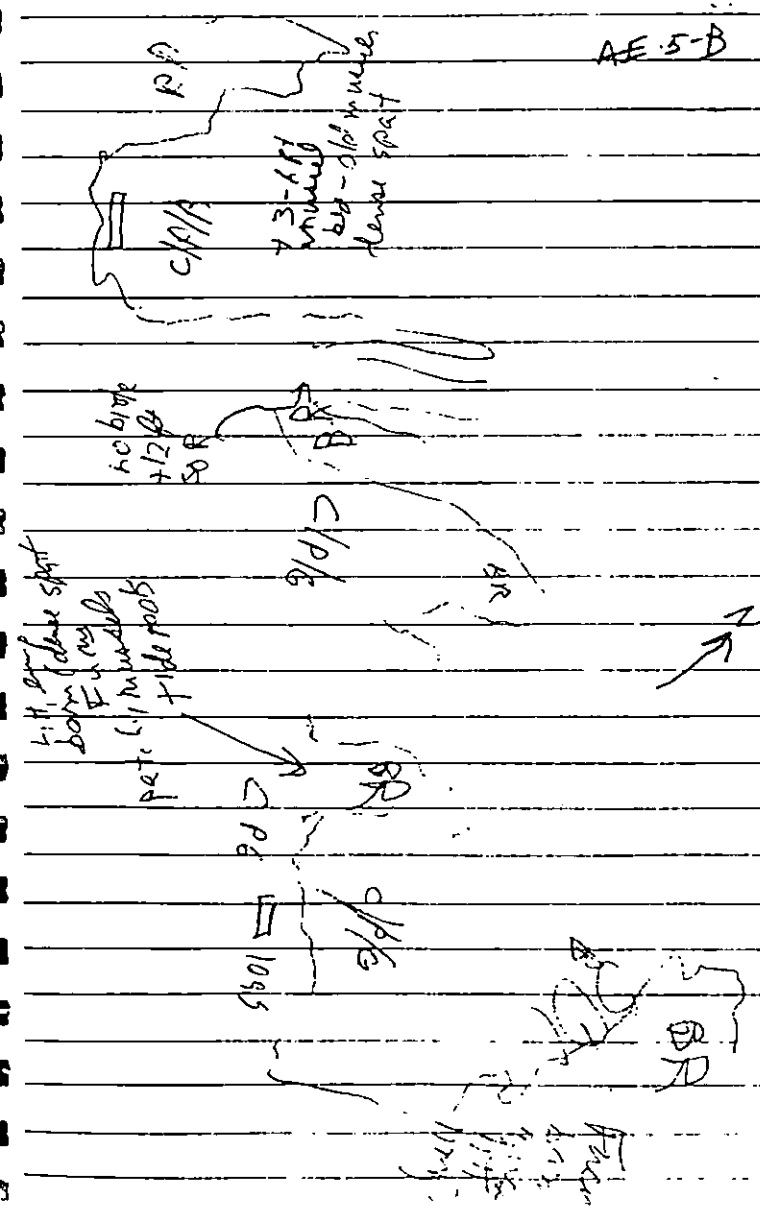
Bio Sketch Map
AE005B
2 May 91
M. Fawcett



REVIEWED: MC 5/7/91

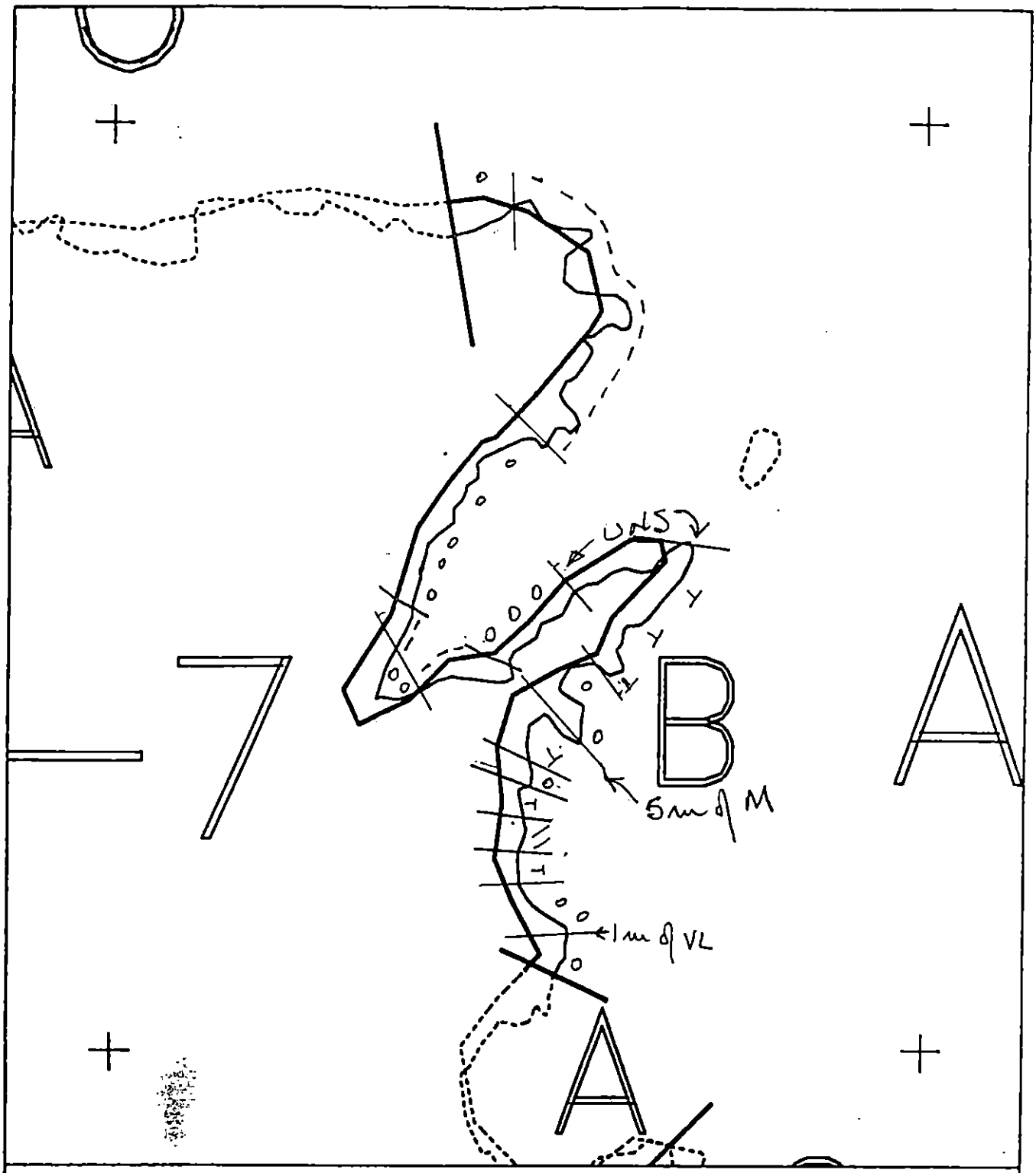
AE 5-B a/r 1045 Fawcett
2 May 91
high energy B/C/P
1 seal nearby
deep BR gullies, narrow creeks
& benches & surge channels,
then wide B/C/P/ beaches -
dense Fucus band (& spot) mussels,
etc. on all BR + 2 ft + 7 ft

Ernie Piper & others visited at
1100 hrs
2 eagles circling
- walked around point 5 of lagoon
pond, & creek at border of
segment 5 & 6 - can see eagle
nest cheated at point where
5 meets 6 - appears inactive,
pair of eagles flying around
mostly 300 m south & inland
1200 hrs - stopped for lunch
at lagoon/stream/pond
- 5 eagles circled around us
while eating lunch
- mussels dense among B/C all
around lagoon also Fucus,



AE5B (cont) 2May91 Fawcett

B Rd boulders near eagle nest
have very dense spat, most still
obviously cyprids - also patchy
dense older Balanus & Chtham.
& Littorines, & Fucus
- dense mussels in crevices
- cyprids not cemented to rock yet
- 2 Jays near nest
Tiny new Fucus + spat, Litt
?, mar trace SOR on exposed side
of pt. at new eagle nest
- largest patch of SOR (1m?)
10M North of - worms in only
N persona & Litt under boulders
nearby -
End segment 1310



XXXX	Wide	**AE005 B**	Subdivision Field Map
////	Medium	ADEC Subsegment Length: 1150m	Map Key: PWSAE005B
----	Narrow	METERS	Name: GM
TTTT	Very Light	0 100 200	Date: 5.7.91
0000	No Oil	AK State Plane Zone 4 pwae005b	Date Entered:

REVISED: F.W. 5/6/91
REVIEWED: MC 5/7/91

5

1991 MAYSAP EVALUATION

SEGMENT: AE005 **SUB:** A **REGION:** PWS **SURVEY DATE:** 4/2/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find, and **contact Exxon's Cultural Resource Program immediately: 564-3276; 564-3657; (Anchorage) or 229-1514 (24 hrs.).**
- Rachel Van Dam 5/14/91

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

COMMENTS:
INITIAL: Manual pickup easily accessible AP/MS at locations A1, A2, A3, follow with Customblen.

TAG: ADD LOCATION A4 TO THE ABOVE PRESCRIBED WORK

FOSC:

TAG APPROVAL DATE: MAY 14 1991 **FOSC APPROVAL DATE:** 5/20/91

ADEC

EXXON

USCG

NOAA

FOSC

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

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 1 SEGMENT AE-51 SUBDIVISION A DATE 05/02/91

ADEC
NAME JEFF GIVALIAS SIGNATURE [signature]

☐ NTR ☒ TREATMENT RECOMMENDED

DIFFICULT TREATMENT BEACH. MAJOR REMAINING OIL IS AT SITES A2 & A3 (SOUTH SIDE). SURFACE OIL/MOUSSE TRAPPED IN VERTICAL SLATE BEDROCK LAYER. THE OIL HAS TRAPPED SOME SEDIMENTS AND SOME IS RECOVERABLE MANUALLY. I WOULD WORK AREA MANUALLY WITH TROWELS (CREW OF 4-6) TO REMOVE OR LOOSEN ALL POSSIBLE MOUSSE. I WOULD THEN SPOTWASH WITH WARM H_2O (LANDA UNIT) ON INCOMING TIDE, WITH A DELUGE FLUSH, BOOMING OFF RUNOFF WITH SNARE AND SORBENT BOOM AND RECOVERING FREED OIL WITH POM POMS, OR SIMILAR. THE EFFECT OF WASHING WOULD FREE MORE OIL FROM SLATE, WHICH EVEN IF IT SETTLES BACK DOWN, WOULD WEATHER BETTER THAN PRESENT. BIOLOGIST RECOMMENDS AGAINST INTRUSION, HOWEVER PROCEDURE REFERENCED ABOVE UTILIZED LAST SEASON ON SITE, WITH SOME SUCCESS. IF ONLY MANUAL USED, AREA SHOULD BE WORKED REPEATEDLY. AS AREA IS VERY UNIQUE AND HIGH RECREATION VALUE. PRESENTLY IS VERY UNSIGHTLY. NOTE: IF SHEEN PRODUCED DURING TREATMENT, IT MUST BE CONTAINED, AS MANY SALMON FRY IN AREA LAST SEASON. A1 IS SIMILAR, ON SMALLER SCALE & SAME TREATMENT. NO TREATMENT RECT. OF SEDIMENT.

EXXON
NAME FRANK BOX SIGNATURE [signature]

☐ NTR There is still some asphalt patches in the south east corner of this segment in the foliated shale bedrock that can be picked out, other than that the small cobble area has cleaned up nicely.

LANDMANAGER
NAME MARSHA HALL OF DNR SIGNATURE Marsha Hall

☐ NTR ☑ TREATMENT

Oiling condition heaviest at AREAS A_1 & A_2 & A_3. NEEDS attention as this is highly visited beach. Much of it is manually recoverable. (40° and wet while on site.) Spot washing after manual removal. MS looks alot like AP, but softer. Due to the amount of sediments removed from A_4 AREA I am inclined to recommend leaving band there alone. Treat Areas A5 & A6 as the areas on the south portion segment.

USCG/NOAA
NAME Jensen / Childs SIGNATURE [signature]

☐ NTR Treat with manual pickup sites A_2, A_3, A_4 (see sketch).

SUBSURFACE OIL OBSERVED IS HIGH IN THE SECTION (0-10cm) AND IS A SILVER SHEEN - VERY LIGHT. SUBSURFACE OIL IS MS, TRAPPED IN FRACTURED VERTICAL SLATE BEDROCK OUTCROPS, WHICH APPEARS TO PRESENT POTENTIAL PROBLEMS IN CLEANUP.

MAYSAP SHORELINE OILING SUMMARY

TEAM NO. 1

SEGMENT AE-5

OG G. MACDONALD BIO M. FAWCETT

SUBDIVISION A

ADEC J. GINALIAS LANDMANAGER M. HALL for DNR

DATE 5 / 2 / 91

EXXON F. Box USCG/NOAA JENSEN / CHILD

TIME 09 : 20 to 10 : 45 TIDE LEVEL 0.0 ft. to 0.0 ft. ENERGY LEVEL: ☐ H ☒ M ☐ L

SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO WEATHER: ☐ SUN ☐ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

TOTAL LENGTH SHORELINE SURVEYED: 304 m NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE

EST. OIL CATEGORY LENGTH: W – m M ~~95~~ 125 m N 50 m VL ~~85~~ 55 m NO 74 m US – m

LOC	SURFACE OIL CHARACTER AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO	SURFACE SEDIMENT TYPE	SHORE SLOPE V H M L	AREA WIDTH m	AREA LENGTH m	ZONE S	UI	MI	LI	NOTES
A1		P				T		T			CGR	L	4	30		X			
A2		P									CR		3	45		X			
A3	P										CPR		2	40		X			
		P						T			CPR		14	50		X	X		
A4		P									PG		2	80		X			
A5		S									BCP		4	10		X			
A6		S						T			BC		2	10		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- 1 - 14 / 1 - 15 FRAMES 0~11 / 1~11

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER OP	HOR	MOR	LOR	OF	TR	NO	OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE S	UI	MI	LI	SURFACE-SUBSURFACE SEDIMENTS	NOTES
1	15							X	-		12	N		X			CP-GP	
2	20							X	-		–		X				CPG-PGV	peat
3	10							X	-		–			X			CP-GC	
4	20							X	-		10	N	X	X			PG-PG	
5	25						X		0-7	Y	3	S		X			PG-GP	
6	25							X	-		3	N		X			PG-GP	
7	15							X	-		1	N			X		PG-GMV	peat
	CONTINUED ON p 2.								-									
									-									

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

OG COMMENTS: Deep pocket beach w/ sediments overlying peat on bedrock.
Surface oil as MS/I on splintery bedrock, notably @ south side of pocket. Rare silver sheen noted @ beach, where groundwater flushes out of beachface, probably over a peat layer.

REVISED ~~PREPARED~~ 5/7/91 MC

ES revised, May 6

MAYSAP SHORELINE OILING SUMMARY (cont.)

TEAM NO. 1

SEGMENT AE-5A SUBDIVISION 1 DATE 5/2/91

OG COMMENTS: G. Macdonald

Subsurface oil limited to traces of silver sheening oil, within 10 cm of the surface. – in effect, all oil here is surficial.

The bedrock is a steeply dipping "shale" which weathers rapidly to splinters. This crevice-ridden bedrock provided a micro-scale trap for the MS, which remains in residence in the top few centimeters.

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE	CLEAN BELOW	H2O LEVEL	SHEEN COLOR	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO	cm-cm	Y/N	(cm)	B R S N	S	UI	MI	LI		
									-									
8	20							X	-		5	N	X				GP-PG	
9	25							X	-		2	N		X			PG-GP	
10	20							X	-		1	N			X		C-MV	peat
11	10							X	-		–			X			BG-CPG	
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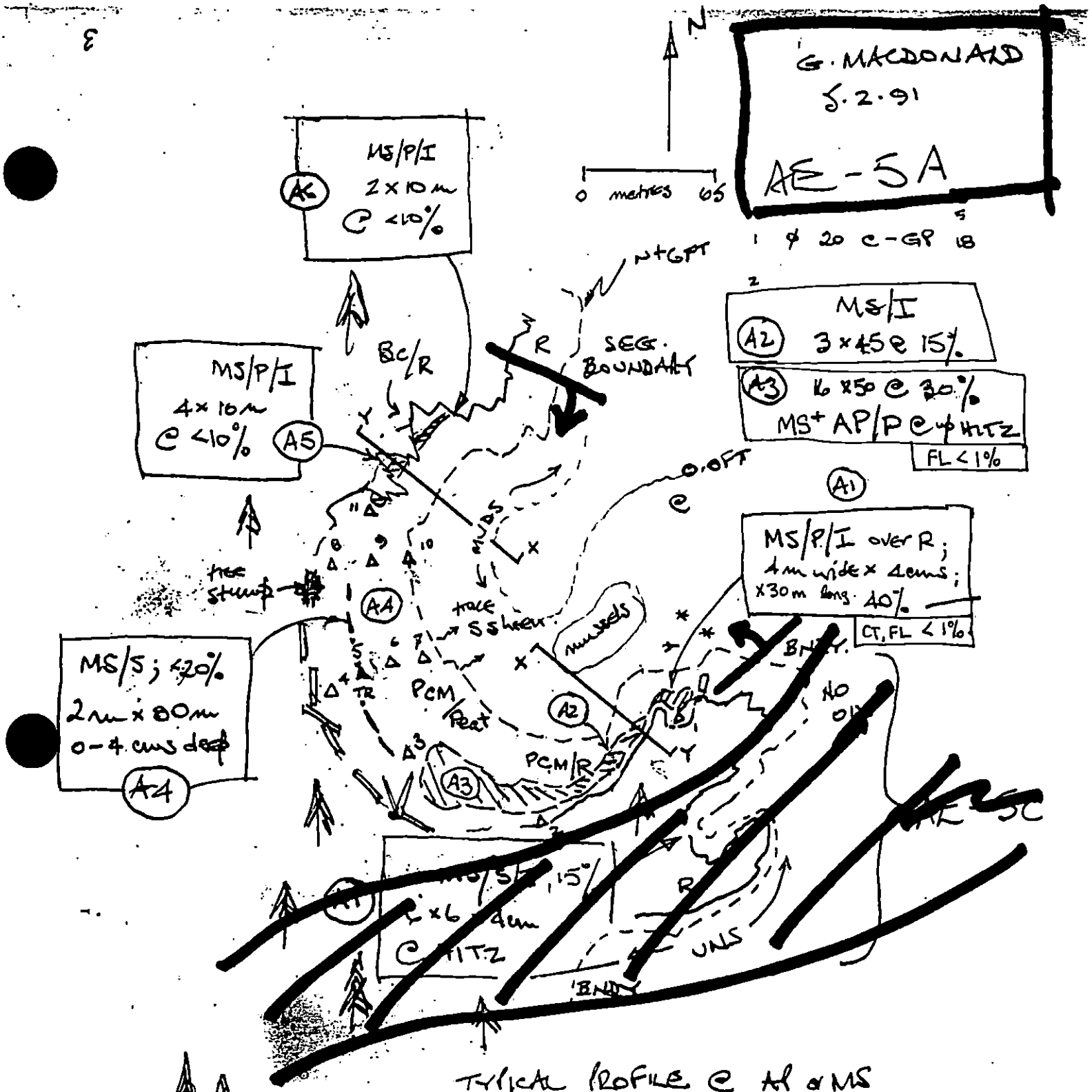
SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

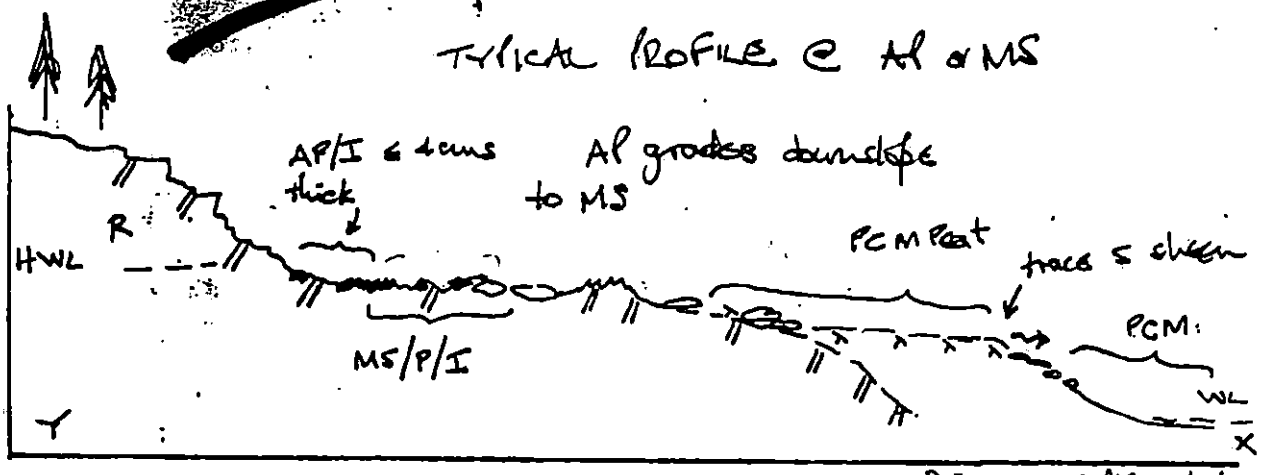
REVIEWED: 5/7/91 MC
EG reviewed, May 6

G. MACDONALD
5.2.91

AE-5A



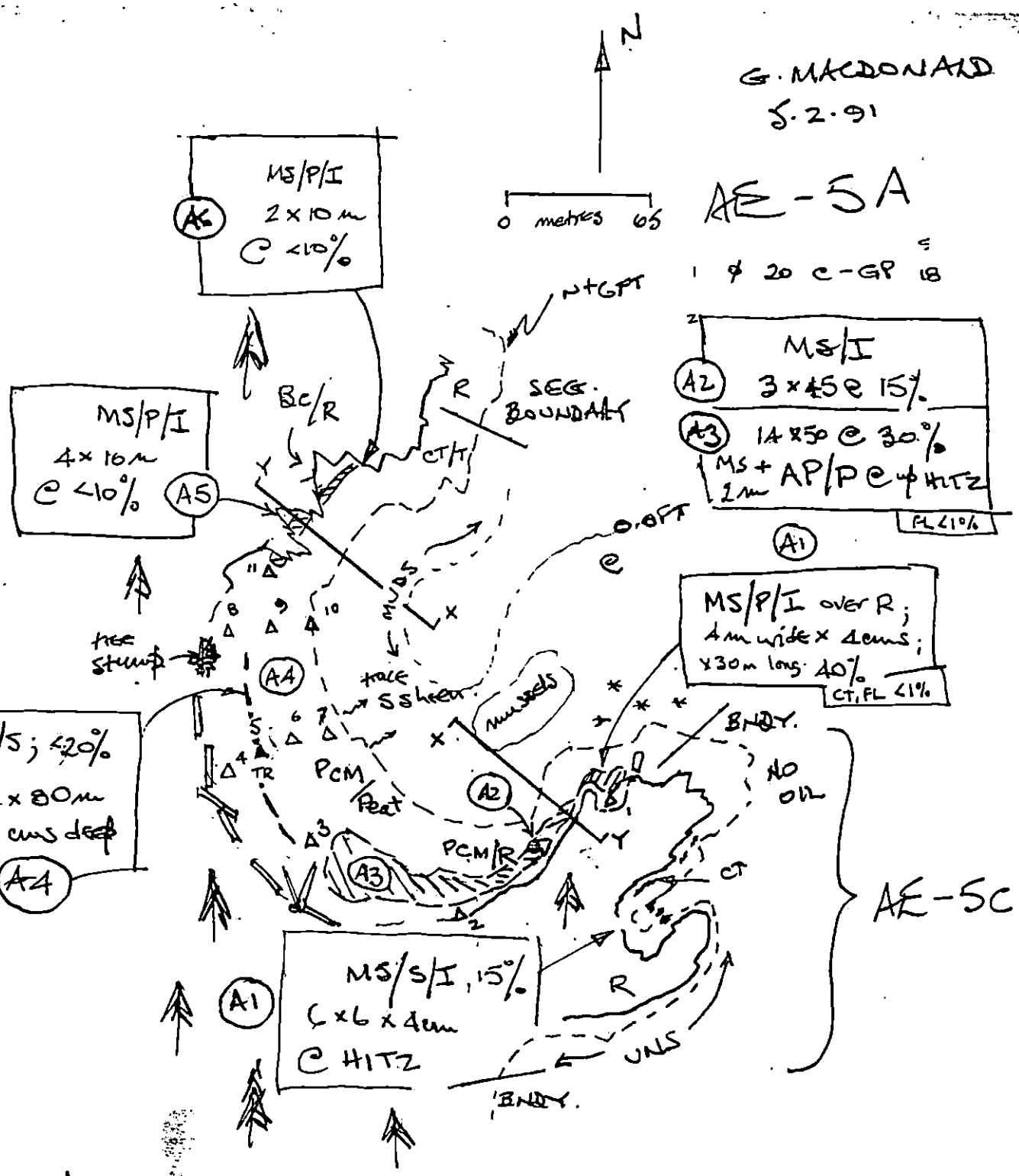
TYPICAL PROFILE @ A1 or MS



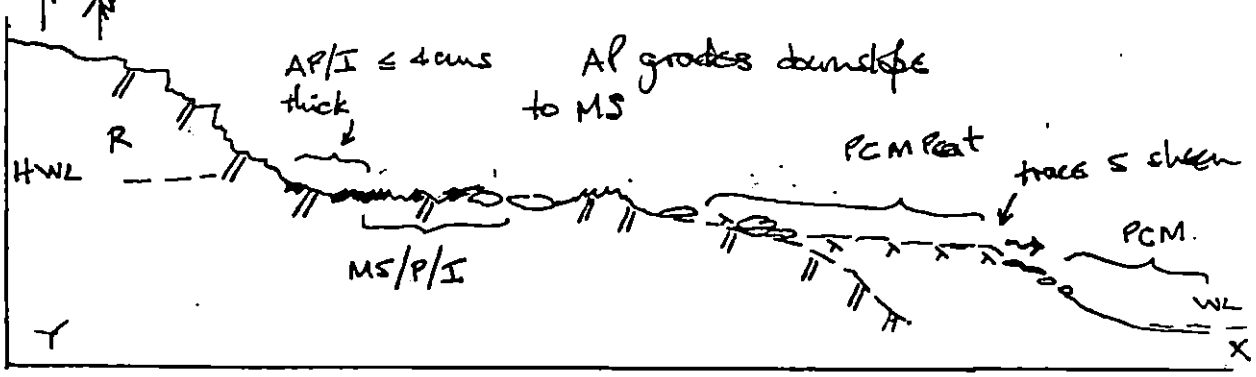
Reviewed: MC 5/7/91
Revised, May 6 86

G. MACDONALD
5.2.91

AE-5A



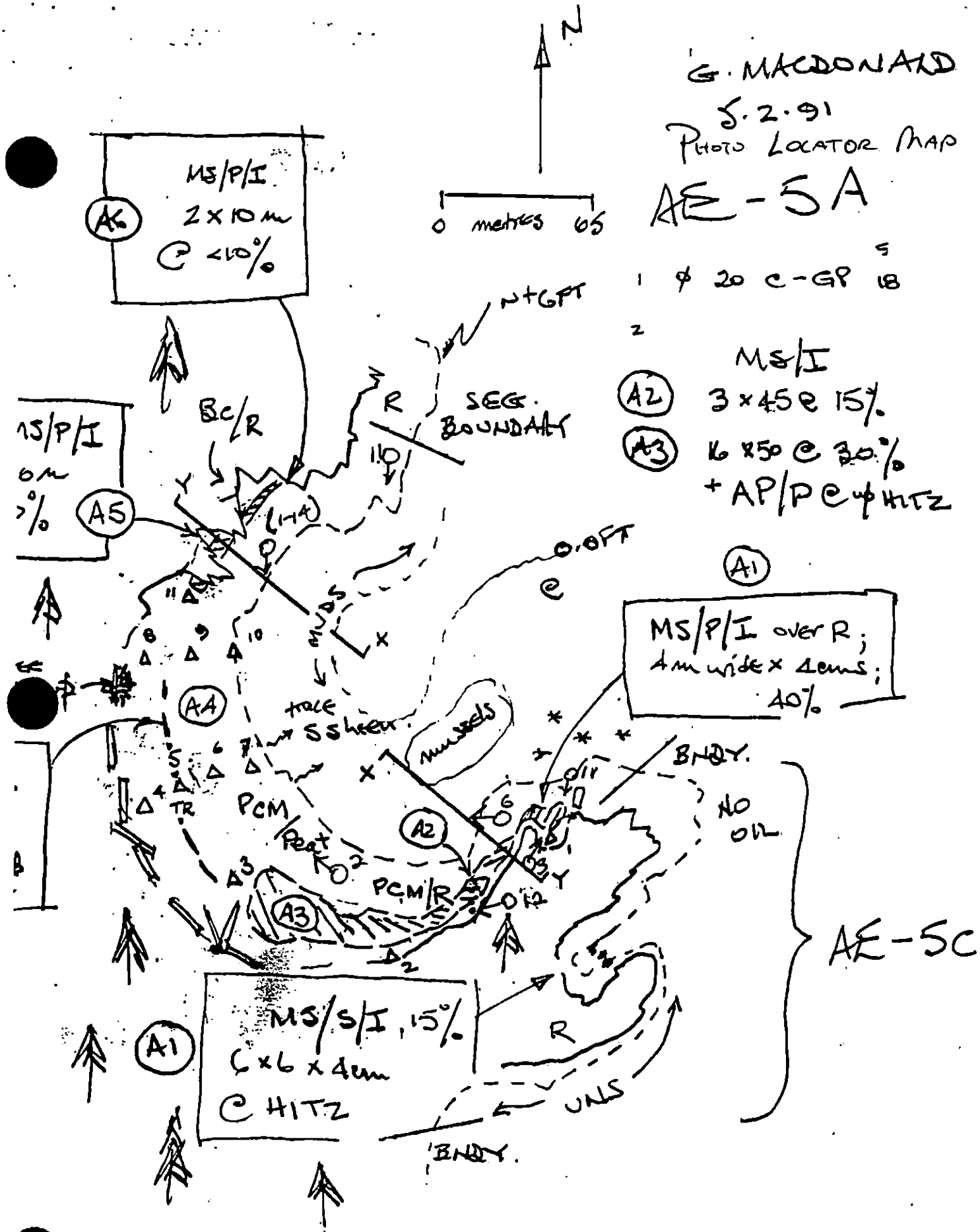
TYPICAL PROFILE @ A1 or MS



REVISED: MC 5/7/91
EG revised, May 4

G. MACDONALD
5.2.91
PHOTO LOCATOR MAP

AE-5A



TYPICAL PROFILE @ A1 & MS

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1 DATE 2 May 91

SEGMENT # AE005 TIDAL HEIGHT (Range) -0.5 to +1.0

SUBDIVISION A BIOLOGIST M. H. Fawcett

SEA STATE 2 ft seas WIND SPEED/DIRECTION NE 15-20 knots

PHOTOGRAPHS: ROLL # FRAME #

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

Site A1 is a small gully (10m from wall to wall) with SOR in splintered shale in UTZ-SUTZ zone from about +12 to +15ft MLLW. Little biota (filamentous algae, scattered littorinids and barnacles) exists in the SOR zone, but dense young rockweed, patches of dense mussels and barnacles, dense barnacle spat, dense hermit crabs, and breeding littorinids with egg masses occupy the boulder area downshore from the SOR; rockweed, barnacles, and mussels occupy bedrock walls.

Sites A2-A6 surround a central lagoon-mudflat area containing eelgrass and infaunal clams (at least 5 species), worms, moon snails (with egg collars), helmet crabs, and other soft-bottom animals. Numerous craters indicate sea otter clam-digging activity. This kind of habitat is relatively uncommon in PWS and is valuable as a foraging area for sea otters, shorebirds, and waterfowl. It is also sensitive to waste runoff and destruction of animal burrows or burial caused by mechanical disturbance and excessive sedimentation; the clams are only moderately abundant now, so it is not recommended that further disturbance be inflicted by any sort of intensive cleanup effort.

Descriptions of biota near the residual oil in sites A2-A6 are provided in the accompanying sketch

WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

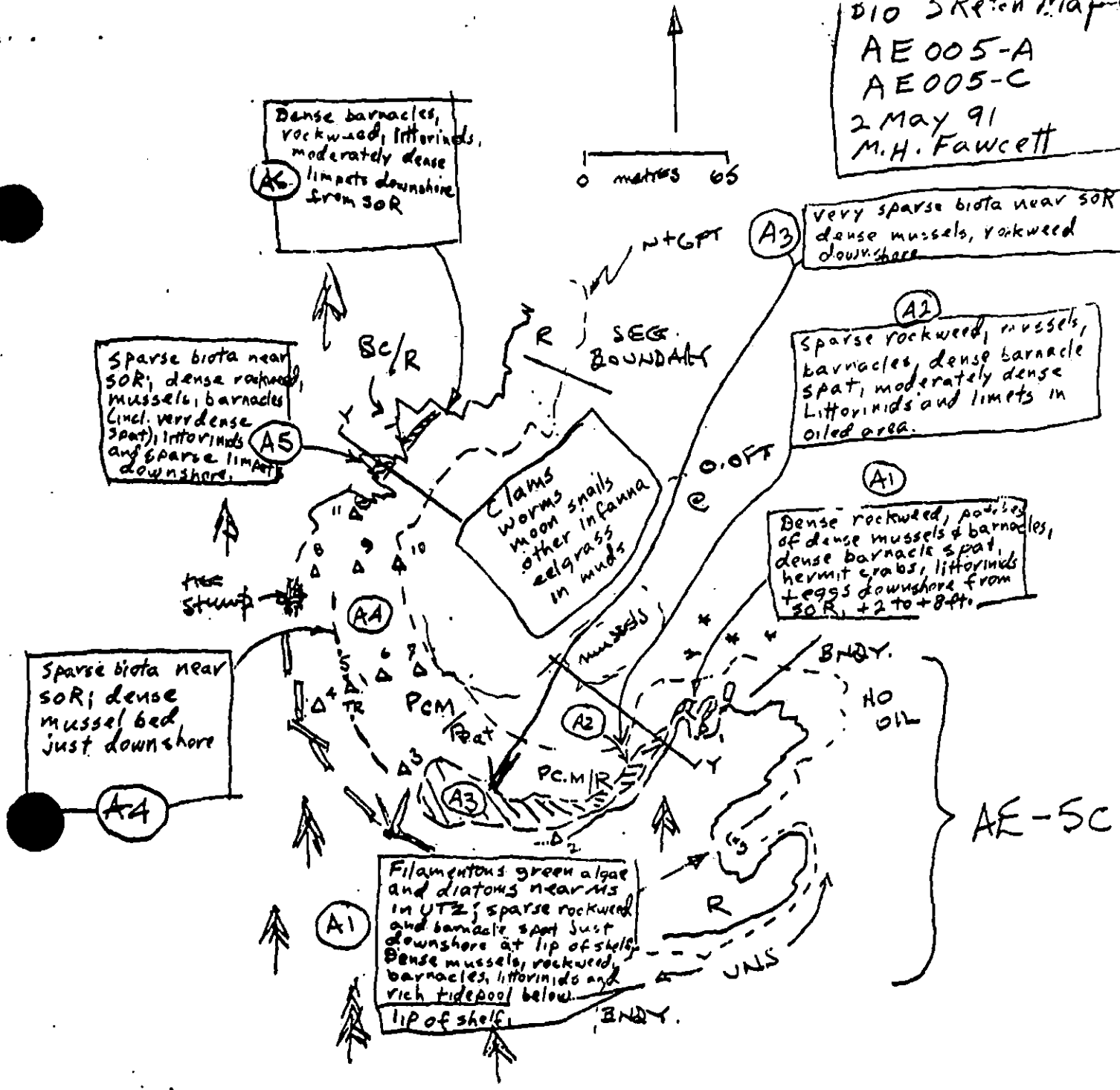
BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	pricklebacks
Seabirds			
Waterfowl			
Gulls/kittiwakes			
Shorebirds			
Corvids	1 Steller's jay	1	
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	none observed, but many craters in clambeds		
Pinnipeds (specify)			
Whales (specify)		deer tracks on beach	

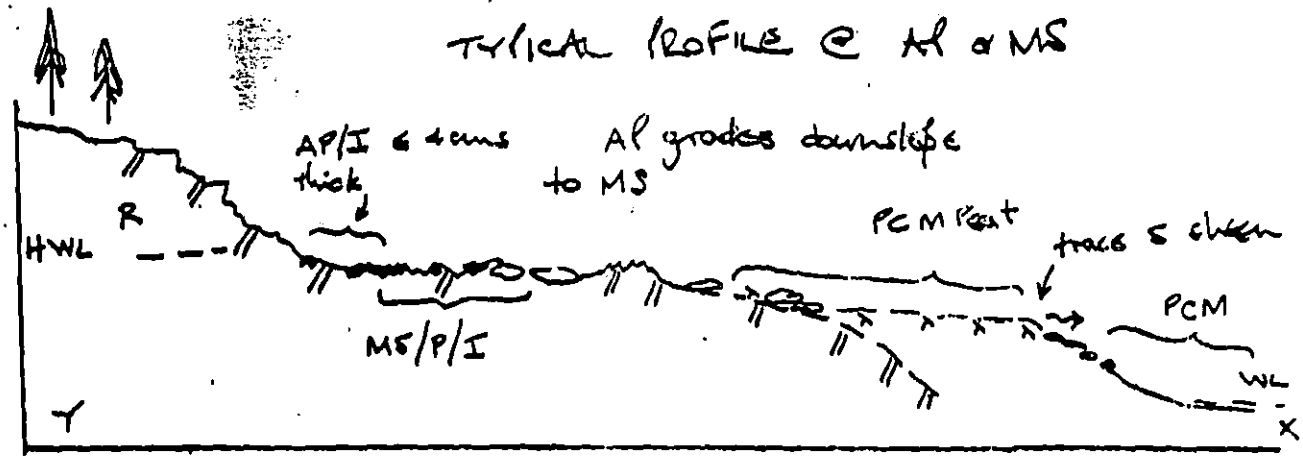
Shoreline subdivision map showing important biological features attached.

REVIEWED: MC 5/7/91

Dio SRich Map
AE005-A
AE005-C
2 May 91
M.H. Fawcett



TYPICAL PROFILE @ A1 & MS

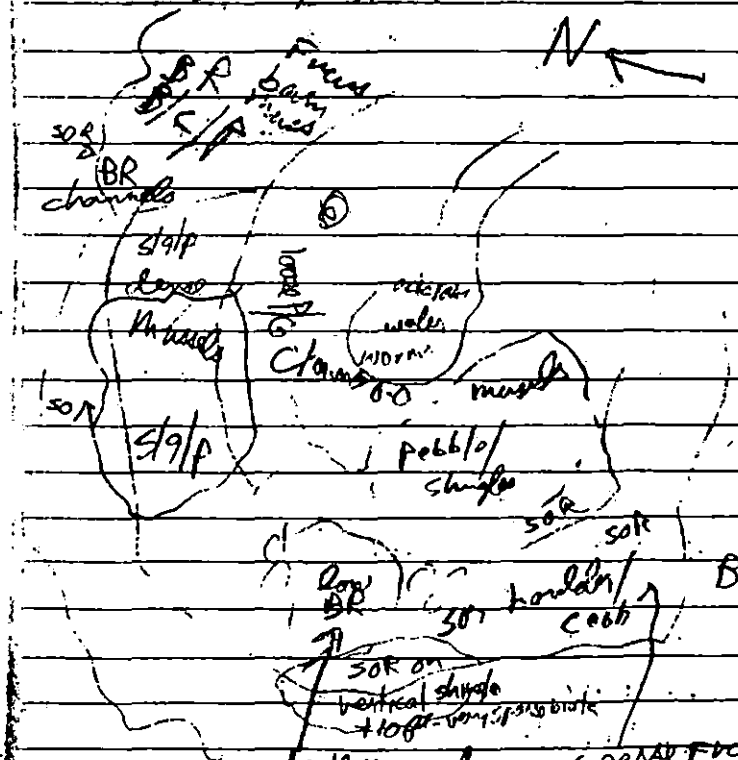


REVIEWED: MC 5/7/91

8

0940 AE 5A (cont) Fawcett
2 May 91

Site (2) (Mann Cove bight)
Shale BR overlain by shingles
boulders/cobble –

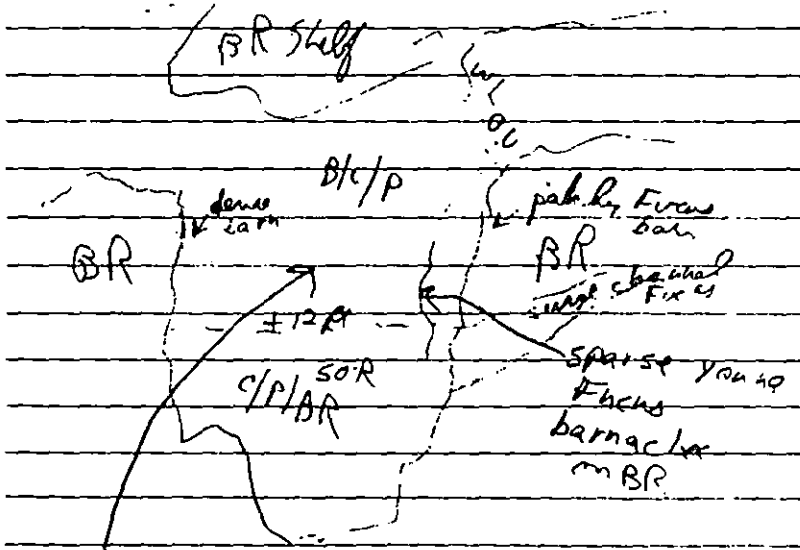


Site 2 (cont) central mud/sand flat lagoon with moderately dense clams (Protothaca, Mya, Clinocardium, Schizothera – also eelgrass, worms, scattered barnacles, mussels, moon snails – SOR +5-10 ft above water & clam area – more washing of heavy tilling etc would run off into lagoon

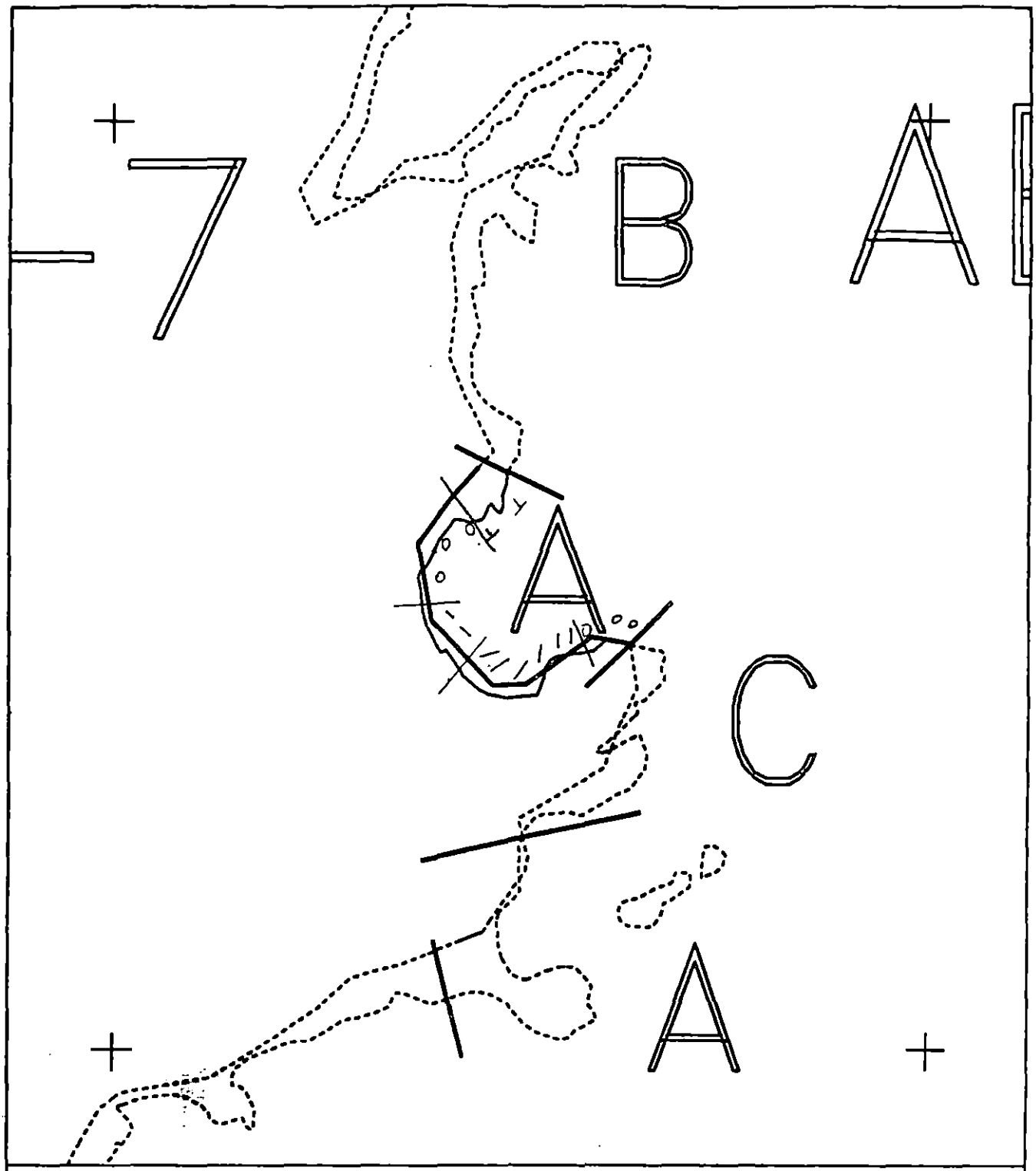
1 eagle
1 Stellar's jay
10/10 hrs
bussed oil mostly on south half of bay

lots of otter crabs in clam beds – Lacuna eggs on eelgrass
Moon snail egg collars
small patches of SOR among big bedrock gullies on north side of lagoon, above +8 ft – dense Fucus etc – 5-15 m Anemone – fish, littorinids, limp

0920 start AF 5A Fawcett
Site 1 2 May 91
small (10m wide) gully
50% in shade splashes UTZ-Saxa
same level as at 5C +12-15 ft



dense Fucus, patchy mussels, barn
dense spat all over in Boulders
+2-9 ft - dense hermit crabs
moderate littorines & eggs



XXXX	Wide	AE005 A	Subdivision Field Map
////	Medium	ADEC Subsegment Length: 304m	Map Key: PWSAE005A
----	Narrow	METERS	Name: G. M.
TTTT	Very Light	0 100 200	Date: 5.2.91
0000	No Oil	AK State Plane Zone 4	Date Entered:

pwsAE005a

EXXON

N

Revised ~~Reviewed~~: MC 5/7/91

ES reviewed, May 6

6

1991 MAYSAP EVALUATION

SEGMENT: AE 005 **SUB:** C **REGION:** PWS **SURVEY DATE:** 5/2/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) OPEN

Ecological/Constraints (see page two for details) NONE

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

SHPO Signature: Rachel Van Dam Date: 5/14/91

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 14 1991 FOSC APPROVAL DATE: 5/20/91

ADEC

EXXON

USCG

NOAA

FOSC

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

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 1 SEGMENT AE-5 SUBDIVISION C DATE 5/3/91

ADEC
NAME JEFF GINGRAS SIGNATURE [signature]

☒ NTR ACCESS PROBLEMS

AT UITB, ONE AREA OF HEAVY CONCENTRATION (6 x 6m) MOUSSE SPREAD AMONGST/WITHIN BEDROCK. RUGGED, JAGGED ROCK - MANUAL INEFFECTIVE IN REACHING CREVICES IN ROCK; INACCESSIBLE AND TOO SMALL A BEACH FOR MECHANICAL. RICH BIOTA AT LITE MAKES WASHING UNATTRACTIVE. BIOREMEDIATION WOULD PROVIDE LIMITED BENEFIT. AS BEACH PROBABLY NOT HIGH HUMAN USE AND OIL CONTAMINATION RELATIVELY ISOLATED, I RECOMMEND CUTTING LOSSES AND ALLOW NATURAL PROCESSES.

EXXON
NAME Earl A Box SIGNATURE [signature]

☑ NTR Small amounts of oil at the high entertidal zone. Not justifiable enough for extensive clean up activity

LANDMANAGER
NAME MARSHA HALL OF DNR SIGNATURE Marsha Hall

☐ NTR ☑ treatment

DUE to the FACT that this island is visited A great deal in summer, some MANUAL recovery should OCCUR. Two - Four people could remove the worst of it in A short time. It is surface oil in HITZ protected by rocks at lower tide level. If MANUAL recovery is not feasible, four people could rake/agitate zone on incoming tide & use pom poms.

USCG/NOAA
NAME Jensen SIGNATURE [signature]

☒ NTR cleanup measures would be excessively costly in view of their insignificant contribution to minimizing a threat to the public health or welfare, or the environment.

No SUBSURFACE OIL OBSERVED - SURFACE OIL AS MS IN THE REAR OF THE CHANNEL - P AS CI & S on the Rly vertical walls.

MAYSAP SHORELINE OILING SUMMARY

TEAM NO. 1

SEGMENT AE-5

OG G. MACDONALD BIO M. FAWCETT

SUBDIVISION C

ADEC J. GINANIAS LANDMANAGER M. HALL for DNR

DATE 5 / 2 / 91

EXXON F. BOX USCG/NOAA JENSEN / CHILDS

TIME 08 : 45 to 09 : 15 TIDE LEVEL +1½ ft. to 0.0 ft. ENERGY LEVEL: ☐ H ☐ M ☒ L

SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO WEATHER: ☐ SUN ☐ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

TOTAL LENGTH SHORELINE SURVEYED: 81 m NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE

EST. OIL CATEGORY LENGTH: W — m M 6 m N — m VL 10 m NO 65 m US 95 m

LOC	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO		V H M L	WIDTH m	LENGTH m	S	UI	MI	LI	
A1		P						T			RBP	M	6	6		X			
A2						S					R	M	<1	10	X	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- 1 - 15 FRAMES 4-5

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO				B R S N	S	UI	MI	LI		
1	15						X		5 - 9	Y	7	S			X		PC-R	
2	10							X	0 - 2	Y	6	B, R		X			BP-R	B globules
3	20						X		0 - 4	Y	15	S		X			BC-PG	
4	15					X	X		5 - 12	Y	10	S	X				PG-G	

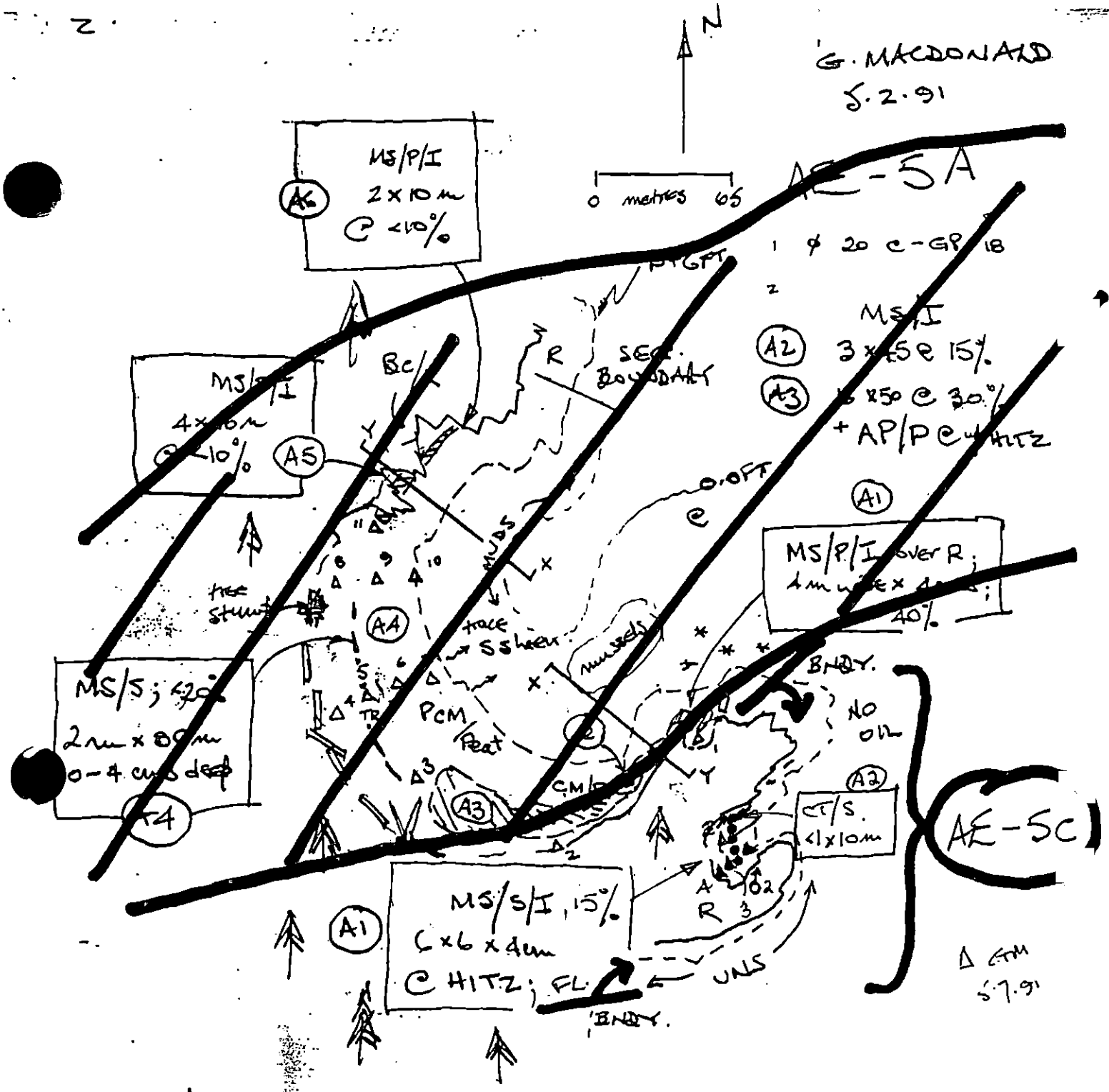
SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS: Rugged rock formation w/ deep channels in bedrock. Surface oil in channel trap es: MS/S/I & CT/S @ HTZ; 15%. (MS ~6 x 6m x 4mm.; CT <1 x 10m). Trace film on bom sediments. No Subsurface oil. Low E in channel; elsewhere, HI.

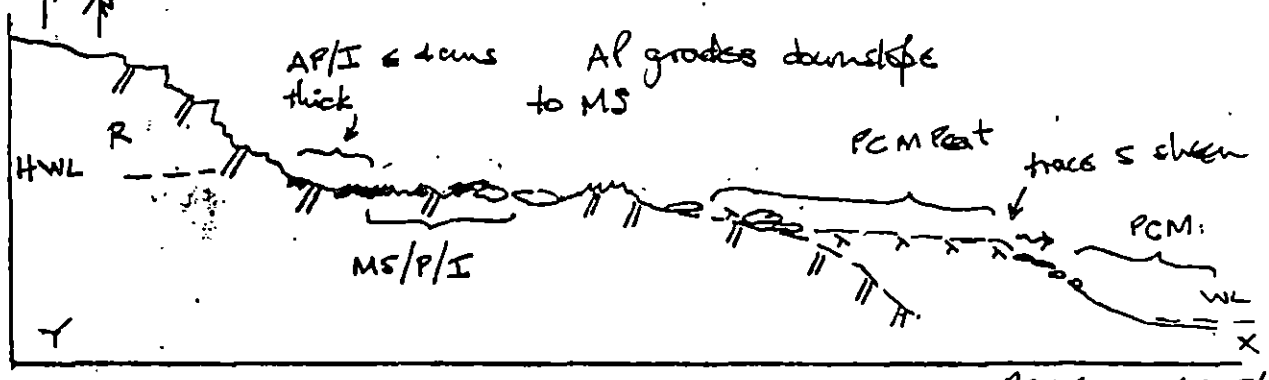
REVISED ~~REVISED~~: MC 5/7/91

FW/ES revised 5/6-7

G. MACDONALD
5.2.91



TYPICAL PROFILE @ A1 & MS



REVIEWED: MC 5/7/91
ET, FW, GM
revised 5/6-7

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1 DATE 2 May 91

SEGMENT # AE005 TIDAL HEIGHT (Range) +0.5 to +1.2 ft MLLW

SUBDIVISION C BIOLOGIST Michael Fawcett

SEA STATE 2 ft seas WIND SPEED/DIRECTION NE 15-20 knots, rain

PHOTOGRAPHS: ROLL # FRAME #

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

The area with residual oil in this subdivision is a high intertidal shelf covered with boulders, cobble, and pebbles, opening to the sea through a narrow crack that spills over the lip of the shelf at about +11 to 12 ft MLLW. The oil residue is mostly on the landward side of the shelf among filamentous green algae and diatoms. Sparse young rockweed and barnacle spat occupy the lip of the shelf just downshore from the oil residue. Below the lip is a vertical drop to a lower shelf with a large tidepool and steep bedrock walls. The tidepool has a well-developed community including coralline, leafy, and filamentous red algae, rockweed, and surfgrass, and barnacles, Littorinids, limpets, whelks, hermit crabs, fishes, anemones, starfish, chitons and other organisms. The rock walls have dense mussels, barnacles, Littorinids, rockweed, and rhodomela. Any cleanup involving runoff of wastes or heavy foot traffic could have negative impacts on the intertidal community below the UTZ shelf.

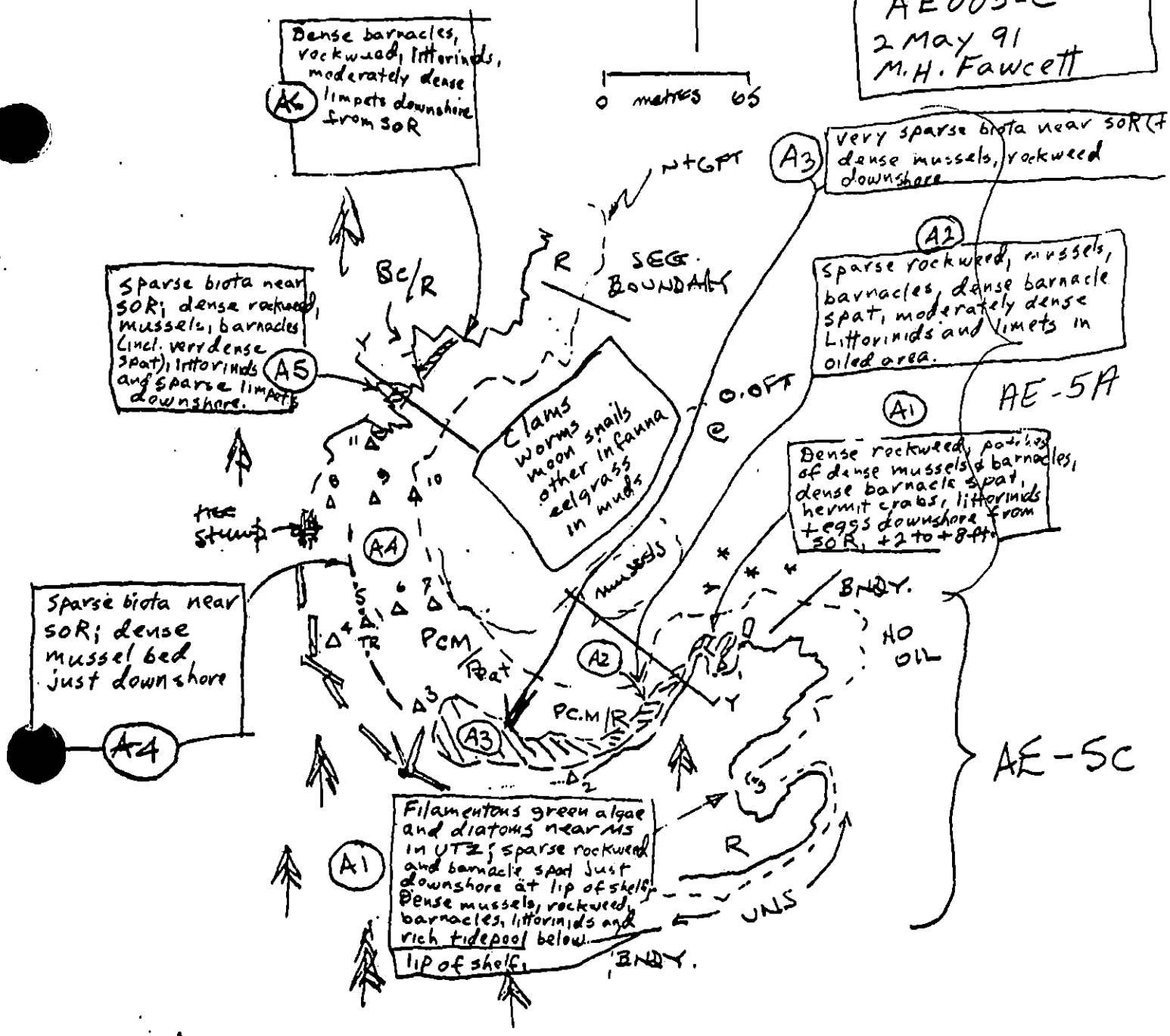
WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			pricklebacks
Seabirds			sculpins
Waterfowl			
Gulls/Kittiwakes			
Shorebirds			
Corvids			
Other Birds			

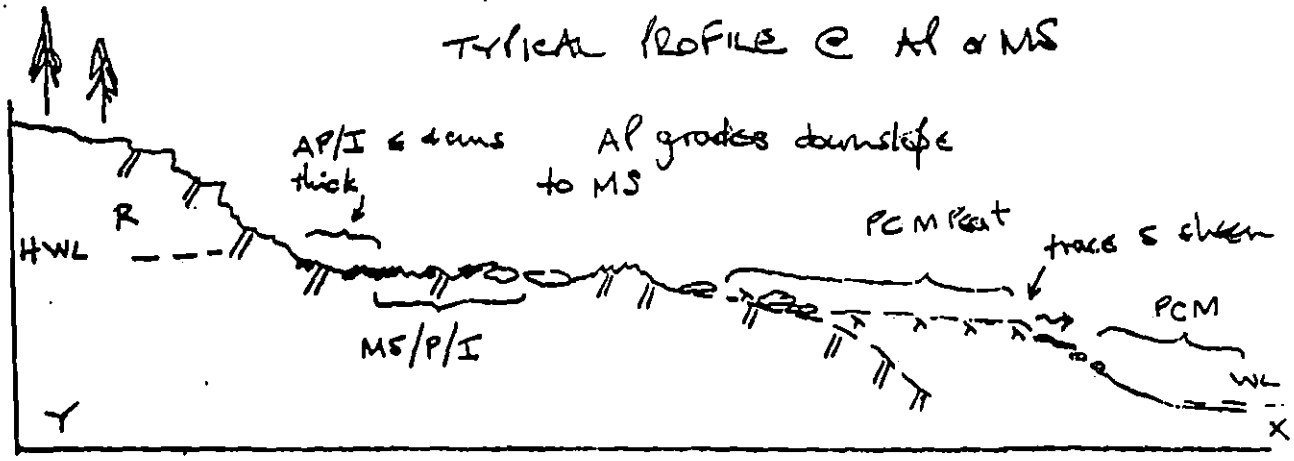
MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

Bio Sketch Map
AE005-A
AE005-C
2 May 91
M.H. Fawcett



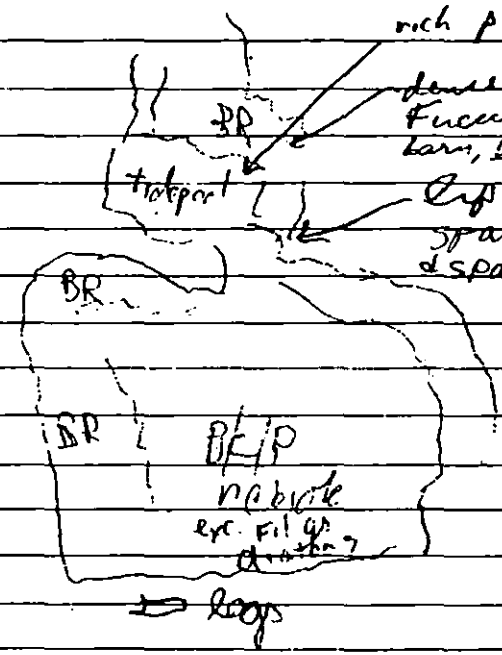
TYPICAL PROFILE @ A1 & MS



6

REVIEWED: MC 5/7/96

AE 5-C Fawcett
2 May 91 arr 0845
seas 2 ft, swell 2½ ft wind NE 20, rain
- Narrow crack opening to UTZ shelf covered w/ shale boulders/cobble/pebbles
The lip through which seawater oozes is ~ +11-12 ft - looks like a tiny cir gut



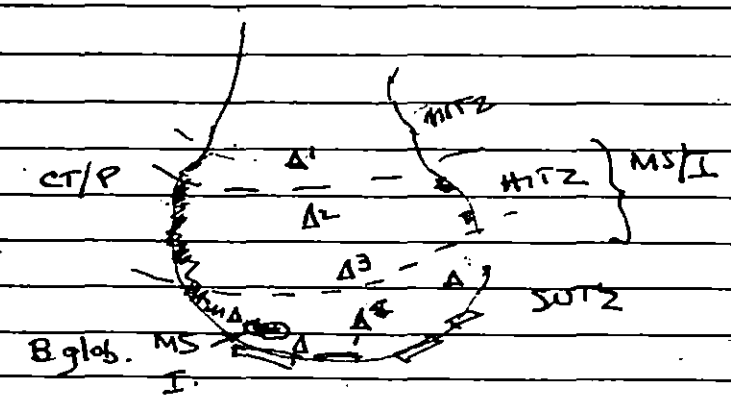
depart 0915

1 eagle nest charted at boundary of SAE NE T10

5.2.91 AE SC 08.45

oiled site :

	d	oil %	litt	clean	Z	sh
1	15	TR	7	Pe-R	Y	M S
2	10	MS/I	6	BP-R	Y	U BR < 5%
3	20	TR	15	Be-PG	Y	M S
4	15	TR	10	PG-G	Y	S H.S.

