

OIL SPILL PUBLIC INFO. CENTER



3 6653 00006399 4

EVOS
GC
1552
.P75
S42
1991
v.1

[Shoreline evaluations, 1991].

Kenai AI-03 to CB-02

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REGION: KENAI

SEGMENT: ST/AI-03

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ AI-03 SUBDIVISION A (1 OF 1) DATE 4/10/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T All bald eagle nests (3/1 to 6/1)-Active eagle nest (3/1 to 9/1)
6V Recreation: Anchorages (6/1 to 9/15)
6NN Recreation: Sportfishing
4LL Kenai Fjords National Parks
See attached Ecological Constraint Sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 40 m: Narrow 76 m: V.Light 1556m: No Oil 7316 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

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

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ AI-3 SUBDIVISION: A DATE 4/10/90NAME G/NOAA JACQUI MICHEL SIGNATURE Michel☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

Pony Cove has improved significantly, compared to Fall SCAT/IDEZ data. The only area that we considered for further treatment was sketch site 1 - the area marked Medium oiling on the map. However, Access is very treacherous and manual removal would not be very effective. This oiled area is very isolated and is unlikely to pose an environmental risk if left alone. No further treatment is warranted.

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

Segment AI-3, site #1, has some medium oiling but this is a very hard site to get to and perform any type of cleanup. There is a marked improvement from last year in the ~~area~~ entire segment. Scattered splatters are spaced throughout the segment. I have read and agree with all data on S.S.A.T. Forms.

LAND MANAGER NPS
NAME Michael Tetra SIGNATURE Michael Tetra☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

Good survey. Apparently there has been significant natural removal of oil from most of this segment over the winter. Manual removal of oil is possible from site #1 although it would be difficult. This site not likely to release oil this summer. The site where type A/hot water sh was done last year looks very good - in fact so good that I am suspicious of buried oil that we may have missed during this survey. If buried oil does exist, it is probably a very small amount.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/80

OG Maan USCG NOAA Michel SEGMENT ST/ A1-3
 BIO Carr LAND REP Tetrapan - NPS SUBDIVISION H
 EXXON Boyer ADEC Reed TIME 8:00 to 11:00
 TEAM NO.: 18 TIDE LEVEL: -1 to +4 DATE 4/10/90
 EST. SUBDIVISION LENGTH: 9570 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: S to N
 SURFACE SEDIMENTS: R 70 % B 30 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Lang 5 % Hang 70 % Vert 25 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 35 m N 60 m VL 1500 m NO 7975 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	C	B	P	S	SP	ST	CT	SL	LT	LT	LT	LT	SU	U	M	U
ASPHALT PAVEMENT				✓									✓			
POOLED																
COVER			✓	✓		✓							✓			
COAT			✓	✓		✓							✓			
STAIN.			✓	✓		✓							✓			
MOUSSE																
PATTIES																
TARBALLS																
FILM																
NO OIL													✓		✓	✓

PAVEMENT: H (F) S 5 sq. m by 6 cm

PATTIES / TARBALLS 5 of asphalt BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☒ YES ☐ NO

TYPE asphalt

#BAGS 1

Photographs:

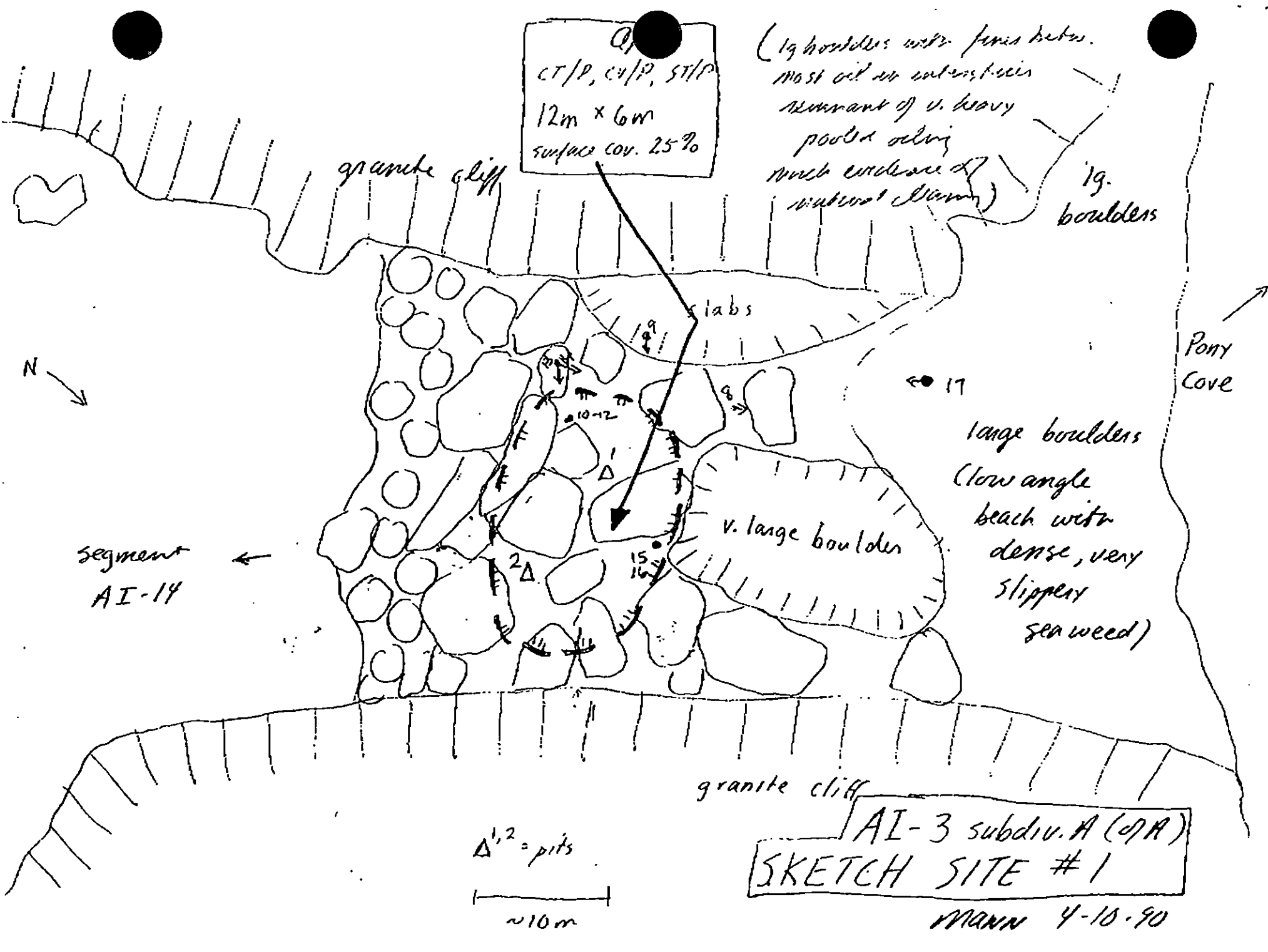
Roll No. 18-6

Frames (8-27)

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CH)	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	SP BR	OR PR	OL BL	SB TL	LB	SU	UI	ME	U			
1	25					✓	-								✓					PCB Throughout	
2	25					✓	-								✓					" "	
3	20					✓	-								✓					PCB Throughout	
4	25					✓	-								✓					" "	
5	15					✓	-								✓					CB Throughout	
6	30					✓	-								✓					CPG Throughout	

COMMENTS This segment covers Pony Cove and its bordering headlands. The shoreline is mainly granite cliffs with frequent rock falls of large to very large, angular boulders. Pocket "beaches" contain large boulders with small boulders and rare cobbles in sheltered pockets. Oil is rare - the most we found was mainly CT and ST (with occasional asphalt) hidden in a jumble of large boulders. WAVE EXPOSURE (and



Qp
CT/P, CV/P, ST/P
12m x 6m
surface cov. 25%

(lg boulders with fossils below.
most oil on water surface
remnant of v. heavy
pools of oil
much evidence of
natural slumps)

19.
boulders

Pony
Cove

segment
AI-14

granite cliff

AI-3 subdiv. A (Qp)
SKETCH SITE #1

MANN 4-10-90

$\Delta^{1,2} = \text{pits}$
~10m

PT-1-1-550 1-1-550 FRI 1 ENSO 10.85 ENSO 10 55M 1 F.85

OG

SKETCH MAP

SEGMENT ST/

AI-3

SUBDIVISION

A

DATE

4, 10 90

CHECKLIST

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

No sketch.

LEGEND

1 ▲

PH - No Subsurface Oil

2 ▲

PH - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

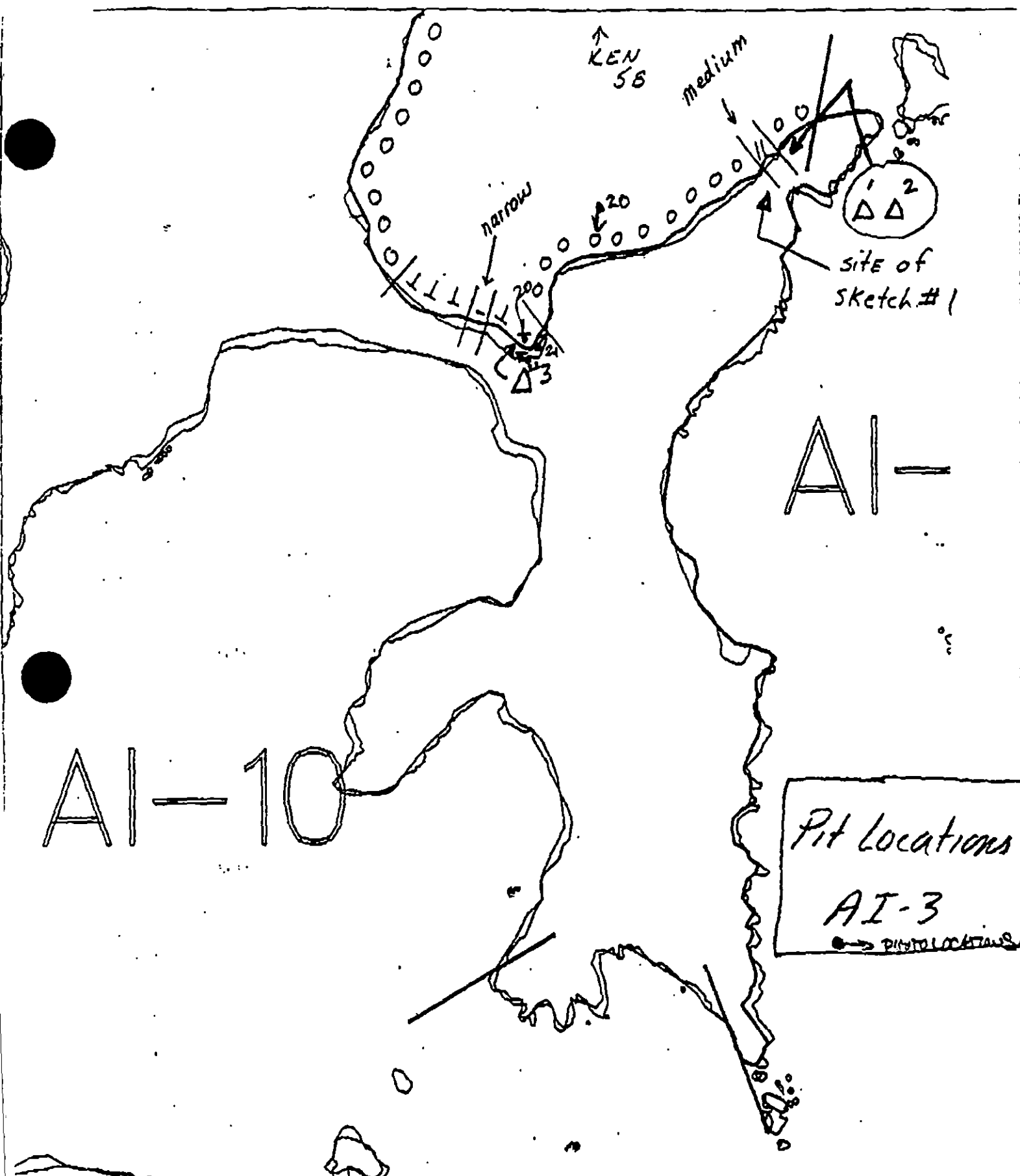
Oiled Vegetation

1 ●→

Photo location, direction,
and number

Oil Character Length (m): AP 10 PO 0 CV 45 CT 50 ST 60 MS 0 PT 0 TB 0 FL 0 NO 9410

REVISION: 9/2/04



XXX Wide

/// Medium

--- Narrow

TTT Very Light

OOO No

AI-14

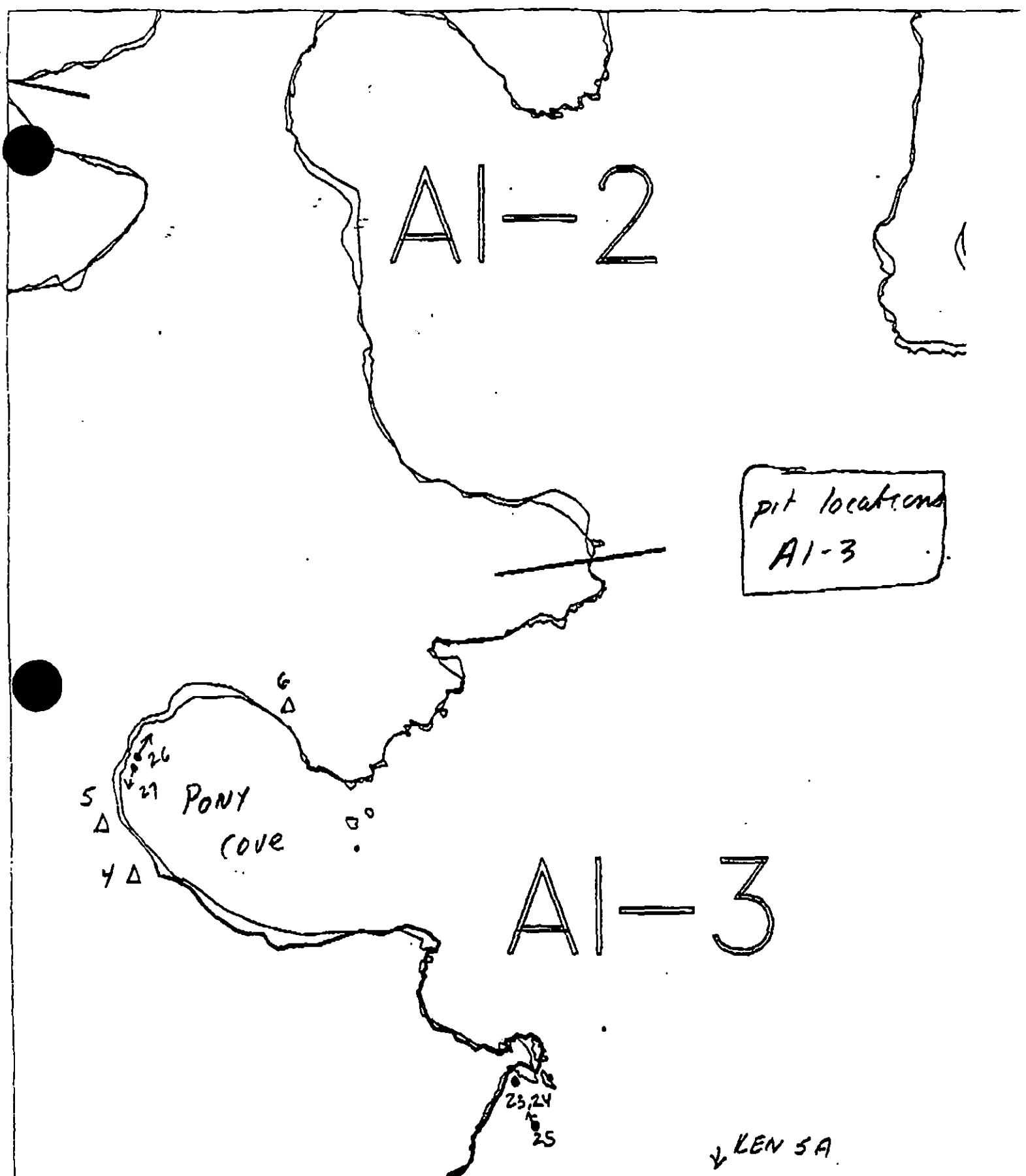
ADEC Segment Length: 10607m

0 500 1000

Map Key: KEN-5a

Name: Mann

Date: 4/10/90



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

AI-14
ADEC Segment Length: 10607m



Map Key: KEN-5b
Name: Mann
Date: 4/10/90
Data Entered:

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST/ AI-3 Subdivision A (of 4) Date (mo / day / yr) 4/10/90Time (24 hr) 0800 Biologist M. CARR(A) Substrate type and % of ^{SUBDIVISION} segments:
(1) Bedrock 70 (2) Boulder 25 (3) Cobble 5 (4) Pebble — (5) Sand — (6) Silt —(B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense 70 Moderate 20 Low 10

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

Photographs:
Roll No. 6Frames 8-38

BARNACLES

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

NOT PRESENT IN ANY

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 IN ANY

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:

H.W. crow (1)

Bald eagle (3) mature, (1) immature

Ecological Considerations:

Sensitivity codes: 4-LL (National Park), 6-NM (Sportfishing), 6-V (Recreational anchorage)

PWS ECOLOGICAL CONSTRAINTS

AI-03

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

AI-2

Aitahik
Aialih

Sensitive Sites

4/10/90

BALD EAGLE NEST

10-3m
potholes
CT, ST
broken
~30%
on small
boulders
in "6.06"
between 19
boulders
splatters
on boulders

washed
ST/3
CT/3

A pit to 35cm
BC no out

washed
CT/3
ST/3
under a valance
cones

went ashore
no oil

2 pits to
~30cm
CPG no
submerged
oil

end
1040

AI-3

splatters of
CT+CV
cov. ~10%
as/s
~50cm² 4m thick
KEN SA

XX Wide

/// Medium

--- Narrow

TFTT Very Light

0000 No oil

AI-14

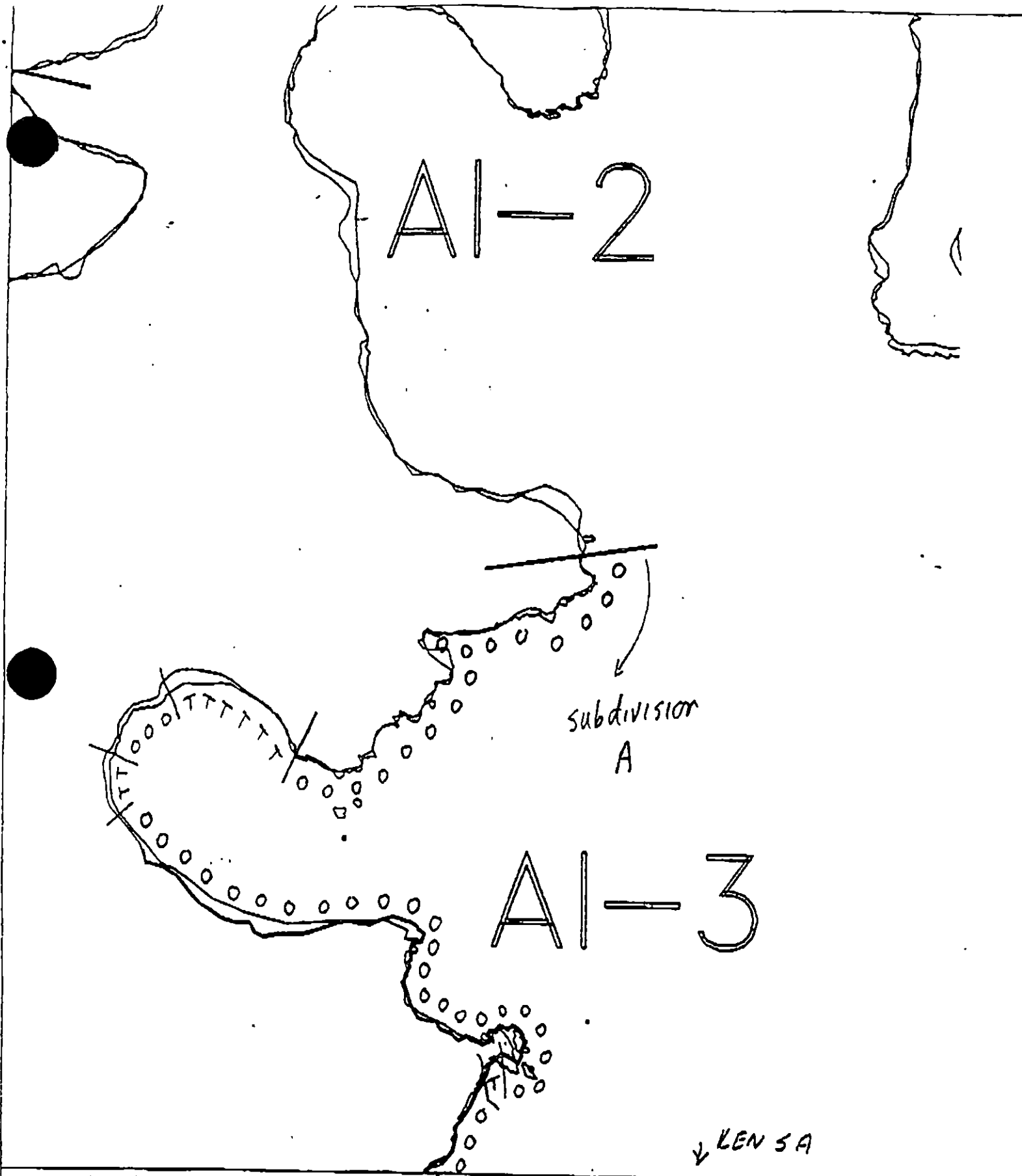
ADEC Segment Length: 10607m

0 300 600 900

Map Key: KEN-5b

Name: _____

Date: _____



XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

ADEC Segment Length: 10607m

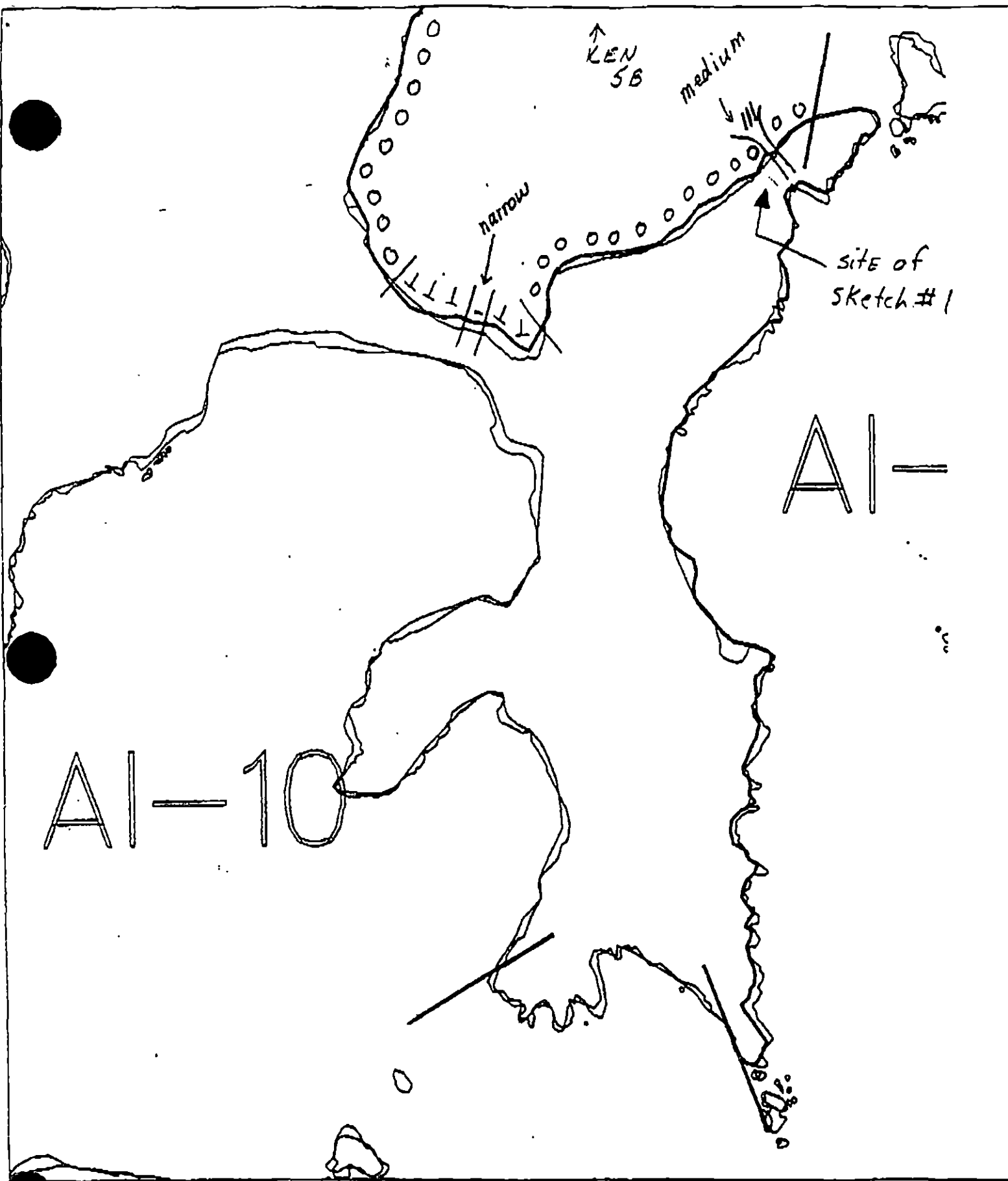


Map Key: KEN-5b

Name: Mann

Date: 4/10/90

Data Entered:



XXX Wide

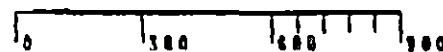
//// Medium

--- Narrow

TTTT Very Light

AI-14

ADEC Segment Length: 10607m



Map Key: KEN-5a

Name: Mann

Date: 4/10/90



SHORELINE EVALUATION

SEGMENT ST/ AI-03 SUBDIVISION A (1 OF 1) DATE 4/10/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T All bald eagle nests (3/1 to 6/1)-Active eagle nest (3/1 to 9/1)
6V Recreation: Anchorages (6/1 to 9/15)
6NN Recreation: Sportfishing
4LL Kenai Fjords National Parks
See attached Ecological Constraint Sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

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

OILING CATEGORIZATION:

Wide 0 m: Medium 40 m: Narrow 76 m: V.Light 1556m: No Oil 7316 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

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

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 4/17/90

ADEC Art Weman Art Weman

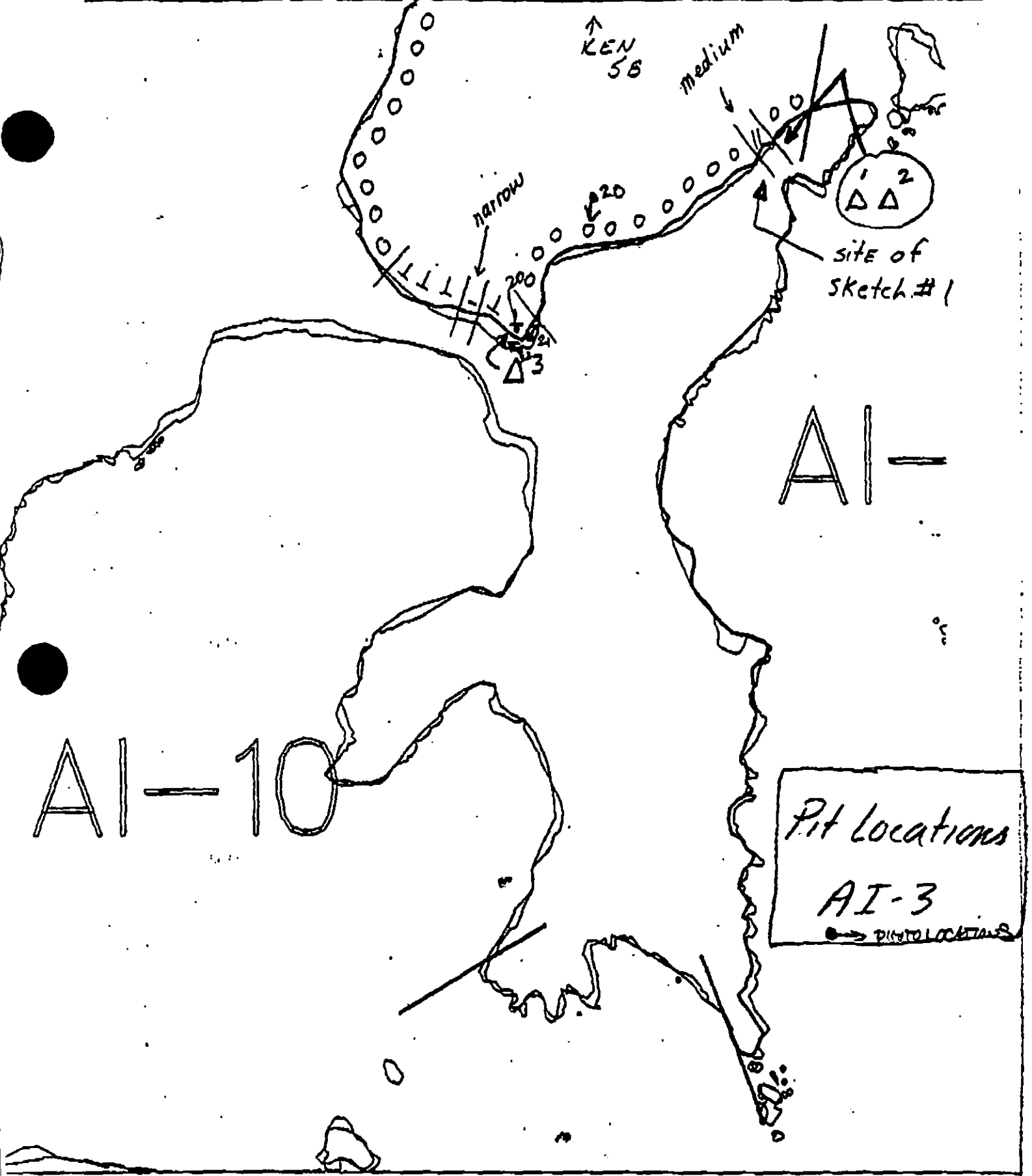
EXXON Andy Tetz Andy Tetz

NOAA Burt Westcott Burt Westcott

USCG Kenneth Korne Kenneth Korne

FOSC: D-E DATE: 4-22-90

Specific comment necessary: NTR because of
SAFETY of clean-up crews, accessibility to area
& size of area - in addition, natural cleaning
should resolve issue.



XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

OOOO No Oil

AI-14

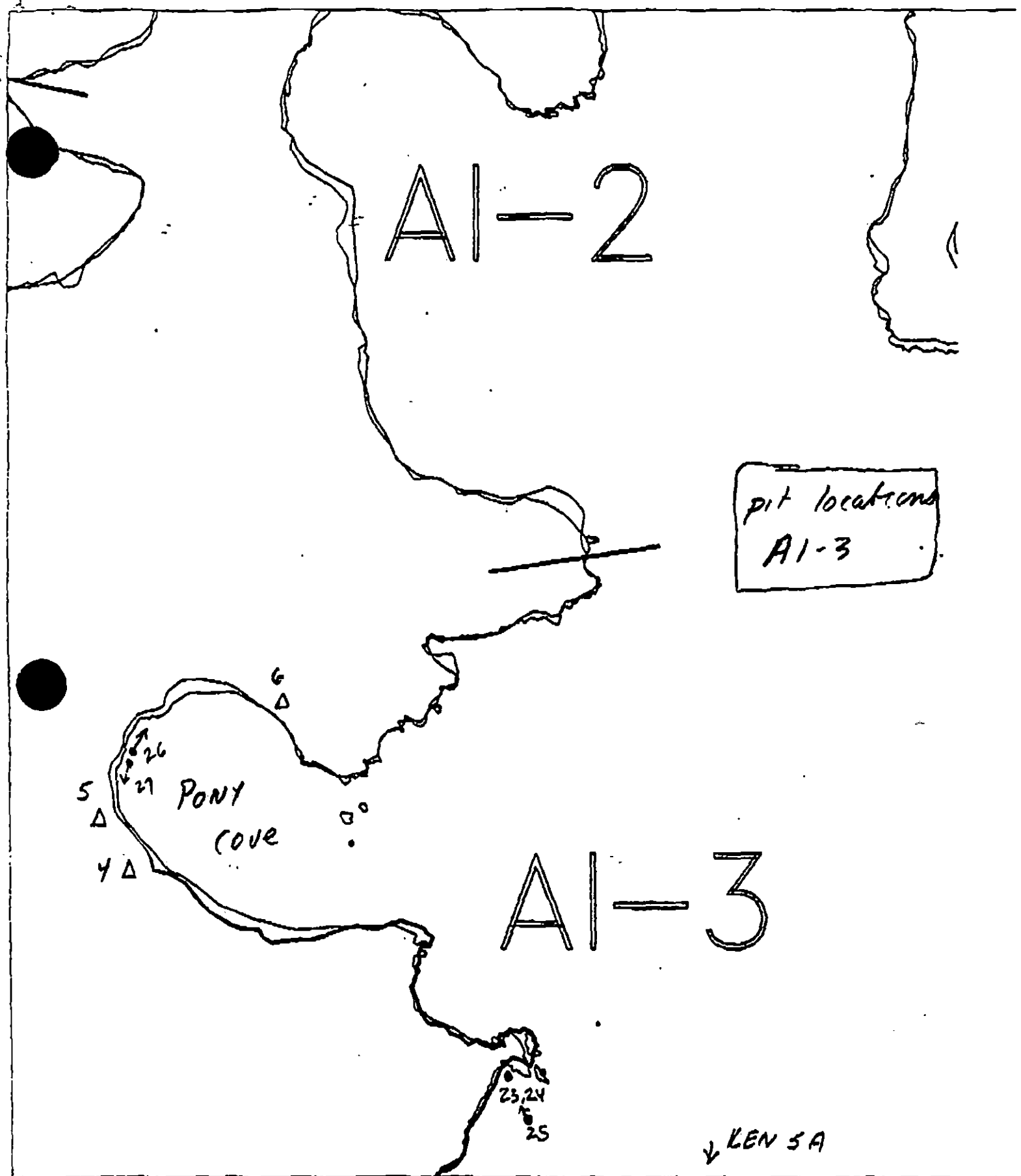
ADEC Segment Length: 10607m



Map Key: KEN-5a

Name: Mann

Date: 4/10/90



pit locations
AI-3

PONY
cove

AI-3

AI-14

↓ KEN 5A

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

ADEC Segment Length: 10607m



Map Key: KEN-5b
Name: Marr
Date: 4/10/90
Data Entered:

AI-2

Aitrahik
Aialih

Sensitive Sites

4/10/90

BALD EAGLE NEST

10-3m
potholes
c) CT, ST
broken
~30%
on small
boulders
in "b.o.
between 19
boulders
splatters
on boulders

weathered
ST/3 CT/3
A pit to 35cm
BC NO oil

washed
c) 10%
ST/3
under a volcanic
cones
went ashore
NO oil
2 pits to
~30cm
CPG no
submerged
oil

end
1040

AI-3

splatters of
CT+CV
cov. < 10%
2 KEN SA
20/5
~50cm² 4m thick

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

AI-14

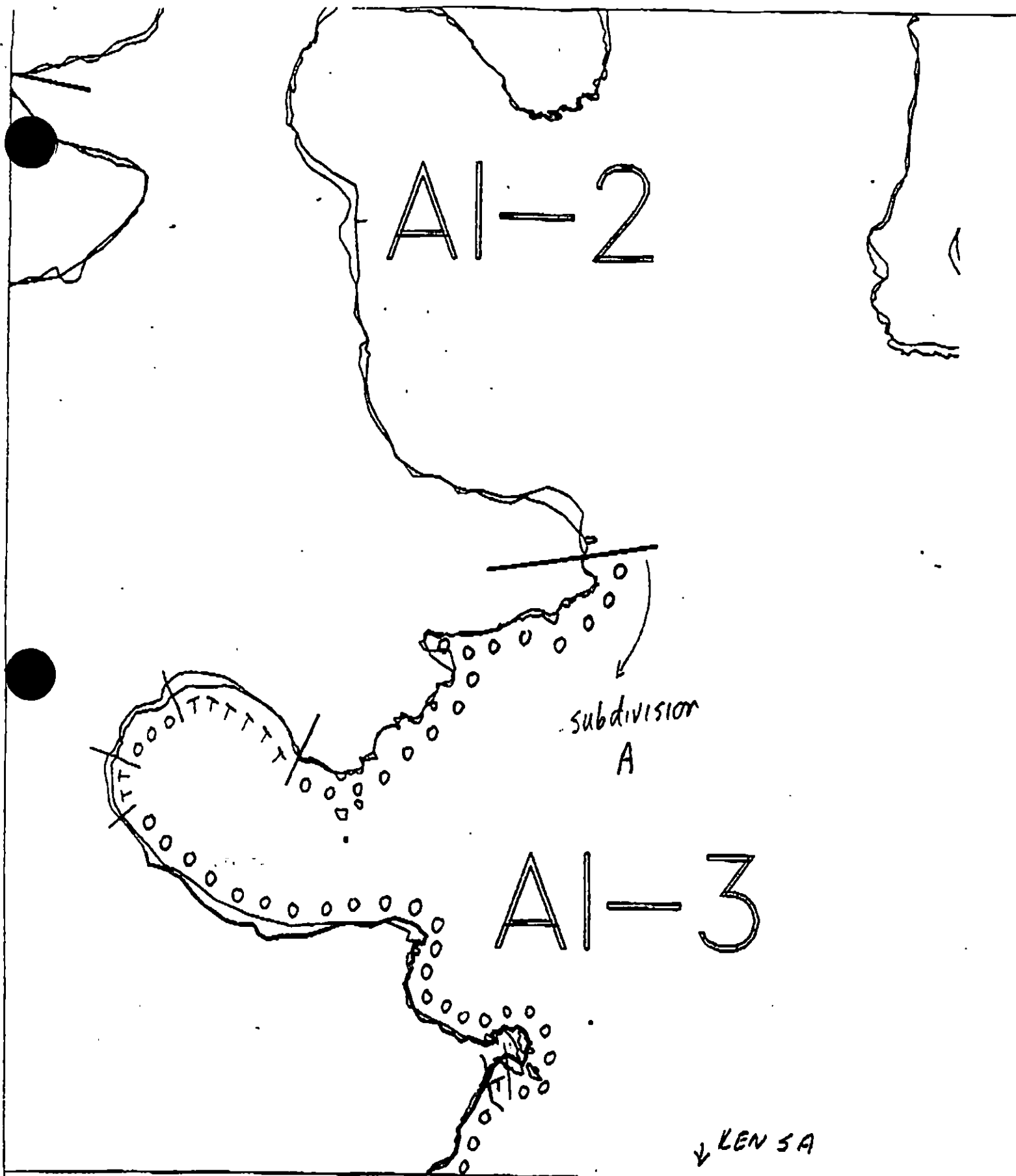
ADEC Segment Length: 10607m

0 500 1000

Map Key: KEN-56

Name: _____

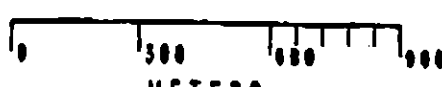
Date: _____



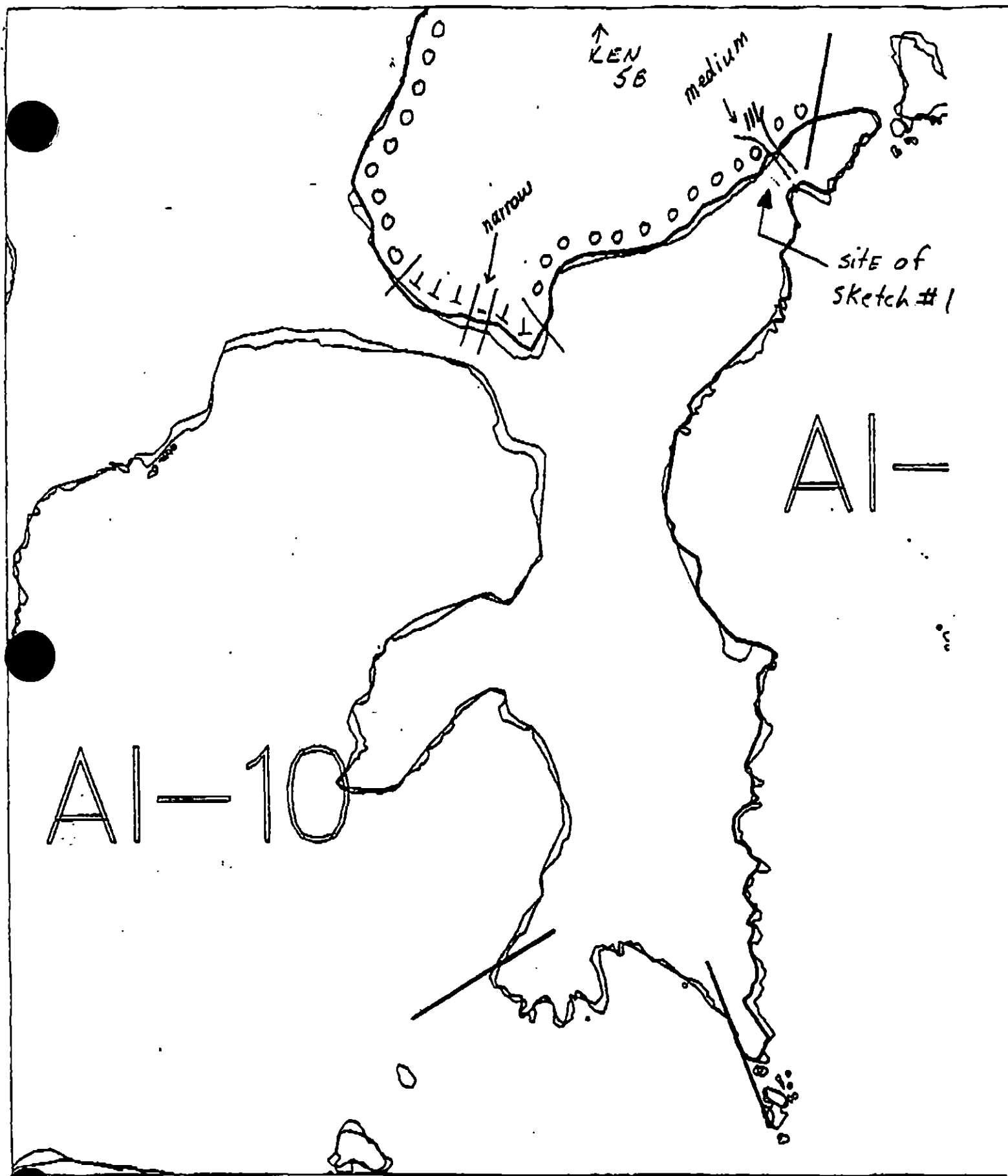
✓ KEN 5A

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

ADEC Segment Length: 10607m



Map Key: KEN-5b
Name: ALAN
Date: 4/10/90
Data Entered:



XXX Wide

//// Medium

--- Narrow

TTTT Very Light

AI-14

ADEC Segment Length: 10607m

0 1000 2000 3000

Map Key: KEN-5a

Name: Mann

Date: 4/10/90

REGION: KENAI

SEGMENT: ST/AI-014

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ AI-014 SUBDIVISION A (1 OF 1) DATE 4/10/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T All bald eagle nests (3/1 to 6/1) - Active eagle nests (3/1 to 9/1)
5R Seabird colony (5/1 to 9/1)
4LL National Park
6NN Recreation: Sport fishing
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 4771 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

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

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST AI-14 SUBDIVISION: A DATE 4/10/90

USCG / NOAA

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

There was no observable oil along this
very exposed, sheer cliff shoreline.

ADEC

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

No oil was observed. I have read and agree with all
data on S.S.A.T. Forms.

LAND MANAGER NPSNAME Michael Tetreau SIGNATURE Michael Tetreau☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

Good survey. No oil was observed along This high energy shoreline.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG Mann USCG NOAA Michel SEGMENT ST/ AI-14
 BIO Carr LAND REP Tetrapak NPS SUBDIVISION A
 EXXON Boyer ADEC Reed TIME 07:05 to 8:00
 TEAM NO.: 18 TIDE LEVEL: +5 to -1 DATE 10 Apr 1990
 EST. SUBDIVISION LENGTH: 5255 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☐ Foot ☒ Boat ☐ Helo WORKING DIRECTION: S to N
 SURFACE SEDIMENTS: R 95 % B 5 % C 0 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 1 % Hang 19 % Ven 80 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 0 m NO 5255 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	A	B	P	S	BR	FW	GY	BL	TR	LR	SU	U	M	U		
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT																
STAIN																
MOUSSE																
PATTIES																
TARBALLS																
FILM																
NO OIL																

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

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☐ YES ☒ NOTYPE NA#BAGS 0

Photographs:

Roll No. 18-6Frames (6-7)SUBSURFACE OIL No pits dug because of bedrock substrate and inaccessibility

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CH)	BELOW		OIL / FILM COLOR								PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	HO		UO	VO	BL	BR	GR	FW	GY	BL	TR	LR	SU	U	M	U		
0							.																
							.																
							.																
							.																
							.																
							.																
							.																

COMMENTS This segment consists of granite cliffs plunging into a high wave-energy sea. Occasional rockfalls have deposited very large boulders in gulleys. We were able to land at only 1 spot - see sketch site #1 on segment AI-3. We failed to find any oil on this segment.

OG Y Mann

SEGMENT AI-14

SUBDIVISION A

DATE 4 1 10 90

SKETCH MAP

CHECKLIST

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

No sketch.

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

Old Vegetation

1 ➡

Photo location, direction,
and number

Oil Character Length (m): AP 0 PO 0 CV 0 CT 0 ST 0 MS 0 PT 0 TB 0 FL 0 NO 5255

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST AI-14 Subdivision A (of A) Date (mo/day/yr) 4/10/90Time (24 hr) 0705 Biologist M. CARRSubstrate type and % of ^{SUBDIVISION} segments:
(1) Bedrock 95 (2) Boulder 5 (3) Cobble — (4) Pebble — (5) Sand — (6) Silt —(B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense 90 Moderate — 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. 6Frames 6-7

BARNACLES

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

NOT PRESENT

MYTILUS

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

NOT PRESENT

STROPODS

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

NOT PRESENT

FUCUS

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

NOT PRESENT

Wildlife Observations/ General Comments:

White-winged scoter (15) Harlequin duck (2) Glaucous-winged gull (50)
 Sea otter (1) Steller sea lion (3) oyster catcher (2)
 Commorants (5) pelagic Bald eagle (2) nest (1) immature

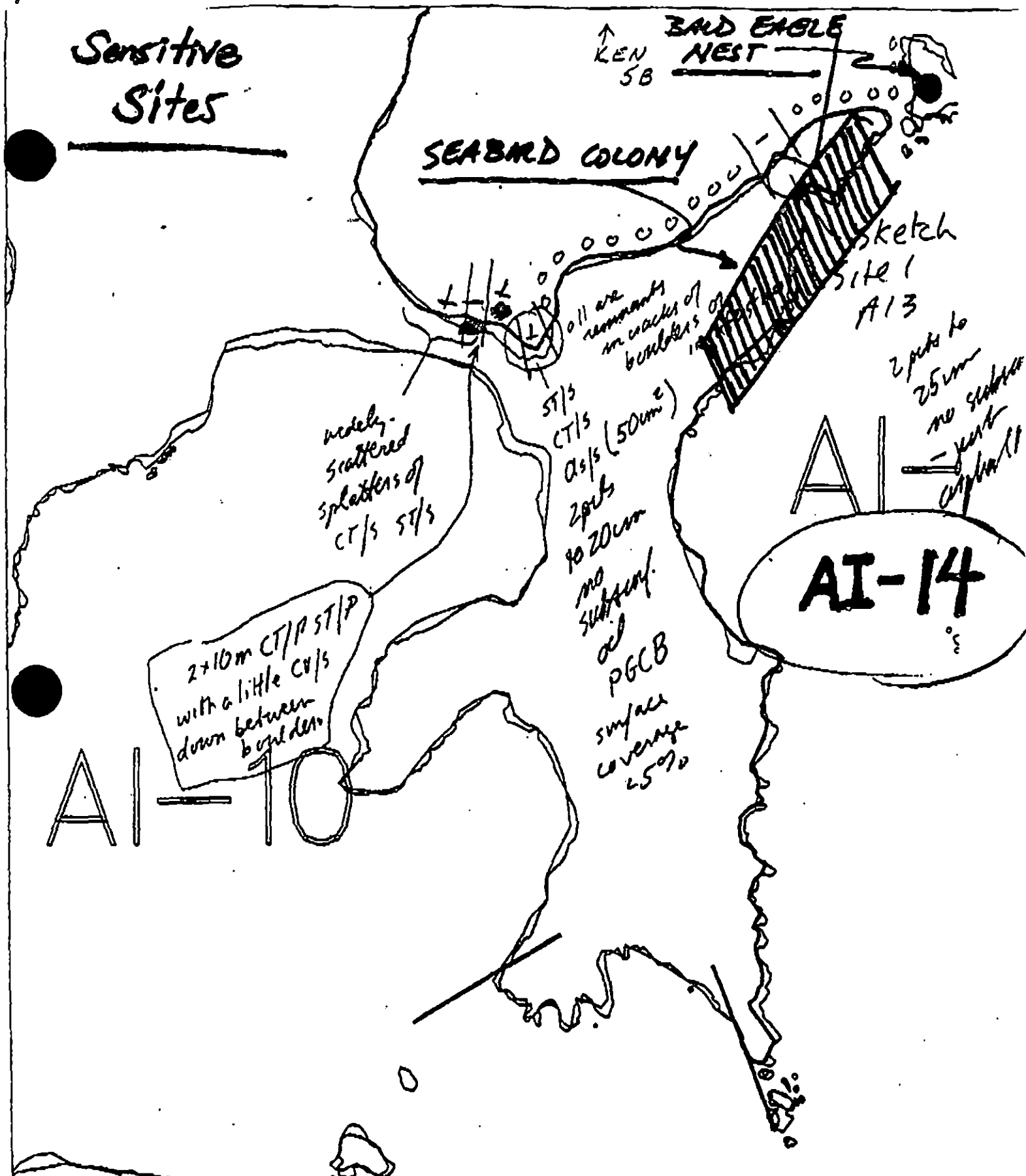
Ecological Considerations:

Sensitivity codes: 4-LL (National Park), 6-NN (Sportfishing), 5-T (Bald eagle nest),
 5-R (Seabird colony).

PWS ECOLOGICAL CONSTRAINTS

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

Sensitive Sites



XXXX Wide

/// Medium

---- Narrow

TTTT Very Light

0000 No Oil

AI-14

ADEC Segment Length: 10607m



Map Key: KEN-5a

Name: _____

Date: _____

Data Entered: _____

↑
KEN
5B

AI-

AI-10

AI-14

XXXX Wide

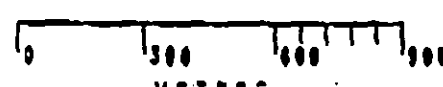
●// Medium

---- Narrow

TTTT Very Light

0000 No Oil

ADEC Segment Length: 10607m



Map Key: KEN-5a

Name: Mann

Date: 4/10/90

Not to Scale



SHORELINE EVALUATION

SEGMENT ST/ AI-014 SUBDIVISION A (1 OF 1) DATE 4/10/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
5R Seabird colony (5/1 to 9/1)
4LL National Park
6NN Recreation: Sport fishing
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: 4/23/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 4771 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

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

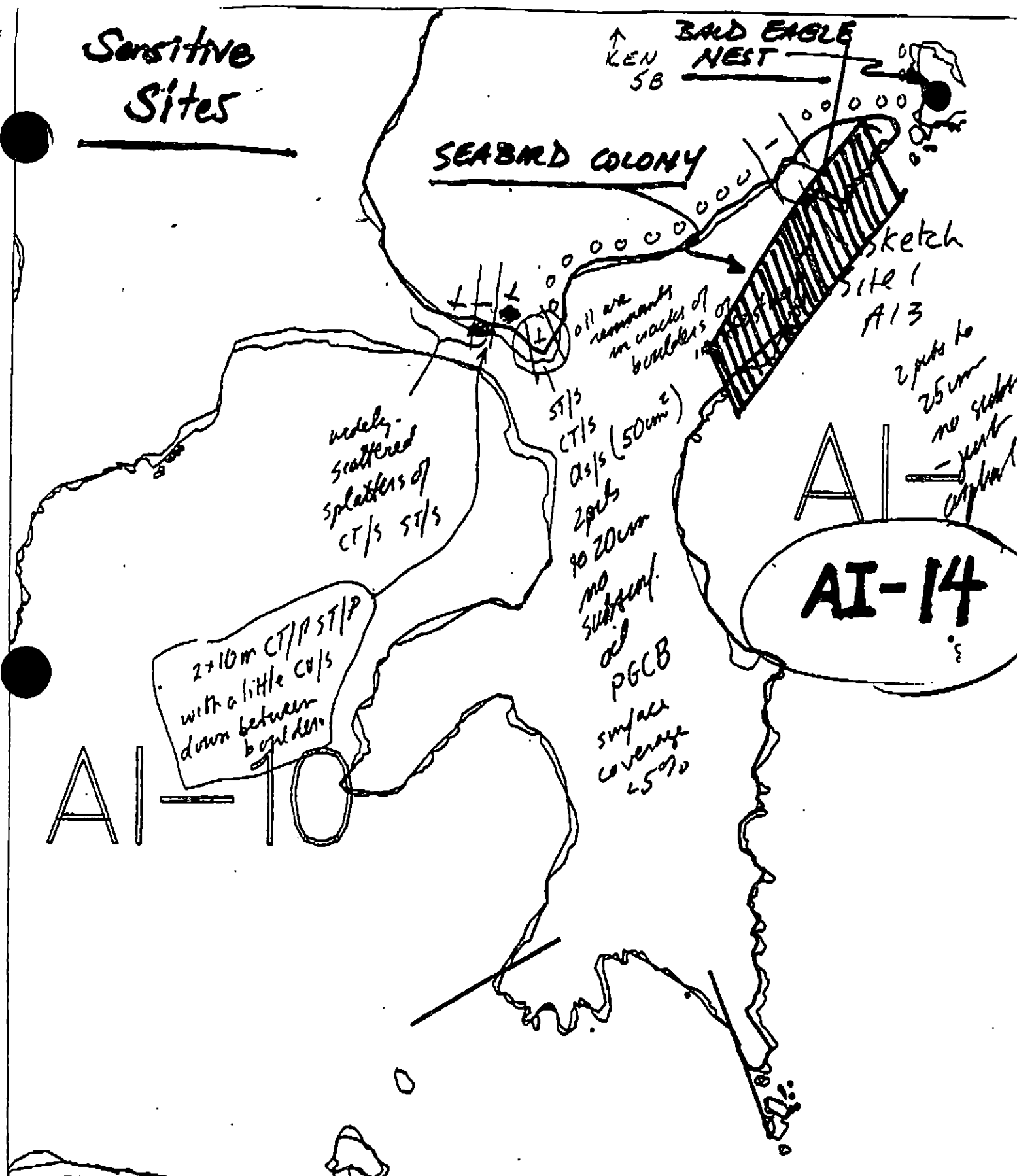
COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 4/21/90
ADEC AET WEINER Art Weiner
EXXON ANDY TGA [Signature]
NOAA Burt Wescott [Signature]
USCG KENNETH KEANE [Signature]

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

Sensitive Sites



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

AI-14

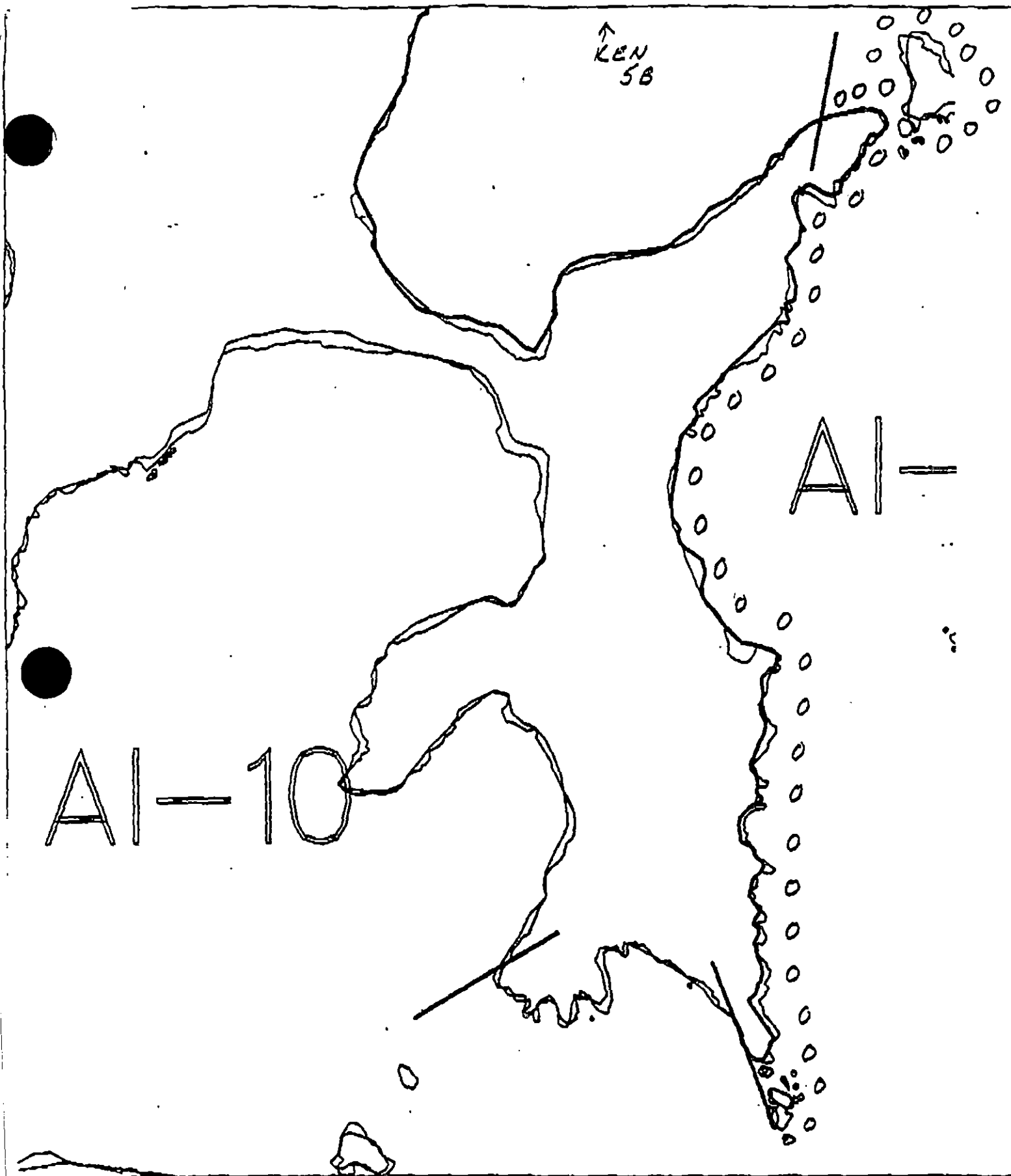
ADEC Segment Length: 10607m

Map Key: KEN-5a

Name: _____

Date: _____

Notes: _____



XXXX Wide

//// Medium

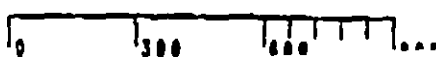
---- Narrow

TTTT Very Light

OOOO No

AI-14

ADEC Segment Length: 10607m



Map Key: KEN-5a

Name: Namr

Date: 4/10/90

REGION: KENAI

SEGMENT: ST/BB-901

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ BB-901 SUBDIVISION A (1 OF 1) DATE 4/26/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no's: 232-22-10145 (Ps, 2/90), 232-22-10140 (Ps, 2/90), 232-22-10130 (Ps, 2/90). NOTE: 2nd stream # is questionable.

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

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

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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 10166 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 Snare (pom poms)

_____ Absorbents (pads, rolls, etc)

_____ Spot Washing: _____ Wands

_____ Beach Cleaner

_____ Other (see comments)

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD, AND HOMER ECOLOGICAL CONSTRAINTS

✓1A
✓1B

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

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

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

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

1C

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

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

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

1D

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

1E

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

1F

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

1G

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

1H

Remote release site

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

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

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

1I

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

1J

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

1K

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

1L

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

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

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

2M

Herring spawning (4/1 to 6/15)

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

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

30, 3Q

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

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

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

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

ADF&G Don Calkins 267-2403

5R

Seabird colony (5/1 to 9/1)

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

5S

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

ADF&G Tom 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

Anchorage (6/1 to 9/15)

6W

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

6X

Lodge (6/1 to 9/15)

6Y

Special use destination

7Z

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

7HH

Finfish harvesting

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 / BB901 SUBDIVISION: A (ENTIRE SEGMENT) DATE 4/26/9

USCG
NAME Jerry Schultz SIGNATURE Jerry Schultz

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ADEC
NAME Mike Ebel SIGNATURE Michael Ebel

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

BB-901-A: This extensive low angle almost level, gravel beach that made up the formerly oiled part of segment was clean (including substrate) with the exception of one splash of coat on a rock and a single tar-ball that was retrieved. No further impact recommended.

LAND MANAGER

NAME Mike Tetreau NPS SIGNATURE Mike Tetreau

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

Good survey. One tarball and one small splash seen.
No oil observed where cleanup took place last year.
It appears That no treatment is necessary.

26/63

SHORELINE OILING SUMMARY

REVISION NO. 04/13/90

OG Randy Siegel USCG Jerry Schulte SEGMENT ST/ BB-901
 BIO Lewis Sherman LAND REP Mike Tetlow (WPA) SUBDIVISION A (1 OF 1)
 EXXON Leonard Herbst ADEC Mike Ebel TIME 07:30:00:45
 TEAM NO. 12 TIDE LEVEL -1.7' to -2.80' DATE 4 / 26 / 90
 EST. SUBDIVISION LENGTH: 9790 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: SW to NW
 SURFACE SEDIMENTS: R 5 % B 5 % C 10 % P 30 % G 30 % S 10 % M 9 % V 1 %
 SLOPE: Long 85 % Hang 10 % Vert 5 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 0 m NO 9790 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR				IMPACTED ZONES			
	C	B	P	R	1	2	3	4	SU	U	M	L
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 cmPATTIES / TARBALLS 0 BAGSNEAR SHORE SHEEN? NO BR RW SL TL

OILED DEBRIS	AMOUNT			DID YOU COLLECT DEBRIS?
	SM	MD	LG	
Logs				YES ☒ NO ☐
Vegetation				
Trash				
Debris				
				TYPE <u>F.B</u>
				#BAGS <u>1</u>

Photographs: NONERoll No. —Frames —

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	SHEEN (Y/N)	▼	SURFACE - SUBSURFACE SEDIMENTS	
		OP	OR	OL	OF	NO		UO	UC	1	2	3	4	5	6	SU	U	M	L					
1	34					X	0-0		X							X						-	-	S
2	30					X	0-0		X							X						N	10	G
3	30					X	0-0		X							X						N	10	G
4	30					X	0-0		X							X						N	15	G.S
5	25					X	0-0		X							X						N	15	G.S
6	34					X	0-0		X							X						N	20	G.S

COMMENTS

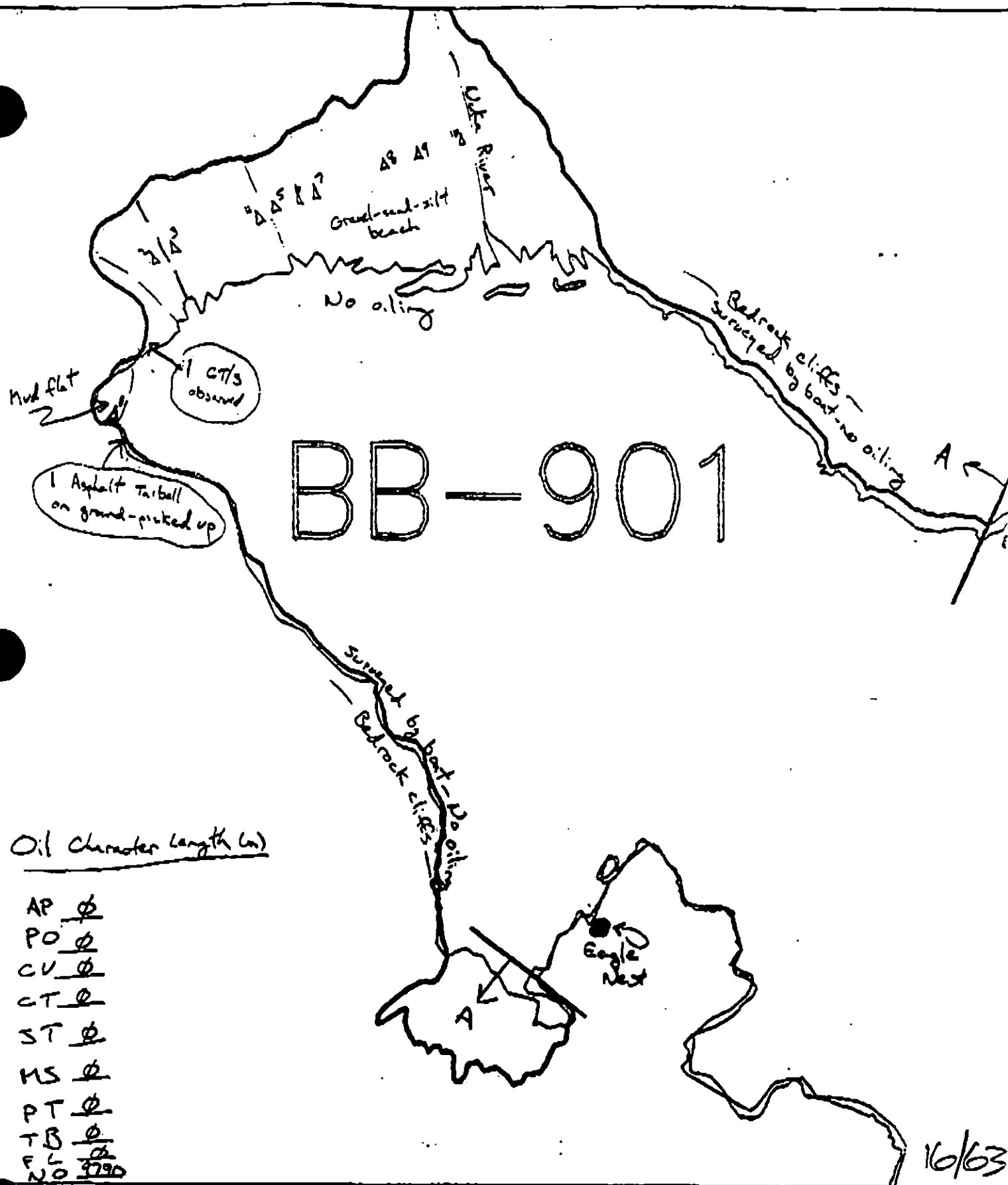
* No Exxon segment length provided in Table. Value shown was taken from Exxon database value shown on computer map.

Very long segment (almost 6 miles). consisting primarily of pebble-gravel beach interior along a large bay. Several streams cut through the beach, including the Nuka River. One splash of coat was found on a weathered rock for the entire segment. An asphalt tarball was also found and picked up. All sites were deoiled.

REVIEWED 7W DATE 4/27/90

11/1/2

REVIEWED _____ DATE _____



XXXX Wide

//// Medium

--- Narrow

TTTT "

BB-901

Approx. Segment Length: 9790m

Approx. Scale

Map Key: KEN-BB-901a

Name: Andy Siegel

Date: 4/26/90

SHORELINE ECOLOGICAL SUMMARY (Page 1 of 3)

Segment ST / BB901 Subdivision A Date (mo / day / yr) 4/26/90

Time (24 hr) 0730-1000 Biologist SHARMAN

- (A) Substrate type and % of segments: SUBDIV
 (1) Bedrock 5 (2) Boulder 5 (3) Cobble 10 (4) Pebble 30 (5) Sand 40 (6) Silt 10 ^{+ gravel} ^{+ mud}
- (B) Overall % cover of biota (% of segment): Dense SUBDIV Moderate Low X
- (C) Density, substrate preference (by number from A, above), & vertical zonation of major taxa: (upper-U; mid-M; low tidal-L); juveniles / adults (X), new settlement (3)
 Photographs:
 Roll No.
 Frames

BARNACLES

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	2	2	2	2	2
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 (ALICELLA, LITTORINA, LIMAEAE)

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: 40 pairs Barnonia goldenrover, 50 pairs glaucous-winged gulls, 20 pairs heron-like ducks, 1 Canada goose, 2 mottled ducks, 1 pair of thunders in forest, 1 oystercatcher, 4 pairs surf scoters, 6 crows, 5 pairs common mergansers, 4 pairs Canada geese. Red squirrel in forest. 3 sets river otter tracks in UTE forest. 1 harbor seal in water, 3 seals hauled out on rock just N. of Slater Cove entrance, W. side. (cont.)