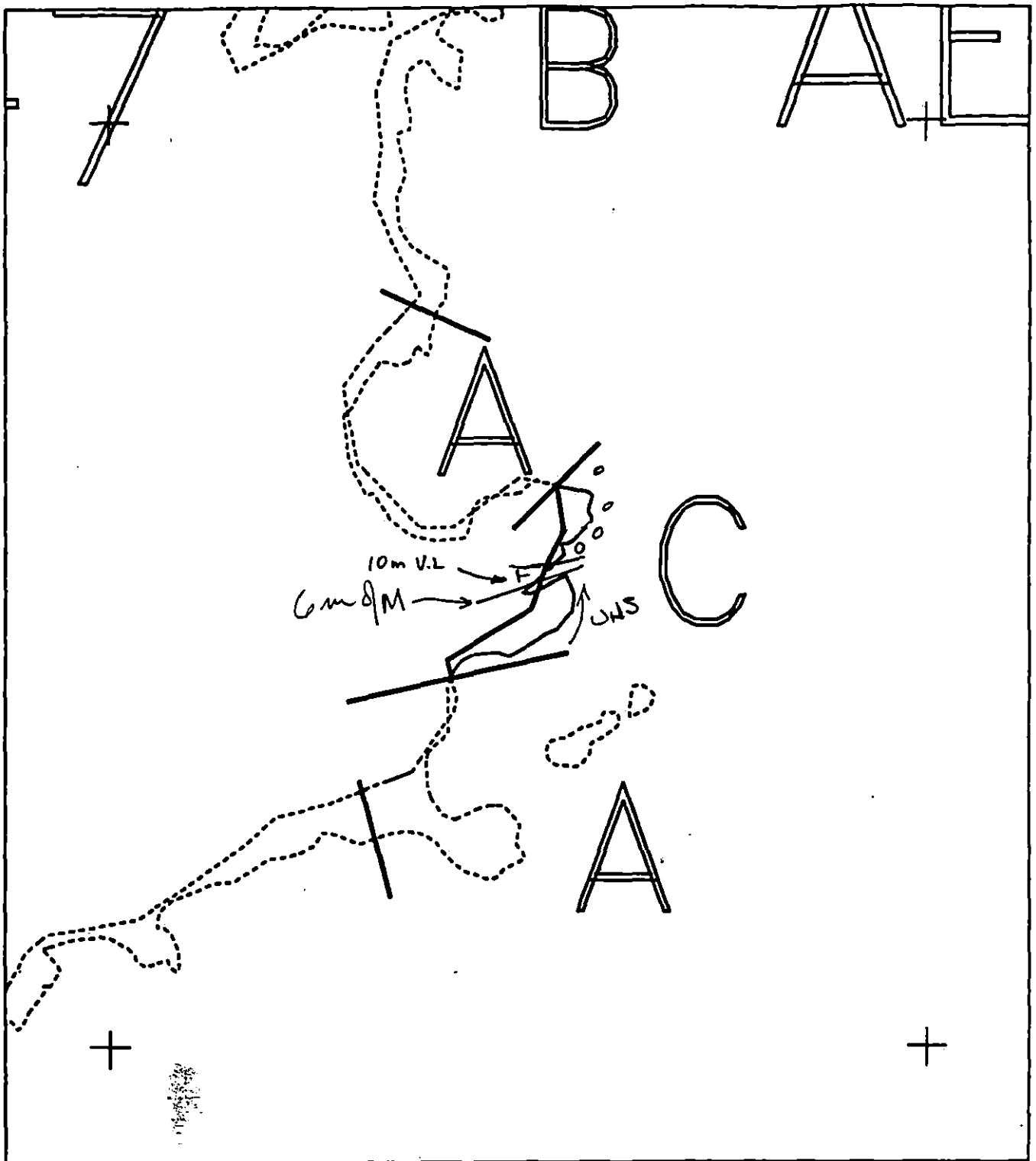


splintery shale ~~occices~~ and P
trap MS/I + FL ≤ 1 cm deep
Qs ≤ 15% total surface oil cover.
Effective treatment since 3/90.
Area ~ 6 x 6 m.

EOS 09.15

SB
13.10

3



XXXX	Wide	**AE005 C**	Subdivision Field Map
////	Medium	ADEC Subsegment Length: 170m	Map Key: PWSAE005C
----	Narrow	METERS	Name: GM
TTTT	Very Light	0 100 200	Date: 5.7.91
0000	No Oil	AK State Plane Zone 4 pae005c	Date Entered:

4

FW revised 5/6
ET revised 5/7
MC REVISED 5/7/91

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/AE-06

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ AE-06 SUBDIVISION A (1 OF 1) DATE 4/24/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
Eagle nest in adjacent segment.
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 24 m: V.Light 11 m: No Oil 705 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 _____ FOSC:_____ DATE:_____
NOAA _____
USCG _____

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

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 Suzomoto 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

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

✓ [redacted] 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 Subsistance area: Salmon harvesting (5/1 to 9/30)
7H-H 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

43/44

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / AE-6 SUBDIVISION: A DATE 4-24-90

USCG
NAME Randolph W. Hubbard SIGNATURE [signature]

☑ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

ADEC
NAME Patrick Endres SIGNATURE Patrick J. Endres

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED ☑
COMMENTS

The one spot where treatment was recommended by Exxon is borderline from my perspective. It will be a job to find this one area amidst all of the pocket beaches. I question whether the human traffic involved is a valid tradeoff for the removal of the spruce needles and tar cocd.

LAND MANAGER
NAME MARSHA MARTIN/DNR SIGNATURE Marsha Martin

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED ☑
COMMENTS 50/50. What's there is obvious but there is no oiling other than on cliff walls.

REVISION NO. 03/21/90

SHORELINE OILING SUMMARY

REVISION NO. 04/13/90

34/40

OG Reimer USCG Hubbard SEGMENT ST/ AE6
BIO Zumach LAND REP M. Martin (DNR) SUBDIVISION A (1 OF 1)
EXXON Arbuckle ADEC Endres TIME 17:10 to 18:30
TEAM NO. 16 TIDE LEVEL +4 to +2 DATE 4 / 24 / 90
EST. SUBDIVISION LENGTH: 942 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: west to east
SURFACE SEDIMENTS: R 70 % B 3 % C 5 % P 12 % G 5 % S 1 % M 0 % V 0 %
SLOPE : Lang 25 % Hang 60 % Vert 15 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
OIL CATEGORY LENGTH: W 0 m M 0 m N 30 m VL 15 m NO 897 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	rc	rs	rp	rs						su	ui	mi	li
ASPHALT PAVEMENT													
POOLED													
COVER		✓		X		X/✓					X/✓		
COAT		X				X					X		
STAIN													
MOUSSE													
PATTIES													
TARBALLS													
FILM													
NO OIL										X		X	X

PAVEMENT H F S 0 sq. m by 0 cr

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 0

#BAGS 0

Photographs:

Roll No.

Frames

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm)	BELOW		OIL / FILM COLOR					PIT ZONE				ANA	SHEEN (Y/N)	▼	SURFACE SUBSURFAC SEDIMENTS
		CP	CR	CL	CF	NO		UO	UO						SU	UI	MI	LI				
1	25					X	-									X						P - P
2	35					X	-									X				N	30	P - PG
3	20					X	-									X						S - SPC
4	25					X	-									X						P - P
5	20					X	-										X					P - PG
							-															

COMMENTS Rocky coastline with intermittent pocket pebble, cobble, sand beaches. The only oiling found was a narrow <1m band of coat to cover along a few cliff sections near the high tide line.

REVIEWED JW DATE 4/24/90

OG Rain[illegible]

SEGMENT S[illegible]E6

SUBDIVISION A

DATE 4 / 26 90

CHECKLIST

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

LEGEND

1 △ PR - No Subsurface Oil

2 △ PN - Subsurface Oil

CT/C Continuous Distribution

CT/B Broken Distribution

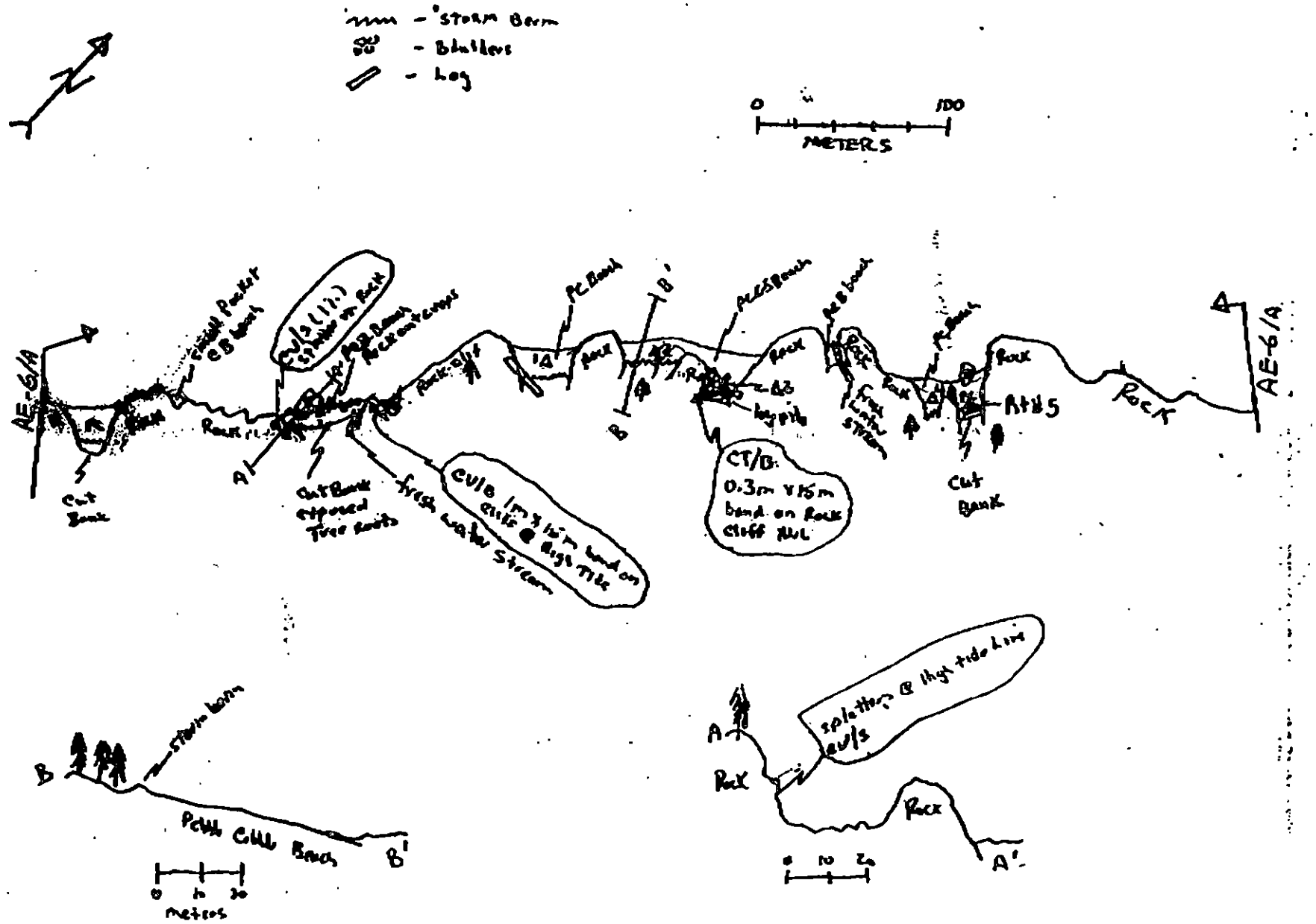
CT/P Patchy Distribution

CT/S Splashed Distribution

Oiled Vegetation

1 Photo location, direction, and number

TCH MAP



Oil Character Length (m): AP 0 PO 0 CV 30 CT 15 ST 0 MS 0 PT 0 TB 0 FL 0 NO 897

REVISIONS

35/44

SHORELINE ECOLOGICAL SUMMARY

REVISION: 08/22/90

Segment ST / AE 6 Subdivision A Date (mo / day / yr) 4/24/90

Time (24 hr) 1710 on 1830 off Biologist TONY ZAMORA

(A) Substrate type and % of segments:
(1) Bedrock 70 (2) Boulder 3 (3) Cobble 9 (4) Pebble 17 (5) Sand 1 (6) Silt —

(B) Overall % cover of biota (% of segment): Dense 80 Moderate 20 Low —

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

Photographs: Roll No. ST-16-11
Frames 16-22

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
3	3	3	3	3	3	X	X	3	3	X	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

MYTILUS

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

NOT PRESENT

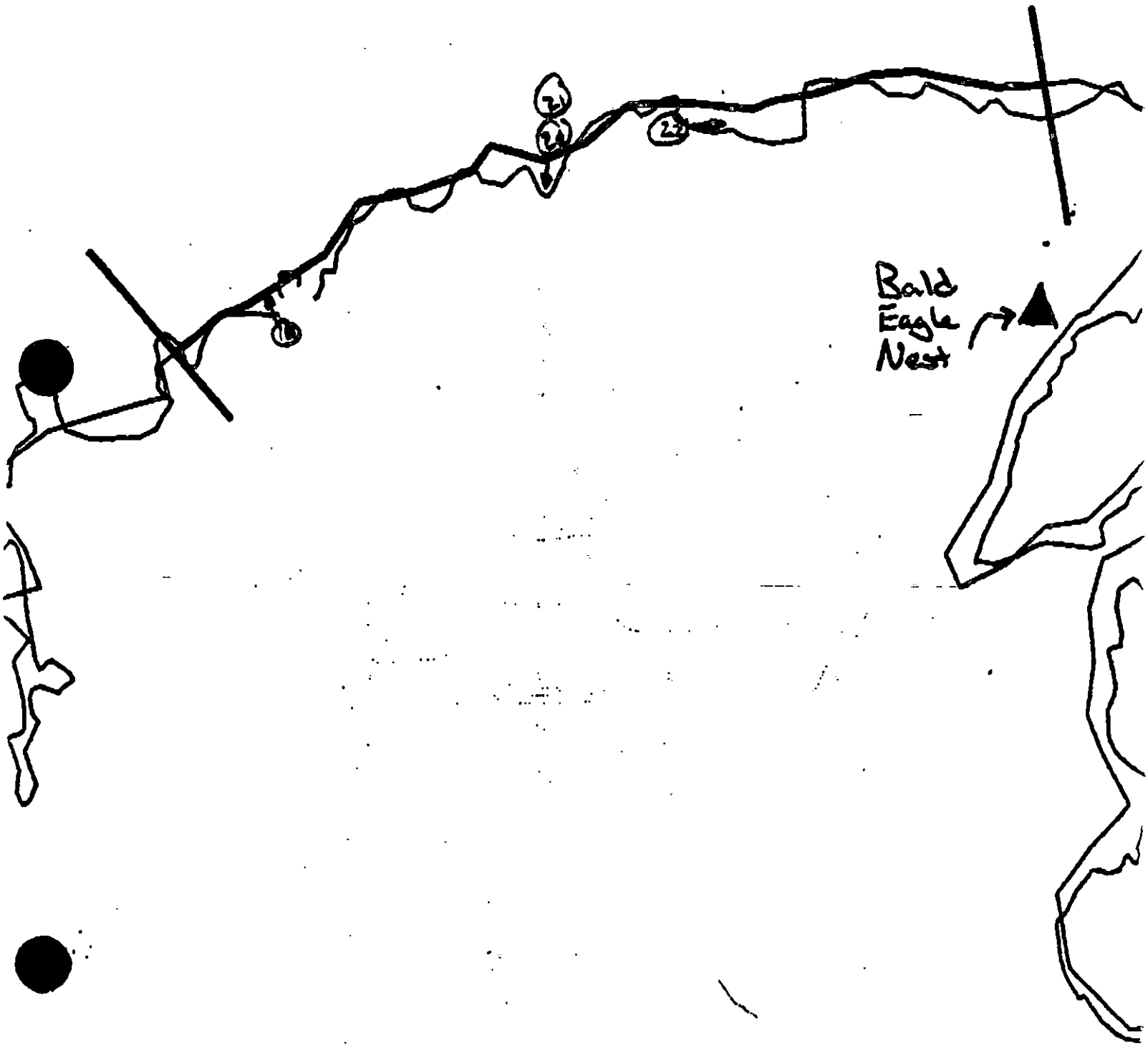
Wildlife Observations/ General Comments:

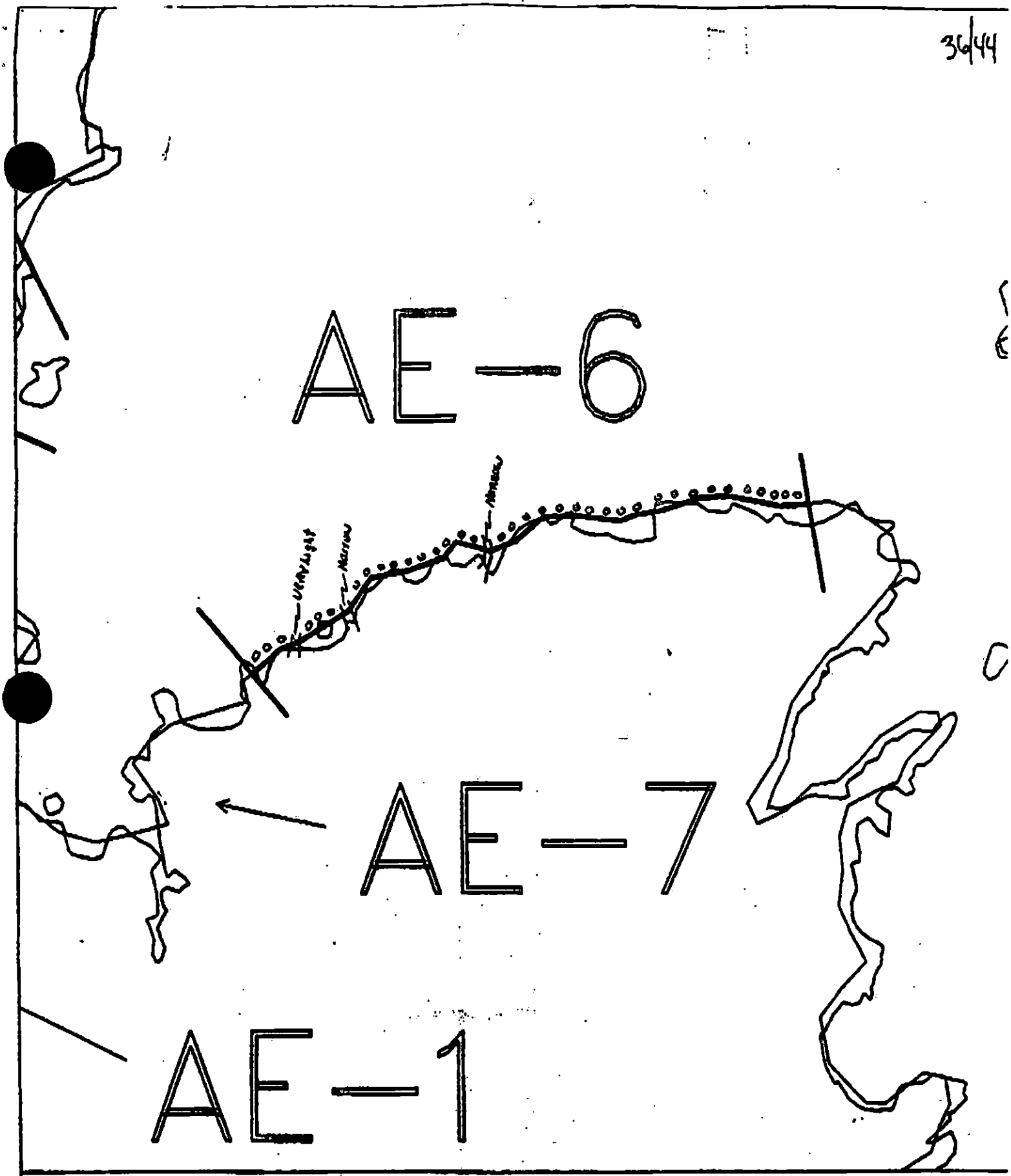
- 1 EAGLE SPOTTED.
- NO OILED BIOTA OBSERVED.
- THIS SEGMENT IS SIMILAR TO OTHERS ON APPLEGATE I. BIOTA APPEARS HEALTHY AS EVIDENT BY DENSE COVERAGE AND NEW GROWTH (SEE ATTACHED SHEET)

ECOLOGICAL CONSIDERATIONS:

GU

AE-6





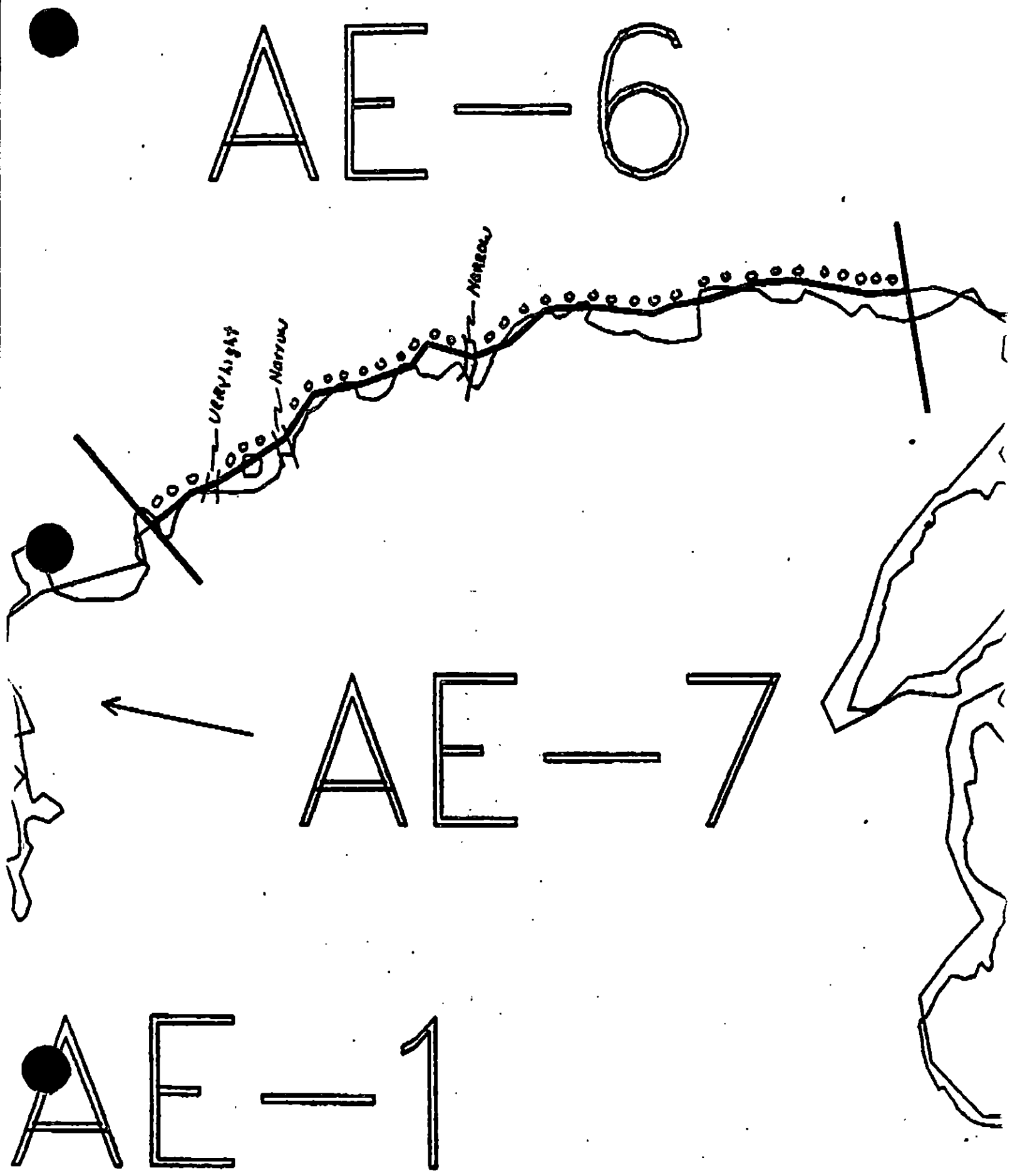
XXXX Wide
//// Medium
---- Narrow
TTTT Very Light
0000 No Oil

AE-6

ADEC Segment Length: 739m

0 100 200 300
METERS

Map Key: PWS-7
Name: Reimer
Date: 4/24/90
Data Entered:


AE-6
Norfolk
Norfolk
AE-7
AE-1

SHORELINE EVALUATION

SEGMENT ST/ AE-06 SUBDIVISION A (1 OF 1) DATE 4/24/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
Eagle nest in adjacent segment.
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: [signature] DATE: 5/5/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 24 m: V.Light 11 m: No Oil 705 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: May 4 1990
ADEC Art WEINER [signature]
EXXON Mark N. Silbert Mark N. Silbert FOSC: [signature] DATE: 5-9-90
NOAA Gary Petrone Gary Petrone
USCG G.A. REITER G.A. Reiter

OG Rain[redacted]

SEGMENT ST/ RE6

SUBDIVISION A

DATE 4 / 26 90

S[redacted]CH MAP

CHECKLIST

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

LEGEND

1 ▲ PR - No Subsurface Oil

2 ▲ PN - Subsurface Oil

CT/C Continuous Distribution

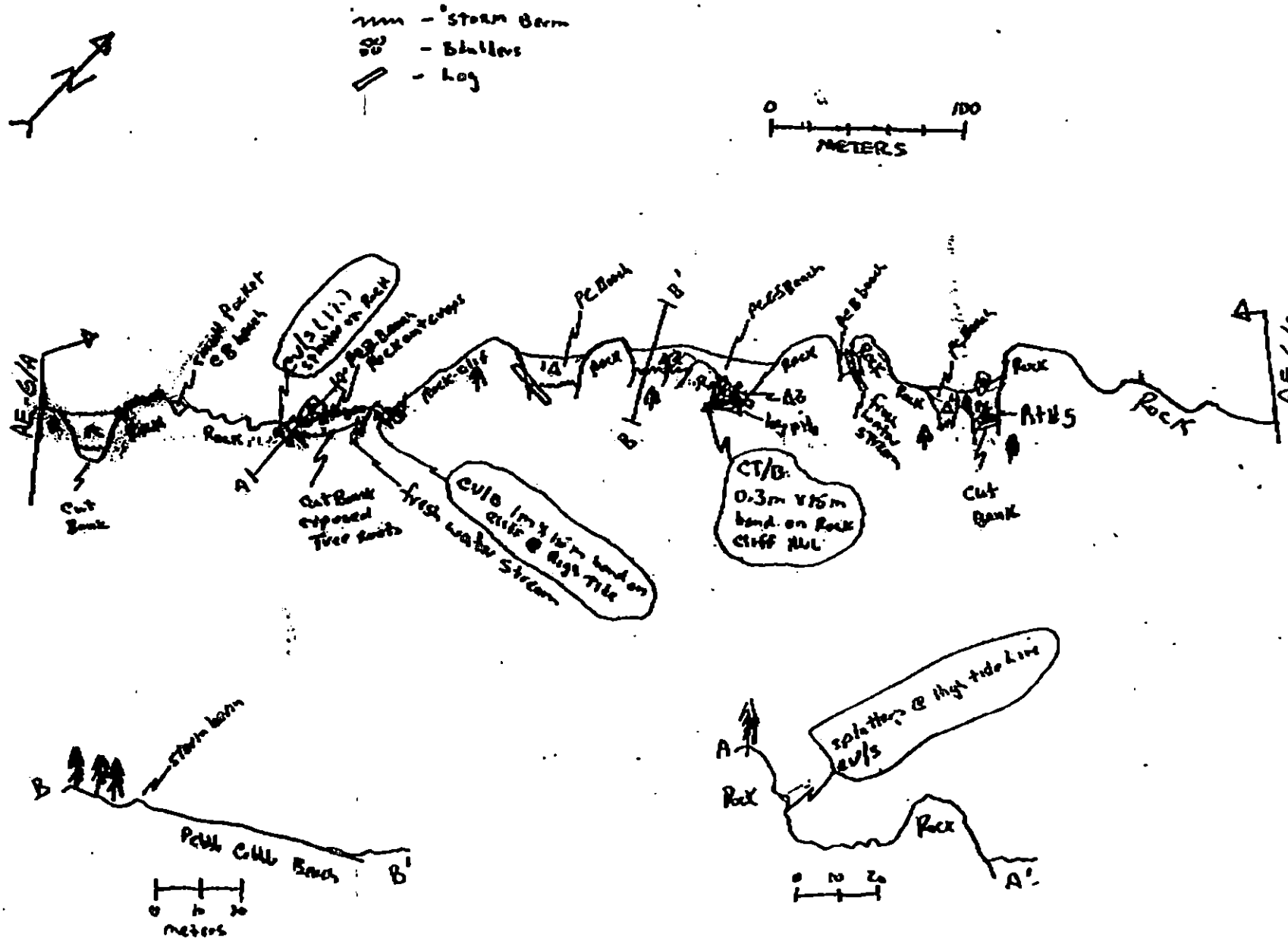
CT/B Broken Distribution

CT/P Patchy Distribution

CT/S Splashed Distribution

Oiled Vegetation

1 Photo location, direction, and number

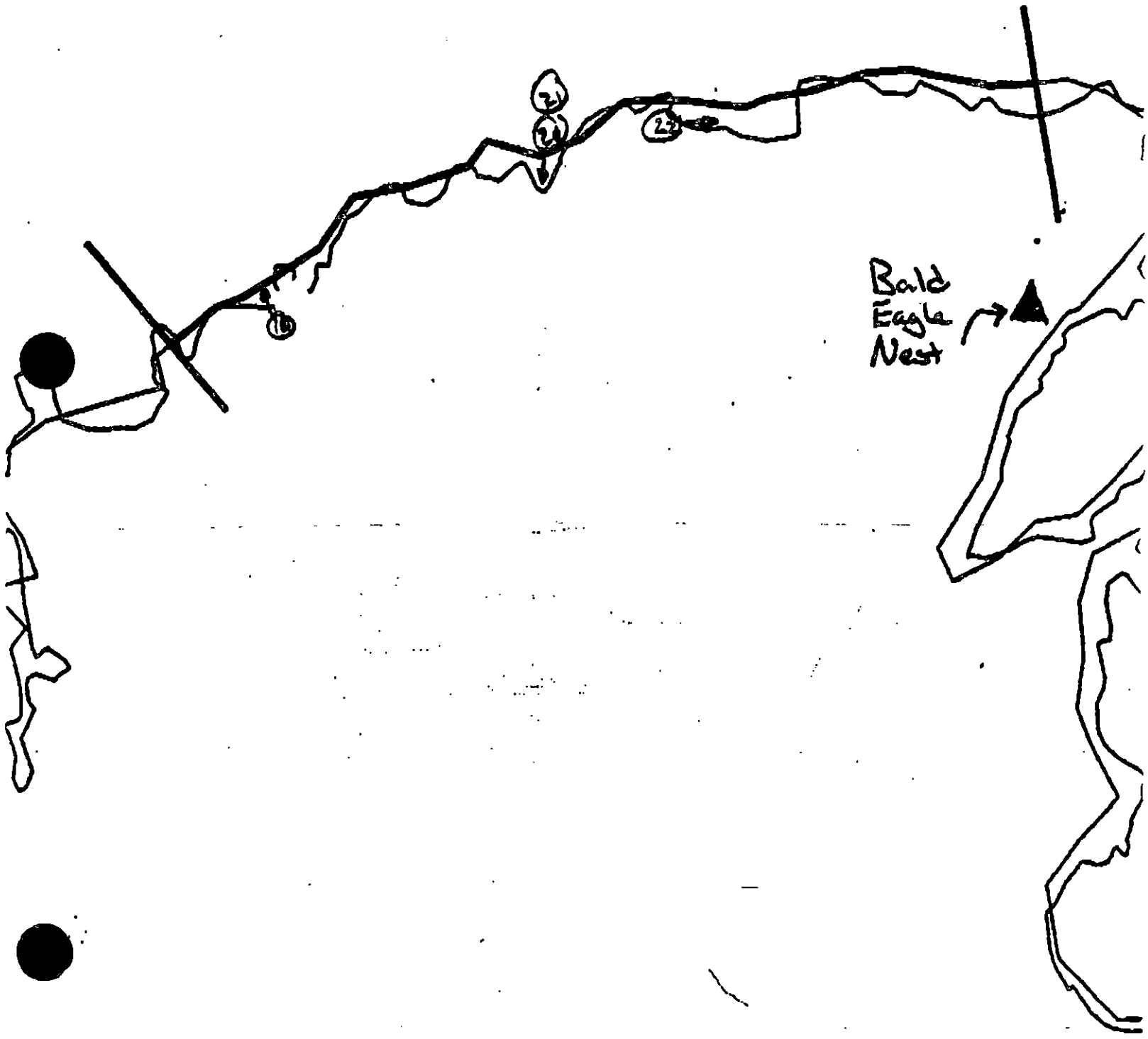


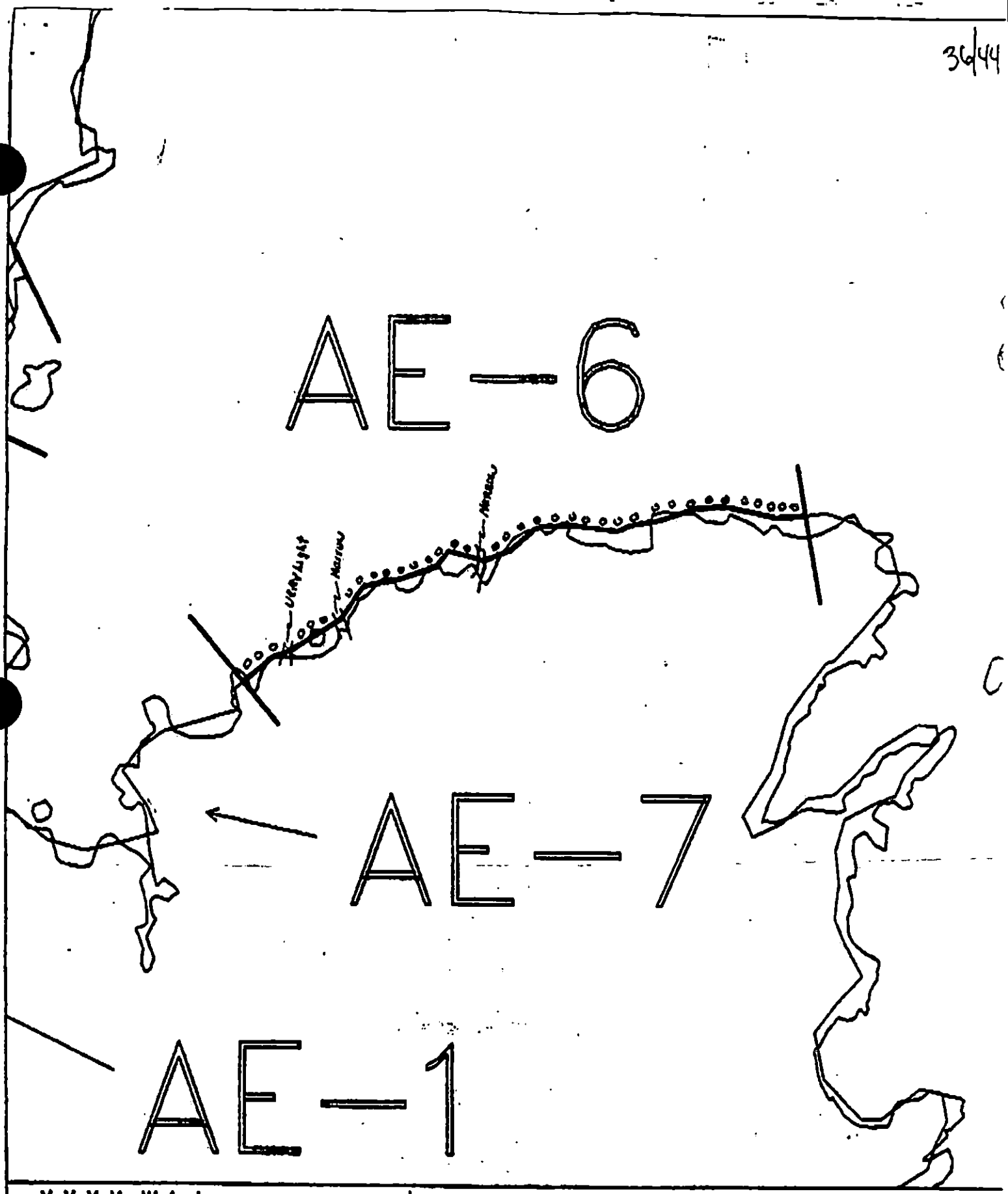
Oil Character Length (m): AP 0 PO 0 CV 30 CT 15 ST 0 MS 0 PT 0 TB 0 FL 0 NO 897

REVISIONS/NOTES

35/44

AE-6





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

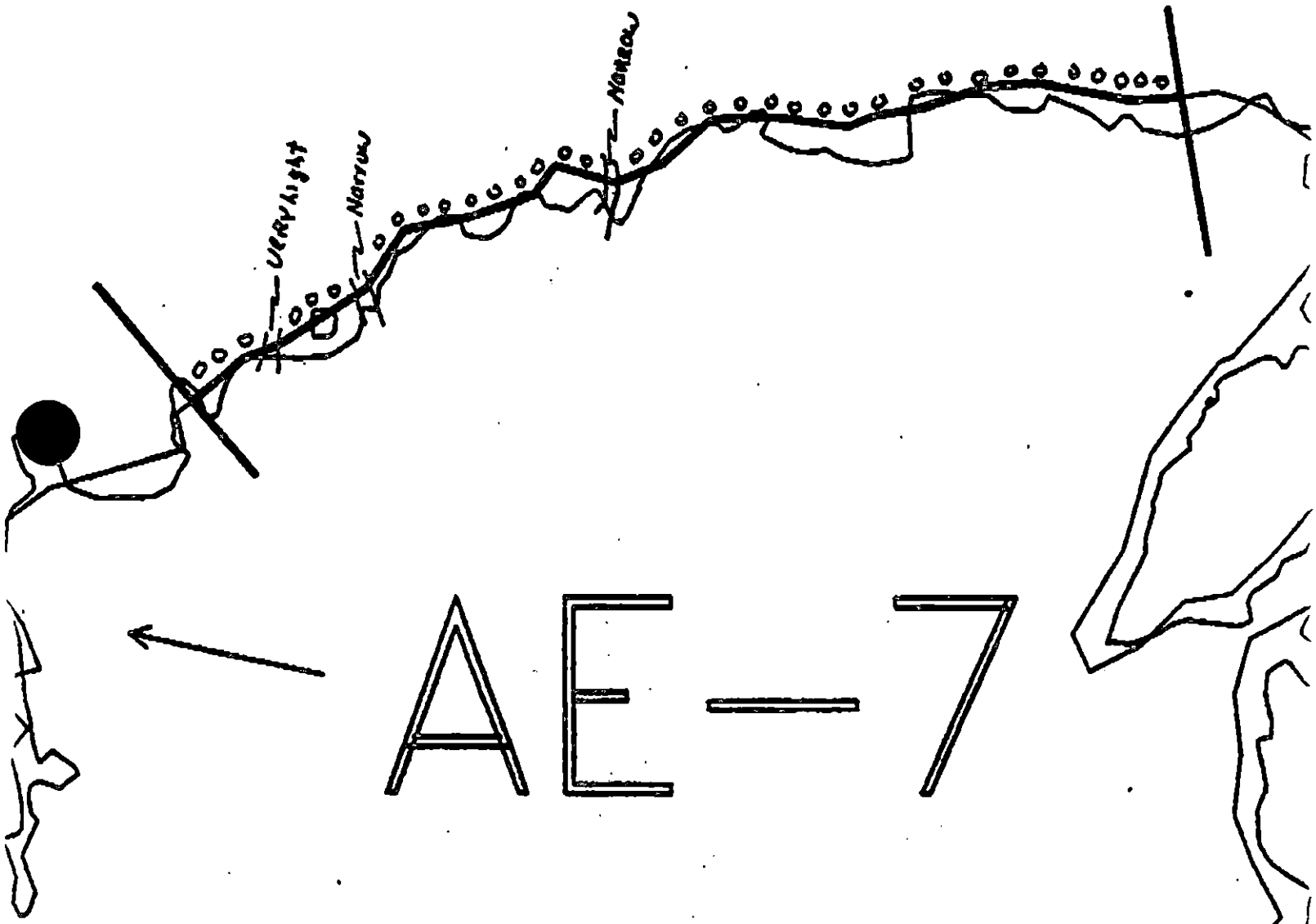
AE-6

ADEC Segment Length: 739m

0 100 200 300
METERS

Map Key: PWS-7
Name: Reimer
Date: 4/24/90
Data Entered:

AE-6



AE-7

AE-1

1991 MAYSAP EVALUATION

SEGMENT: AE 006 SUB: A REGION: PWS 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: _____ Date: _____

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

COMMENTS:
INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: _____ FOSC APPROVAL DATE: _____

ADEC _____ FOSC _____

EXXON _____

USCG _____

NOAA _____

ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

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

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 1 SEGMENT AE-006 SUBDIVISION A DATE 5/12/91

ADEC
NAME JEFF GINALIAS SIGNATURE [signature]

☒ NTR

ONLY OBSERVED OIL WAS A COAT ON BEDROCK OUTCROPS.
OLD, WEATHERED. NO BENEFIT DERIVED BY TREATMENT.

EXXON
NAME RANDALL K. BOYER SIGNATURE Randall K. Boyer

☒ NTR JUST A TRACE OF SURFACE COAT ON VERTICLE BEDROCK.
THIS DOES NOT WARRANT TREATMENT OR FURTHER ASSESSMENT.
YOUNG BARNACLE COLONIES THROUGH OUT THE INTERTIDAL ZONE. THESE RECRUITS WERE ONLY A FEW DAYS OLD. A HARBOR SEAL WAS NOTICED JUST OFFSHORE.

LANDMANAGER
NAME MARSHA HALL OF DNR SIGNATURE Marsha Hall

☒ NTR SCRAPED some of the thicker "CT" off w/ pen.
surface coat was only oil sighted.

USCG/NOAA
NAME SCHULTZ / CHILOS SIGNATURE [signature] / [signature]

☒ NTR DOES NOT WARRANT TREATMENT.

OIL OBSERVED AS CT ON VERT BEDROCK FACES (A,B,C) & ON lee SIDES OF BOULDERS (C)
NO SUBSURFACE OIL OBSERVED.

MAYSAP SHORELINE OILING SUMMARY

TEAM NO. 1

OG G. MACDONALD BIO M. FAWCETT SEGMENT AE-6

ADEC J. GINAWAS LANDMANAGER M. HALL for DNR SUBDIVISION A

EXXON R. BOYER USCG/NOAA SCHULTZ/CHILDS DATE 5/12/91

TIME 08:25 to 09:30 TIDE LEVEL +1.0 ft. to +3.8 ft. ENERGY LEVEL: ☐ H ☐ M ☒ L

SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO WEATHER: ☐ SUN ☐ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

TOTAL LENGTH SHORELINE SURVEYED: 739 m NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE

EST. OIL CATEGORY LENGTH: W – m M – m N – m VL 47 m NO 692 m US – m

LOC	SURFACE OIL CHARACTER AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO	SURFACE SEDIMENT TYPE	SHORE SLOPE V H M L	AREA WIDTH m	AREA LENGTH m	ZONE S	UI	MI	LI	NOTES
A						S					R	V	0.5	0.5		X			
B						S					R	V	0.1	6		X			weathered oil-tar
C						T					R	H	0.1	40		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- 1 - 20 FRAMES 4~7

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER OP	HOR	MOR	LOR	OF	TR	NO	OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE S	UI	MI	LI	SURFACE-SUBSURFACE SEDIMENTS	NOTES
1	25							X	-		–		X				GP-GC	
2	30							X	-		–			X			PG-GCM	
3	35							X	-		–				X		PG-CG	
4	35							X	-							X	PG-PSC	
5	35							X	-		–			X			PC-PC	berm
6	30							X	-		–				X		PS-SPC	
7	40							X	-		38	N		X			PS-PGS	
									-									
									-									

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

OG COMMENTS: Rugged sheltered shore w/ small pockets set in steep, low rock wall.

Surface oil only, as trace & splash CT @ up. HTZ; often w/ spruce needles.

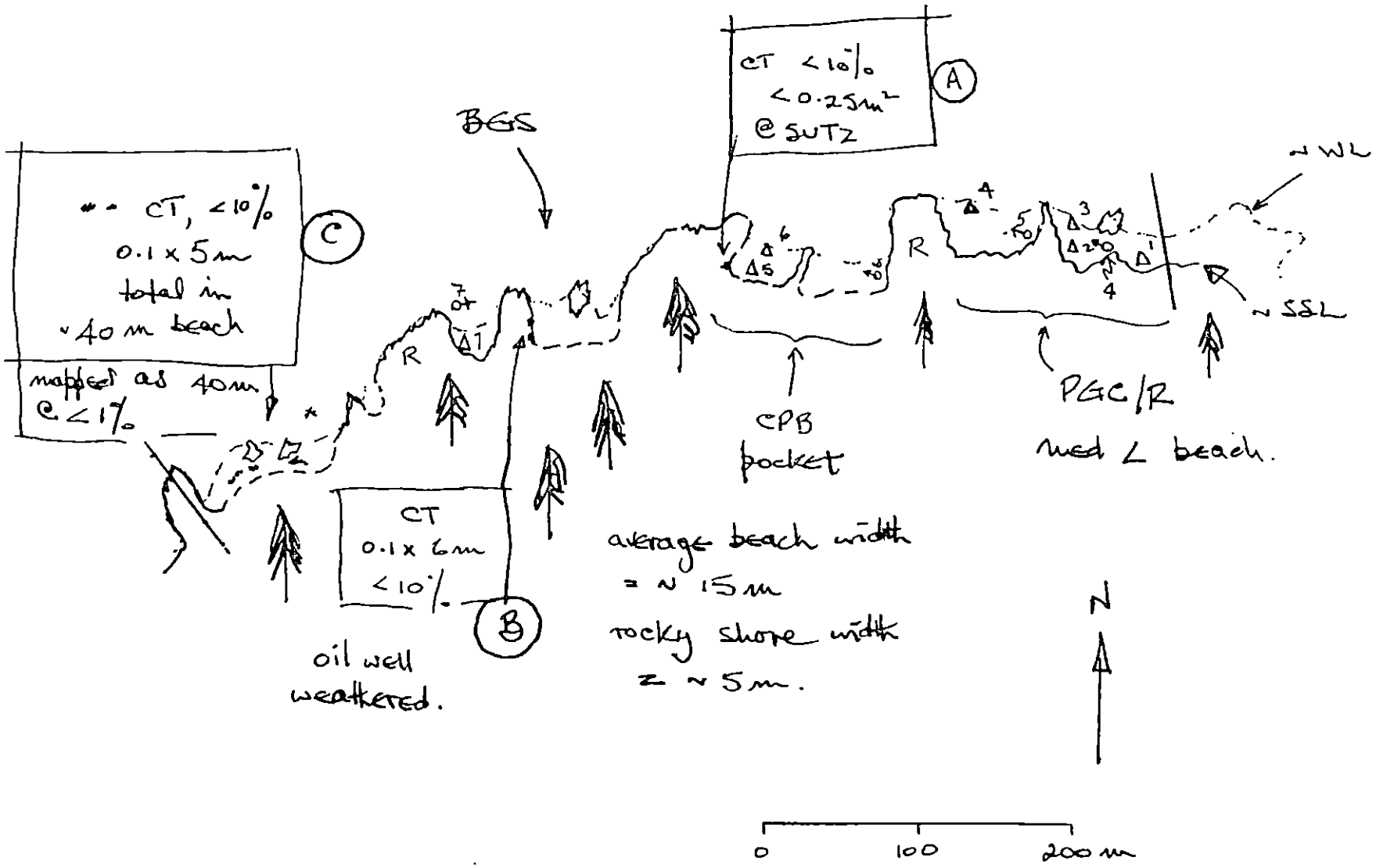
SG revised May 14

REVIEWED CG IS NA

AE-6A

G. MACDONALD

5.12.91



EG reviewed May 14

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1 DATE 12 May 91

SEGMENT # AE-6 TIDAL HEIGHT(Range) +1.0 to +3.8 ft MLLW

SUBDIVISION A BIOLOGIST Michael Fawcett

SEA STATE calm WIND SPEED/DIRECTION SE 5 knots

PHOTOGRAPHS: ROLL # FRAME #

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

This subdivision contains a number of pocket beaches separated by rugged outcrops. The beaches are moderate energy, comprised mostly of rounded shale pebbles, cobble, and boulders. Bedrock and larger boulders typically have dense, mixed-age rockweed throughout MTZ and UTZ as high as about +9ft MLLW, along with dense barnacles and very dense new spat, plus moderately dense litterinids, limpets, whelks, Rhodomela, and mussels. LTZ areas often have very dense patches of 0-2yr old mussels, scattered old barnacles (Balanus cariosus), some old limpets (Notoacmea scutum and Collisella pelta), & a variety of algae (especially Rockweed, Rhodomela, Ulva, Halosaccion, Scytosiphon, Cladophora). Tidepools have dense littorines & algae if in UTZ, and Littorines, limpets, chitons, hermit crabs, starfish, coralline algae, sculpins, and other organisms if in MTZ-LTZ. Whelks (Nucella emarginata) scattered among barnacles & mussels in MTZ-LTZ. Pricklebacks (eel-like fishes), 6-rayed starfish (Leptasterias), limpets, isopods, hermit crab and some breeding litterinids and sea slugs (Lamellidoris) common beneath MTZ-LTZ boulders.

Residual oil found as traces of coat on rock walls in UTZ-supratidal zones at 3 sites (see sketch map).

The crew inadvertently approached (apparently) within 200m of an active eagle nest, although no nest was seen and no eagles were seen near the nest site. One eagle was seen sitting in a tree on an islet near the center of the subdivision.

WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1 in tree	prickleback
Seabirds	1 tern (Arctic or Aleutian)	6	
Waterfowl			
Gulls/kittiwakes	1 (G-W gull)	5	
Shorebirds			
Corvids			
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

AE2 cont (5/12/91) Fawcett
LTZ below CT (15m downshore
@ +1ft) boulders have numerous
prickleback, some Lit & Lacellidonis
eggs, a few Thais eggs. 1 Alyanassa-
type snail - (last up) - very dense spot
scattered young mussels, Cladophora,
a few N. amarg, Leptast, 1 Pyrus
dep 0810

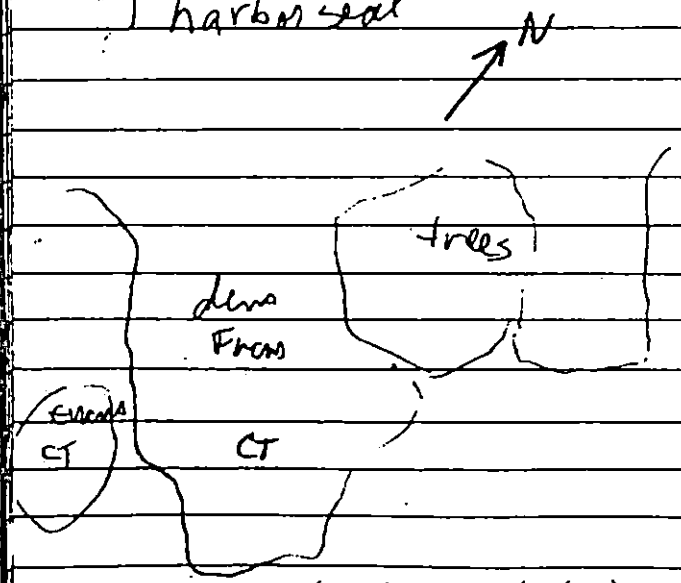
Arrive AE6 0825
- rounded shale pebbles, f/c/B
BR - dense Fucus on BR MTZ
LTZ, no biota in LTZ pebble
& gravel - very dense spat MTZ
LTZ - dense mussels MTZ on
BR
- no oil found - depart 0840
depart 0840

arr Site 2 0843 - same habitat
pocket beach G/P/C/B/BR
- dense Fucus on east wall,
dense mussels & barn west, 0 to +8ft,
scattered Cancrus & young Halosacca

site 2 (cont) - west wall
spread angle C, pelts
Sm Anthopleura
Trace CT in West wall supra +7-11ft
no biota except lichen - dense
barnacles begin 3-4m downshore
at +9ft

Site C (3) 0900
- Same as 1 & 2, but rock sand -
same biota - CT on east side
of outcrop in center of beach,
& +12 feet - mostly lichen
nearby, but dense Fucus &
barnacles below some of it at
about +8 ft
- dense young Fucus, barn (1 rock)
+ spat, 0-3 yr old mussels
on MTZ-LTZ BR
- Arctic? tern (3)
- Gulls 4-5
1 eagle in tree on islet
- extremely dense 3-4 mm mussels
on LTZ BR 0-+3ft, & 100%
cover, growing over barnacles
Fucus, etc
1 harbor seal

AE6 (Cont) 5/12/91 Fawcett
site 4 (0915)
c/B pocket beach, steep
walls - dense spot everywhere
cobble & boulders overly shale
BR - dense mussel MTZ patchy
Fucus, barn, Rhodo, Ulva, Cladophora,
Littorines, limp, prickles, Lept.
Trace CT on one isolated
boulder +9-10 ft, dense Fucus
at base & downstream, 0 to +9 ft
1 harbor seal



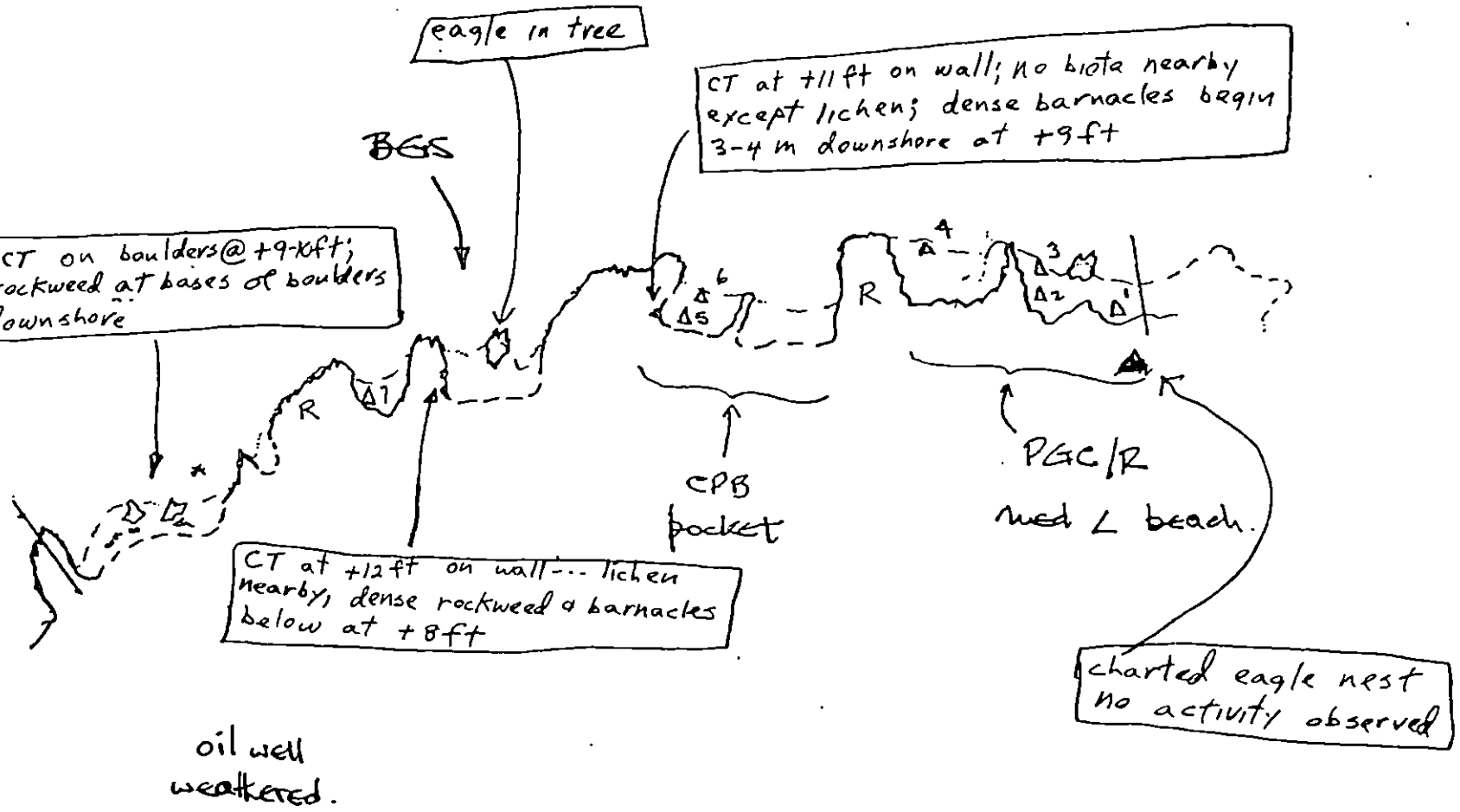
3 Terns (Arctic or Aleutian)
- Lit breeding
- Nesting in
prickles

dep. 0930

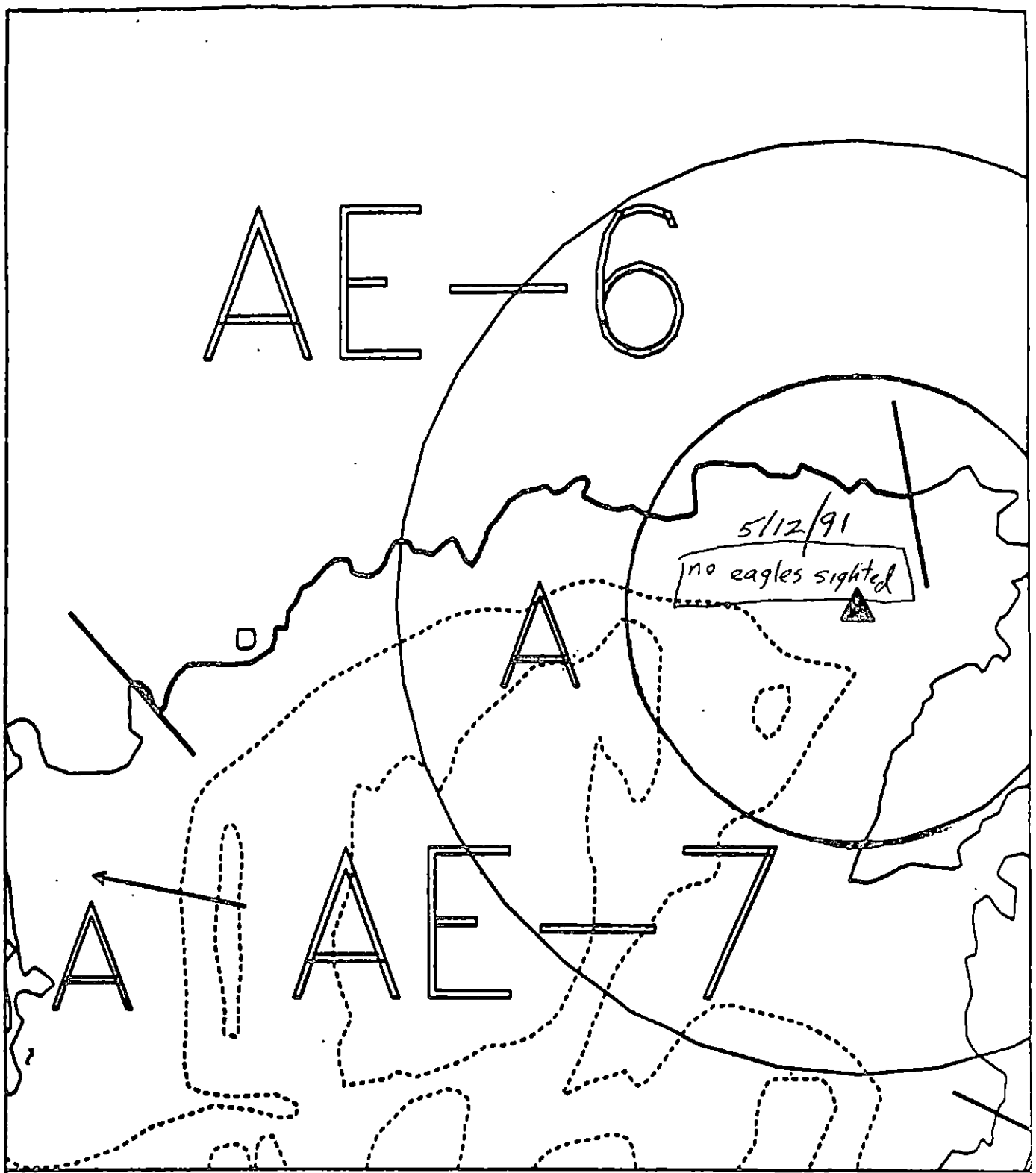
Bio Sketch Map
AE-6A
12 May 91
M.H. Fawcett

N

Arctic or Aleutian terns
Glaucous-winged gulls
Harbor seal



oil well weathered.



AE006

Segment Reference Map

Map Key: PWSAE006

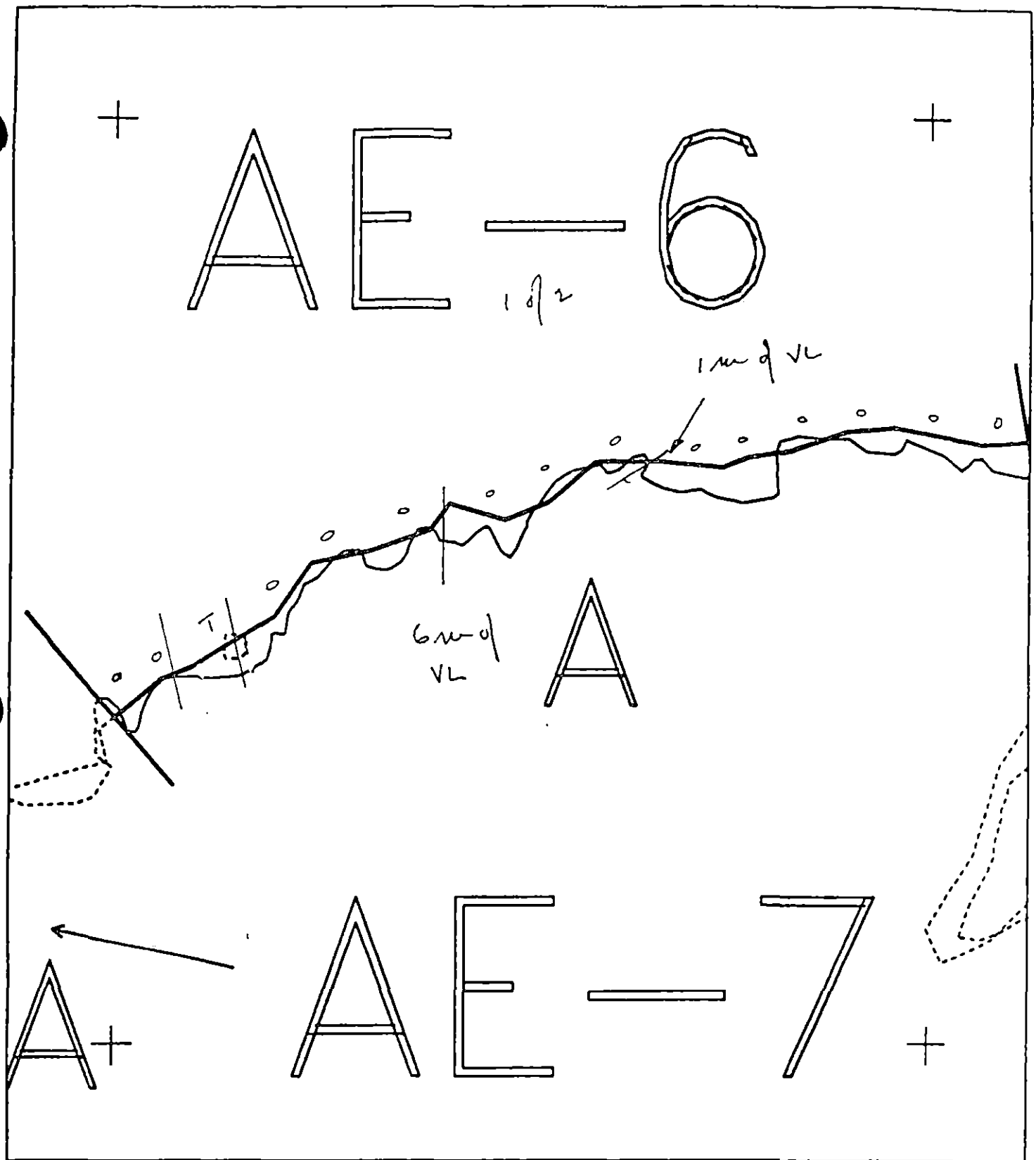
METERS

0 112 224

AK State Plane Zone 4

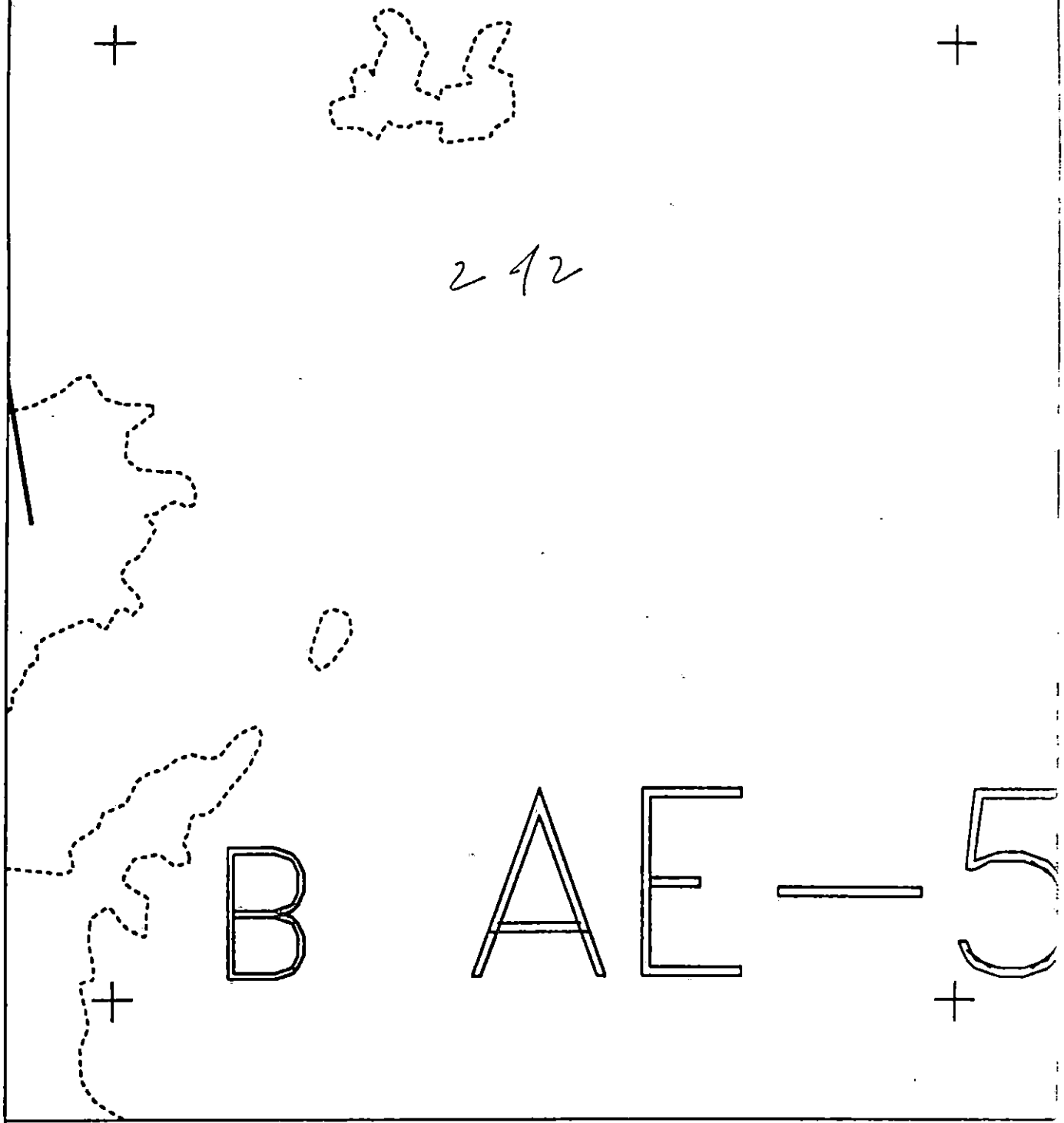
EXXON

EAGLE NEST



XXXX	Wide	AE006 A	Subdivision Field Map
////	Medium	ADEC Subsegment Length: 730m	Map Key: PWSAE006Aa
----	Narrow	METERS	Name: GM
TTTT	Very Light	0 100 200	Date: 5.12.01
0000	No Oil	AK State Plane Zone 4 pwsAE006aa	Date Entered:

E6 revised
REVIEWED



AE006 A

METERS

0 100 200

AK State Plane Zone 4
pseudo

Subdivision Field Map
Map Key: PWSAE006A
Name: GM
Date: 5-12-91

Reviewed May 14
REVIEWED 5-14-91

4

1991 MAYSAP EVALUATION

SEGMENT: AE 006 SUB: A REGION: PWS 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 Dan Owen 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

EXXON

USCG

NOAA

FOSC

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

ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

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

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 1 SEGMENT AE-006 SUBDIVISION A DATE 5/12/91

ADEC
NAME JEFF GINALIAS SIGNATURE [signature]

☒ NTR

ONLY OBSERVED OIL WAS A COAT ON BEDROCK OUTCROPS. OLD, WEATHERED. NO BENEFIT DERIVED BY TREATMENT.