Ecological Considerations:

We received no information regarding resource sensitivities for this segment. There is a presently inactive eagle nest just beyond the S. segment boundary (see map). Also see attached map for general location of anadromous streams at the head of the bay, along with information gleaned from a recent report to N.P.S. by Milner. This segment cannot benefit biotically from further human intrusion/physical disturbance.

22/63

BB901

Shoreline Ecological Summary (cont.)
(Page 2 of 3)Shorman
4/26/90General Comments (cont.):

Several tabs of pan ice floating & stranded in intertidal zone - probably carried down Nuka River (?). 1 sea otter hauled out on floating ice tab. Several sets moose tracks in UTE sandy outwash at head of bay. 3 moose browsing 1/4 mi. up Nuka R. on bank - 1 cow & 2 yearlings (all 3 are skinny). 1 mink in intertidal zone, foraging. 3 ravens. Local area shows subsidence from '64 earthquake, evidenced by dead trees along shoreline - very extensive at head of bay. Some Protolaea, Capidomus, Mya, Macoma, Chione shells in finer-sediment outwash areas at & near head of bay. This appears to be a perfectly healthy & normal group of intertidal communities. A very rich LTE in the bare areas of bedrock & large boulders away from the outwash, & normally depauperate biota occupying the fine-grained unstable outwash substrate. Some sparse & discontinuous edgewise patches in the shallow subtidal, often with occasional Pyrosoma.

23/63

another branch
of Naha R.?

232-22-10135

or
232-22-10140?
sm. run of pink
salmon 1989

Naha
River
(anadromous)

ADF & G # 232-22-10130

- chem fry collected in Naha R.
Saturday 1989

- run of pink salmon 1989

232-22-10130

232-22-10145

Ferrum Cr. (?)

- uncatagorized
- chem fry recently collected in Ferrum Cr. Saturday 1989
- small run of pink salmon 1989

232-22-10140

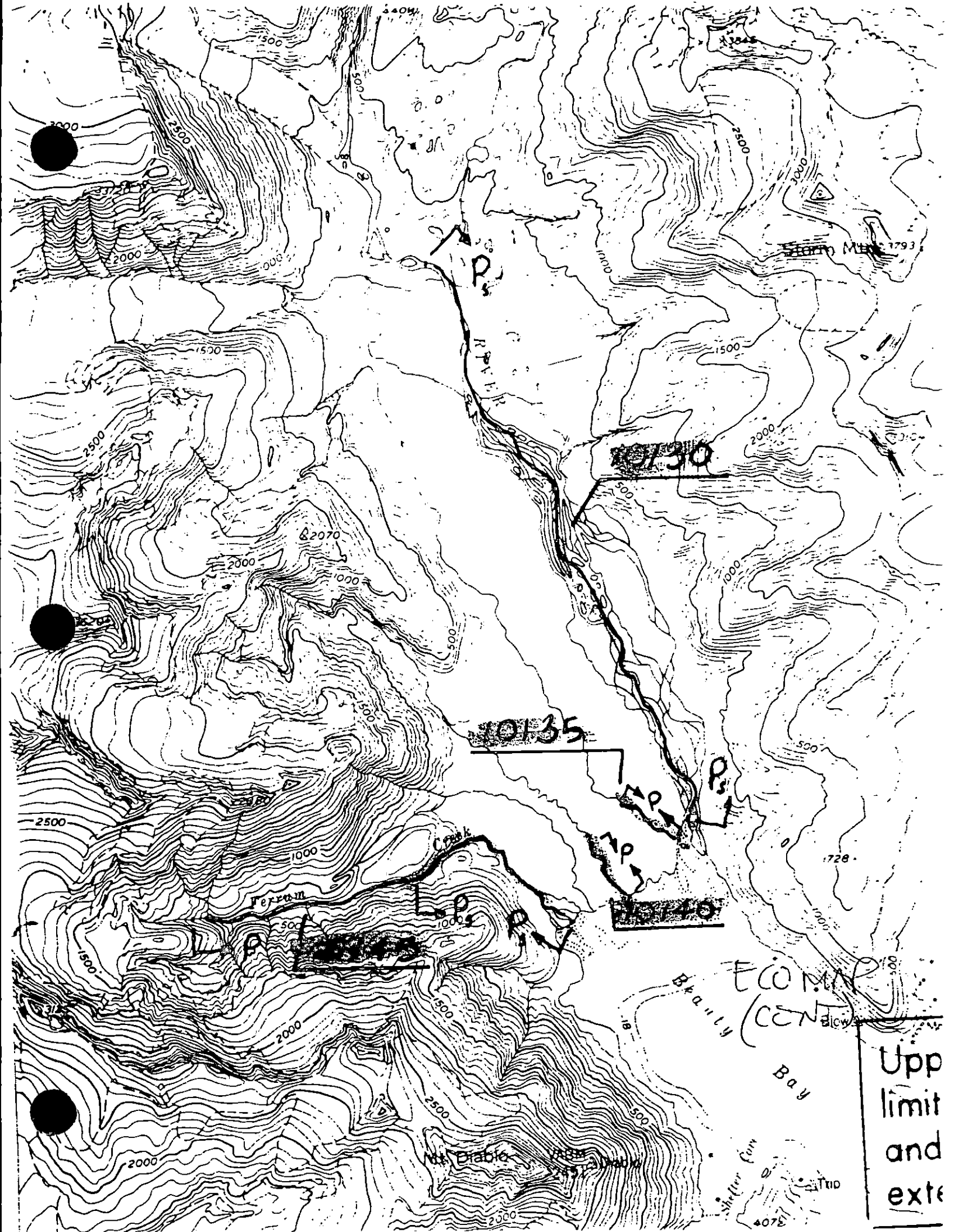
BB-901

(Page 3 of 3)

Bald Eagle Nest
(presumably inactive)

Shelta
Cove

24/63



TO MAP
(CONT)

Upp
limit
and
exte

APR-26-1990 21:23 FROM AURIGH
APR-26-1990 06:36 FROM EXXON

TO
TO

EXXON SCAT P.11
AURIGH P.07

A

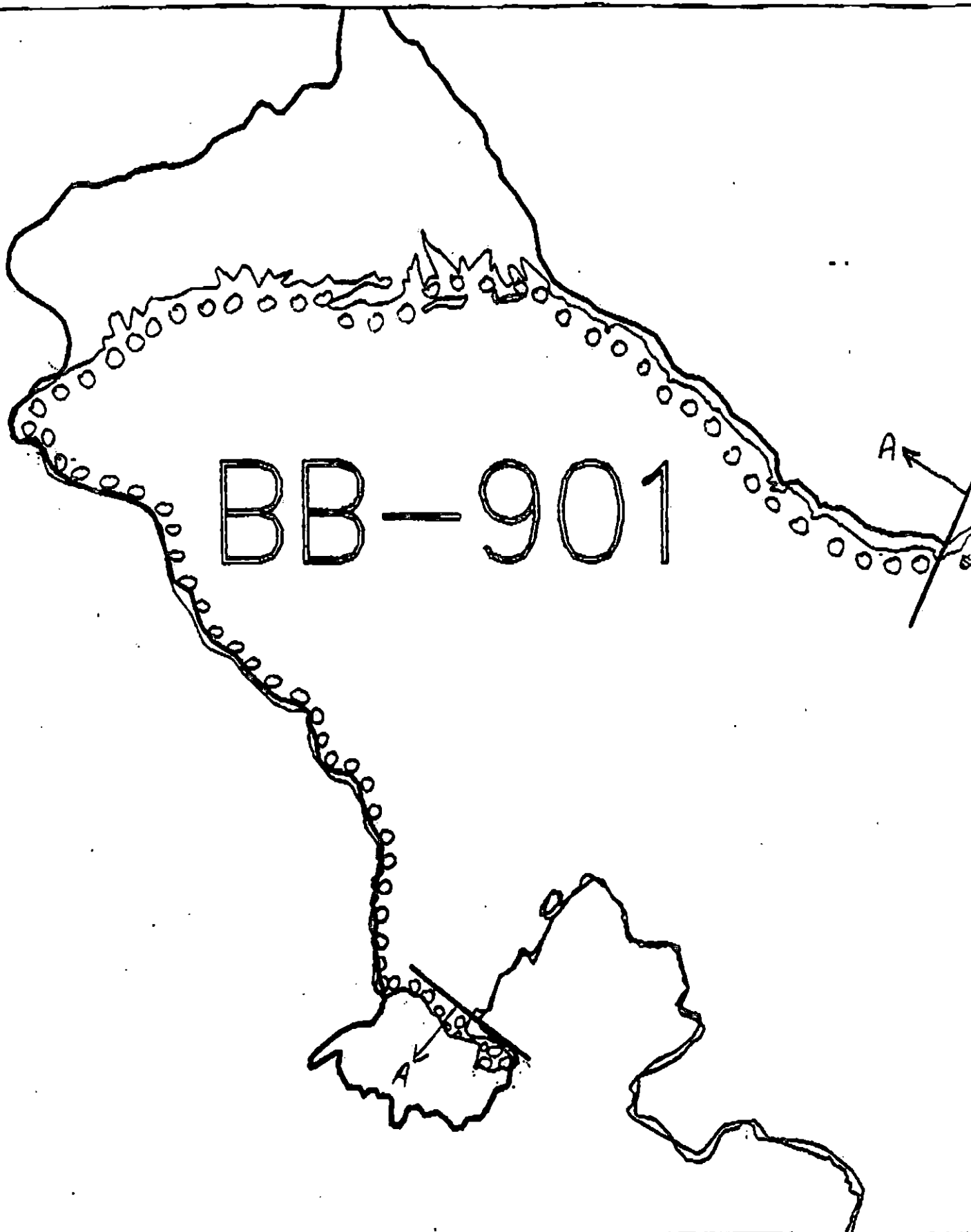
18/63

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

BB-901

Approx. Segment Length: 9700m

Map Key: KEN-BB-901c
Name: Randy Siegel
at 1900



XXXX Wide

//// Medium

--- Narrow

TTTT

BB-901

Approx. Segment Length: 9790m

Map Key: KEN-BB-901a

Name: Barry Siegel

Date: 4/2/90

SHORELINE EVALUATION

SEGMENT ST/ BB-901 SUBDIVISION A (1 OF 1) DATE 4/26/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no's: 232-22-10145 (Ps, 2/90), 232-22-10140 (Ps, 2/90), 232-22-10130 (Ps, 2/90). NOTE: 2nd stream # is questionable.

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

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

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: L. David M. Mahan DATE: 5/8/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 10166 m

Subsurface Oil Observed: Yes No ☒ 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:_____

AG APPROVAL DATE: 5/7/90

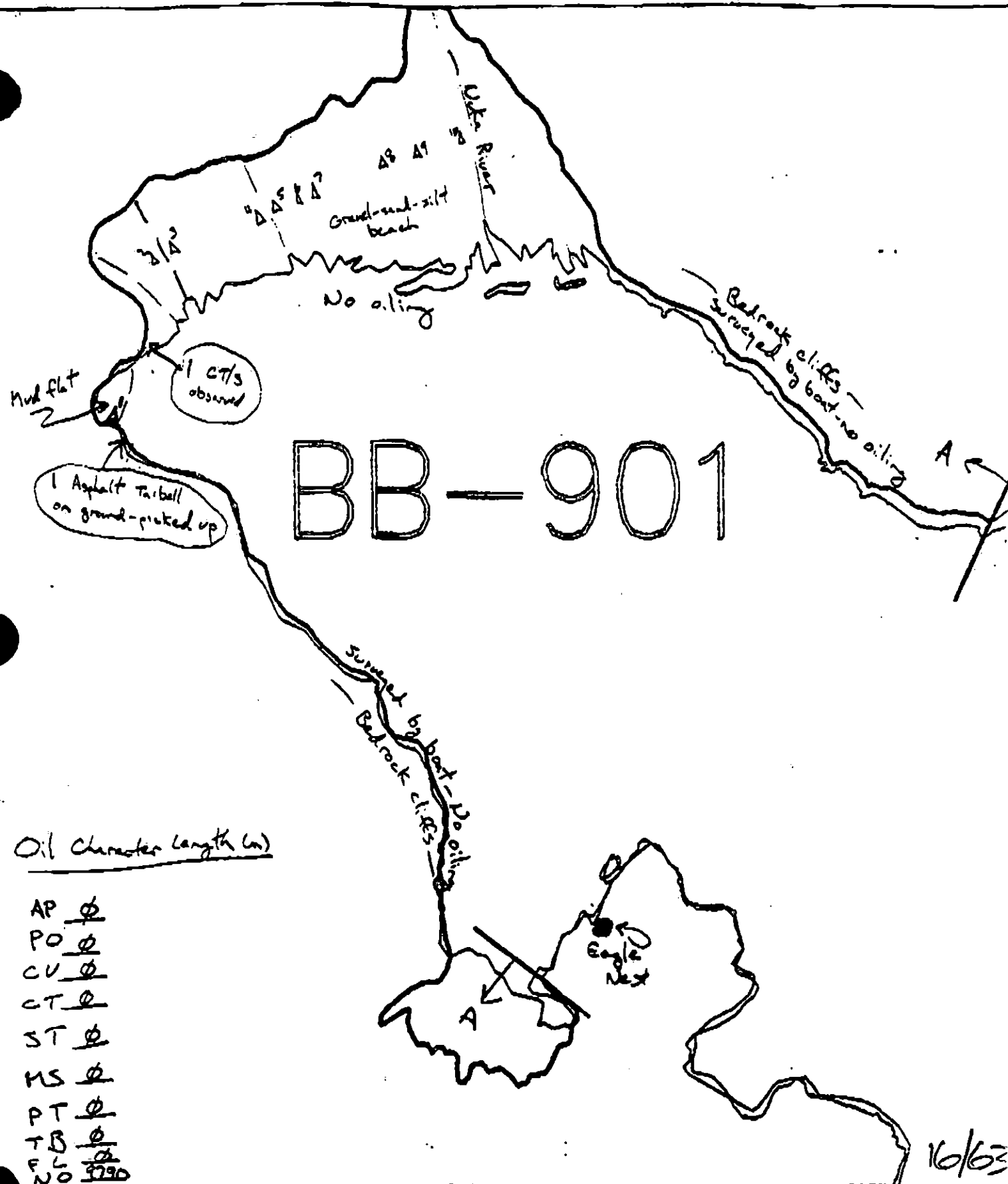
ADDEC ART WEINER Art Wein

EXXON Amoy TGAZ Real

NOAA Coastal Petrel Coastal Petrel

FOSC: 10/1 DATE: 10/1

USCG G.A. REITER G.A. Reiter



Oil Character Length (m)

AP ϕ
 PO ϕ
 CV ϕ
 CT ϕ
 ST ϕ
 HS ϕ
 PT ϕ
 TB ϕ
 FL ϕ
 NO 9790

XXXX Wide

//// Medium

--- Narrow

TTT

BB-901

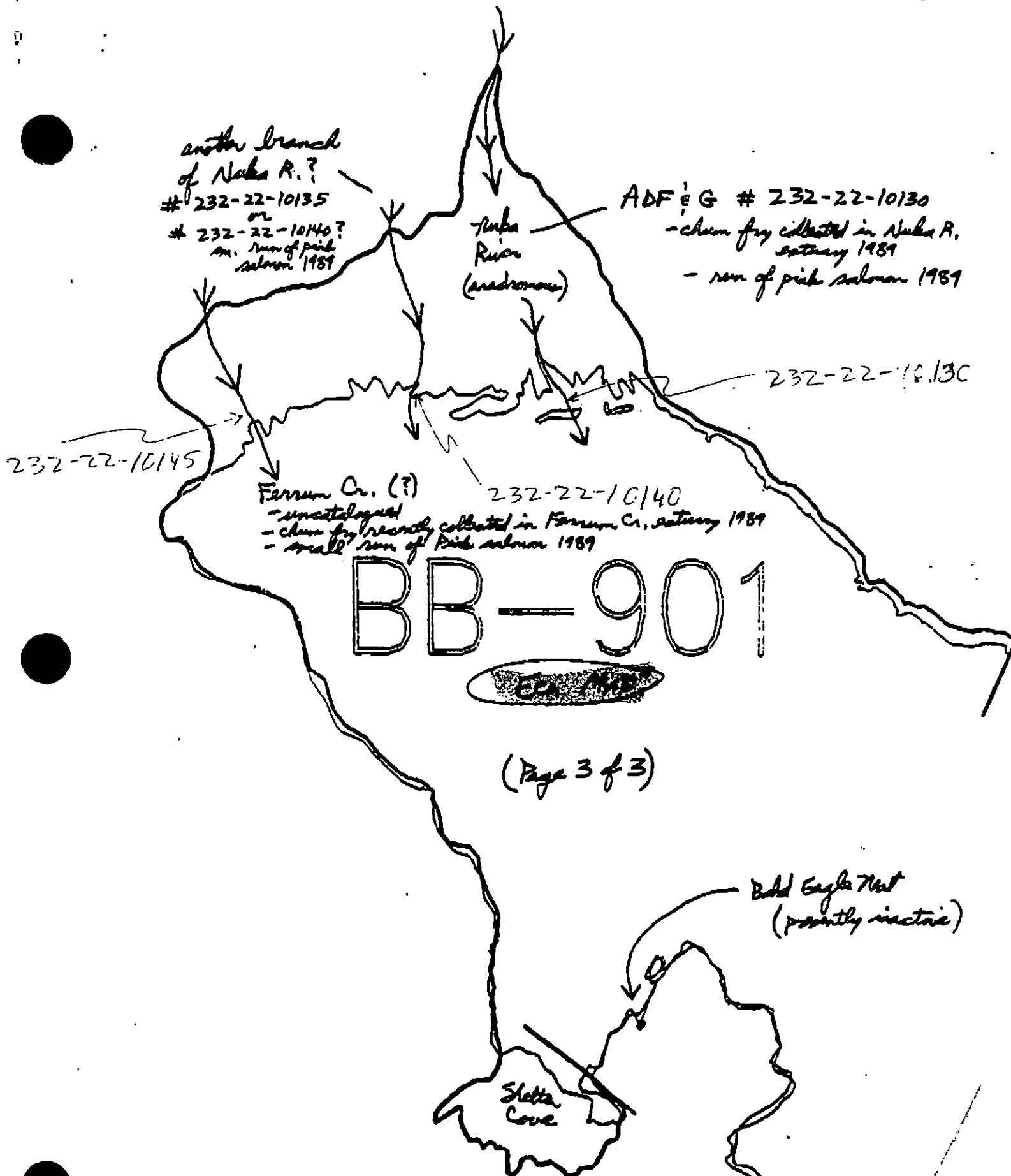
Approx. Segment Length: 9790m

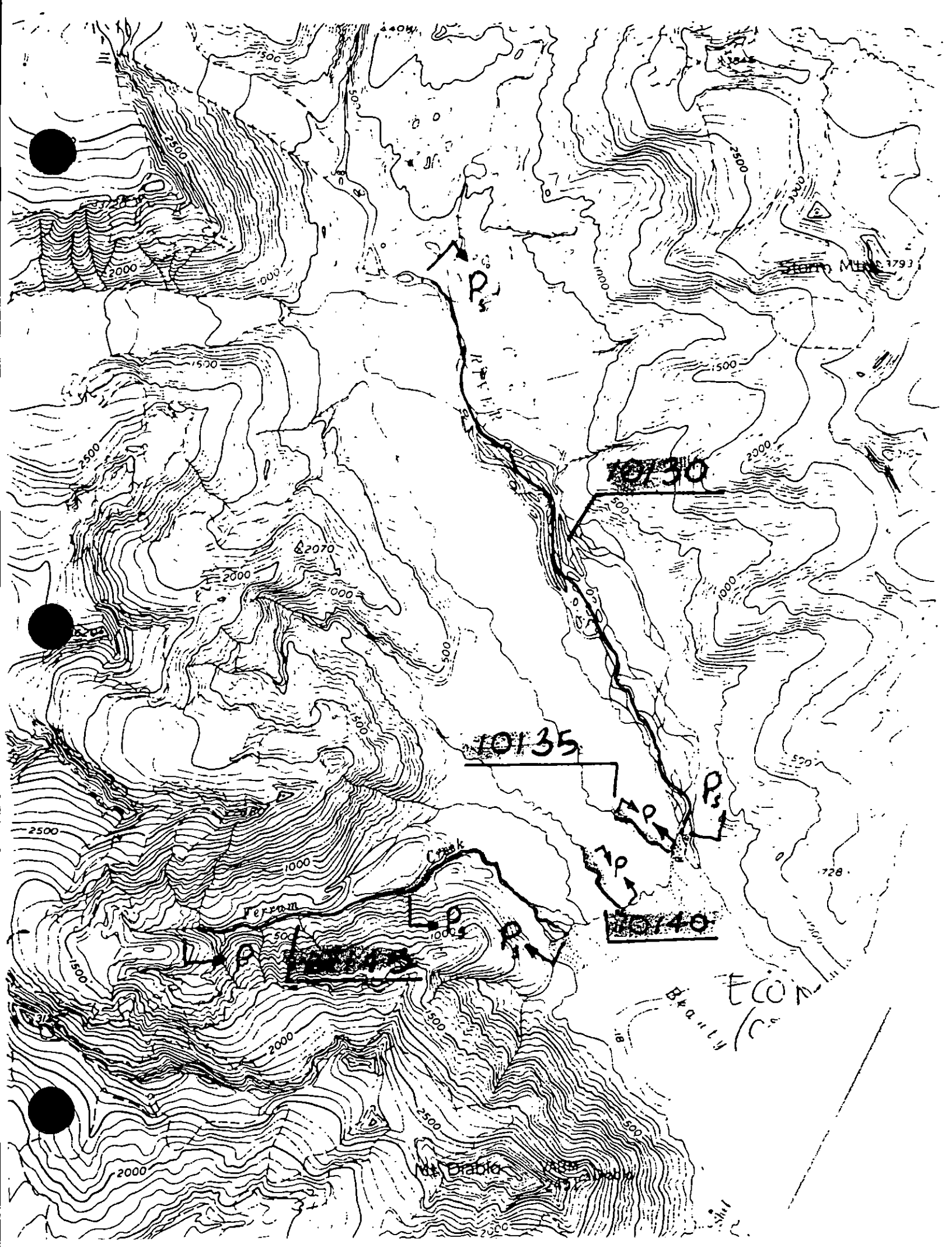
Approx. Scale

Map Key: KEN-BB-9010

Name: Andy Siegel

Date: 4/26/90





APR-26-1990 21:23 FROM AURIGH
APR-26-1990 06:36 FROM EXXON

TO
TO

EXXON SCAT P.11
AURIGH P.07

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

BB-901

Approx. Segment Length: 9790m

No.
Name

APR-26-1990 21:28 FROM AURIGA
APR-25-1990 16:04 FROM SCAT CENTRAL

TO
TO

EXXON SCAT P.10
AURIGA P.02

BB-901

A

A

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

BB-901

Approx. Segment Length: 9790m

Map Key: KEN-BB-901a

Name: Edy Diesel

Date: 04-1-90

REGION: KENAI

SEGMENT: ST/BC-02

SUBDIVISIONS: A (1 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ BC-002 SUBDIVISION A (1 OF 2) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

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

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

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

4GA State wilderness park

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

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid 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 227 m: Narrow 262 m: V.Light 89 m: No Oil 53 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 25+ cm

RECOMMENDATIONS:

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

COMMENTS: Recommend treatment includes 1) manual pick up of mousse patties and tar balls. 2) Manual pick up of oiled debris and logs if more than 10% coverage. 3) Bioremediation of areas shown on attached map. Work should be conducted between 7/1 and 7/10 based on above harbor seal and salmon constraints unless otherwise authorized by ADF&G and USFWS.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ BC-2 SUBDIVISION: A DATE 4-1-92**SCG**NAME R. BRYAN HIRTLE^{DCI} SIGNATURE R. Bryan Hirtle☐ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

I agree with the findings of the
Shoreline Oiling Summary form

ADECNAME Russell Kurihe SIGNATURE Russell Kurihe☐ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

Comments Attached

LAND MANAGERNAME Roger L. McCampbell SIGNATURE Roger L. McCampbell☐ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

Comment attached.

Segment: BC-2 Subdivision: A Date: 4/1/90

ADEC

Name: Russell Kunibe

Signature

Russell Kunibe 4/1/90 1 of 2

Area Discription:

The area had oil stain and coat on the bedrock and boulders in a patchy distribution in the UITZ over most of the subdivision. There was an area at the east end of the subdivision 10 M. X 30 M. with asphalt between the boulders up to 5 cm. thick. The adjacent 25 M. X 30 M. gravel area had oil penetration to over 35cm. with a patchy brown oil film (two pits were dug).

There was mousse and soft asphalt (mousse saturated sediments) in a splashy distribution in the boulder cobble area at the base of the large gravel area at the west end of the segment.

On the first large (50 M. X 150 M.) gravel area at the west end of beach segment BC-2 there is evidence for a possible buried lens of anaerobic oil.

The hole which the SSAT team dug in the gravel began to cave in at 35 cm. below the surface, which was below the level of the ground water. When the shovel was pushed below the ground water and gravel to a approximate depth of 50 cm the shovel came up with a dark brown mousse that saturated the pores of the gravel. The layer was at least 8 cm. thick in some areas as evidenced by the thickest chunk of mousse which was shoveled up. 5 holes were dug in a 4 square meter area and mousse saturated sediments were pulled out of 4 of these holes. 4 holes were dug outside of this area with no oil found.

Recomended treatment:

Because we were finding a definite subsurface, anaerobic layer of mousse which was not weathering at the limit of how deep we could dig, there is a possibility that the sub-surface lens of oil is more extensive then that found. The raw data from the ADEC fall beach survey would support this contention. It is my feeling that this beach should be looked at later in the spring when the ground water level is lower and a determination of the size of the buried lens of oil could be made. This should be followed by a determination of the appropriate treatment method required to remove this oil.

Manual pick up methods should be used to pick up all asphalt and mousse patties in this segment. This includes the biologically rich boulder field below the gravel beach at the west end of the segment. The mousse and soft asphalt (mousse saturated sediments) were confined to the upper MITZ and lower HITZ and especially the 8M. X 8M. area described in the report.

The gravel areas at the top of the narrow shoots with deep

penetration of oil could be tilled with shovels and bioremediated with granular fertilizer. Rototilling with the application of granular fertilizer would be appropriate for the 25 M. X 30 M. gravel area at the east end of the segment.

Revised
4/1/90

ADNR LAND MANAGER SSAT COMMENTS
HOMER BEACH SEGMENT BC-2
TREATMENT RECOMMENDED

This segment is within Kachemak Bay State Wilderness Park. It is suspected as being a pinniped haulout and possible seal pupping area.

At first glance this segment would not appear to have significant oiling. The oil stained or coated rocks are not noticable to the untrained eye. However with warmer temperatures and closer inspection this would change. This first SSAT of this area was disorganized and I don't feel the report indicates the true extent or degree of oiling though for the most part it is complete. The biological report is complete and accurate as far as I can ascertain.

This area will need to be reassessed at a later date. The sketch map is not an accurate representation of what I observed or remember. It is obvious we will need to work better together as a team.

Follow the sketch map, note section A. The narrow gorges had up to 80% oil coating on both sides from the MITZ to the HITZ. Some sheens were noted in small pools with a small amount of saturated gravels under large rocks. Most of this area would not be workable nor are there significant amounts of oil to be recovered or treated here. However, in the splash zone at the storm berm, test pits revealed saturated gravel beach material at a depth of 10 cm. The surface was noted to have stains, indicating that the area had been 'worked'. The subsurface gravels were saturated. This area could easily be turned over by a crew with shovels to expose the saturated subsurface sediments to wave action. In addition granular fertilizer may be indicated.

on mmr? had 3/31/88

A subsurface significant lens of oil may exist in the sandy beach area. Russell Kunibe and I dug four test pits in a four meter square area. Each pit found ground water at 12 inches and then the holes would start to collapse.

However, at 18 to 24 inches, which is as far as we could dig in the sandy beach, the shovel would bring up brown moussey nearly pure looking oil. It appeared that the oil lens would be several centimeters thick. We dug these test pits in the lower end of the sandy beach along the northern edge. Towards the south the beach sloped upwards and was covered with larger gravel. These test pits are not indicated between sections B and D on the sketch map.

Below the above described area, in the LITZ, we found sheens. Further investigation revealed brown coppery mousse below and under the cobble rocks and on bottom of tide pools. Disturbance of this oil caused significant sheening, with brown oil collecting on the surface of the sheen in thin layers. Mike Faucet, SSAT biologist, noted that this area had been worked by recent storm tides indicated by turned over rocks. He also indicated it was rich in intertidal life. However he advised not to collect limpets for consumption. This area can be worked fairly easily under the supervision of someone with a trained eye for the oil. Very little, if any, significant disturbance would occur to the LITZ life.

Anybody using this area for subsistence or recreational collection would run the risk of contamination.

The other area of significance is at the eastern end of subdivision A in section E. This area has saturated gravels with a tarry consistency. Gravels in storm berm should be turned over and exposed, some saturated gravels should be removed.

D. L. L. L. L.

Subdivision B found little recoverable oil. A small amount of saturated sands and gravels could be recovered under the rock faces at the South end of this beach.

This beach contained a substantial amount of drift logs, all were clean of oil except a few small pieces of driftwood of little significance.

On the Isthmus-grass and snag covered upland area between sub. A and B (helo LZ and ADEC transect site) I noted that foot traffic from last year had noticeably trampled the grass/vegetation. (beach rye grass). In addition a possible culturally modified tree was noted as well as an old snag (standing dead tree) which may have been culturally modified.

A pair of Bald Eagles was noted as indicated by size difference and both had adult coloration.

Several land otter tracks were noted on beach sub. B.

With manual removal there should be approximately a dozen or more bags of oil and oily material to collect.

As discussed, the saturated subsurface lens should be resurveyed at a later date. However, if remaining it should be removed or exposed by whatever means.

RJ MacLamb 3/21/92

SHORELINE OILING SUMMARY

REVISION NO. 01/22/90

OG Randy Siegel USCG Bryan Hirtle SEGMENT ST/ BC-2 (1-63)
 BIO Mike Fawcett LAND REP Roger McCampbell SUBDIVISION A (4 subdivisions)
 EXXON John Dean ADEC Russell Kunitz DNR TIME 8:00 10 14:00
 TEAM NO.: 17 TIDE LEVEL: 0.0 to +7.2 DATE 3 / 30 / 90
 EST. SUBDIVISION LENGTH: 750 m GOO ☒ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: SW to NE
 SURFACE SEDIMENTS: R 40 % B 30 % C 20 % P 5 % G 5 % S 0 % M 0 % V 0 %
 SLOPE: Long 30 % Hang 20 % Vert 0 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 15 m M 150 m N 235 m VL 100 m NO 50 m NO 2

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	IC	IB	IP	IS	SB	DB	GB	GB	GB	GB	GB	GB	SU	UI	MI	U
ASPHALT PAVEMENT		X				X								X		
POOLED				X									X	X		
COVER		X	✓	+		X	✓						X	✓		
COAT		X	✓	+		X	✓			+			X	✓	+	
STAIN		X	✓	+		X	✓			+			X	✓	+	
MOUSSE				X									X	X		
PATTIES				X									X	X		
TARBALLS				X									X	X		
FILM				X	X	X	X						X			
NO OIL																X

PAVEMENT: H (F) S 3 sq. m by 2 cmPATTIES / TARBALLS 30 BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

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

DEBRIS COLLECTED

☒ YES ☒ NOTYPE 5-10-15#BAGS 3

Photographs:

Roll No. ST-17-1ST-17-2Frames 27-371-14

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm)	BELOW		OIL / FILM COLOR								PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	SB	DB	GB	GB	GB	GB	GB	GB	SU	UI	MI	U		
1	20	X					15 - 20	X										X	X			X	P.G. Post
2	25	X	X				15 - 20	X										X	X				G
3	25	X					20 - 25	X										X	X				G
4	25					X	0 - 0		X									X					G
5	30					X	0 - 0		X									X					G
6	50					X	0 - 0		X									X					G

COMMENTS

* Film frequently observed on surface of intertidal water. Color varied with location.
 This subdivision was comprised largely of bedrock and large boulders extending into the water. A number of surge channels extended inland, incising beach. The pebbles and gravel sediments within these channels often had mousse patties/tarballs and ~~some~~ subsurface mousse layers. Boulders frequently coated with 10-40% distribution. No map was available in field - I hand-drew it in field. Channels often steep - difficult access at times. Shallow groundwater (<0.5 meters) and bedrock. No access to first 200 meters of ...
 REVIEWED BAT DATE 10/10/90

REVISION 01.11.90

SUBSURFACE OIL (CONTINUED)

[illegible]

COMMENTS

REVIEWED JAT DATE 11/29/0

OG Rail
 SEGMENT ST/BC-2
 SUBDIVISION A

DATE 3/30/90

CHECKLIST

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

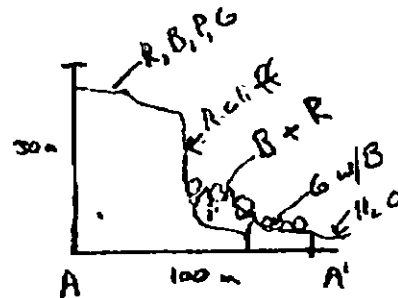
LEGEND

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

100 m
 Approximate
 Scale

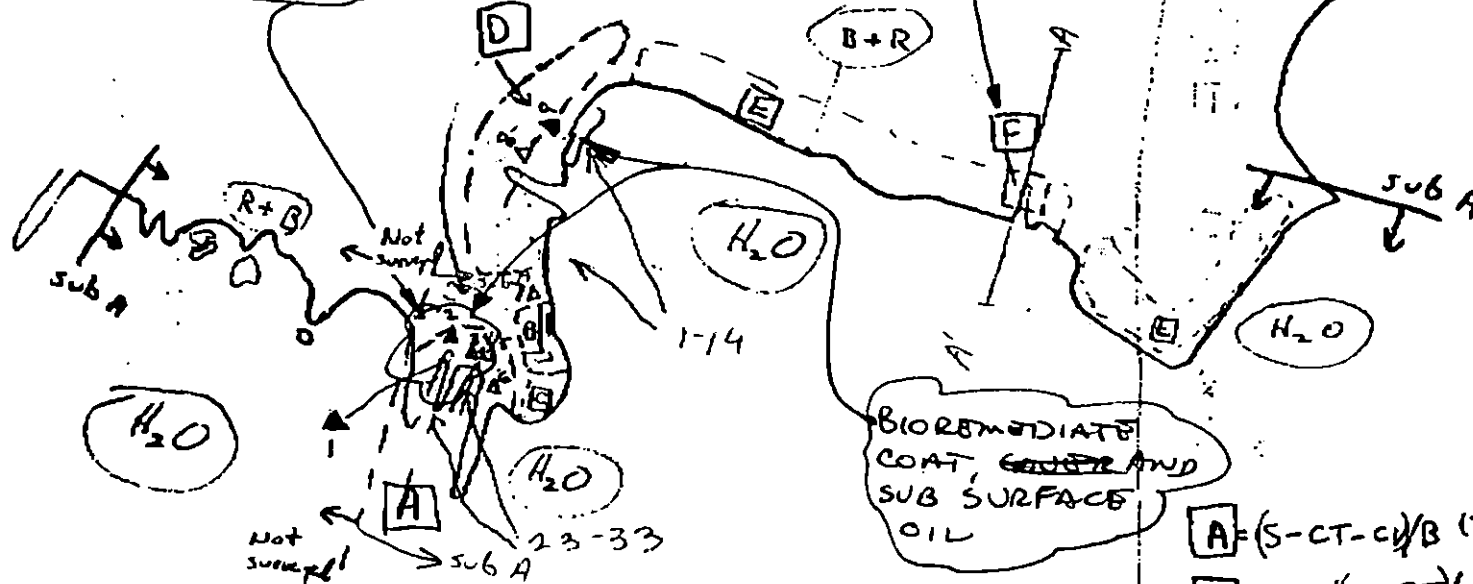


ETCH MAP



1 Δ P: 1/100
 2 Δ P: 1/100

TAR MAT REMOVAL
 MANUAL PICK-UP
 MOUSSE, TAR BALLS PATRIES
 & OILED DEBRIS



Photos:

ST-17-1, frames 23-37
 ST-17-2, frames 1-14
 M. Fawcett

- $\boxed{D}$ (ST-CT)/P - from <10% to
 observed on boulders,
 bedrock, & some sur-
 grounds. Numerous sp-
 observed on boulders/be-
 distributed.
- $\boxed{E}$ (ST-CT)/P - usually <10-30%
 observed on boulders/be-
 distributed.
- $\boxed{F}$ (ST-CT)/S with one 6x10m
 of /C observed on
 gravel.
 occasional AP-MS/TB/S (<
 Some stained logs/debris
 UI and SD.