EXXON
NAME RANDALL K. BOYER SIGNATURE Randall K. Boyer

☒ NTR JUST A TRACE OF SURFACE COAT ON VERTICLE BEDROCK. THIS DOES NOT WARRANT TREATMENT OR FURTHER ASSESSMENT. YOUNG BARNACLE COLONIES THROUGH OUT THE INTERTIDAL ZONE. THESE RECRUITS WERE ONLY A FEW DAYS OLD. A HARBOR SEAL WAS NOTICED JUST OFFSHORE.

LANDMANAGER
NAME MARSHA HALL OF DNR SIGNATURE Marsha Hall

☒ NTR SCRAPED some of the thicker "CT" off w/ pen. surface coat was only oil sighted.

USCG/NOAA
NAME SCHULTZ / CHILDS SIGNATURE [signature] / [signature]

☒ NTR DOES NOT WARRANT TREATMENT.

OIL OBSERVED AS CT ON VERT BEDROCK FACES (A,B,C) & ON lee SIDES OF BOULDERS (C)
NO SUBSURFACE OIL OBSERVED.

MAYSAP SHORELINE OILING SUMMARY

PAGE 1 OF 1

TEAM NO. 1

OG G. MACDONALD

BIO M. FAWCETT

SEGMENT AE-6

ADEC J. GINANAS

LANDMANAGER M. HALL for DNR

SUBDIVISION A

EXXON R. BOYER

USCG/NOAA SCHULTZ/CHINDS

DATE 5/12/91

TIME 08:25 to 09:30

TIDE LEVEL +1.0 ft. to +3.8 ft.

ENERGY LEVEL: ☐ H ☐ M ☒ L

SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO

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

TOTAL LENGTH SHORELINE SURVEYED: 739 m

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

EST. OIL CATEGORY LENGTH: W — m M — m N — m VL 47 m NO 692 m US — m

LOC	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO		V H M L	WIDTH m	LENGTH m	S	UI	MI	LI	
A						S					R	V	0.5	0.5		X			
B						S					R	V	0.1	6		X			weathered oil - tar
C						T					R	H	0.1	40		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- 1 - 20 FRAMES 4~7

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
1	25							X	-		-		X				GP-GC	
2	30							X	-		-			X			PG-GCM	
3	35							X	-		-				X		PG-CG	
4	35							X	-							X	PG-PSC	
5	35							X	-		-			X			PC-PC	berm
6	30							X	-		-				X		PS-SPC	
7	40							X	-		38	N		X			PS-PGS	
									-									
									-									

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

OG COMMENTS: Rugged sheltered shore w/ small pockets set in steep, low rock wall.

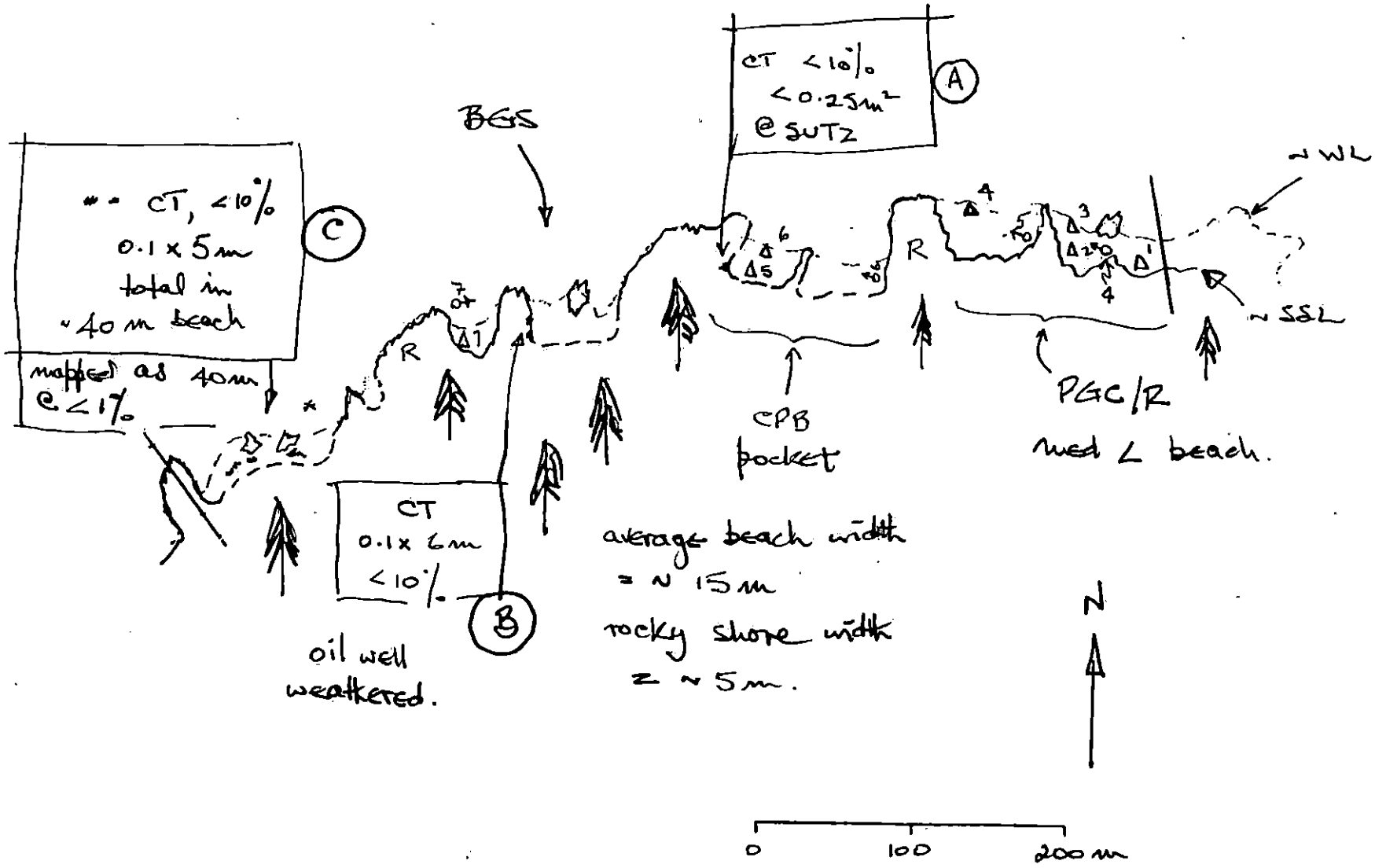
Surface oil only, as face & splash CT @ up. HTZ; often w/ spruce needles.

SS revised, May 14

REVIEWED CG 14 MAY

AE-6A

G. MACDONALD
5.12.91



GM reviewed May 14
REVIEWED CD 14 MAY

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1 DATE 12 May 91

SEGMENT # AE-6 TIDAL HEIGHT(Range) +1.0 to +3.8 ft MLLW

SUBDIVISION A BIOLOGIST Michael Fawcett

SEA STATE calm WIND SPEED/DIRECTION SE 5 knots

PHOTOGRAPHS: ROLL # FRAME #

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

This subdivision contains a number of pocket beaches separated by rugged outcrops. The beaches are moderate energy, comprised mostly of rounded shale pebbles, cobble, and boulders. Bedrock and larger boulders typically have dense mixed-age rockweed throughout MTZ and UTZ as high as about +9 ft MLLW, along with dense barnacles and very dense new spat, plus moderately dense littorinids, limpets, whelks, Rhodomela, and mussels. LTZ areas often have very dense patches of 0-2 yr old mussels, scattered old barnacles (Balanus cariosus), some old limpets (Notoacmea scutum and Collisella pelta), & a variety of algae (especially Rockweed, Rhodomela, Ulva, Halosaccion, Scytosiphon, Cladophora). Tidepools have dense littorines & algae if in UTZ, and Littorines, limpets, chitons, hermit crabs, starfish, coralline algae, sculpins, and other organisms if in MTZ-LTZ. Whelks (Nucella emarginata) scattered among barnacles & mussels in MTZ-LTZ. Pricklebacks (eel-like fishes), 6-rayed starfish (Leptasterias), limpets, isopods, hermit crabs, and some breeding littorinids and sea slugs (Lamellidoris) common beneath MTZ-LTZ boulders.

Residual oil found as traces of coat on rock walls in UTZ-supratidal zones at 3 sites (see sketch map).

The crew inadvertently approached (apparently) within 200m of an active eagle nest, although no nest was seen and no eagles were seen near the nest site. One eagle was seen sitting in a tree on an islet near the center of the subdivision.

WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1 in tree	prickleback
Seabirds	1 tern (Arctic or Aleutian)	6	
Waterfowl			
Gulls/kittiwakes	1 (G-w gull)	5	
Shorebirds			
Corvids			
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

AE2 cont (5/12/91) Faurett
LTZ below CT (15m downshore
@ +1ft) boulders have numerous
pinkblebs, some Litt & Lanellidonis
eggs, a few Thais eggs, 1 Olyanassa-
type snail - last up - very dense spat
scattered young mussels, Cladophora,
a few N. emarg, Leptast, 1 Pyca
dep 0810

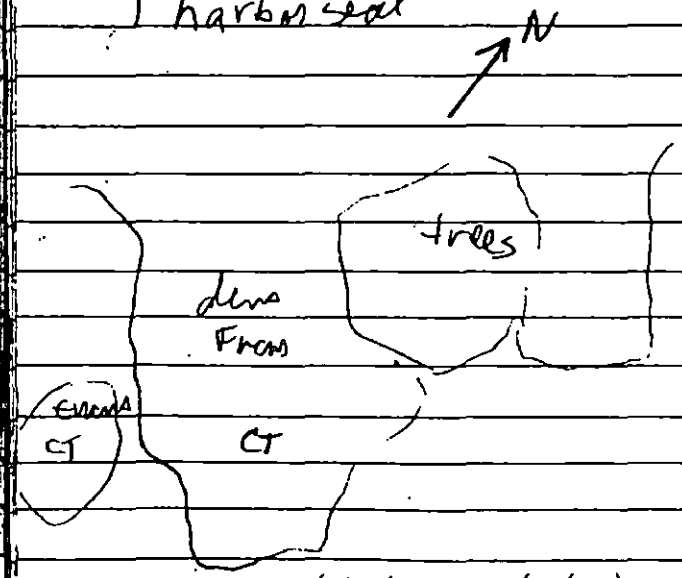
arrive AE6 0825
- rounded shale pebbles, f/c/(B)
BR - dense Fucus on BR MTZ
LTZ, no biota in UTZ pebble
& gravel - very dense spat MTZ
LTZ - dense mussels MTZ on
BR
- no old fouling - depart 0840
depart 0840

arr Site 2 0843 - same habitat
pebbly beach c/p/c/B/BR
- dense Fucus on east wall,
dense mussels & barn on west, 0 to +8ft,
scattered Corallina & young Halosacca
below + leafy reds & Rhodo

site 2 (cont) - west wall
spread angle C, pebb
sm Anthopleura
Trace CT on West wall supra +11ft
no biota except lichen - dense
barnacles begin 3-4m downshore
at +9ft

Site C (3) 0900
- same as 1 & 2, but rock sand -
same biota - CT on east side
of outcrop in center of beach,
& +12feet - mostly lichen
nearby, but dense Fucus &
barnacles below some of it at
about +8ft
- dense young Fucus, barn (1 yr old)
+ spat, 0-2 yr old mussels
on MTZ-LTZ BR
- Arctic? tern (3)
- Gulls 4-5
1 eagle in tree on islet
- extremely dense 3-4mm mussels
on LTZ BR 0-+3ft, & 100%
cover, growing over barnacles
Fucus, etc
1 harbor seal

AE6 (Cont) 5/12/91 Fawcett
site 4 (0915)
c/B pocket beach, steep
walls - dense spat everywhere
cobble & boulders overly shale
BR - dense mussels MT2 patchy
Fucus, barn, Rhodo, Ulva, Cladopha,
Littorines, limp, prickles, Lept.
Trace CT on one isolated
boulder + 9-10 ft, dense Fucus
at base & downshore, 0 to +9 ft
1 harbor seal



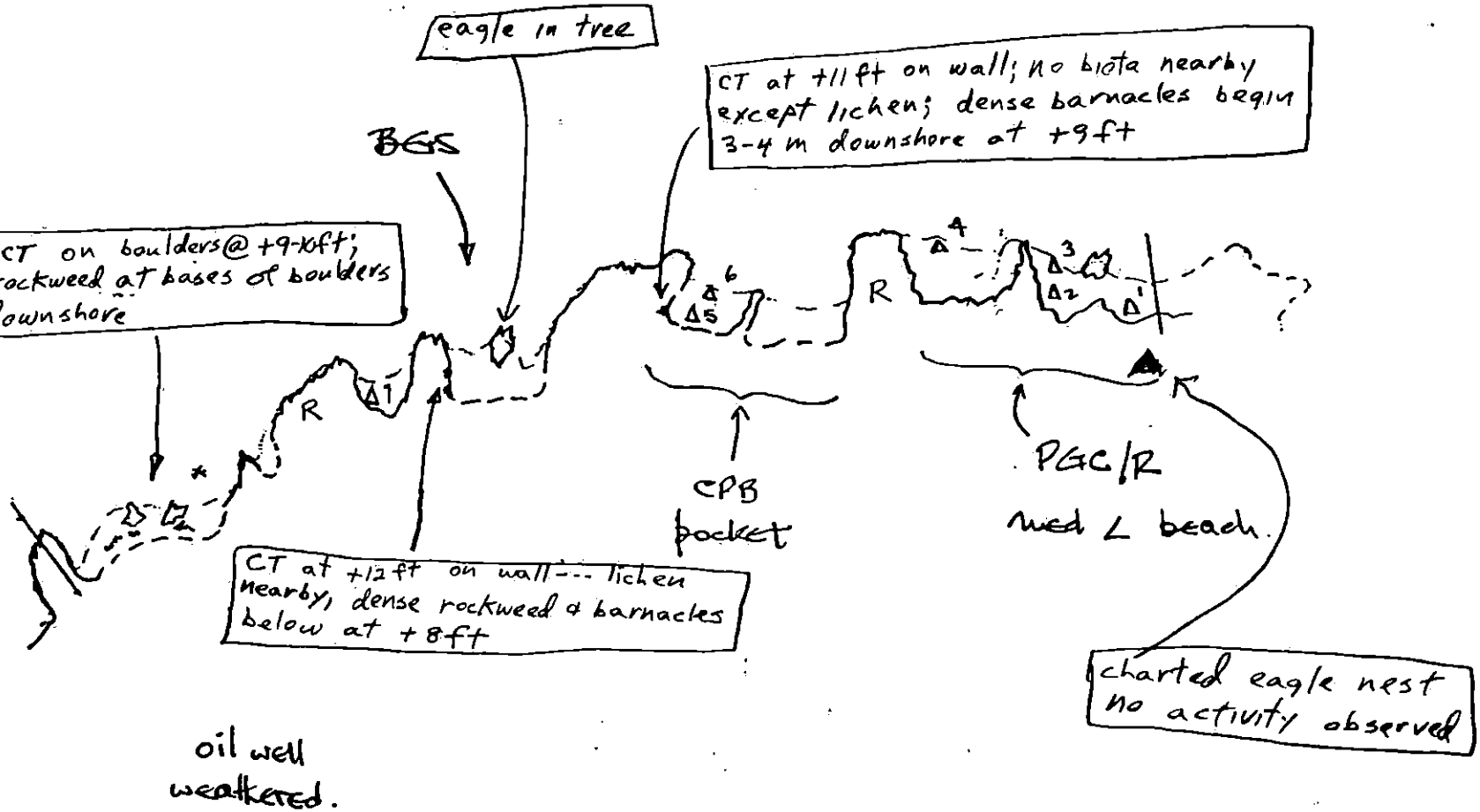
3 Terns (Arctic or Aleutian)
- Litt breeding
- Nemarging &
prickles

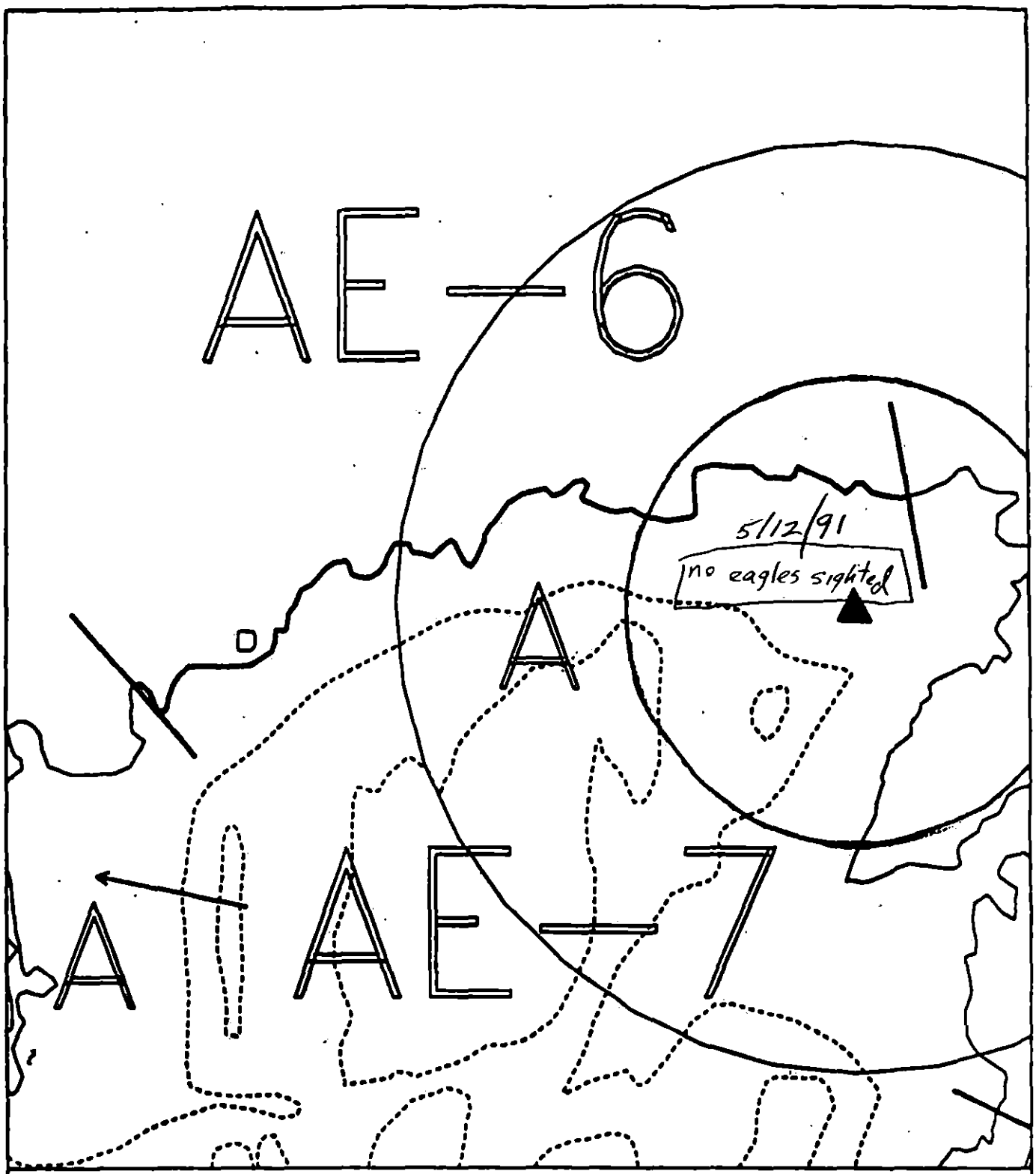
dep. 0930

Bio Sketch Map
AE-6A
12 May 91
M.H. Fawcett

N

Arctic or Aleutian terns
Glaucous-winged gulls
Harbor seal





AE006

Segment Reference Map

Map Key: PWSAE006

METERS

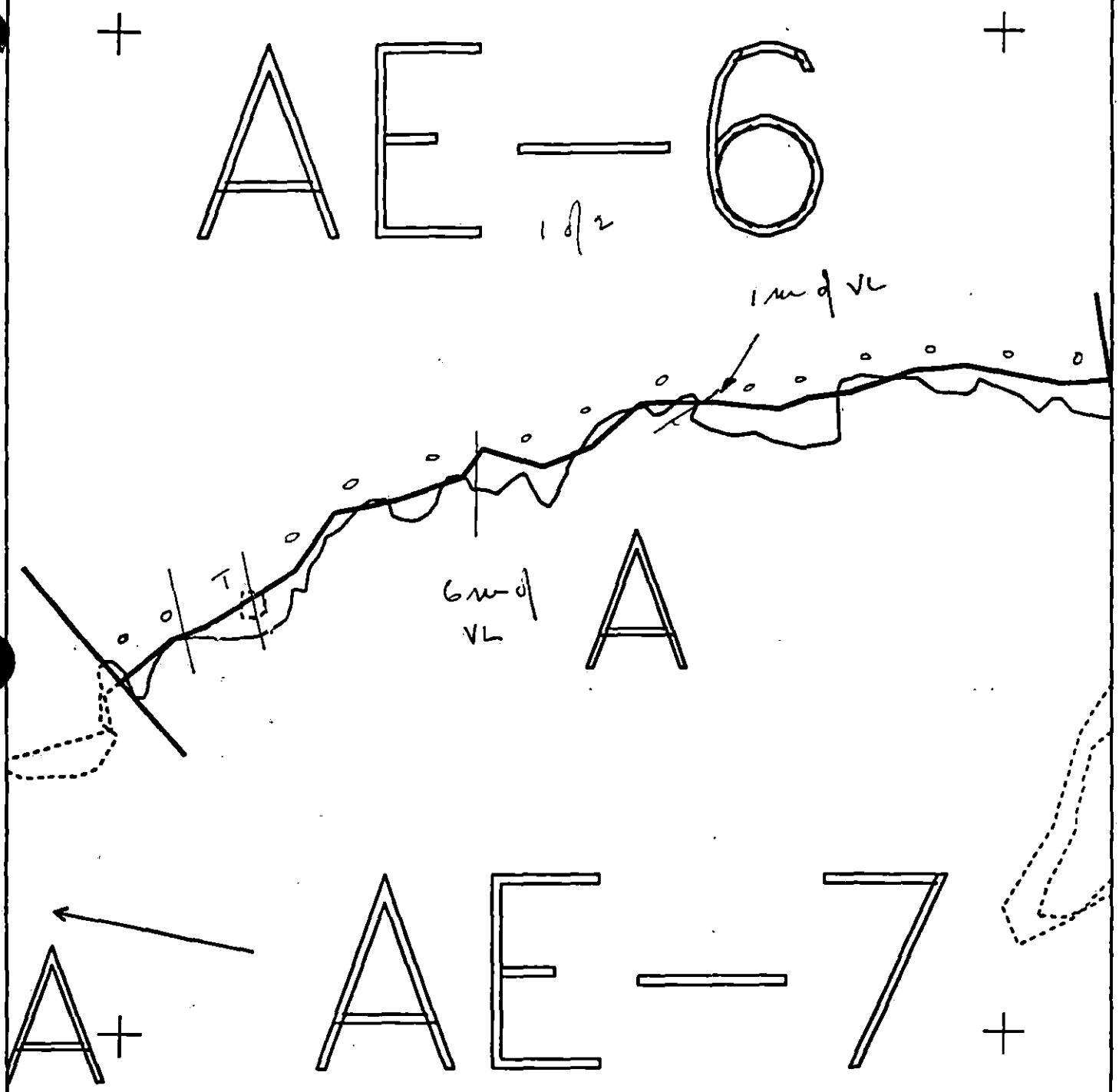
0 112 224

AK State Plane Zone 4

EXXON

EAGLE NEST

M. FAWCETT
5/12/91

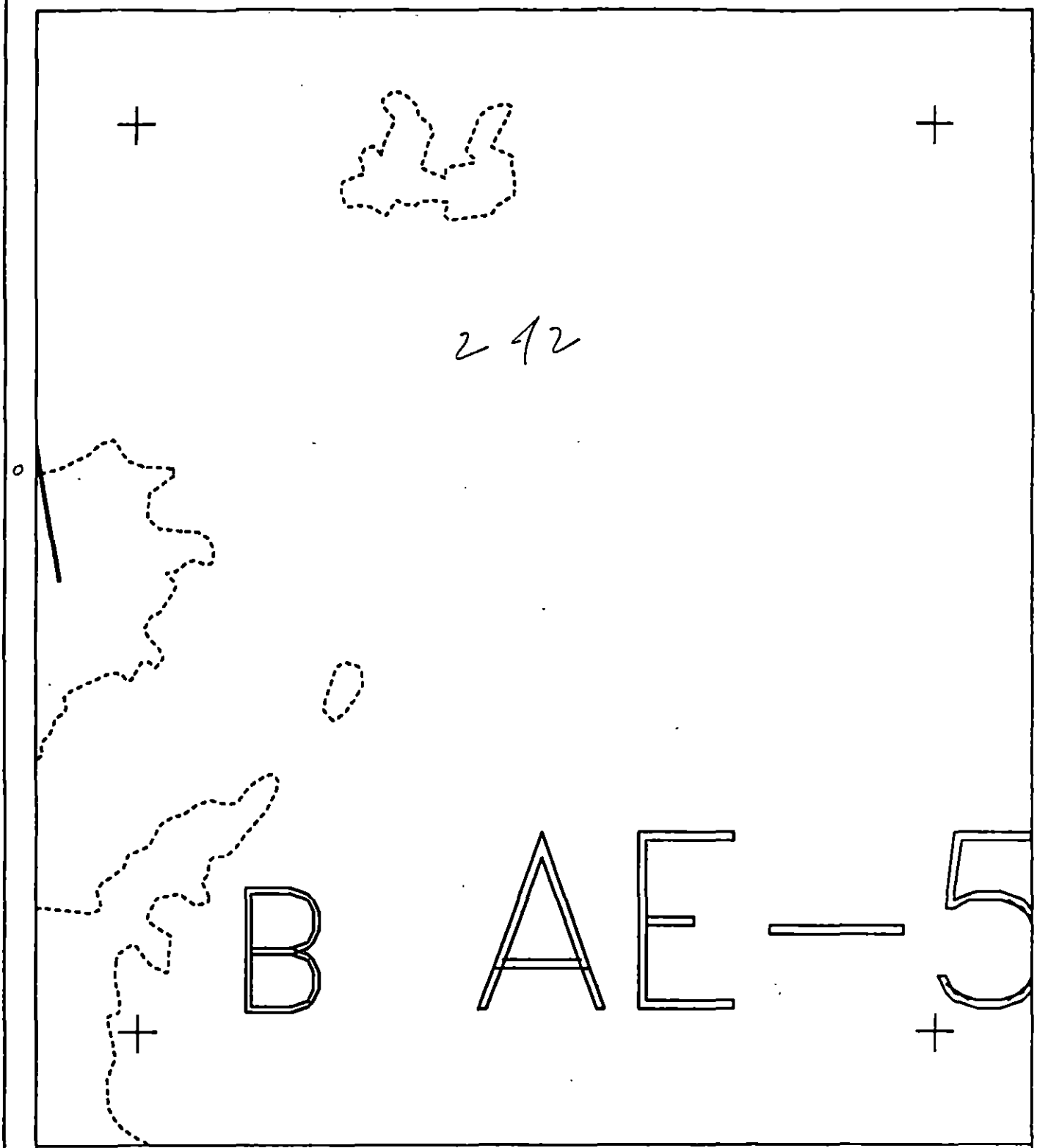


XXXX	Wide	AE006 A	Subdivision Field Map
////	Medium	ADEC Subsegment Length: 739m	Map Key: PWSAE006Ac
----	Narrow	METERS	Name: GM
TTTT	Very Light	0 100 200	Date: 5.12.91
0000	No Oil	AK State Plane Zone 4	Date Entered:

EXXON

E6 revised May 14

REVIEWED CO 14 MAY



AE006 A

METERS

0 100 200

AK State Plane Zone 4
pe88048

Subdivision Field Map
Map Key: PWSAE006Ab
Name: GM
Date: 5.12.81

EXXON

ES reviewed May 14
REVIEWED CG 14 MAY

4

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/AE-07

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ AE-07 SUBDIVISION A (1 OF 1) DATE 42490

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

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

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

SHPO SIGNATURE:_____ DATE:_____

OILING CATEGORIZATION:

Wide 0 m: Medium 7 m: Narrow 20 m: V.Light 75 m: No Oil 445 m
Subsurface Oil Observed: Yes____ No X Maximum Depth_____

RECOMMENDATIONS:

____No Treatment Recommended
X Treatment Recommended
____Manual Pickup
____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 manual removal of tarmats in three areas indicatd on sketch map. No specific working time constraints.

TAG COMMENTS:_____

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

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 Suzomoto 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 unoiled 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 Rothy 267-2206

5T **All Bald Eagle nests (3/1 to 6/1)**
Active Bald Eagle nests (3/1 to 9/1)
Restrict air traffic and all disturbance to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

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

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

30/44

SEGMENT ST / AE-7 SUBDIVISION: A DATE 4/24/90

USCG
NAME Landis W. Hollard SIGNATURE [signature]

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

1. Minimal oil covers wall of rock cliff, sometimes located in patchy ~~spot~~band along difficult area just on cliffs.

ADEC
NAME Patrick Endres SIGNATURE Patrick J. Endres

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

I concur with Exxon OPS Notes regarding cleanup. Due to high recreational use and such a beautiful area, the faster the cleanup operations the better. The biota was abundant and healthy so extra care should be exercised regarding foot travel. —
I agree with land manager on considering the trade offs for scraping spruce needles off rock face.

LAND MANAGER
NAME MARSHA MARTIN / DNR SIGNATURE Marsha Martin

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

Suggest treatment for sure in area of pit
4 (Pocket #2), Pocket #1. Consider trade offs
for scraping band off vertical walls; such as
harm vs. good.

REVISION NO. 08/21/90

SHORELINE OILING SUMMARY

REVISION NO. 04/13/90

204

OG Reimer USCG Hulsband SEGMENT ST/ AE-7
BIO Zamora LAND REP M. Martin (DNR) SUBDIVISION A (1 OF 1)
EXXON Arbuckle ADEC Endres TIME 16:20 to 17:10
TEAM NO. 16 TIDE LEVEL +6 to +4 DATE 4 / 24 / 90
EST. SUBDIVISION LENGTH: 1193 m ☒ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock Grass
SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: West to East
SURFACE SEDIMENTS: R 35 % B 5 % C 25 % P 30 % G 5 % S 5 % M 10 % V 0 %
SLOPE: Lang 80 % Hang 20 % Vert 20 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
OIL CATEGORY LENGTH: W 0 m M 5 m N 30 m VL 95 m NO 1063 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	rc	rs	rp	rs	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	su	ui	mi	li
ASPHALT PAVEMENT			X			X		X			X	X	
POOLED													
COVER			✓	X		X					X		
COAT				X		X					X		
STAIN													
MOUSSE		X	✓					X			X		
PATTIES													
TARBALLS													
FILM													
NO OIL										X			X

PAVEMENT (H) F (S) 8 sq. m by 3 cm

PATTIES / TARBALLS 0 BAGS

NEAR SHORE SHEEN? (NO) SR RW SL TL

OILED DEBRIS	AMOUNT SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS? YES ☐ NO ☒

TYPE 0.

#BAGS 0

Photographs:

Roll No. _____

Frames _____

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm-cm)	BELOW		OIL / FILM COLOR					PIT ZONE				ANA	SHEEN (Y/N)	▼	SURFACE-SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	su	ui	mi	li	—			
1	20					X	-									X						P - P
2	35					X	-									X						P - PC
3	25					X	-										X					P - PGC
4	20					X	-										X					PC - PGC
5	30					X	-									X						P - P
6	35					X	-										X					PC - PGS

COMMENTS Predominantly a rock cliff dominated coastline with pocket pebble, cobble beaches. Near the center of the segment is a narrow entrance to a backshore tidal lagoonal area with upland grass and peat, there is a freshwater stream and/or snow melt run off washing over the tidal flats.
The oiling along this segment is mostly sporadic to patchy narrow bands along the upper intertidal zone on rock cliffs. Most of this oiling has abundant evergreen needles stuck to the surface. There are two small mousse patches.

REVIEWED TW DATE 4/26/90

SHORELINE OILING SUMMARY (PAGE 2)

REVISION 06/13/90

SEGMENT ST/ AE-7 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				ANA	SHEEN (Y/N)	!	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC						SU	UI	MI	U				
7	30					X	-									X						P - P
8	25					X	-											X				P - PG
9	20					X	-									X						PC - PGC
							-															
							-															
							-															
							-															
							-															
							-															
							-															
							-															
							-															
							-															
							-															

COMMENTS (1) in a small sheltered cove just north of the Lagoon and (2) along the east side of a Tombolo beach in behind a nearshore Island. Two patches of pavement were found, (1) on the western bank at the entrance to the Lagoon, and (2) in a sheltered cove at the east end of the segment. The second pavement area is 1/2 x 1/2 m. and is very hard (this may not be Exxon Valdez oil), however it is in the same spot where some sporadic softer cover was found.

REVIEWED JW DATE 4/26/90

22/24 OG Reimer

SEGME[redacted] AE-7

SUBDIVISION A

DATE 4 / 24 90

CHECKLIST

- N Arrow
- Approx. Scale
- Sag/Sub Body
- Oil Dist.
  - Width
  - Length
  - % Cover
- Substrate Character
- Est. HWL/LWL
- Slp
- Profile Location(s)
- Profile(s)
- Pit Location(s)
- Photo Location(s)

LEGEND

1 ▲ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

CT/D Discon Distribution

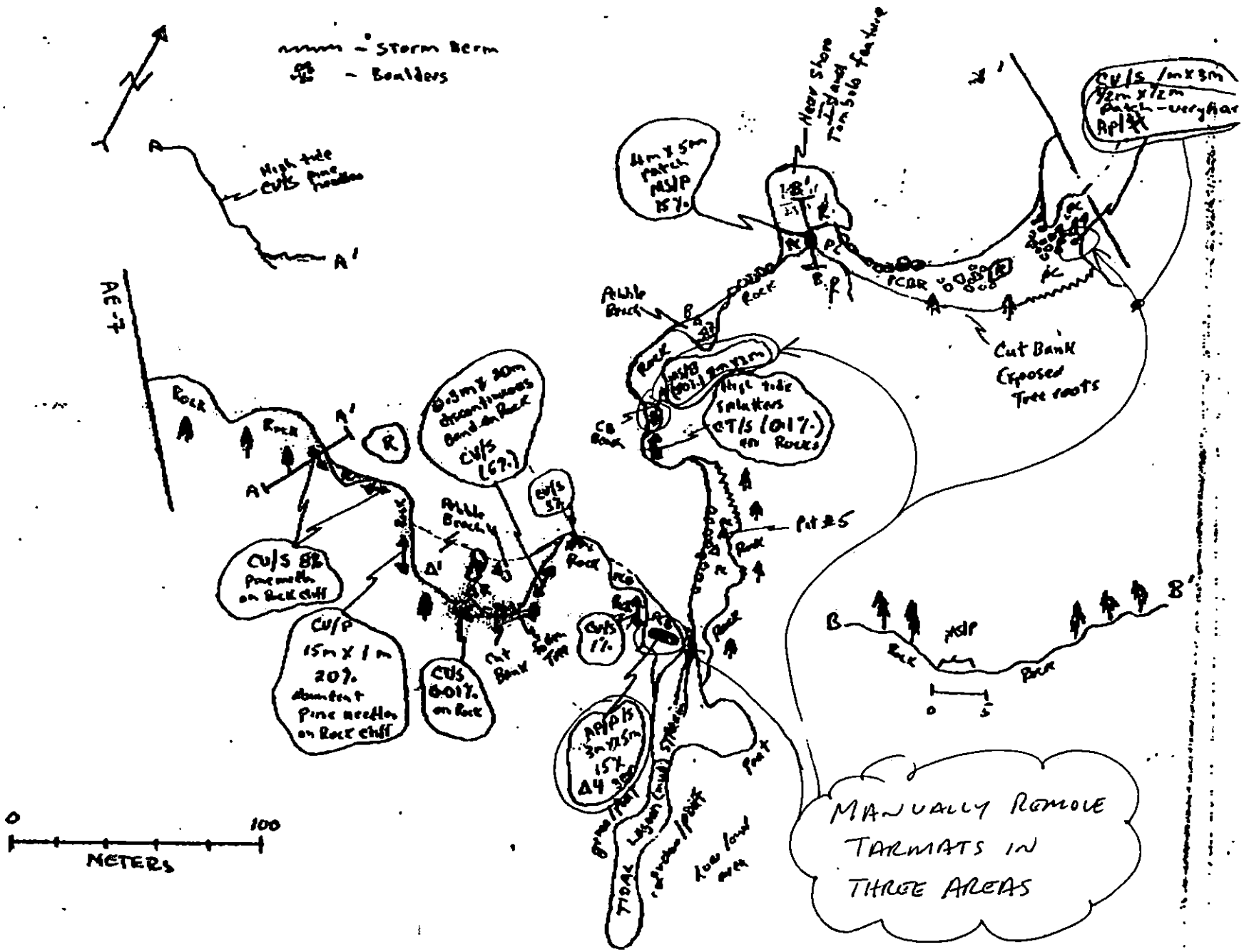
CT/P Patchy Distribution

CT/S Splashed Distribution

Oiled Vegetation

Photo location, direction, and number

SKETCH MAP


Storm Berm
Boulders
High tide CV/S pine needles
A
A'
AE-7
Rock
R
CV/S 8% Pine needles on Rock cliff
CV/P 15m x 1m 20% abundant Pine needles on Rock cliff
CV/S 60% on Rock
Cut Bank
Root
Root
Root

25/44

SHORELINE ECOLOGICAL SUMMARY

REVISION: 09/22/89

Segment ST / AE 7 Subdivision A Date (mo / day / yr) 4-24-90

Time (24 hr) _____ Biologist TONY ZAMORA

(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 20 Low —

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

Photographs:
Roll No. ST-16-11
Frames 7-14

BARNACLES

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

NOT PRESENT

MYTILUS

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

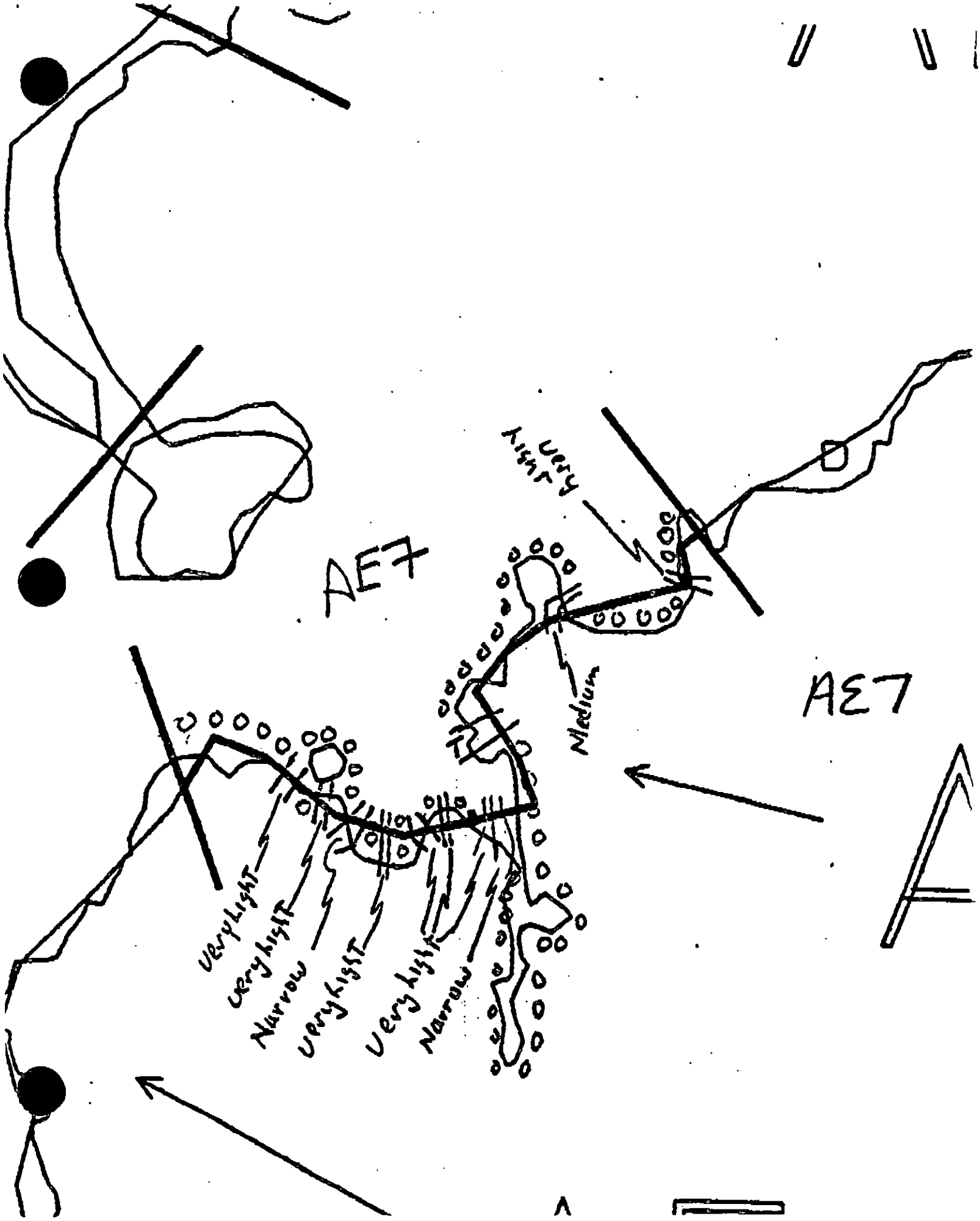
NOT PRESENT

Wildlife Observations/ General Comments:

- 1 GROUSE SPOTTED
- DENSE BARNACLE SPAT, NEW GROWTH OF FUCUS ON ROCK, NUCELLA COPULATING, LITTORINA EGGS.
- NO OIL COATED BIOTA SEEN. LOW MORTALITY OVERALL.
- THIS SEGMENT HAS SIMILAR ROCKY SHORE BIOTA AS ON THE REST OF APPLEGATE ISLAND.

ECOLOGICAL CONSIDERATIONS:
GU, 7JJ, POSSIBLY 1/A/B

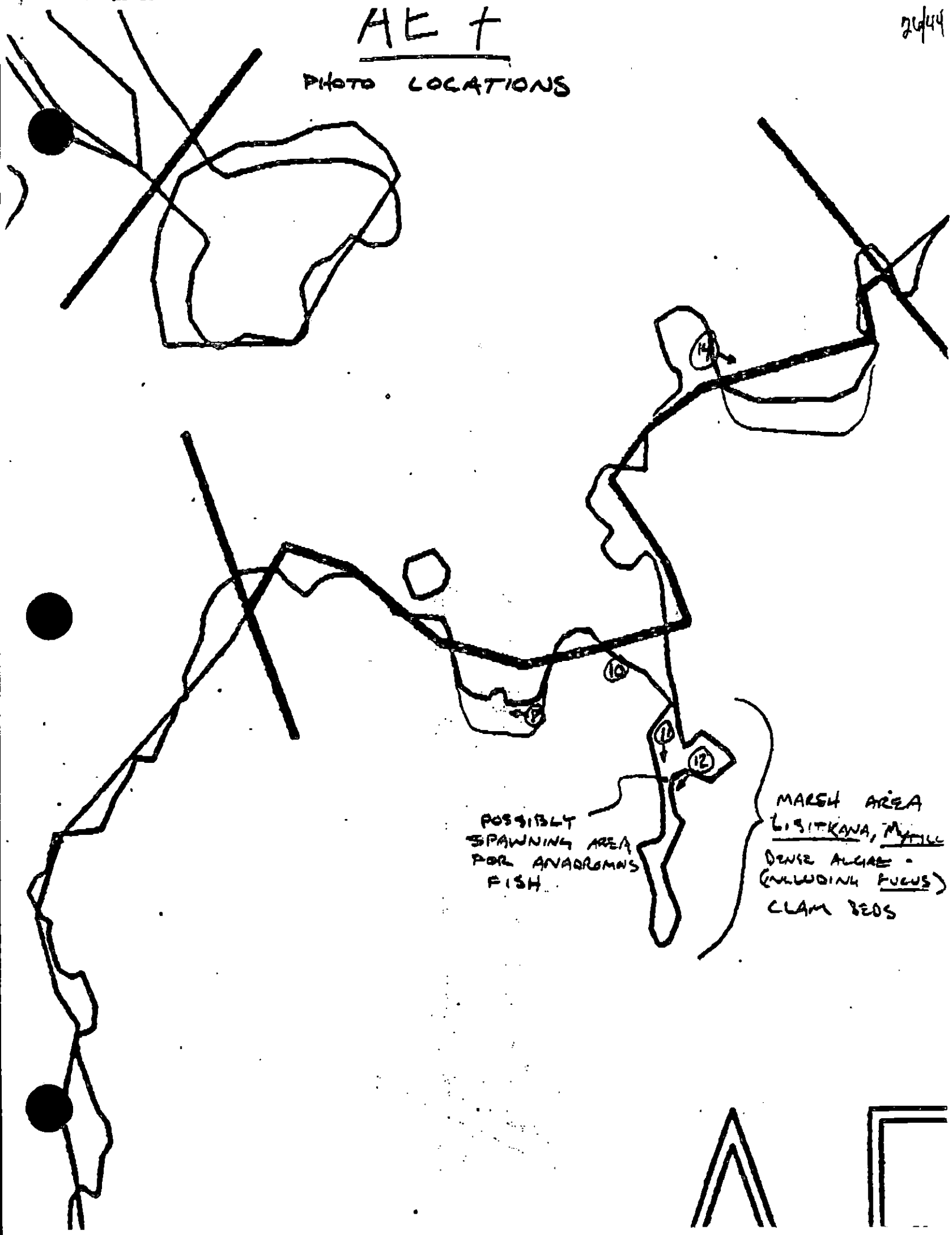
24/40


AE7
Very Light
Medium
AE7
Very Light
Very Light
Narrow
Very Light
Very Light
Narrow

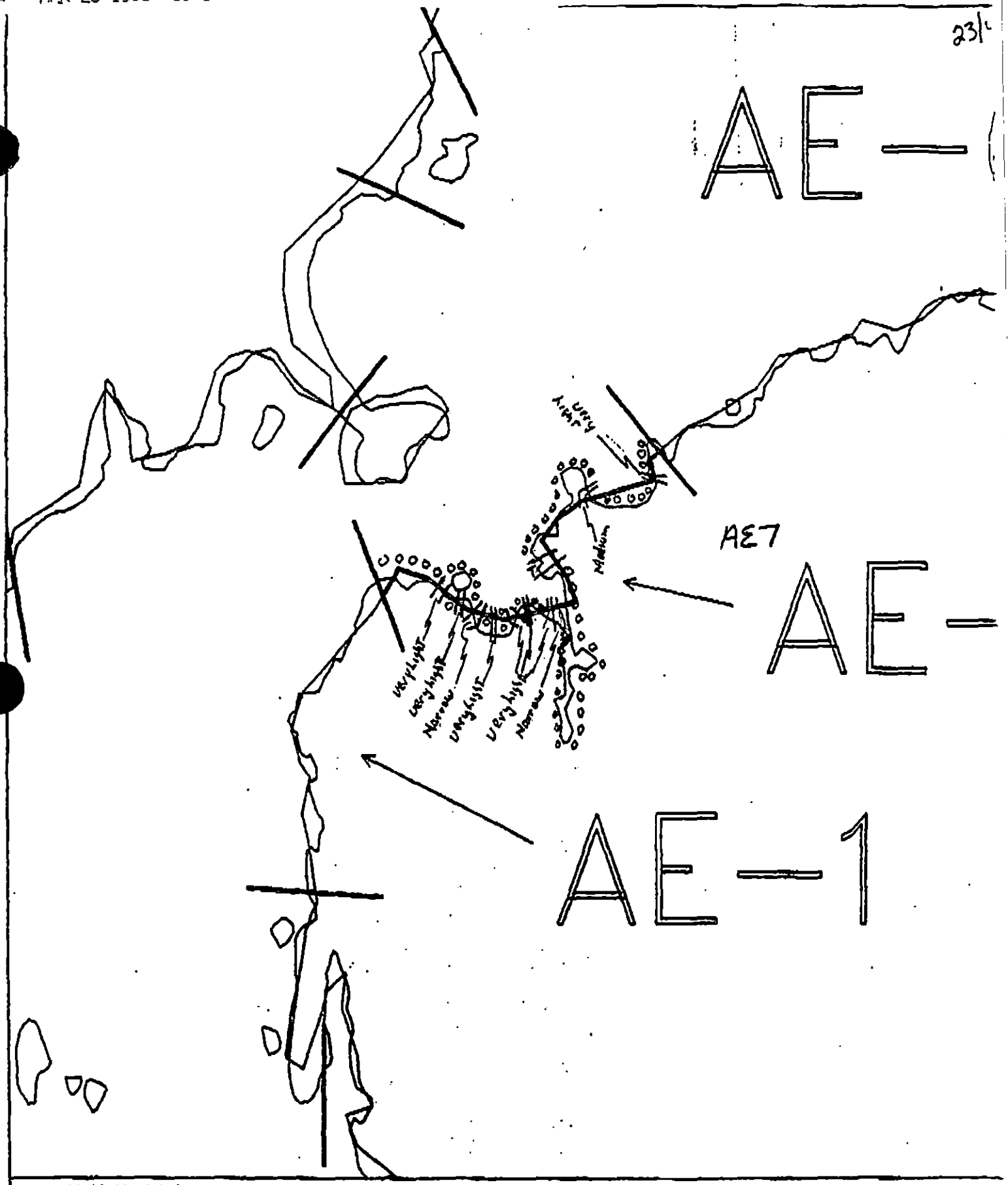
26/44

AE 1

PHOTO LOCATIONS



23|c



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

AE-7

ADEC Segment Length: 548m

0 100 200 300
Metres

Map Key: PWS-8
Name: Reimer
Date: 4/24/90
Data Entered:

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT AE-7 SUBDIVISION A (1 of 1)

WORK WINDOW	
Manual Pickup Tarmat Removal	OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

No specific ecological time constraints identified.

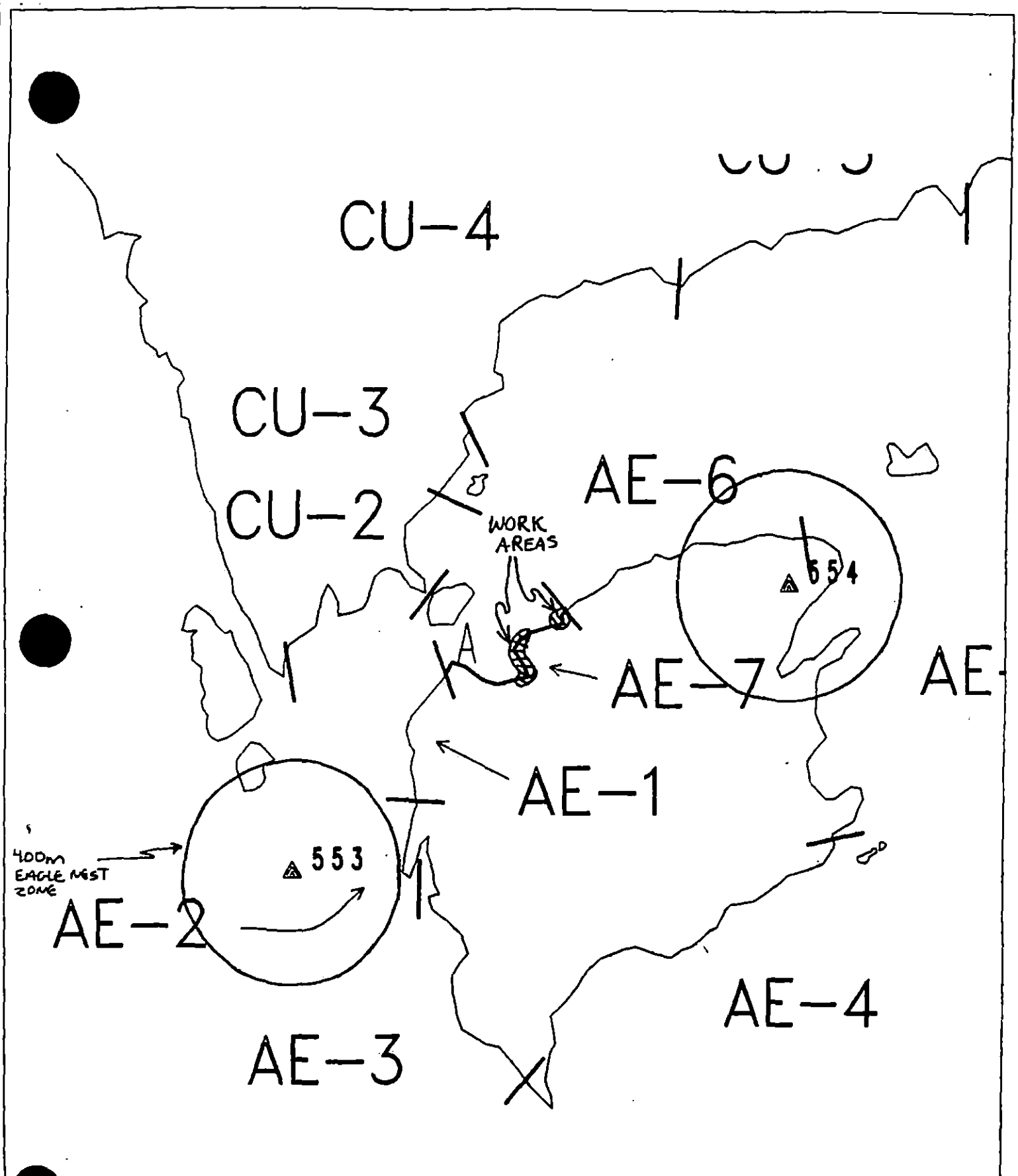
OTHER ECOLOGICAL CONSIDERATIONS

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

TAG ADDENDUM DATE 5/21/90.
ADEC Art Weiner
EXXON Avon Teal
NOAA Joseph Talbott
USCG M. T. Hall

FOSC _____ DATE 5-21-90

Prepared by: _____ Date: 5/19/90



EXXON

Exxon Company, USA

Map Key: PWS-AE-7

ECOLOGY MAP

SEGMENT AE-7

SUBDIVISION A (1 of 1)

METERS

★ Seabird Colony

▲ Eagle Nest

SHORELINE EVALUATION

SEGMENT ST/ AE-07 SUBDIVISION A (1 OF 1) DATE 42490

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

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

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

SHPO SIGNATURE: [signature] DATE: 5/8/90

OILING CATEGORIZATION:

Wide 0 m: Medium 7 m: Narrow 20 m: V.Light 75 m: No Oil 445 m
Subsurface Oil Observed: Yes ____ No X Maximum Depth ____

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)

+ MOUSSE

COMMENTS: Recommended treatment includes manual removal of tarmats in three areas indicatd on sketch map. No specific working time constraints.
SEE ADDENDUM DATED 5/19/90
REX C.

TAG COMMENTS: ____

TAG APPROVAL DATE: 5/8/90.
ADEC Art Weiner [signature]
EXXON Andy Tear [signature]
NOAA Gary Petrac [signature]
USCG G.A. Reiter G.A. Reiter

FOSC: [signature] DATE: 5-12-90

SHORELINE EVALUATION

SEGMENT ST/ AE-07 SUBDIVISION A (1 OF 1) DATE 42490

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

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

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

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

OILING CATEGORIZATION:

Wide 0 m: Medium 7 m: Narrow 20 m: V.Light 75 m: No Oil 445 m
Subsurface Oil Observed: Yes ____ No X Maximum Depth ____

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)

+ MOUSSE

COMMENTS: Recommended treatment includes manual removal of tarmats in three areas indicatd on sketch map. No specific working time constraints.

TAG COMMENTS: ____

TAG APPROVAL DATE: 5/8/90.
ADEC Art Weiner Art Weiner
EXXON Andy Tear
NOAA Gary Petrone Gary Petrone
USCG G.A. Reiter G.A. Reiter
FOSC: [illegible] DATE: 5-12-90

22/44 OG Reimer

SEGME[redacted] AE-7

SUBDIVISION A

DATE 4 / 24 90

CHECKLIST

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

LEGEND

1 ▲ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

CT/B Broken Distribution

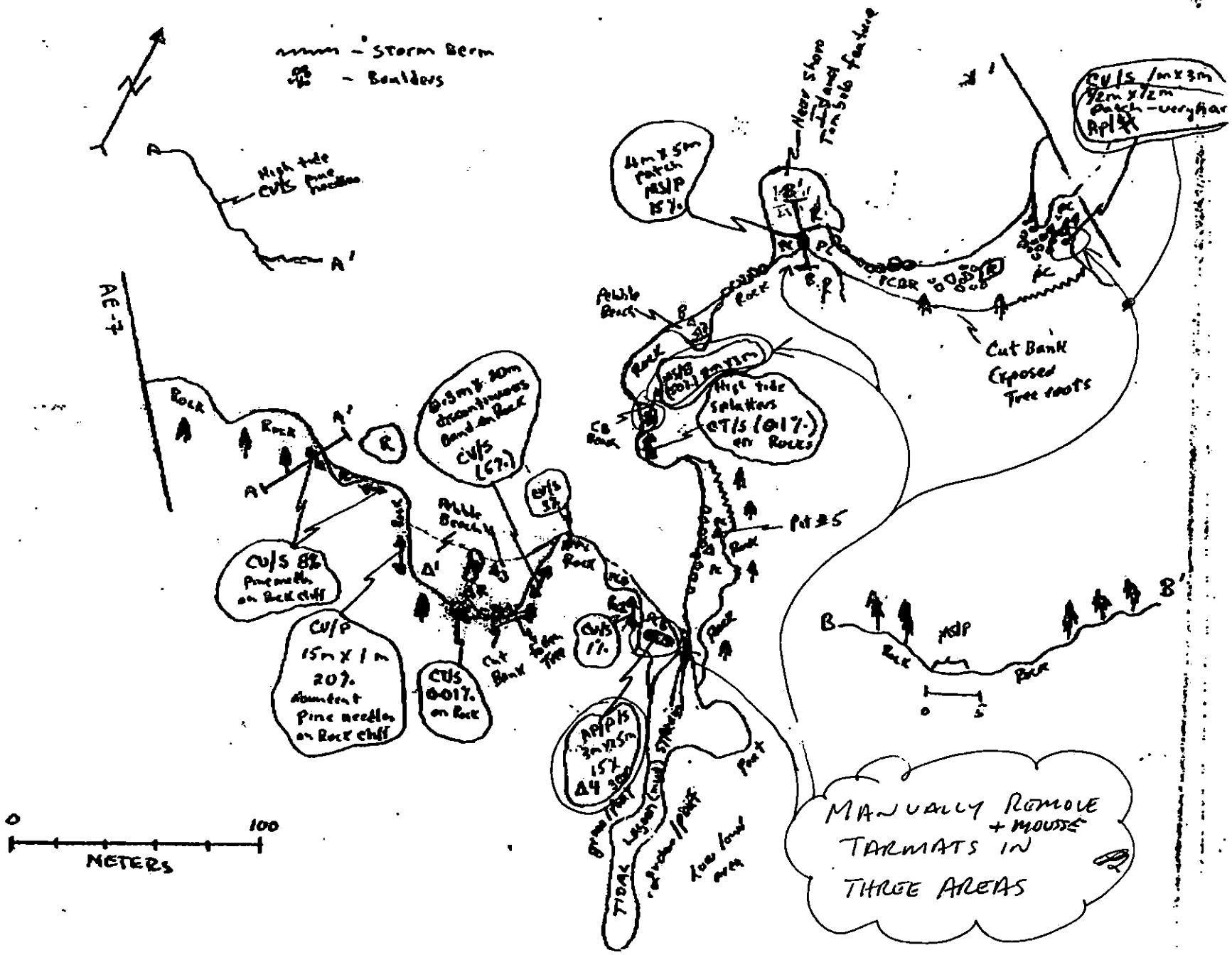
CT/P Patchy Distribution

CT/S Splashed Distribution

Oiled Vegetation

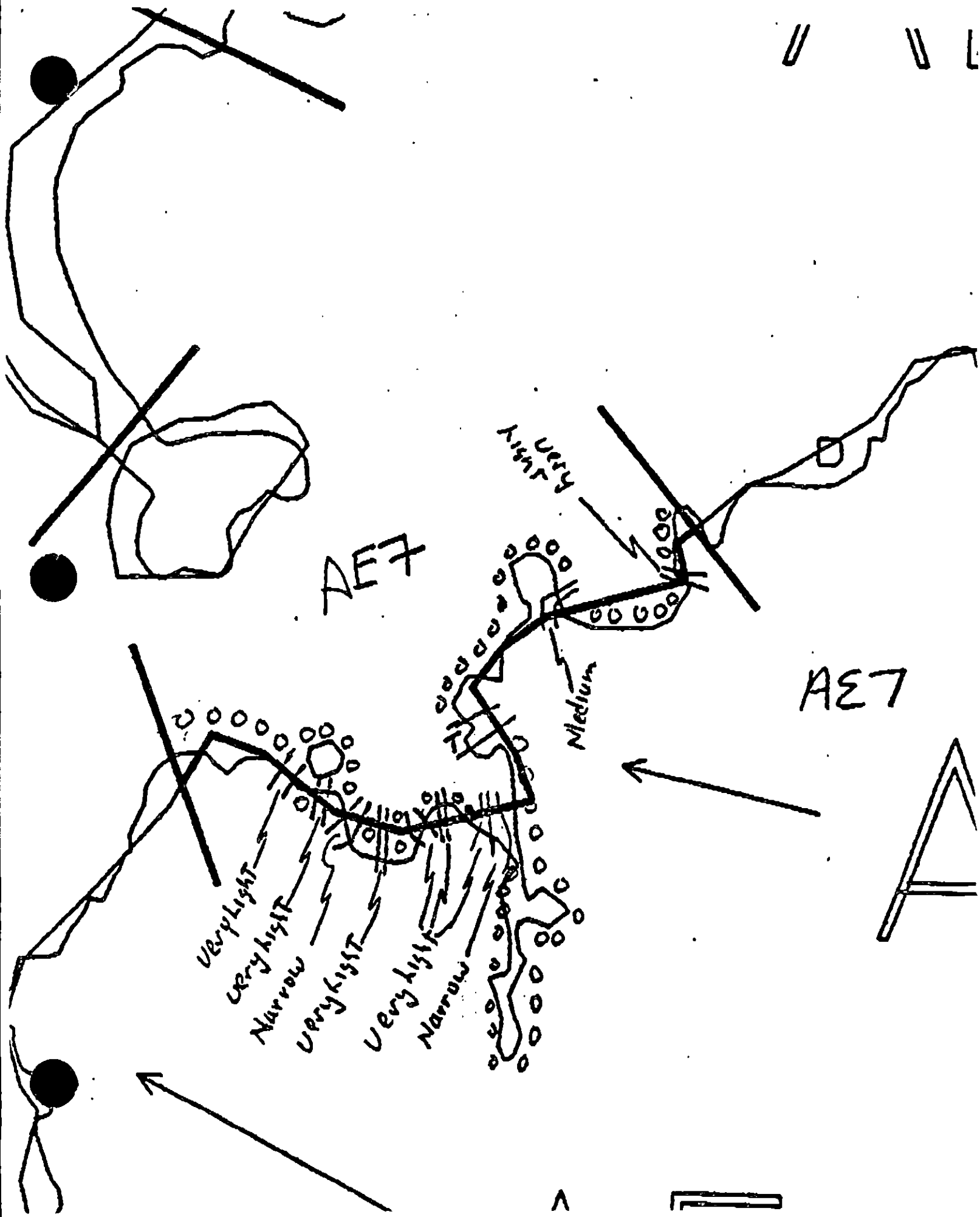
1 Photo location, direction, and number

[redacted]KETCH MAP



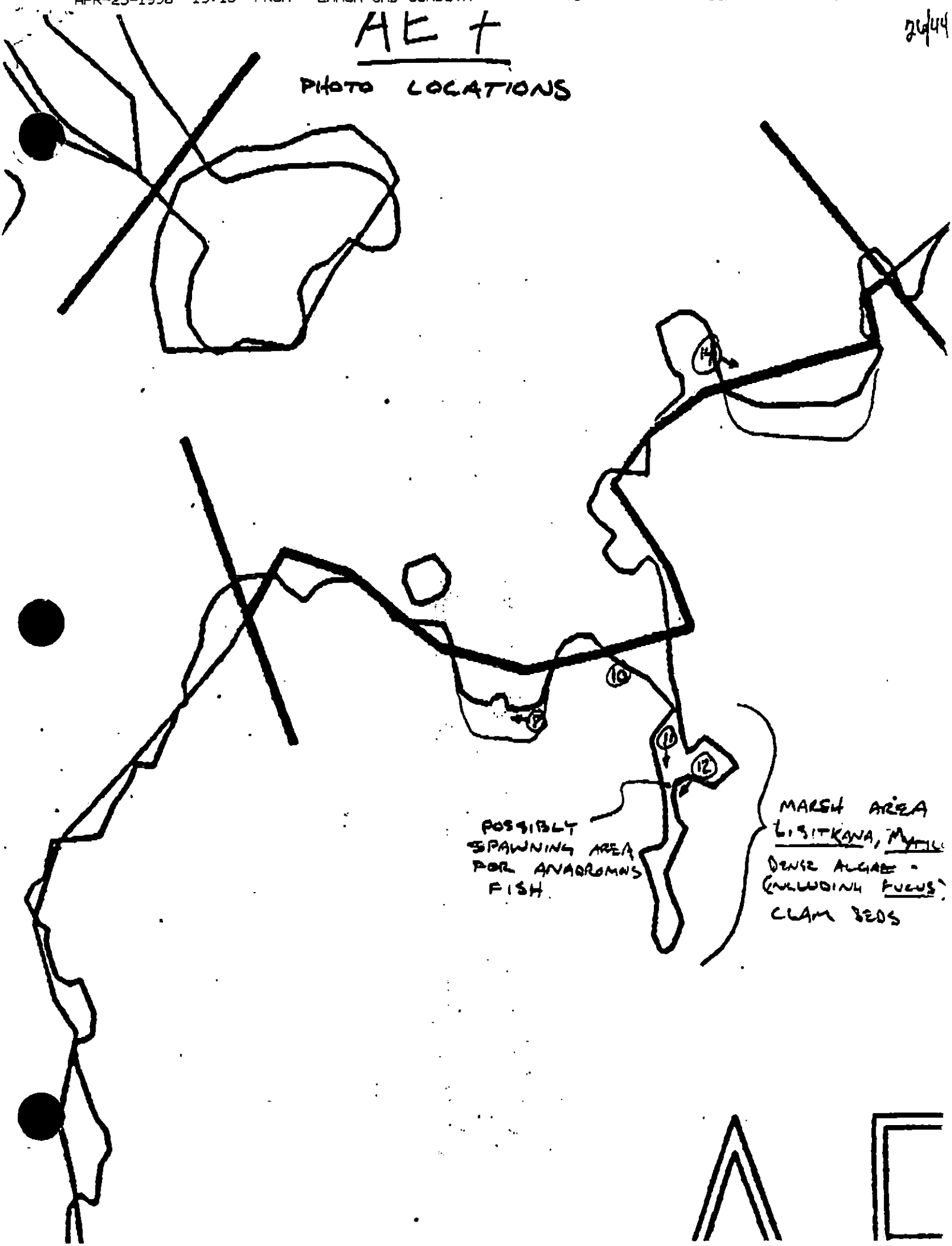
Oil Character Length (m): AP 16 PO 0 CV 15 CT 10 ST 0 MS 8 PT 0 TB 0 FL 0 NO 1063

REVISION 02/2000

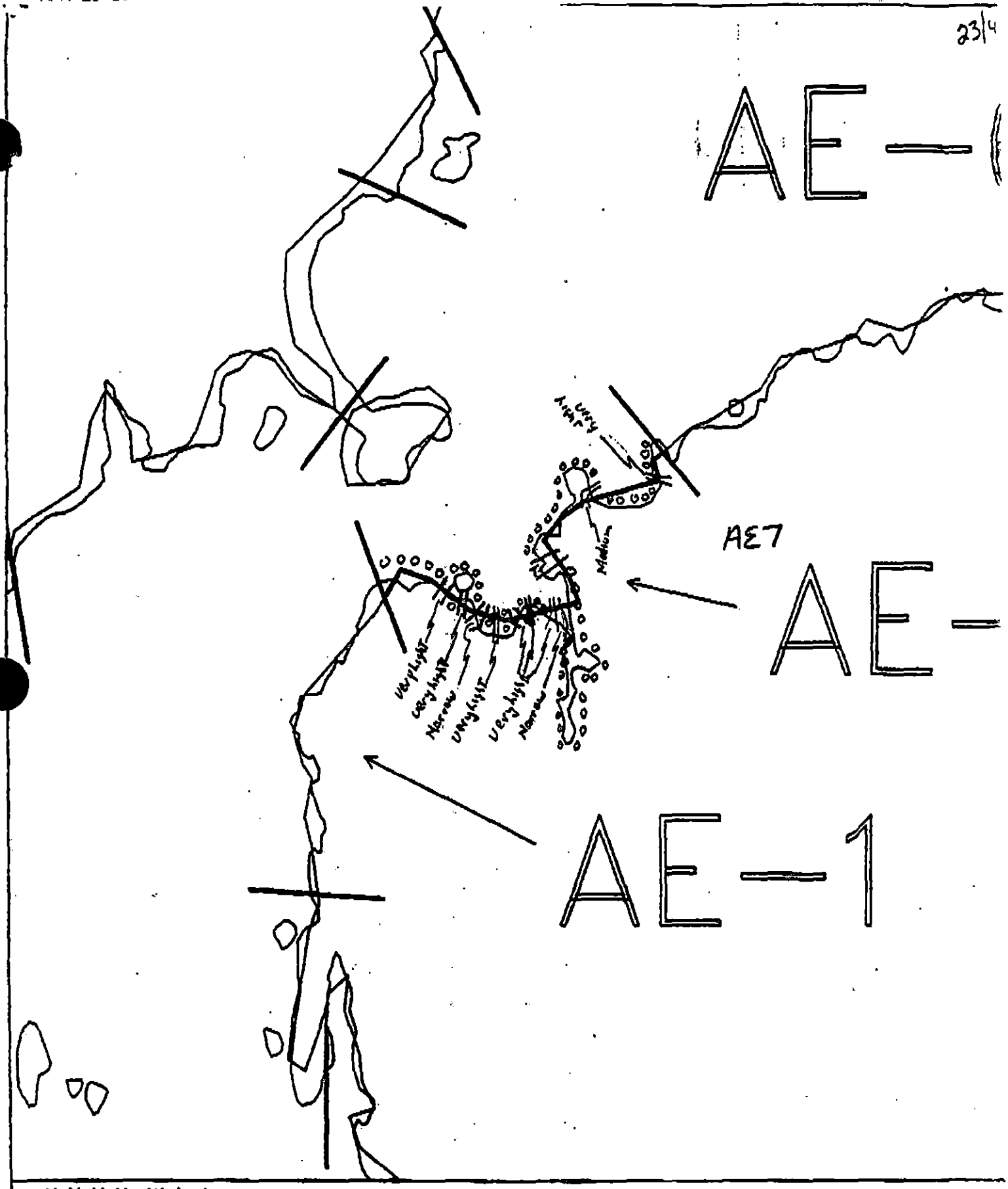

AE7
Very Light
Medium
AE7
Very Light
Very Light
Narrow
Very Light
Very Light
Narrow

AE 1

PHOTO LOCATIONS



23/4



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

AE-7

ADEC Segment Length: 548m

0 100 200 300
METRES

Map Key: PWS-8
Name: Reimer
Date: 4/24/90
Data Entered:

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/AG-01

SUBDIVISIONS: A (1 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ AG-01 SUBDIVISION A (1 OF 2) DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T 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 71 m: Medium 0 m: Narrow 0 m: V.Light 86 m: No Oil 0 m
Subsurface Oil Observed: Yes____ No X Maximum Depth_____

RECOMMENDATIONS:

____	No Treatment Recommended	____	Snare/Absorbent Booms
X	Treatment Recommended	____	Oil Snares (pom poms)
____	Manual Pickup	____	Absorbents (pads,rolls,etc)
X	Bioremediation	____	Spot Washing:____Wands
____	Tarmat: ____Breakup		____ Beach Cleaner
	____Removal	____	Other (see comments)

COMMENTS: Recommend bioremediation of pocket beach as shown on sketch map. Work should be conducted after 6/1 and after contacting USFWS regarding eagle nesting status in subdivision.

TAG COMMENTS:_____

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

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

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

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

FIELD SHORELINE COMMENT SHEET (7 of 22)

SEGMENT ST / AG-1 SUBDIVISION: A DATE 4/6/90

NAME Jeffrey Rahlin SIGNATURE Jeffrey Rahlin

☐ NO TREATMENT RECOMMENDED ■ TREATMENT SUGGESTED

COMMENTS

~~Beach~~ cobble ~~pebble~~ Beach had a wide band of oil. The oil was subsurface on the entire intertidal zones. The ~~pebble~~ and bedrock were coated with oil in a fairly wide and heavy band. Sheen ~~was~~ came off from the sediments quite readily. The oil was 2-5cm deep in the sediments.

ADEC

NAME Lori Stratton SIGNATURE Lori J. Stratton

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS

Wide coat of oil on sides of boulders, oil film extending over surface of cobbles should be treated due to rainbow sheen released in pits at M I. Surface oil under cobbles ~~extend~~ penetrate to 5 cm. See locations #2 and #4.

Hot water wash or bioremediation are suggestions for this area. Moderate mussel populations are present.

LAND MANAGER

NAME SIGNATURE

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

No land manager

SHORELINE OILING SUMMARY (2 of 22)

REVISION NO. 03/22/90

OG K. DE BUSSCHERE (KDB) Jeffrey Rollin SEGMENT ST/ AG-1
BIO D REED LAND REP NONE SUBDIVISION A
EXXON Tony Diaz ADEC Lori Stratton TIME 17:20 to 17:50
TEAM NO.: 9 TIDE LEVEL: 1 to 3/4 FT DATE 4/6/90
ST. SUBDIVISION LENGTH: 155 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: N to S
SURFACE SEDIMENTS: R 70 % B 5 % C 10 % P 10 % G 0 % S 0 % M 5 % V 0 %
SLOPE: Lang 30 % Hang 40 % Vert 30 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
OIL CATEGORY LENGTH: W 55 m M 0 m N 0 m VL 100 m NO 0 m

SURFACE OIL

CHARACTER	DISTRIBUTION /C	/G	/P	/S	OIL / FILM COLOR BR/DK	DBL/RW	OY/SL	DBR/TL	LBR	IMPACTED ZONES SU	UI	MI	LI
ASPHALT PAVEMENT													
POOLED													
COVER													
COAT		X				X					X		
STAIN	X					X					X	X	X
MOUSSE													
PATTIES													
TARBALLS													
FILM													
NO OIL										X			

PAVEMENT: H F S — sq. m by — cm
PATTIES / TARBALLS — BAGS
NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED ☐ YES ☐ NO
TYPE —
#BAGS —

Photographs:
Roll No. ST-9-2
Frames 22

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER OP	OR	OL	OF	NO	OILED INTERVAL (CM-CM)	BELOW UO	UC	OIL / FILM COLOR SGL/BR	DBL/RW	OY/SL	DBR/TL	LBR	PIT ZONE SU	UI	MI	LI	ANA	SUBSURFACE SEDIMENTS
1	20		X				0-5*		X			X				X				P/G&P (H2O)
2	20		X				0-5*		X			X					X			P/G&P (H2O)
3	15		X				0-2		X			X					X			P&C/S&G (H2O)
4	20		X				0-5		X			X				X				P&C/P (H2O)
5	5				X		0-5*	X				X				X				MUD

LOC ① LOC ②

COMMENTS * oiled interval of <5cm in fine sediments of pits #1,2+5 does not constitute subsurface oil.

- SUBDIVISION CONSISTS OF 2 POCKET BEACHES (LOC ① & LOC ②) AND BEDROCK → ±10M → ±45'
- OILING IS WIDE IN POCKET BEACHES; STAIN/C EXTENDS FROM LI TO UI ON PEBBLES & COBBLES WITH OR UP TO ±5 CM DEEP. (OIL SHEEN DEVELOPED ON H2O IN PITS)
- ON S-END OF OF SUBDIVISION (& SKETCH MAP), AN OIL SHEEN COVERED THE MUDFLAT IN HIGH SPRING TIDE.

Page 1 of ___ REVIEWED DIL DATE 4/10/90

OG K. DEBUSSCHERE

SEGMENT A6-1

SUBDIVISION A

DATE 4/6/90

SKETCH MAP (3 of 22)

ST-AG-1-A
Location #2

CHECKLIST

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

LEGEND

1 △ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

CT/B Broken Distribution

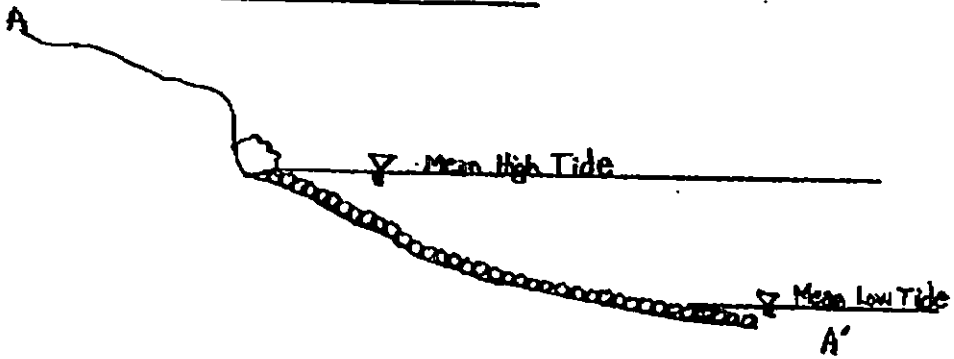
CT/P Patchy Distribution

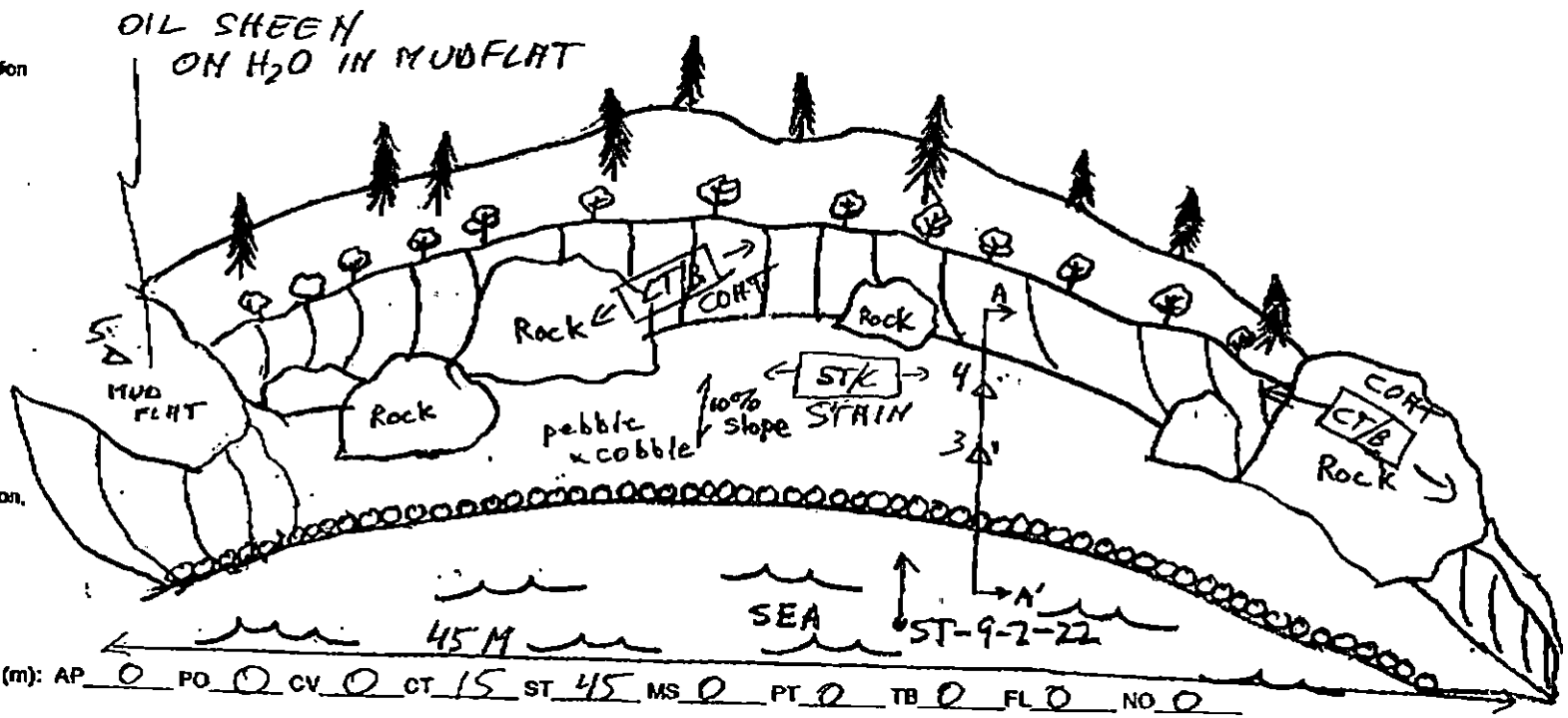
CT/S Splashed Distribution

Oiled Vegetation

1 ●→ Photo location, direction, and number

Profile A-A'

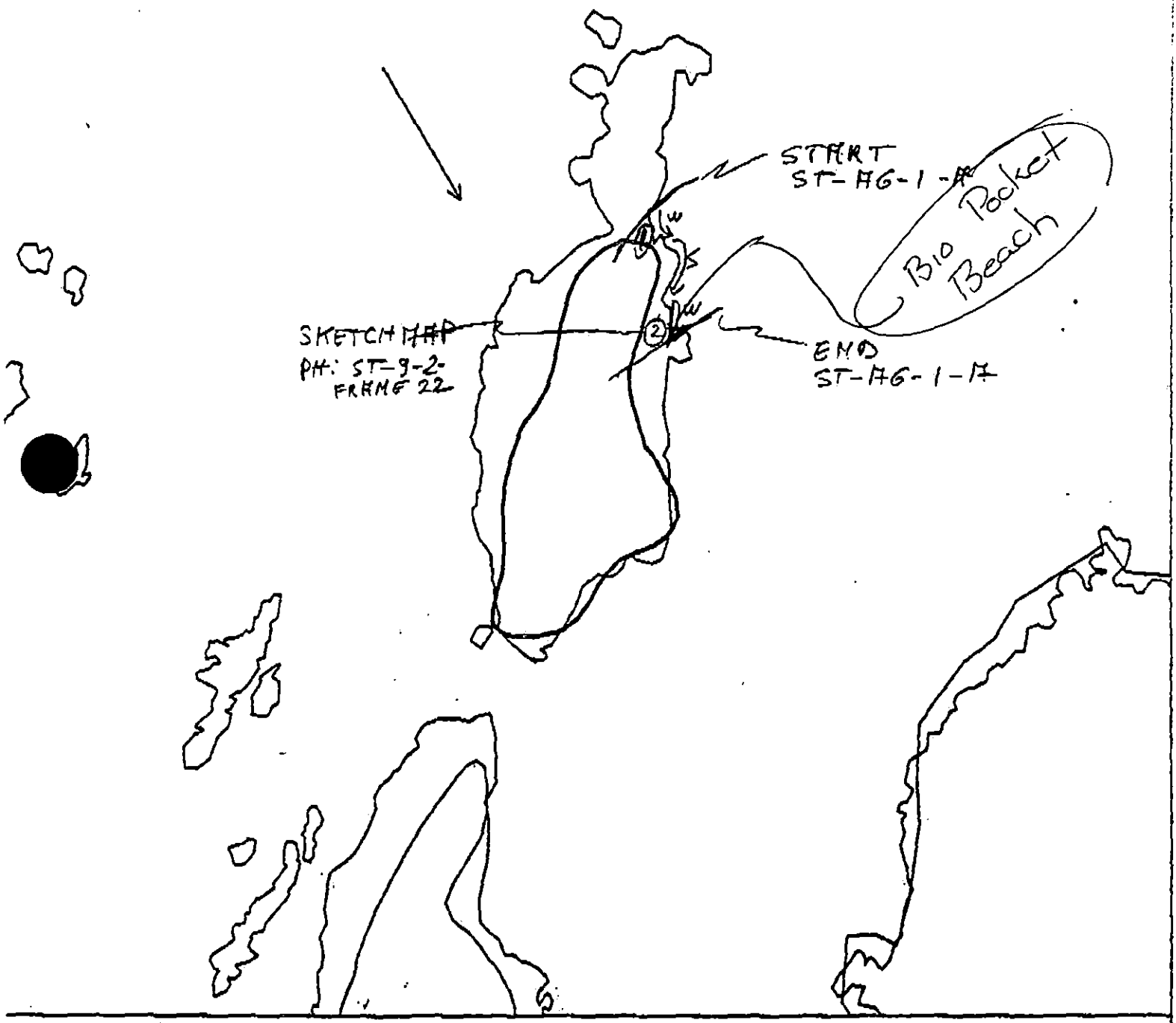




Oil Character Length (m): AP 0 PO 0 CV 0 CT 15 ST 45 MS 0 PT 0 TB 0 FL 0 NO 0

REVISION:03/24/90

AG-01



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

ST-AG-1-A

Total Segment Length: 1928

0 100 200 300
METERS

Map Key: PWS-9
Name: K. DEBUSSCHERE
Date: 4/6/90
Data Entered:

SHORELINE ECOLOGICAL SUMMARY (6 of 22)

REVISION: 03/22/90

Segment ST / AG-1 Subdivision A Date (mo / day / yr) 04/06/90

Time (24 hr) 1720-1750 Biologist D. Reed

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

(B) Overall % cover of biota (% of segment): Dense 20 Moderate 40 Low 40

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

Photographs: Roll No. ST-9-2
Frames 22

BARNACLES

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

MYTILUS

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

GASTROPODS

Dense			Moderate			Sparse			Rare			
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	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	X	1U	1M	1L	
2	2	2	2	X	2	2	2	X	2	2	2	
3	3	3	3	3	3	3	3	3	3	X	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:

NONE SHORT subdivision with wide oiled beach.

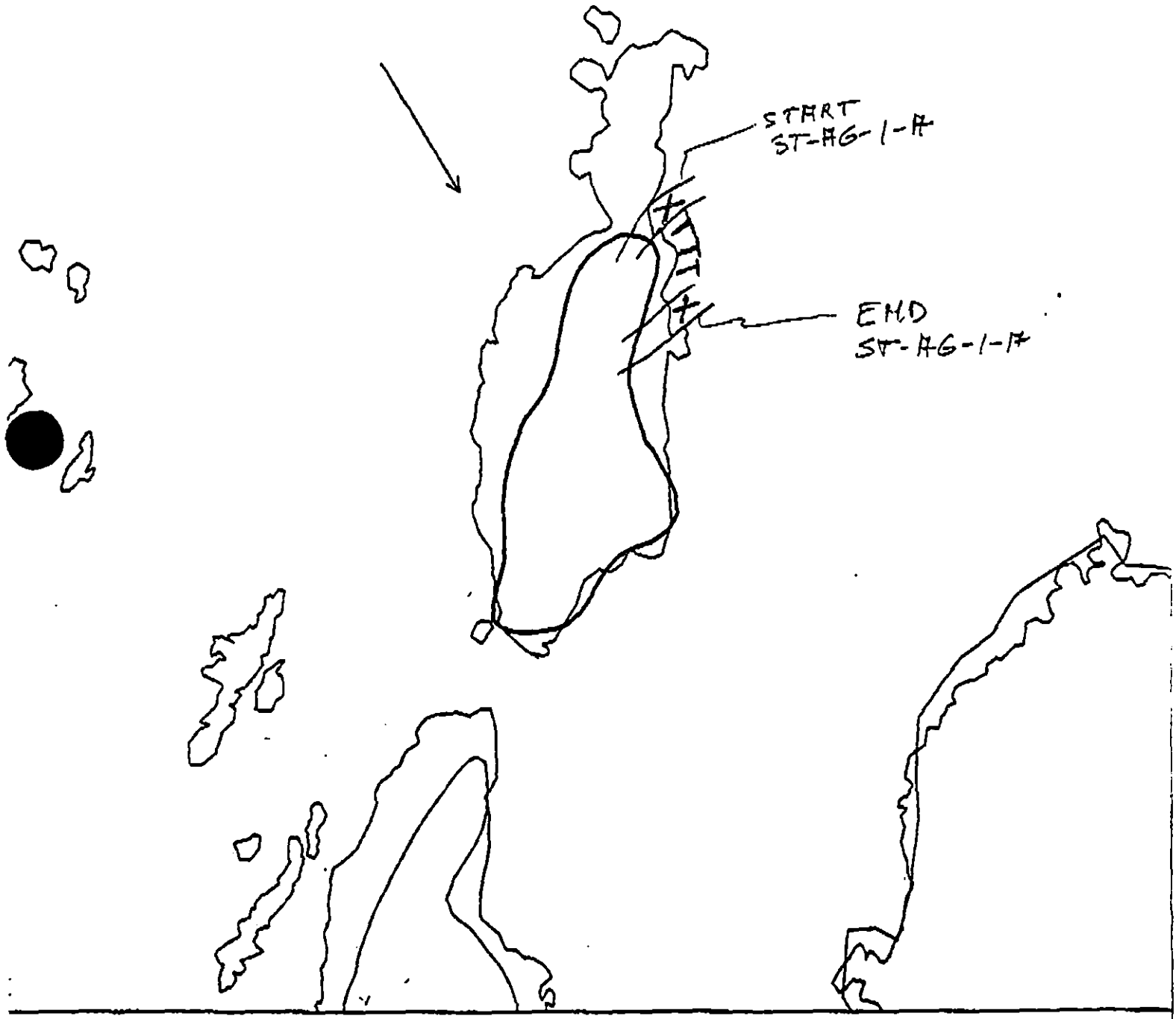
Ecological Considerations:

NONE

(5 of 22)

OIL MAP

AG-01



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

ST-AG-1-A

Total Segment Length: ~~1077~~ 1928

0 100 200 300

Map Key: PWS-9

Name: K. DEBUSSCHERE

Date: 4/6/90

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/AG-01

SUBDIVISIONS: B (2 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ AG-01 SUBDIVISION B (2 OF 2) DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T 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. Contact USFWS prior to treatment for permit if necessary as a result of eagle constraints.

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 21 m: Narrow 17 m: V.Light 817 m: No Oil 0 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 _____ FOSC:_____ DATE:_____
NOAA _____
USCG _____

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 unoiled 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 (12 of 22)

SEGMENT ST / AG-1 SUBDIVISION: B DATE 4/6/90

NAME Jeffrey Mahlin SIGNATURE Jeffrey Mahlin

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS The oil was very light and occurred as intermittent bands on the boulder and bedrock.

ADEC

NAME Lori Stratton SIGNATURE Lori J. Stratton

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS Oil was not mobile or heavy enough to warrant treatment.

LAND MANAGER

NAME _____ SIGNATURE _____

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

No land manager.

SHORELINE OILING SUMMARY (8 of 22)

REVISION NO. 03/23/90

OG K. DEBUSSCHERE ~~[illegible]~~ Jeffrey Allen SEGMENT ST/ H6-1
BIO D. REGO LAND REP NONE SUBDIVISION 13 (2 of 2)
EXXON TONY DIAZ ADEC Lori Stratton TIME 17:50 to 18:20
TEAM NO.: 19 TIDE LEVEL: 3/4 to ___ DATE 4 / 6 / 90
EST. SUBDIVISION LENGTH: 1773 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: E to W
SURFACE SEDIMENTS: R 80 % B 5 % C 10 % P 5 % G ___ % S ___ % M ___ % V ___ %
SLOPE : Lang 10 % Hang 30 % Vert 60 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
OIL CATEGORY LENGTH: W 0 m M 20 m N 20 m VL 1733 m NO 0 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	/C	/B	/P	/S	BRN/BLK	ORN/PNK	GY/SL	BRN/TL	LBR	SU	UI	MI	LI
ASPHALT PAVEMENT													
POOLED													
COVER													
COAT		X				X					X		
STAIN	X		X			X					X		
MOUSSE													
PATTIES													
TARBALLS													
FILM	X							X			X	X	
NO OIL										X			X

PAVEMENT: H F S — sq. m by — cm

PATTIES / TARBALLS — BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED ☐ YES ☒ NO

TYPE ___

#BAGS —

Photographs:

Roll No. ___

Frames NONE

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL	BELOW		OIL / FILM COLOR					PIT ZONE				ANA	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO	(CM-CM)	UO	UC	BRN/BLK	ORN/PNK	GY/SL	BRN/TL	LBR	SU	UI	MI	LI		
1	15					X	-										X			C/P
							-													
							-													
							-													
							-													
							-													

COMMENTS

SUBDIVISION IS MOSTLY BEDROCK - VERY LIGHT OILING

REVIEWED DIL DATE 4/10/90

SHORELINE ECOLOGICAL SUMMARY (11 of 22)

REVISION: 03/22/90

Segment ST / AG-1 Subdivision B Date (mo / day / yr) 04/06/90

Time (24 hr) 1750-1820 Biologist D. REED

(A) Substrate type and % of segments:
(1) Bedrock 80 (2) Boulder 5 (3) Cobble 10 (4) Pebble 5 (5) Sand ____ (6) Silt ____

(B) Overall % cover of biota (% of segment): Dense 10 Moderate 70 Low 20

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

Photographs: ____
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	X	2	X	3	2	2	2	2
3	3	3	3	X	3	2	2	3	3	3	3
4	4	4	4	4	4	3	3	4	4	4	4
5	5	5	5	5	5	4	4	5	5	5	5
6	6	6	6	6	6	5	5	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	X	X	2	3	3
3	3	3	3	X	X	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	X	2	2	2	2	2	2	X
3	3	3	3	3	3	3	X	X	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

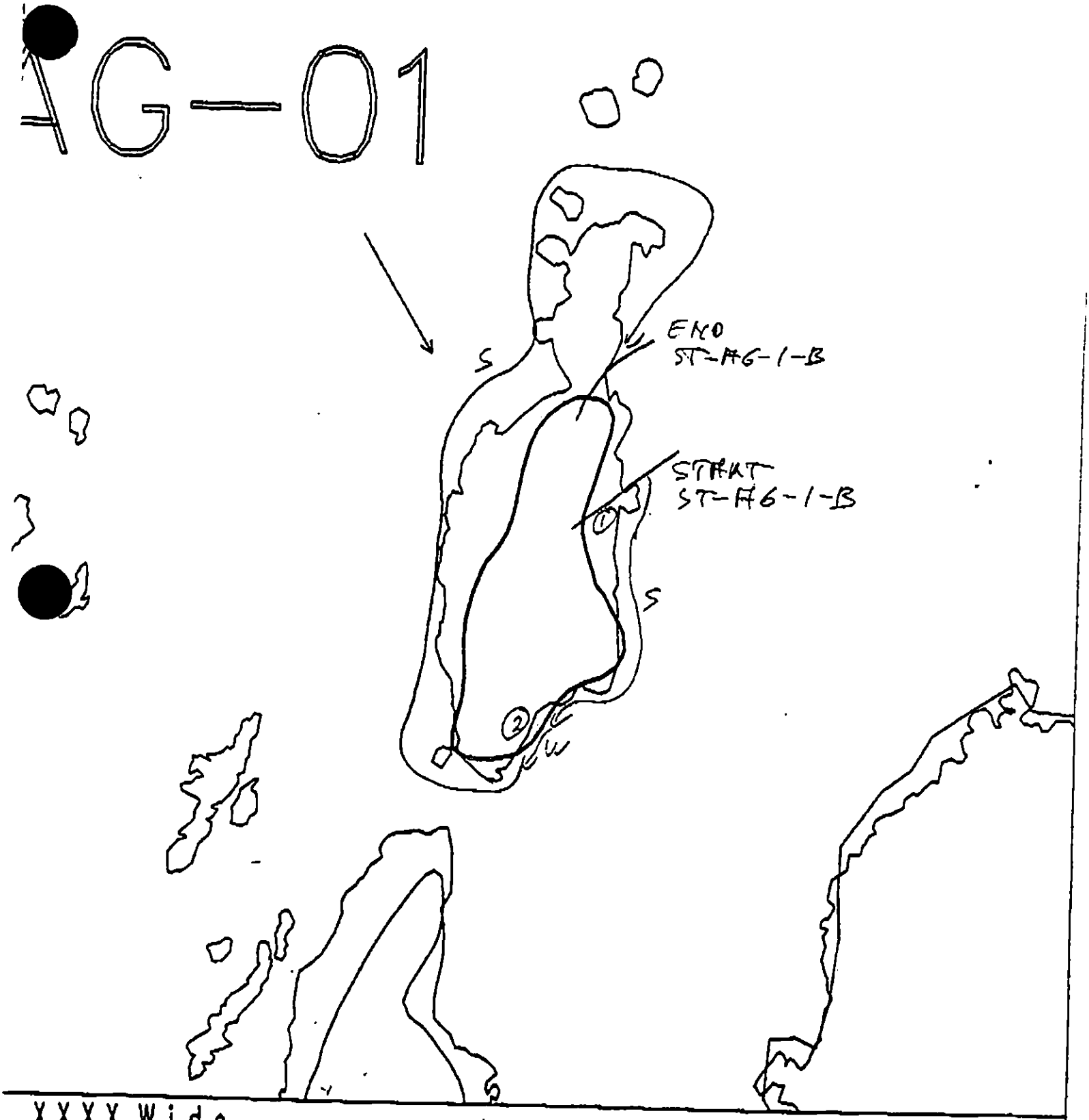
Wildlife Observations/ General Comments:

2 EAGLES

Ecological Considerations:

NONE - LIGHT OIL

S = SKIFF
W = WALK



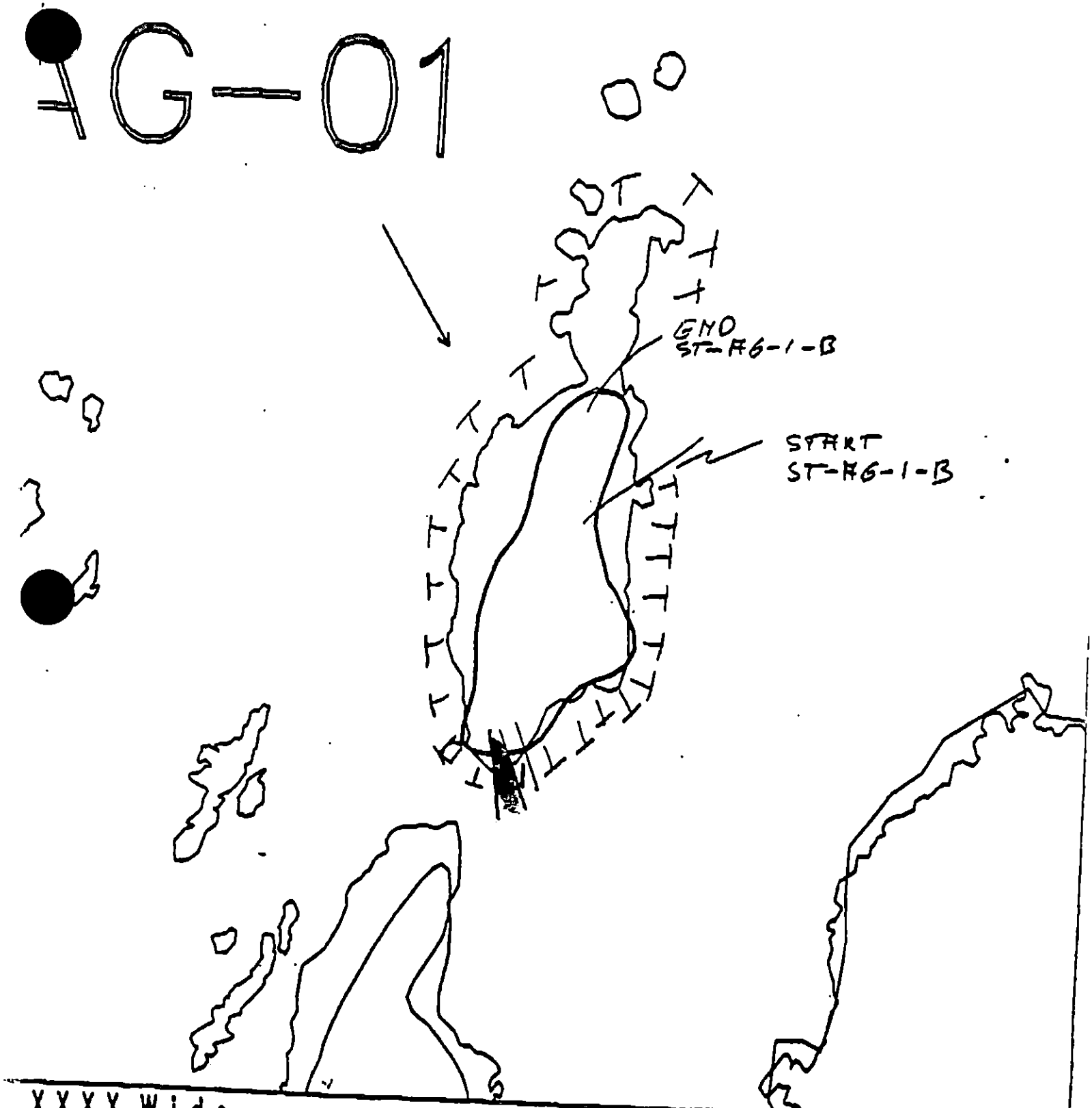
XXXX Wide
●/// Medium
---- Narrow
TTTT Very Light
0000 No Oil

ST-AG-1-B

Total Segment Length: ~~1011~~ 1928

0 100 200 300
METERS

Map Key: PWS-9
Name: K. DEBUCSCHERE
Date: 4/6/90
Date Entered:



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

ST-AG-1-B

Total Segment Length: 1928

0 100 200 300
METERS

Map Key: PWS-9
Name: K. DEBUSCHERE
Date: 4/6/90
Date Entered:

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT AG-1 SUBDIVISION A (1 of 2)

WORK WINDOW	
Bioremediation	**CLOSED**

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

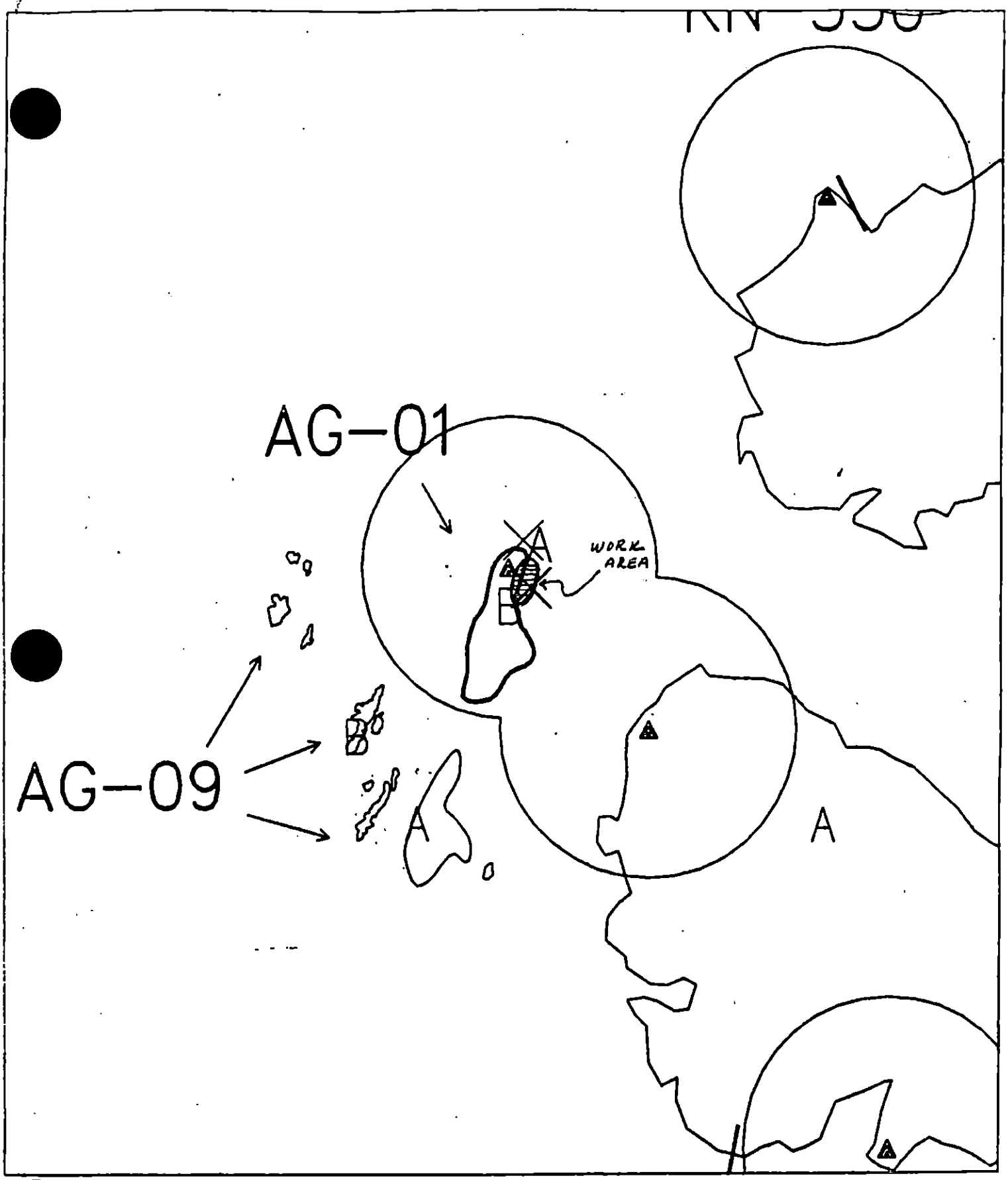
3N,O,P,Q	**Harbor Seal & Sea Lion Pupping and Molting**	NO TIME CONSTRAINT. Authorized per memorandum dated 5/14/90 from Kathryn Frost/ADF&G to Mark Kuwada/ADF&G.
5T	**Bald Eagle Nest**	USFWS 6/1/90 map indicates an active nest in Subdivision A. Closed to bioremediation within 400m of active nest.

OTHER ECOLOGICAL CONSIDERATIONS

If eagle nest constraint is removed, other ecological considerations will apply.

FOSC A Zanoffi Date 6/6/90

Prepared by J Phillips Date 6/14/90



EXXON

Exxon Company, USA
Map Key: PWS-AG-1
June 08, 1990

ECOLOGY MAP
SEGMENT AG-1
SUBDIVISION A (1 of 2)

METERS
0 352 703

★ Seabird Colony
▲ Active Eagle Nest
△ Inactive Eagle Nest

1 inch = 1153 feet

SHORELINE EVALUATION

SEGMENT ST/ AG-01 SUBDIVISION A (1 OF 2) DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T 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: [signature] DATE: 4/23/90

OILING CATEGORIZATION:

Wide 71 m: Medium 0 m: Narrow 0 m: V.Light 86 m: No Oil 0 m
Subsurface Oil Observed: Yes ____ No X Maximum Depth ____

RECOMMENDATIONS:

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

COMMENTS: Recommend bioremediation of pocket beach as shown on sketch map. Work should be conducted after 6/1 and after contacting USFWS regarding eagle nesting status in subdivision.

SPR CONSTRAINTS ADDENDUM dated 6/14/90 [illegible]

TAG COMMENTS: ____

TAG APPROVAL DATE: 4/23/90.
ADEC Art Weiner [signature]
EXXON Andy Tak [signature] FOSC: [signature] DATE: 4-27-90
NOAA Joseph Talbott [signature]
USCG Kenneth Keane [signature]

SHORELINE EVALUATION

SEGMENT ST/ AG-01 SUBDIVISION A (1 OF 2) DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T 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. Daniel McMahan DATE: 4/23/90

OILING CATEGORIZATION:

Wide 71 m: Medium 0 m: Narrow 0 m: V.Light 86 m: No Oil 0 m
Subsurface Oil Observed: Yes____ No X Maximum Depth_____

RECOMMENDATIONS:

_____No Treatment Recommended
X Treatment Recommended
_____Manual Pickup
X Bioremediation
_____Tarmat: _____Breakup
_____Removal

_____Snare/Absorbent Booms
_____Oil Snares (pom poms)
_____Absorbents (pads,rolls,etc)
_____Spot Washing:_____Wands
_____ Beach Cleaner
_____Other (see comments)

COMMENTS: Recommend bioremediation of pocket beach as shown on sketch map. Work should be conducted after 6/1 and after contacting USFWS regarding eagle nesting status in subdivision.

TAG COMMENTS:

TAG APPROVAL DATE: 4/23/90.
ADEC ART WEINER
EXXON MONITRAC
NOAA JOSEPH TALBOTT
USCG KENNETH KEANE
FOSC: DATE: 4-27-90

OG K. DEBUSSCHERE

SEGMENT/ A6-1

SUBDIVISION A

DATE 4/6/90

SKETCH MAP (3 of 22)

ST-AG-1-A
Location #2

CHECKLIST

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

LEGEND

1 ▲ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

CT/B Broken Distribution

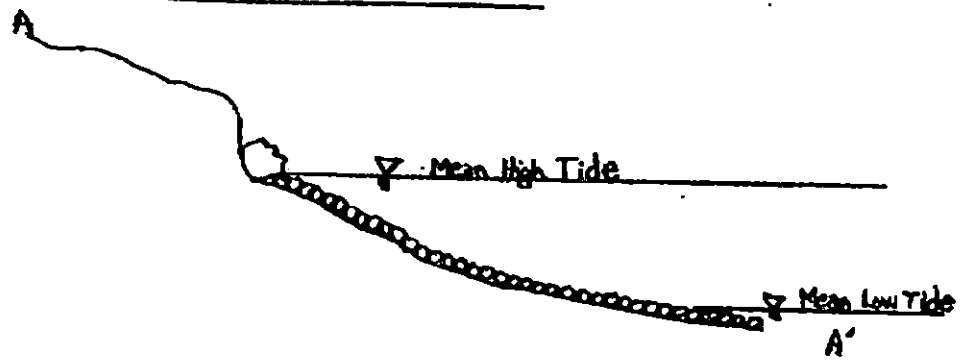
CT/P Patchy Distribution

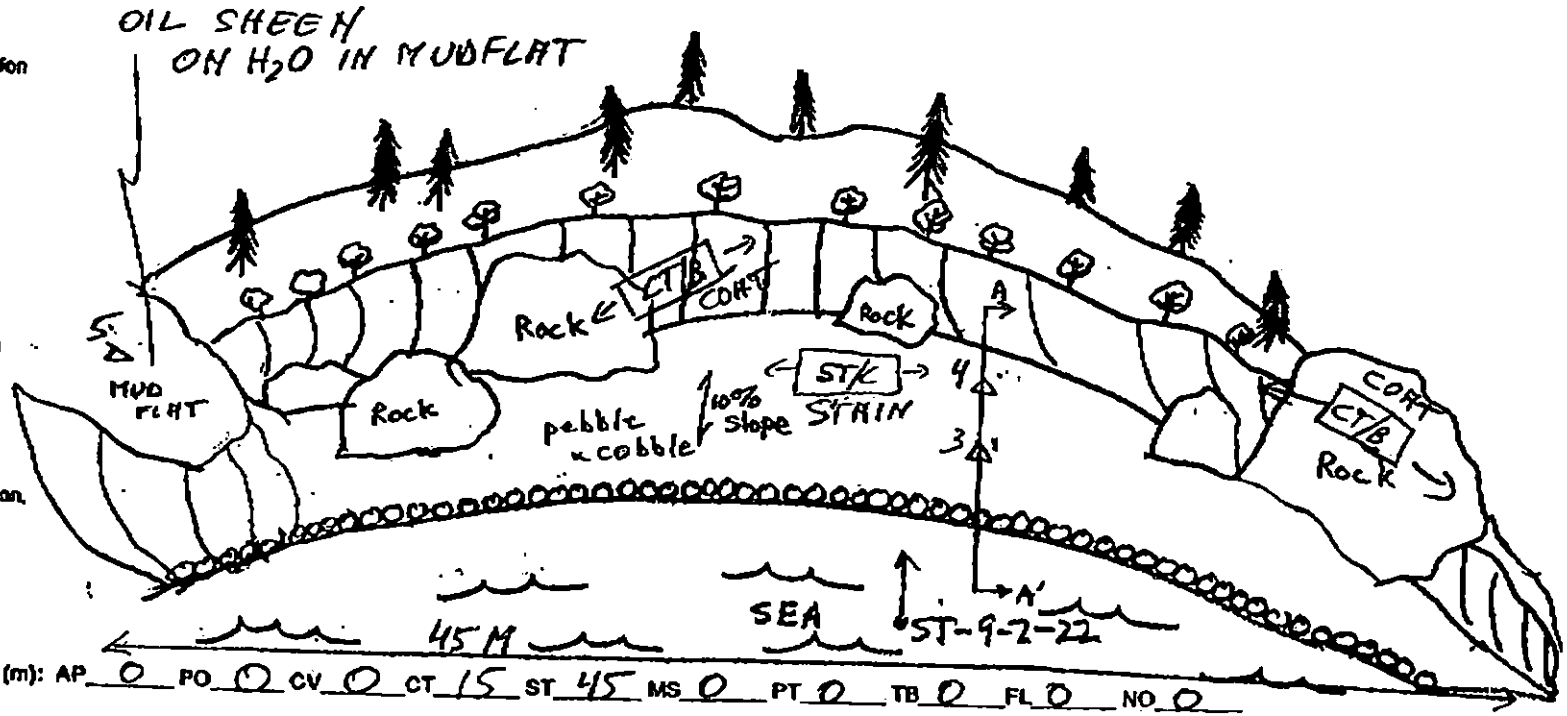
CT/S Splashed Distribution

Oiled Vegetation

1 Photo location, direction, and number

Profile A-A'

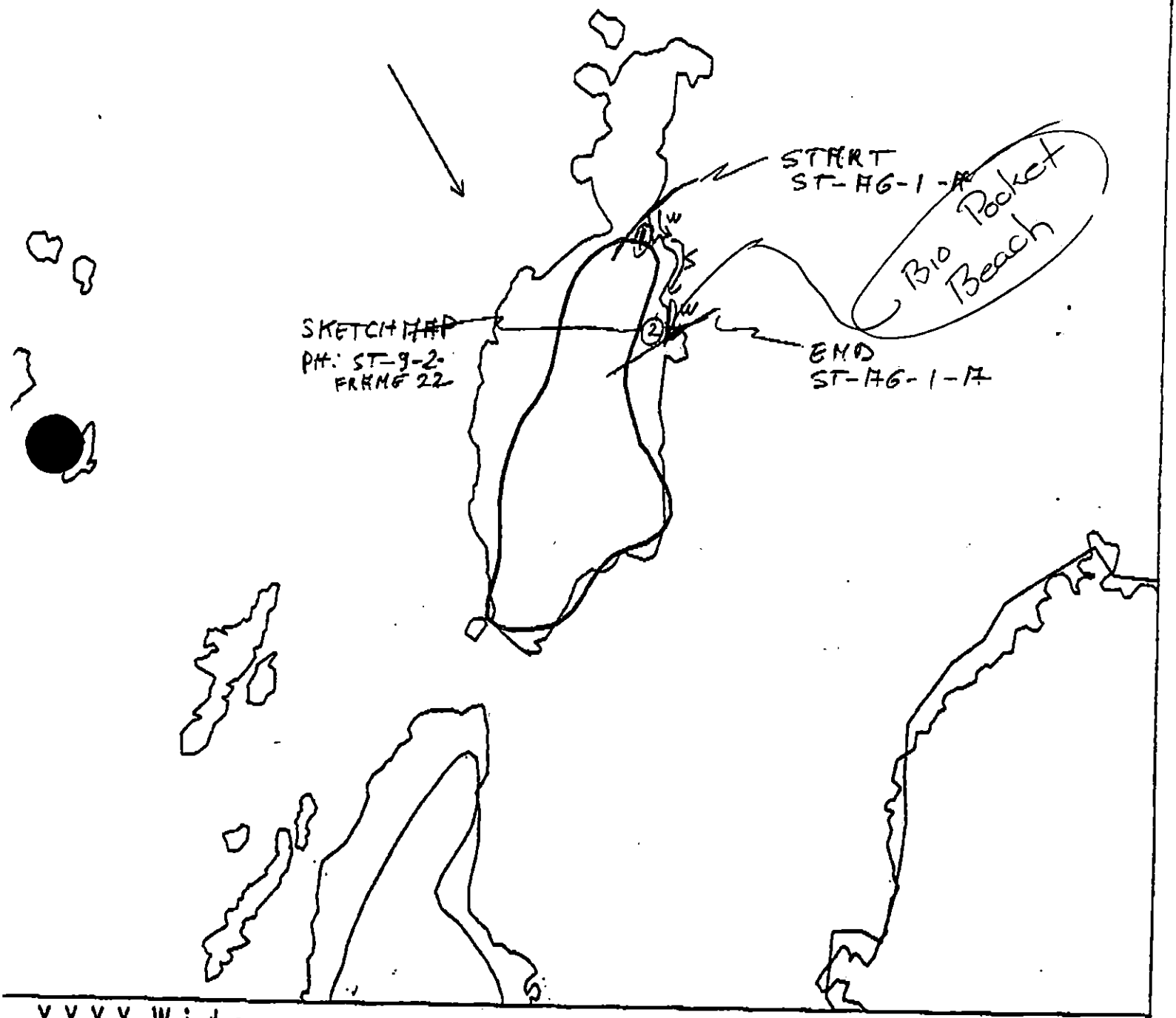




Oil Character Length (m): AP 0 PO 0 CV 0 CT 15 ST 45 MS 0 PT 0 TB 0 FL 0 NO 0

REVISION 8/24/90

AG-01



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

ST-AG-1-A

Total Segment Length: ~~1073~~ 1928

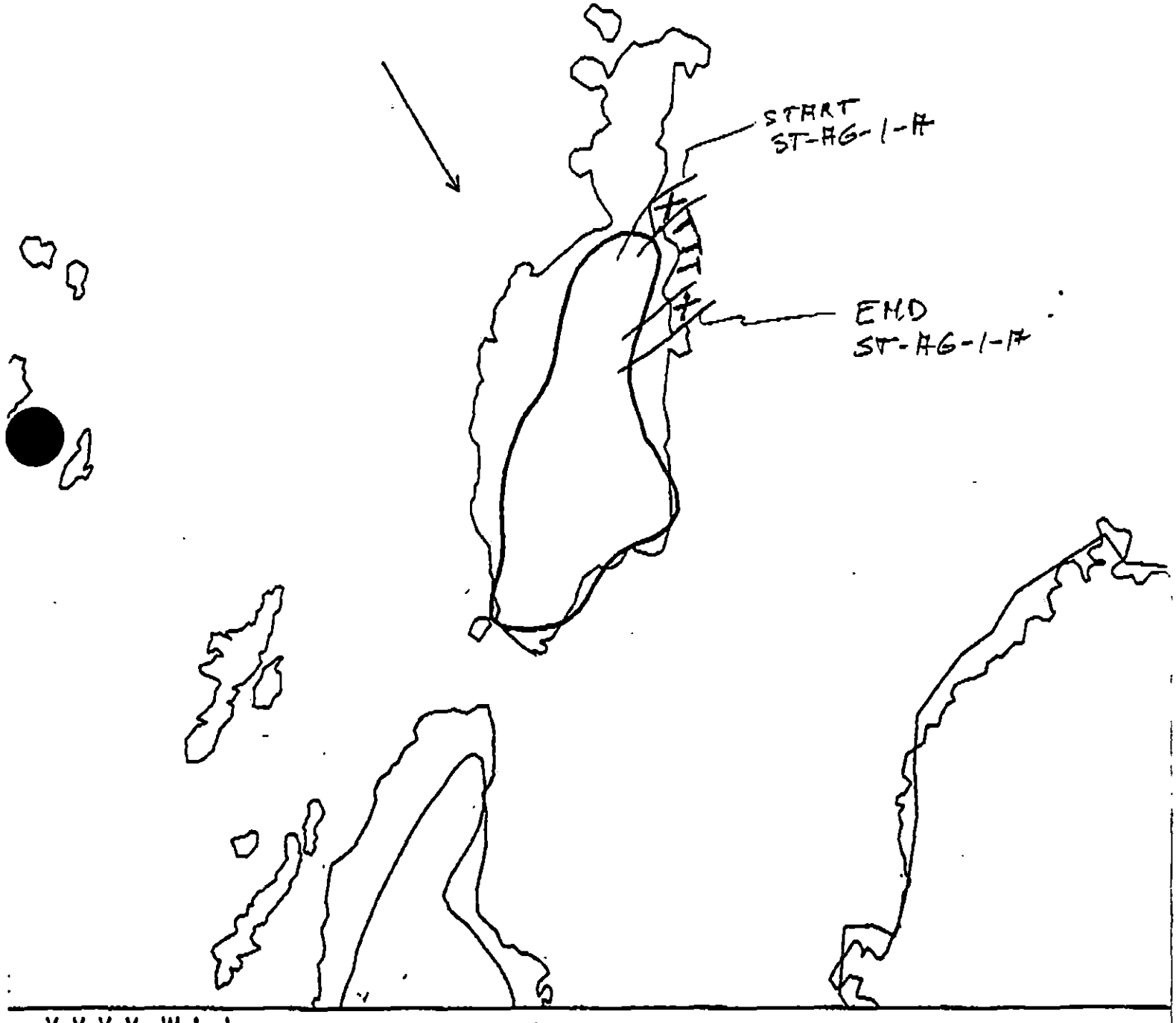
0 100 200 300
METERS

Map Key: PWS-9
Name: K. DEBUSSCHERE
Date: 4/6/90
Data Entered:

(5 of 22)

OIL MAP

AG-01



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

ST-AG-1-A

Total Segment Length: 1928

0 100 200 300
METERS

Map Key: PWS-9
Name: K. DEBUSSCHERE
Date: 4/6/90
Date Entered:

SHORELINE EVALUATION

SEGMENT ST/ AG-01 SUBDIVISION B (2 OF 2) DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T 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. Contact USFWS prior to treatment for permit if necessary as a result of eagle constraints.

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

SHPO SIGNATURE: David McMorlan DATE: 4/23/90

OILING CATEGORIZATION:

Wide 0 m: Medium 21 m: Narrow 17 m: V.Light 817 m: No Oil 0 m
Subsurface Oil Observed: Yes ____ No X Maximum Depth ____

RECOMMENDATIONS:

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

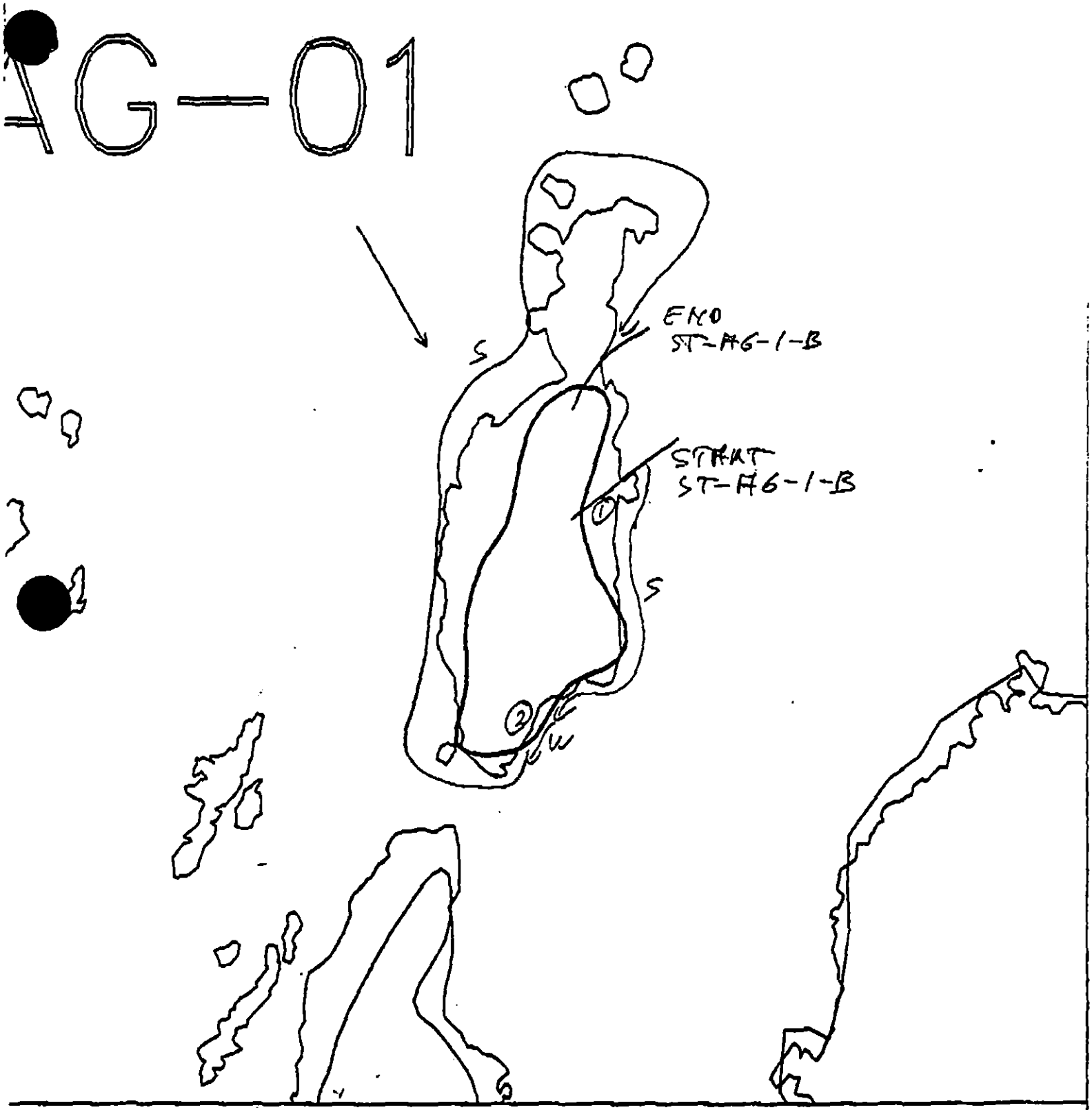
____ Snare/Absorbent Booms
____ Oil Snares (pom poms)
____ Absorbents (pads,rolls,etc)
____ Spot Washing: ____ Wands
____ Beach Cleaner
____ Other (see comments)

COMMENTS: ____

TAG COMMENTS: ____

TAG APPROVAL DATE: 4/23/90
ADEC Art Weiner
EXXON Andy Tolz
NOAA Joseph Talbott
USCG Kenneth Keane
FOSC: ____ DATE: 4-27-90

S = SKIFF
W = WALK



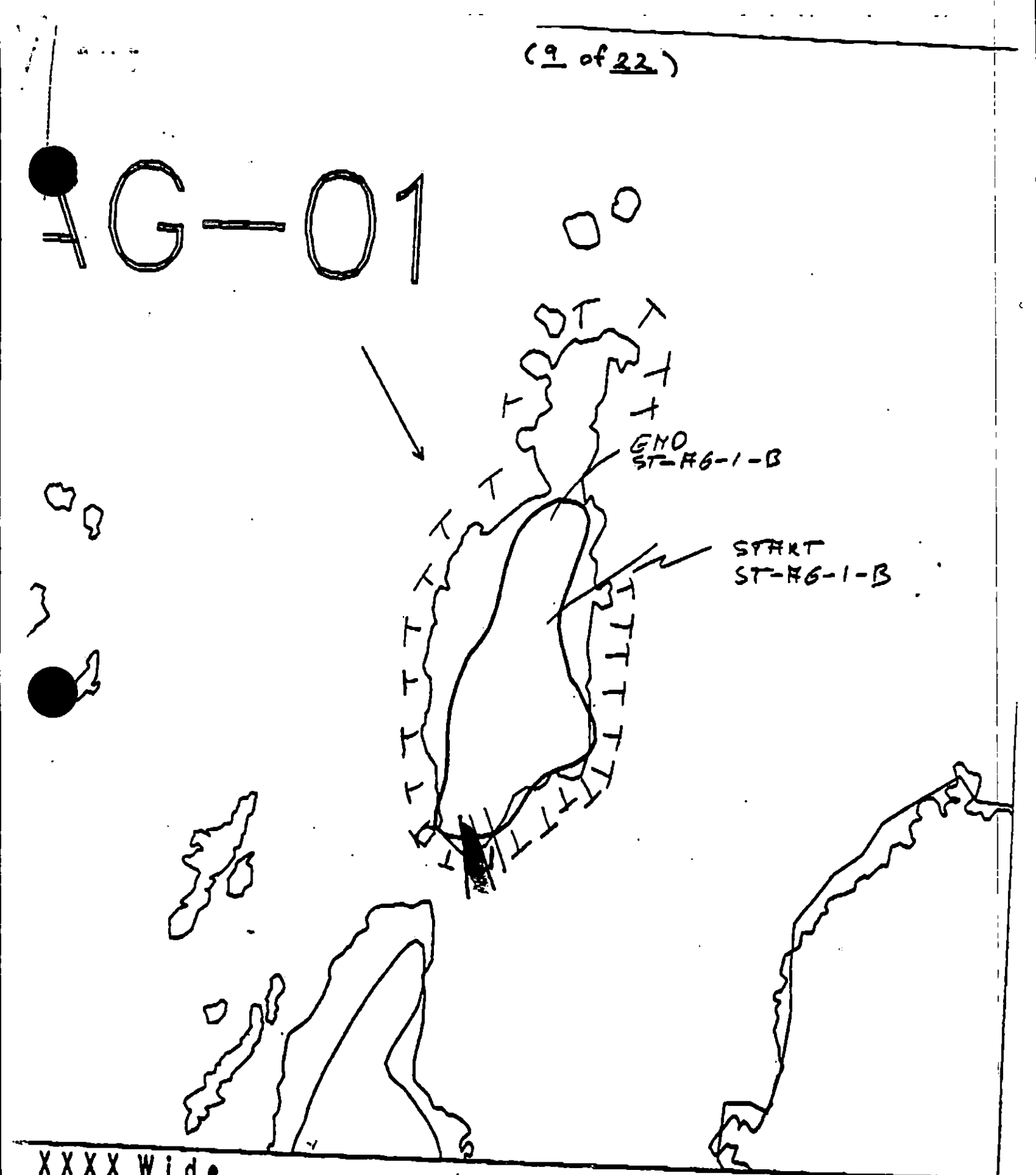
XXXX Wide
/// Medium
--- Narrow
TTTT Very Light
OOOO No Oil

ST-AG-1-B

Total Segment Length: ~~1913~~ 1928

0 100 200 300
METERS

Map Key: PWS-9
Name: K. DEDUCSCHERE
Date: 4/6/90
Date Entered:



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

ST-AG-1-B

Total Segment Length: 1928

0 100 200 300
METERS

Map Key: PWS-8
Name: K. DEBUCCHERO
Date: 4/6/90
Date Entered:

1991 MAYSAP EVALUATION

SEGMENT: AG 001 SUB: A REGION: PWS SURVEY DATE: 5/4/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) RESTRICTED 3/1 - 9/1

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

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

SHPO Signature: _____ Date: _____

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

COMMENTS:
INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: _____ FOSC APPROVAL DATE: _____

ADEC _____ FOSC _____

EXXON _____

USCG _____

NOAA _____

ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

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

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT AG001-A SUBDIVISION A DATE 4/MAY/91

ADEC
NAME Dianne Munson SIGNATURE Dianne Munson

☐ NTR ☒ Treatment Recommended MSOR oiling recorded on OG map was not previously recorded on ASAP survey. Area A, on OG map has oiling ranging from LSOR to OP. This site has low wave exposure. Heavy oiling occurs outside of the sensitive biological communities. Brown mobile sheen is released very easily if sediments are agitated. Oiling occurs from 2-10 cm and is easily accessible thru coarse sand and mixed sediments. Recommend manual agitation with rakes with the tide to release oil. Sorbents should be used to collect the free floating oil that will subsequently be released. Part of the segment was not surveyed.