- $\boxed{A}$ (S-CT-C)/B (75%)
- $\boxed{B}$ MS/(TB-PT)/S (LP along north
 band of zone,
 about 8x8m, concentrated
 beneath boulders)
- $\boxed{C}$ MS/TB/S on sediments
 (ST-CT)/P (10-30% coating
 on rocks)

Oil Character Length (m): AP 3 PO 5 CV 500 CT 500 ST 500 MS 40 PT 15 TB 15 FL N/A NO 100

REVISION 03/24/90

BC-2 subdivision A (continuation of "Comments"
from OG form)

Last 2 lines of page are:

" meters of section (from SW to NE) - not surveyed, due to hi-angle cliff face. Might try to survey by ship. Some form of oiling present across most of this subdivision, although never very "heavy".

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / BC 2 Subdivision A Date (mo / day / yr) 3 / 30 / 90Time (24 hr) 0830-1300 Biologist M. Fawcett(A) Substrate type and % of segments:
(1) Bedrock 40 (2) Boulder 30 (3) Cobble 20 (4) Pebble 10 (5) Sand 0 (6) Silt 0* (B) Overall % cover of biota (% of segment): Dense X Moderate Low

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

Photographs: ST-17-1 / ST-17-2
Roll No. 23-37 / 1-14
Frames 23-37 / 1-14

BARNACLES

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

mussels dense in
patches sparse
overall
NOT PRESENT

GASTROPODS

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

FUCUS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	X	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:

* - overall density of biota applicable only to mid. & low intertidal, as it is
- see attached sheet always "low" in upper zone

Ecological Considerations:

very diverse, densely populated, healthy community in mid- and
low intertidal areas. Avoid trampling.

BC 2-A Rocky Point / Bootlegger Cove
Wildlife observations & general comments

M Fawcett

P. 1 of 2

Most of this subsegment consists of high vertical faces and stacks dissected by deep surge channels, with bedrock reefs and large boulders. One sand/gravel beach in semi-protected cove near east end of subsection. Except for that cove, the area is exposed to fairly high wave energy. Throughout the area the middle and lower intertidal zones are densely populated by a rich variety of plants and animals. In the low zone some starfish (Pisaster ochraceus and Derasterias imbricata) were observed in pools and crevices, the first I've seen intertidally since last September-October, when they migrated down to the subtidal areas for the winter. Leptasterias hexactis was common under boulders. Dense patches of newly recruited mussels 12-4 mm, were seen mostly on bedrock on lee sides of reefs. Limpets abundant in mid-lower zones, included adults, juveniles, & new recruits (Nitidulana scutellata and Collisella pelta were most abundant limpets, Acmaea mitra and A. personata also observed.

The boulderfield below the sand/gravel beach has dense covering of red, green, and brown algae, including Ulva, Halosaccaria, Endocladia, Callophylla, Porphyra, Gigartina, Hypophyllum, Costaria & Laminaria, with several kinds of coralline algae in pools along with surfgrass (Phyllospadix). Beneath the boulders are Leptasterias (6-armed starfish) large isopods, Littorina hermit crabs, amphipods, sidaculids, anemones

sculpins, clingfish, gunnels, blennies, chitons (Torresia, Katharina, Mopalia), limpets and other animals. About 10% of boulders have recently been overturned, indicating some strong wave action in storms, as many of these are fairly large boulders (the boulders appearing white on top in photographs are overturned). Considerable mousse remains under some of the boulders, causing sheen on some tidepools (Roger McCampbell said this boulderfield was heavily oiled last summer). However, the remaining oil does not appear to having much impact on the biota; many of the limpets, chitons, snails, etc are large, old individuals that were certainly present before the spill, as were many of the mature plants.

Littorina sitkana (periwinkles) extremely abundant in boulder-cobble areas throughout this subsection (easily 10,000/m² in many areas). Large breeding aggregations of Littorina were found beneath several boulders.

Dense patches of recently recruited barnacle spat were seen on bedrock areas, near dense patches of 3-4 mm barnacles (mostly Balanus glandula) which probably settled in summer of 1989. B. cariosus were moderately abundant in low intertidal areas.

PWS ECOLOGICAL CONSTRAINTS

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

↑
KEN
153



KEN
153

XXXX Wide

//// Medium

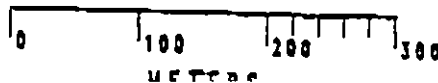
---- Narrow

TTTT Very Light

0000 No Oil

BC-2

ADEC Segment Length: 4119m



Map Key: KEN-15a

Name: Ruby 122

Date: 3/5/90

Date Entered:

REGION: KENAI

SEGMENT: ST/BC-02

SUBDIVISIONS: B (2 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ BC-002 SUBDIVISION B (2 OF 2) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

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

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

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

4G State wilderness park

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

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid 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 12 m: Medium 0 m: Narrow 0 m: V.Light 87 m: No Oil 23 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 8 cm

RECOMMENDATIONS:

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

COMMENTS: Recommend treatment includes 1) manual pick up and removal of tarmats, 2) Manual pick up of oiled debris and logs with greater than 10% coverage, 3) bioremediation of areas shown on attached sketch map. Work should be conducted between 7/1 and 7/10 based on above salmon constraints unless otherwise authorized by ADF&G and USFWS.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

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

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ BC-002 SUBDIVISION: B DATE 3-30-90SCG
NAME R. BRYAN HIRTZ SIGNATURE R. Bryan Hirtz☐ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

I agree with the findings of the Shoreline Diling Summary sheet for BC-002 subdivision B

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

This subdivision had an area of gravel asphalt in the LITZ. There is also cover, coat and stain on the Bedrock and boulders in this subdivision.

I recomend manual pick up of the gravel asphalt in the LITZ

LAND MANAGER
NAME Roger McCampbell SIGNATURE Roger McCampbell☐ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

This subdivision has an area of asphalted gravel in the LITZ as well as a small amount of weathered oil in .8cm of surface sediments near Pit 6. The rock faces and bedrock have a stain and coat of oil that will scape off in some areas.

I recommend manual removal of the gravel asphalt in the LITZ which can be accomplished at the same as any work in Subdivision A.

SHORELINE OILING SUMMARY

REVISION NO 01220

OG Rindy Siegal USCG Bryan Hirtle SEGMENT ST/ RC-2 14
 BIO Elmer Fawcett LAND REP Roger McCampbell SUBDIVISION B (2-4-2)
 EXXON John Dean ADEC Russell Kumbier TIME 13:00 to 14:22
 TEAM NO.: 17 TIDE LEVEL: 2.0 to 7.2 DATE 3/30/90
 EST. SUBDIVISION LENGTH: 180 m ☒ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: S to N
 SURFACE SEDIMENTS: R 20% B 20% C 10% P 5% G 15% S 30% M 0% V 0%
 SLOPE: Long 20% Hang 20% Vert 0% WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 20 m M N/A m N N/A m VL 80 m NO 20 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	C	B	P	S	SSL	SSL	SSL	SSL	SSL	SSL	SSL	SSL	SU	U	M	L
ASPHALT PAVEMENT				X	X											X
POOLED																
COVER	X		✓		✓	X										X
COAT			✓	X		X										X
STAIN				X		X							X			
MOUSSE																
PATTIES																
TARBALLS																
FILM				X			X									X
NO OIL													X	X		

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

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

DEBRIS COLLECTED

☐ YES ☒ NO

TYPE _____

#BAGS _____

Photographs:

Roll No. 3T-17-2Frames 15-20

SUBSURFACE OIL * Sheen on intertidal water

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CM)	BELOW		OIL / FILM COLOR								PIT ZONE				A N A	SUBSURFACE SEDIMENTS	
		OP	OR	OL	OF	NO		UO	UC	SSL SP	SSL NW	GL BL	OKR TL	LGR	SU	U	M	L						
1	40					X	0-0		X									X						S
2	15					X	0-0		X									X						S
3	15					X	0-0		X									X						S
4	15					X	0-0		X										X					S
5	30					X	0-0		X												X			G
6	15		X				0-8		X	X											X			G

COMMENTS

This subdivision consists largely of a sandy beach with patches of bedrock and boulders. The SSL behind the beach is covered with sand and debris. Portions of the B + R areas had no sheens of oil, particularly where sheltered from waves.

OG Red Seal

SEGMENT ST/BC-2

SUBDIVISION B

DATE 3/30/90

CHECKLIST

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

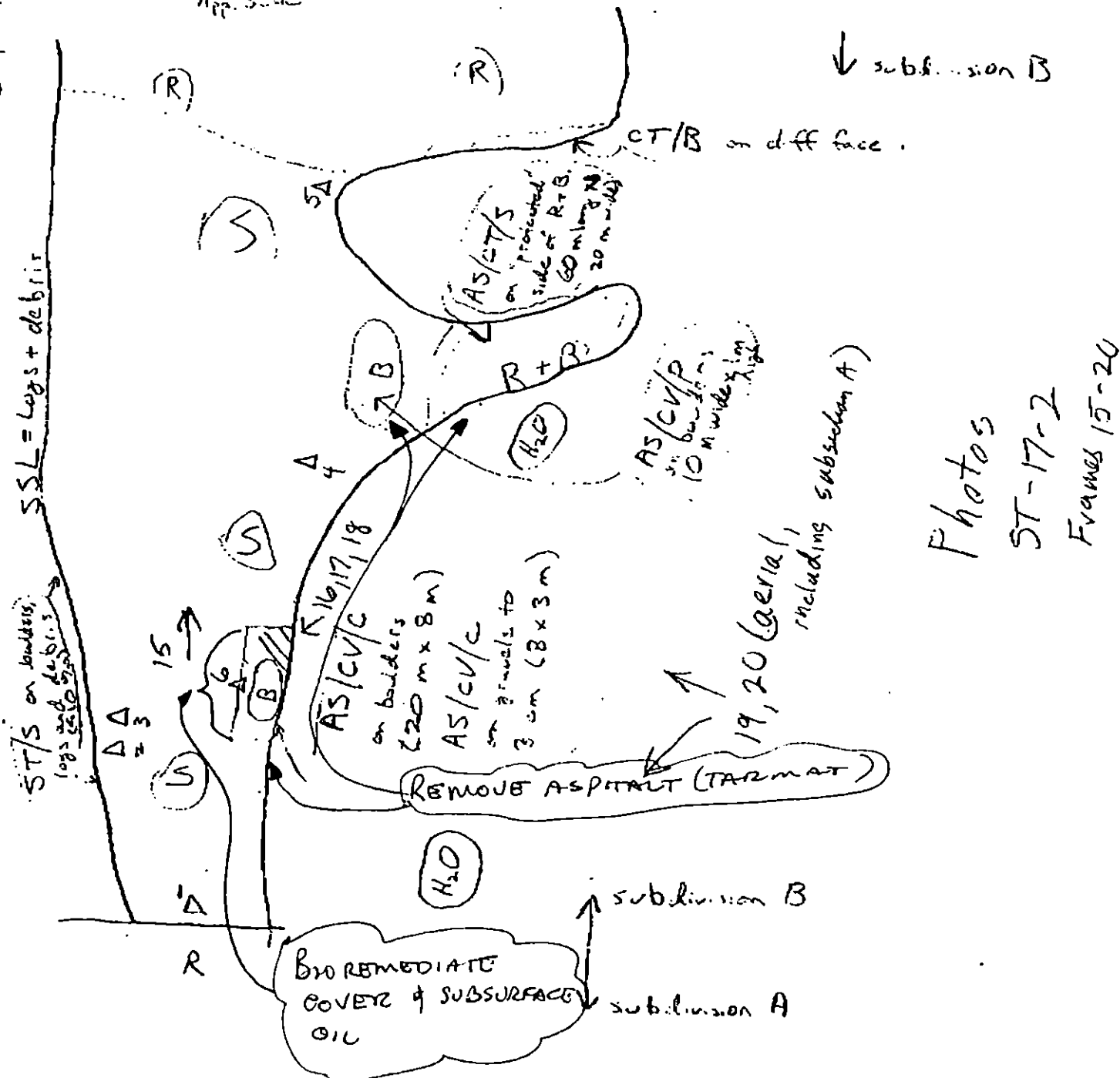
LEGEND

- 1 Δ
PII - No Subsurface Oil
- 2 Δ
PII - Subsurface Oil
- CT/C
Continuous Distribution
- CT/B
Broken Distribution
- CT/P
Patchy Distribution
- CT/S
Splashed Distribution
- Offed Vegetation
- Photo location, direction, and number

2 cm = 20 m
App. Scale



SKETCH MAP



Oil Character Length (m): AP 40 PO N/A CV 30 CT 35 ST 50 MS N/A PT N/A TB N/A FL N/A NO 30

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / BC Subdivision 2 Date (mo / day / yr) 3/30/90Time (24 hr) 1300 Biologist M. Fawcett

- (A) Substrate type and % of segments:
 (1) Bedrock 20 (2) Boulder 20 (3) Cobble 10 (4) Pebble 20 (5) Sand 30 (6) Silt 0
- (B) Overall % cover of biota (% of segment): Dense Moderate Low
- (C) Density, substrate preference (by number from A, above), & vertical zonation of major taxa: (upper-U; mid-M; low tidal-L); juveniles / adults (X), new settlement (3)

Photographs:
Roll No. ST 17-2Frames 15-20

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:

- river otter tracks on beach
 - weathered oil coating bedrock at east end of subsegment - some mussels coated, but alive. Filamentous green algae growing on top of oil

Ecological Considerations:

4GA

1B (no salmon stream in this subdivision)

3N possible pupping area, harbor seal

6U

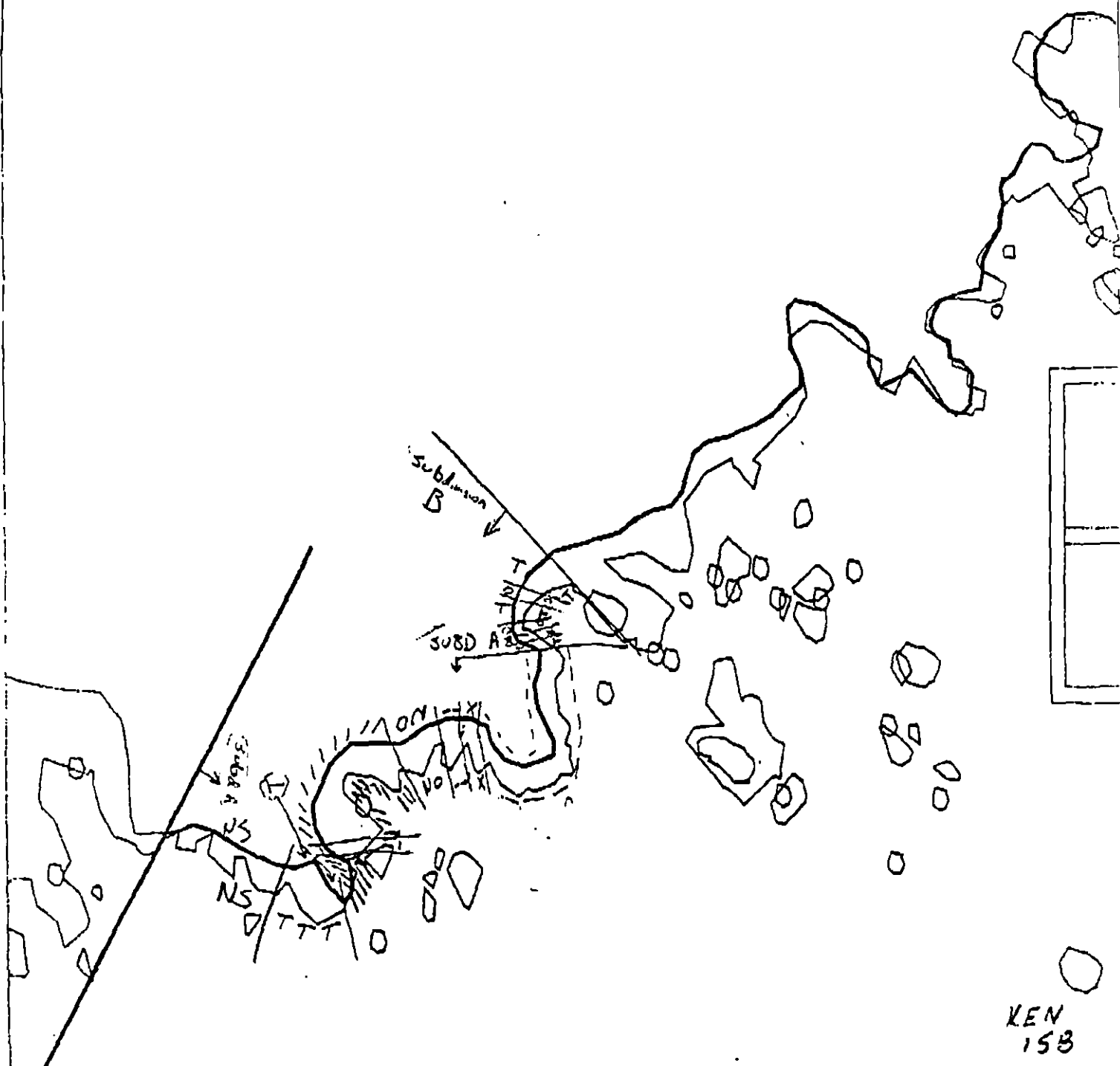
4/4/90

Note:

Under ecological considerations
for BC 2 A (3/30/90), sensitivities
listed should include 46A, 3N, & 6U

M H Fawcett

↑
EN
100

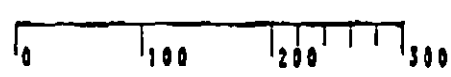


KCN
158

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

BC-2

ADEC Segment Length: 4119m



Map Key: KCN-15a

Name: Ruby

Date: 3/20/90

Notes: Continued

SHORELINE EVALUATION

SEGMENT ST/ BC-002 SUBDIVISION A (1 OF 2) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
3N,3P Harbor seal and sea lion pupping (5/15 to 7/1)
4GA State wilderness park
6U Recreation: Tent sites (6/1 to 9/15)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance or damage to uncoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE:

DATE:

OILING CATEGORIZATION:

Wide 18 m: Medium 227 m: Narrow 262 m: V.Light 89 m: No Oil 53 m
Subsurface Oil Observed: Yes X No Maximum Depth 25+ cm

RECOMMENDATIONS:

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

COMMENTS: Recommend treatment includes 1) manual pick up of mousse patties and tar balls. 2) Manual pick up of oiled debris and logs if more than 10% coverage. 3) Bioremediation of areas shown on attached map. Work should be conducted between 7/1 and 7/10 based on above harbor seal and salmon constraints unless otherwise authorized by ADF&G and USFWS. MANUALLY TILL IN AREA of PITS 1,2 +3 PRIOR TO BIOREMEDIATION

TAG COMMENTS:

TAG APPROVAL DATE:

ADEC

EXXON

NOAA
USCG

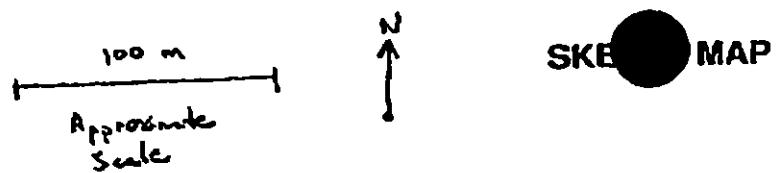
FOSC:

DATE: 6-8-90

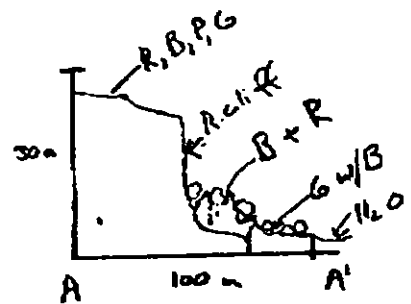
3 Randy Si
 SEGMENT ST/BC-2
 DIVISION A
 DATE 3/30/90

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

- LEGEND**
- 1 Δ No Subsurface Oil
 - 2 Δ 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

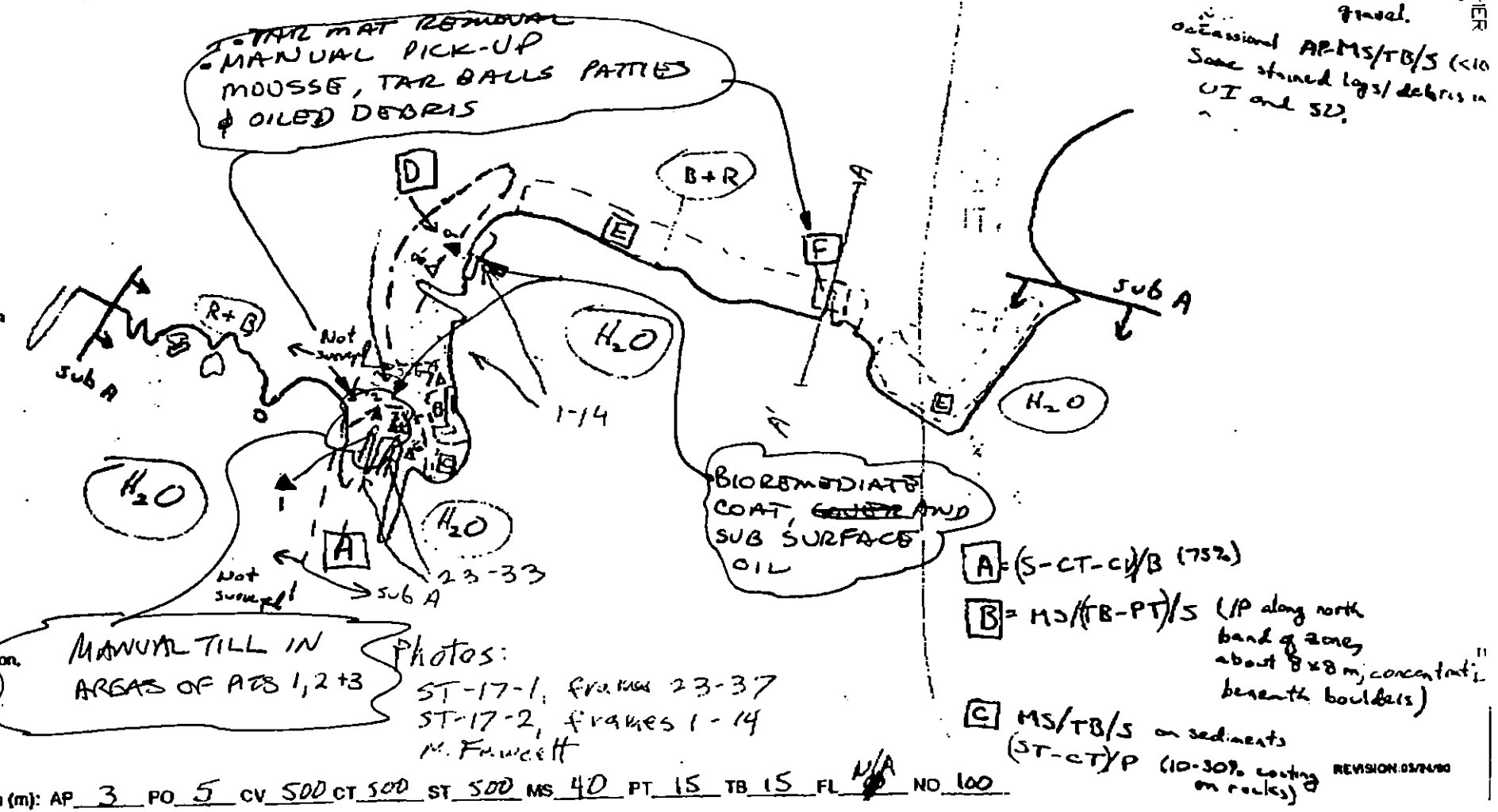


SKETCH MAP



1 Δ = P+1/UC
 2 Δ = P+4/UC

- D** (ST-CT)/P - from <10% to 100% observed on boulders, bedrock, & some surf gravels. Numerous sphaerulites.
- E** (ST-CT)/P - usually <10-30% observed on boulders/bc. Numerous sphaerulites, irregularly distributed.
- F** (ST-CT)/S with one 6x10 m of /C observed on gravel. occasional AP-MS/TB/S (<10% Some stained logs/debris in UI and S2).



Character Length (m): AP 3 PO 5 CV 500 CT 500 ST 500 MS 40 PT 15 TB 15 FL N/A NO 100

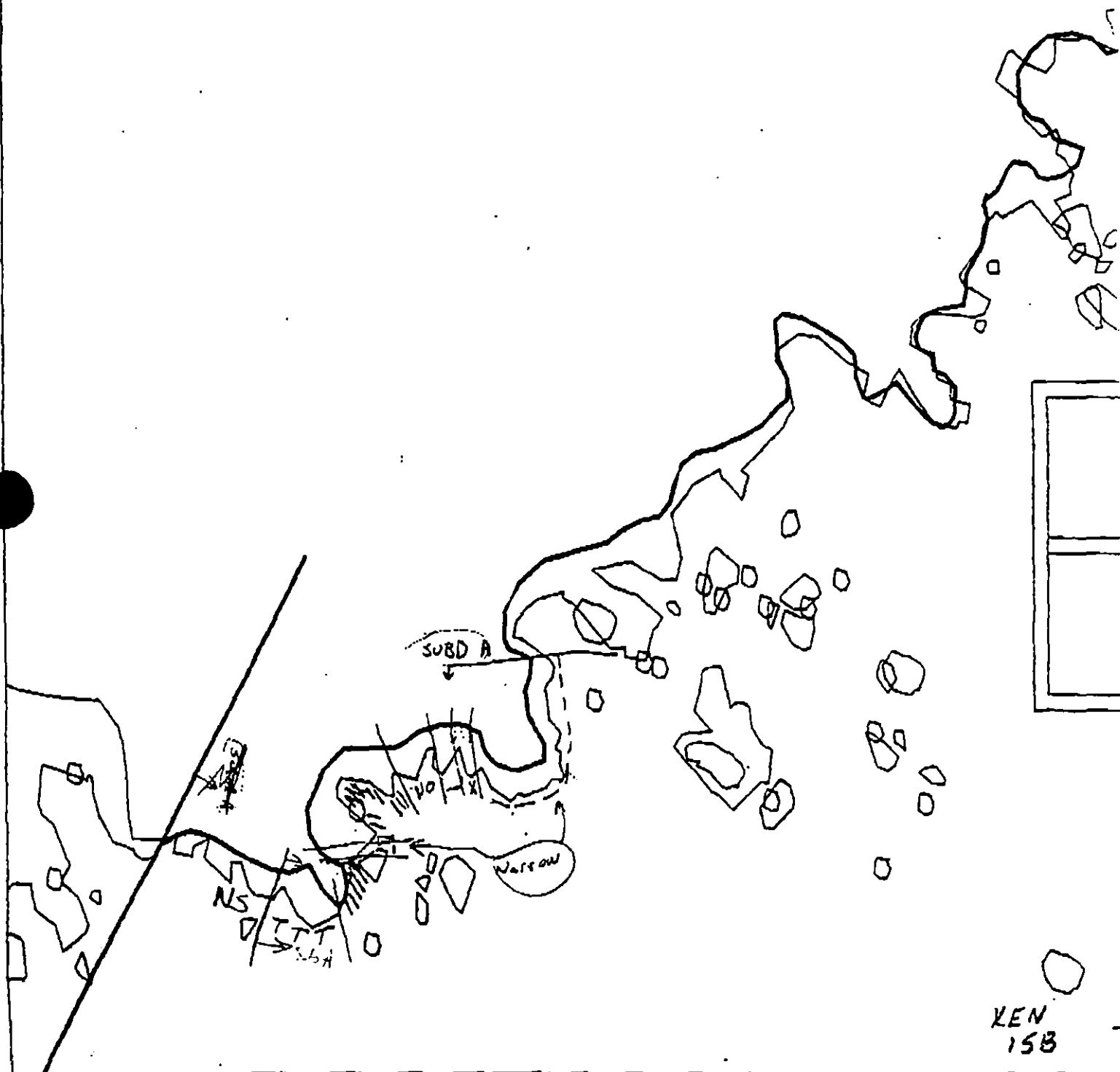
REVISION 03/26/90

BC-2 subdivision A (continuation of "Comments"
from OG form)

Last 2 lines of page are:

" meters of section (from SW to NE) - not surveyed, due to hi-angle cliff face. Might try to survey by ship. Some form of oiling present across most of this subdivision, although never very "heavy".

↑
KEN
153



KEN
153

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

BC-2

ADEC Segment Length: 4119m

0 100 1000 10000

Map Key: KEN-15a

Name: Ruby 122

Date: 3/31/90

SHORELINE EVALUATION

SEGMENT ST/ BC-002 SUBDIVISION B (2 OF 2) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

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

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

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

4G State wilderness park

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

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance or damage to uncoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: Charles E. Adams DATE: 4/18/90

OILING CATEGORIZATION:

Wide 12 m: Medium 0 m: Narrow 0 m: V.Light 87 m: No Oil 23 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 8 cm

RECOMMENDATIONS:

No Treatment Recommended

X	Treatment Recommended
1	1
2	1
3	1
4	1
5	1
6	1
7	1
8	1
9	1
10	1
11	1
12	1
13	1
14	1
15	1
16	1
17	1
18	1
19	1
20	1
21	1
22	1
23	1
24	1
25	1
26	1
27	1
28	1
29	1
30	1
31	1
32	1
33	1
34	1
35	1
36	1
37	1
38	1
39	1
40	1
41	1
42	1
43	1
44	1
45	1
46	1
47	1
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92	1
93	1
94	1
95	1
96	1
97	1
98	1
99	1
100	1

X	Manual Pickup
---	---------------

X Bioremediation

X Tarmat: Breakup

X Removal

 Snare/Absorbent Booms

Oil Snares (pom poms)

 Absorbents (pads, rolls, etc)

Spot Washing: Wands

Beach Cleaner

____ Other (see comments)

COMMENTS: Recommend treatment includes 1) manual pick up and removal of tarmats, 2) Manual pick up of oiled debris and logs with greater than 10% coverage, 3) bioremediation of areas shown on attached sketch map. Work should be conducted between 7/1 and 7/10 based on above salmon constraints unless otherwise authorized by ADF&G and USFWS.

TAG COMMENTS: _____

TAG APPROVAL DATE: 4/1/98.

ADEC JOHN BAUER *John Bauer*

EXXON Ans/TEAL 1/10/82

NOAA Russ Westcott Russ Westcott

USCG G.A. REITER G.A. Reiter

FOSC: W L DATE: 4-27-98

DATE: 4-27-92

OG Ran

SEGMENT ST/ BC-2

SUBDIVISION B

DATE 3/30/90

CHECKLIST

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

LEGEND

1 Δ

PII - No Subsurface Oil

2 Δ

PII - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

Oil Vegetation

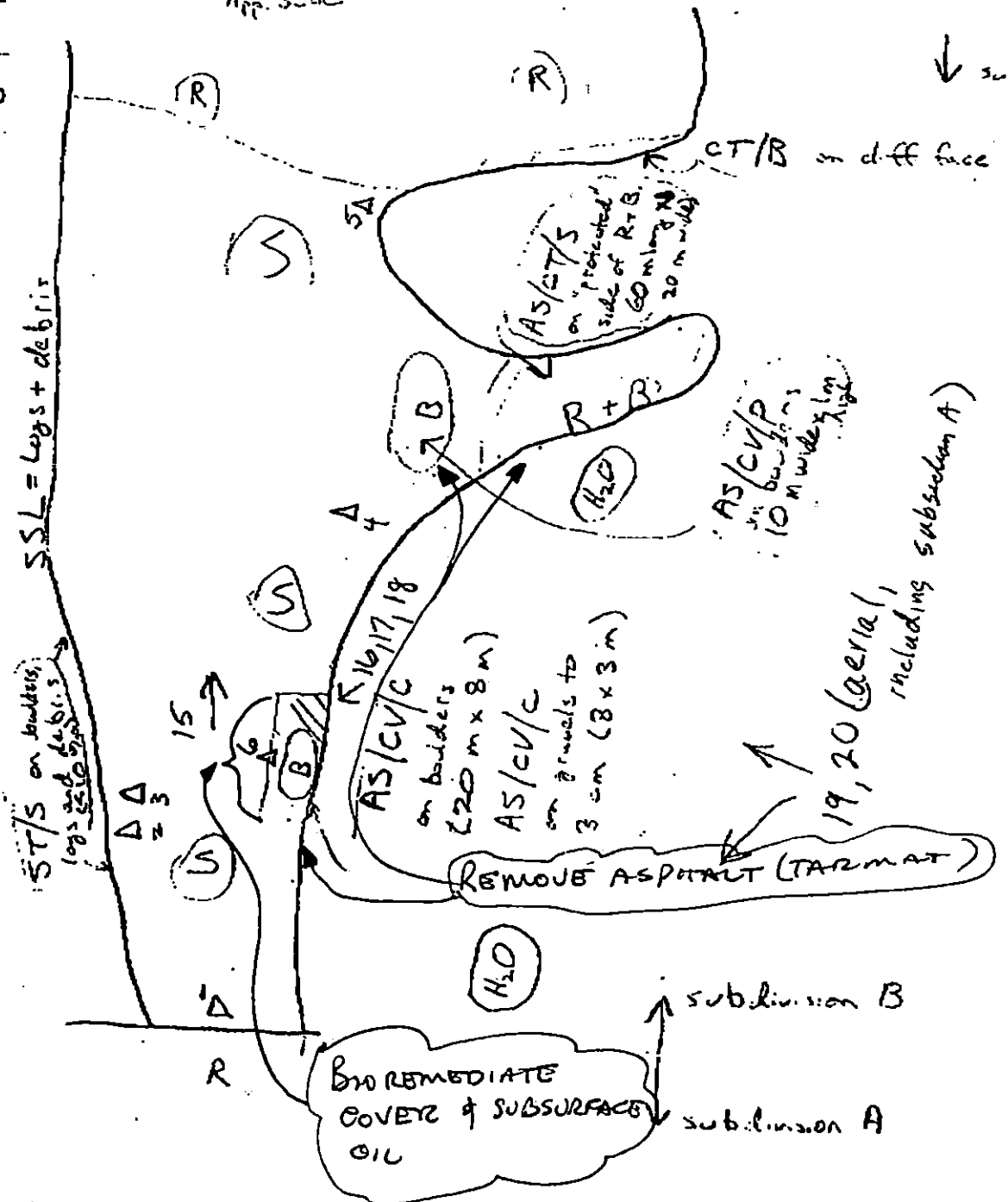
1 →

Photo location, direction, and number

2 cm = 200 m
App. Scale



SKETCH MAP

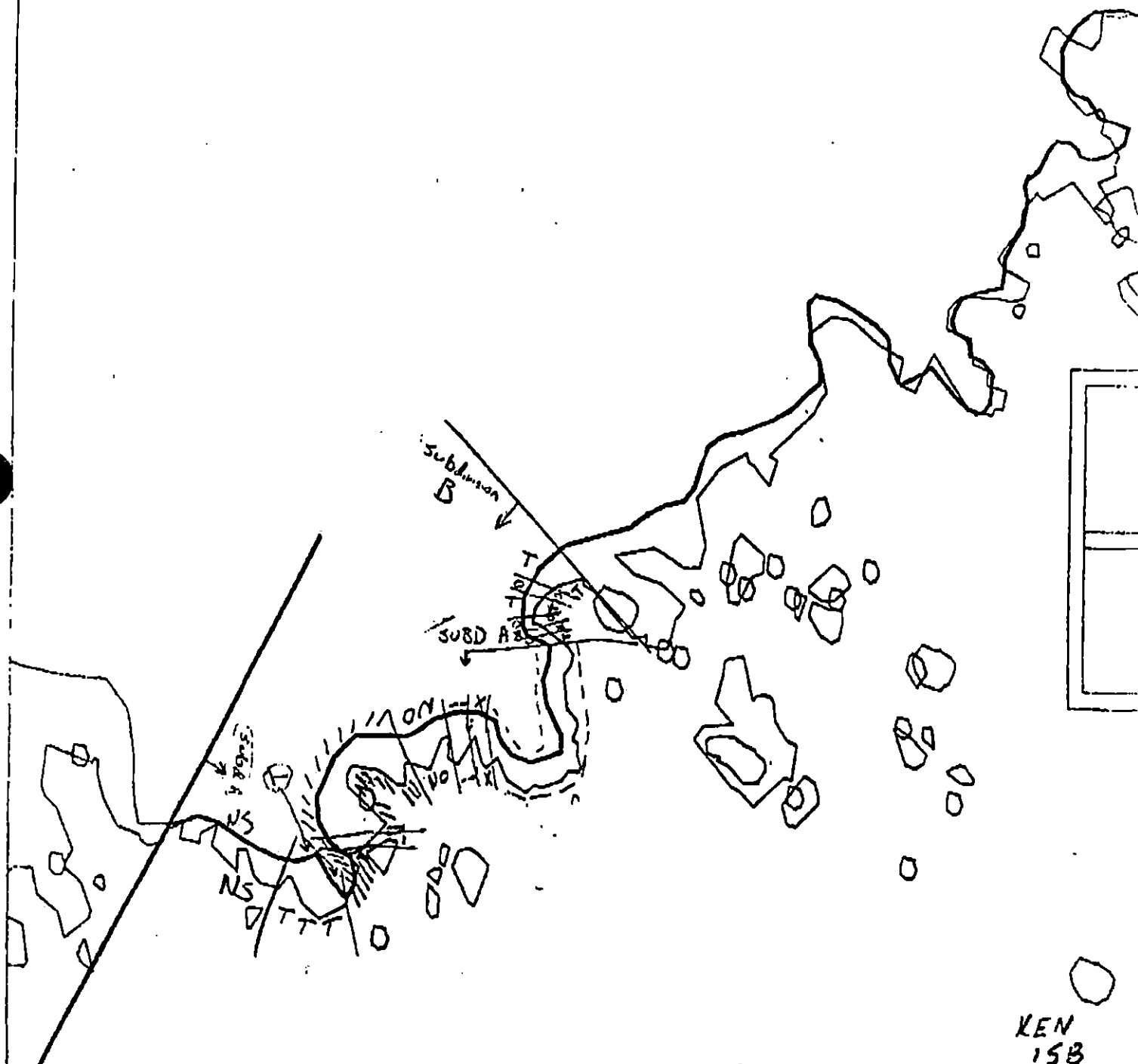


↓ subdivision B

Photos
ST-17-2
Frames 15-20

Character Length (m): AP 40 PO N/A CV 30 CT 35 ST 60 MS N/A PT N/A TB N/A FL N/A NO 30

↑
EN
101



XXXX Wide

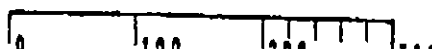
//// Medium

--- Narrow

TTTT Very Light

BC-2

ADEC Segment Length: 4119m



Map Key: KEN-15a

Name: Roddy

Date: 3/20/90

1991 MAYSAP EVALUATION

SEGMENT: BC 002 **SUB:** B **REGION:** KEN **SURVEY DATE:** 5/23/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: _____ **Date:** _____

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____

FOSC APPROVAL DATE: _____

ADEC

FOSC

EXXON

USCG

NOAA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

ADEC NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☒ NTR In this area, H.SOR, AP, M.SOR was recovered in ≈ 10 bags off the SW. end of segment at the base of bedrock, B, C.
No further treatment recommended.

EXXON NAME George P. Stiles SIGNATURE George P. Stiles

☒ NTR very little oil remaining.

INDMANAGER NAME Jeff Johnson OF DNR SIGNATURE Jeff Johnson

☒ NTR Concur w/ DEC comments, + USCG/NOAA. Area has signs of high hydrocarbon river otter activity, + is within Kachemak Bay State Wilderness Park. Additional treatment would probably yield few positive results.

USCG/NOAA NAME Capt. J. McManis SIGNATURE J. McManis

☒ NTR This area had a moderate amount of on scene clean-up (fish etc) and around 80% was removed of what we found. The remaining area of the segment revealed no debris.

Ann H. McManis

REVIEWED: MC 6/8/91
revised 5/31/91 KG

OG SKETCH Map

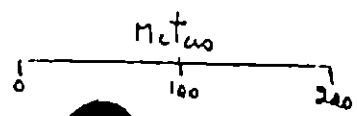
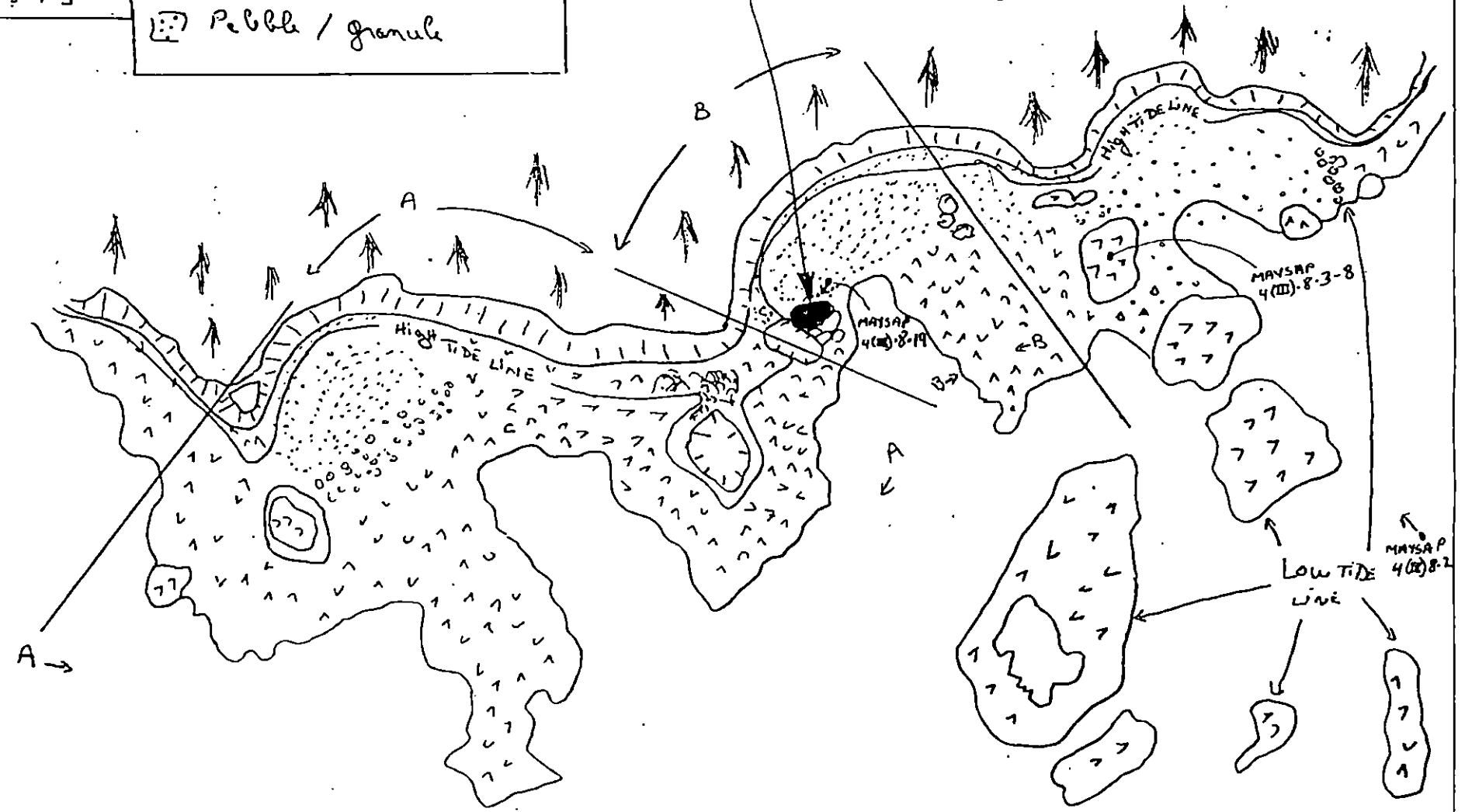
BC 009 - B
 17 SEMPELS
 MAY 23/91
 1518 - 1545

Legend

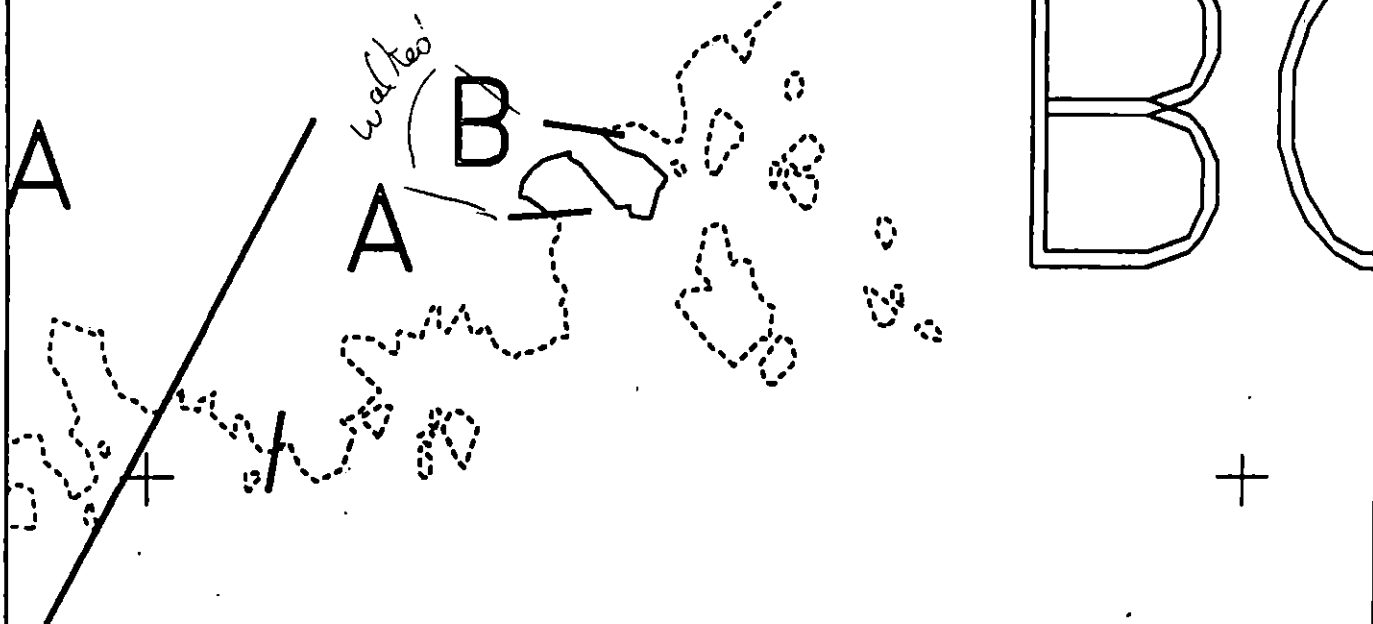
-  Bedrock cliffs / Bluffs
-  Intertidal bedrock outcrops
-  Boulder / cobble
-  Cobble / Pebble
-  Pebble / granule

ct. 2x10 < 10% A1
 on bedrock
 MSOR / Ap < 5%, 15x15
 max patch size ~ 1m²
 < 5 cm
 worked on A9

reviewed 5/31/91
 REVISOR: MCG



Location Map



BC002 B

METERS



AS State Plane Zone 4
12500280

Subdivision Field Map

Map Key: KENBC002Bc

Name: J. M. Sempels

Date: May 23/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 23, 1991 1518 - 1550
SEGMENT #	BC002	TIDAL HEIGHT (Range)	3.1 => 2.2
SUBDIVISION	B	BIOLOGIST	JIM BARRY
SEA STATE	1-3 ft sea	WIND SPEED/DIRECTION	SW 5-10 kt, clear

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil Related Comments

- A A coat of oil is found in the upper intertidal on the vertical wall of a bedrock headland. The weathered ct is located slightly above the upper limit of the barnacle zone. Green filamentous algae, and a few barnacles, limpets, and littorine snails, are the only biota present.
- B HSOR in a patch at the base of a bedrock cliff, with boulders and cobble talus. This patch extends from the upper to the middle intertidal. The upper portion has barnacles (sparse), limpets (moderate) and littorine snails (dense), with many egg masses, even in nearly direct contact with the oil. Lower zones have more red algae (Rhodomela), sparse Fucus, and many pricklyback fishes (eel-like, Stichaeidae) brooding eggs under cobble. Again, these species are in nearly direct contact with the oiled sediments.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

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

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	4	River Otter	Tracks
Pinnipeds (specify)		Bear	Tracks
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

Good data on

General Characteristics of BC002-A/B

The shores along this subdivision are spectacular, comprising bedrock headlands, protected cobble and sand coves, and rugged cliffs and coastal bluffs. This heterogeneity is also manifested in the biota of the shores. The biota are very diverse, are vary with habitat type and wave exposure. The major assemblages or communities are:

- 1: Sand/pebble beach. Very little lives on these beaches.
- 2: Cobble/boulder field. The biota of this habitat varies according to exposure. Areas with high waves cause high disturbance, resulting in low cover and density of species. On protected coves, such as the main beach/cobble field on the subdivision, the low cobble/boulder covered shore has a fairly high cover of *Fucus*, with a rich assemblage of associated species of invertebrates and algae. Some boulder and cobble habitats in some moderately exposed areas have extremely high densities of littorine snails.
- 3: Bedrock outcrops also have diverse species assemblages. *Fucus* is generally high in cover, as are barnacles and limpets. Cover and abundance of attached invertebrates are high, especially where the shores are protected from scour by boulders and cobble.
- 4: A couple of the small coves are quite well protected from waves and have peat and eel grass, with sparse to moderate abundance of clams in the low shore.

General Zonation Pattern

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal

Al Distribution			---	- - ++ ++	-	
Bare Rock		----	- - - -			
Green Filamentous Algae		-- -	---+---+-----			
Barnacles (<i>Balanus</i>)			-----++**+++-	- - - - -	-	-
Littorine Snails			- - -	+++* * * * *	- - - - -	-
Limpets			-	-----++ ++	-----	-
Rockweed (<i>Fucus</i>)			-	-----++**++-++**	-----	-
Palmaria and other Red Algae					-----++**+-+---++**	
Brown Algae (<i>Alaria</i>)					-----++**++**?	
Mussels (<i>Mytilus</i>)				- -	+++-----	
Upright Brown Algae (not <i>Fucus</i>)					- -	+ +**++**++**
Eel Grass						-----++*
Clams						- - - - + - -
Fish (Pricklebacks)				---	---	---

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

Common Species on BC002-A/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*, *Hildenbrandia* sp., *Laminaria groenlandica*,

Nereocystis leutkeana, Ralfsia sp., Syctosiphon lomentaria

4. Red Algae - Rhodophyta
Anfelta plicata, Bossiella sp., Calliarthron sp., Corallina sp.,
Cryptosiphonia woodii, Cumagloia andersonii, Endocladia muricata,
Halosaccion glandiforme, Iridaea sp., Lithothamnion sp., Mastocarpus
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 bowerbanki?
2. Anemones - Anthopleura artemesia, A. elegantissima, A. xanthogrammica,
Epiactis ritteri, E. prolifera?, Metridium senile, Urticina
crassicornis,
3. Hydroids - Sertulariidae, Aglaophenia sp., Abietinaria sp.
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile, Tubulanus
polymorphus
8. Polychaete Worms
Glyceridae
Nepthyidae
Nereidae - Nereis spp.
Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii
10. Crustaceans
 - a. Amphipods - Traskorchestia traskiana
 - b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs - Haplogaster sp., Hemigrapsus oregonensis, Paguridae
(hermit crabs), Oregonia gracilis, Pugettia sp.,
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma
oregonensis
11. Mollusca
 - a. Chitons - Mopalia sp., M. mucosa, Katharina tunicata, Tonicella
lineata,
 - b. Snails - Gastropods
Amphissa columbiana, Fusitriton oregonensis, Lirularia sp.,
Littorina sitkana, L. keenae, Natica clausa, Nucella lamellosa,
N. lima, Searlesia dira, Tachyrhynchus sp.
 - c. Limpets - Acmaea mitra, Lottia digitalis, L. persona, L. limatula,
Tectura fenestrata, T. persona, T. scutum, Siphonaria
thersites.
 - d. Nudibranches - Lamellidoris fusca, Onchidella borealis
 - e. Bivalves - Clinocardium nuttalli, Modiolus modiolus, Mytilus edulis,
Pododesmus cepio, Prototheca staminea, Saxidomus
giganteus
 - f. Cephalopods - Octopus dofleini
12. Echinoderms
 - a. Brittle Stars - Ophiolus aculeatus?, Ophiothrix spiculata?,
Amphipholis?
 - b. Sea stars - Dermasterias imbricata, Evasterias truscheli, Henricia
leviuscula, Leptasterias hexactis, Mediaster aequalis?,
Orthasterias keohleri, Pisaster ochraceus, Pycnopoda
helianthoides, Solaster dawsoni
 - c. Sea Cucumbers - Holothurians Cucumaria miniata, Eupentacta sp.,

Leptosynapta sp.

- d. Urchins - *Strongylocentrotus droebachiensis*
- 13. Bryozoans - *Membranipora* sp., *Microporina borealis*, *Phidolopora pacifica*,
Schizoporella sp.
- 14. Ascidians - *Synocium?* sp., *Aplidium?*
- 15. Fishes

Cottidae -

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

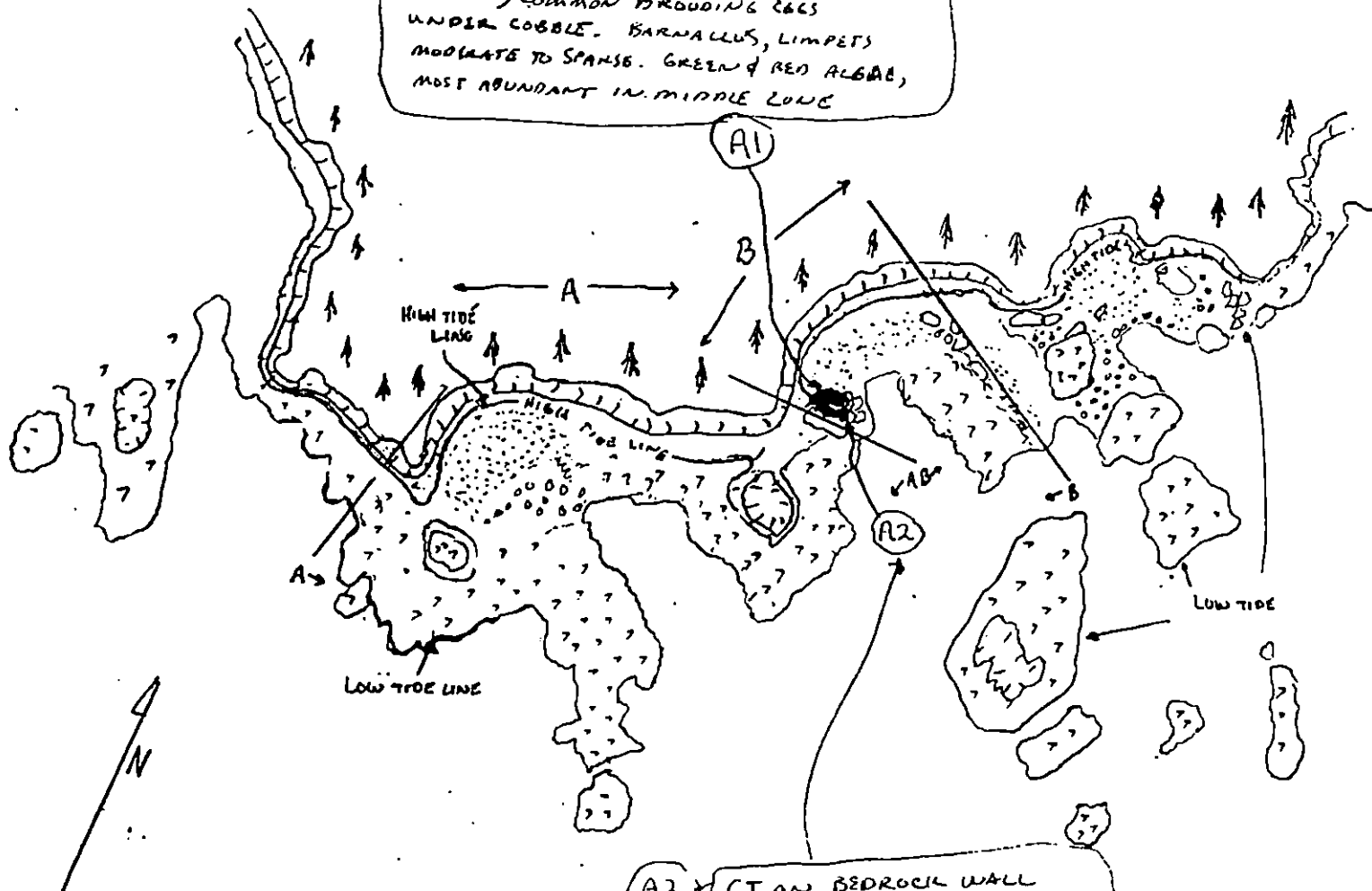
- III. Birds - Common Murre (5), Glaucous-winged Gull (5), Black-legged Kittiwake
(5)

BC02-A/B

Legend

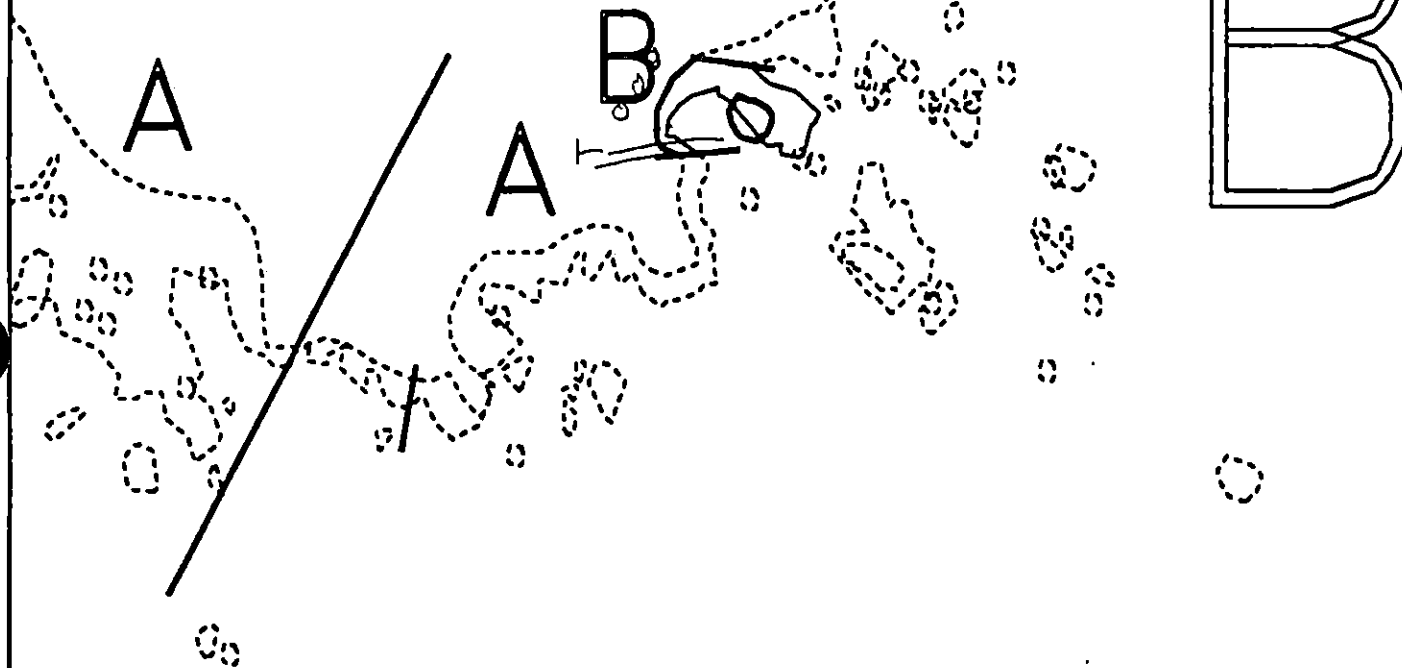
- Bedrock Cl. M's / Blue M's
- Bedrock outcrop
- Boulder/cobble
- Cobble/Ms
- Pebble/Granule

MSOR? IN COBBLE/BOULDER HABITAT
UPPER TO MIDDLE ZONE. DIVERSE
COMMUNITY WITH MODERATE TO LOW
ABUNDANCE. MODERATE LITTORINE
SNAIL DENSITY - LOTS OF EGG MASSES.
PRICKLEBACK FISHES (EEL-LIKE, STICH-
ABLOPS) COMMON BROODING EGGS
UNDER COBBLE. BARNACLES, LIMPETS
MODERATE TO SPARSE. GREEN & RED ALGAE,
MOST ABUNDANT IN MIDDLE ZONE



BIO SKETCH MAP
BC02-B
23 MAY 1991
1518-1550
JP BAREY

A2 CT ON BEDROCK WALL
MODERATE COVER OF
GREEN FILAMENTOUS ALGAE
BARNACLES SPARSE, A FEW
LITTORINE SNAILS. THIS
CT OCCURS SLIGHTLY
ABOVE THE BARNACLE ZONE



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

BC002 B
 ADEC Subsegment Length: 262m
 METERS

AK State Plane Zone 4
 abc002b



Subdivision Field Map
 Map Key: KENBC002B
 Name: 17 Samples
 Date: MAY 23/91
 Date Entered:

REVIEWED: MC 6/2/91
 revised 513191 KG

1991 MAYSAP EVALUATION

SEGMENT: BC 002 SUB: A REGION: KEN SURVEY DATE: 5/23/91

ENVIRONMENTAL SENSITIVITIES:

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

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: _____ Date: _____

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____

FOSC APPROVAL DATE: _____

ADEC _____

FOSC _____

EXXON _____

USCG _____

NOAA _____

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

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

ADEC
NAME CLARA S. Crosby SIGNATURE Clara S. Crosby

☒ NTR Lt. oiling was observed throughout this segment. Areas of AP, MSOR & MS. These areas are rather inaccessible & were partially worked. Suggest no further activity in the area

EXXON
NAME George P. Stiles SIGNATURE George P. Stiles 5/23/91

☒ NTR Very little oil found. VECO crew picked up what was retrievable.

LANDMANAGER
NAME Jeff Johnson OF DNR SIGNATURE Jeff Johnson

☒ NTR Widely scattered splatters + tar, except for one area of MSOR-AP that was picked up, and some coat in an area of boulders that wouldn't be practical to work. Within Kachemak Bay State Wilderness Park.

USCG/NOAA
NAME Woz. McMillan SIGNATURE Woz. McMillan

☒ NTR very little oil found, picked-up by VECO crew.