EXXON
NAME LARRY D. OLSON SIGNATURE Larry D. Olson

☒ NTR Any treatment of MSOR indicated on OG sketch map would be harmful to established biological growth. Particular attention to be paid to the Peat area.

LANDMANAGER
NAME Chris Linkenhaker OF USFS SIGNATURE Chris A. Linkenhaker

☑ NTR Shallow tilling "may" help to expose subsurface oiling to increased weathering. However, locatio of oiled area is isolated in mid tide area. Accelerated leaching from tilling may have a negative overall effect on mussel and clam beds in lower tidal area. Also, location of peat bog is such that leaching may also have a detrimental effect from tilling. Costs in $ and indirect effects from treatment may outweigh the benefits of existing recovery

USCG/NOAA
NAME JERRY SCHULTZ SIGNATURE Jerry Schultz

☒ NTR NATURAL WEATHERING HAS DONE WELL AT THIS SITE FURTHER REMOVAL/TREATMENT EFFORTS MAY BE ENVIRONMENTALY HARMFUL.

TEAM NO. 1

OG J M Sempels

ADEC D Munson

EXXON L. Olson

BIO J. Barry

LANDMAN Chris Linkenhoker for USFS

USCG/NOAA J. Schultz J Galt

SEGMENT Ag001

SUBDIVISION A

DATE 4 / MAY / 91

TIME 11 : 25 to 11 : 53

TIDE LEVEL +1 ft. to +1 ft.

ENERGY LEVEL: [X] H [X] M [ ] L

SURVEYED FROM: [X] FOOT [ ] BOAT [ ] HELO

WEATHER: [ ] SUN [X] CLOUDS [ ] FOG [X] RAIN [ ] SNOW

TOTAL LENGTH SHORELINE SURVEYED: 100 m

NEAR SHORE SHEEN: [ ] BR [ ] RB [ ] SL [X] NONE

EST. OIL CATEGORY LENGTH: W____ m M 25 m N____ m VL____ m NO 75 m US 57 m

LOC	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE V H M L	AREA WIDTH m	AREA LENGTH m	ZONE S	ZONE UI	ZONE MI	ZONE LI	NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO									
N				P							cb/Pb gv	M	6	95		*			See map.

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 OP	HOR	MOR	LOR	OF	TR	NO	OIL ZONE cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE S	UI	MI	LI	SURFACE-SUBSURFACE SEDIMENTS	NOTES
1	30			[redacted]					2-8	Y	5	B			[redacted]		S, G, P	
2	31			[redacted]					2-10	N	7	B			[redacted]		S, G, P	

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

OG COMMENTS: Area surveyed consists of a pocket of cobble / gravel / pebbles and boulder talus bounded by and including bedrock outcrops. An elongated patch of MOR is present in the surface 5 cm. over fine sediment and peat. Note: There is some uncertainty about segment numbers: maps show it as Ag001 B but label makes it Ag001 - A

REVIEWED: 5/7/91 mc

Og Sketch Map

Ag001-A
JM Sempels
4 May 91
1125-1153

Legend

Bedrock
cb/gv/pl
talus

NO FIELD DATA
ASSUME:
MAX 6x25m

A1
MSOR <50%
6x25

25
6

Peat

Few tar
splatters
scattered

PL1

Location
map.

N

Meters
0 10 20

REVIEWED: 5/7/91 mc
revised 5/6/91 JMS

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 4, 1991 1128 - 1153
SEGMENT #	AG001	TIDAL HEIGHT (Range)	+1 => +1
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm, cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A The oiled (MSOR) area at this site extends from the upper drift line to the upper edge of the middle intertidal zone. The beach is composed of talus boulders, cobble and pebbles, with finer grained inorganic and organic sediments incorporated through most of the oiled area. This is a low wave exposure site. In the highest zone, the oiling is subsurface and little biota are present either within the sediments or above them at this level. Barnacles are scattered on the surface of cobble within the oiled area, as are sparse to moderate densities of littorine snails and limpets. Barnacle spat also are sparse in towards the lower edge of the oiled area, and somewhat denser lower in the intertidal zone. Nematodes are common and polychaete worms are present in the oiled area, often in contact with weathering oil.

Below the oiled area, the abundance of many species increases. A sparse mussel bed is found in the middle intertidal and a sparse clam bed is located below the mussels. Fucus is present in sparse cover on cobble in the middle to lower intertidal, and the red alga, Odonthalia floccosa is abundant among the lower zone cobble. Filamentous, red, green, and brown algae increase in abundance towards the subtidal, where larger brown algae and eel grass appear to be the conspicuous dominant species.

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	2	
Seabirds			
Waterfowl			
Gulls/Kittiwakes	2	8	
Shorebirds	1	2	
Corvids	2	4	
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

REVIEWED: 5/7/91 MC

A (cont.)

Some manual cleanup was performed during the survey, primarily removal tar splatters. Additional removal of oil or oiled sediments should proceed with caution on this beach. While much of the oiled area does not directly overlap sensitive biological communities, the sparse mussel and clam beds in the lower zones of the beach are nearby and should not be greatly disturbed. Treatment methods which do not impact these resources, and do not result in the removal of the majority of the fined grained sediments with high organic content from the oiled area, would be acceptable at this oiled site. More invasive procedures, such as high pressure rinsing or complete removal of beach sediments near the oiled area, should be prohibited.

B This oiled area is contiguous with A above and the biotic community also is very similar. The oiled area (MSOR) is located in the surface sediments along the upper zone of the beach and extends towards the middle intertidal zone. Most of the oil is found in fairly fine grained sediments along the upper intertidal behind a bedrock outcrop. Barnacles are sparse on cobble in the oiled area and a few other species, such as littorine snails, limpets, and hermit crabs, also are scattered in patches among these sediments.

The intertidal community below the oiled area is much richer. A patchy mussel bed is present in the sediments below the oiled area, and towards the lowest zone, a dense clam bed with numerous pits indicating recent otter foraging is present. These resources are somewhat (ca 5-25 m) removed from the oiled area. A bedrock outcrop is also present adjacent to the oiled site, and has high cover of Fucus juveniles, moderately dense barnacles, and scattered patches of mussels in crevices. Subtidal habitats appear to have large brown algae and eel grass as the major species.

Summary of Subdivision AG001-A

This subdivision is quite short and consists of a couple pocket beaches and a short distance of bedrock cliffs. We surveyed one of the pocket beaches. A description of the biota is presented above. The bedrock cliffs have moderate to dense cover of Fucus, with a high proportion of juveniles. Barnacles (Balanus) also are abundant. Littorines and limpets are abundant throughout. Mussels are present in sparse to moderate patches, and dense within patches. The low intertidal subtidal areas are rich, usually with high cover of filamentous algae (green and brown). This is a low exposure site.

One eagle nest is mapped for this subdivision, but was not observed during the survey. Two adult bald eagles were observed in a tree within the subdivision, but no nest was present.

List of Common Species from AG001-A

A. Marine Plants
   1. Diatoms, Blue Greens
   2. Green Algae - Chlorophyta
      Acrosiphonia sp., Cladophora sp., Enteromorpha sp., Prasiola meridionalis, Ulva sp., Urospora sp.
   3. Brown Algae - Phaeophyta
      Agarum fimbriatum, Costaria costata, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Ralfsia sp., Syctosiphon lomentaria
   4. Red Algae - Rhodophyta
      Calliarthron sp., Corallina sp., Lithothamnion sp., Odonthalia floccosa, Petrocelis sp., Porphyra sp., Ptilota filicina, Rhodomela larix
   5. Higher Plants

REVIEWED: 5/7/91 MC

II. Marine Animals

1. Sponges - Porifera - Halichondria sp.
2. Anemones - Anthopleura artemesia
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
8. Polychaete worms
   - Nepthyidae
   - Nereidae - Nereis spp.
   - Serpulidae - Serpula sp., Eudistylia polymorpha
   - Spriorbidae - Spirorbis sp.
10. Crustaceans
    - a. Amphipods - Orchestia sp.?
    - b. Barnacles - Balanus glandula
    - c. Crabs
      Haplogaster sp., Hemigrapsus oregonensis, Paguridae (hermit crabs)
    - d. Isopods - Idotea wosnesenskii
11. Mollusca
    - a. Chitons - Mopalia sp.
    - b. Snails - Gastropods
      Amphissa versicolor, Littorina sp, Natica clausa, Nucella lamellosa, N. lima, Searlesia dira, Lirularia sp.,
    - c. Limpets
      Lottia digitalis, L. persona, L. pelta, Tectura persona, T. scutum
    - d. Nudibranches - Lamellidoris fusca
    - e. Mussels and Clams
      Clinocardium sp., C. nuttalli, Hiatella arctica, Macoma balthica, Modiolus sp., Mytilus edulis, Pododesmus cepio, Prototheca staminea, Saxidomus giganteus
12. Echinoderms
    - b. Sea stars
      Dermasterias imbricata, Leptasterias hexactis, Pycnopoida helianthoides
    - c. Sea Cucumbers - Holothurians - Eupentacta sp.
    - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Schizoporella sp.
15. Fishes
    Cottidae - unknown species
    Stichaeidae - Xiphister atropurpureus, X. mucosus

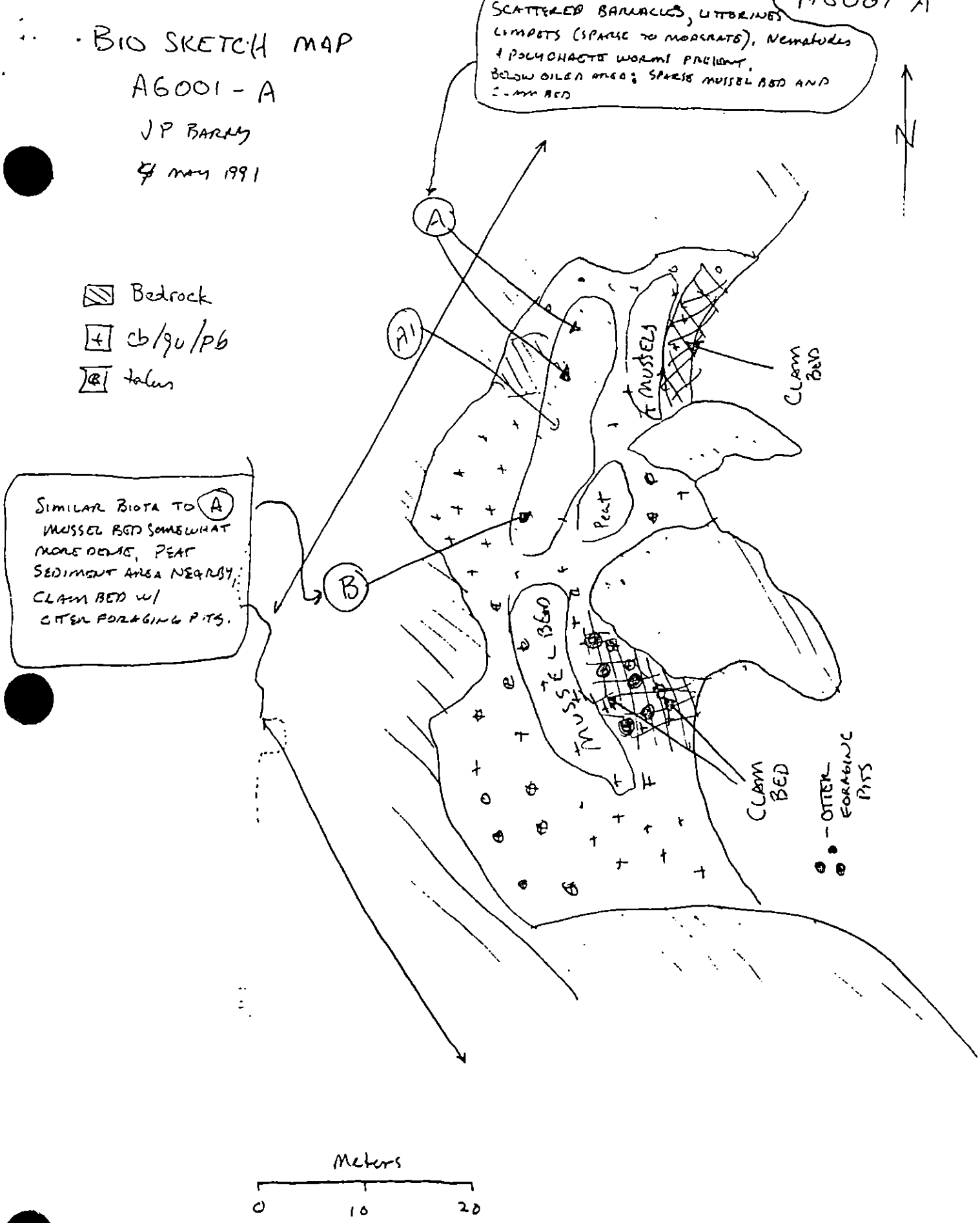
IV Birds - bald eagle (2), gull (2), kittiwake (2), oystercatcher (2), crow (1), raven (3)

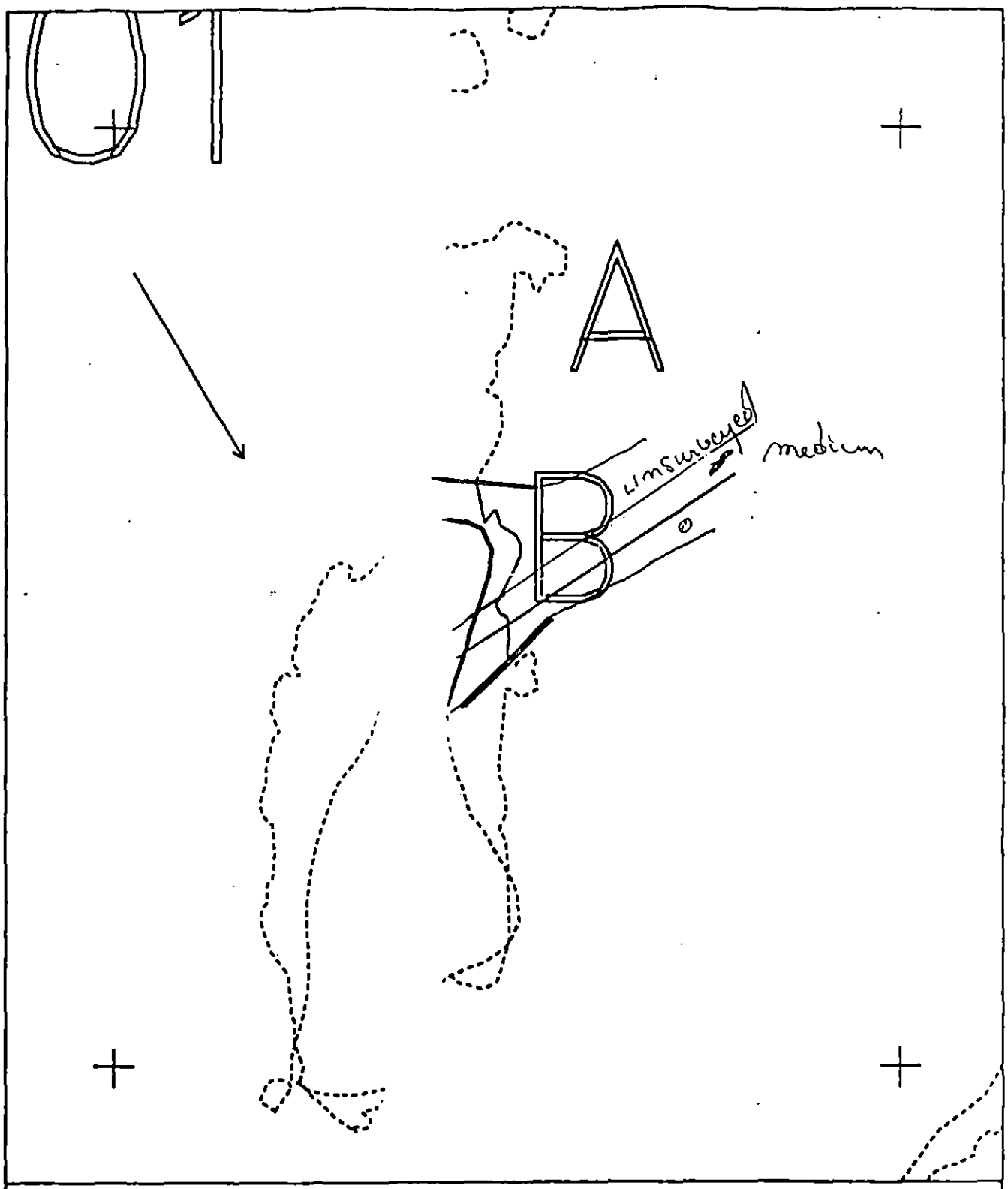
BIO SKETCH MAP

A6001 - A

J P BARRY

4 MAY 1991





XXXX	Wide	AG -001 A	Subdivision Field Map
////	Medium	ADEC : int Length: 157m	Map Key: KNIAG001A
----	Narrow	:TERS	Name: JM Simpels
TTTT	Very Light	0 10 200	Date: 4 MAY 91
0000	No Oil	AK Sic: ine 4 (001a	Date Entered:

Reviewed: 5/7/91 mc

revised 5/6/91

1991 MAYSAP EVALUATION

SEGMENT: AG 001 SUB: A REGION: PWS SURVEY DATE: 5/4/91

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: [illegible] Date: 5/14/91

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 14 91

ADEC [illegible]

EXXON [illegible]

USCG [illegible] CT

NOAA [illegible]

FOSC APPROVAL DATE: 5/20/91

FOSC [illegible]
E. E. PAGE, CDR, USCG
CHIEF OF STAFF, FOSC

ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

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

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 41 SEGMENT AG001-A SUBDIVISION A DATE 4/17/91

ADEC
NAME Dianne Munson SIGNATURE Dianne Munson

☐ NTR ☒ Treatment Recommended MSOR oiling recorded on OG map was not previously recorded on ASAP survey. Area A, on OG map has oiling ranging from LSOR to OP. This site has low wave exposure. Heavy oiling occurs outside of the sensitive biological communities. Brown mobile sheen is released very easily if sediments are agitated. Oiling occurs from 2-10 cm and is easily accessible thru coarse sand and mixed sediments. Recommend manual agitation with rakes with the tide to release oil. Sorbents should be used to collect the free floating oil that will subsequently be released. Part of the segment was not surveyed.

EXXON
NAME LARRY D. OLSON SIGNATURE Larry D. Olson

☒ NTR Any treatment of MSOR indicated on OG sketch map would be harmful to established biological growth. Particular attention to be paid to the Peat area.

LANDMANAGER
NAME Chris Linkenhoker OF USFS SIGNATURE Chris A. Linkenhoker

☑ NTR Shallow tilling "may" help to expose subsurface oiling to increased weathering. However, location of oiled area is isolated in mid tide area. Accelerated leaching from tilling may have a negative overall effect on mussel and clam beds in lower tidal area. Also, location of peat bog is such that leaching may also have a detrimental effect from tilling. Costs in $ and indirect effects from treatment may outweigh the benefits of existing recovery.

USCG/NOAA
NAME JERRY SCHULTZ SIGNATURE Jerry Schultz

☒ NTR NATURAL WEATHERING HAS DONE WELL AT THIS SITE FURTHER REMOVAL/TREATMENT EFFORTS MAY BE ENVIRONMENTALY HARMFUL.

TEAM NO. 4

OG J M Sempsch

ADEC D Munson

EXXON L. Olson

BIO J. Barry

LANDMANAGER Chris Lin Kenhoker for USFS

USCG/NOAA J. Schultz J Gall

SEGMENT Ag001

SUBDIVISION A

DATE 4 / MAY / 91

TIME 11 : 35 to 11 : 53

TIDE LEVEL +1 ft. to +1 ft.

ENERGY LEVEL: [X] H [X] M [ ] L

SURVEYED FROM: [X] FOOT [ ] BOAT [ ] HELO

WEATHER: [ ] SUN [X] CLOUDS [ ] FOG [X] RAIN [ ] SNOW

TOTAL LENGTH SHORELINE SURVEYED: 100 -

NEAR SHORE SHEEN: [ ] BR [ ] RB [ ] SL [X] NONE

EST. OIL CATEGORY LENGTH: W____ m M 25 m N____ m VL____ m NO 75 m US 57 m

LOC	SURFACE OIL CHARACTER AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO	SURFACE SEDIMENT TYPE	SHORE SLOPE V H M L	AREA WIDTH m	AREA LENGTH m	ZONE S	UI	MI	LI	NOTES
N				P							cbPb gr	M	6	95		*			See map.

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 OP	HOR	MOR	LOR	OF	TR	NO	OIL ZONE cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE S	UI	MI	LI	SURFACE-SUBSURFACE SEDIMENTS	NOTES
1	30			[redacted]					2-8	Y	5	B			[redacted]		S, G, P	
2	31			[redacted]					2-10	N	7	B			[redacted]		S, G, P	

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

OG COMMENTS: Area surveyed consists of a pocket of cobble / gravel / pebbles and boulder talus bounded by and including bedrock outcrops. An eroded patch of M SOR is present in the surface 5 cm. over fine sediments and peat. Note: There is some uncertainty about segment numbers: maps show it as Ag001 B but label makes it Ag001 - A

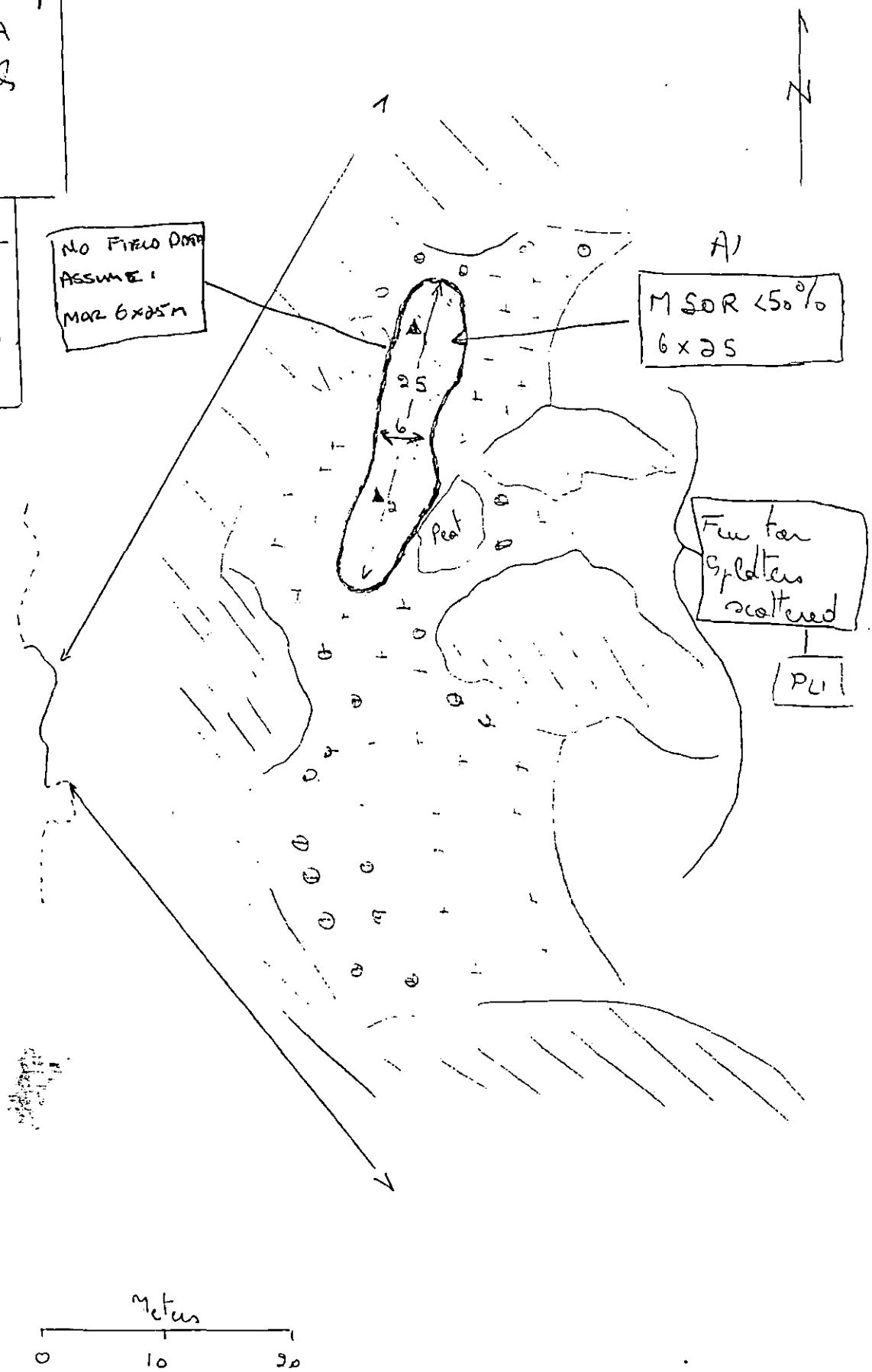
REVIEWED: 5/7/91 MC

Og Sketch Map

Ag001-A
fm Sempels
4 May 91
1125-1153

Legend

Bedrock
cb/gv/pl
talus



REVIEWED: 5/2/91 mc
revised 5/6/91 JMS KG

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 4, 1991 1128 - 1153
SEGMENT #	AG001	TIDAL HEIGHT (Range)	+1 => +1
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm, cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A The oiled (MSOR) area at this site extends from the upper drift line to the upper edge of the middle intertidal zone. The beach is composed of talus boulders, cobble and pebbles, with finer grained inorganic and organic sediments incorporated through most of the oiled area. This is a low wave exposure site. In the highest zone, the oiling is subsurface and little biota are present either within the sediments or above them at this level. Barnacles are scattered on the surface of cobble within the oiled area, as are sparse to moderate densities of littorine snails and limpets. Barnacle spat also are sparse in towards the lower edge of the oiled area, and somewhat denser lower in the intertidal zone. Nematodes are common and polychaete worms are present in the oiled area, often in contact with weathering oil.

Below the oiled area, the abundance of many species increases. A sparse mussel bed is found in the middle intertidal and a sparse clam bed is located below the mussels. Fucus is present in sparse cover on cobble in the middle to lower intertidal, and the red alga, Odonthalia floccosa is abundant among the lower zone cobble. Filamentous, red, green, and brown algae increase in abundance towards the subtidal, where larger brown algae and eel grass appear to be the conspicuous dominant species.

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	2	
Seabirds			
Waterfowl			
Gulls/Kittiwakes	2	8	
Shorebirds	1	2	
Corvids	2	4	
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

REVIEWED: 5/7/91 MC

A (cont.)

Some manual cleanup was performed during the survey, primarily removal tar splatters. Additional removal of oil or oiled sediments should proceed with caution on this beach. While much of the oiled area does not directly overlap sensitive biological communities, the sparse mussel and clam beds in the lower zones of the beach are nearby and should not be greatly disturbed. Treatment methods which do not impact these resources, and do not result in the removal of the majority of the fined grained sediments with high organic content from the oiled area, would be acceptable at this oiled site. More invasive procedures, such as high pressure rinsing or complete removal of beach sediments near the oiled area, should be prohibited.

B This oiled area is contiguous with A above and the biotic community also is very similar. The oiled area (MSOR) is located in the surface sediments along the upper zone of the beach and extends towards the middle intertidal zone. Most of the oil is found in fairly fine grained sediments along the upper intertidal behind a bedrock outcrop. Barnacles are sparse on cobble in the oiled area and a few other species, such as littorine snails, limpets, and hermit crabs, also are scattered in patches among these sediments.

The intertidal community below the oiled area is much richer. A patchy mussel bed is present in the sediments below the oiled area, and towards the lowest zone, a dense clam bed with numerous pits indicating recent otter foraging is present. These resources are somewhat (ca 5-25 m) removed from the oiled area. A bedrock outcrop is also present adjacent to the oiled site, and has high cover of Fucus juveniles, moderately dense barnacles, and scattered patches of mussels in crevices. Subtidal habitats appear to have large brown algae and eel grass as the major species.

Summary of Subdivision AG001-A

This subdivision is quite short and consists of a couple pocket beaches and a short distance of bedrock cliffs. We surveyed one of the pocket beaches. A description of the biota is presented above. The bedrock cliffs have moderate to dense cover of Fucus, with a high proportion of juveniles. Barnacles (Balanus) also are abundant. Littorines and limpets are abundant throughout. Mussels are present in sparse to moderate patches, and dense within patches. The low intertidal subtidal areas are rich, usually with high cover of filamentous algae (green and brown). This is a low exposure site.

One eagle nest is mapped for this subdivision, but was not observed during the survey. Two adult bald eagles were observed in a tree within the subdivision, but no nest was present.

List of Common Species from AG001-A

A. Marine Plants
1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
   Acrosiphonia sp., Cladophora sp., Enteromorpha sp., Prasiola meridionalis, Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
   Agarum fimbriatum, Costaria costata, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
   Calliarthron sp., Corallina sp., Lithothamnion sp., Odonthalia floccosa, Petrocelis sp., Porphyra sp., Ptilota filicina, Rhodomela larix
5. Higher Plants

REVIEWED: 5/7/91 MC

Zostera marina (eel grass). Leymus mollis (beach rye grass)

II. Marine Animals

1. Sponges - Porifera - Halichondria sp.
2. Anemones - Anthopleura artemesia
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
8. Polychaete worms
   - Nepthyidae
   - Nereidae - Nereis spp.
   - Serpulidae - Serpula sp., Eudistylia polymorpha
   - Spriorbidae - Spirorbis sp.
10. Crustaceans
    - a. Amphipods - Orchestia sp.?
    - b. Barnacles - Balanus glandula
    - c. Crabs
      Haplogaster sp., Hemigrapsus oregonensis, Paguridae (hermit crabs)
    - d. Isopods - Idotea wosnesenskii
11. Mollusca
    - a. Chitons - Mopalia sp.
    - b. Snails - Gastropods
      Amphissa versicolor, Littorina sp, Natica clausa, Nucella lamellosa, N. lima, Searlesia dira, Lirularia sp.,
    - c. Limpets
      Lottia digitalis, L. persona, L. pelta, Tectura persona, T. scutum
    - d. Nudibranches - Lamellidoris fusca
    - e. Mussels and Clams
      Clinocardium sp., C. nuttalli, Hiatella arctica, Macoma balthica, Modiolus sp., Mytilus edulis, Pododesmus cepio, Prototheca staminea, Saxidomus giganteus
12. Echinoderms
    - b. Sea stars
      Dermasterias imbricata, Leptasterias hexactis, Pycnopoida helianthoides
    - c. Sea Cucumbers - Holothurians - Eupentacta sp.
    - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Schizoporella sp.
15. Fishes
    Cottidae - unknown species
    Stichaeidae - Xiphister atropurpureus, X. mucosus

IV Birds - bald eagle (2), gull (2), kittiwake (2), oystercatcher (2), crow (1), raven (3)

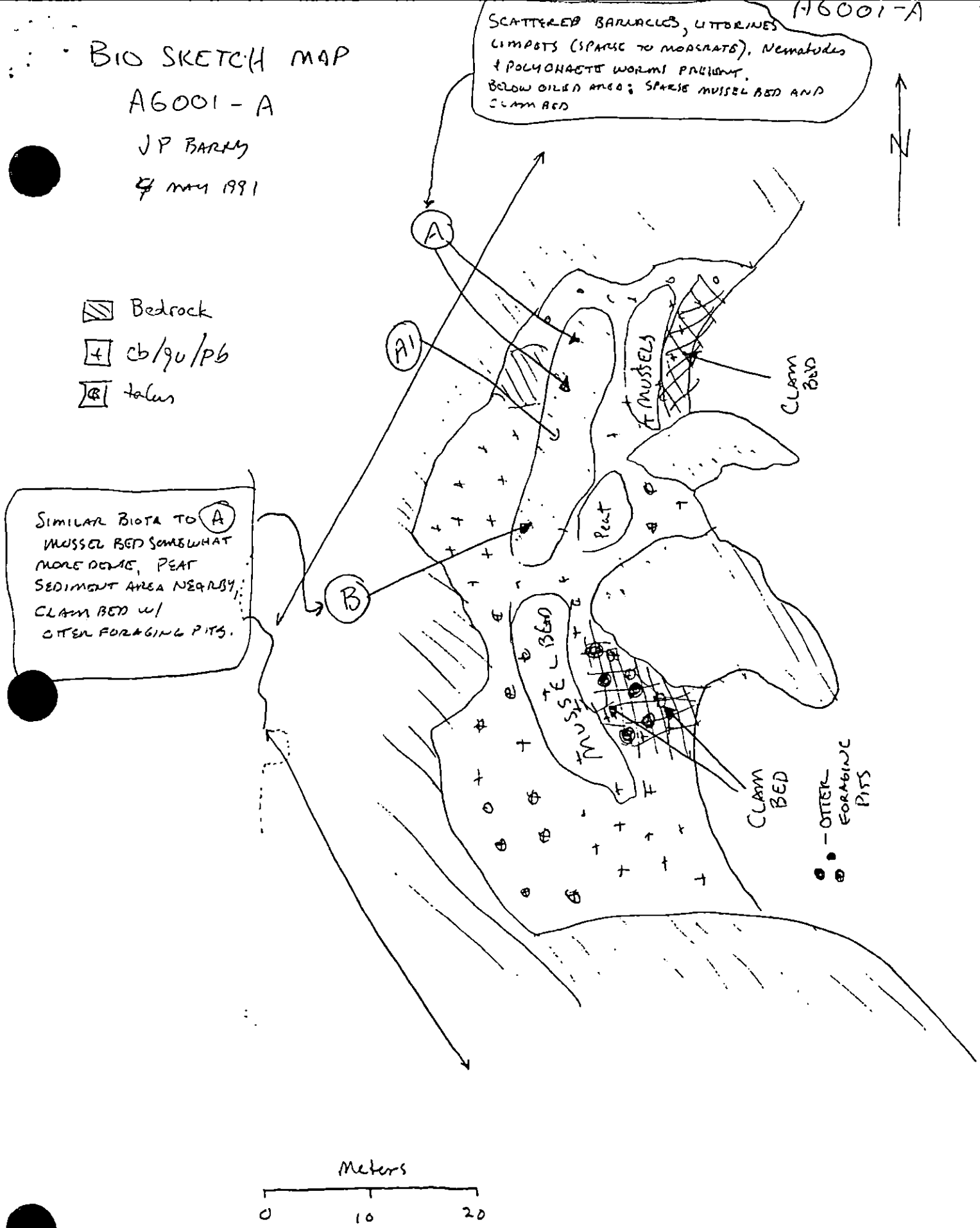
A6001-A 6/

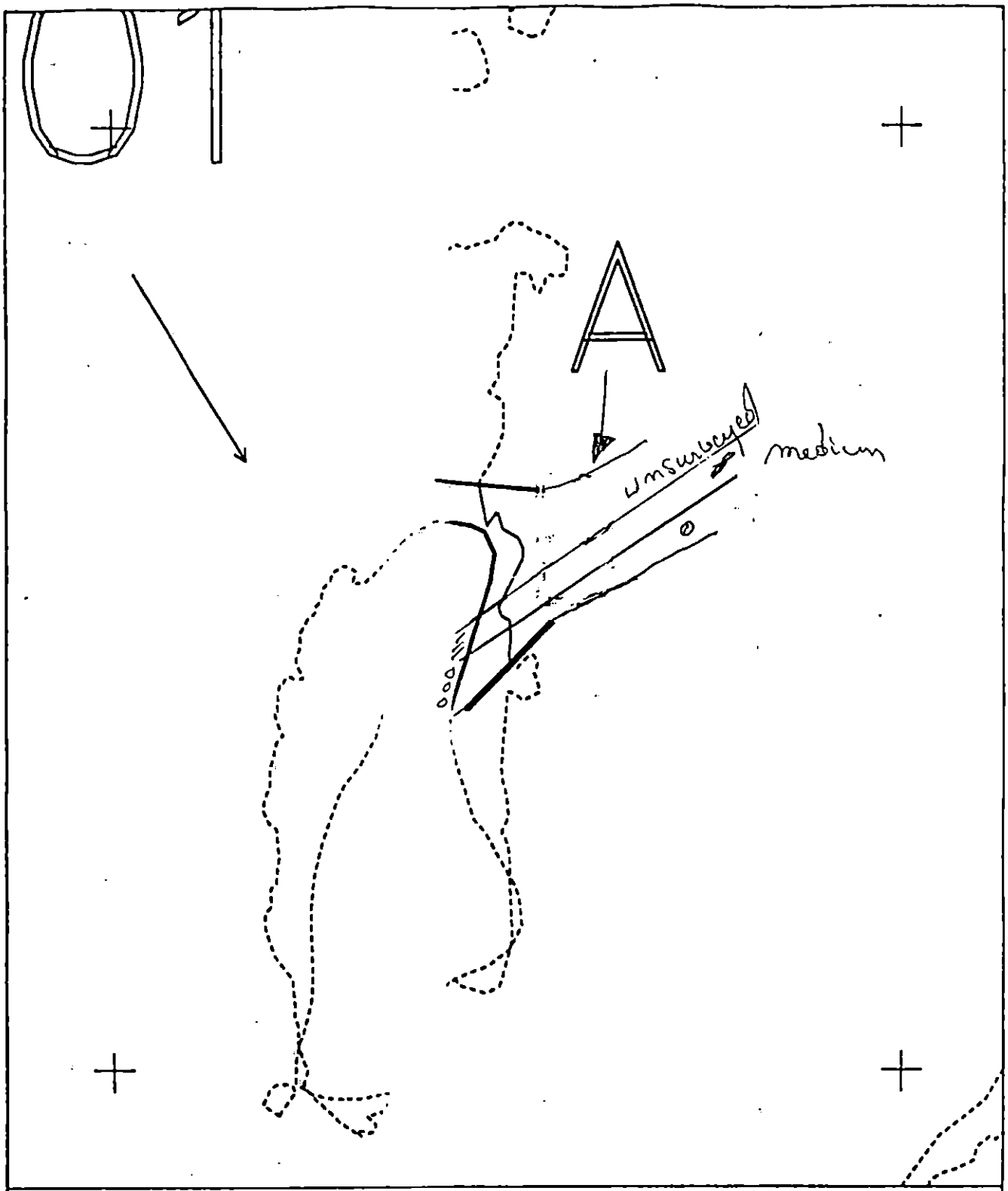
BIO SKETCH MAP

A6001 - A

JP BARRY

4 MAY 1991





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

AG -001 A

ADEC : nt Length: 157m

:TERS

0 10 200

AK Sta: ine 4 (0010

EXXON

Subdivision Field Map

Map Key: KNIAG001A

Name: JM Simpels

Date: 4 MAY 91

Date Entered:

Reviewed: 5/7/91 mc

revised 5/6/91 KG

Confirmed Loc of Sub. A 5/14/91 wk

1991 MAYSAP EVALUATION

SEGMENT: AG01 SUB: B REGION: PWS SURVEY DATE: TAG JUNE 28 1991

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) _____

Ecological/Constraints (see page two for details) _____

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

SHPO Signature: Timothy A. Smith Date: 7/02/91

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

COMMENTS:
INITIAL: _____

TAG: TAG VISIT REVEALED MINIMAL OILING CONDITIONS NTR.

FOSC: _____

TAG APPROVAL DATE: July 2 1991 FOSC APPROVAL DATE: _____

ADEC [signature] FOSC _____

EXXON [signature]

USCG [signature] LT

NOAA [signature]

1991 MAYSAP EVALUATION

SEGMENT: AG01 **SUB:** B **REGION:** PWS **SURVEY DATE:** TAG JUNE 28 1991

ENVIRONMENTAL SENSITIVITIES:
Work Window(s)

RECEIVED

Ecological/Constraints (see page two for details)

JUL 18 1991

ANCHORAGE-A00/A

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

SHPO Signature: Timothy A. Smith Date: 7/02/91

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

COMMENTS:
INITIAL:

TAG: TAG VISIT REVEALED MINIMAL OILING CONDITIONS NTR.

FOSC:

TAG APPROVAL DATE: July 2 1991

ADEC

EXXON

USCG T.M. Murphy LT

NOAA

FOSC APPROVAL DATE: 7/8/91

FOSC

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

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/AG-09

SUBDIVISIONS: A (1 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ AG-09 SUBDIVISION A (1 OF 2) DATE 4/25/90

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)
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 21 m: Medium 38 m: Narrow 487 m: V.Light 284 m: No Oil 110 m
Subsurface Oil Observed: Yes X No____ Maximum Depth 22 cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) tarmat removal, 2) manual pickup of mousse tarballs and oiled vegetation where shown on sketch map, and 3) bioremediation of surface and subsurface oil as shown on sketch map. Work should be conducted prior to 5/15 or 7/1 to 8/15 due to pinniped constraints with the exception of Inipol application which should only be used from 7/2 to 7/31.

TAG COMMENTS:_____

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

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 Suzomoto 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 unoiled 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

3 **Harbor seal and sea lion pupping (5/15 to 7/1)**
3Q, 3R **Harbor seal and sea lion molting (8/15 to 9/15)**
Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts. No application of Inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31). Contact ADF&G and USFWS prior to treatment for confirmation.
AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 586-7235
ADF&G Don Calkins 267-2403

5R **Seabird colony (5/1 to 9/1)**
Restrict air and boat traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from colony. Contact USFWS prior to treatment.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

5S **Shorebird/waterfowl concentration (4/1 to 5/15)**
Restrict all activity to essential minimum, especially air traffic. Contact USFWS and ADF&G for confirmation.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
ADF&G Tom Rothy 267-2206

5T **All Bald Eagle nests (3/1 to 6/1)**
Active Bald Eagle nests (3/1 to 9/1)
Restrict air traffic and all disturbance to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

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

7Z **Subsistence area:** **Salmon harvesting (5/1 to 9/30)**
7HH **Finfish harvesting**
7II **Deer harvesting (8/15 to 2/28)**
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 / A6-9 SUBDIVISION: A DATE April 25 90

NOAA
NMFS
NAME Stephen Sturm SIGNATURE Stephen Sturm

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS Oil (silver/ey) is present in the permeable surface coverage (gravel/pebble/cobble) in the mitt-uitz above the fucus zone at loc. #2. This area should be raked/tilled by a small work team to increase surface exposure of oiled sediment followed by bioremediation. Care should be taken not to disturb the fucus zone, which is dense and apparently 'healthy'. Nor should the use of Inipol be overzealous as it is moderately toxic to the intertidal community. Tar mats/balls should be removed from locations 2,3,4; with manual raking of oiled substrates to increase ~~from~~ microbial degradation. The use of Inipol (bioremediation) may be necessary in the uitz on a 25 m² area at location #4.

ADEC
NAME Wesley Ghormley SIGNATURE Wesley Ghormley

☐ NO TREATMENT RECOMMENDED ■ TREATMENT SUGGESTED

COMMENTS
Location #1, Coat/Cover needs to be removed using Hot H2O High pressure.
Location #2, small patch of oiled vegetation should be removed using hand tools. In addition boulders cobbles @ uitz should be wiped down using sorbent pads to recover as much mobile oil as possible, Hot H2O should follow to remove remaining oil. Subsurface oil on Location should be removed by aggitating gravel & by the use of Hot H2O. In Addition a small header system might be a plus to enhance the flow of oil to the water line, so as to be recovered. Work only when "green zone" is not exposed so it wont be contaminated. Pick up oil with pom-poms.
Location #3 - Manually removal of asphalt/pavement. Wipe bedrock to remove coat/cover with sorbant pads. Scrapers could be ~~then~~ used to remove cover & Hot H2O applied @ High tide.
~~[illegible]~~ Tar balls & cover are w.a. visible in Pocket beach around corner from southern tip. Manually remove tar balls & wipe down any visible oil on rocks then roll them to the side to expose oil, treat with ~~the~~ H2O.

(see additional sheet)

LAND MANAGER
NAME Ray Burger ADNR SIGNATURE Ray Burger

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS

- Concur with ADEC treatment as above.
- While many beaches are suitable landing areas, the only tent site is at the south point where access is afforded from both east + west sides. However, this also near a possible gull nesting site.

1/2

REVISION NO. 08/21/89

FIELD SHORELINE Additional COMMENT SHEET

SEGMENT ST / AG-9 SUBDIVISION: A DATE April 25, 90

SCG

NAME _____ SIGNATURE _____

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

ADEC

NAME Wesley Ghormley SIGNATURE Wesley Ghormley

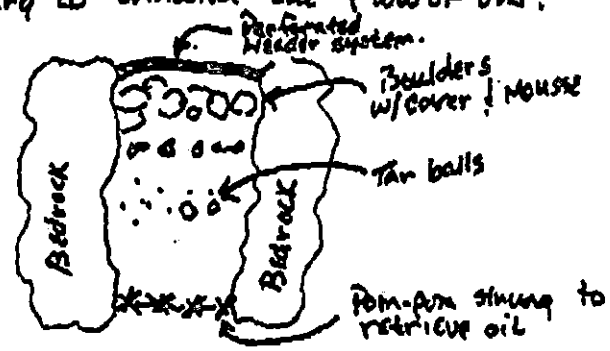
☐ NO TREATMENT RECOMMENDED ■ TREATMENT SUGGESTED

COMMENTS

Location #4 - Recommend wiping down of all recoverable oil with sorbant pads. Mousse, tar balls, cover on Location should be removed by the use of Hot H_2O in addition a small Hot header system may be necessary to enhance the flow of oil.

The location is a small packet beach with bedrock on both sides & is perfect for a small header system & the use of pom-poms strung above uncontaminated green zone. Retrieve oil with pom-poms.

Location #5 - Remove coat/cover w/ Hot H_2O wiping & possibly scraping Heaviest Portions of oil first.



LAND MANAGER

NAME _____ SIGNATURE _____

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

2/2

SHORELINE OILING SUMMARY

REVISION NO. 04.12.90

OG K. DEBUSSCHERE NOAA STEPHEN SMITH SEGMENT ST/ A6 – 9
BIO D. REED LAND REP Ray Berger ADNR SUBDIVISION A (1 OF 2)
EXXON T. DIAZ ADEC Wesley Chromley TIME 7:00 to 9:25 AND 10:45 TO 11
TEAM NO. 9 TIDE LEVEL -2 TO -1 AND 3 TO 3.75 DATE 4 / 25 / 90
EST. SUBDIVISION LENGTH: 1395 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: S to N
SURFACE SEDIMENTS: R 60 % B 15 % C 10 % P 10 % G 3 % S 2 % M 0 % V 0 %
SLOPE : Lang 40 % Hang 45 % Vert 15 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
OIL CATEGORY LENGTH: W 15 m M 180 m N 700 m VL 400 m NO 160 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	/C	/B	/P	/S						SU	UI	MI	U
ASPHALT PAVEMENT			X			X					X		
POOLED													
COVER		O	V	X	V X	V O X					V O X		
COAT	V	Z	X	O		V O Z X					V O Z X	O	
STAIN													
MOUSSE				X					X		X		
PATTIES													
TARBALLS				V X		X		V			V X		
FILM													
NO OIL										X			X

PAVEMENT H (F) S 9 sq. m by 1 cm
PATTIES / TARBALLS 1 BAGS
NEAR SHORE SHEEN? (NO) BR RW SL TL

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

DID YOU COLLECT DEBRIS? YES ☒ NO ☐
TYPE POM POM
#BAGS 1

Photographs:
Roll No. ST-9-3
Frames 25 & 26

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM)	BELOW		OIL / FILM COLOR					PIT ZONE				ANA	SHEEN (Y/N)	▼	SURFACE · SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC						SU	UI	MI	U				
1	18		X				5-15	X				X				X				Y	15	P–PαCαGαS
2	15		X				10-12		X				X			X			•	N	—	B–PαGαS
3	7		X				0-4		X			X					X			Y	5	P–PαS
4	10					X	•											X		N	2	M–MαPαG
5	15					X	•										X			N	10	CαM–MαPαG
6	40		X				15-22		X				X				X			N	—	P–PαG/C

OC ②

COMMENTS

- SUBDIVISION CONSISTS OF ROCKY HEADLANDS, PEBBLE DOMINATED LOW ANGLE, AND COBBLE & BOULDER LOW TO HIGH ANGLE BEACHES
- MOST SIGNIFICANT OILING IS IN LOCATION ②: SUBSURFACE EXTENDS TO 22 CM (SEE PITS 1–6) SUBSURFACE IS IN ± 10X15M WIDE BAND IN COBBLE/PEBBLE BEACH AND ± 7M WIDE IN PEBBLE

REVIEWED MH DATE 4-27-90

→ OVER

SHORELINE OILING SUMMARY (PAGE 2)

REVISION 04/13/90

SEGMENT ST/ A6-9 SUBDIVISION A (1 OF 2)

SUBSURFACE OIL (CONTINUED)

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CM)	BELOW		OIL / FILM COLOR					PIT ZONE				ANA	SHEEN (Y/N)	▼	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UO						SU	UI	MI	LI				
7	20					X	-									X				N	15	P-P&G
8	15					X	-										X			N	10	P-P&G
							-															
							-															
							-															
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							-															
							-															

COMMENTS

DEPOSITS TO THE SOUTH

- SURFACE OIL IS COAT/S & COAT/P ON ROCK-FACES AT COBBLE/BOULDER BEACH, AND COVER/P & COAT/P OVER A 20 M x ≤0.75 M BAND ON ROCK-FACE TO THE SOUTH.

- ASPHALT PAVEMENT OCCURS AT LOCATION (3): A ROCKY HEADLAND FORMING A RELATIVELY HORIZONTAL PLATEAU. AP/P HAS FORMED IN P/C/G DEPOSITS ON LEESIDE OF BED-ROCK PROTRUSIONS.

REVIEWED HH DATE 4-27-90

OG K. DE[redacted]SCHERE

SEGMENT ST/ AG-9

SUBDIVISION A

DATE 4/25/90

CHECKLIST

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

LEGEND

1 ▲ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

CT/B Broken Distribution

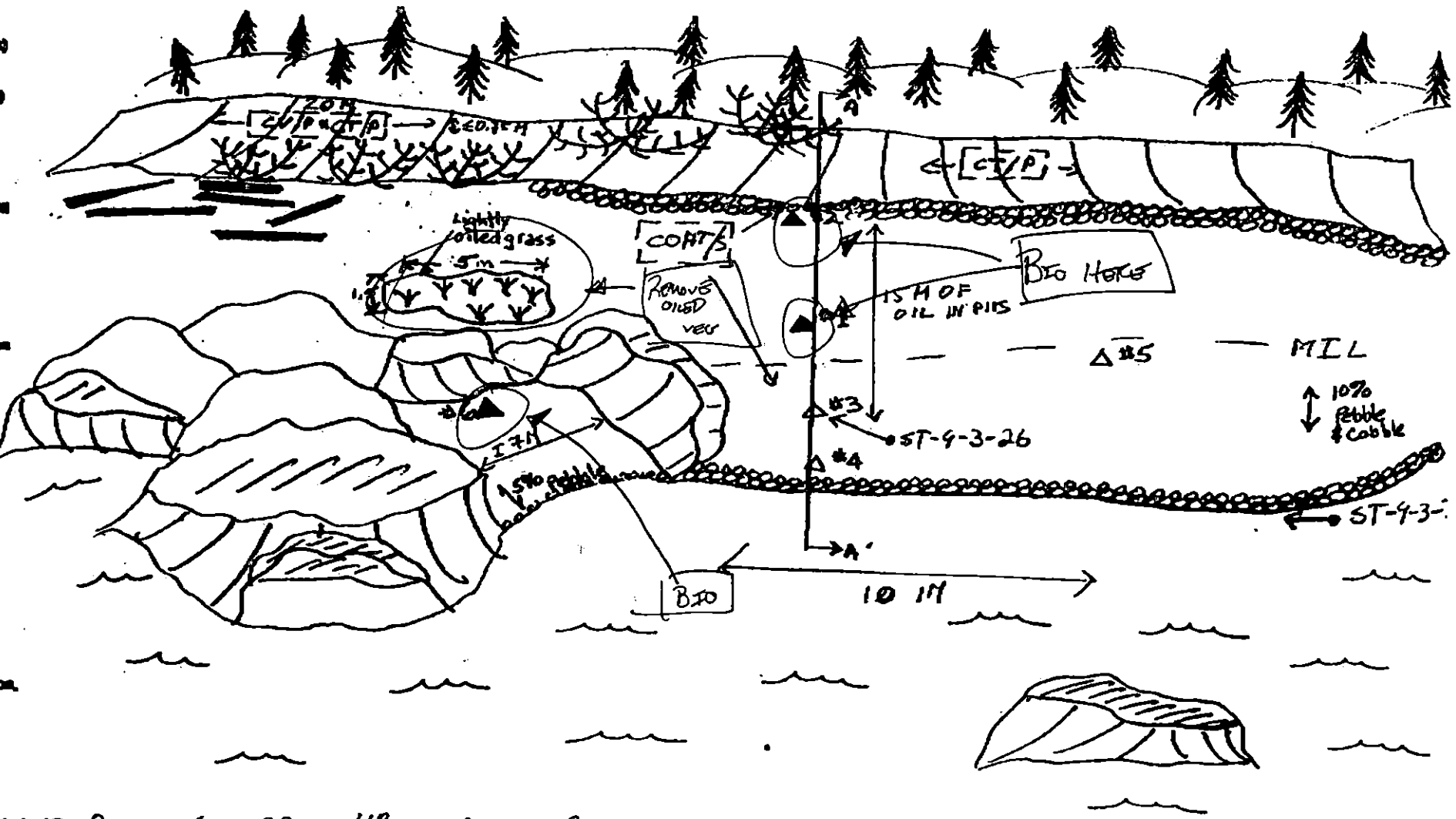
CT/P Patchy Distribution

CT/S Splashed Distribution

Oiled Vegetation

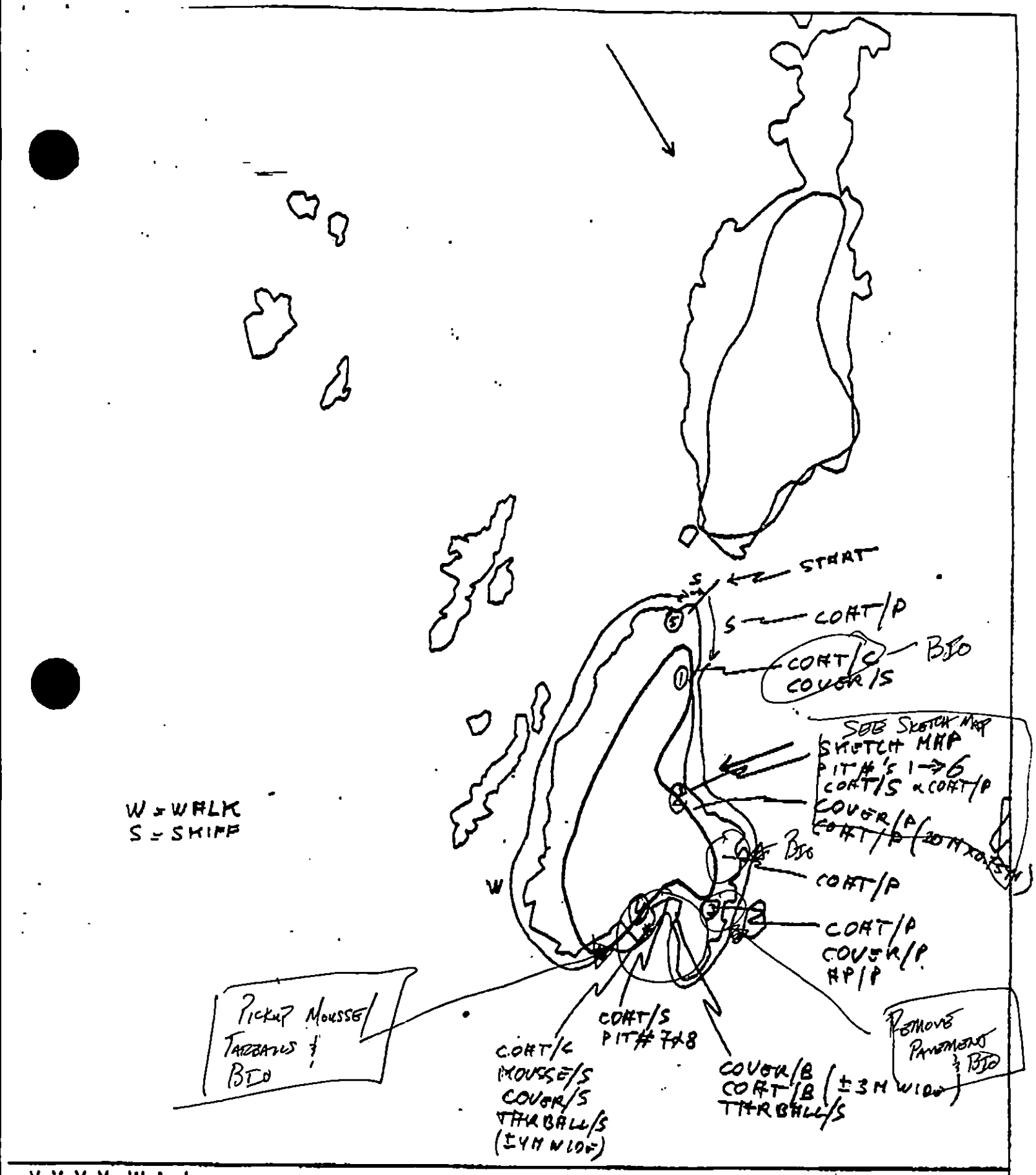
1 Photo location, direction, and number

S[redacted]CH MAP
ST-AG-9-A
(Location #2)



Oil Character Length (m): AP 0 PO 0 CV 20 CT 40 ST 0 MS 0 PT 0 TB 0 FL 0 NO 0

REVISION: 03/24/89



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

ST-AG-9-A

Total Segment Length: ~~[illegible]~~ 3723

0 100 200 300
METERS

Map Key: PWS-10
Name: K. DEBUSS CHARE
Date: 4/25/90
Data Entered:

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / AG-9 Subdivision A Date (mo / day / yr) 04/25/90

Time (24 hr) 0720-0930 / 1045-1120 Biologist D. REED

(A) Substrate type and % of segments:
(1) Bedrock 60 (2) Boulder 15 (3) Cobble 10 (4) Pebble 10 (5) Sand 5 (6) Silt ____

(B) Overall % cover of biota (% of segment): Dense 40 Moderate 30 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. STF 9-3
Frames 25,26

BARNACLES

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

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	X	X	2	2	2
3	3	3	3	X	3	3	3	X	3	3	3
4	4	4	4	X	4	4	4	X	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	X	2	2	2	X	2	2	2	X
3	3	3	X	3	3	3	X	3	3	3	X
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

FUCUS

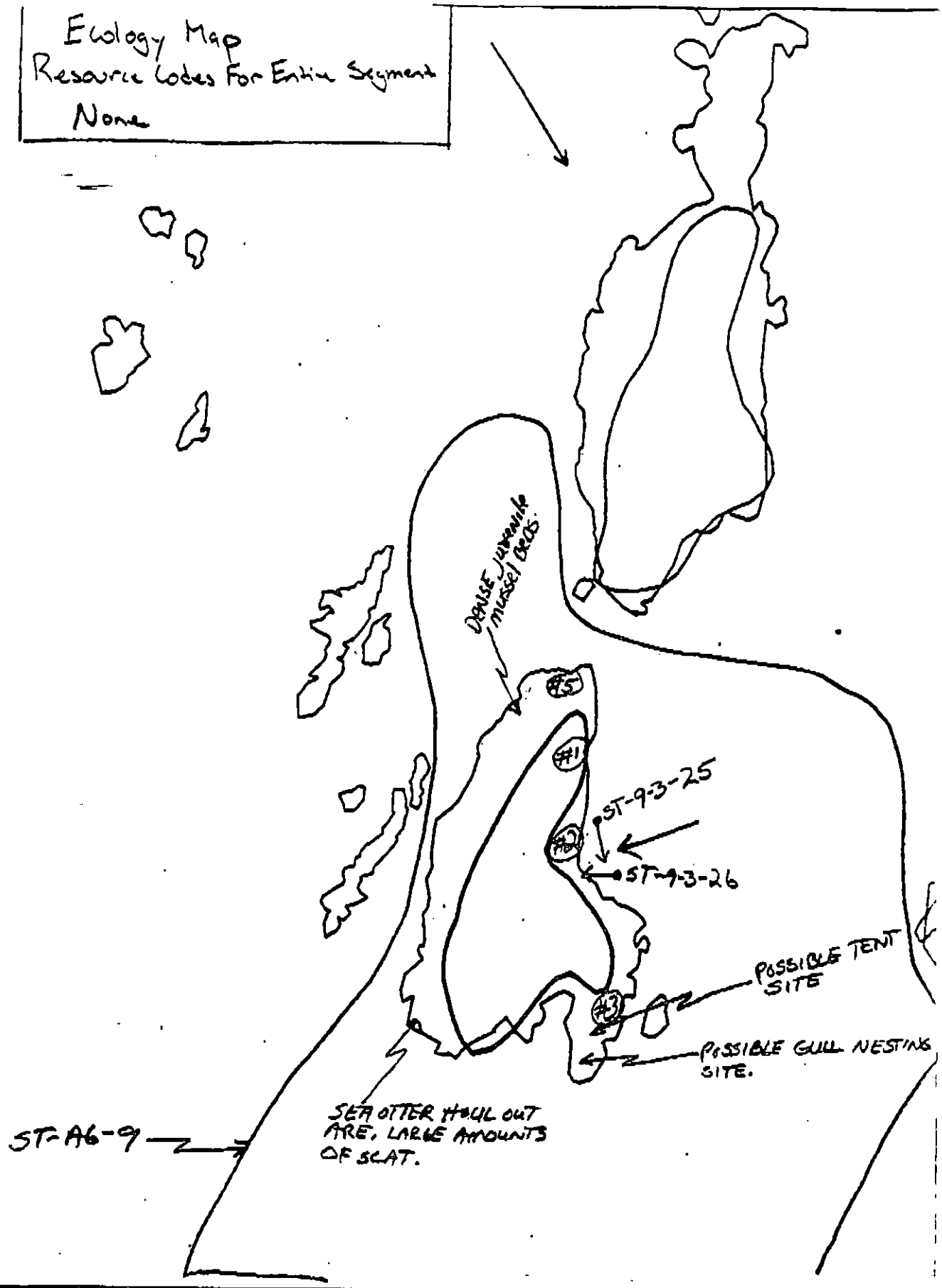
Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	X	X	X	2	2	2
3	3	3	3	X	3	X	3	X	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

Wildlife Observations/ General Comments: SEDIMENT LARGELY BEDROCK WITH DENSE algal COVER IN MID AND LOW ZONES DENSE JUVENILE MUSSEL BEDS GROWING ON Rhodomela at location (#5). POSSIBLE GULL NESTING / ROOSTING SITE (INDICATED by CRACKED Nucella shells, feathers AND GUANO) LOCATED HIGH ON FLAT BEDROCK ≈ 100m FROM a POTENTIAL TENT SITE. SEA OTTER FORAGING PITS AND HAUL OUT ARE COMMON ON SOUTH SIDE. NUMEROUS SEA STARS (PYCNOPODIA, DERMASTERIAS, EVASTERIAS) AND DENSE SEA GRASS, RED ALGAE (Rhodomela) AND KELP (PLEUROPHYCUS, Hedophyllum AND COSTARIA IN LOW ZONE.