Donald McMillan

Revised: MC 6/2/91
revised 5/3/91 KG

Geological Map

Location

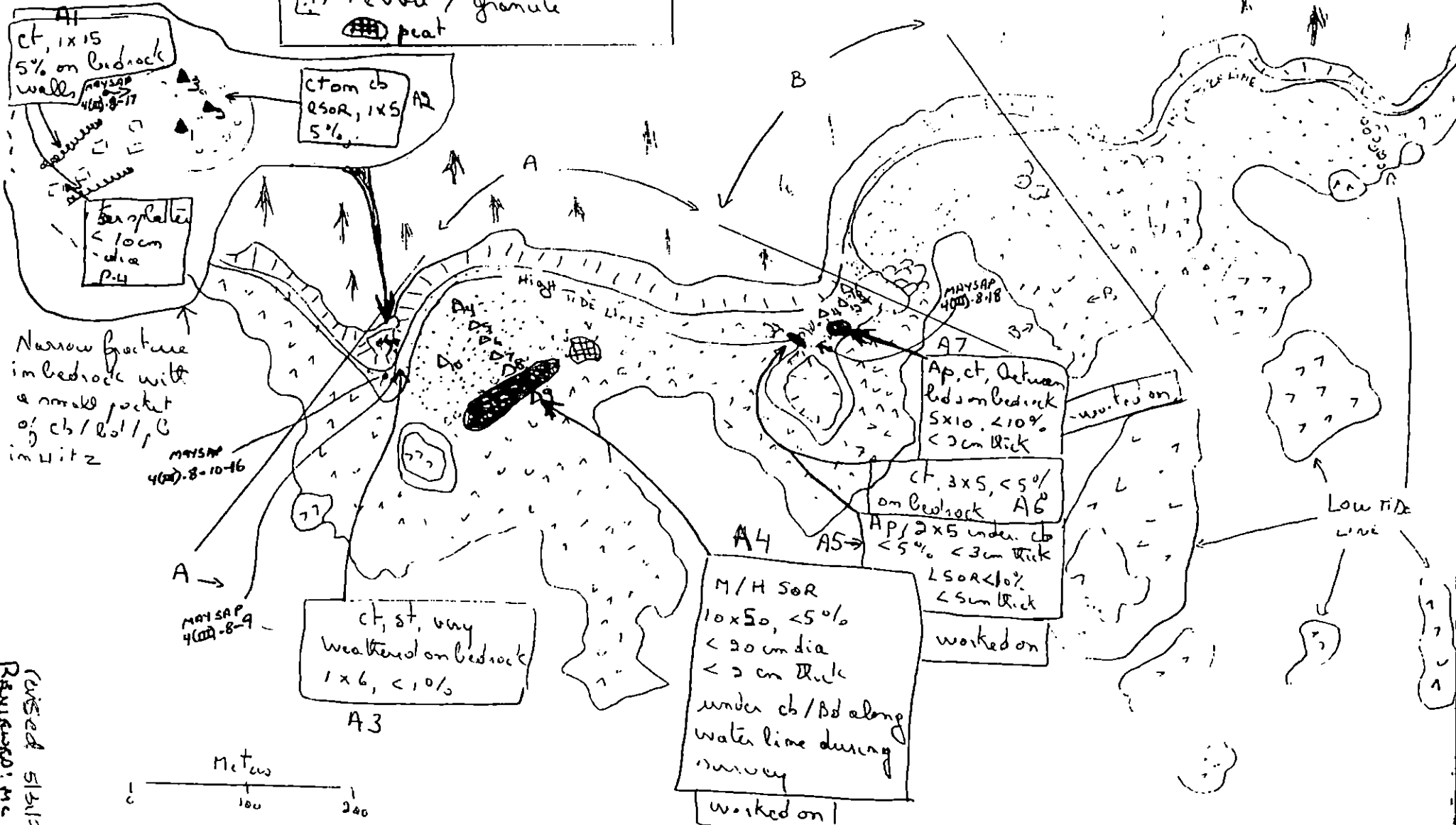
3C009-A

17 SAMPLES

MAY 23/91

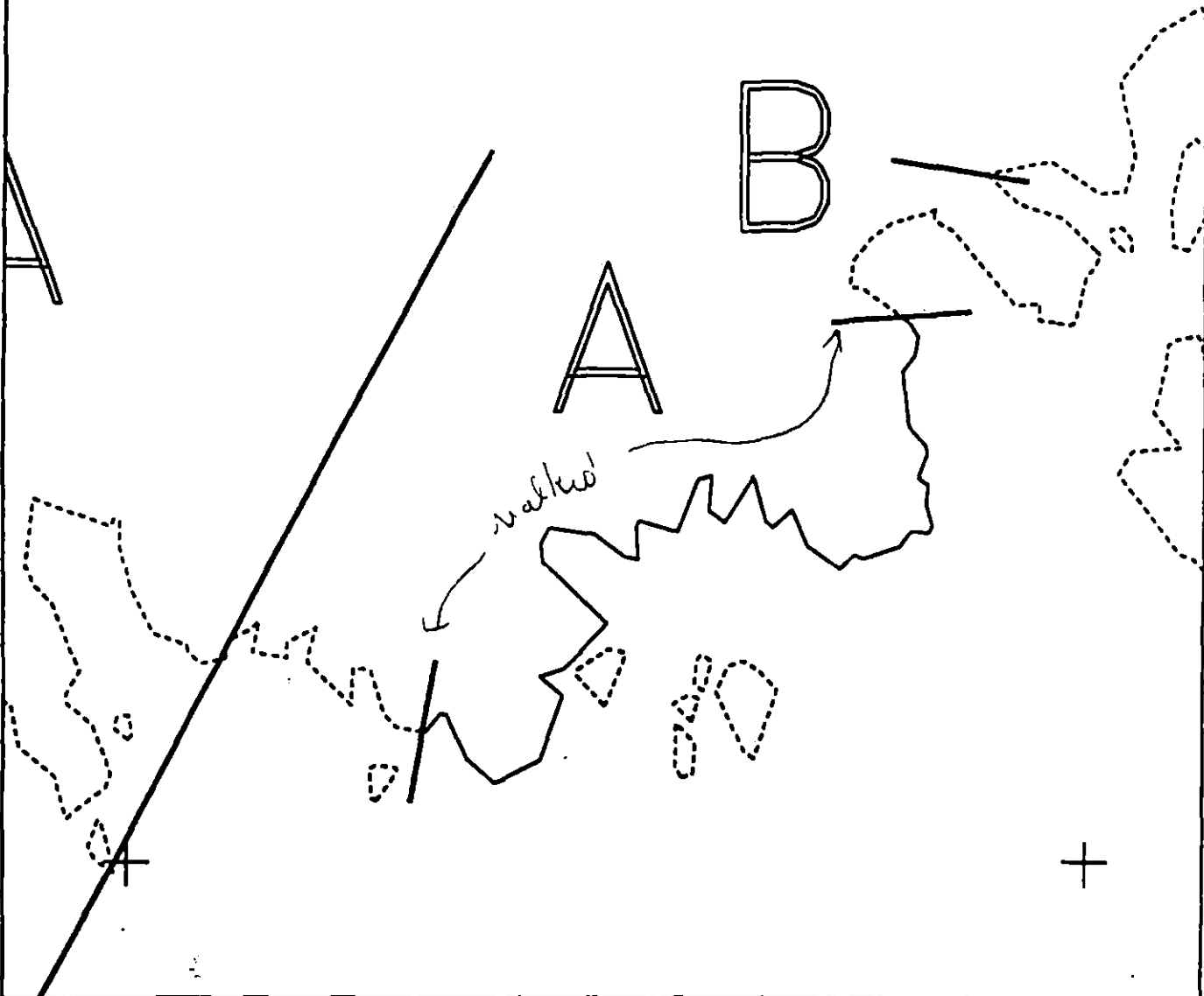
1422-1518

- [Hatched Box] Bedrock cliffs / Bluffs
- [Stippled Box] Intertidal bedrock outcrops
- [Box with Circles] Boulder / cobble
- [Box with Dots] Cobble / Pebble
- [Box with Small Squares] Pebble / granule
- [Box with Crosses] peat



Revised 5/1/91
R. W. M. M. M.

Location Map



BC002 A

METERS

0 100 200

AK State Plane Zone 4
5500200

Subdivision Field Map

Map Key: KENBC002Aa

Name: JM Sample

Date: MAY 13/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 23, 1991 1422 - 1518
SEGMENT #	BC002	TIDAL HEIGHT (Range)	4.6 => 3.1
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	1-3 ft sea	WIND SPEED/DIRECTION	SW 5-10 kt, clear

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil Related Comments

- A Oil (scattered LSOR) on some of the angular pebbles in the supratidal zone at the top of a small channel. No biota are present. No biota would be expected at this location.
- B A scattered coat of oil was found on the bedrock wall in the upper zone of a highly exposed small channel. Green filamentous algae forms a film over much of the bedrock. Ephemeral algae (Porphyra, Scytosiphon) are present in scattered patches. Littorine snails are dense, particularly small (ca 3 mm) individuals. Limpets are present, but sparse.
- C Patches of MS?HSOR are found under cobble in the middle to low zone of the intertidal boulderfield. The oil appears quite weathered, does not sheen easily, and is restricted to the undersurface of large cobble. This site appears quite healthy, with a rich bed of Fucus, scattered mussels, moderate to dense abundances of littorine snails, barnacles, isopods, and amphipods. Several species, particularly littorines, have recently deposited egg masses. Many other species are present, including burrowing forms (peanut worms), hermit crabs, fishes, clams, and many algae.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

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

Shoreline subdivision map showing important biological features attached.

Rev 3 1/2/11

- D A CT?HSOR on the bedrock in the supratidal zone very near the drift line behind a large headland. There are a few littorine snails at this site, and no other biota. Very few species would persist here regardless of oiling conditions.
- E A coat of oil is present on the boulder and bedrock headland in the upper intertidal zone to supratidal zone. Green filamentous algae are present in some pools, and black lichen occurs in small patches. This is very high in the intertidal and is rarely splashed by waves. The oil is quite weathered.

General Characteristics of BC002-A

The shores along this subdivision are spectacular, comprising bedrock headlands, protected cobble and sand coves, and rugged cliffs and coastal bluffs. This heterogeneity is also manifested in the biota of the shores. The biota are very diverse, are vary with habitat type and wave exposure. The major assemblages or communities are:

- 1: Sand/pebble beach. Very little lives on these beaches.
 - 2: Cobble/boulder field. The biota of this habitat varies according to exposure. Areas with high waves cause high disturbance, resulting in low cover and density of species. On protected coves, such as the main beach/cobble field on the subdivision, the low cobble/boulder covered shore has a fairly high cover of Fucus, with a rich assemblage of associated species of invertebrates and algae.
 - 3: Bedrock outcrops also have diverse species assemblages. Fucus is generally high in cover, as are barnacles and limpets. Cover and abundance of attached invertebrates are high, especially where the shores are protected from scour by boulders and cobble.
- : A couple of the small coves are quite well protected from waves and have peat and eel grass, with sparse to moderate abundance of clams in the low shore.

General Zonation Pattern

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal
Oil Distribution		---	-	-	-	-
Bare Rock		----	-	-	-	-
Green-Filamentous Algae		--	-	++	+	----
Barnacles (Balanus)			-----	+++*	++++	-----
Littorine Snails			---	++*	* * *	+ - - -
Limpets			-	---	++	+
Rockweed (Fucus)				---	+++*	++++
Palmaria and other Red Algae					---	+++*+ - + + + *
Brown Algae (Alaria)					---	+++*+*+*
Mussels (Mytilus)				---	+++	-----
Upright Brown Algae (not Fucus)					---	- + ++*+*+*+*
Eel Grass						-----
Clams						---
Fish (Pricklebacks)						---

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

Common Species on BC002-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Acrosiphonia sp., Cladophora sp., Enteromorpha sp., Ulva sp.,
Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Agarum fimbriatum, Costaria costata, Ectocarpus
spp., Fucus distichus, Hildenbrandia sp., Laminaria groenlandica,
Nereocystis leutkeana, Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Anfeltia plicata, Bossiella sp., Calliarthron sp., Corallina sp.,
Cryptosiphonia woodii, Cumagloia andersonii, Endocladia muricata,
Halosaccion glandiforme, Iridaea sp., Lithothamnion sp., Mastocarpus
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 bowerbanki?
2. Anemones - Anthopleura artemesia, A. elegantissima, A. xanthogrammica,
Epiactis ritteri, E. prolifera?, Metridium senile, Urticina
crassicornis,
3. Hydroids - Sertulariidae, Aglaophenia sp., Abietinaria sp.
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile, Tubulanus
polymorphus
8. Polychaete Worms
Glyceridae
Nepthyidae
Nereidae - Nereis spp.
Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii
10. Crustaceans
 - a. Amphipods - Traskorchestia traskiana
 - b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs - Haplogaster sp., Hemigrapsus oregonensis, Paguridae
(hermit crabs), Oregonia gracilis, Pugettia sp.,
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Ghorimorsphaeroma
oregonensis
11. Mollusca
 - a. Chitons - Mopalia sp., M. mucosa, Katharina tunicata, Tonicella
lineata,
 - b. Snails - Gastropods
Amphissa columbiana, Fusitriton oregonensis, Littoraria sp.,
Littorina sitkana, L. keenae, Natica clausa, Nucella lamellosa,
N. lima, Searlesia dira, Tachyrhynchus sp.
 - c. Limpets - Acmaea mitra, Lottia digitalis, L. persona, L. limatula,
Tectura fenestrata, T. persona, T. scutum, Siphonaria
thersites
 - d. Nudibranches - Lamellidoris fusca, Onchidella borealis
 - e. Bivalves - Clinocardium nuttalli, Modiolus modiolus, Mytilus edulis,
Pododesmus cepio, Prototheca staminea, Saxidomus
giganteus
 - f. Cephalopods - Octopus dofleini

12. Echinoderms

- a. Brittle Stars - *Ophiolus aculeatus?*, *Ophiothrix spiculata?*,
Amphipholis?
 - b. Sea stars - *Dermasterias imbricata*, *Evasterias truscheli*, *Henricia leviuscula*, *Leptasterias hexactis*, *Mediaster aequalis?*,
Orthasterias keohleri, *Pisaster ochraceus*, *Pycnopoda helianthoides*, *Solaster dawsoni*
 - c. Sea Cucumbers - Holothurians *Cucumaria miniata*, *Eupentacta sp.*,
Leptosynapta sp.
 - d. Urchins - *Strongylocentrotus droebachiensis*
13. Bryozoans - *Membranipora sp.*, *Microporina borealis*, *Phidolopora pacifica*,
Schizoporella sp.
14. Ascidians - *Synocium? sp.*, *Aplidium?*
15. Fishes

Cottidae -

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

- III. Birds - Common Murre (5), Glaucous-winged Gull (5), Black-legged Kittiwake (5)

BC02-A/B

Legend - Geology

-  Bedrock Cl. R₁ / Bl. R₁
-  Bedrock outcrop
-  Boulder/cobble
-  Cobble/R₁
-  Pebble/granule

BIO SKETCH MAP

BC002-A

23 MAY 1991

1422-1518

J.P. Barry

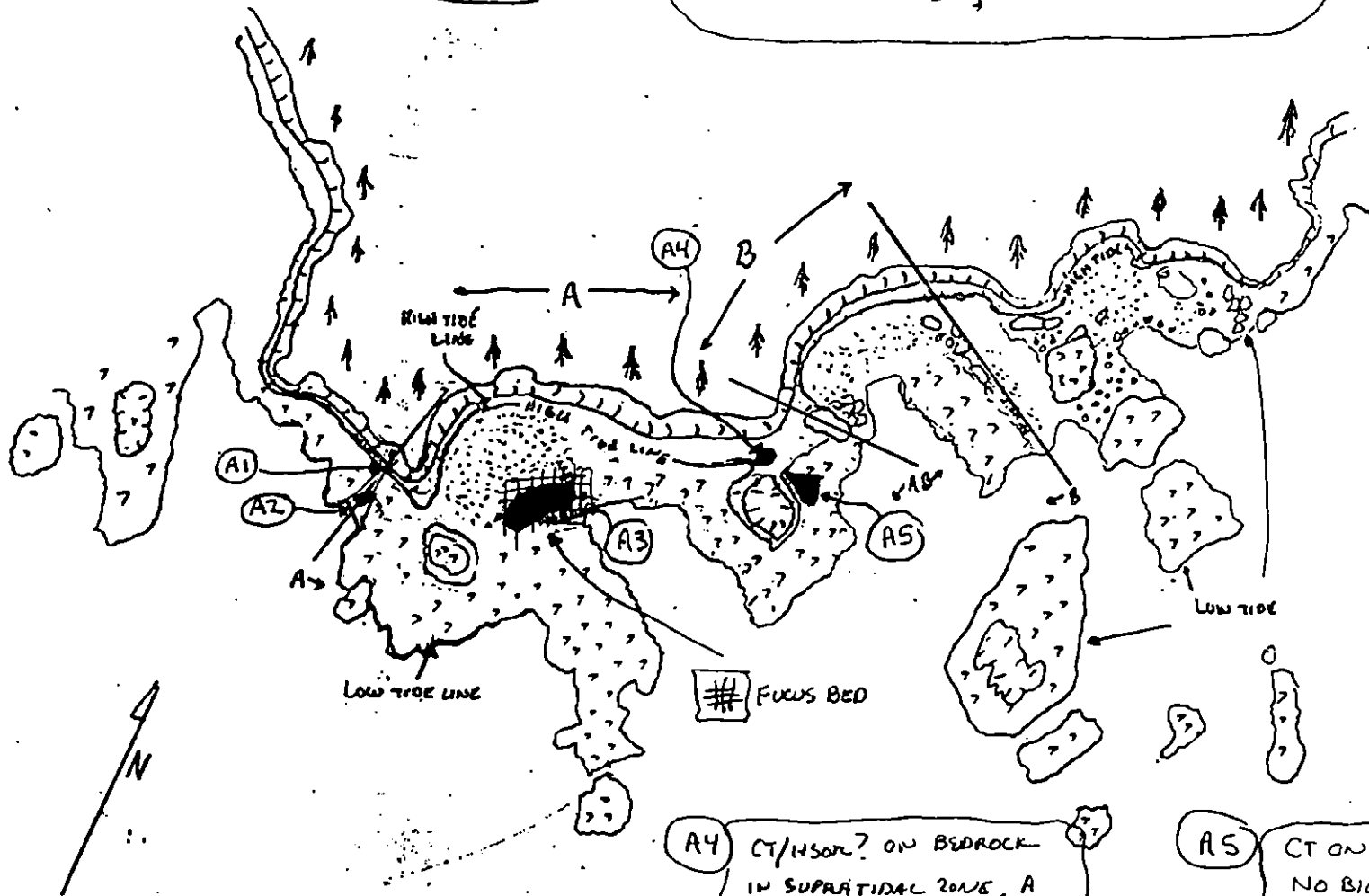
A3 MS/MSOR? IN COBBLE TO LOW ZONE COBBLE/BOULDER FIELD. DIVERSE & RICH COMMUNITY. MODERATE FUCUS. MODERATE TO DENSE LITTORINES, ?? EGG MASSES. ISOPODS, AMPHIPODS, HERMIT CRABS, PEANUT WORMS, RED & GREEN ALGAE, CLAMS, MUSSELS, FISH, POLYCHAETE WORMS - ALL PRESENT. OIL IS UNDER LARGER COBBLE,

NO BIOTA

A2

CT ON BEDROCK-

FILAMENTOUS GREEN ALGAE PRESENT AS SCATTERED FILM. SPARSE EPHEMERAL ALGAE (PORPHYRA, ENTEROMORPHA) DENSE LITTORINE SNAILS (MOSTLY JUVENILES), A FEW LIMNETS

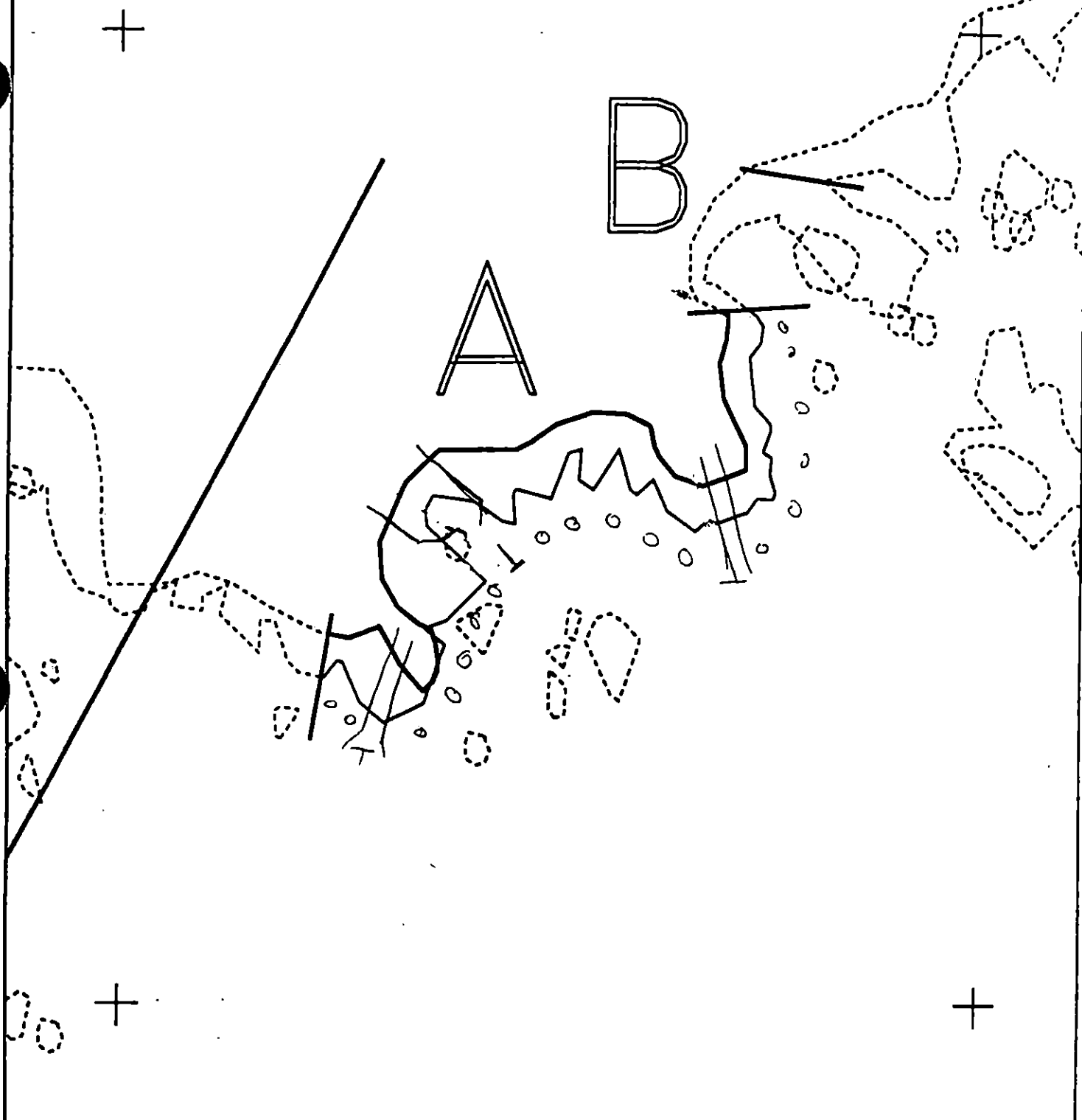


A4

CT/MSOR? ON BEDROCK IN SUPRATIDAL ZONE. A FEW LITTORINE SNAILS, NO OTHER BIOTA

A5

CT ON BEDROCK - SUPRATIDAL ZONE NO BIOTA PRESENT AT THAT TIDAL ZONE IN THIS AREA



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

BC002 A
 ADEC Subsegment Length: 850m
 METERS

AK State Plane Zone 4
 abc002a



Subdivision Field Map
 Map Key: KENBC002A
 Name: JM Campbell
 Date: MAY 23/91
 Date Entered:

REVIEWED: MC 6/2/91
 CENSEA 5/31/91 KG

1991 MAYSAP EVALUATION

SEGMENT: BC 002 SUB: B REGION: KEN SURVEY DATE: 5/23/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: Timothy A Smith Date: 6/07/91

RECOMMENDATIONS:

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

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: June 7 1991

FOSC APPROVAL DATE: 6/11/91

ADEC [Signature]

FOSC [Signature]

EXXON [Signature]

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

USCG 7. M. Murphy et

NOAA [Signature]

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

TEAM NO. 4 SEGMENT B0002 SUBDIVISION B DATE 23 / MAY / 91

ADEC
NAME Clara S. Crosby SIGNATURE Clara S. Crosby
☒ NTR In this area, HSOR, AP, MSOR was recovered
in ≈ 10 bags off the SW. end of segment at
the base of bedrock, B, C.
No further treatment recommended.

EXXON
NAME George P. St. Ives SIGNATURE George P. St. Ives
☒ NTR very little oil remaining.

LANDMANAGER
NAME J. A. Johnson OF DNR SIGNATURE J. A. Johnson
☒ NTR Concur w/ DEC comments, + USCG/NOAA. Area has signs of high
hydrocarbon use other activity, + is within Kachemak Bay State
Wilderness Park. Additional treatment would probably yield few
positive results.

USCG/NOAA
NAME Capt. J. Mc Math SIGNATURE J. Mc Math
☒ NTR This area had a moderate amount of
on scene clean-up (fish etc) and around 50%
was removed of what we found.
The remaining area of the segment
revealed no oil.
Paul Mc Math

REVIEWED: MC 6/2/91
 REUSED 5/31/91 KC

Og Sketch Map

Legend

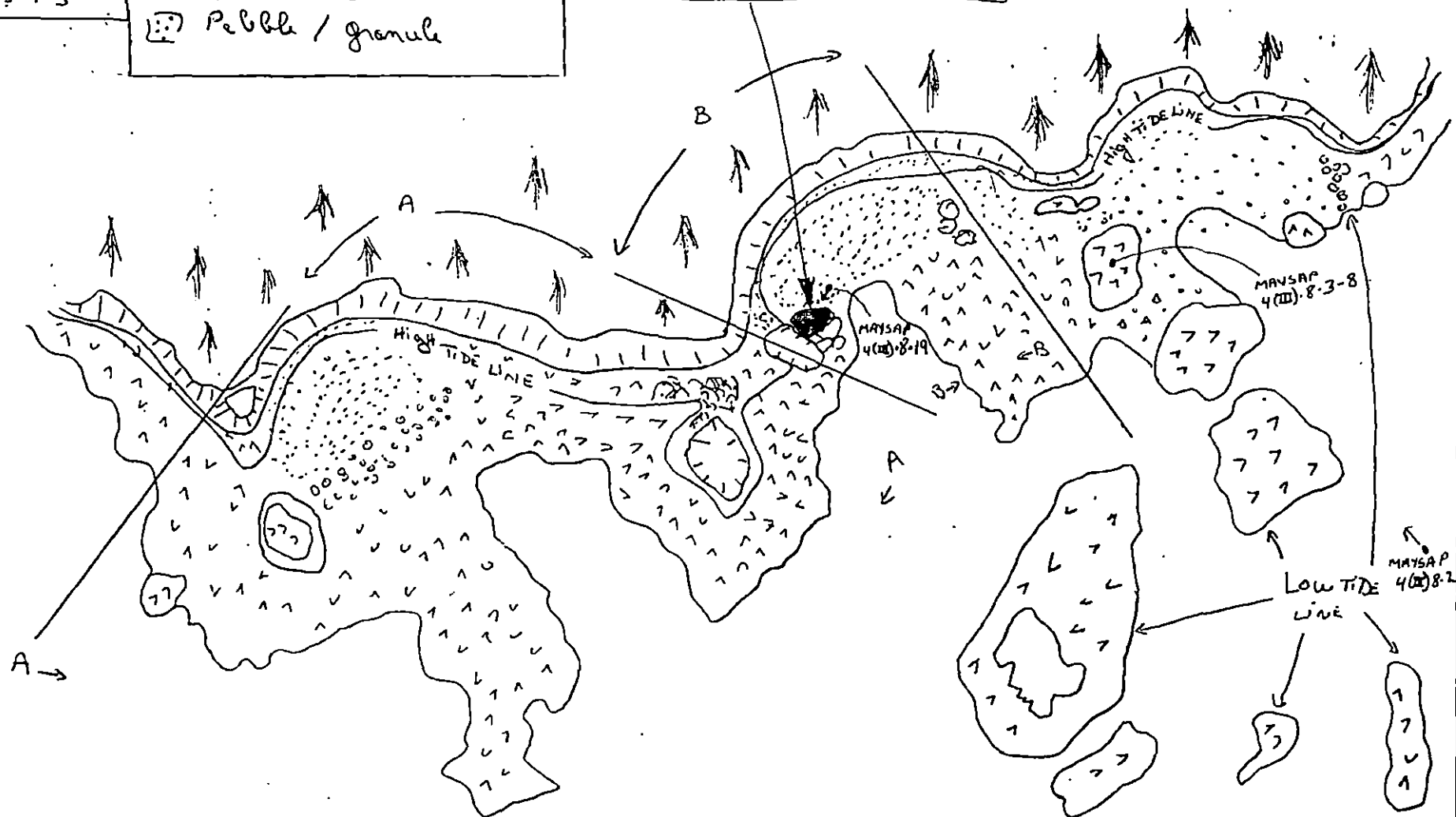
BC009-B
17 SAMPLES
MAY 23/91
1518 - 1545

- Bedrock cliffs / Bluffs
- Intertidal bedrock outcrops
- Boulder / cobble
- Cobble / Pebble
- Pebble / granule

ct. 2x10 < 10% A1
on bedrock

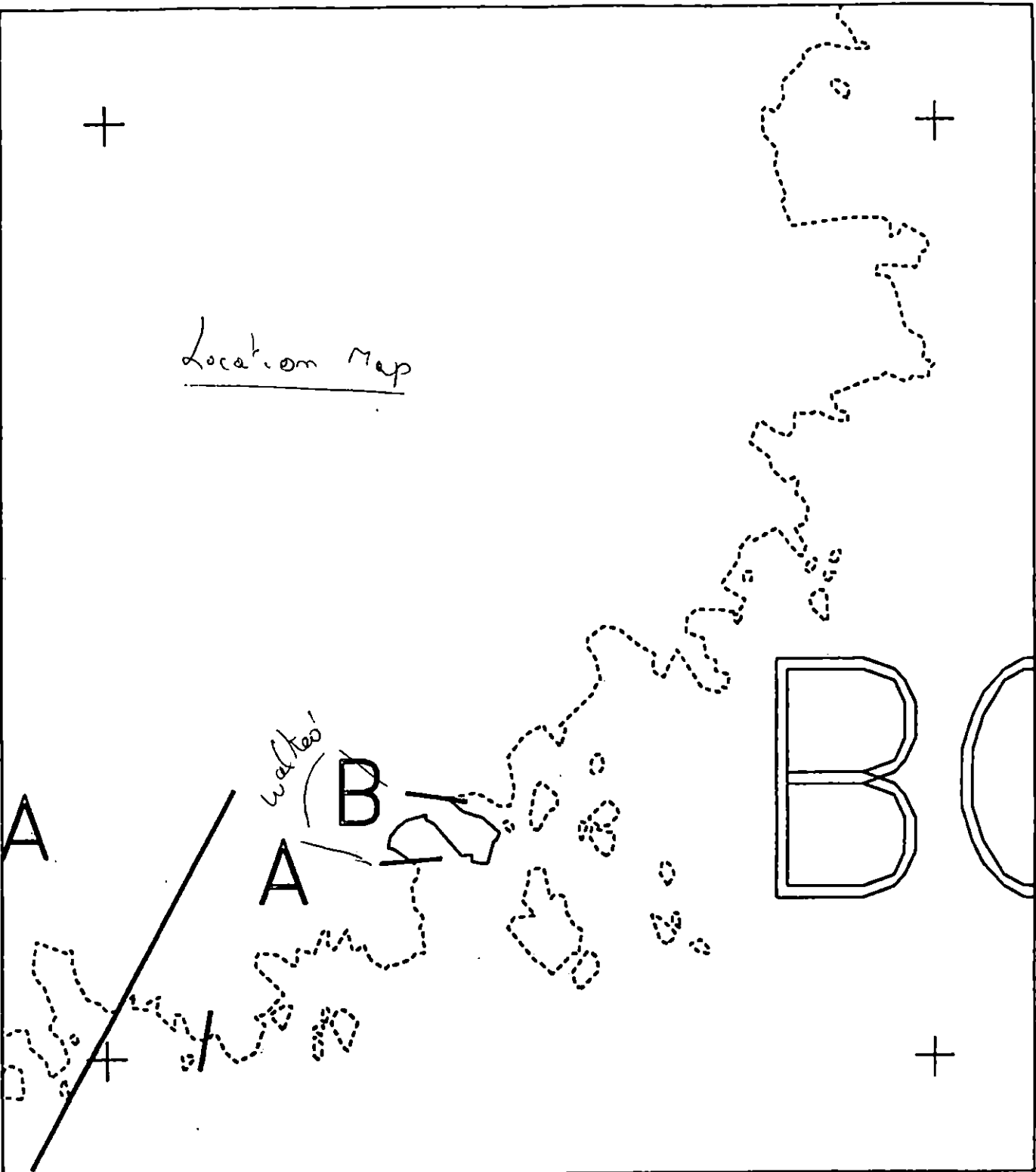
MSOR / Ap < 5%, 15x15
max patch size ~ 1m²
< 5 cm
worked on A9

reviewed 5/21/91
Reviewed: M. G. H.



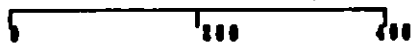
Meters
0 100 200

Location Map



BC002 B

METERS



AK State Plane Zone 4
NAD83

Subdivision Field Map

Map Key: KENBC002Ba

Name: J M Sample

Date: MAY 23/91

MAYSAP BIOLOGICAL SUMMARY FORM

STATION #	4	DATE/TIME	May 23, 1991 1518 - 1550
SEGMENT #	BC002	TIDAL HEIGHT (Range)	3.1 => 2.2
SUBDIVISION	B	BIOLOGIST	JIM BARRY
SEA STATE	1-3 ft sea	WIND SPEED/DIRECTION	SW 5-10 kt, clear

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil Related Comments

- A A coat of oil is found in the upper intertidal on the vertical wall of a bedrock headland. The weathered rock is located slightly above the upper limit of the barnacle zone. Green filamentous algae, and a few barnacles, limpets, and littorine snails, are the only biota present.
- B HSOR in a patch at the base of a bedrock cliff, with boulders and cobble talus. This patch extends from the upper to the middle intertidal. The upper portion has barnacles (sparse), limpets (moderate) and littorine snails (dense), with many egg masses, even in nearly direct contact with the oil. Lower zones have more red algae (Rhodomela), sparse Fucus, and many prickleback fishes (eel-like, Stichaeidae) brooding eggs under cobble. Again, these species are in nearly direct contact with the oiled sediments.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

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

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	4	River Otter	Tracks
Pinnipeds (specify)		Bear	Tracks
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

B. J. Barry

The shores along this subdivision are spectacular, comprising bedrock headlands, protected cobble and sand coves, and rugged cliffs and coastal bluffs. This heterogeneity is also manifested in the biota of the shores. The biota are very diverse, are vary with habitat type and wave exposure. The major assemblages or communities are:

- ### General Zonation Pattern

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

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, Hildenbrandia sp., Laminaria groenlandica.