Ecological Considerations:

Ecology Map
Resource Codes For Entire Segment
None



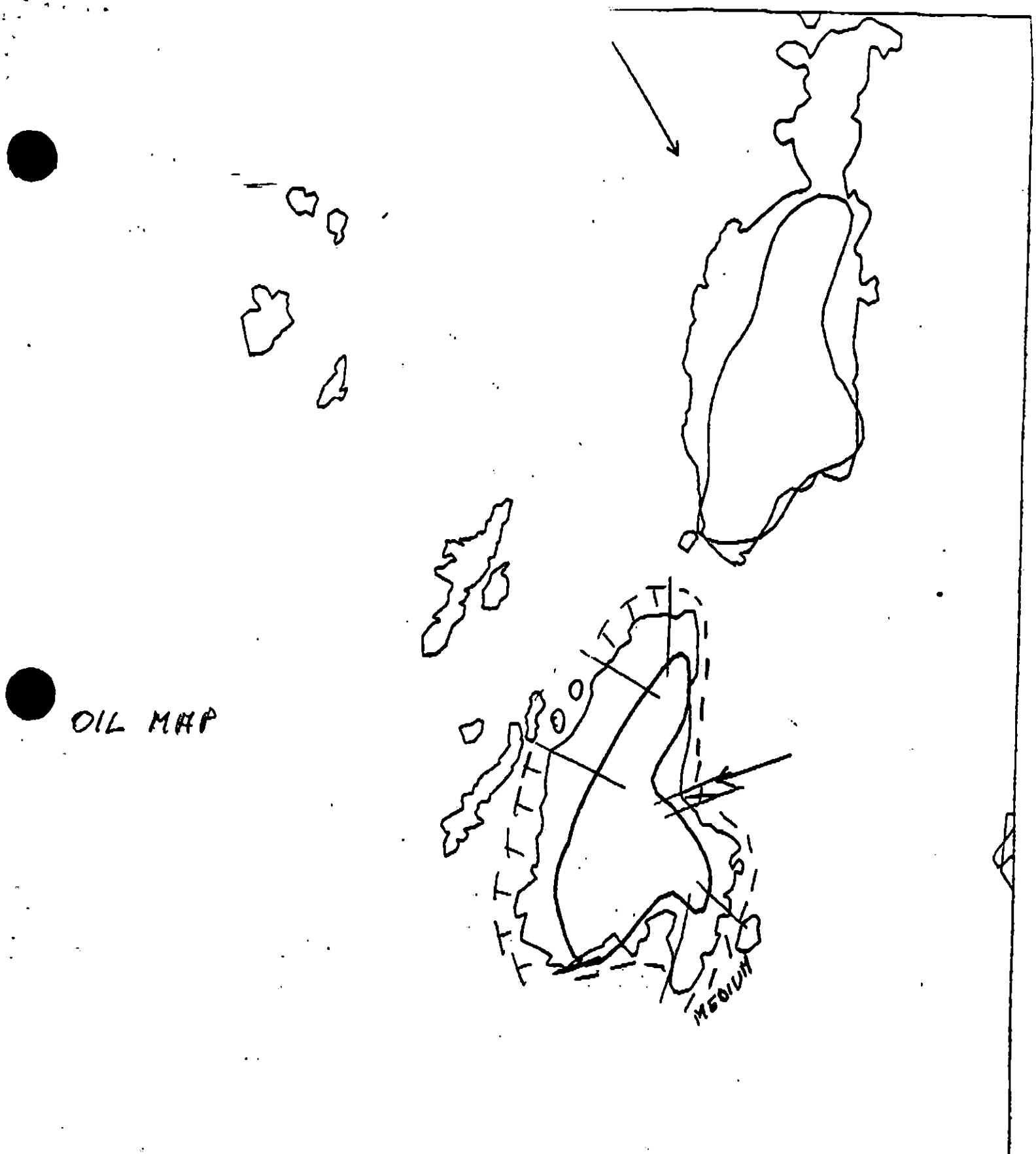
XXXX Wide
/// Medium
---- Narrow
TTTT Very Light
OOOO No Oil

ST-AG-9-A

Total Segment Length: 940

0 100 200 300
METERS

Map Key: PWS-10
Name: DAN REED
Date: 04/25/90
Date Entered:



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

ST-AG-9-A

Total Segment Length: 3723

0 100 200 300
METERS

Map Key: PWS-10
Name: K. DEBUSSCHERE
Date: 4/25/90
Data Entered:

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/AG-09

SUBDIVISIONS: B (2 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ AG-09 SUBDIVISION B (2 OF 2) DATE 4/25/90

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)
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 258 m: Medium 0 m: Narrow 0 m: V.Light 1783 m: No Oil 0 m
Subsurface Oil Observed: Yes X No____ Maximum Depth 11 cm

RECOMMENDATIONS:

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

COMMENTS: Recommend bioremediation in areas shown on sketch map. Work should be conducted between 7/2 to 7/31 based on pinniped constraints.

TAG COMMENTS:_____

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

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 Suzomoto 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 unoiled 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

3O Harbor seal and sea lion pupping (5/15 to 7/1)
3P Harbor seal and sea lion molting (8/15 to 9/15)
Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts. No application of inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31). Contact ADF&G and USFWS prior to treatment for confirmation.
AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 586-7235
ADF&G Don Calkins 267-2403

5R Seabird colony (5/1 to 9/1)
Restrict air and boat traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from colony. Contact USFWS prior to treatment.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

5S Shorebird/waterfowl concentration (4/1 to 5/15)
Restrict all activity to essential minimum, especially air traffic. Contact USFWS and ADF&G for confirmation.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
ADF&G Tom Rothy 267-2206

5T All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
Restrict air traffic and all disturbance to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

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

7Z Subsistence area: Salmon harvesting (5/1 to 9/30)
7HH Finfish harvesting
7II Deer harvesting (8/15 to 2/28)
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 / A6-9 SUBDIVISION: B DATE 4-25-90

NOAA

NAME STEPHEN STURM SIGNATURE Stephen Sturm

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS ALL ISLANDS IN THIS SUBDIVISION HAVE A COAT OF THICKY BLACK OIL ON THE SOUTHERN AND EASTERN FACING VERTICAL ROCK FACES ABOVE OR AT MHW. ADDITIONALLY, LOCALITY #3 HAS OILED SURFACE/SUBSTRATE ON A PERCHED COBBLE-VENEERED PLATFORM AT THE CENTER OF THE ISLAND. MANUALLY RAKING/TILLING THIS AREA FOLLOWED BY APPLICATION OF INIPOL IS RECOMMENDED IN THIS AREA. TREATMENT SHOULD COMMENCE AT A TIME WHEN THE LITV COMMUNITY IS COVERED SO IT IS NOT DISTURBED BY PHYSICAL OR CHEMICAL IMPACT.

OIL COAT SHOULD BE EVALUATED AT A LATER TIME, TAKING INTO ACCOUNT PHYSICAL DEGRADATION, PHOTODEGRADATION, AND TOXICITY TO THE SURROUNDING BIOTA.

ADEC

NAME Wesley Ghormley SIGNATURE Wesley Ghormley

☐ NO TREATMENT RECOMMENDED ■ TREATMENT SUGGESTED

COMMENTS

THIS ~~segment~~ subdivision is made up of some islands to the West of the AGULIAK islands. A Large amount of wildlife was observed in area & has been determined to be a sea otter haul out area. Seals were also observed in area & on rocks. Due to the fact that it is a sensitive area I suggest bioremediation not even be a consideration due to the amount of time it takes to degrade the oil. I suggest it be cleaned early in operation & as thoroughly as possible & as quick as possible due to wildlife windows. (Location #3)

Location #3 - Subsurface oil is present along w/ coat, cover & tarballs. Suggest working @ high tide with Hot-warm H_2O to remove oil, agitating of sediment needs to be applied with Hot-warm H_2O. Care should be taken not to disturb the amount of organisms in area. Recommend a small work crew that only works the small beach & bedrock. Foot traffic to other parts of island should be minimal do to large amounts of muscles.

Location #6 - Manually remove tarballs.

Location #6 - Manually remove tarballs.

LAND MANAGER

NAME Ray Burger ADNR SIGNATURE Ray Burger

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS

- Treat as outlined by ADEC above
- Timing is critical.

REVISION NO. 03/21/90

SHORELINE OILING SUMMARY

REVISION NO. 04-13-90

OG K. DEBUSSCHERE NOAA STEPHEN STURM SEGMENT ST/ AG-9
BIO D. REED LAND REP Ray Burger ADNR SUBDIVISION B (2 OF 2)
EXXON T. DIAZ ADEC Wes Gholmley TIME 9:30 to 10:45
TEAM NO. 9 TIDE LEVEL -1 to 3 DATE 4 / 25 / 90
EST. SUBDIVISION LENGTH: 2328 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
UPLANDS DESCRIPTION: ☐ Grass ☐ Forest ☒ Rock → NO UPLANDS → ROCK-OUTCROPS
SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: N to S
SURFACE SEDIMENTS: R 80 % B 5 % C 5 % P 5 % G 2 % S 2 % M 0 % V 0 %
SLOPE: Lang 15 % Hang 80 % Vert 5 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
OIL CATEGORY LENGTH: W 230 m M 0 m N 0 m VL 2098 m NO 0 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	rc	rb	rp	rs						su	ui	mi	u
ASPHALT PAVEMENT													
POOLED													
COVER		V		X		X					X		
COAT		V		X		V X					V X		
STAIN	X					X					X		
MOUSSE													
PATTIES													
TARBALLS				X		X					X		
[illegible]M													
[illegible] OIL										X		X	X

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

#BAGS 0

Photographs:

Roll No. ST-9-3

Frames 27 & 28

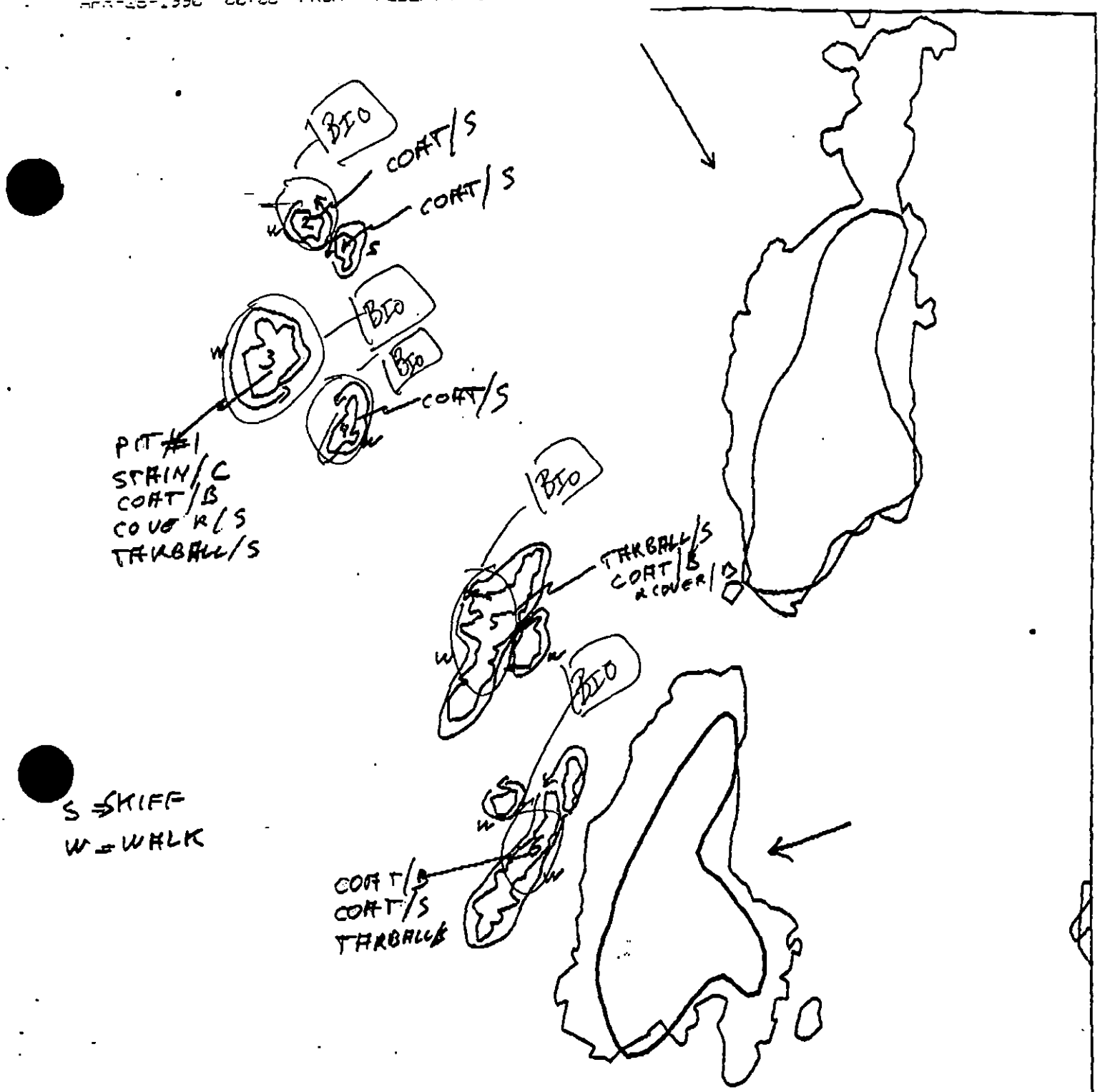
SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm)	BELOW		OIL / FILM COLOR					PIT ZONE				ANA	SHEEN (Y/N)	▼	SURFACE-SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	HO		UO	UC						SU	UI	MI	U				
1	30		X				6-11		X			X				X			YES	N	—	C-P&M/M&V

COMMENTS

- SUBDIVISION CONSISTS OF ROCKY ISLETS
- MOST SIGNIFICANT OILING IS IN LOCATION (3): ROCKY ISLET WITH SUBMERGED CENTRAL BASIN - LAG DEPOSITS (COBBLES & BOULDERS)
  - ⇒ ON C/B: STAIN/C WITH SUBSURFACE OIL 6-11 CM. / SUBSURFACE SEDIMENTS ARE IN ANAEROBIC ENVIRONMENT.
  - ⇒ ON BEDROCK FACES: COAT/B, COVER/S (IN CRACKS) AND TARBALL/S

REVIEWED MJS DATE 4-26-90



XXXX Wide
/ / Medium
- - - - Narrow
TTTT Very Light
)000 No Oil

ST-AG-9-B

Total Segment Length: 8723

0 100 200 300
METERS

Map Key: PWS-10
Name: K DERUSCHMORE
Date: 4/25/90
Data Entered:

SHORELINE ECOLOGICAL SUMMARY

REVISION: 09/22/98

Segment ST / AG-9 Subdivision B Date (mo / day / yr) 04/25/90

Time (24 hr) 0930-1045 Biologist D. REED

(A) Substrate type and % of segments:
(1) Bedrock 80 (2) Boulder 5 (3) Cobble 5 (4) Pebble 5 (5) Sand 5 (6) Silt ____

(B) Overall % cover of biota (% of segment): Dense 50 Moderate 30 Low 20

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

Photographs:
Roll No. ST-9-3
Frames 27, 28

BARNACLES

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

NOT PRESENT

MYTILUS

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

NOT PRESENT

FUCUS

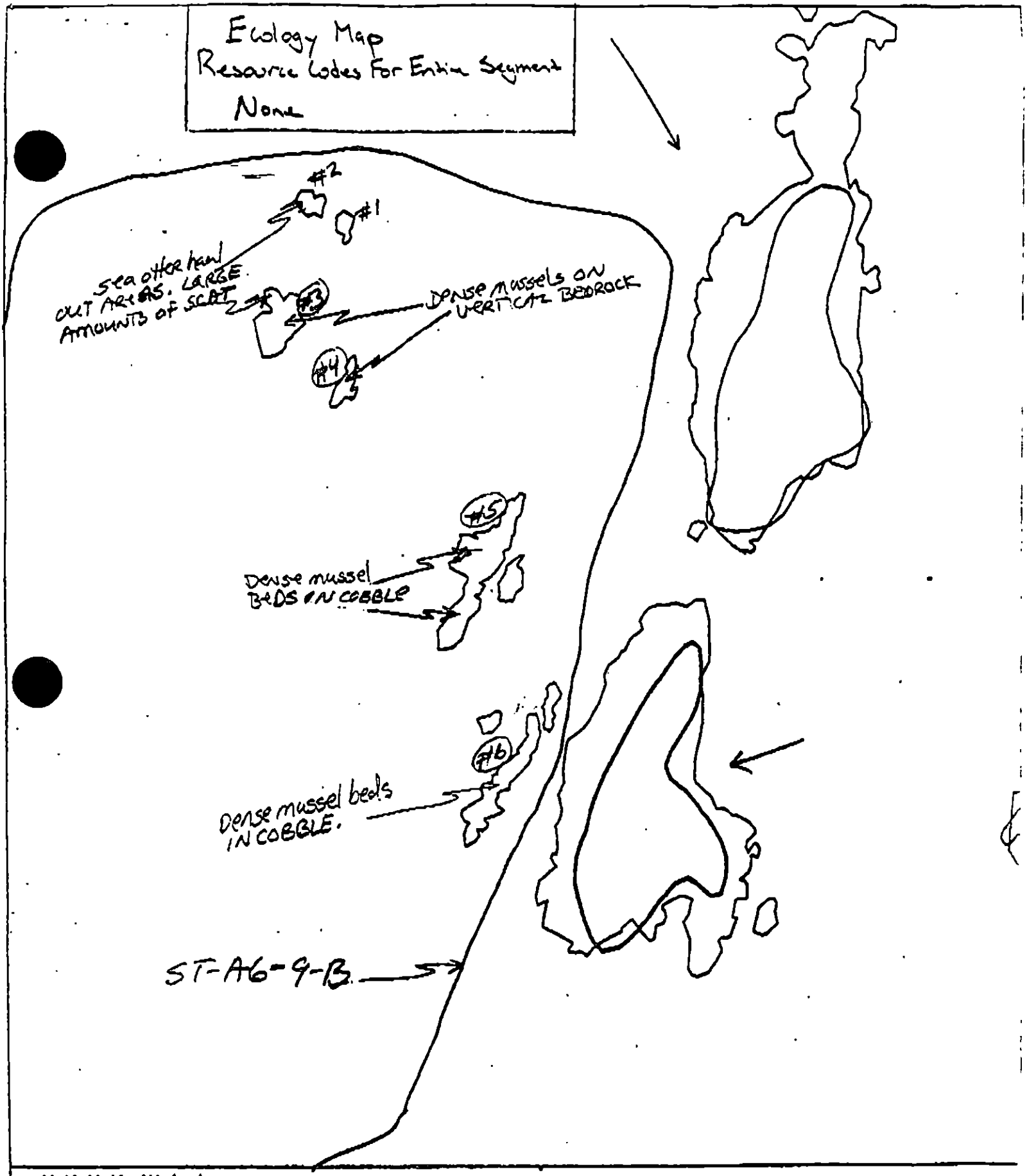
Dense			Moderate			Sparse			Rare		
1U	X	1L	1U	1M	1L	X	1M	X	1U	1M	1L
2	2	2	2	2	2	2	X	2	X	2	X
3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

Wildlife Observations/ General Comments:
1 SEA LION, 10 SEA OTTERS, 1 HARBOR SEAL, small pod of DOLPHINS, 3 FLOCKS OF SANDHILL CRANES FLYING OVER HEAD (400, 200, 200 BIRDS respectively), 2 OYSTER CATCHERS, BULL KELP DRIFT WITH HERRING ROE, 2 SURFBIRDS.

Ecological Considerations:
This subdivision is composed of a number of small islets that appear to b extensively used by sea otters and seals as haul out areas. Seabirds may also use these islet for roosting. Dense algal cover in M10 and L0a zones quite lush. Many flat cobble areas with dense mussel beds that may be sensiti to heavy foot traffic. These islets appear to be relatively produc

Ecology Map
Resource Codes For Entire Segment
None



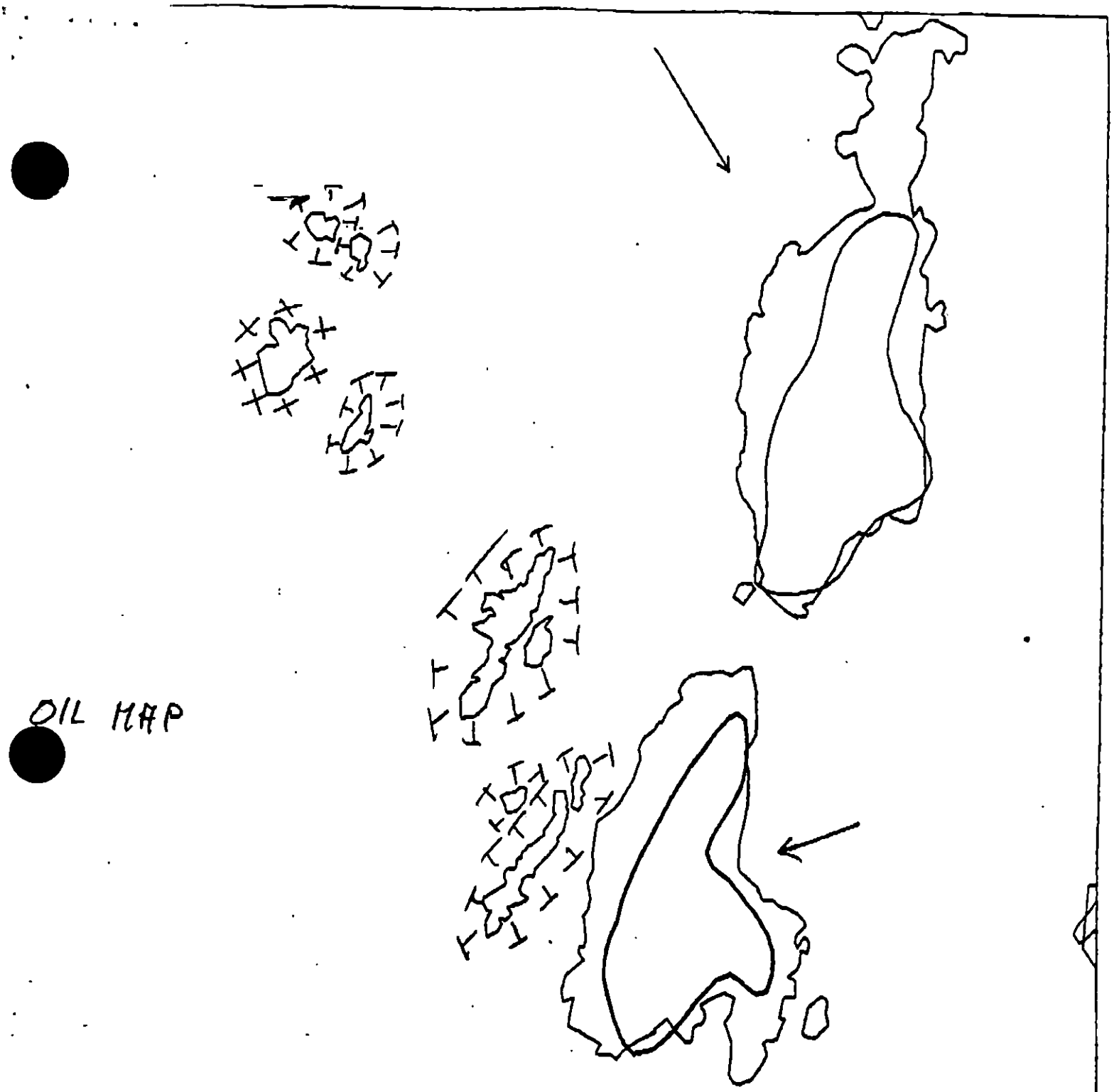
XXXX Wide
/// Medium
---- Narrow
TTTT Very Light
OOOO No Oil

ST -AG-9-B

Total Segment Length: 940

0 100 200 300
METERS

Map Key: PWS-10
Name: DAN REED
Date: 04/25/90
Data Entered:



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

ST-AG-9-B

Total Segment Length: 3723

0 100 200 300
METERS

Map Key: PWS-10
Name: K. DEROSS CHORO
Date: 4/25/90
Date Entered:

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT AG-9 SUBDIVISION B (2 of 2)

WORK WINDOW	
Manual Pickup	OPEN
Spot Washing	OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

3N,O,P,Q	**Harbor Seal & Seal Lion Pupping and Molting**	NO TIME CONSTRAINT. Authorized per memorandum dated 5/14/90 from Kathryn Frost/ADF&G to Mark Kuwada/ADF&G.

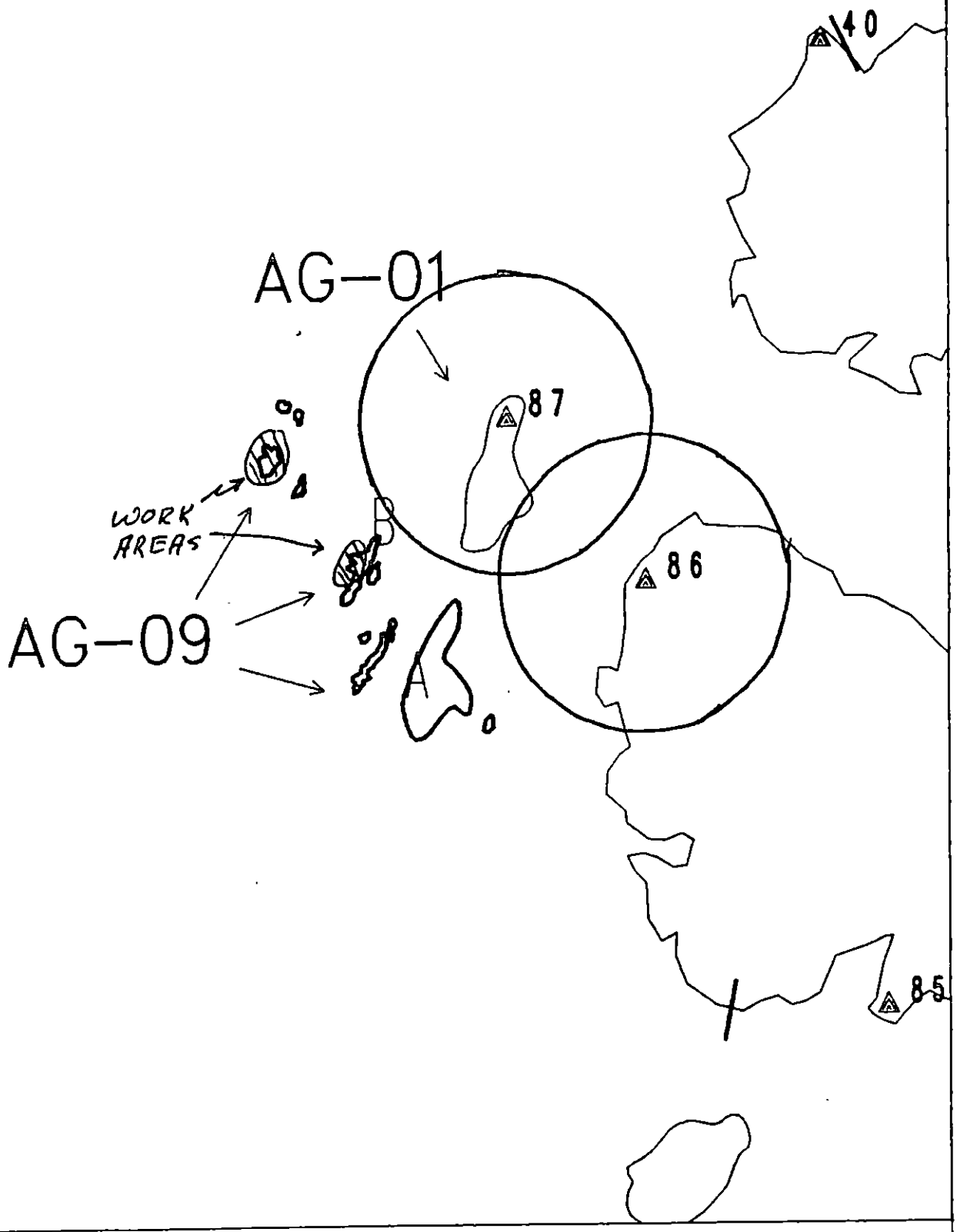
OTHER ECOLOGICAL CONSIDERATIONS

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 unoiled biota and substrate. Avoid damaging mussel beds.

TAG APPROVAL DATE 5/29/90.
ADEC ART WEINER Art Weiner
EXXON Amy Tex
NOAA Bluecrest
USCG G.A. Reiter G.A. Reiter

FOSC _____ DATE MAY 29 1990

Prepared By: Andrew Meyer WTK Date 5/27/90



EXXON

Exxon Company, USA
Map Key: KNI-AG-9
May 11, 1990

ECOLOGY MAP
SEGMENT AG-9
SUBDIVISION B (2 of 2)

METERS
0 403 807

★ Seabird Colony
△ Eagle Nest

1 inch = 1324 feet

SHORELINE EVALUATION

SEGMENT ST/ AG-09 SUBDIVISION B (2 OF 2) DATE 4/25/90

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)
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. David McMahan DATE: 5/2/90

OILING CATEGORIZATION:

Wide 258 m: Medium 0 m: Narrow 0 m: V.Light 1783 m: No Oil 0 m
Subsurface Oil Observed: Yes X No ____ Maximum Depth 11 cm

RECOMMENDATIONS:

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

COMMENTS: Recommend bioremediation in areas shown on sketch map. Work should be conducted between 7/2 to 7/31 based on pinniped constraints.
REVISED, SEE ADDENDUM 5/27/90 WK

TAG COMMENTS: BIOREMEDIATION NOT RECOMMENDED DUE TO GW. SENSITIVITIES (DENSE MUSSEL BEDS). MANUAL PICKUP OF TARBALLS AS INDICATED ON SKETCH, SPOT WASH ON AREAS OF COVER INDICATED ON SKETCH.

TAG APPROVAL DATE: 5/3/90.
ADEC Art Weiner
EXXON Andy Tear
NOAA Gary Pohrac
USCG Kenneth Keane

FOSC: [illegible] DATE: 5-12-90

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT AG-9 SUBDIVISION A (1 of 2)

WORK WINDOW	
Manual Pickup Tarmat Removal	WORK 7/1 TO 8/15
Bioremediation Manual Tilling	WORK 7/1 TO 7/31

STANDARD ARCHAEOLOGICAL CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

3N,3P,3O,3Q Pinnipeds

- Do not manual till or apply bioremediation prior to 7/1 or after 7/31.
- Closed to all activities 5/15 to 7/1 and 8/15 to 9/15.

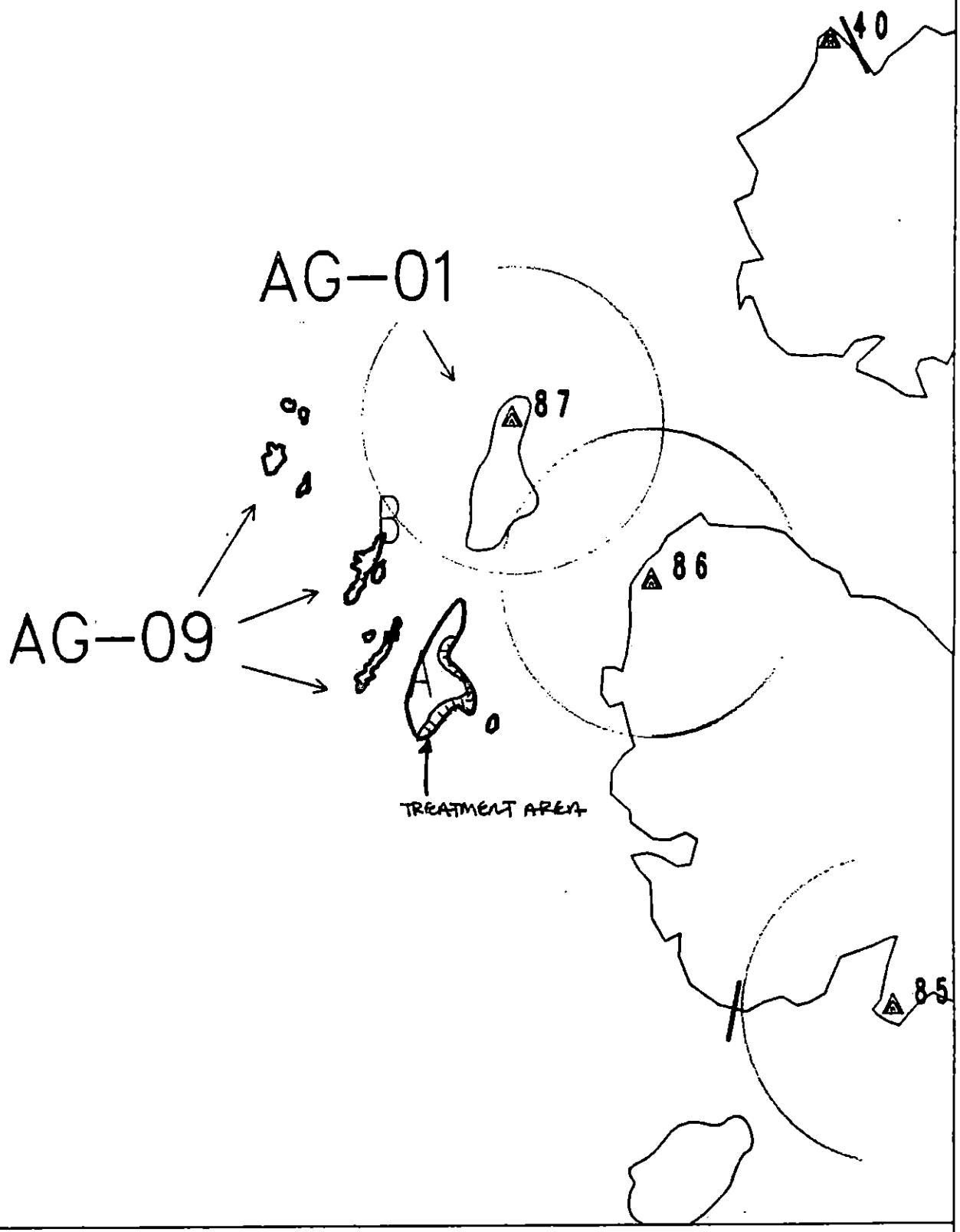
OTHER ECOLOGICAL CONSIDERATIONS

Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Restrict all activity to essential minimum, especially air traffic.

TAG ADDENDUM DATE 5/18/90
ADEC Art Weiner Art Weiner
EXXON Andy Tom
NOAA Gary Petrasek Gary Petrasek
USCG G.A. Reiter

FOSC _____ DATE 5-18-90

Prepared by: Arden Meyer WOK Date: 5/14/90



EXXON

Exxon Company, USA
Map Key: KNI-AG-9

ECOLOGY MAP
SEGMENT AG-9
SUBDIVISION A (1 of 2)
METERS

★ Seabird Colony
▲ Eagle Nest

SHORELINE EVALUATION

SEGMENT ST/ AG-09 SUBDIVISION A (1 OF 2) DATE 4/25/90

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)
See attached Ecological Constraint sheet for specific constraints and contacts.

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

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

SHPO SIGNATURE: Charles J. Holmes DATE: 5/3/90

OILING CATEGORIZATION:

Wide 21 m: Medium 38 m: Narrow 487 m: V.Light 284 m: No Oil 110 m
Subsurface Oil Observed: Yes X No ____ Maximum Depth 22 cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) tarmat removal, 2) manual pickup of mousse tarballs and oiled vegetation where shown on sketch map, and 3) bioremediation of surface and subsurface oil as shown on sketch map. Work should be conducted prior to 5/15 or 7/1 to 8/15 due to pinniped constraints with the exception of Inipol application which should only be used from 7/2 to 7/31.

See Addendum dated 5/14/90

TAG COMMENTS: MANUAL TILLING PRIOR TO B/O IN AREA OF TP6

TAG APPROVAL DATE: 5/3/90.
ADEC ART WEINER
EXXON ANDY TSA
NOAA Gary Petrac
USCG Kenneth Kenny

FOSC: [illegible] DATE: 5-8-90

SHORELINE EVALUATION

SEGMENT ST/ AG-09 SUBDIVISION A (1 OF 2) DATE 4/25/90

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)
See attached Ecological Constraint sheet for specific constraints and contacts.

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

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

SHPO SIGNATURE: Charles E. Holmes DATE: 5/3/90

OILING CATEGORIZATION:

Wide 21 m: Medium 38 m: Narrow 487 m: V.Light 284 m: No Oil 110 m
Subsurface Oil Observed: Yes X No ____ Maximum Depth 22 cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) tarmat removal, 2) manual pickup of mousse tarballs and oiled vegetation where shown on sketch map, and 3) bioremediation of surface and subsurface oil as shown on sketch map. Work should be conducted prior to 5/15 or 7/1 to 8/15 due to pinniped constraints with the exception of Inipol application which should only be used from 7/2 to 7/31.

TAG COMMENTS: MANUAL TILLING PRIOR TO BIO IN AREA OF TP6

TAG APPROVAL DATE: 5/3/90.
ADEC ART WEINER Art Weiner
EXXON ANDY TEA
NOAA Gary Petrae Gary Petrae
USCG KENNETH KEHNE

FOSC: [illegible] DATE: 5-8-90

OG K. DE[illegible]SCHERE

SEGMENT ST/RG-9

SUBDIVISION A

DATE 4/25/90

CHECKLIST

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

LEGEND

1 △ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

CT/B Broken Distribution

CT/P Patchy Distribution

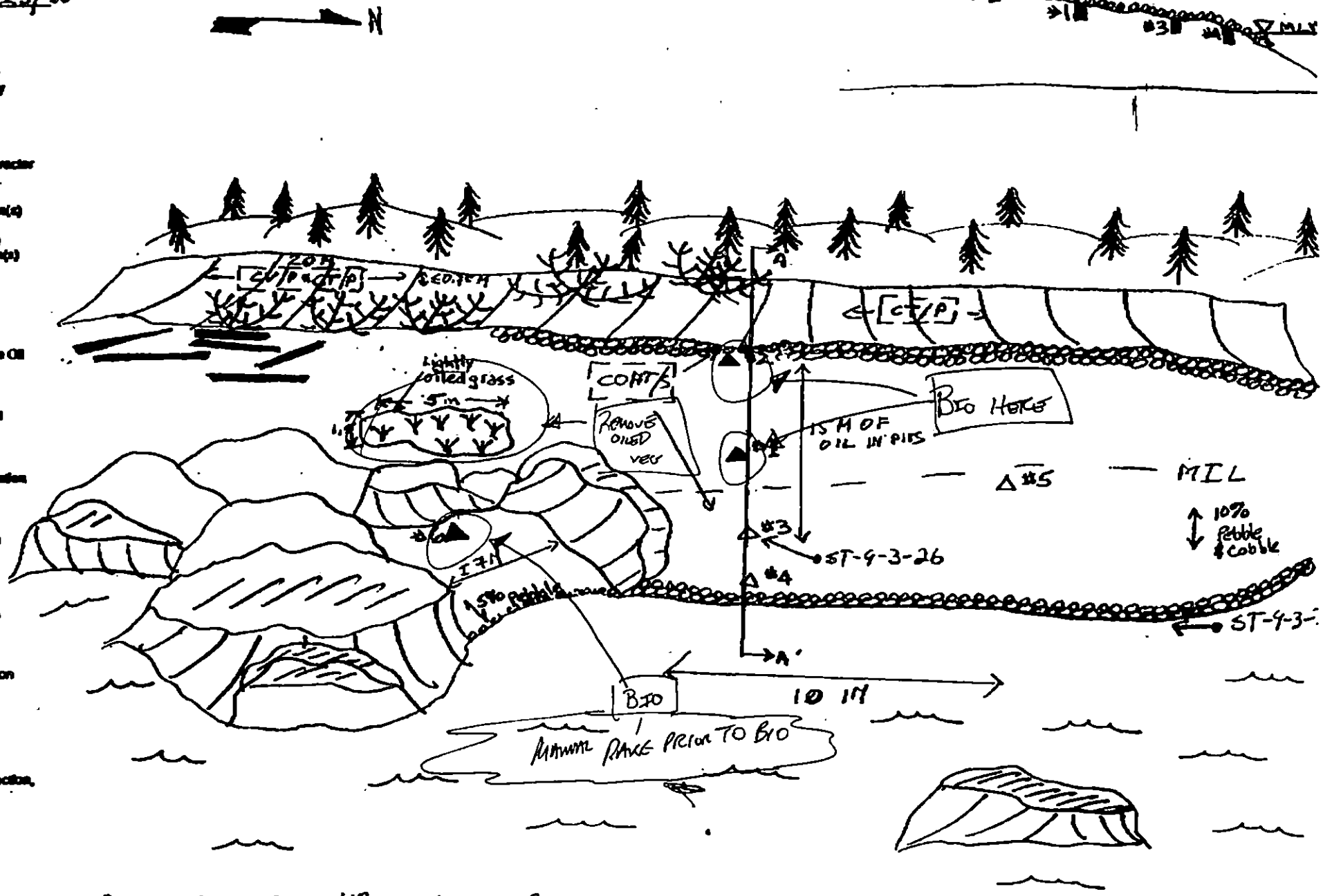
CT/S Splashed Distribution

Oiled Vegetation

1 Photo location, direction, and number

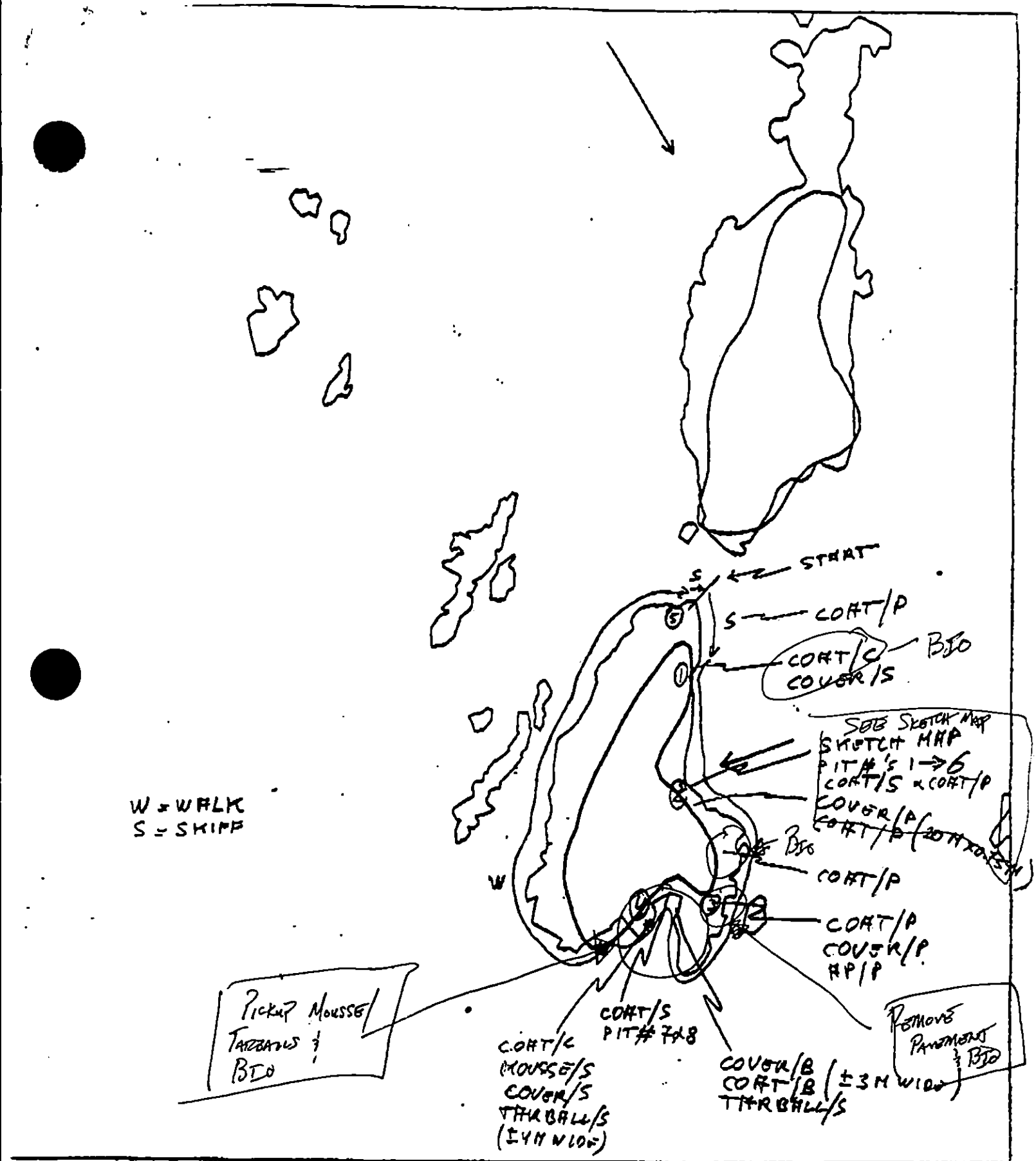
S[illegible]CH MAP

ST-RG-9-A
(Location #2)



Oil Character Length (m): AP 0 PO 0 CV 20 CT 40 ST 0 MS 0 PT 0 TB 0 FL 0 NO 0

REVISION:03/31/89



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

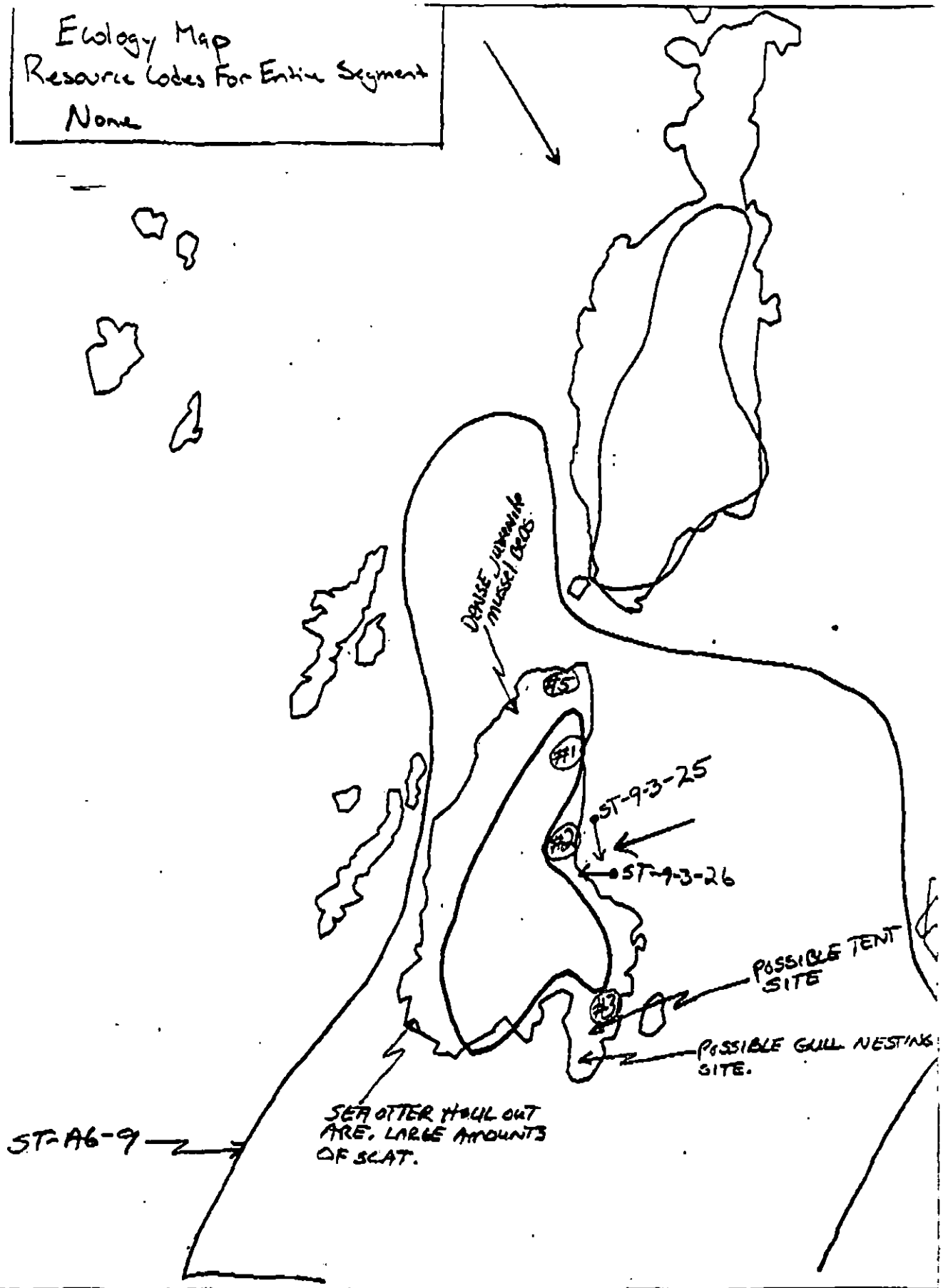
ST—AG-9-A

Total Segment Length: ~~9440~~ 3723

0 100 200 300
METERS

Map Key: PWS-10
Name: K. DEBUSS CHAPE
Date: 4/25/90
Date Entered:

Ecology Map
Resource Codes For Entire Segment
None



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

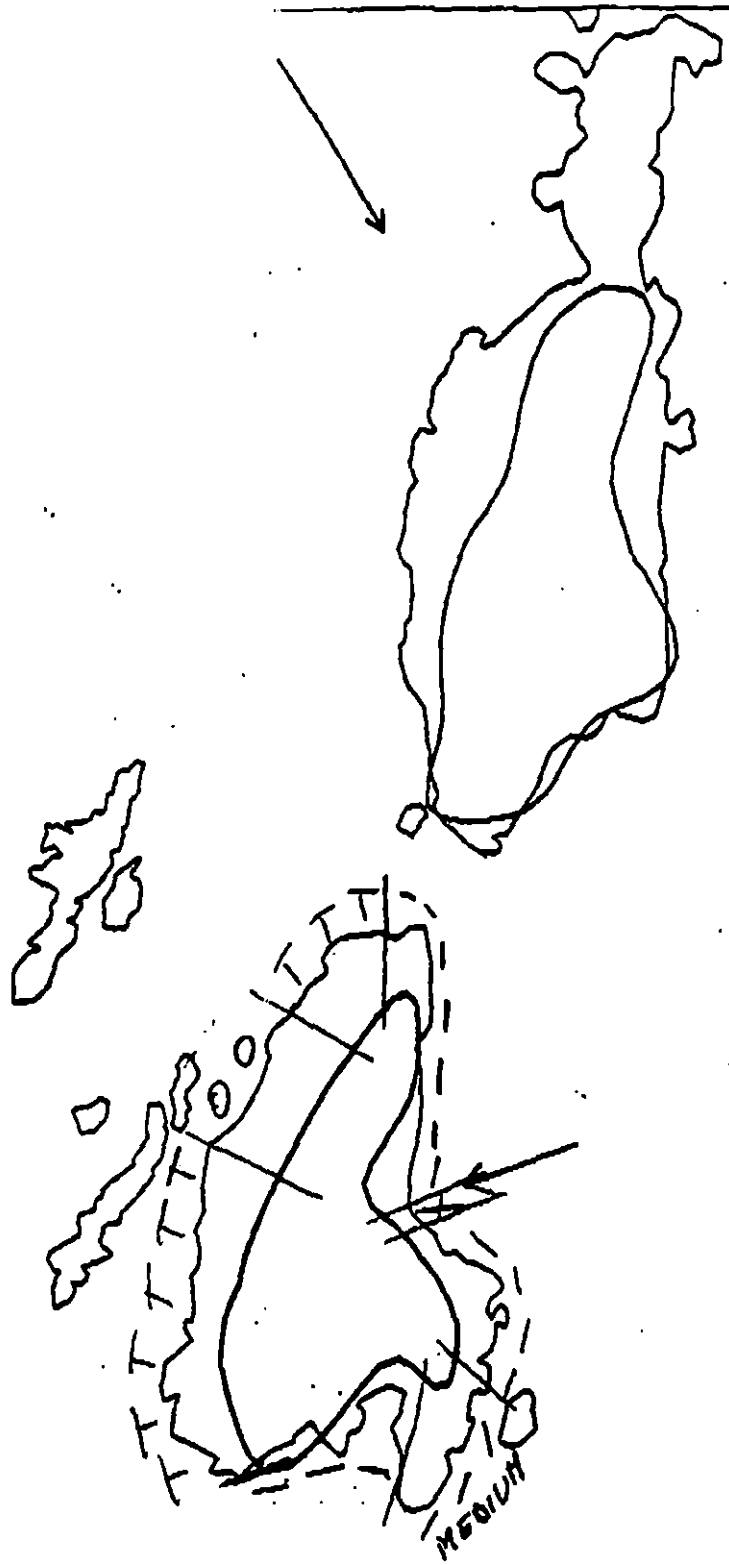
ST-AG-9-A

Total Segment Length: 940

0 100 200 300

Map Key: PWS-10
Name: DAN REED
Date: 04/25/90
Date Entered:

OIL MAP



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

ST-AG-9-A

Total Segment Length: 3723

0 100 200 300
METERS

Map Key: PWS-10
Name: K. DEBUSSCHERE
Date: 4/25/90
Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ AG-09 SUBDIVISION B (2 OF 2) DATE 4/25/90

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)
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. David McMahan DATE: 5/8/90

OILING CATEGORIZATION:

Wide 258 m: Medium 0 m: Narrow 0 m: V.Light 1783 m: No Oil 0 m
Subsurface Oil Observed: Yes X No ____ Maximum Depth 11 cm

RECOMMENDATIONS:

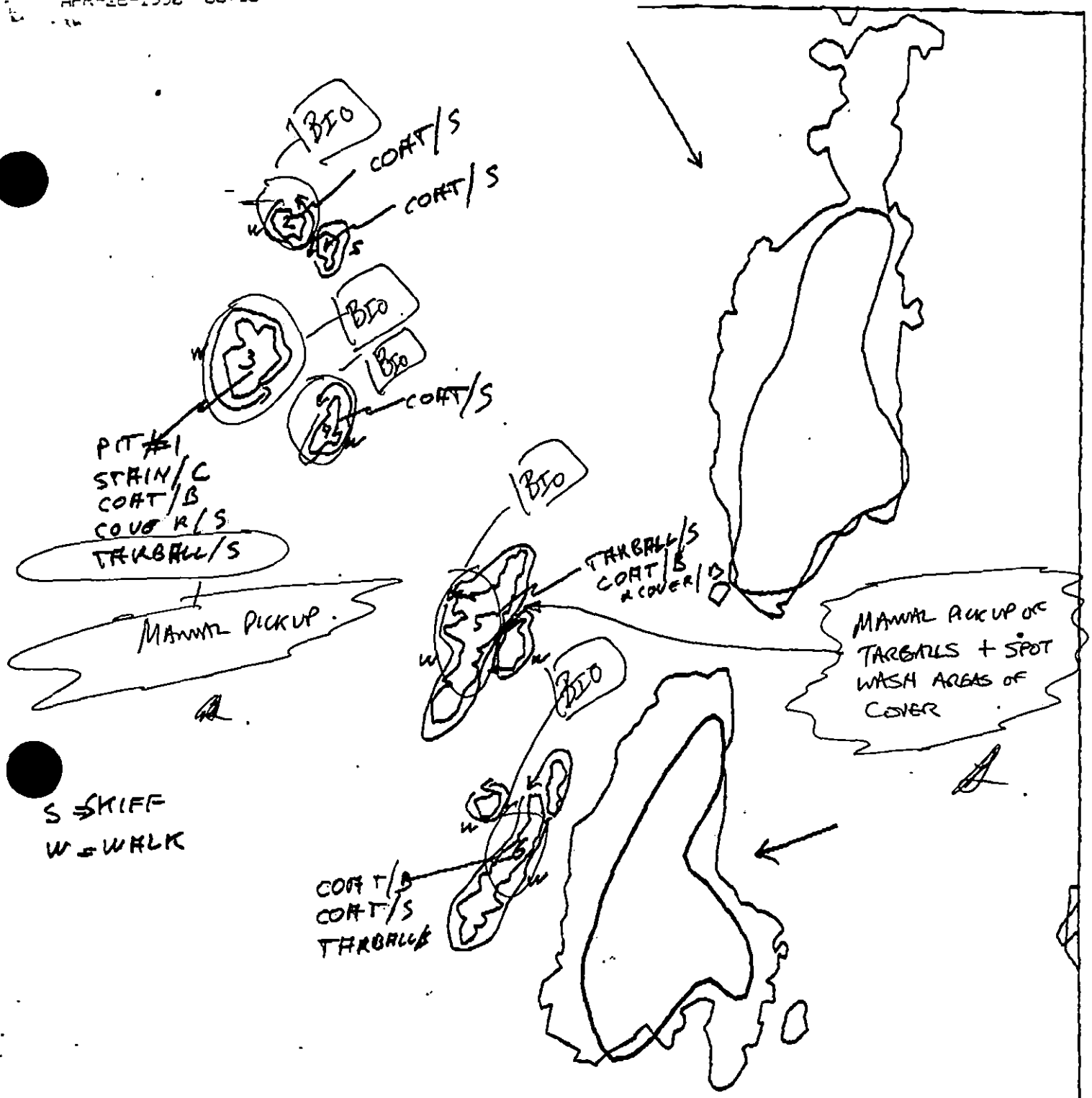
____	No Treatment Recommended	____	Snare/Absorbent Booms
X	Treatment Recommended	____	Oil Snares (pom poms)
X	Manual Pickup	____	Absorbents (pads,rolls,etc)
X	Bioremediation	____	Spot Washing: ____ Wands
____	Tarmat Removal	____	Beach Cleaner
		____	Other (see comments)

COMMENTS: Recommend bioremediation in areas shown on sketch map. Work should be conducted between 7/2 to 7/31 based on pinniped constraints.

TAG COMMENTS: BIOREMEDIATION NOT RECOMMENDED DUE TO ENV. SENSITIVITIES (DENSE MUSSEL BEDS). MANUAL PICKUP OF TARBALLS AS INDICATED ON SKETCH, SPOT WASH ON AREAS OF COVER INDICATED ON SKETCH.

TAG APPROVAL DATE: 5/3/90.
ADEC Art Weiner Art Weiner
EXXON Andy Tear
NOAA Gary Petrac Gary Petrac
USCG Kenneth Keane

FOSC: [signature] DATE: 5-12-90



XXXX Wide
/ / Medium
---- Narrow
TTTT Very Light
)000 No Oil

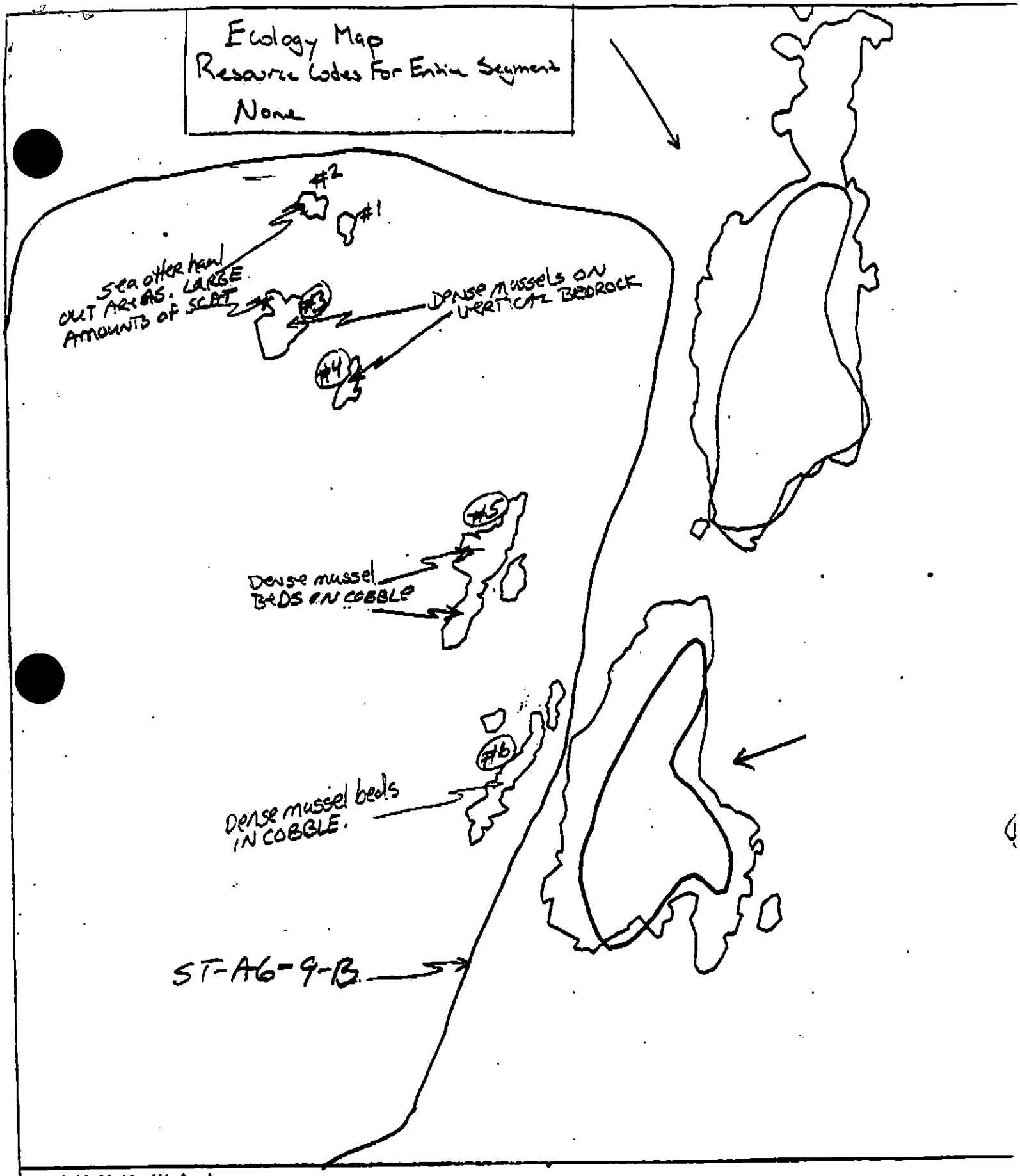
ST-AG-9-B

Total Segment Length: 3723

0 100 200 300
METERS

Map Key: PWS-10
Name: K. DERUSCHERE
Date: 4/25/90
Date Entered:

Ecology Map
Resource Codes For Entire Segment
None



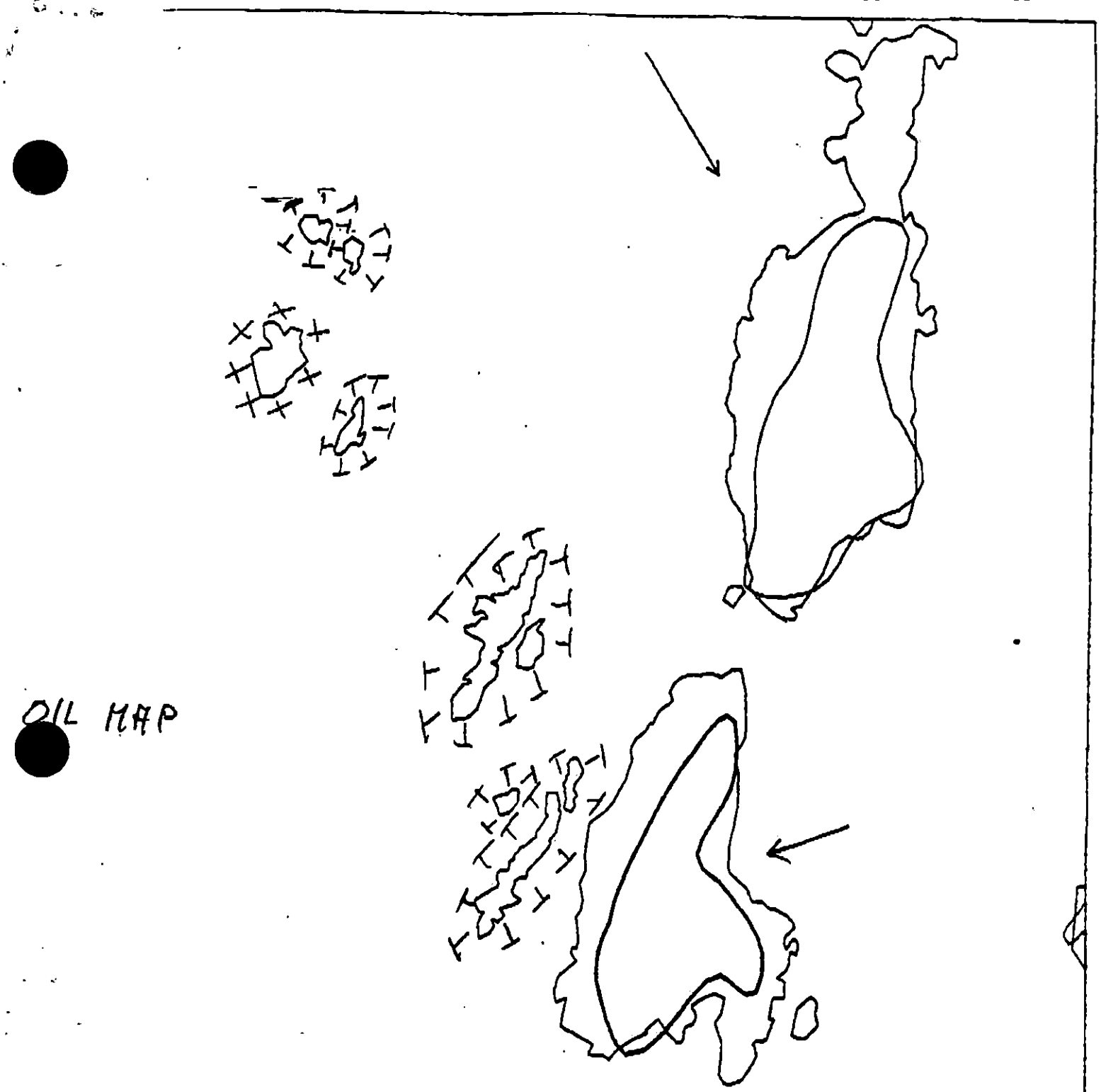
XXXX Wide
//// Medium
---- Narrow
TTTT Very Light
OOOO No Oil

ST -AG-9-B

Total Segment Length: 940

0 100 200 300
METERS

Map Key: PWS-10
Name: DAN REED
Date: 04/25/90
Data Entered:



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

ST-AG-9-B

Total Segment Length: 3723

0 100 200 300
METERS

Map Key: PWS-10
Name: K. DEBOSS CHORO
Date: 4/25/90
Data Entered:

1991 MAYSAP EVALUATION

SEGMENT: AG 009 SUB: A REGION: PWS SURVEY DATE: 5/4/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) RESTRICTED 3/1 - 9/1

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

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

SHPO Signature: _____ Date: _____

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

COMMENTS:
INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: _____ FOSC APPROVAL DATE: _____

ADEC _____ FOSC _____

EXXON _____

USCG _____

NOAA _____

ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

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

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 4, 1991 1015 - 1125
SEGMENT #	AG009	TIDAL HEIGHT (Range)	+1.5 => +1.0
SUBDIVISION	A	BIOLOGIST	JIM BARRY
A STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Area 1 Oiled area (tar splatters) occurs in the upper to supratidal zone at scattered spots along this shore. The beach has a fairly complex structure, with talus boulders, bedrock outcrops, and cobble flats containing low to high content of organic sediments, as well as a shallow low to subtidal ramp with a small clam and eel grass bed. The oil splatters are located on bedrock boulders at the upper edge of the beach. Biota at the oiled area are mosses, black lichen, and little else. Some mosses are growing from the weathered oil.

Below the oiled area, the character of the intertidal community depends upon the habitat type. Bedrock boulders have high Fucus and barnacle cover in this area, with scattered patches of mussels. The low zone cobble/ peat ramp has a clam bed, sparse Fucus, and a border of moderately dense mussels. Otter foraging pits are common in this habitat. Both of these communities are at least 20 m from any oil splatters.

Manual removal was performed during the survey. Most of the material was removed and further treatment should not be necessary.

Area 2 The oiled zone (MSOR,TB) on this pocket beach extends from the drift line in the upper intertidal zone into the middle zone. This beach has talus boulders, cobble/pebbles, and finer grained sediments and is rarely exposed to waves. Fucus drift algae, sparse black lichen, medium to sparse densities of barnacles are found

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

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

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	1		
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

A1 B (cont.)

in the very high zone on the bedrock. Slightly below the bedrock, the gravel and cobble beach has little biota near the oiled area. Somewhat lower towards the middle zone, barnacles, littorines, mussels, nematode worms, and polychaete worms all are present on or very very close (<1cm) to weathered, but still sheening, oil at a slightly lower tidal level within the oiled region. Custom Blend pellets are scattered throughout the area. Barnacle spat are present in moderate to high densities close to, but not directly on, the oiled rocks. Mussels are present in a sparse bed. Littorine snails (egg masses and adults) and hermit crabs are occasionally dense in this area. Juveniles of limpets also are common within the oiled site and very nearly in direct contact with the oil (<0.5 cm). Nematode worms are common at this area.

Below the zone of oiling, sparse Fucus occurs on beach boulders, with higher cover of green and brown filamentous algae towards the subtidal. A sparse clam bed containing high peat content sediments is located at the lowest edge of the beach. Eel grass is present in the subtidal, as is large brown algae. Odonthalia floccossa is abundant on low zone cobble.

Some manual pickup was done on this beach. Additional cleaning, if recommended, should be spatially restricted so as to prevent disturbance to the intertidal mussel bed or the low zone clam bed. Tilling, turning over cobble, or removal of coarse sediments in the high zone outside the mussel bed will not adversely impact the biotic communities at the site, but high pressure wash, or other invasive methods should not be used in areas or in such manner as to disturb the sensitive communities or habitats, which include the mussels beds, clam beds, or heavy peat containing sediments.

Summary of Subdivision AG009-A

We visited two cobble beaches on the subdivision. The only one of consequence regarding oiling is site A1B (above). This beach had an MSOR layer which included both the high and middle intertidal zones. Even with this oil content, the mussel bed and other biota at the exact location of the MSOR appear healthy and little or no evidence of oil-related mortality or negative impacts were evident. Additional cleanup operations at this site may cause adverse effects on this community via mortality to individual species, disruption of the cohesion of the mussel bed, or loss of fine, high organic sediments in from the beach.

Other evidence of recovery from spill-related impacts to the marine communities are evident on bedrock outcrops where Fucus recruits form thick cover in the middle intertidal where few or no adults are present. This area appears to have undergone extensive cleaning of the outcrop substratum.

The remainder of the segment is dominated by bedrock headlands and cliffs. The distribution of biota within these habitats appear to be like those of similar habitats on other subdivisions. These include generally high abundances of the key species, with Fucus and barnacles dominating the cover of the middle zone, red and brown algae dominating the low and subtidal zones, and diverse invertebrate community. Mussels are found in scattered dense patches as well as a sparse to moderate general distribution.

List of Common Species from AG009-A

Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
   Enteromorpha sp., Ulva sp., Urospora sp., filamentous green

3. Brown Algae - Phaeophyta
   Agarum fimbriatum, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
   Calliarthron sp., Corallina sp., Cryptosiphonia woodii, Cumagloia andersonii, Halosaccion glandiforme, Iridaea sp., Lithothamnion sp., Mastocarpus sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria palmata, Rhodomela larix, filamentous red algae
5. Higher Plants - Zostera marina (eel grass), Leymus mollis (beach rye grass)

II. Marine Animals
1. Sponges - Porifera
   Halichondria sp.
2. Anemones
   Anthopleura artemesia, A. elegantissama, Epiactis ritteri, Metridium senile, Urticina crassicornis,
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaetes
   - Glyceridae
   - Nepthyidae
   - Nereidae - Nereis spp.
   - Serpulidae - Serpula sp., Eudistylia polymorpha
   - Spriorbidae - Spirorbis sp.
10. Crustaceans
    a. Amphipods - Orchestia sp.?
    b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
    c. Crabs - Haplogaster sp., Hemigrapsus oregonensis, Paguridae (hermit crabs), Oregonia gracilis,
11. Mollusca
    a. Chitons
       Mopalia mucosa, Tonicella lineata,
    b. Snails - Gastropods
       Littorina scutulata, L. sitkana, Margarites sp., Natica clausa, Nucella lamellosa, N. lima,
    c. Limpets - Acmaea mitra, Lottia digitalis, L. persona, Tectura fenestrata
    e. Mussels and Clams
       Clinocardium sp., C. nuttalli, Macoma balthica, Macoma nasuta, Modiolus sp., Mya arenaria (soft-shell clam), Mytilus californianus, M. cepio, Prototheca staminea, Saxidomus giganteus,
12. Echinoderms
    a. Brittle Stars - Ophiolus sp., ?
    b. Sea stars
       Dermasterias imbricata, Evasterias truscheli, Leptasterias hexactis, Pycnopoida helianthoides, Solaster sp.
    c. Sea Cucumbers - Holothurians - Leptosynapta sp.
    d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Schizoporella sp.
15. Fishes
    - Cottidae - several unknown species
    - Liparidae - Liparis callyodon
    - Stichaeidae - Xiphister atropurpureus, X. mucosus

V. Birds
   Marbled Murrelet (2), Harlequin Duck (2), Barrow's Goldeneye (4) Kittiwake (1), Glaucous Gull (1), Crow (1).

BIO SKETCH MAP

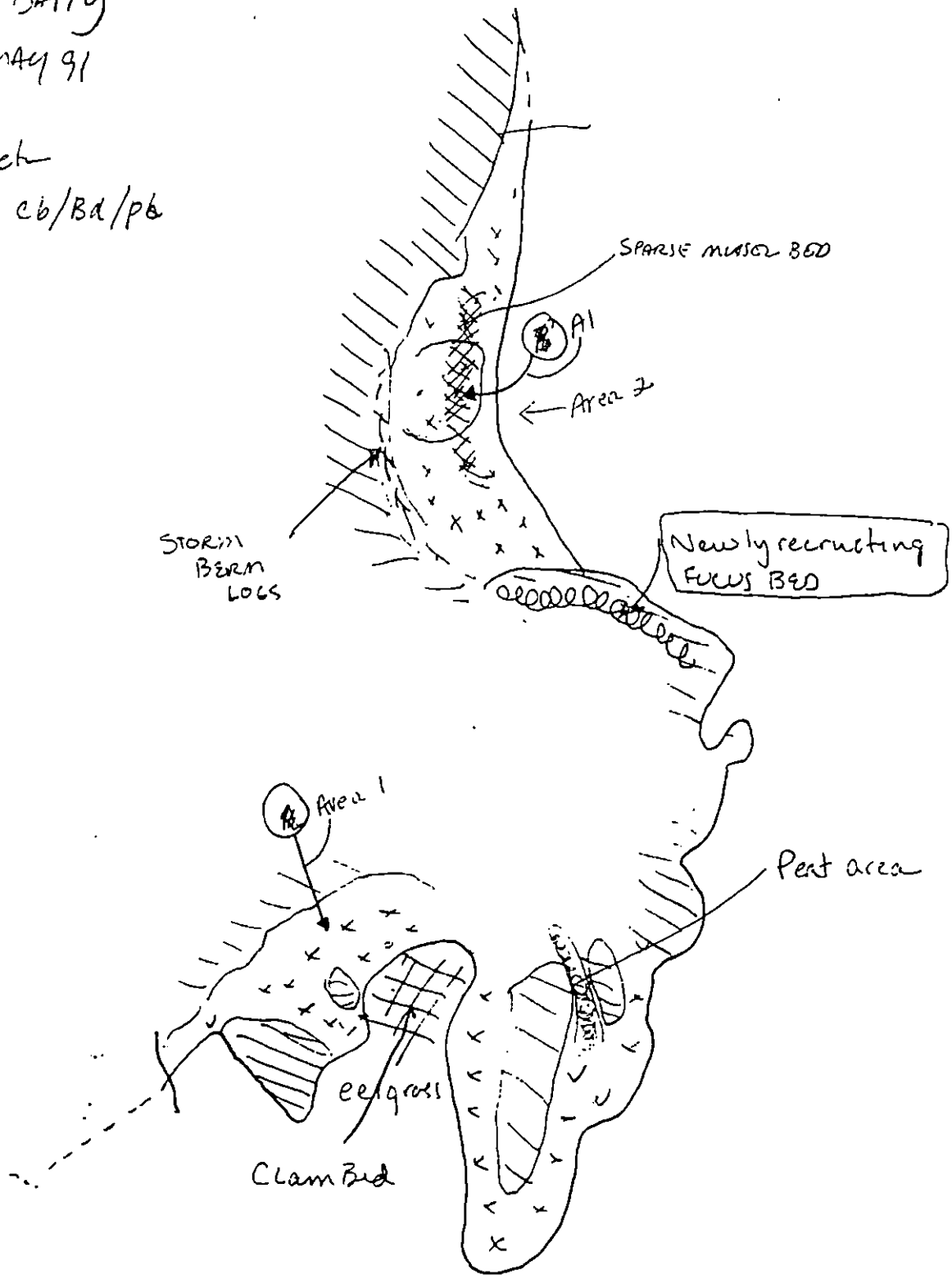
AG009 A

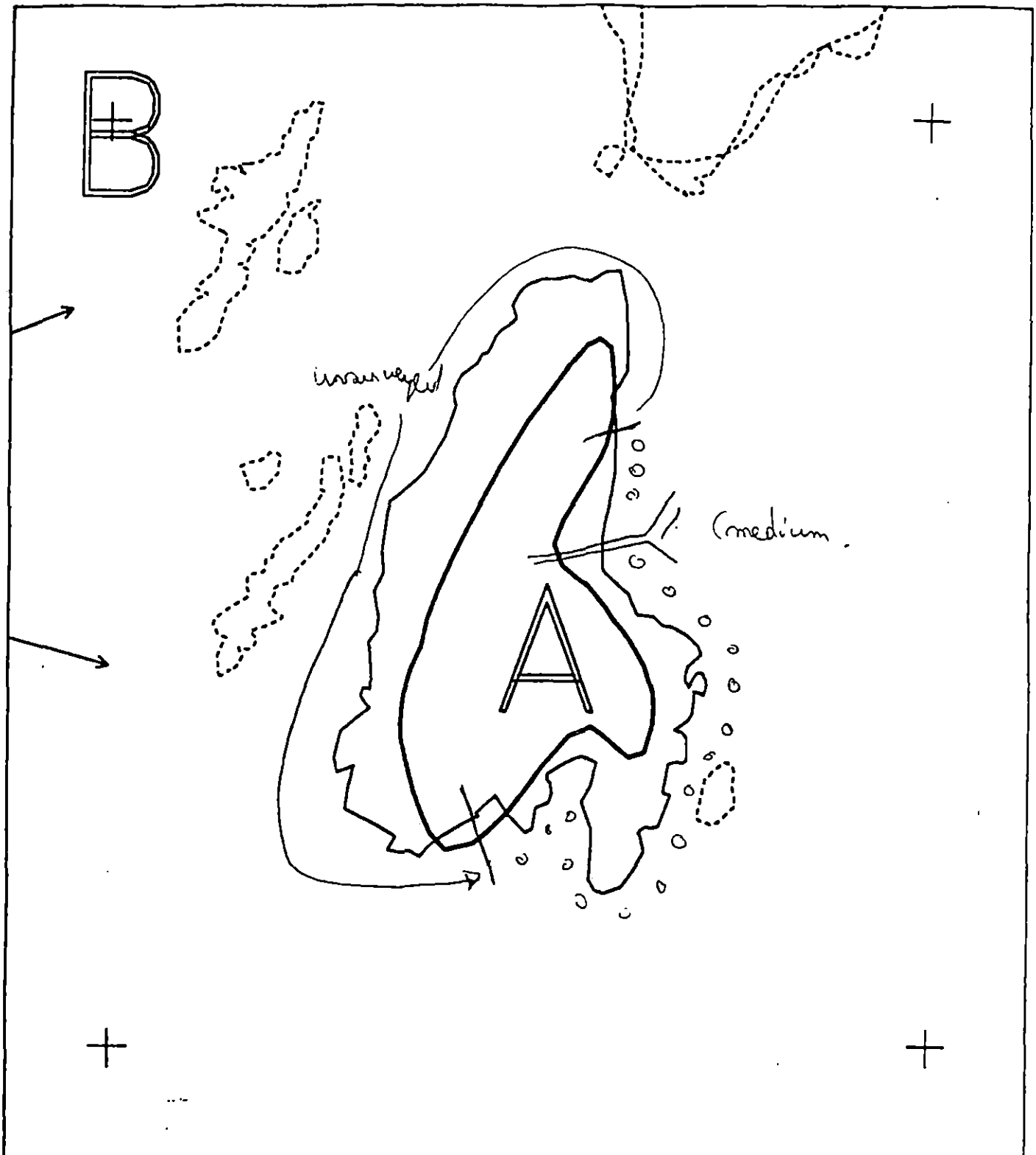
JP BATTY

4 MAY 91

Bedrock

Angular cb/Bd/pb





XXXX	Wide	AG009 A	Subdivision Field Map
////	Medium	ADEC Subsegment Length: 840m	Map Key: KNIAG009A
----	Narrow	METERS	Name: J. Semple
TTTT	Very Light	0 100 200	Date: 4 MAY 91
0000	No Oil	AK State Plane Zone 4 Eagle0fa	Date Entered:

reviewed 5/6/91 mc

REVIEWED: 5/6/91 MC

1991 MAYSAP EVALUATION

SEGMENT: AG 009 SUB: B REGION: PWS SURVEY DATE: 5/4/91

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 Jean Dee Date: 5/14/91

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 14 1991 FOSC APPROVAL DATE: 5/20/91

ADEC

EXXON

USCG LT

NOAA

FOSC

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

ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

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

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 41 SEGMENT A0009 SUBDIVISION B DATE 4/17/91

ADEC
NAME Dianne Munson SIGNATURE Dianne Munson

☒ NTR ☐ Treatment Recommended

Not NMF haul

Tarballs, coats and stains.
observed two Harbor Seals on subdivision. Possible seal haulout area.

EXXON
NAME LARRY D. OLSON SIGNATURE Larry D. Olson

☒ NTR Agree - no further work required.

LANDMANAGER
NAME Chris Linkenhoker OF USFS SIGNATURE Chris A. Linkenhoker

☒ NTR Insignificant oiling.
No Treatment

USCG/NOAA
NAME JERRY SCHULTZ SIGNATURE Jerry Schultz

☒ NTR AGREE WITH OTHER REPRESENTATIVES

TEAM NO. 7

OG J M Sempel

ADEC D. Munson

EXXON L. Olson

BC J. Barry

LAND Chris Linkenhoker for USFS

USCG J. Schultz / J. Galt

SEGMENT Hg009

SUBDIVISION B

DATE 4 / MAY / 91

TIME 12 : 00 to 12 : 30

TIDE LEVEL +1.0 ft. to +1.5 ft.

ENERGY LEVEL: [X] H [ ] M [ ] L

SURVEYED FROM: [X] FOOT [ ] BOAT [ ] AIR

WEATHER: [ ] SUN [X] CLOUDS [ ] FOG [X] RAIN [ ] SNOW

TOTAL LENGTH SHORELINE SURVEYED: 300

NEAR SHORE SHEEN: [ ] BR [ ] RB [ ] SL [X] NONE

EST. OIL CATEGORY LENGTH: W 0 0 m N 0 m VL 20 m NO 280 m US 1741 m
estimated ↑

LOC	SURFACE OIL CHARACTER AP	MS	TB	SOR	CV	CT	ST	FL	DB	INC	SHORE SLOPE V H M L	AREA WIDTH m	LENGTH m	ZONE S	UI	MI	LI	NOTES
A1			T						Pb/Cb		H	15	5		*			what probably remained after cleanup was done
									bedrock		L							
A2			S						Bedrock			very few scattered	tar	splatter	X			

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

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

PHOTO ROLL # MAYSAP-_____-_____ FRAMES _____

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER OP	HOR	MOR	LOR	OF	TR	INC	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE S	UI	MI	LI	SURFACE-SUBSURFACE SEDIMENTS	NOTES
					Bedrock subsurface												

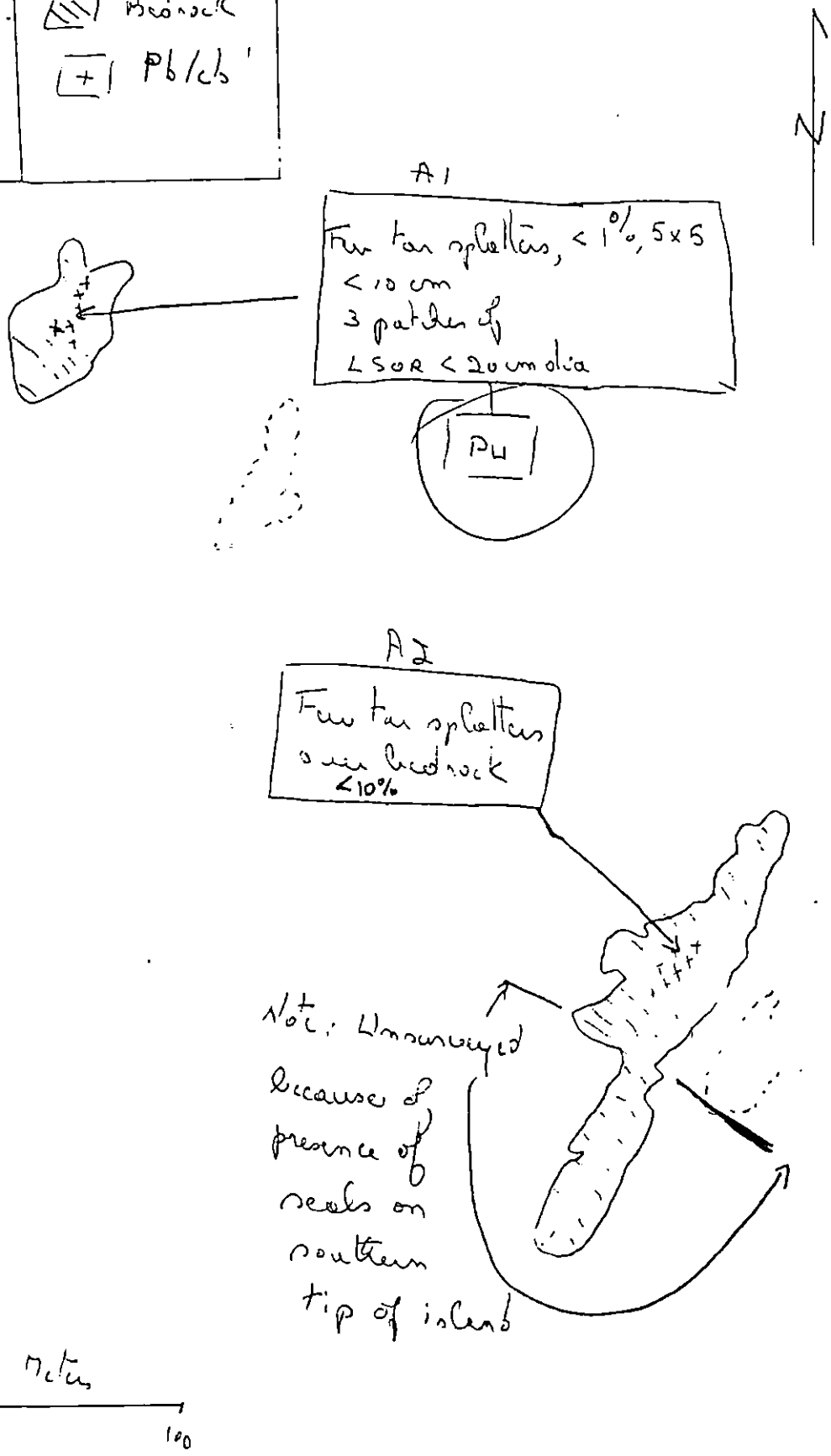
SHEEN COLOR: B = BROWN; R = RED; S = SILVER; N = NONE

OG COMMENTS: Small bedrock islands with small pockets of angular cobble/pebbles. A few patches of < SOR were found and picked up. a few tar splatters were also found some were removed, a few remain.

REVIEWED: MC 5/7/91

EG revised, May 6

Og Sketch Map	Legend
Agaaq 9 B JM Samples 4 MAY 91 1200 - 1230.	Bedrock Pb/cb'



ET revised, May 6

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 5, 1991 1200 - 1230
SEGMENT #	AG009	TIDAL HEIGHT (Range)	+1.0 => +1.5
SUBDIVISION	B	BIOLOGIST	JIM BARRY
STATE	Calm	WIND SPEED/DIRECTION	North 5 kt., cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A The oiled (tar splatters) locations at this site are in the upper intertidal zone and are somewhat protected from high waves, even though these small islands are well exposed to waves in the channel. Biota at the oiled areas include black lichen, scattered barnacles, some small patches of Fucus, and sparse to moderate densities of limpets, and littorine snails. Slightly below this tidal level, a sparse mussel bed is present throughout the central, relatively flat, portion of the islands where small cobble and gravel occur. The lower zones of the intertidal are very rich and diverse on these islands, as is typical of exposed sites. Fucus is present in high cover in the mid-shore, with very dense cover of red, green, and some brown algae in the lowest intertidal zone on bedrock. Invertebrates are abundant, with several species of sea stars, anemones, crabs, shrimps, and other crustaceans, marine snails, worms, and encrusting species. Clams are also present on a couple small pocket beaches along the inshore margin of one of the islands.

Some manual pickup of the tar splatters was performed on this subdivision. Further manual pickup will have no adverse effects on the biological communities at the site.

Summary of Subdivision AG009-B

This series of small islands are exposed to medium sized or larger swell and have highly diverse marine communities. The intertidal habitats are primarily exposed bedrock cliffs and boulders, with more protected cobble beaches on a few islands. The marine communities are diverse and discussed above.

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	2	7	
Waterfowl	1	3	
Gulls/Kittiwakes	2	20	
Shorebirds	1	2	
Corvids			
Other Birds	1	2	

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	7 (2 pups)		
Pinnipeds (specify)			
Harbor Seals	3 (1 pup)		
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

Reviewed: MC 5/7/91

AG009-B Biology Report, continued

Our survey visited 2 islands, one of which was only partially surveyed. Sea otters were present around the islands. Five adults, two with pups, were observed. Harbor seals were hauled out on the southern tip of one island (see map), 2 adults and 1 juvenile were observed.

List of Common or Expected Species on AG009-B

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, Agarum fimbriatum, Costaria costata, Ectocarpus spp., Fucus distichus, Hedophyllum sessile, Hildenbrandia sp., Laminaria saccharina, Nereocystis leutkeana, Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
   Anfeltia plicata, Bossiella sp., Calliarthron sp., Corallina sp., Cryptosiphonia woodii, Cumagloia andersonii, Endocladia muricata,, Grateloupia setchelli, Halosaccion glandiforme, Iridaea sp., Lithothamnion sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria palmata, Petrocelis sp., Porphyra sp., Ptilota filicina, Rhodomela larix
5. Higher Plants
   Zostera marina (eel grass), Leymus mollis (beach rye grass)

II. Marine Animals
1. Sponges - Porifera -
   Halichondria sp., Ophlitaspongia pennata, Tethys sp.
2. Anemones
   Anthopleura artemesia, A. elegantissama, A. xanthogrammica, Epiactis ritteri, E. prolifera?, Metridium senile, Urticina crassicornis,
3. Hydroids - Sertularidae - Sertularella?
4. Hydrocorals - Allopora porphyra
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaete worms
   Glyceridae
   Nepthyidae
   Nereidae - Nereis spp.
   Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
   Spriorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii
10. Crustaceans
    a. Amphipods - Orchestia sp.?
    b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
    c. Crabs
       Acantholithodes hispidus, Haplogaster sp., Hemigrapsus oregonensis, Paguridae (hermit crabs), Oregonia gracilis, Pugettia sp.,
    d. Isopods - Ligia sp., Idotea wosnesenskii
11. Mollusca
    a. Chitons - Mopalia sp., M. mucosa, Katharina tunicata, Tonicella lineata,
    b. Snails - Gastropods
       Amphissa columbiana, Littorina scutulata, L. sitkana, Natica clausa, Nucella lamellosa, N. lima, N. emarginata, Tachyrhynchus sp.
    c. Limpets - Acmaea mitra, Diadora aspera, Lottia digitalis, L. persona, Tectura fenestrata, T. persona, T. scutum

d. Nudibranches - Lamellidoris fusca

e. Mussels and Clams
Clinocardium sp., C. nuttalli, Modiolus sp., Mytilus edulis, Pododesmus cepio, Prototheca staminea

f. Cephalopods - Octopus dofleini

12. Echinoderms

a. Brittle Stars - Ophiolus sp., ?

b. Sea stars - Dermasterias imbricata, Evasterias truscheli, Henricia leviuscula, H. sanguinolenta, Leptasterias hexactis, Orthaasterias keohleri, Pisaster ochraceus, Pycnopoida helianthoides, Solaster sp.

c. Sea Cucumbers - Holothurians
Cucumaria miniata, C. vegae, Eupentacta sp., Leptosynapta sp.

d. Urchins - Strongylocentrotus droebachiensis

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

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

BIO SKETCH MAP

A6009 B

J P BARRY

4 MAY 91

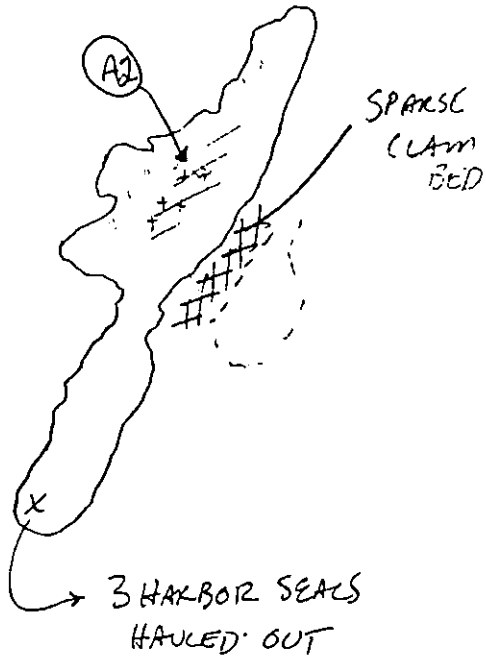
1200 - 1230

A6009-B

Bedrock

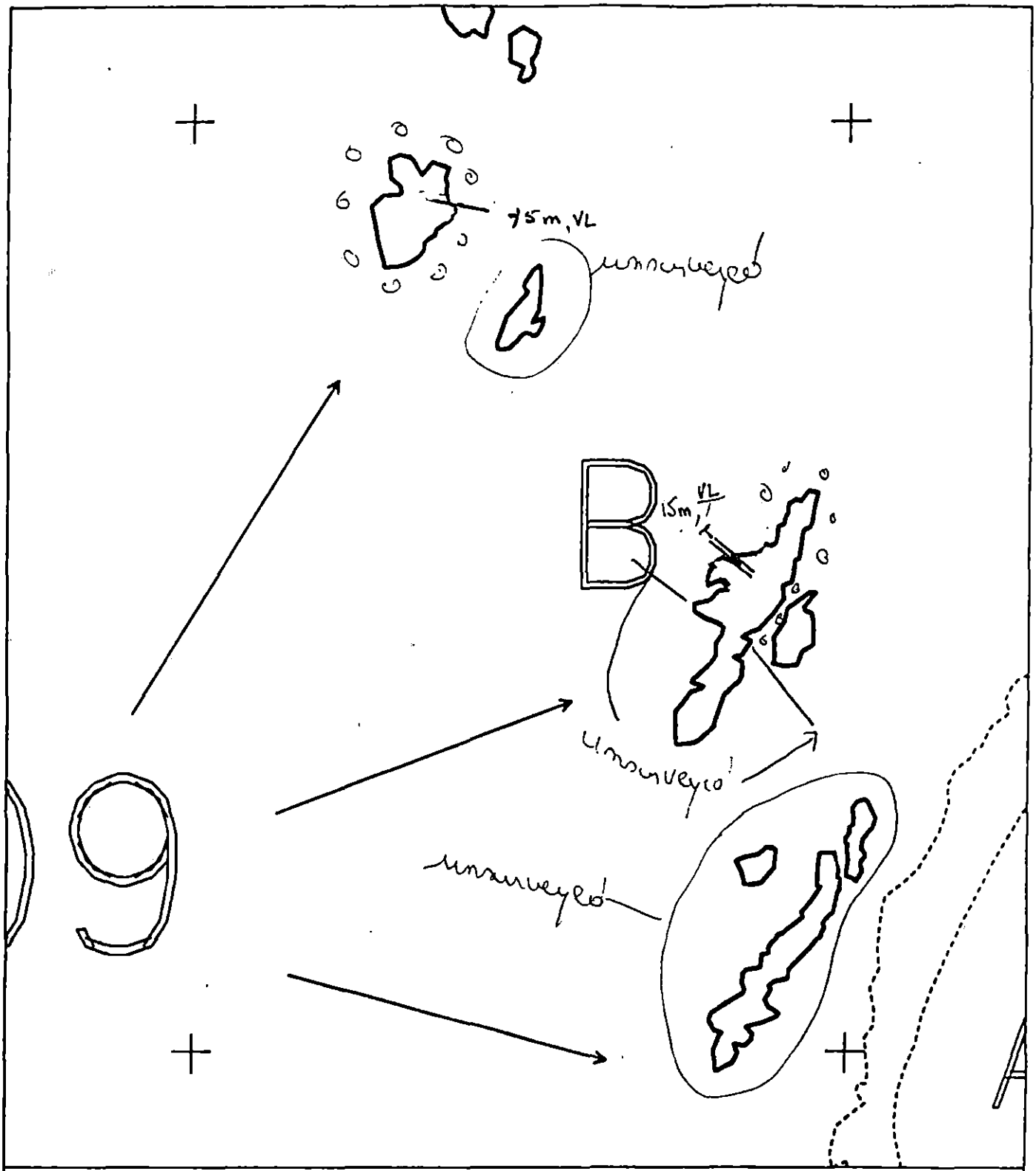
A

SCATTERED SPARSE BARNACLES
MODERATE TO DENSE LITTORINES
SPARSE FUCUS
OTHER SNAILS, LIMPETS MODERATE
SCATTERED DRIFT ALGAE
LOWER ZONES -
SHORELINE IN LOW ZONE
HAS DENSE RED GREEN & BROWN
ALGAE, RICH INVERTEBRATE
BIOTA



Meters

0 100



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

AG009 B

ADEC Subsegment Length: 2041m

METERS

0 100 200

AK State Plane Zone 4
Leg0008a

EXXON

Subdivision Field Map

Map Key: KNIAG009Ba

Name: M Sevy

Date: 4/ MAY

Date Entered:

RENEWED: 5/7/91 MC
EG revised, May 6

REVISION 1
7/28/90

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT AG-9 SUBDIVISION A (1 of 2)

WORK WINDOW	
Manual Pickup Tarmat Removal	OPEN ~~WORK 7/1 TO 6/15~~
Bioremediation Manual Tilling	OPEN ~~WORK 7/1 TO 7/31~~

NO TIME CONSTRAINT. AUTHORIZED PER MEMORANDUM DATED 5/14/90 FROM KATHY FROST/ADF&G TO MARK KUWADA/ADF&G.

7-31-90

STANDARD ARCHAEOLOGICAL CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

3N,3P,3O,3Q Pinnipeds

- NO CONSTRAINT TO ~~Do not manual till or apply~~ bioremediation OR MANUAL TILLING ~~prior to 7/1 or after 7/31~~.
- Closed to all activities 5/15 to 7/1 and 8/15 to 9/15.
  NO CONSTRAINT TO MANUAL PICKUP & TARMAT REMOVAL

OTHER ECOLOGICAL CONSIDERATIONS

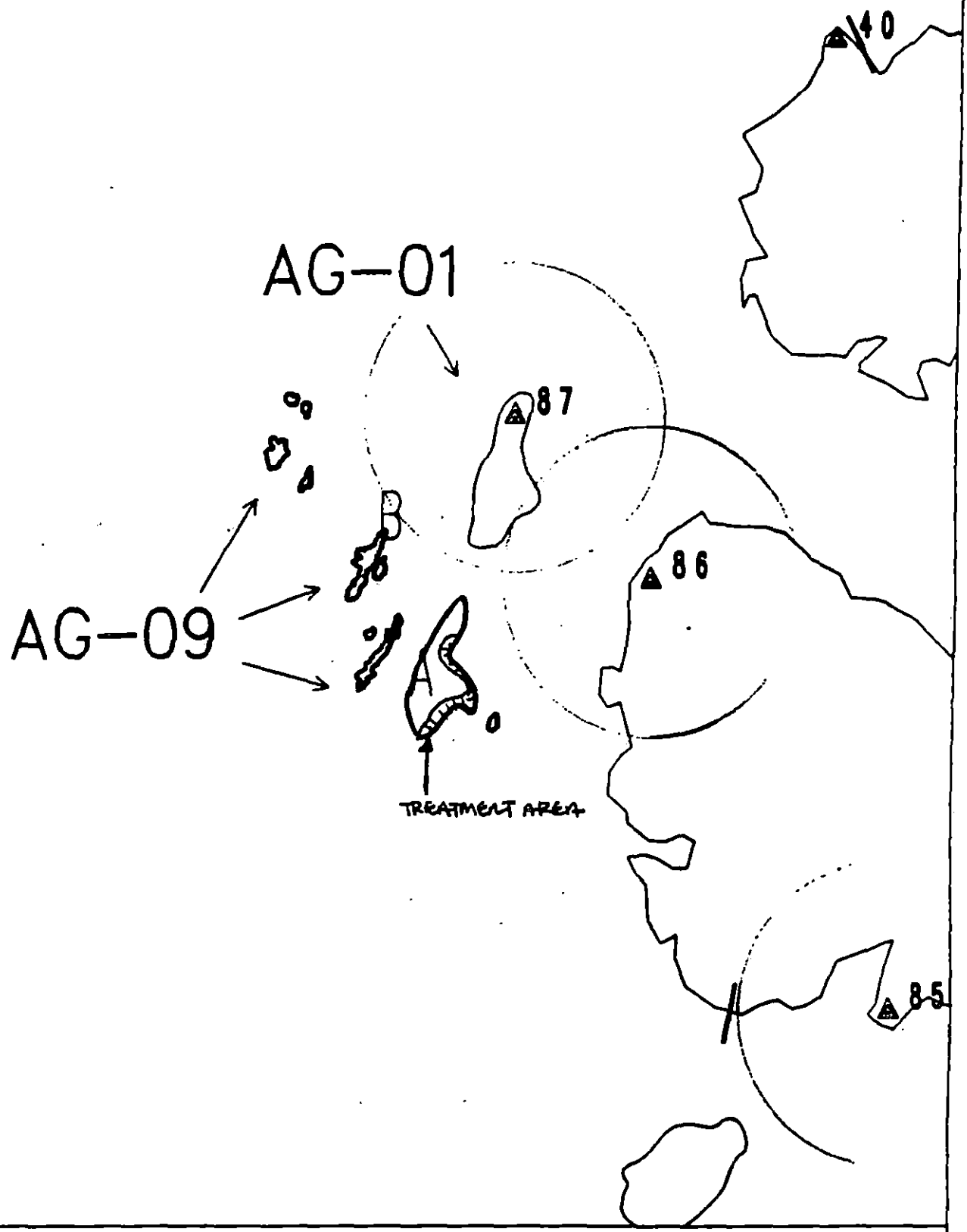
Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Restrict all activity to essential minimum, especially air traffic.

TAG ADDENDUM DATE 5/18/90
ADEC Art Weiner
EXXON Andy Tah
NOAA Gary Petrone
USCG G.A. Reiter

FOSC _____ DATE 5-18-90

Prepared by: Andrea Meyer WK

Date: 5/14/90



EXXON

Exxon Company, USA
Map Key: KNI-AG-9
Mar. 11, 1990

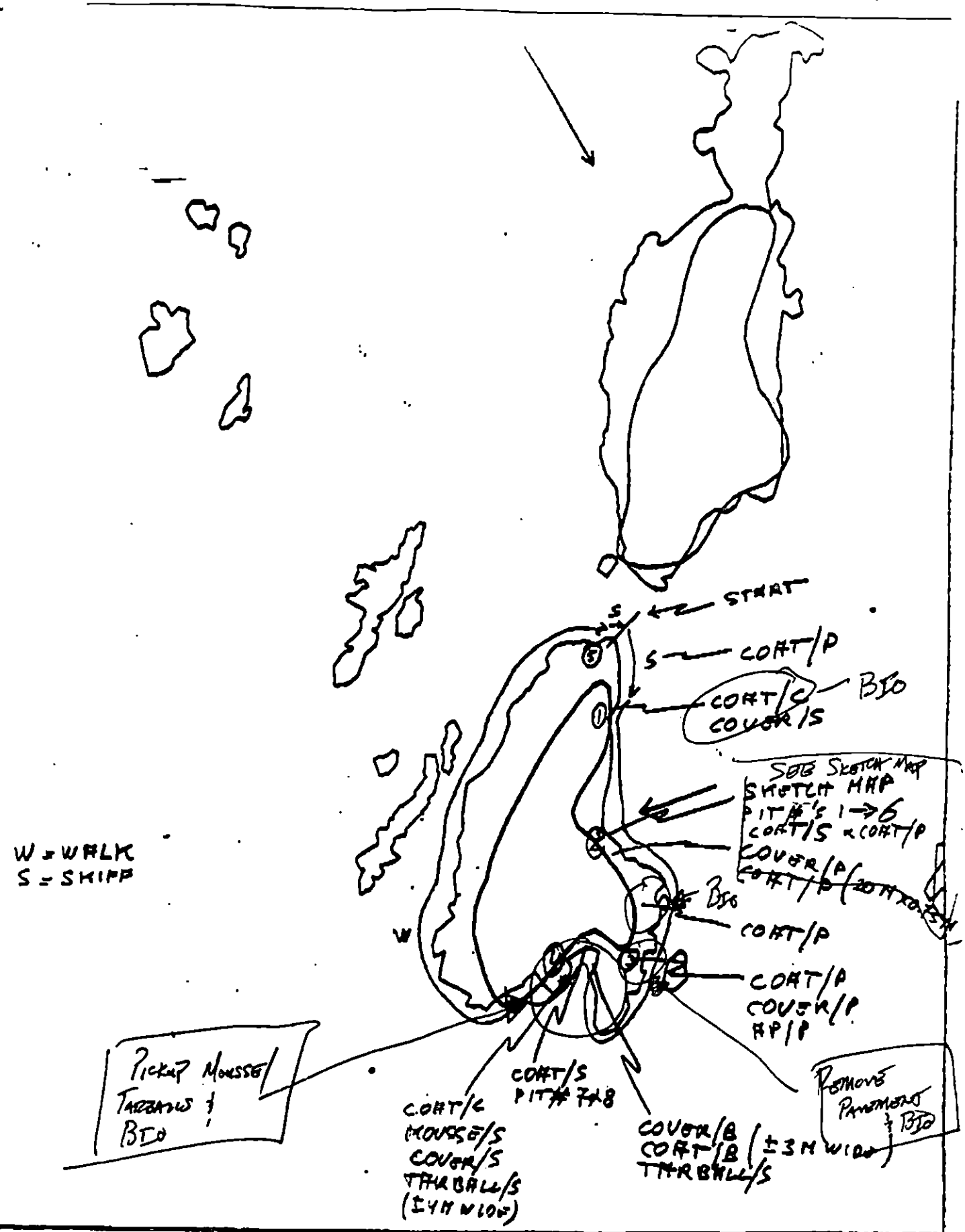
ECOLOGY MAP
SEGMENT AG-9
SUBDIVISION A (1 of 2)

METERS

0 100 200

★ Seabird Colony
▲ Eagle Nest

1 inch = 1324 feet



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

ST-AG-9-A

Total Segment Length: ~~[illegible]~~ 3723

0 100 200 300

Map Key: PWS-10

Name: K. DEBUSS CHORE

Date: 4/25/90

Date Entered:

SHORELINE EVALUATION

SEGMENT ST/ AG-09 SUBDIVISION A (1 OF 2) DATE 4/25/90

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)
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: 5/3/90

OILING CATEGORIZATION:

Wide 21 m: Medium 38 m: Narrow 487 m: V.Light 284 m: No Oil 110 m
Subsurface Oil Observed: Yes X No ____ Maximum Depth 22 cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) tarmat removal, 2) manual pickup of mousse tarballs and oiled vegetation where shown on sketch map, and 3) bioremediation of surface and subsurface oil as shown on sketch map. Work should be conducted prior to 5/15 or 7/1 to 8/15 due to pinniped constraints with the exception of Inipol application which should only be used from 7/2 to 7/31.

See Addendum dated 5/14/90

REVISION 1.
SEE CONSTRAINTS ADDENDUM DATED 7/28/90.

TAG COMMENTS: MANUAL TILLING PRIOR TO PCO IN TREA OF IFG

TAG APPROVAL DATE: 5/3/90.
ADEC Art Weiner [signature]
EXXON Andy Tsa [signature]
NOAA Gary Petrac [signature]
USCG Kenneth Kenni [signature]

FOSC: [signature] DATE: 5-8-90

1991 MAYSAP EVALUATION

SEGMENT: AG 009 SUB: B REGION: PWS SURVEY DATE: 5/4/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) RESTRICTED 3/1 - 9/1

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

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

SHPO Signature: _____ Date: _____

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

COMMENTS:
INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: _____ FOSC APPROVAL DATE: _____

ADEC _____ FOSC _____

EXXON _____

USCG _____

NOAA _____

ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

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

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 41 SEGMENT A9009 SUBDIVISION B DATE 4/17/91

ADEC
NAME Dianne Munson SIGNATURE Dianne Munson

Not a NMFS - designated haulout area DM

☒ NTR ☐ Treatment Recommended

Tarballs, coats and stains.
observed two Harbor Seals on subdivision. Possible seal haulout area.

EXXON
NAME LARRY D. OLSON SIGNATURE Larry D. Olson

☒ NTR Agree - no further work required.

LANDMANAGER
NAME Chris Linkenhoker OF USFS SIGNATURE Chris A. Linkenhoker

☒ NTR Insignificant oiling.
No Treatment

USCG/NOAA
NAME JERRY SCHULTZ SIGNATURE Jerry Schultz

☒ NTR AGREE WITH OTHER REPRESENTATIVES

TEAM NO. 7

OG JM Sempel | BC J. Barry | SEGMENT A9009

ADEC D. Munson | LAND Chris Linkenhoker for USES | SUBDIVISION B

EXXON L. Olson | USFWS J. Schultz / J. Galt | DATE 21 / MAY / 91

TIME 12 : 00 to 12 : 30 | TIDE LEVEL +1.0 ft. to +1.5 ft. | ENERGY LEVEL: [X] H [ ] M [ ] L

SURVEYED FROM: [X] FOOT [ ] BOAT [ ] AIR | WEATHER: [ ] SUN [X] CLOUDS [ ] FOG [X] RAIN [ ] SNOW

TOTAL LENGTH SHORELINE SURVEYED: 300 | NEAR SHORE SHEEN: [ ] BR [ ] RB [ ] SL [X] NONE

EST. OIL CATEGORY LENGTH: W 0 0 m N 0 m VL 20 m NO 280 m US 1741 m
estimated ↑

LOC	SURFACE OIL CHARACTER AP	MS	TB	SOR	CV	CT	ST	FL	DB	INC	SHORE SLOPE V H M L	AREA WIDTH m	LENGTH m	ZONE S	UI	MI	LI	NOTES
A1			T						Pb/Cb		H	5	5		*			what probably remained after cleanup was done
									bedrock		L							
A2			S						Bedrock			very few scattered			X			tar splatter

DISTRIBUTION: C = 91-100%; B = 51-90%; P = [illegible] 0%; T = <1%

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

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER OP	HOR	MOR	LOR	OF	TR	INC	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE S	UI	MI	LI	SURFACE-SUBSURFACE SEDIMENTS	NOTES

Bedrock subsurface

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

OG COMMENTS: Small bedrock islands with small pockets of angular cobble/pebbles. A few patches of < SOR were found and picked up. a few tar splatters were also found some were removed, a few remain.

REVIEWED: MC 11/91

SG revised, Mar 6

Og. Sketch Map	Legend
Agaw 9 B JM Samples 4 MAY 91 1200 - 1230.	Bedrock Pb/cb

A1

Few tar splatters, < 1%, 5x5
< 10 cm
3 patches of
< 50 or < 20 cm dia

PU

A2

Few tar splatters
over bedrock
< 10%

Note: Unsurveyed because of presence of seals on southern tip of island

Metres

0 100

ET revised, May 6

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 5, 1991 1200 - 1230
SEGMENT #	AG009	TIDAL HEIGHT (Range)	+1.0 => +1.5
SUBDIVISION	B	BIOLOGIST	JIM BARRY
ALASKA STATE	Cala	WIND SPEED/DIRECTION	North 5 kt., cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A The oiled (tar splatters) locations at this site are in the upper intertidal zone and are somewhat protected from high waves, even though these small islands are well exposed to waves in the channel. Biota at the oiled areas include black lichen, scattered barnacles, some small patches of Fucus, and sparse to moderate densities of limpets, and littorine snails. Slightly below this tidal level, a sparse mussel bed is present throughout the central, relatively flat, portion of the islands where small cobble and gravel occur. The lower zones of the intertidal are very rich and diverse on these islands, as is typical of exposed sites. Fucus is present in high cover in the mid-shore, with very dense cover of red, green, and some brown algae in the lowest intertidal zone on bedrock. Invertebrates are abundant, with several species of sea stars, anemones, crabs, shrimps, and other crustaceans, marine snails, worms, and encrusting species. Clams are also present on a couple small pocket beaches along the inshore margin of one of the islands.

Some manual pickup of the tar splatters was performed on this subdivision. Further manual pickup will have no adverse effects on the biological communities at the site.

Summary of Subdivision AG009-B

This series of small islands are exposed to medium sized or larger swell and have highly diverse marine communities. The intertidal habitats are primarily exposed bedrock cliffs and boulders, with more protected cobble beaches on a few islands. The marine communities are diverse and discussed above.

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	2	7	
Waterfowl	1	3	
Gulls/Kittiwakes	2	20	
Shorebirds	1	2	
Corvids			
Other Birds	1	2	

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	7 (2 pups)		
Pinnipeds (specify)			
Harbor Seals	3 (1 pup)		
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

Reviewed: MC 5/7/9

Our survey visited 2 islands, one of which was only partially surveyed. Sea otters were present around the islands. Five adults, two with pups, were observed. Harbor seals were hauled out on the southern tip of one island (see map), 2 adults and 1 juvenile were observed.

List of Common or Expected Species on AG009-B

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, Agarum fimbriatum, Costaria costata, Ectocarpus spp., Fucus distichus, Hedophyllum sessile, Hildenbrandia sp., Laminaria saccharina, Nereocystis leutkeana, Ralfsia sp., Syctosiphon lomentaria
   4. Red Algae - Rhodophyta
      Anfeltia plicata, Bossiella sp., Calliarthron sp., Corallina sp., Cryptosiphonia woodii, Cumagloia andersonii, Endocladia muricata,, Grateloupia setchelli, Halosaccion glandiforme, Iridaea sp., Lithothamnion sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria palmata, Petrocelis sp., Porphyra sp., Ptilota filicina, Rhodomela larix
   5. Higher Plants
      Zostera marina (eel grass), Leymus mollis (beach rye grass)

II. Marine Animals
   1. Sponges - Porifera -
      Halichondria sp., Ophlitaspongia pennata, Tethys sp.
   2. Anemones
      Anthopleura artemesia, A. elegantissama, A. xanthogrammica, Epiactis ritteri, E. prolifera?, Metridium senile, Urticina crassicornis,
   3. Hydroids - Sertularidae - Sertularella?
   4. Hydrocorals - Allopora porphyra
   5. Flatworms - Platyhelminthes - Polyclads
   6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
   8. Polychaete worms
      Glyceridae
      Nepthyidae
      Nereidae - Nereis spp.
      Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
      Spriorbidae - Spirorbis sp.
   9. Peanut worms - Sipunculids - Phascolosoma agassizii
   10. Crustaceans
      a. Amphipods - Orchestia sp.?
      b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
      c. Crabs
         Acantholithodes hispidus, Haplogaster sp., Hemigrapsus oregonensis, Paguridae (hermit crabs), Oregonia gracilis, Pugettia sp.,
      d. Isopods - Ligia sp., Idotea wosnesenskii
   11. Mollusca
      a. Chitons - Mopalia sp., M. mucosa, Katharina tunicata, Tonicella lineata,
      b. Snails - Gastropods
         Amphissa columbiana, Littorina scutulata, L. sitkana, Natica clausa, Nucella lamellosa, N. lima, N. emarginata, Tachyrhynchus sp.
      c. Limpets - Acmaea mitra, Diadora aspera, Lottia digitalis, L. persona, Tectura fenestrata, T. persona, T. scutum

d. Nudibranches - Lamellidoris fusca

e. Mussels and Clams
Clinocardium sp., C. nuttalli, Modiolus sp., Mytilus edulis, Pododesmus cepio, Prototheca staminea

f. Cephalopods - Octopus dofleini

12. Echinoderms

a. Brittle Stars - Ophiolus sp., ?

b. Sea stars - Dermasterias imbricata, Evasterias truscheli, Henricia leviuscula, H. sanguinolenta, Leptasterias hexactis, Orthaasterias keohleri, Pisaster ochraceus, Pycnopoida helianthoides, Solaster sp.

c. Sea Cucumbers - Holothurians
Cucumaria miniata, C. vegae, Eupentacta sp., Leptosynapta sp.

d. Urchins - Strongylocentrotus droebachiensis

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

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

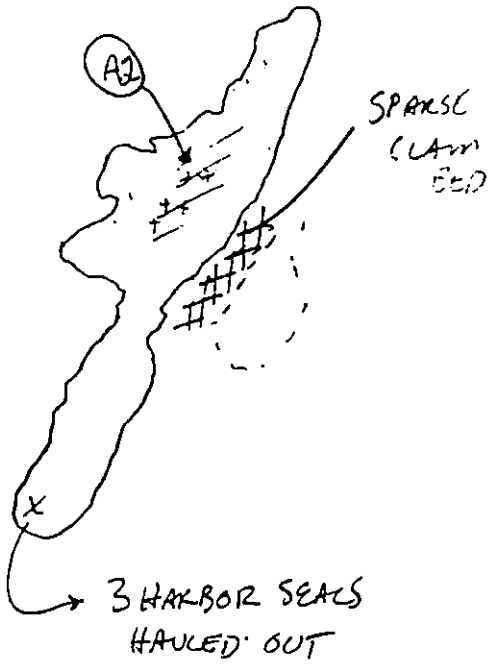
BIO SKETCH MAP
A6009 B
J P BARRY
4 MAY 91
1200 - 1230

A6009-B

Bedrock

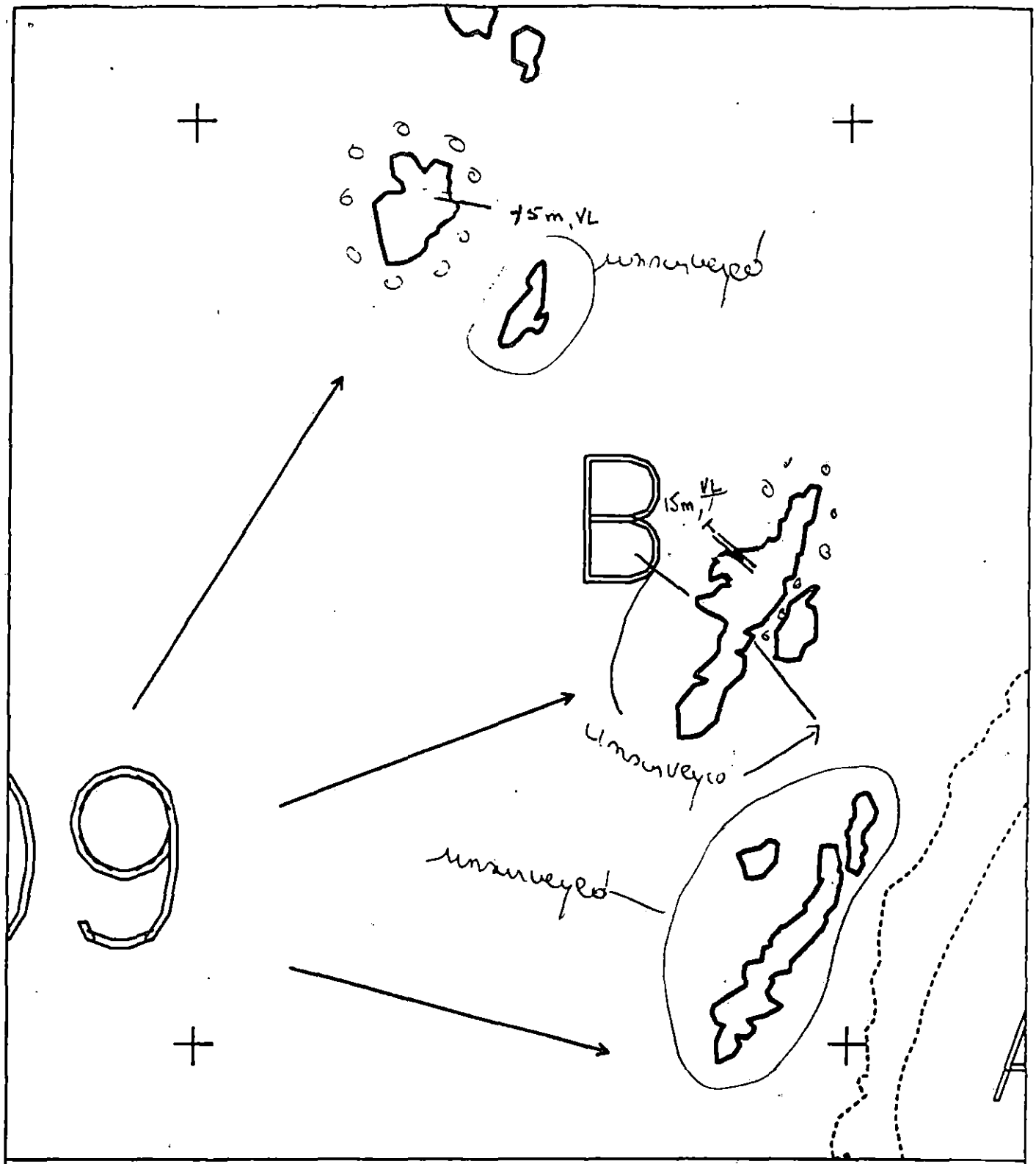
A

SCATTERED SPARSE BARNACLES
MODERATE TO DENSE LITTORINES
SPARSE FUCUS
OTHER SNAILS, LIMPETS MODERATE
SCATTERED DRIFT ALGAE
LOWER ZONES -
SHORELINE IN LOW ZONE
HAS DENSE RED GREEN & BROWN
ALGAE, RICH INVERTEBRATE
BIOTA



Meters

0 100



XXXX	Wide	**AG009 B**	Subdivision Field Map
////	Medium	ADEC Subsegment Length: 2041m	Map Key: KNIAG009Be
----	Narrow	METERS	Name: JM Seng
TTTT	Very Light	0 100 200	Date: 4 MAY
0000	No Oil	AK State Plane Zone 4 Kag009be	Date Entered:

RENEWED: 5/7/91 MC
EG revised, May 6

1991 MAYSAP EVALUATION

SEGMENT: AG 009 SUB: A REGION: PWS SURVEY DATE: 5/4/91

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: [illegible] Date: 5/14/91

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 14 1991 FOSC APPROVAL DATE: 5/20/91

ADEC [illegible]

EXXON [illegible]

USCG [illegible] LT

NOAA [illegible]

FOSC [illegible]
E. E. PAGE, CDR, USCG
CHIEF OF STAFF, FOSC

state will evaluate 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.

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT A9009 SUBDIVISION A DATE 4/MAY/91

ADEC
NAME Dianne Munson SIGNATURE Dianne Munson

☐ NTR ☒ Treatment Recommended Majority of segment not surveyed. Recommend further survey of Area A, on O.G sketch map which is the same as site "B" on the bio map has oiling from LSOR to OP. Much of the oiling occurs outside of the mussel bed. Brown mobile sheen is released very easily if sediments are agitated. Oiling occurs from 0 to 15 cm and easily accessible thru coarse sand. Recommend manual agitation with rakes with the tide to release oil from beach sediments. Sorbents should be used to collect the free floating oil that will subsequently be release.

EXXON
NAME LARRY D. OLSON SIGNATURE Larry D. Olson

☒ NTR An area of MSOR was located in area as indicated on O.G. sketch map. A mussel bed is established in this location with a clam bed in lower tidal zone. Attempts to treat this location would damage healthy biological growth. 16.0. Bag of tar Balls was removed.

LANDMANAGER
NAME Chris Linkenhoker OF USFS SIGNATURE Chris A. Linkenhoker

☑ NTR Previous weathering processes have been effective and flora/fauna populations are recovering nicely. Nutrient rich organic layers exist below the cobble surfaces and may be harmed by either manual or chemical treatments. Do not believe further treatment is warranted at this time

USCG/NOAA
NAME JERRY SCHOLTZ SIGNATURE Jerry Scholtz

☒ NTR NATURAL WEATHERING HAS DONE WELL AT THIS SITE. FURTHER TREATMENT MAY BE ENVIRONMENTALY HARMFUL. NO FURTHER TREATMENT IS WARRANTED AT THIS TIME.

TEAM NO. 4

OG JM Semple

ADEC D. Munson

EXXON L. Olson

BIO J. Berry

LANDOWNER Chris Lin Kenhoker for USFS

USCG J. Schultz / J. Galt

SEGMENT Ag009 A

SUBDIVISION A

DATE 4 / MAY / 91

TIME 10 : 50 to 11 : 25

TIDE LEVEL +1.5 ft. to +1.0 ft.

ENERGY LEVEL: [X] H [X] M [ ] L

SURVEYED FROM: [X] FOOT [X] BOAT [ ] HE

WEATHER: [ ] SUN [X] CLOUDS [ ] FOG [X] RAIN [ ] SNOW

TOTAL LENGTH SHORELINE SURVEYED: 580

NEAR SHORE SHEEN: [ ] BR [ ] RB [ ] SL [X] NONE

EST. OIL CATEGORY LENGTH: W ____ M 12 m N ____ m VL ____ m NO 568 m US 360 m

LOC	SURFACE OIL CHARACTER AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO	SHORE SLOPE VHML	AREA WIDTH m	AREA LENGTH m	ZONE S	UI	MI	LI	NOTES
A1				P						cb/pb	M	19	12		X	X		See map.

DISTRIBUTION: C = 91-100%; B = 51-90%; P = 11-50%; [illegible] 0%; T = <1%

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM; [illegible] L = LOW ANGLE PHOTO ROLL # MAYSAP-____-____ FRAMES ____

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER OP	HOR	MOR	LOR	OF	TR	NO	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR BRSN	PIT ZONE S	UI	MI	LI	SURFACE-SUBSURFACE SEDIMENTS	NOTES
1	21	■						5-15	N	12	B			■		S, P, G	
2	25			■				0-8	Y	6	B			■		S, P, G	
3	30			■				0-5	Y	5	B				■	S, P, G	
4	20				■			0-2	Y	7	R			■		S, P, G	
5	22							■	Y	10	N				■	S, P, G	
6	20			■				0-8	Y	10	R			■		S, P, G	
7	24				■			0-2	Y	15	N			■		S, P, G	
8	30							■	Y	15	N			■			

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

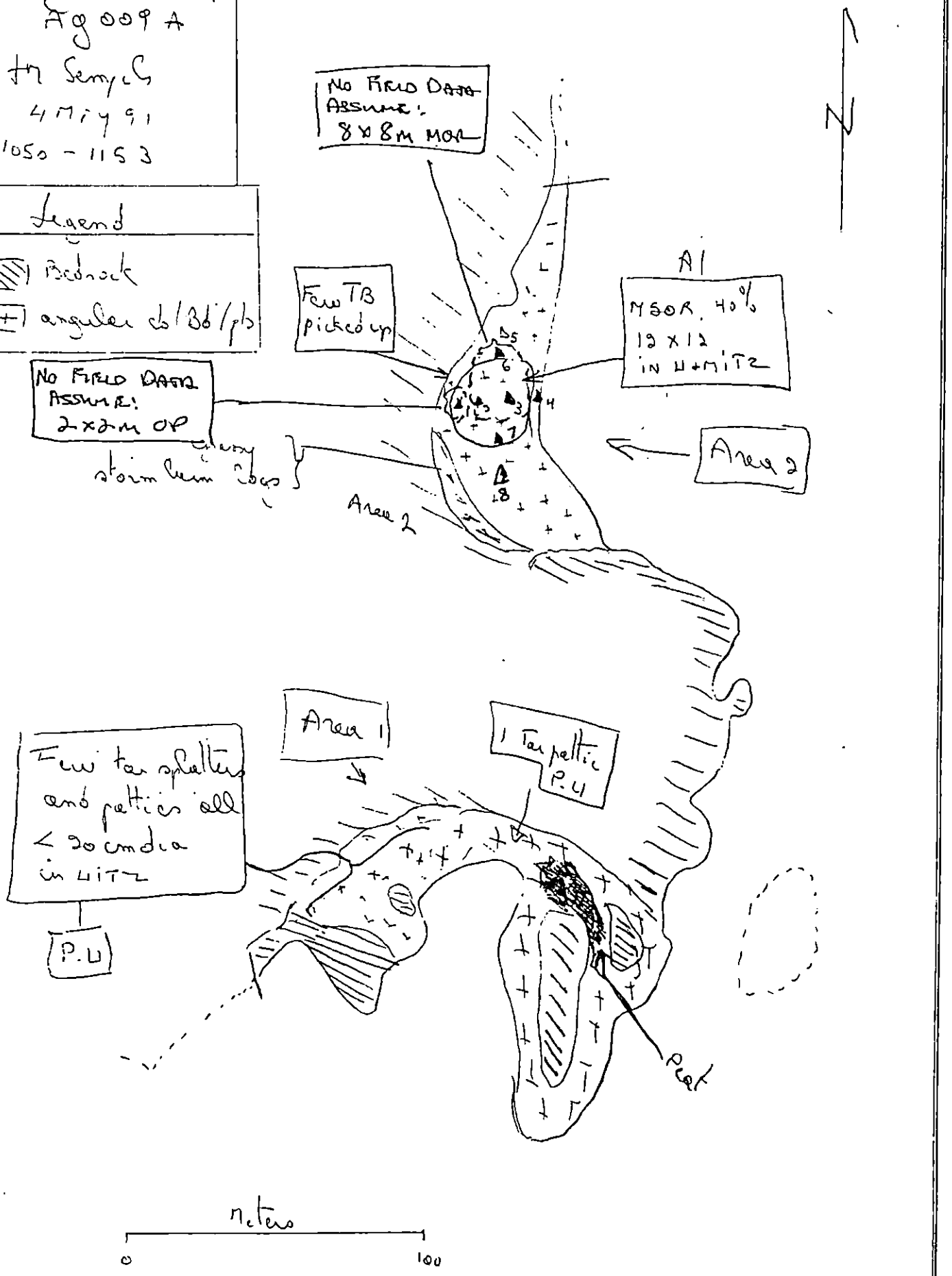
OG COMMENTS: Area 1 is a small pocket beach of angular cobble boulders and pebble between bedrock headlands. Includes 2 bedrock outcrops and an area of peat all surrounded by angular cb/Bd/pb & talus. A few tar balls were found and picked up. Area 2 includes a pocket beach of angular cb/pb/Bd with a 19x12 area, extending over the U and M itz, of MSOR.

revised 5/6/91 KG

REVISED: 5/6/91 MC & JMS

Og Sketch Map
Ag 009 A
M Semyck
4 May 91
1050 - 1153

Legend
Bedrock
angular cb/Bb/pb



REVISED: 5/6/91 MC & JMS
reviewed 5/6/91 KG

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 4, 1991 1015 - 1125
SEGMENT #	AG009	TIDAL HEIGHT (Range)	+1.5 => +1.0
SUBDIVISION	A	BIOLOGIST	JIM BARRY
STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Area 1 Oiled area (tar splatters) occurs in the upper to supratidal zone at scattered spots along this shore. The beach has a fairly complex structure, with talus boulders, bedrock outcrops, and cobble flats containing low to high content of organic sediments, as well as a shallow low to subtidal ramp with a small clam and eel grass bed. The oil splatters are located on bedrock boulders at the upper edge of the beach. Biota at the oiled area are mosses, black lichen, and little else. Some mosses are growing from the weathered oil.