Nereocystis leutkeana, Ralfsia sp., Syctosiphon lomentaria

4. Red Algae - Rhodophyta
Anfelia plicata, Bossiella sp., Calliarthron sp., Corallina sp.,
Cryptosiphonia woodii, Cumagloia andersonii, Endocladia muricata,
Halosaccion glandiforme, Iridaea sp., Lithothamnion sp., Mastocarpus
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 bowerbanki?
2. Anemones - Anthopleura artemesia, A. elegantissima, A. xanthogrammica,
Epiactis ritteri, E. prolifera?, Metridium senile, Urticina
crassicornis,
3. Hydroids - Sertulariidae, Aglaophenia sp., Abietinaria sp.
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile, Tubulanus
polymorphus
8. Polychaete Worms
Glyceridae
Nepthyidae
Nereidae - Nereis spp.
Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii
10. Crustaceans
a. Amphipods - Traskorchestia traskiana
b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
c. Crabs - Haplogaster sp., Hemigrapsus oregonensis, Paguridae
(hermit crabs), Oregonia gracilis, Pugettia sp.,
d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma
oregonensis
11. Mollusca
a. Chitons - Mopalia sp., M. mucosa, Katharina tunicata, Tonicella
lineata,
b. Snails - Gastropods
Amphissa columbiana, Fusitriton oregonensis, Lirularia sp.,
Littorina sitkana, L. keenae, Natica clausa, Nucella lamellosa,
N. lima, Searlesia dira, Tachyrhynchus sp.
c. Limpets - Acmaea mitra, Lottia digitalis, L. persona, L. limatula,
Tectura fenestrata, T. persona, T. scutum, Siphonaria
thersites
d. Nudibranches - Lamellidoris fusca, Onchidella borealis
e. Bivalves - Clinocardium nuttalli, Modiolus modiolus, Mytilus edulis,
Pododesmus cepio, Prototheca staminea, Saxidomus
giganteus
f. Cephalopods - Octopus dofleini
12. Echinoderms
a. Brittle Stars - Ophiolus aculeatus?, Ophiothrix spiculata?,
Amphipholis?
b. Sea stars - Dermasterias imbricata, Evasterias truscheli, Henricia
leviuscula, Leptasterias hexactis, Mediaster aequalis?,
Orthasterias keohleri, Pisaster ochraceus, Pycnopoda
helianthoides, Solaster dawsoni
c. Sea Cucumbers - Holothurians Cucumaria miniata, Eupentacta sp.,

Leptosynapta sp.

d. Urchins - *Strongylocentrotus droebachiensis*13. Bryozoans - *Membranipora* sp., *Microporina borealis*, *Phidolopora pacifica*,
Schizoporella sp.14. Ascidians - *Synocium?* sp., *Aplidium?*

15. Fishes

Cottidae -

Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*III. Birds - Common Murre (5), Glaucous-winged Gull (5), Black-legged Kittiwake
(5)

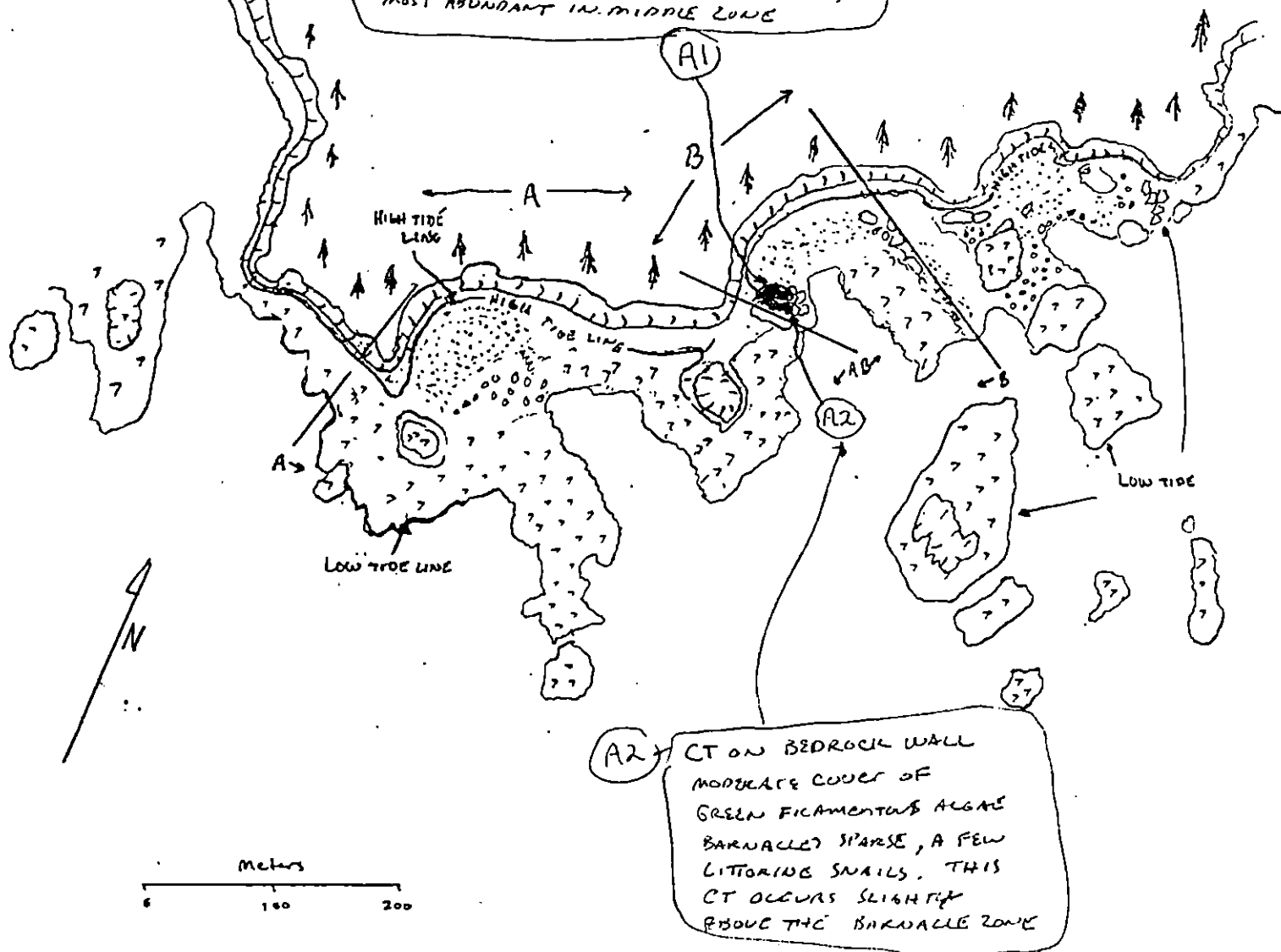
BC02-A/B

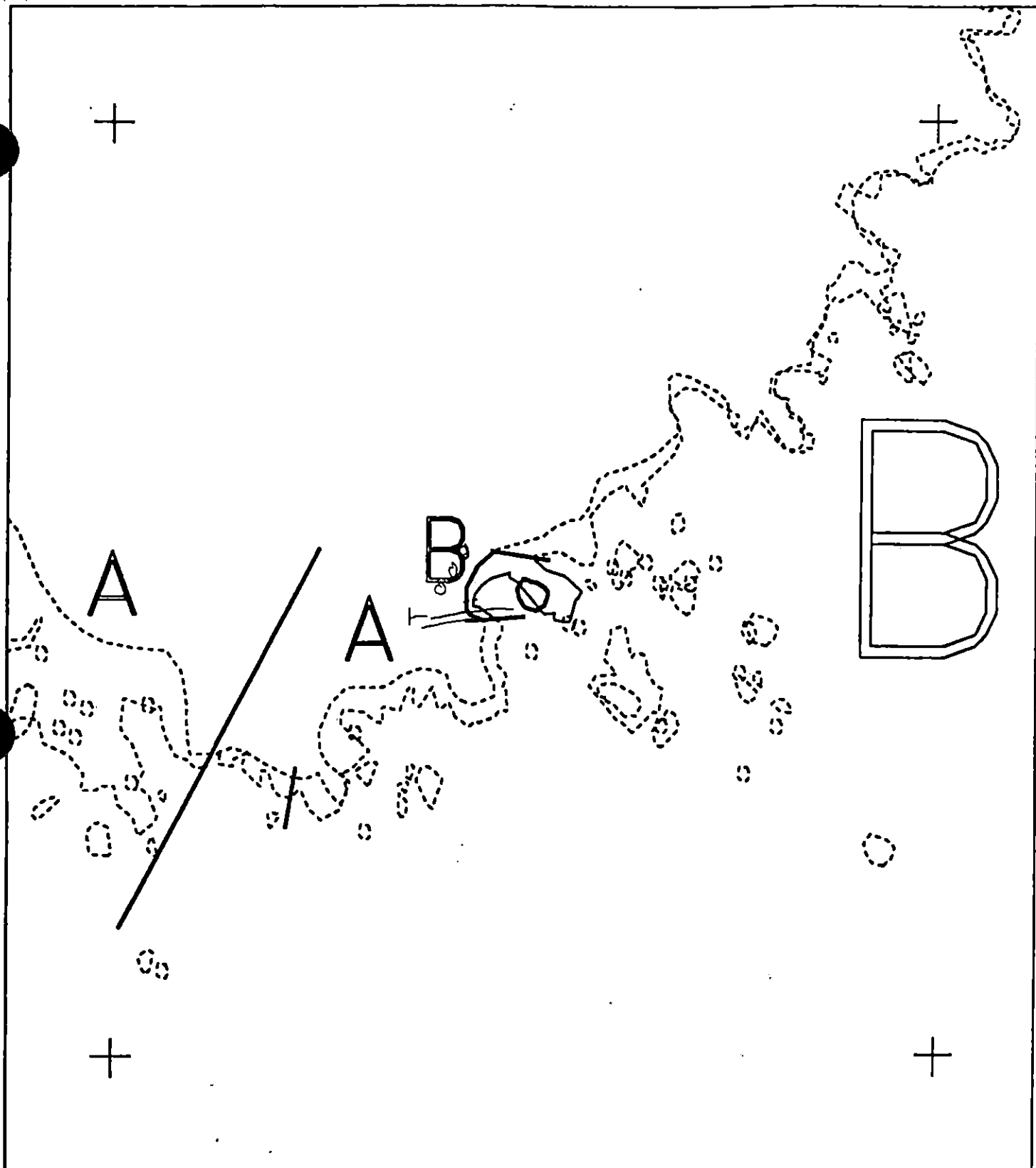
Legend

-  Bedrock Cl. R. / Blue R.
-  Bedrock outcrop
-  Boulder/cobble
-  Cobble/Rh
-  Pebble/Gravels

BIO SKETCH MAP
BC02-B
23 MAY 1991
1518-1550
JP BAREY

MSOR? IN COBBLE/BOULDER HABITAT
UPPER TO MIDDLE ZONE. DIVERSE
COMMUNITY WITH MODERATE TO LOW
ABUNDANCE. MODERATE LITTORINE
SNAIL DENSITY - LOTS OF EGG MASSES.
PRICKLEBALL FISHES (EEL-LIKE, STICH-
ABIDAE) COMMON BROODING EGGS
UNDER COBBLE. BARNACLES, LIMPETS
MODERATE TO SPARSE. GREEN & RED ALGAE,
MOST ABUNDANT IN MIDDLE ZONE





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

BC002 B
 ADEC Subsegment Length: 282m
 METERS

0 200 400
 AK State Plane Zone 4
 abc002b



Subdivision Field Map
 Map Key: KENBC002B
 Name: JM Samples
 Date: May 23/91
 Date Entered:

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

1991 MAYSAP EVALUATION

SEGMENT: BC 002 SUB: A REGION: KEN SURVEY DATE: 5/23/91

ENVIRONMENTAL SENSITIVITIES:

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

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: T. Smith Date: 6/07/91

RECOMMENDATIONS:

INITIAL**TAG**

FOSC

TREATMENT REQUIRED (Y or N)

N

✓

7

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Custombien

Other

Other

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: JUNE 7 1991

FOSC APPROVAL DATE: 6/11/91

ADEC

FOSC

EXXON

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

USCG

NOAA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

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

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT BC002 SUBDIVISION A DATE 23 May 91

ADEC

NAME CLARA S. Crosby

SIGNATURE

Clara S. Crosby

☒ NTR Lt. oiling was observed throughout this segment. Areas of AP, MSOR & MS. These areas are rather inaccessible & were partially worked. Suggest no further activity in the area.

EXXON

NAME George P. Stiles

SIGNATURE

George P. Stiles 5/23/91

☒ NTR Very little oil found. VECO crew picked up what was retrievable.

LANDMANAGER

NAME Jeff Johnson

OF

DNR

SIGNATURE

Jeff Johnson☒ NTR

Widely scattered splatters + tar, except for one area of MSOR-AP that was picked up, and some coat in an area of boulders that wouldn't be practical to work. Within Kachemak Bay State Wilderness Park.

USCG/NOAA

NAME CWO2 J. McMillan

SIGNATURE

J. McMillan☒ NTR

very little oil found, picked-up by VECO crew.

Donald McMillan

PAGE _____ OF _____

SEGMENT B(-00)

SUBDIVISION A

DATE 7-1 1953 / 91

ENERGY LEVEL: ☐ H ☒ M ☐ L

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

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

EST. OIL CATEGORY LENGTH: W m M m N m VL 96 m NO 554 m US m

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

SLOPE: V = VERTICAL: H = HIGH ANGLE: M = MEDIUM ANGLE: L = LOW ANGLE PHOTO ROLL # MAYSAP-4(III) - 8 FRAMES 9-18

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

OG COMMENTS: Shoreline with wide intertidal bedrock ramp. Area is exposed to a 1000 ft fetch but is sheltered by the presence of many nearshore shoals and islands. Storm berm well developed with lots of clean bags where fine sediments are present, elsewhere, the beach is made up of bedrock bluffs. Oil is present as indicated on map in 4 distinct areas.

REvised: MC 6/2/91

revised 5/3/91 KG

PAGE _____ OF _____

DATE MAY 123 / 91

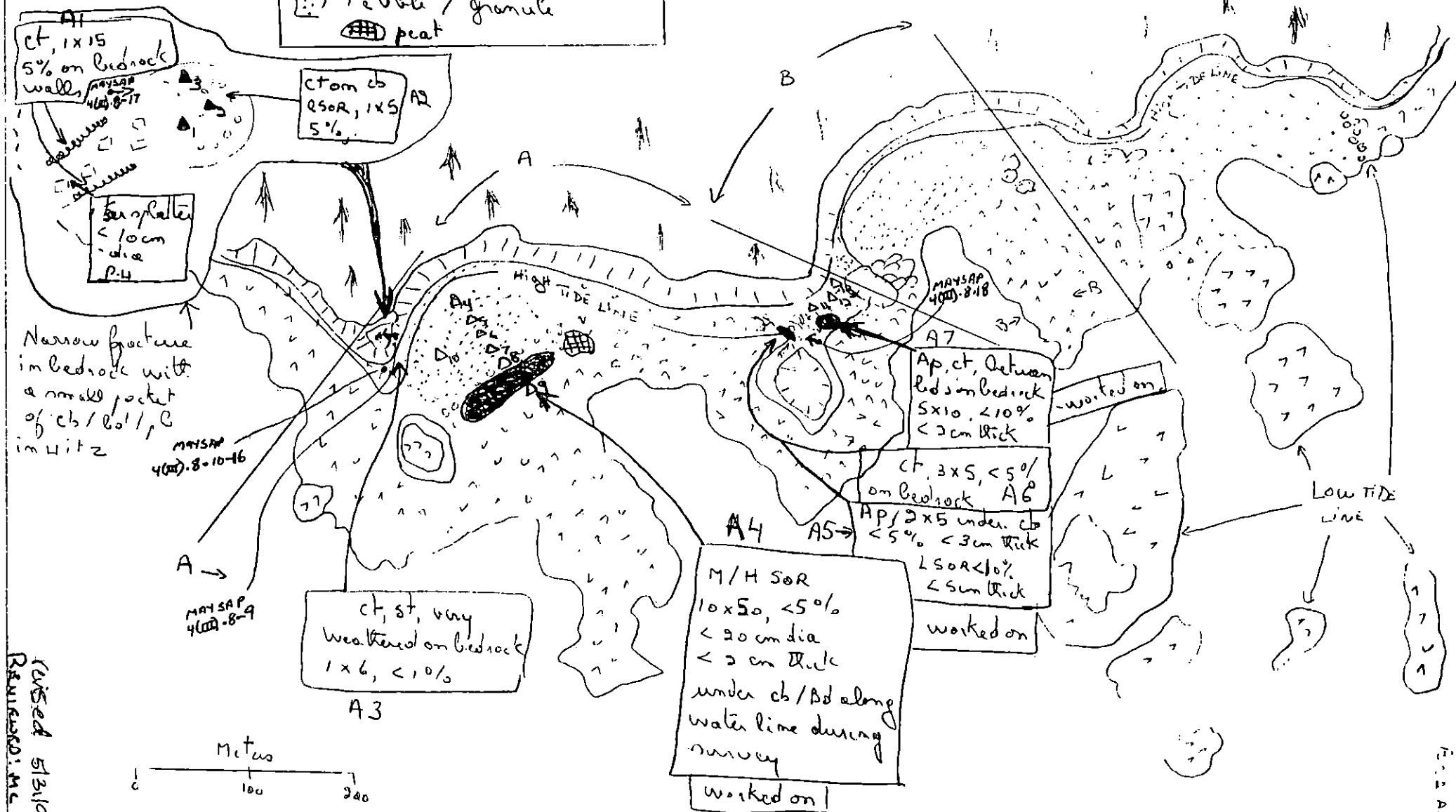
SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

REVIEWED: MC 6/2/91

1422 - 1518

ഭാഗ്യം

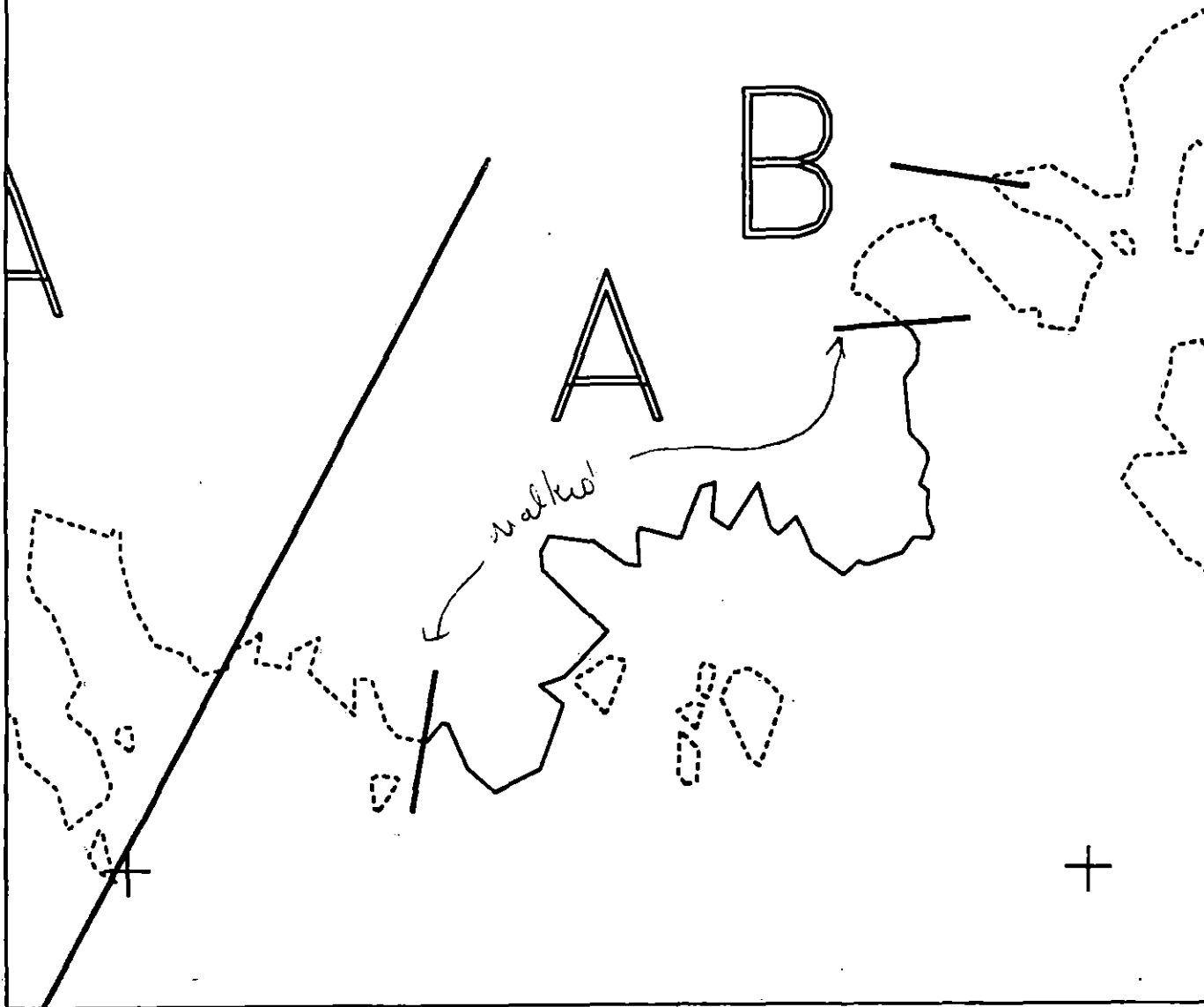
- ☒ Bedrock cliffs / Bluffs
- ☒ Intertidal bedrock outcrops
- ☐ Boulder / cobble
- ☐ Cobble / Pebble
- ☒ Pebble / granule
- ☒ peat



Revised 5/31/91 KC
Revised: MC 6/2/91

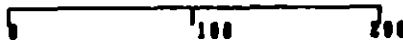
111

Location Map



BC002 A

METERS



AK State Plane Zone 4
56080200

Subdivision Field Map

Map Key: KENBC002Aa

Name: Jim Simpson

Date: MAY 13/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 23, 1991 1422 - 1518
SEGMENT #	BC002	TIDAL HEIGHT (Range)	4.6 => 3.1
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	1-3 ft sea	WIND SPEED/DIRECTION	SW 5-10 kt, clear

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Oil Related Comments

- A Oil (scattered LSOR) on some of the angular pebbles in the supratidal zone at the top of a small channel. No biota are present. No biota would be expected at this location.
- B A scattered coat of oil was found on the bedrock wall in the upper zone of a highly exposed small channel. Green filamentous algae forms a film over much of the bedrock. Ephemeral algae (Porphyra, Scytosiphon) are present in scattered patches. Littorine snails are dense, particularly small (ca 3 mm) individuals. Limpets are present, but sparse.
- C Patches of MS?HSOR are found under cobble in the middle to low zone of the intertidal boulderfield. The oil appears quite weathered, does not sheen easily, and is restricted to the undersurface of large cobble. This site appears quite healthy, with a rich bed of Fucus, scattered mussels, moderate to dense abundances of littorine snails, barnacles, isopods, and amphipods. Several species, particularly littorines, have recently deposited egg masses. Many other species are present, including burrowing forms (peanut worms), hermit crabs, fishes, clams, and many algae.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

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

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	4	River Otter	Tracks
Pinnipeds (specify)		Bear	Tracks
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

- D A CT?HSOR on the bedrock in the supratidal zone very near the drift line behind a large headland. There are a few littorine snails at this site, and no other biota. Very few species would persist here regardless of oiling conditions.
- E A coat of oil is present on the boulder and bedrock headland in the upper intertidal zone to supratidal zone. Green filamentous algae are present in some pools, and black lichen occurs in small patches. This is very high in the intertidal and is rarely splashed by waves. The oil is quite weathered.

General Characteristics of BC002-A

The shores along this subdivision are spectacular, comprising bedrock headlands, protected cobble and sand coves, and rugged cliffs and coastal bluffs. This heterogeneity is also manifested in the biota of the shores. The biota are very diverse, are vary with habitat type and wave exposure. The major assemblages or communities are:

- 1: Sand/pebble beach. Very little lives on these beaches.
- 2: Cobble/boulder field. The biota of this habitat varies according to exposure. Areas with high waves cause high disturbance, resulting in low cover and density of species. On protected coves, such as the main beach/cobble field on the subdivision, the low cobble/boulder covered shore has a fairly high cover of Fucus, with a rich assemblage of associated species of invertebrates and algae.
- 3: Bedrock outcrops also have diverse species assemblages. Fucus is generally high in cover, as are barnacles and limpets. Cover and abundance of attached invertebrates are high, especially where the shores are protected from scour by boulders and cobble.
- 4: A couple of the small coves are quite well protected from waves and have peat and eel grass, with sparse to moderate abundance of clams in the low shore.

General Zonation Pattern

Biota:	Tide Level	SupraTidal	Upper	Middle	Low	Subtidal
Oil Distribution		---	-	-	-	-
Bare Rock		----	-	-	-	-
Green Filamentous Algae		--	-	++	+	+
Barnacles (Balanus)			-----	+++++	+	+
Littorine Snails			---	++*	*	*
Limpets			---	++	++	+
Rockweed (Fucus)			---	+++++	++	+
Palmaria and other Red Algae					+++++	++
Brown Algae (Alaria)					+++++	+
Mussels (Mytilus)				---	++	+
Upright Brown Algae (not Fucus)					---	++
Eel Grass						++
Clams						++
Fish (Pricklebacks)						---

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

Common Species on BC002-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Acrosiphonia sp., Cladophora sp., Enteromorpha sp., Ulva sp.,
Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Agarum fimbriatum, Costaria costata, Ectocarpus
spp., Fucus distichus, Hildenbrandia sp., Laminaria groenlandica,
Nereocystis leutkeana, Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Anfelia plicata, Bossiella sp., Calliarthron sp., Corallina sp.,
Cryptosiphonia woodii, Cumagloia andersonii, Endocladia muricata,
Halosaccion glandiforme, Iridaea sp., Lithothamnion sp., Mastocarpus
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 bowerbanki?
2. Anemones - Anthopleura artemesia, A. elegantissima, A. xanthogrammica,
Epiactis ritteri, E. prolifera?, Metridium senile, Urticina
crassicornis,
3. Hydroids - Sertulariidae, Aglaophenia sp., Abietinaria sp.
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile, Tubulanus
polymorphus
8. Polychaete Worms
Glyceridae
Nepthyidae
Nereidae - Nereis spp.
Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii
10. Crustaceans
 - a. Amphipods - Traskorchestia traskiana
 - b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs - Haplogaster sp., Hemigrapsus oregonensis, Paguridae
(hermit crabs), Oregonia gracilis, Pugettia sp.,
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma
oregonensis
11. Mollusca
 - a. Chitons - Mopalia sp., M. mucosa, Katharina tunicata, Tonicella
lineata,
 - b. Snails - Gastropods
Amphissa columbiana, Fusitriton oregonensis, Lirularia sp.,
Littorina sitkana, L. keenae, Natica clausa, Nucella lamellosa,
N. lima, Searlesia dira, Tachyrhynchus sp.
 - c. Limpets - Acmaea mitra, Lottia digitalis, L. persona, L. limatula,
Tectura fenestrata, T. persona, T. scutum, Siphonaria
thersites
 - d. Nudibranches - Lamellidoris fusca, Onchidella borealis
 - e. Bivalves - Clinocardium nuttalli, Modiolus modiolus, Mytilus edulis,
Pododesmus cepio, Prototheca staminea, Saxidomus
giganteus
 - f. Cephalopods - Octopus dofleini

12. Echinoderms
 - a. Brittle Stars - *Ophiolus aculeatus?*, *Ophiothrix spiculata?*,
Amphipholis?
 - b. Sea stars - *Dermasterias imbricata*, *Evasterias truscheli*, *Henricia leviuscula*, *Leptasterias hexactis*, *Mediaster aequalis?*,
Orthasterias keohleri, *Pisaster ochraceus*, *Pycnopoda helianthoides*, *Solaster dawsoni*
 - c. Sea Cucumbers - *Holothurians Cucumaria miniata*, *Eupentacta sp.*,
Leptosynapta sp.
 - d. Urchins - *Strongylocentrotus droebachiensis*
 13. Bryozoans - *Membranipora sp.*, *Microporina borealis*, *Phidolopora pacifica*,
Schizoporella sp.
 14. Ascidians - *Synocium? sp.*, *Aplidium?*
 15. Fishes
 - Cottidae -
 - Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*
- III. Birds - Common Murre (5), Glaucous-winged Gull (5), Black-legged Kittiwake (5)

B.C02-A/B

Send - Geology

- ☒ Bedrock Cl. M. / Blue
- ☒ Bedrock outcrop
- ☒ Boulder / Cobble
- ☒ Cobble / Rb
- ☒ Pebble / Gravel

BIO SKETCH MAP

B.C02-A

23 MAY 1991

1422-1518

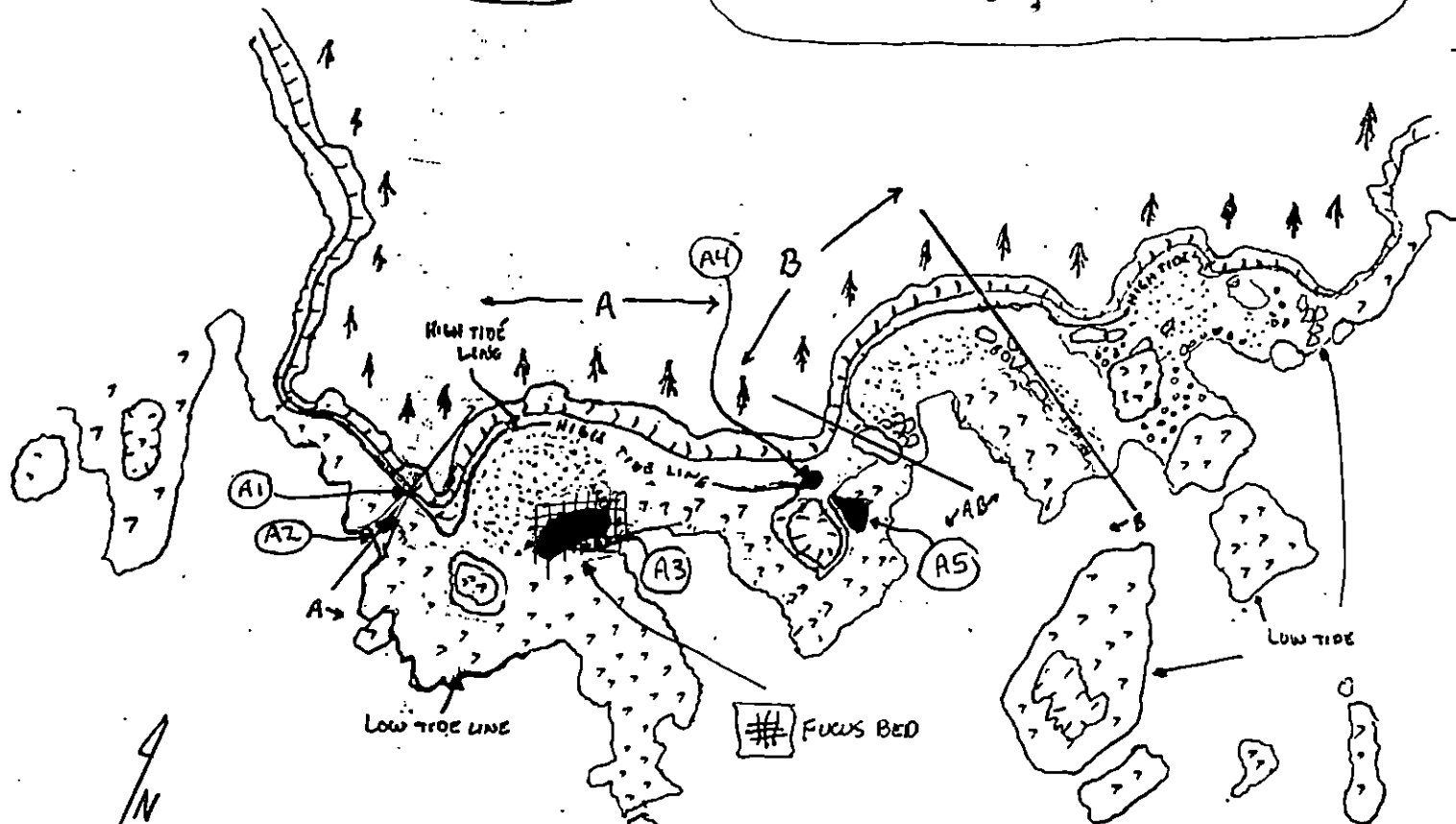
J.P. Barry

A3 MS/MSOL? IN MID LOW ZONE COBBLE/BOULDER FIELD. DIVERSE & RICH COMMUNITY. MODERATE FUCUS. MODERATE TO DENSE LITTORINES, EGG MASSES. ISOPODS, AMPHIPODS, HERMIT CRABS, PEANUT WORMS, RED & GREEN ALGAE, CLAMS, MUSSELS, FISH, POLYCHAETE WORMS - ALL PRESENT. OIL IS UNDER LARGER COBBLE,

A1 BIOTA

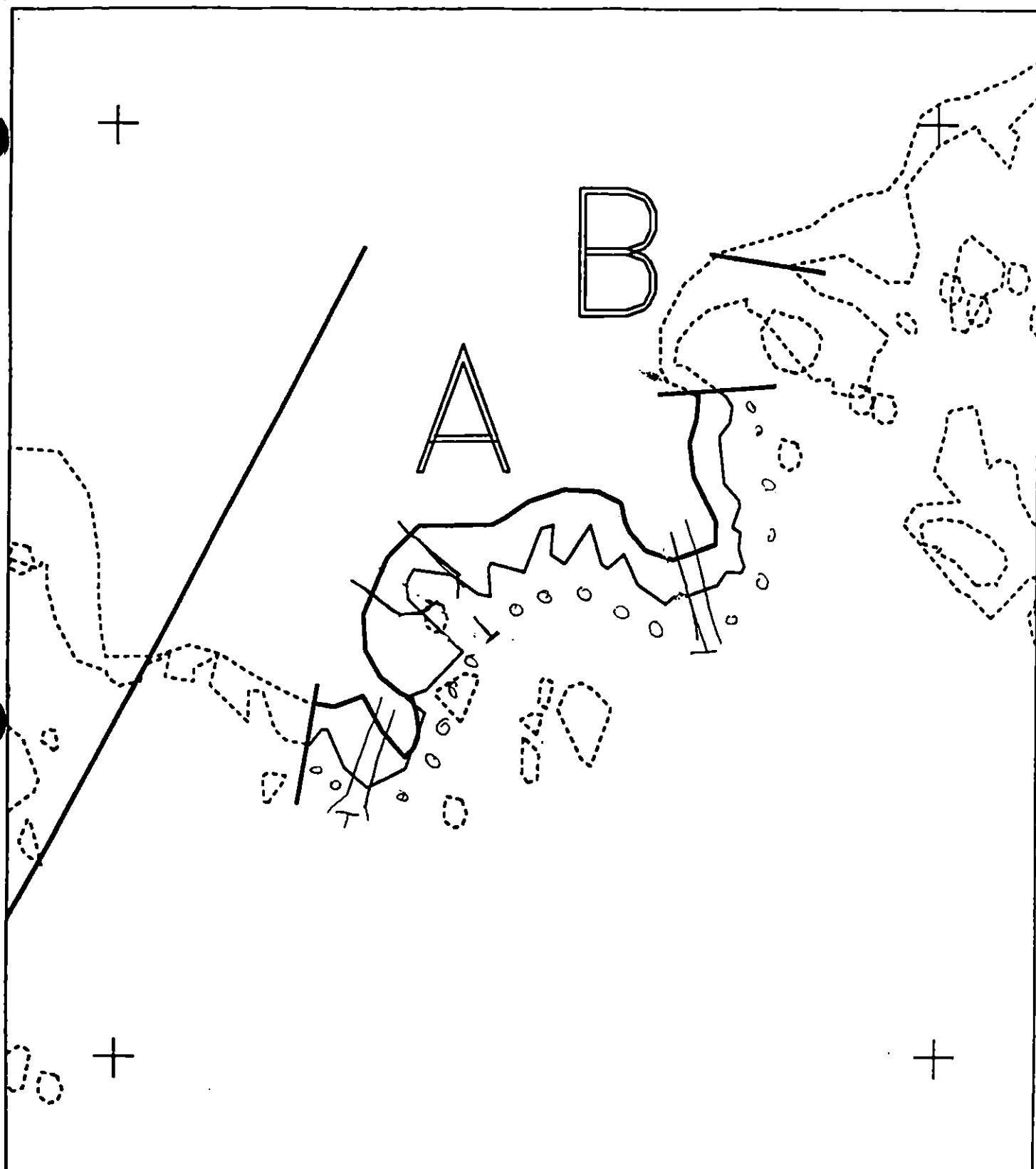
A2 CT ON BEDROCK -

FILAMENTOUS GREEN ALGAE PRESENT AS SCATTERED FILM. SPARSE EPHEMERAL ALGAE (PORPHYRA, ENTEROMORPHA) DENSE LITTORINE SNAILS (MOSTLY JUVENILES), A FEW LIMACS



A4 CT/MSOL? ON BEDROCK IN SUPRATIDAL ZONE. A FEW LITTORINE SNAILS, NO OTHER BIOTA

A5 CT ON BEDROCK - SUPRATIDAL ZONE NO BIOTA PRESENT AT THAT TIDAL ZONE IN THIS AREA



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

BC002 A
 ADEC Subsegment Length: 650m
 METERS
 0 100 200
 AK State Plane Zone 4
 abc002a

Subdivision Field Map
 Map Key: KENBC002A
 Name: J. M. Campbell
 Date: MAY 23/91
 Date Entered:

REVIEWED: MC 6/12/91
 revised 5/31/91 KG

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT BC-2 SUBDIVISION A (1 of 1)

WORK WINDOW	
Manual Pickup Tarmat Removal	WORK 7/1 - 8/15
Bioremediation Manual Tilling	WORK 7/1 - 7/31

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B	Salmon Stream	An ADF&G uncatalogued anadromous stream is more than 100m from work site. No constraint to manual pickup, tarmat removal, bioremediation, and manual tilling.
3N,O,P,Q	Harbor Seal & Seal Lion Pupping and Molting	Closed to bioremediation and manual tilling prior to 7/1 and after 7/31. Closed to manual pickup and tarmat removal prior to 7/1 and after 8/15.
1J	Purse Seine Area	Closed to bioremediation after 7/10. No constraint to manual pickup and manual tilling.