Below the oiled area, the character of the intertidal community depends upon the habitat type. Bedrock boulders have high Fucus and barnacle cover in this area, with scattered patches of mussels. The low zone cobble/ peat ramp has a clam bed, sparse Fucus, and a border of moderately dense mussels. Otter foraging pits are common in this habitat. Both of these communities are at least 20 m from any oil splatters.

Manual removal was performed during the survey. Most of the material was removed and further treatment should not be necessary.

~~B~~A1 Area 2 The oiled zone (MSOR,TB) on this pocket beach extends from the drift line in the upper intertidal zone into the middle zone. This beach has talus boulders, cobble/pebbles, and finer grained sediments and is rarely exposed to waves. Fucus drift algae, sparse black lichen, medium to sparse densities of barnacles are found

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

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

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	1		
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

A1 B (cont.)

in the very high zone on the bedrock. Slightly below the bedrock, the gravel and cobble beach has little biota near the oiled area. Somewhat lower towards the middle zone, barnacles, littorines, mussels, nematode worms, and polychaete worms all are present on or very very close (<1cm) to weathered, but still sheening, oil at a slightly lower tidal level within the oiled region. Custom Blend pellets are scattered throughout the area. Barnacle spat are present in moderate to high densities close to, but not directly on, the oiled rocks. Mussels are present in a sparse bed. Littorine snails (egg masses and adults) and hermit crabs are occasionally dense in this area. Juveniles of limpets also are common within the oiled site and very nearly in direct contact with the oil (<0.5 cm). Nematode worms are common at this area.

Below the zone of oiling, sparse Fucus occurs on beach boulders, with higher cover of green and brown filamentous algae towards the subtidal. A sparse clam bed containing high peat content sediments is located at the lowest edge of the beach. Eel grass is present in the subtidal, as is large brown algae. Odonthalia floccossa is abundant on low zone cobble.

Some manual pickup was done on this beach. Additional cleaning, if recommended, should be spatially restricted so as to prevent disturbance to the intertidal mussel bed or the low zone clam bed. Tilling, turning over cobble, or removal of coarse sediments in the high zone outside the mussel bed will not adversely impact the biotic communities at the site, but high pressure wash, or other invasive methods should **not** be used in areas or in such manner as to disturb the sensitive communities or habitats, which include the mussels beds, clam beds, or heavy peat containing sediments.

Summary of Subdivision AG009-A

We visited two cobble beaches on the subdivision. The only one of consequence regarding oiling is site A1B (above). This beach had an MSOR layer which included both the high and middle intertidal zones. Even with this oil content, the mussel bed and other biota at the exact location of the MSOR appear healthy and little or no evidence of oil-related mortality or negative impacts were evident. Additional cleanup operations at this site may cause adverse effects on this community via mortality to individual species, disruption of the cohesion of the mussel bed, or loss of fine, high organic sediments in from the beach.

Other evidence of recovery from spill-related impacts to the marine communities are evident on bedrock outcrops where Fucus recruits form thick cover in the middle intertidal where few or no adults are present. This area appears to have undergone extensive cleaning of the outcrop substratum.

The remainder of the segment is dominated by bedrock headlands and cliffs. The distribution of biota within these habitats appear to be like those of similar habitats on other subdivisions. These include generally high abundances of the key species, with Fucus and barnacles dominating the cover of the middle zone, red and brown algae dominating the low and subtidal zones, and diverse invertebrate community. Mussels are found in scattered dense patches as well as a sparse to moderate general distribution.

List of Common Species from AG009-A

Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
   Enteromorpha sp., Ulva sp., Urospora sp., filamentous green

3. Brown Algae - Phaeophyta
   Agarum fimbriatum, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
   Calliarthron sp., Corallina sp., Cryptosiphonia woodii, Cumagloia andersonii, Halosaccion glandiforme, Iridaea sp., Lithothamnion sp., Mastocarpus sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria palmata, Rhodomela larix, filamentous red algae
5. Higher Plants - Zostera marina (eel grass), Leymus mollis (beach rye grass)

II. Marine Animals
1. Sponges - Porifera
   Halichondria sp.
2. Anemones
   Anthopleura artemesia, A. elegantissama, Epiactis ritteri, Metridium senile, Urticina crassicornis,
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaetes
   - Glyceridae
   - Nepthyidae
   - Nereidae - Nereis spp.
   - Serpulidae - Serpula sp., Eudistylia polymorpha
   - Spriorbidae - Spirorbis sp.
10. Crustaceans
    a. Amphipods - Orchestia sp.?
    b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
    c. Crabs - Haplogaster sp., Hemigrapsus oregonensis, Paguridae (hermit crabs), Oregonia gracilis,
11. Mollusca
    a. Chitons
       Mopalia mucosa, Tonicella lineata,
    b. Snails - Gastropods
       Littorina scutulata, L. sitkana, Margarites sp., Natica clausa, Nucella lamellosa, N. lima,
    c. Limpets - Acmaea mitra, Lottia digitalis, L. persona, Tectura fenestrata
    e. Mussels and Clams
       Clinocardium sp., C. nuttalli, Macoma balthica, Macoma nasuta, Modiolus sp., Mya arenaria (soft-shell clam), Mytilus californianus, M. cepio, Prototheca staminea, Saxidomus giganteus,
12. Echinoderms
    a. Brittle Stars - Ophiolus sp., ?
    b. Sea stars
       Dermasterias imbricata, Evasterias truscheli, Leptasterias hexactis, Pycnopoida helianthoides, Solaster sp.
    c. Sea Cucumbers - Holothurians - Leptosynapta sp.
    d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Schizoporella sp.
15. Fishes
    - Cottidae - several unknown species
    - Liparidae - Liparis callyodon
    - Stichaeidae - Xiphister atropurpureus, X. mucosus

IV. Birds
Marbled Murrelet (2), Harlequin Duck (2), Barrow's Goldeneye (4) Kittiwake (1), Glaucous Gull (1), Crow (1).

BIO SKETCH MAP

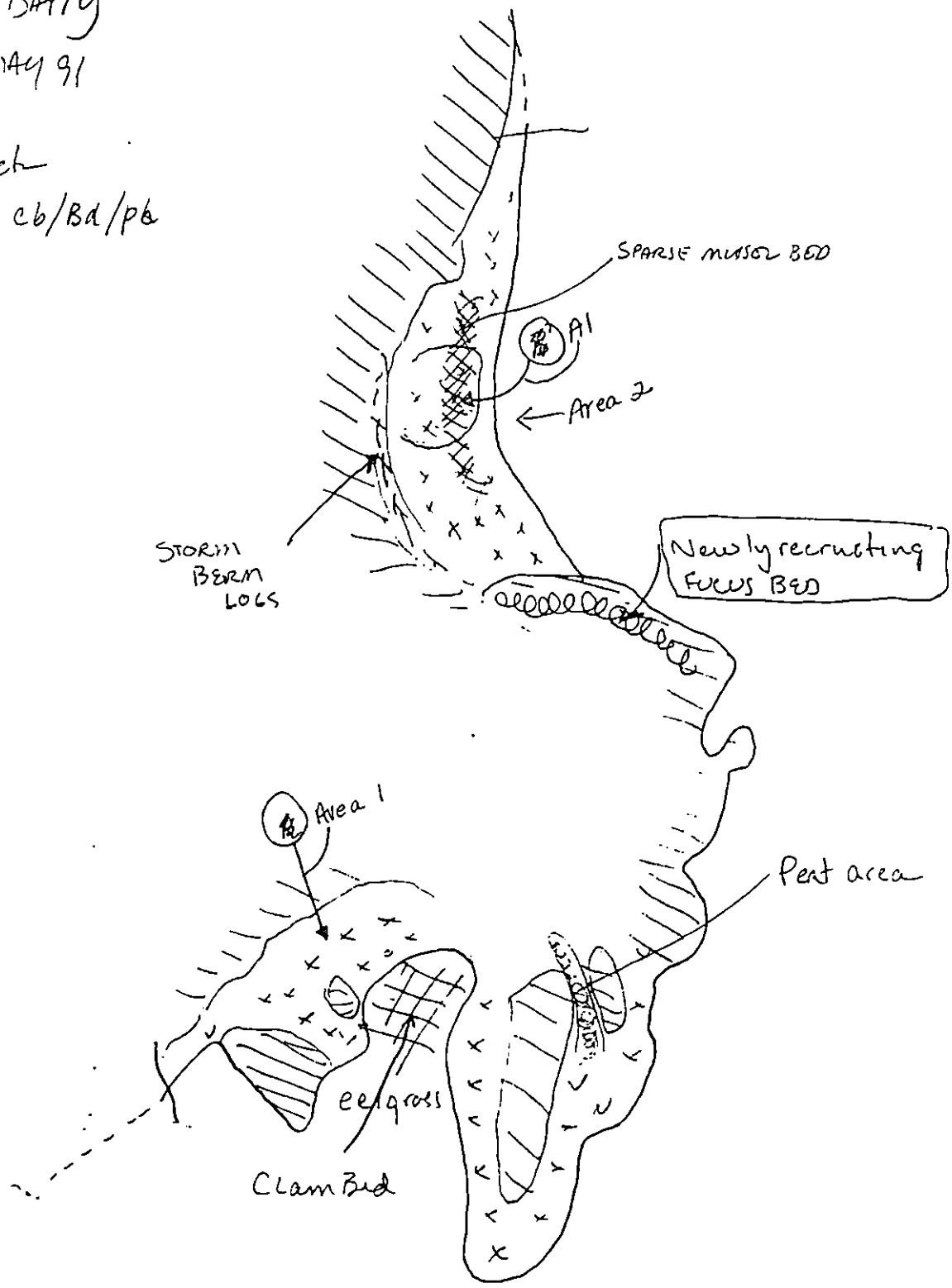
AG009 A

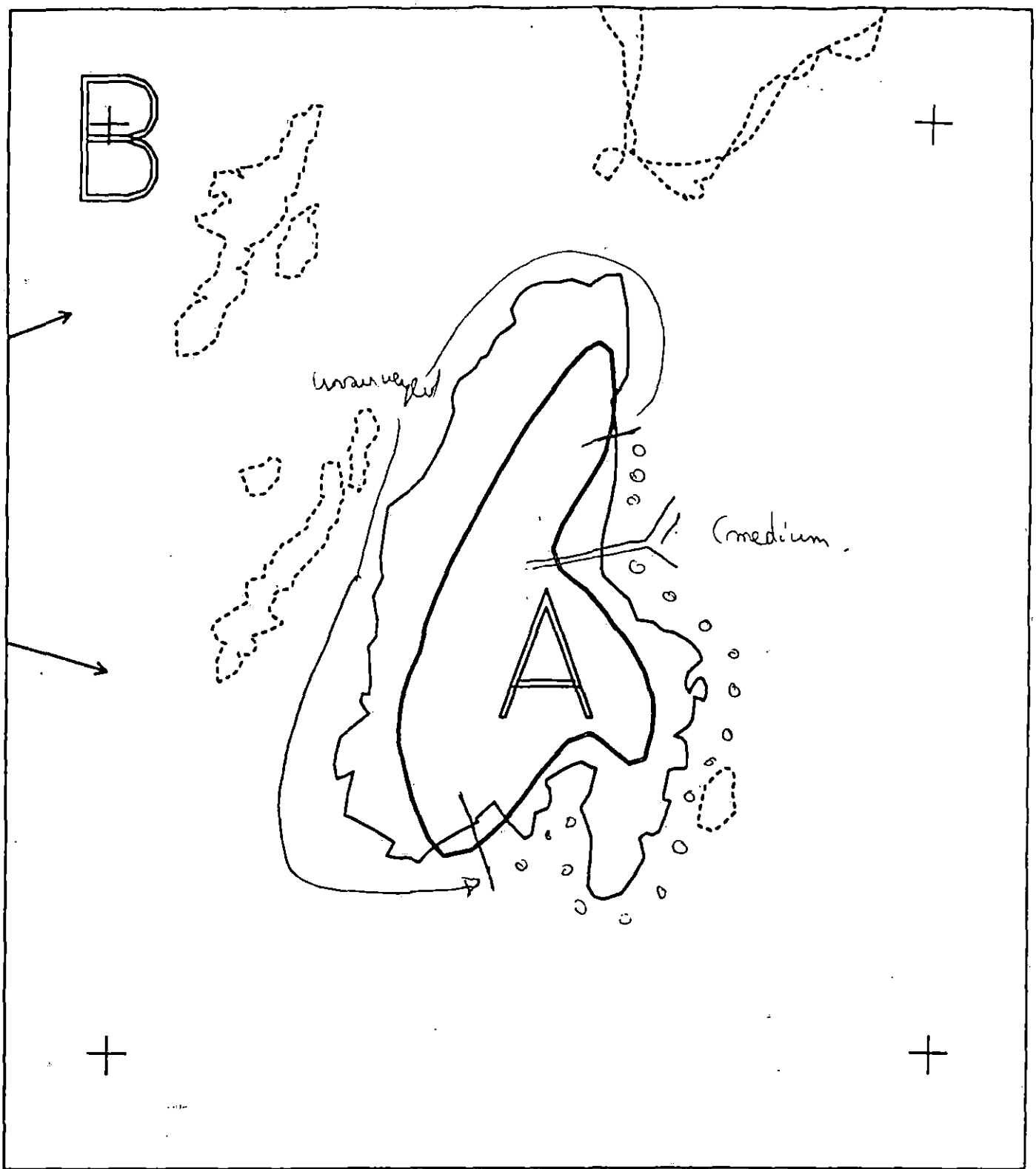
J P BATTY

4 MAY 91

Bedrock

Angular cb/Bd/pb





XXXX	Wide	AG009 A	Subdivision Field Map
////	Medium	ADEC Subsegment Length: 940m	Map Key: KNIAG009A
----	Narrow	METERS	Name: J. Semple
TTTT	Very Light	0 100 200	Date: 4 MAY 91
0000	No Oil	AK State Plane Zone 4 Kag009a	Date Entered:

reviewed 5/6/91 KG
REVIEWED: 5/6/91 MC

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/AP-38

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ AP-38 SUBDIVISION A (1 OF 1) DATE 3/31/90

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)
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 57 m: No Oil 991* 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: *NOTE: ADEC shows no shoreline for this segment; lengths of oiling are from Exxon's shoreline.

TAG COMMENTS:

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

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / AP 38 SUBDIVISION: None DATE 3/31

USCG
NAME Robert G. Jensen SIGNATURE [signature]

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

ADEC
NAME Rowann T. Hudnall SIGNATURE Rowann T. Hudnall

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS
sporadic splashes only.

LAND MANAGER
NAME U.S. Forest Service SIGNATURE [signature]

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS
Continue natural cleaning
Only found one small area of "splash type" oil remaining - heard out area clean.

SHORELINE OILING SUMMARY

REVISION NO. 03/28/90

OG Sam Tazin Sample USCG Bob Jensen SEGMENT ST/ AP-38
BIO John Dixon LAND REP Bob Keeler SUBDIVISION No Subdivision
EXXON Jim Ellison ADEC Rosemary Hindrell TIME 06:40 to 07:30
TEAM NO. 2 TIDE LEVEL: +9' to +5.5' DATE March / 31 / 90
ST. SUBDIVISION LENGTH: 1047 m ☐ Sun ☒ Clouds ☐ Fog ☒ Rain ☐ Snow
UPLANDS DESCRIPTION: ☐ Grass ☐ Forest ☒ Rock
SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: Walked all segment
SURFACE SEDIMENTS: R 55 % B 40 % C 5 % P – % G – % S – % M – % V – %
SLOPE: Lang 100 % Hang – % Vert – % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 60 m NO 987 m

SURFACE OIL

CHARACTER	DISTRIBUTION /C	/B	/P	/S	OIL / FILM COLOR					IMPACTED ZONES SU	UI	MI	U
ASPHALT PAVEMENT													
POOLED													
COVER													
COAT				X		X						X	
STAIN													
MOUSSE													
PATTIES													
TARBALLS													
FILM													
NO OIL										X	X		X

PAVEMENT: H F S No sq. m by – cm

PATTIES / TARBALLS No BAGS

NEAR SHORE SHEEN? NO BR RW SL TL

OILED DEBRIS No	AMOUNT SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED ☐ YES ☒ NO

TYPE

#BAGS

Photographs:

Roll No. ST-2-2

Frames 1-4

SUBSURFACE OIL (NO) Bedrock Ramp.

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER OP	OR	OL	OF	NO	OILED INTERVAL (CM-CM)	BELOW UO	UC	OIL / FILM COLOR					PIT ZONE SU	UI	MI	U	ANA	SUBSURFACE SEDIMENTS
							-													
							-													
							-													
							-													
							-													
							-													

COMMENTS

REVIEWED DATE

OG [redacted] Sample

SEGMENT ST/ AP-38

SUBDIVISION None

DATE MARCH/ 31 90

[redacted]KETCH MAP

CHECKLIST

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

LEGEND

1 △ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

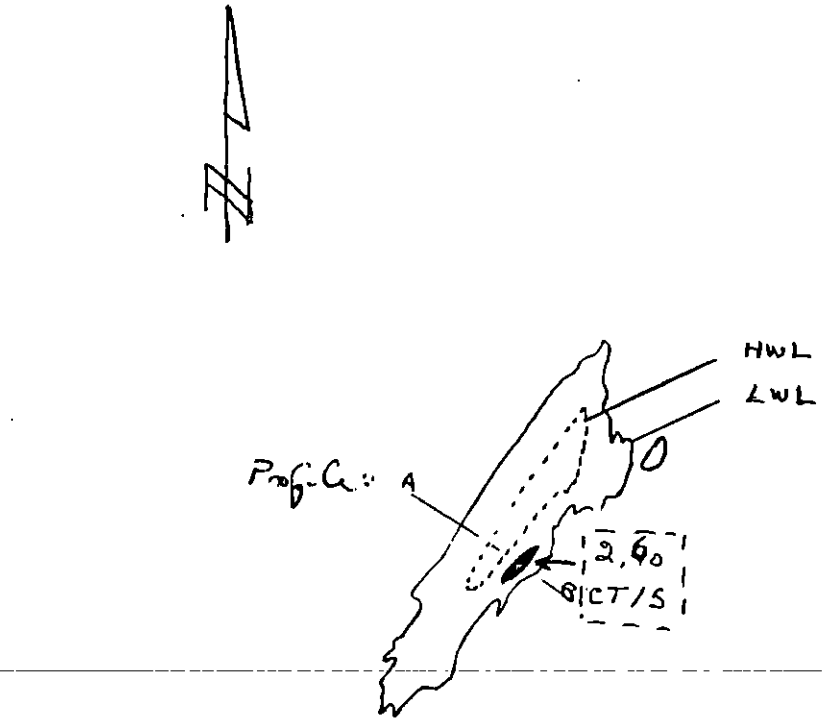
CT/B Broken Distribution

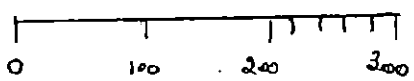
CT/P Patchy Distribution

CT/S Splashed Distribution

Oiled Vegetation

1 Photo location, direction, and number





Legend

Width [redacted] Length (m)

2, 60

CT/S

Distribution

Character

[redacted] Overall area within which oil splashes occur.

— LWL --- HWL

Profile A-B

Bedrock outcrop Vertical foliation.

Bedrock Ramp covered with boulders some cobbles. Very few splashes in mitz, 2 m wide band << 10% coverage

Oil Character Length (m): AP — PO — CV — CT 60 ST — MS — PT — TB — FL — NO 987

REVISION:03/24/90

Applegate Islands, AP-38, March 31, 1990

Segment AP-38 includes the northernmost of the Applegate Rocks, three small islands located north of Green Island. This segment is exposed to a fetch of about 20 km to the east and west; to the north and south, it is exposed to longer fetch distances that are partially blocked by other islands (Seal and Smith, Green).

The segment is made up entirely of bedrock with steep to vertical foliation on the northwestern side, and a gently sloping narrow debrock ramp on the southeastern side. This bedrock ramp is covered with rounded boulders and cobbles in the middle intertidal zone.

Oil was found on the southwestern side of this island, within a 2 m wide, 60 m long band in the middle intertidal range. It occurs as very scattered coatings of small splashes made up of dull black tar less than 1 mm thick.

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / AP-38 Subdivision N/A Date (mo / day / yr) 03/31/90

Time (24 hr) 0655-0730 Biologist John Dixon

( ) Substrate type and % of segments:
(1) Bedrock 55 (2) Boulder 40 (3) Cobble 5 (4) Pebble ____ (5) Sand ____ (6) Silt ____

(B) Overall % cover of biota (% of segment): Dense 15 Moderate 25 Low 60

(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-2-2
Frames 1-3

BARNACLES

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

NOT PRESENT

GASTROPODS

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

NOT PRESENT

FUCUS

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

NOT PRESENT

Wildlife Observations/ General Comments: Tide at +3' feet. Only upper intertidal observed. 4 bald eagles resting on island as we approach - also many gulls & some cormorants. Several harbor seals offshore.

Ecological Considerations: The upper intertidal of this small island is about 80% bedrock on the E side which has moderate to high algal cover. The W half is about 80% unstable boulders with little algae but moderately dense littorines & limpets. Appears to be extensive Fucus at lower tidal levels.

Harbor Seal & Sea Lion pupping & molting site.

3/31/90 AP-38 JDD 1/2

Applegate Rocks

Land 0655 +7.0' Tide

Rock Outcrop Island Bed 95
~25 m x 100 m Tidal B-B
Vertical Dangerous C-1
D-1

+7 - +10

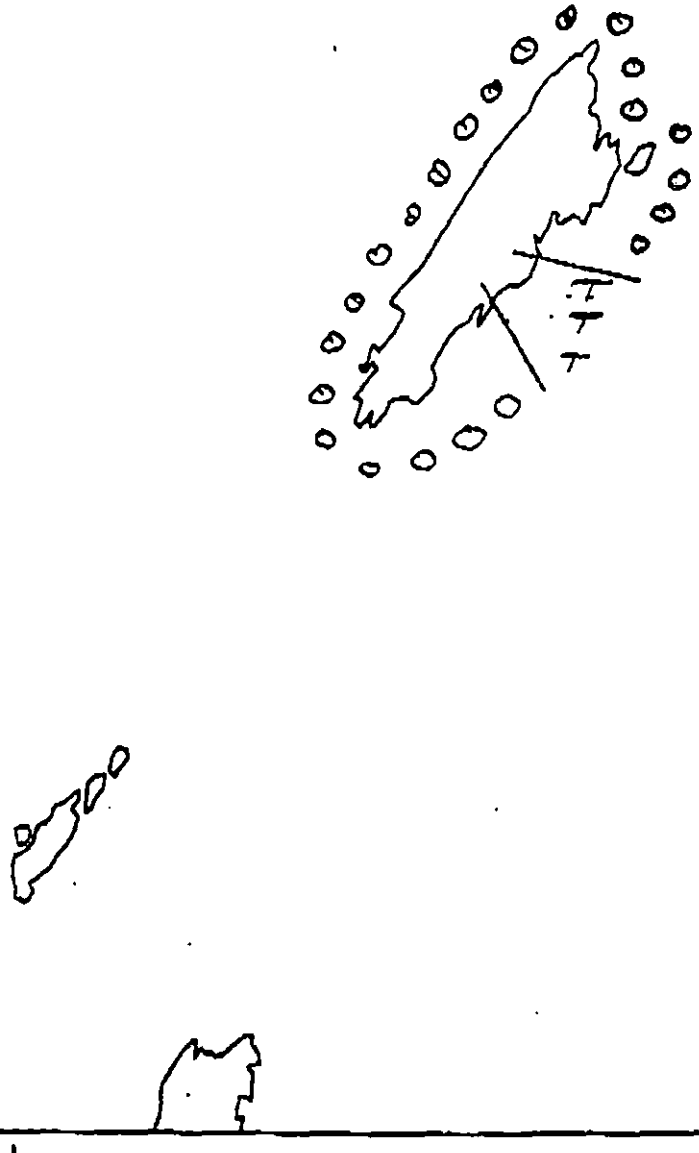
Band of Fucus on both sides of Hogback 20-80%
cover Barnacles found
to be on lower Boulders
20% on bolders 210% on Horizontal
slabs. Red algae, Nor Sub
~ 10-20% Phyllospadix
in runoff channels Few
snails - only under cobbles
Few mussels in cracks

Barnacles also on lee side
with Boulders Fucus on
windward side (W) with
Dedgeet Creek & Tidal
Stream of Hogsback mud
under Bar-Cobble

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 unoiled intertidal and subtidal algae and seagrass. Contact ADF&G for specific dates and locations.	
3N, 3P 3O, 3Q	Harbor seal and sea lion pupping (5/15 to 7/1) Harbor seal and sea lion molting (8/15 to 9/15) Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts.	
5R	Seabird colony (5/1 to 9/1) Restrict air traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance. Contact ADF&G and USFWS prior to treatment.	
5S	Shorebird/waterfowl concentration (4/1 to 5/15) Restrict all activity to essential minimum, especially air traffic.	
5T	All Bald Eagle nests (3/1 to 6/1) Active Bald Eagle nests (3/1 to 9/1) Restrict air traffic to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.	
6U	Recreation:	Tent sites (6/1 to 9/15)
6V		Anchorages (6/1 to 9/15)
6W		Forest Service cabins (6/1 to 9/15)
6X		Lodge (6/1 to 9/15)
6Y		Special use destination
7Z	Subsistence area:	Salmon harvesting (5/1 to 9/30)
7HH		Finfish harvesting
7II		Deer harvesting (8/15 to 2/28)
7JJ		Invertebrate harvesting
	For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.	

AP-



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

AP-38

ADEC Segment Length: 1047m

0 100 200 300
METERS

Map Key: PWS-27
Name: Joan Marie Sempels
Date: March 31/90
Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ AP-38 SUBDIVISION A (1 OF 1) DATE 3/31/90

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)
See attached Ecological Constraint sheet for specific constraints and contacts.

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

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

SHPO SIGNATURE: Charles E Holmes DATE: 4/20/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 57 m: No Oil 991* 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: *NOTE: ADEC shows no shoreline for this segment; lengths of oiling are from Exxon's shoreline.

TAG COMMENTS:

TAG APPROVAL DATE: 4/20/90.
ADEC Art Weiner Art Weiner
EXXON Amy Tegal
NOAA Burl Wescott
USCG Kenneth Keane

FOSC: DATE: 4-26-90

OG for [redacted] Sample

SEGMENT ST/ AP-38

SUBDIVISION None

DATE MARCH/ 31 90

[redacted]ETCH MAP

CHECKLIST

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

LEGEND

1 △ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

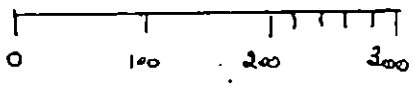
CT/B Broken Distribution

CT/P Patchy Distribution

CT/S Splashed Distribution

Oiled Vegetation

1 ●→ Photo location, direction, and number



Legend

width (m) length (m)

2, 60

CT/S

Character

Distribution

[redacted] Overall area within which oil splashes occur.

— LWL --- HWL

Profile A-B

Bedrock outcrop Vertical foliation.

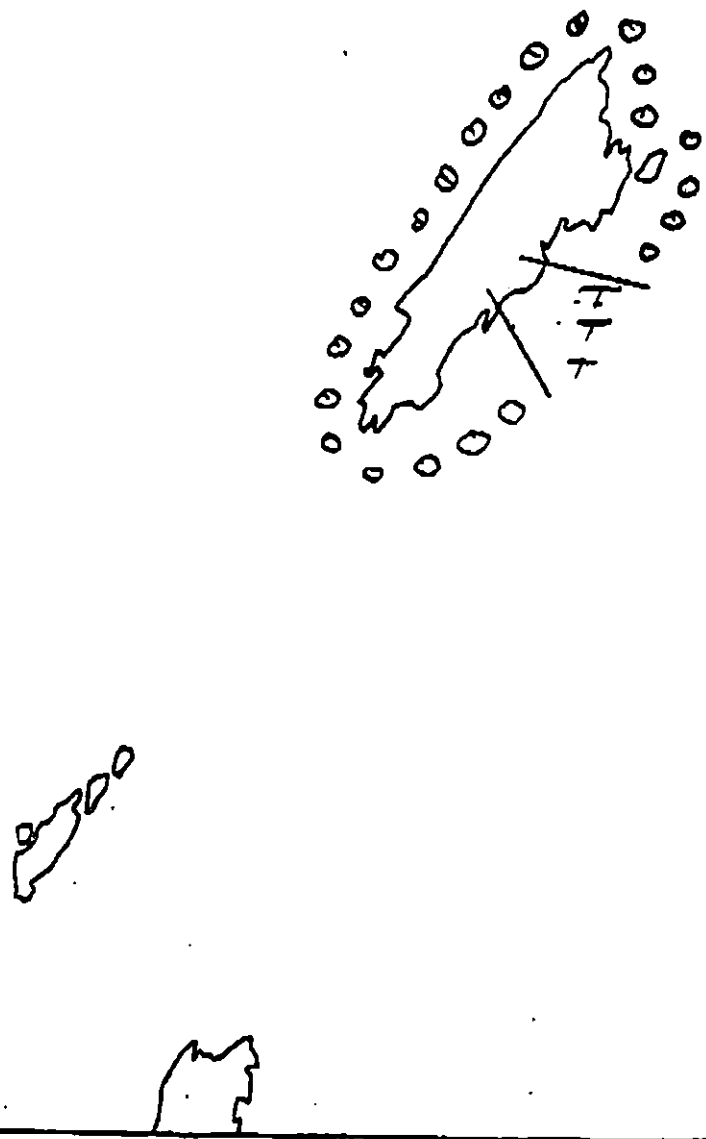
Bedrock Ramp covered with boulders some cobbles. Very few splashes in mitz, 2 m wide band << 10% coverage

Oil Character Length (m): AP — PO — CV — CT 60 ST — MS — PT — TB — FL — NO 987

REVISION:03/24/90

p. 38 p 3 / 1

AP-



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

AP-38

ADEC Segment Length: 1047m

0 100 200 300 Meters

Map Key: PWS-27
Name: Joan Marie Semple
Date: March 31/90
Data Entered:

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/AP-39

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ AP-39 SUBDIVISION A (1 OF 1) DATE 3/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
Harbor seal and sea lion pupping (3N, 3P) - 5/15 to 7/1 and molting (3O, 3Q) - 8/15 to 9/15.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Restrict boat and air traffic to essential minimum. Contact ADF&G and USFWS prior to treatment. Treatment to be completed prior to 5/15 or between 7/1 and 8/15 unless otherwise approved by ADF&G and/or USFWS.

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 407 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 _____ FOSC:_____ DATE:_____
NOAA _____
USCG _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / AP 39 SUBDIVISION: None DATE 3/31

USCG
NAME Robert G. Jensen SIGNATURE [signature]

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

ADEC
NAME Rowann T. Hudnall SIGNATURE Rowann T. Hudnall

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

No oil observed.

LAND MANAGER
NAME U.S. Forest Service SIGNATURE [signature]

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

No oil found.

REVISION NO. 03/31/90

SHORELINE OILING SUMMARY

REVISION NO. 03/22/88

OG Terra Tech Scientists USCG Bob Jensen SEGMENT ST/ AP-39 A(1 of 1)
BIO John Dixon LAND REP Bob Keeler SUBDIVISION No Subdivision
EXXON Tim Ellison ADEC Rowena Hudnall TIME 07 : 30 to 08 : 00
TEAM NO: 3 TIDE LEVEL: +5 1/2' to +4' DATE March / 31 / 90
EST. SUBDIVISION LENGTH: 407 m ☐ Sun ☒ Clouds ☐ Fog ☒ Rain ☐ Snow
UPLANDS DESCRIPTION: ☐ Grass ☐ Forest ☒ Rock
SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: Walked over island
SURFACE SEDIMENTS: R 95 % B — % C 5 % P — % G — % S — % M — % V — %
SLOPE: Lang ____ % Hang 100 % Vert ____ % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
OIL CATEGORY LENGTH: W — m M — m N — m VL — m NO 407 m

SURFACE OIL

No Surface oil

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	/C	/S	/P	/R	BK/BR	DBR/PK	OY/BL	DGR/TL	LGR/	SU	UI	MI	LI
ASPHALT PAVEMENT													
POOLED													
COVER													
COAT													
STAIN													
MOUSSE													
PATTIES													
TARBALLS													
FILM													
NO OIL										X	X	X	X

PAVEMENT: H F S No sq. m by ____ cm

PATTIES / TARBALLS No BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS No	AMOUNT SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED ☐ YES ☒ NO

TYPE ____

#BAGS ____

Photographs:

Roll No. ST-2-2

Frames F-5

SUBSURFACE OIL

No Subsurface oil.

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CM)	BELOW		OIL / FILM COLOR					PIT ZONE				ANA	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	BK/BR	DBR/PK	OY/BL	DGR/TL	LGR/	SU	UI	MI	LI		
							-													
							-													
							-													
							-													
							-													
							-													

COMMENTS

REVIEWED DATE

Applegate Islands, AP-39, March 31, 1990

Segment AP-39 includes the middle of he Applegate Rocks, three small islands located north of Green Island. This segment is exposed to a fetch of about 20 km to the east and west; to the north and south, it is exposed to longer fetch distances that are partially blocked by other islands (northern Applegate, Seal and Smith, Green).

The segment is made up entirely of bedrock with steep to vertical foliation ands very rounded cobbles in the upper and middle intertidal zones. No oil was found on this segment.

SHORELINE ECOLOGICAL SUMMARY

REVISION: 10/22/90

Segment ST / AP-39 Subdivision N/A Date (mo / day / yr) 05/31/90

Time (24 hr) 0742-0800 Biologist Debb Dixon

(A) Substrate type and % of segments:
(1) Bedrock 60 (2) Boulder 30 (3) Cobble 10 (4) Pebble ____ (5) Sand ____ (6) Silt ____

(B) Overall % cover of biota (% of segment): Dense 15 Moderate 15 Low 70

(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-2-2
Frames 4-5

BARNACLES

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

GASTROPODS

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

Wildlife Observations/ General Comments: Tide at +5'. Only upper intertidal observed. Many gulls & 6 shorebirds on island as we approached. A sealine & Harbor seal were just offshore

Ecological Considerations: Island is mostly irregular horizontal bedrock in upper zone with scattered boulders & cobbles. Stable surfaces covered with Fucus, Rodomela & Halosaccion in depressions. Phyllospadix & corallina grow in surge channels & tide pools.

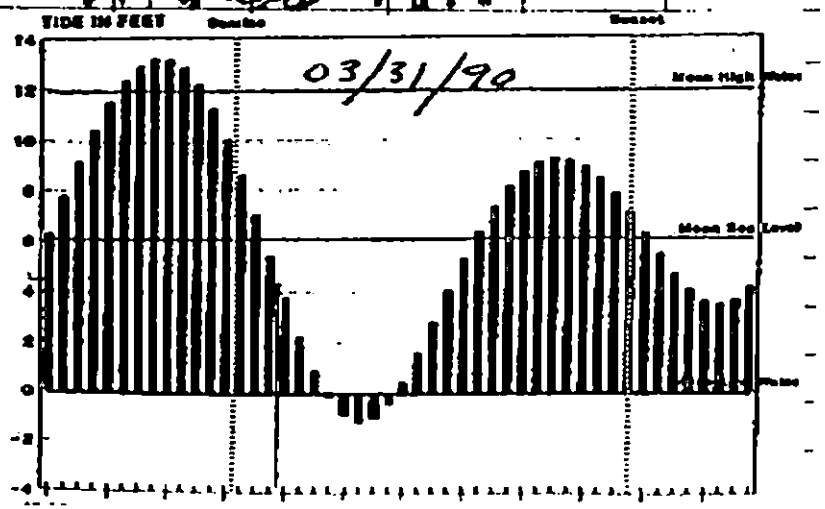
Harbor seal & sea lion pupping & molting site.

JDP AP-38 2/2

Oil on high Hor surf
Turky vul on low
Hor surf

Bon B common (S)
25 Pead & B gull (SN)
& Ottbrowlin (SN) 10% Pead
no Stat
0725 Departed

4 Baldeagles on island
Numerous gulls & pch cormorants
several Harbor seals
offshore +6.5'



3/31/90 AP-39 JDP 1/1

land 0742 ut 4.81

Phyllospadix in surge channel & pools
avalina array

Island has irregular hor surface w/ Scattered Boulders & cobble

Stable surface covered with fucus
Tar/grass & Nat Sponges in lower area

70% B deal Tax

Sealion, Harbor seal
& shorebird - Many gulls

Sus Bed - 60
IS - 30
S - 10

OG Jean [redacted] Sempels

SEGMENT ST/ A.P.-39

SUBDIVISION None

DATE March / 31 / 90

SK[redacted]CH MAP

CHECKLIST

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

LEGEND

1 △

Pit - No Subsurface Oil

2 ▲

Pit - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

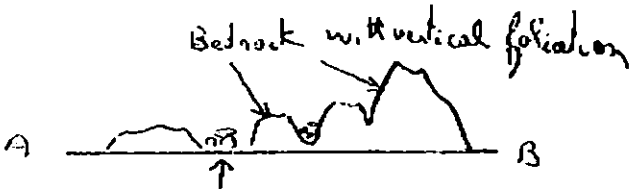
CT/S

Splashed Distribution

Oiled Vegetation

1 ●►

Photo location, direction, and number



Very small pockets of rounded cobbles in low-lying areas.

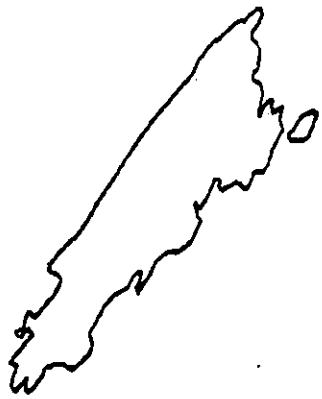
No oil.

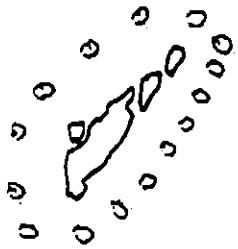
Oil Character Length (m): AP — PO — CV — CT — ST — MS — PT — TB — FL — NO 407

REVISION: 03/24/90

Page 3 of 7

AP-3





AP-39

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

AP-39

~~ADEC Segment Length: 1047m~~

0 100 200 400

Map Key: PWS-27
Name: Bom Test Sample
Date: March 31/90

SHORELINE EVALUATION

SEGMENT ST/ AP-39 SUBDIVISION A (1 OF 1) DATE 3/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
Harbor seal and sea lion pupping (3N, 3P) - 5/15 to 7/1 and molting (3O, 3Q) - 8/15 to 9/15.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Restrict boat and air traffic to essential minimum. Contact ADF&G and USFWS prior to treatment. Treatment to be completed prior to 5/15 or between 7/1 and 8/15 unless otherwise approved by ADF&G and/or USFWS.

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

SHPO SIGNATURE: Charles E Holmes DATE: 4/17/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 407 m
Subsurface Oil Observed: Yes____ No X Maximum Depth_____

RECOMMENDATIONS:

X No Treatment Recommended
_____Treatment Recommended
_____Manual Pickup
_____Bioremediation
_____Tarmat: _____Breakup
_____Removal

_____Snare/Absorbent Booms
_____Oil Snares (pom poms)
_____Absorbents (pads,rolls,etc)
_____Spot Washing:_____Wands
_____ Beach Cleaner
_____Other (see comments)

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 4/16/90
ADEC Al Kizzier
EXXON Andy Bar
NOAA Burl Wescott
USCG G.A. Reiter
FOSC: DATE: 4-20-90

OG from [redacted] Samples

SEGMENT ST/ A2-39

SUBDIVISION None

DATE March / 31 / 90

SKETCH MAP

CHECKLIST

- ___N Arrow
- ___Approx. Scale
- ___Seg/Sub Bndry
- ___Oil Dist.
- ___Width
- ___Length
- ___% Cover
- ___Substrate Character
- ___Est. HWL/LWL
- ___SSI
- ___Profile Location(s)
- ___Profile(s)
- ___Pit Location(s)
- ___Photo Location(s)

LEGEND

1 ▲ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

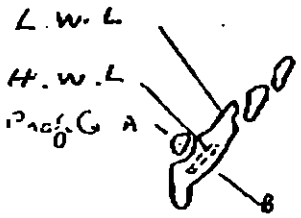
CT/B Broken Distribution

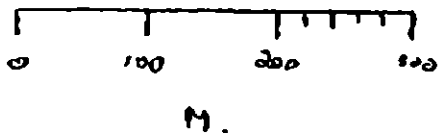
CT/P Patchy Distribution

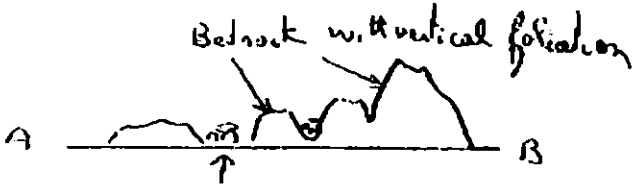
CT/S Splashed Distribution

Oiled Vegetation

1 Photo location, direction, and number







Very small pockets of rounded cobbles in low-lying areas.

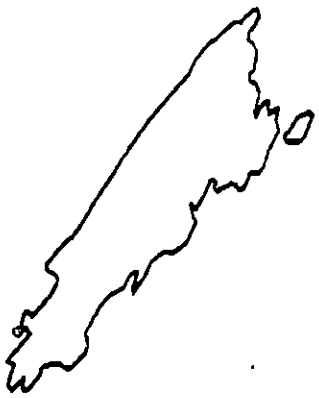
No oil.

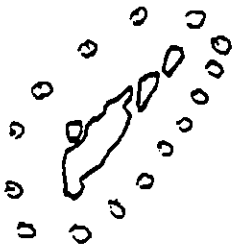
Oil Character Length (m): AP — PO — CV — CT — ST — MS — PT — TB — FL — NO 407

REVISION 93/04/08

Page 3 of 7

AP-3





AP-39

XX Wide
//// Medium
---- Narrow
T·T·T·T Very Light
0000 No Oil

AP-39

~~ADEC Segment Length: 1067m~~

0 100 200 300

Map Key: PWS-27
Name: Bern Tour Sampl
Date: March 31/90

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/AP-40

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ AP-40 SUBDIVISION A (1 OF 1) DATE 4/1/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Harbor seal and sea lion pupping and molting area (3N,P,O, Q) - 5/17 to 7/1 and 8/15 to 9/15.

SUBDIVISION ECOLOGICAL CONSTRAINTS: Same as above

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 17 m: No Oil 719m

Subsurface Oil Observed: Yes___ No X Maximum Depth_____

RECOMMENDATIONS:

X No Treatment Recommended

___Treatment Recommended

___Manual Pickup ___Snare Booms/Sorbents ___Tarmat Breakup/Removal

___Bioremediation SPOT WASHING ___Other

___Wands

___Beach Cleaner

Comments: Recommend no treatment as only a very light surface splash was found in an isolated area. High energy in area should continue to reduce remnant oil. Please review field shoreline comment sheet.

TAG COMMENTS:_____

TAG APPROVAL DATE:_____

ADEC _____

EXXON _____ FOSC:_____ DATE:_____

NOAA _____

USCG _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / AP-40 SUBDIVISION: No Subdivision DATE 31 March 90

USCG
NAME James C. Gambill SIGNATURE [signature]

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS
Two small spots of oil sheening approx. 30 yards South of Light.

ADEC
NAME Brian K. FitzSimons SIGNATURE [signature]

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS
One small area @ 10m x 30m B/BR where occasional Boulders have oil trapped beneath which sheen into H_2O
No Treatment recommended - High energy beach produces sufficient scouring

LAND MANAGER
NAME Carol Huber USFS SIGNATURE Carol S Huber

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS
Continued natural cleansing recommend. This island is an extremely high energy environment subject to severe scouring and flushing. Only one small area showed an oil sheen (just south of light) in 2 pits.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG B. Bergland USCG J. Gamble SEGMENT ST/ AP-410
BIO S. Schroeter LAND REP C. Hubert SUBDIVISION —
EXXON C. Levine ADEC B. Fritz Simons TIME 7:00 to 7:30
TEAM NO.: 1 TIDE LEVEL: 7 to 5.5 DATE 3 / 31 / 90
EST. SUBDIVISION LENGTH: 950 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
UPLANDS DESCRIPTION: ☐ Grass ☐ Forest ☒ Rock
SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: S to N
SURFACE SEDIMENTS: R 40 % B 30 % C 20 % P 10 % G ~0 % S ~0 % M ~0 % V ~0 %
SLOPE: Lang 95 % Hang 5 % Vert ~0 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 5 m NO ~~950~~ 945 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	/C	/B	/P	/S	SBR/BR	DBL/RW	GY/SL	DBR/TL	LBR	SU	UI	MI	LI
ASPHALT PAVEMENT													
POOLED													
COVER													
COAT													
STAIN													
MOUSSE													
PATTIES													
TARBALLS													
FILM				✓		✓						✓	
NO OIL										X	✓		✓

PAVEMENT: H F S 0 — sq. m by 0 — cm
PATTIES / TARBALLS 0 — BAGS
NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED ☐ YES ☒ NO
TYPE
#BAGS

Photographs:
Roll No. ST-1-1
Frames 30, 31

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL	BELOW		OIL / FILM COLOR					PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO	(CM-CM)	UO	UC	SBR/BR	DBL/RW	GY/SL	DBR/TL	LBR	SU	UI	MI	LI		
1	30					X	·		✓							✓			✓	C/P
							·													
							·													
							·													
							·													
							·													

COMMENTS

Essentially no visible oil present except for minor patch noted on sketch. (Film, <5%). No tar, coat or stains visible on exposed rock. However lower MI & LI was not visible due to tide height.

REVIEWED DJH DATE 4/1/90

OC B. Berglund

SEGMENT ST/ AP-4D

SUBDIVISION —

DATE 3 / 31 / 90

SKETCH MAP

CHECKLIST

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

LEGEND

1 △ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

CT/B Broken Distribution

CT/P Patchy Distribution

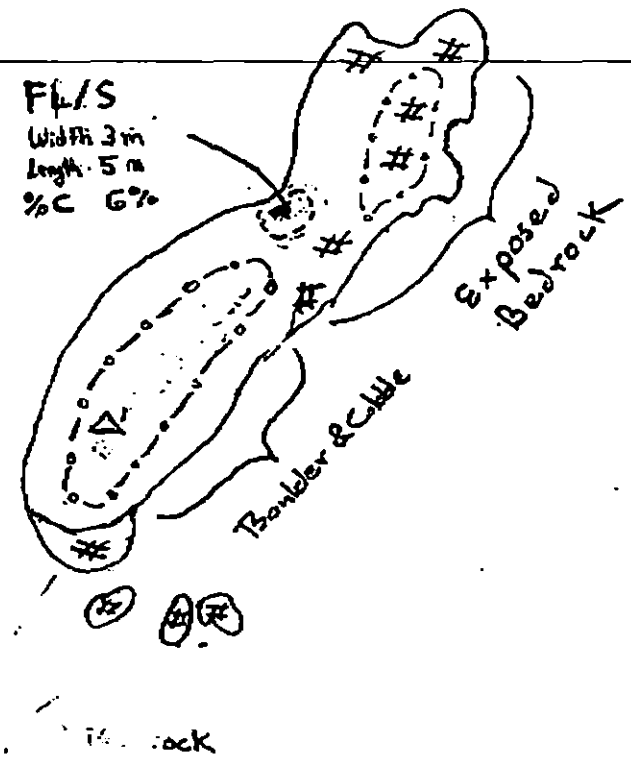
CT/S Splashed Distribution

Oiled Vegetation

1 Photo location, direction, and number

—o—o— HWL

Exposed Bedrock



0 100 200
Meters

N

Oil Character Length (m): AP____ PO____ CV____ CT____ ST____ MS____ PT____ TB____ FL 5 NO 265

REVISION 03/24/90

3/31/90 1 cam 1 Bio S. Schroeter AP-40 -1

AP-40 is small island. In the upper intertidal about 1/3 is bedrock 2/3 boulder cobble.

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / AP-40 Subdivision N/A Date (mo / day / yr) 3/31/90

Time (24 hr) 0730 (0700) Biologist S. Schroeter

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

(B) Overall % cover of biota (% of segment): Dense 30 Moderate 20 Low 50

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

Photographs: Roll No. ST-1-1 Frames 29

BARNACLES

Dense			Moderate			Sparse			Rare			
1U	1M	1L	(X)	1M	1L	1U	1M	1L	X	1M	1L	
2	2	2	2	2	2	2	2	2	X	2	2	
3	3	3	3	3	3	3	3	3	X	3	3	NOT PRESENT
4	4	4	4	4	4	4	4	4	X	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	(X)	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	X	2	2	
3	3	3	3	3	3	3	3	3	X	3	3	NOT PRESENT
4	4	4	4	4	4	4	4	4	X	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	(X)	1M	1L	
2	2	2	2	2	2	2	(X)	2	2	2	2	
3	3	3	3	3	3	3	(X)	3	3	3	3	NOT PRESENT
4	4	4	4	4	4	4	(X)	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	

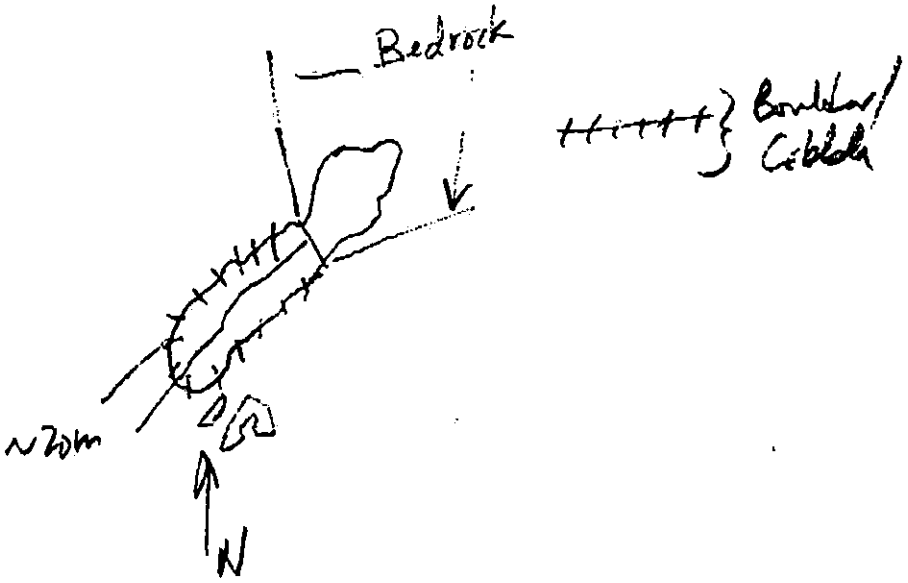
FUCUS

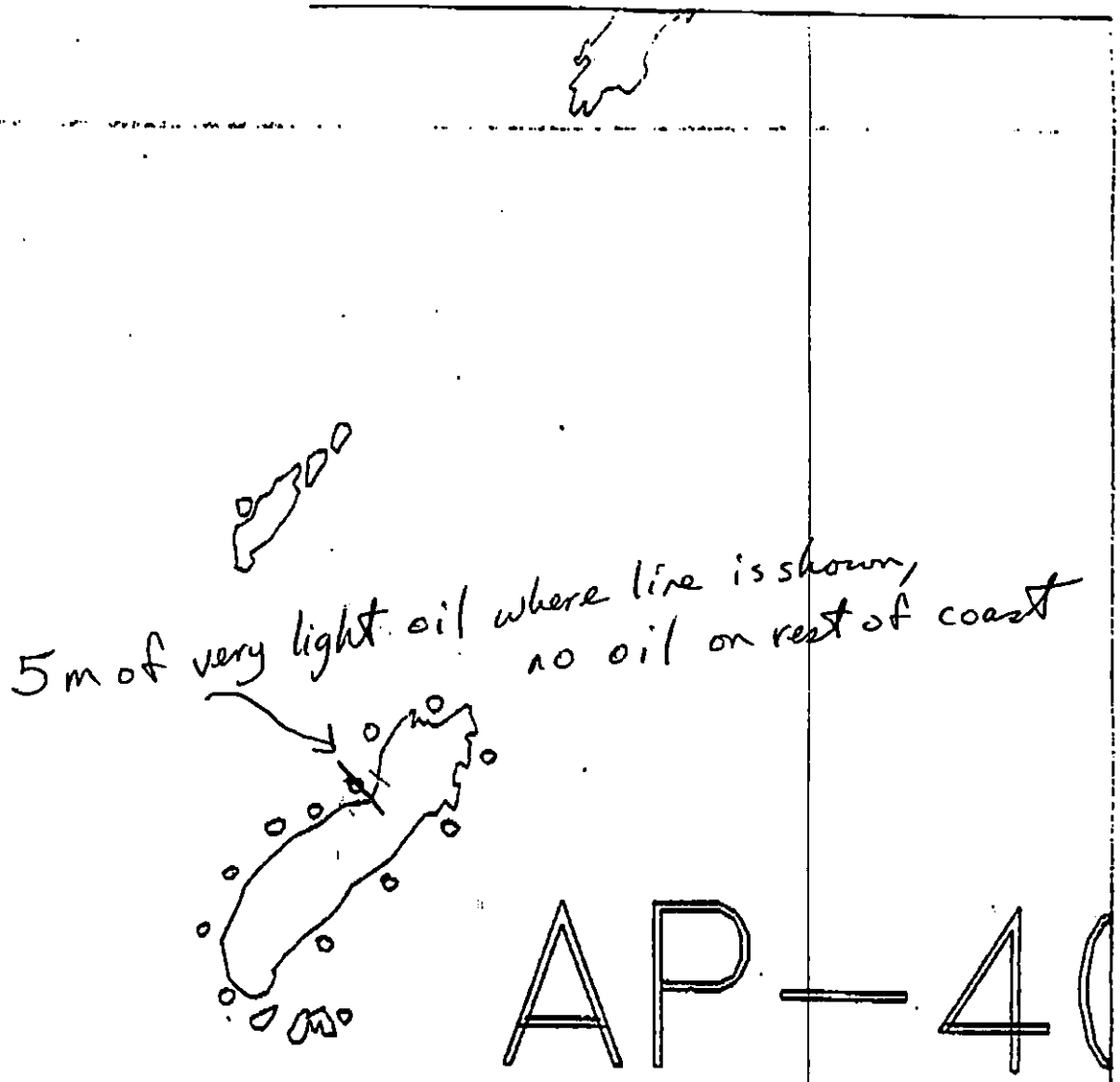
Dense			Moderate			Sparse			Rare			
1U	1M	1L	(X)	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	X	2	2	
3	3	3	3	3	3	3	3	3	X	3	3	NOT PRESENT
4	4	4	4	4	4	4	4	4	X	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments: ~50 spotted seals; 1 sea otter; 6-10 oyster catch adult bald eagle - no harbor seals or sea lions spotted / light sheen on upper intertidal pools, but no discernable stains on white gloves

Ecological Considerations: Due to tide conditions, only upper intertidal. Upper intertidal consists of roughly ½ bedrock + ½ boulder/cobble bench; On bedrock were dense patches of barnacles + Fucus + moderate-density patches of mussels. Except for gastropods, there were low densities of biota. Under boulders were dense aggregations of Littorina sitkana laying eggs + Notoacmaea scutum. Orchestia found occasionally under boulders

3/31/90 1cam 310 D. Schroeder HP-40-2





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

AP-40

ADEC Segment Length: 944m

0 100 200 300
METERS

Map Key: PWS-29
Name: B. Berglund
Date: 3/31/90
Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ AP-40 SUBDIVISION A (1 OF 1) DATE 4/1/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
Harbor seal and sea lion pupping and molting area (3N,P,O, Q) - 5/17 to 7/1 and 8/15 to 9/15.

SUBDIVISION ECOLOGICAL CONSTRAINTS: Same as above

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

SHPO SIGNATURE: Charles E Holmes DATE: April 6, 1990

OILING CATEGORIZATION:
Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 17 m: No Oil 719m
Subsurface Oil Observed: Yes___ No X Maximum Depth_____

RECOMMENDATIONS:
X No Treatment Recommended
___ Treatment Recommended
___ Manual Pickup ___ Snare Booms/Sorbents ___ Tarmat Breakup/Removal
___ Bioremediation SPOT WASHING ___ Other
___ Wands
___ Beach Cleaner

Comments: Recommend no treatment as only a very light surface splash was found in an isolated area. High energy in area should continue to reduce remnant oil. Please review field shoreline comment sheet.

TAG COMMENTS:

TAG APPROVAL DATE: 4-6-90
ADEC JOHN BAUER
EXXON ANDY TAR
NOAA Burl Wescott
SCG G.A. REITER

FOSC: DATE: 4-19-90

OG B. Beyglund

SE[illegible]T ST/ AP-4D

SUBDIVISION —

DATE 3 / 31 / 90

SKETCH MAP

CHECKLIST

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

LEGEND

1 △ Pit - No Subsurface Oil

2 ▲ Pit - Subsurface Oil

CT/C Continuous Distribution

CT/B Broken Distribution

CT/P Patchy Distribution

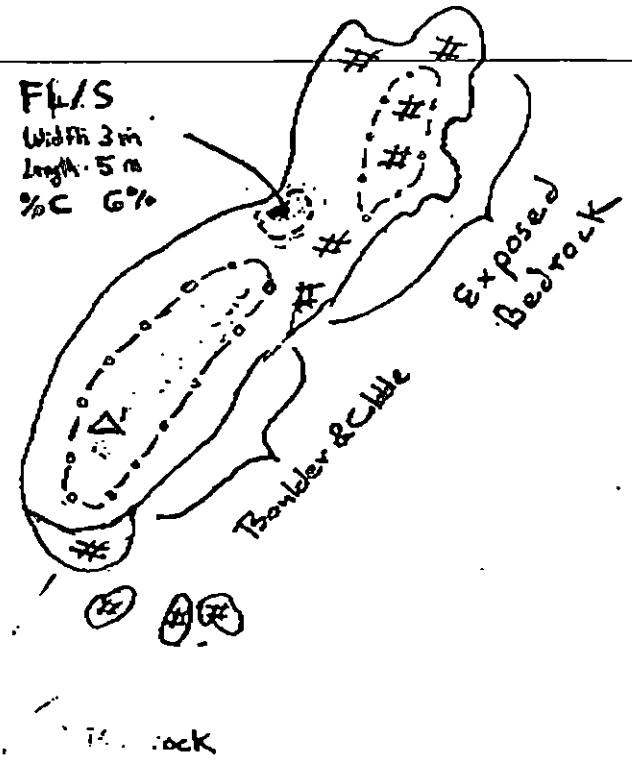
CT/S Splashed Distribution

Oiled Vegetation

1 Photo location, direction, and number

—o—o— HWL

Exposed Bedrock



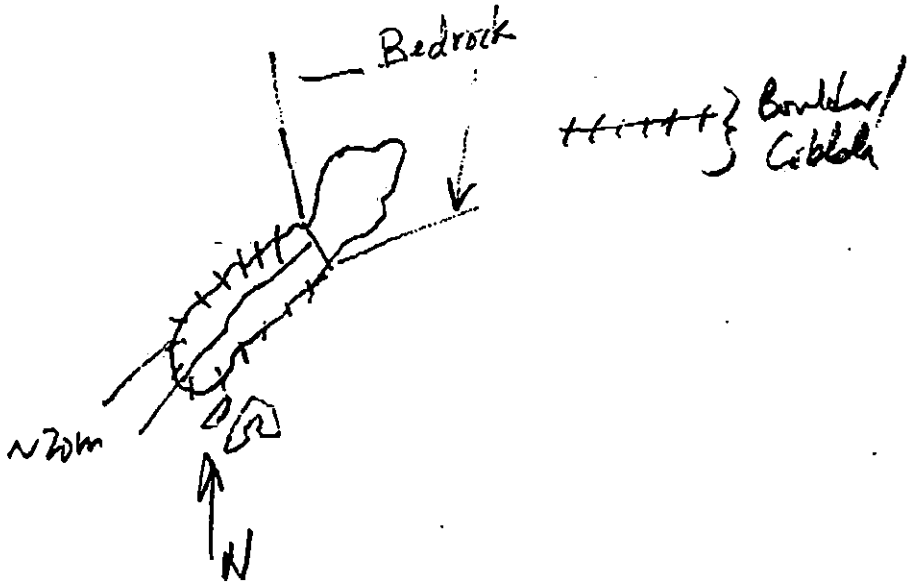
0 100 200
Meters

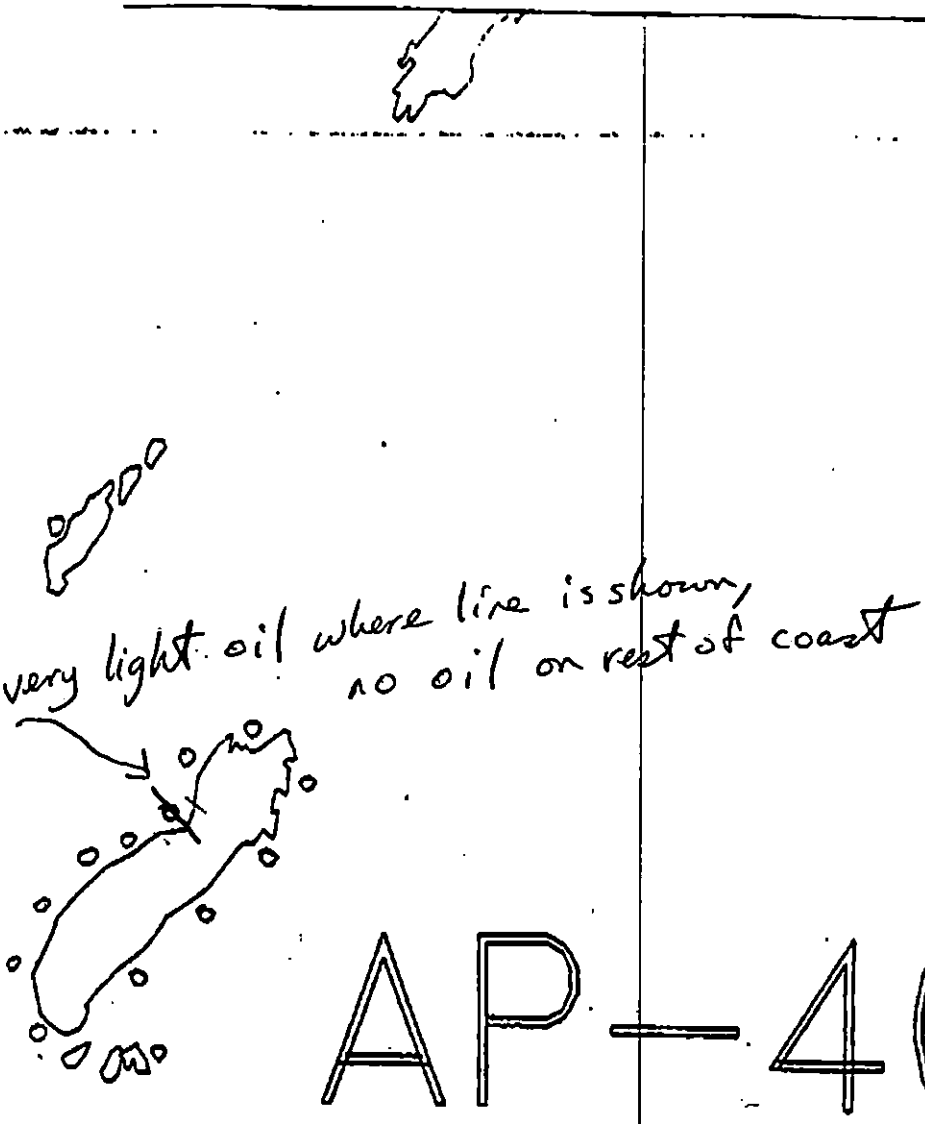
N

Oil Character Length (m): AP_____ PO_____ CV_____ CT_____ ST_____ MS_____ PT_____ TB_____ FL 5 NO 265

REVISED 02/24/90

3/31/90 Team 1 310 S. Schroeder HP-40-2





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

AP-40

ADEC Segment Length: 944m

0 100 200 300

Map Key: PWS-29
Name: B. Berglund
Date: 3/31/90
Data Entered:

ARLIS
Alaska Resources
Library & Information Services
Anchorage, AK