OTHER ECOLOGICAL CONSIDERATIONS

Do not apply bioremediation to specific areas where seals are observed to haulout. Do not chase or harass seals or sea lions, and do not approach pups under any circumstances. When working on or near haulouts, complete the job as quickly as possible with minimum personnel, equipment, noise and disturbance. Keep boats and personnel as far from actual haulouts as is practical to do the work specified. Minimize air traffic near haulouts, maintain elevation as is practical, and avoid repeated overflights of the same haulout areas. Restrict boat and air traffic to essential minimum after 7/10. Avoid any unnecessary disturbance or damage to unrolled biota and substrate.

FOSC

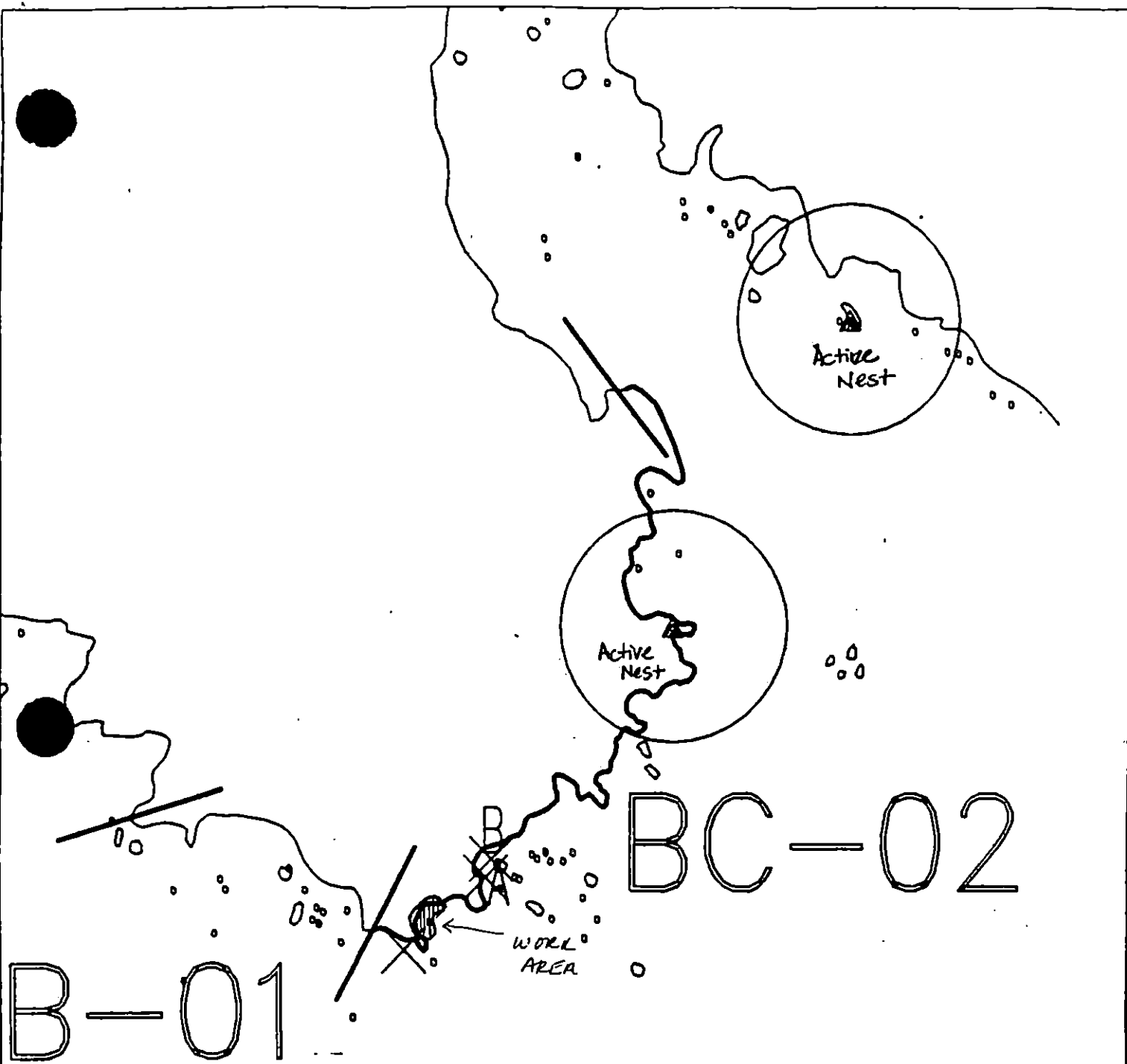
Date

6-14-90

Prepared by

Date

6/16/90



Exxon Company, USA
Map Key: KEN-BC-2



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

★	Seabird Colony
▲	Eagle Nest

SHORELINE EVALUATION

SEGMENT ST/ BC-002 SUBDIVISION A (1 OF 2) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
3N,3P Harbor seal and sea lion pupping (5/15 to 7/1)
4GA State wilderness park
6U Recreation: Tent sites (6/1 to 9/15)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid 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. Hansen*

DATE: 4/18/90

OILING CATEGORIZATION:

Wide 18 m: Medium 227 m: Narrow 262 m: V.Light 89 m: No Oil 53 m
Subsurface Oil Observed: Yes X No Maximum Depth 25+ cm

RECOMMENDATIONS:

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

COMMENTS: Recommend treatment includes 1) manual pick up of mousse patties and tar balls. 2) Manual pick up of oiled debris and logs if more than 10% coverage. 3) Bioremediation of areas shown on attached map. Work should be conducted between 7/1 and 7/10 based on above harbor seal and salmon constraints unless otherwise authorized by ADF&G and USFWS. MANUALLY TILL IN AREA of PTS 1, 2 + 3 PRIOR TO BIOREMEDIATION.

TAG COMMENTS:

SEE CONSTRAINTS ADDENDUM DATED 6/16/90. *JP*

TAG APPROVAL DATE: 4/18/90.

ADEC *Art Weiner*
EXXON *Andy Galt*
NOAA *Bruce Westcott*
USCG *G.A. Reiter*

FOSC: *W L*

DATE: 6-8-90

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT BC-2 SUBDIVISION B (2 of 2)

WORK WINDOW	
Manual Pickup Tarnat Removal	WORK 7/1 to 8/15
Bioremediation	WORK 7/1 to 7/31

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B	Salmon Stream	NO CONSTRAINT. No ADF&G catalogued stream in Segment.
1J	Purse Seine Area	Closed to bioremediation after 7/20. No constraint to manual pickup and tarnat removal.
3N,O,P,Q	Harbor Seal & Sea Lion Pupping and Molting	Closed to bioremediation prior to 7/1 and after 7/31. Closed to manual pickup and tarnat removal prior to 7/1 and after 8/15.

OTHER ECOLOGICAL CONSIDERATIONS

Do not apply bioremediation to specific areas where seals are observed to haulout. Do not chase or harass seals or sea lions, and do not approach pups under any circumstances. When working on or near haulouts, complete the job as quickly as possible with minimum personnel, equipment, noise and disturbance. Keep boats and personnel as far from actual haulouts as is practical to do the work specified. Minimize air traffic near haulouts, maintain elevation as is practical, and avoid repeated overflights of the same haulout areas. Restrict boat and air traffic to essential minimum after 7/20. Avoid any unnecessary disturbance or damage to unrolled blots and substrate.

FOSC

[Signature]

Date

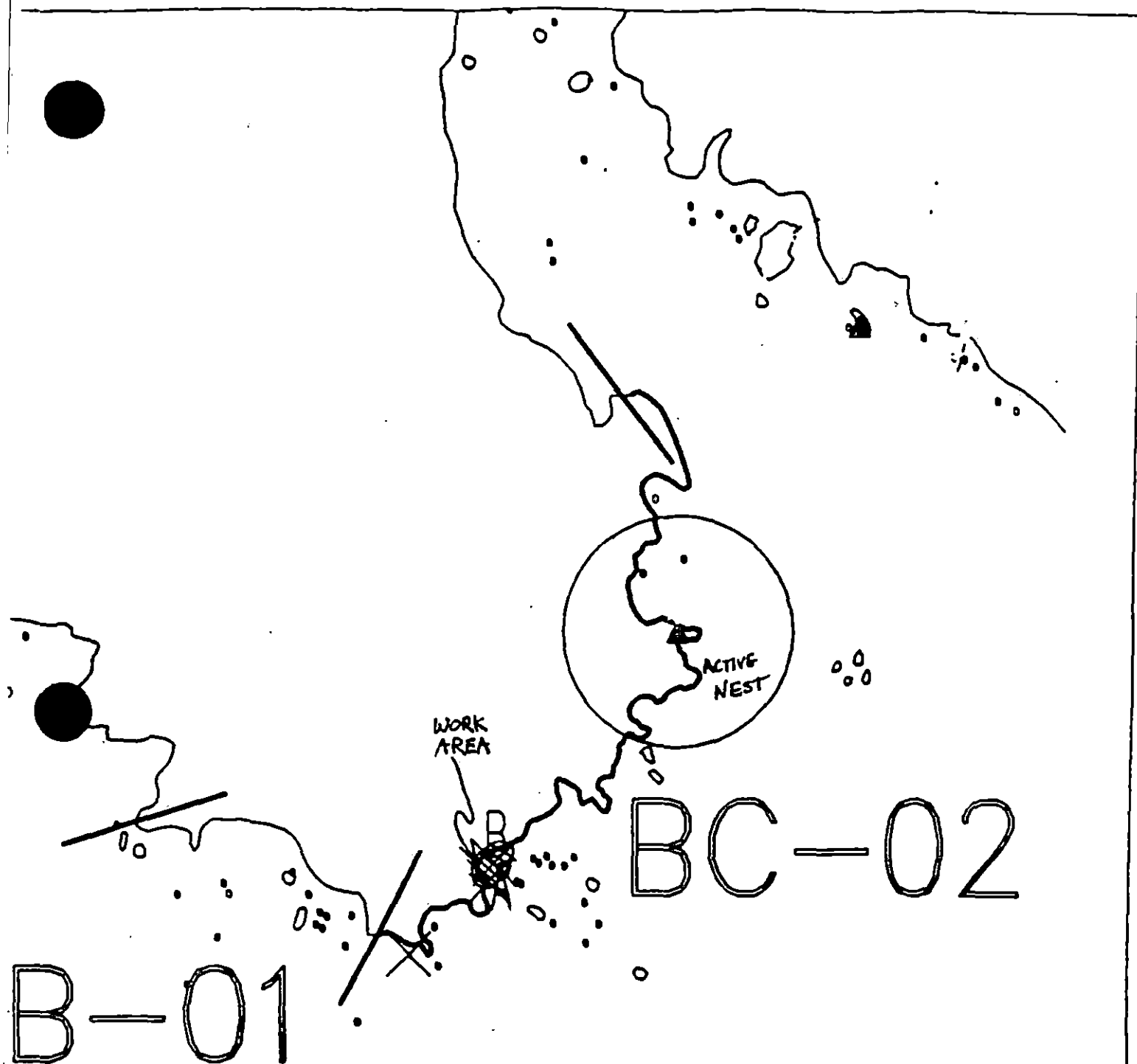
6/14/90

Prepared by

[Signature]

Date

6/14/90



NO ADF&G Cataloged Stream in this Segment



Exxon Company, USA

ECOLOGY MAP
SEGMENT BC-2
SUBDIVISION B (2 of 2)

- ★ Seabird Colony
- ▲ Eagle Nest

SHORELINE EVALUATION

SEGMENT ST/ BC-002 SUBDIVISION B (2 OF 2) DATE 3/30/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

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

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

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

4G State wilderness park

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

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid 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. Homan DATE: 4/18/90

OILING CATEGORIZATION:

Wide 12 m: Medium 0 m: Narrow 0 m: V. Light 87 m: No Oil 23 m
Subsurface Oil Observed: Yes X No Maximum Depth 8 cm

RECOMMENDATIONS:

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

COMMENTS: Recommend treatment includes 1) manual pick up and removal of tarmats. 2) Manual pick up of oiled debris and logs with greater than 10% coverage. 3) bioremediation of areas shown on attached sketch map. Work should be conducted between 7/1 and 7/10 based on above salmon constraints unless otherwise authorized by ADF&G and USFWS.

SEE FUV. COMMENTS ADDENDUM dated 6/4/90

TAG COMMENTS: _____

TAG APPROVAL DATE: 4/18/90

ADEC JOHN BAUER

EXXON ANDY TETZ

NOAA Burt Westcott

USCG G.A. REITER

FOSC: W L DATE: 4-27-90

REGION: KENAI

SEGMENT: ST/BG-01

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ BG-01 SUBDIVISION A (1 OF 1) DATE 4/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
4LL National Parks
6U Recreation: Tent sites (6/1 to 9/15)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 3465 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

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

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

1A
1B

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

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

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

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

1C

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

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

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

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

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

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

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

1H Remote release site

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

AGENCY CONTACT PERSON: 1E

ADF&G Larry Peltz 424-3214

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

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

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

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

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

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

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

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

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

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

3N, 3P
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. No application of Inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31). Contact ADF&G and USFWS prior to treatment for confirmation.

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

ADF&G Don Calkins 267-2403

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

ADF&G Tom Roth 267-2206

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

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

6U

Recreation:

Tent sites (6/1 to 9/15)

6V

Anchorage (6/1 to 9/15)

6W

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

6X

Lodge (6/1 to 9/15)

6Y

Special use destination

7Z

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

7HH

Finfish harvesting

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 BG-1 SUBDIVISION: A DATE 4/29/90USCGNAME JERRY SCHULTZ SIGNATURE Jerry Schultz☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTEDADECNAME Mike Ebel SIGNATURE Michael Ebel☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTEDBG-1-A: No oil found.LAND MANAGER NPSNAME Michael Tetreau SIGNATURE Michael Tetreau☒ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

Only surveyed part of The segment, but due to The very limited history of oil here and The high wave energy I feel That no further survey is warranted. No oil was found.

SHORELINE OILING SUMMARY

REVISION NO. 04/13/90

OG Randy Siegel USCG Jerry Schulte Mike Tetlow (WPS) SEGMENT ST/ BG-1
 BIO Lewis Sherman LAND REP Peter Zoller (CAC) SUBDIVISION A (1 OF 1)
 EXXON Leonard Herbst ADEC Mike Ebel TIME H: 001014:50
 TEAM NO. 12 TIDE LEVEL 3.0' to 5.7' DATE 4/29/90
 EST. SUBDIVISION LENGTH: 3420 m ☐ Sun ☐ Clouds ☒ Fog ☒ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: S to N
 SURFACE SEDIMENTS: R 5 % B 10 % C 40 % P 25 % G 10 % S 10 % M 0 % V 0 %
 SLOPE: Long 25 % Hang 5 % Vert 0 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 0 m NO 3420 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	TC	TS	TP	TR	1	2	3	4	5	SU	U	M	L
ASPHALT PAVEMENT													
POOLED													
COVER													
COAT													
STAIN													
MOUSSE													
PATTIES													
TARBALLS													
FILM													
NO OIL										X	X	X	X

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

OILED DEBRIS	AMOUNT			DID YOU COLLECT DEBRIS?
	SM	MD	LG	
Logs				YES ☒ NO ☐ TYPE <u>Boat-floats</u> <u>Plastic trash</u>
Vegetation				
Trash	X			
Debris	X			
				#BAGS <u>3</u>

Photographs:

Roll No. NoneFrames —SUBSURFACE OIL No pits dug - see comments

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
		OF	OR	OL	OP	NO		UO	VO	1	2	3	4	5	SU	U	M	L				

COMMENTS

Segment consists of high-energy beach, with zones of sand, cobbles, pebbles. Cobbles predominant. No oil at all observed across segment walked approximately half of segment. Did not survey second half due to small likelihood of oil being present. Oiled driftwood only was observed by ADEC in 9/89 SCAT. No pits dug.

31/46

REVIEWED

BAL

DATE 7 May 90

OG Randi Angel

SEGMENT ST/ BG-1

SUBDIVISION A

DATE 4/29/90

CHECKLIST

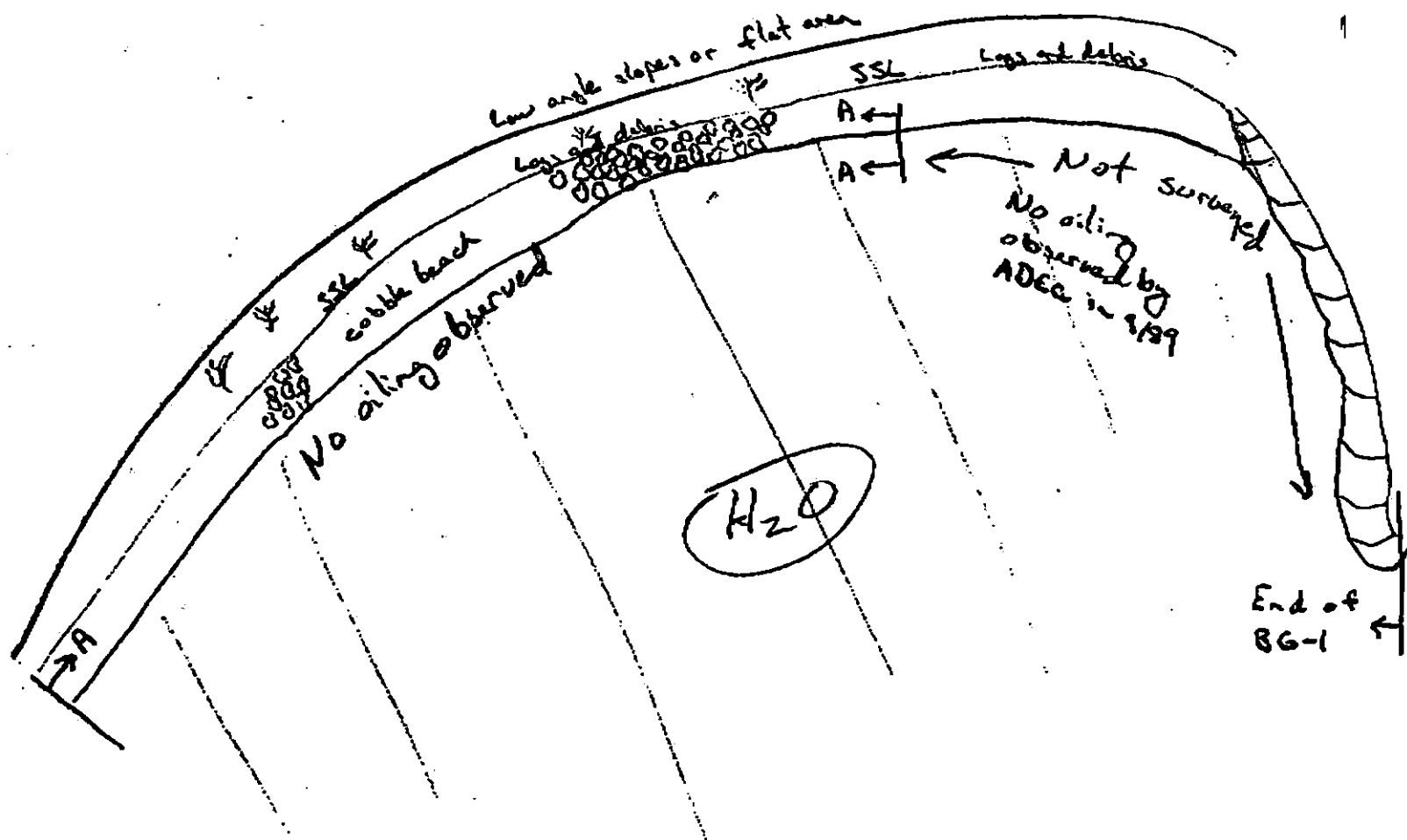
- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Body
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HML/LML
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Pit Location(s)
- ☐ Photo Location(s)

LEGEND

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

SKETCH MAP

App. Scale
500 m



Oil Character Length (m): AP ϕ PO ϕ CV ϕ CT ϕ ST ϕ MS ϕ PT ϕ TB ϕ FL ϕ NO 3420

REVISION 02/24/90

SHORELINE ECOLOGICAL SUMMARY

REVISION: 00/00/00

Segment ST / BG-1 Subdivision A Date (mo / day / yr) 4/29/90

Time (24 hr) 1400-1450 Biologist SHARMAN

(A) Substrate type and % of segments: SUBDIV.
 (1) Bedrock 5 (2) Boulder 10 (3) Cobble 40 (4) Pebble 25 (5) Sand 20 (6) Silt 0

(B) Overall % cover of biota (% of segment): Dense 0 Moderate 0 Low X

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

Photographs: Roll No. —

Frames —

BARNACLES

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

MYTILUS

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

GASTROPODS (ANCELA, LITTORINA, LIMAETE)

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

FUCUS

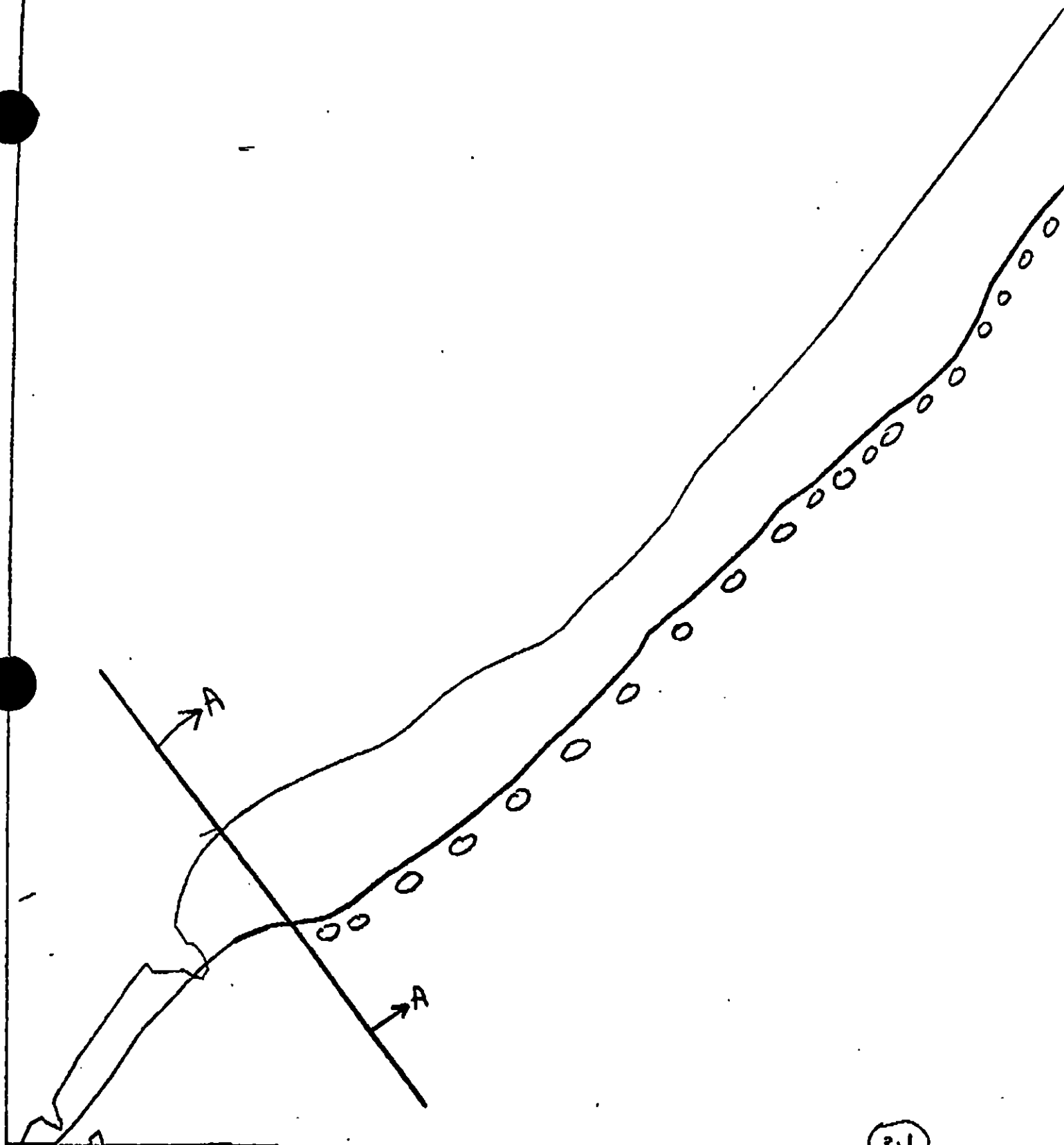
Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments: 6 amph. anura, 1 adult eagle, 1 subadult eagle, 3 pigeon guillemots, 2 gulls on cliffs. Coyotes / fox tracks in subtidal sand. As for BG-2, this beach segment is extremely bird-rich, especially during low tide. Not unusually so, however, on this highly eroded section of coastline and the unstable nature of the substrate. What is there seems to be recruiting in low numbers but artifactually.

Ecological Considerations:

We received no information regarding resource availability previously identified for this segment. Nor do there appear to be any particular restrictions.

40/46



(2.1)

XXXX Wide

//// Medium

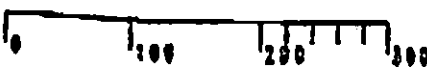
---- Narrow

TTTT Very Light

0000 No Oil

BG-1

Approx. Segment Length: 4670m



METERS



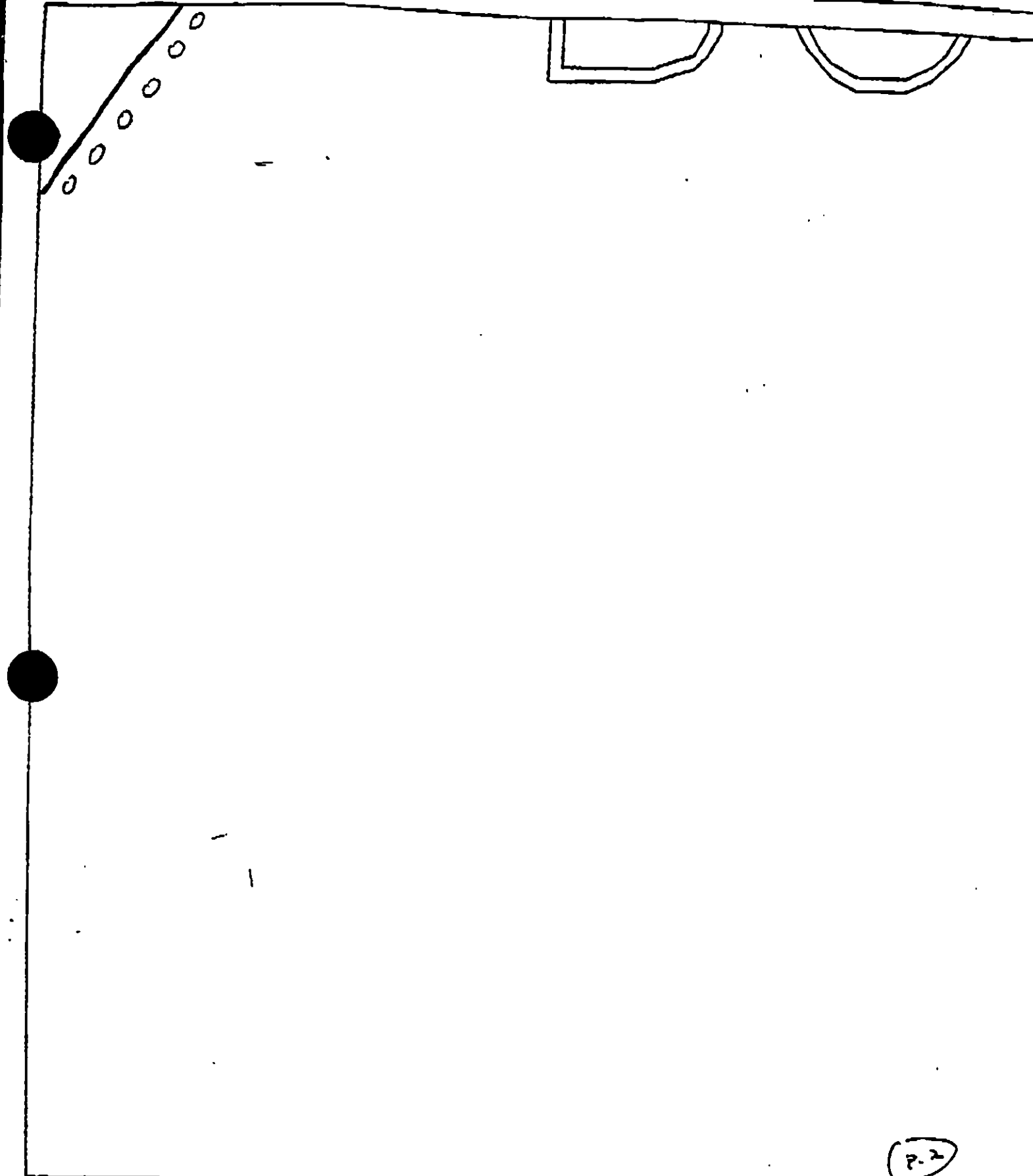
Map Key: KEN-86-1a

Name: Randy Siegel

Date: 9/29/90

Data Entered:

32/46



(P.2)

XXXX Wide

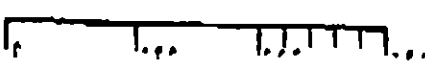
//// Medium

--- Narrow

TTTT Very Light

BG-1

Approx. Segment Length: 4670m

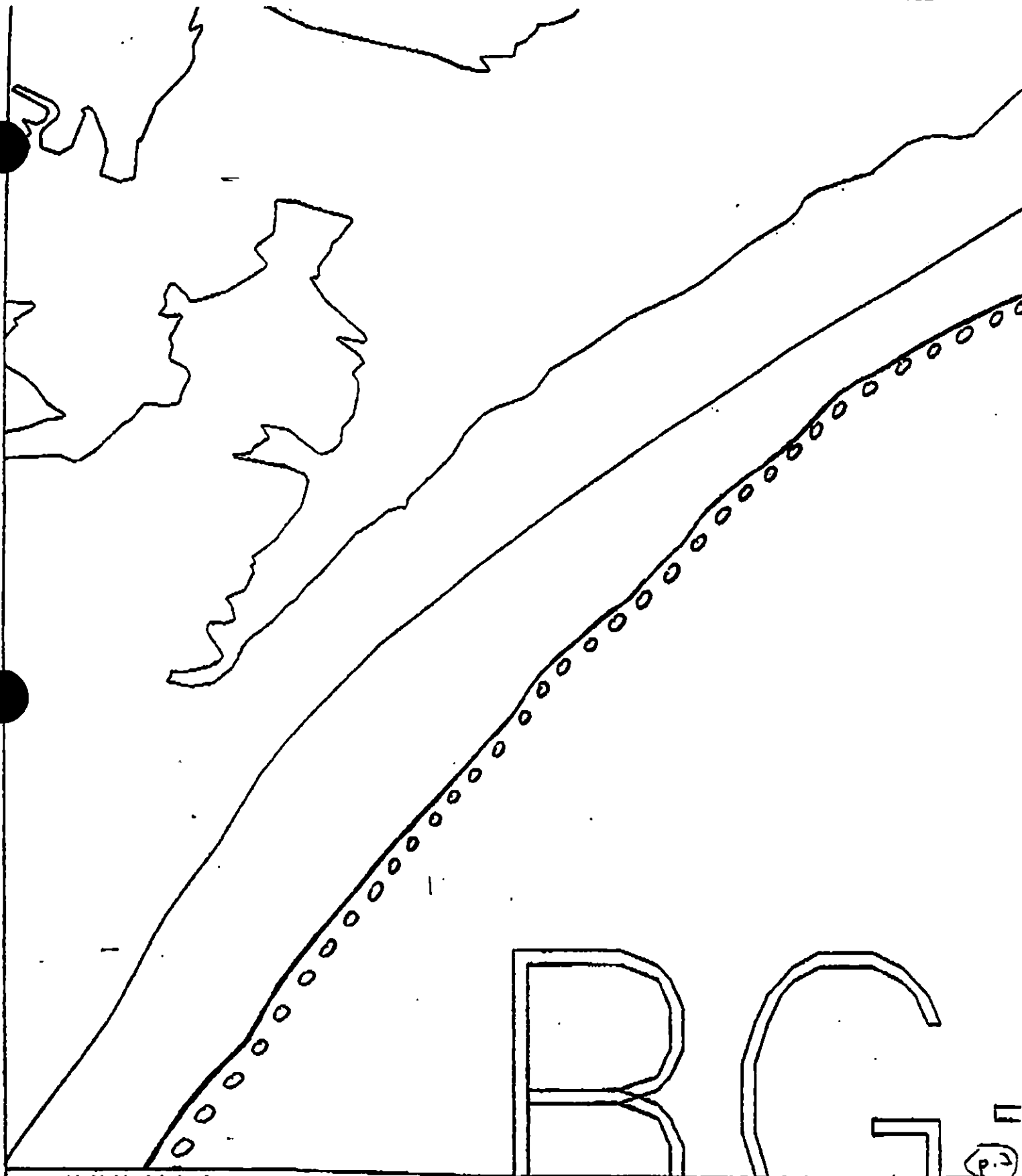


Map Key: KEN-8G-16

Name: _____

Date: _____

33/46



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

0000 No Oil

BG-1

Approx. Segment Length: 4670m



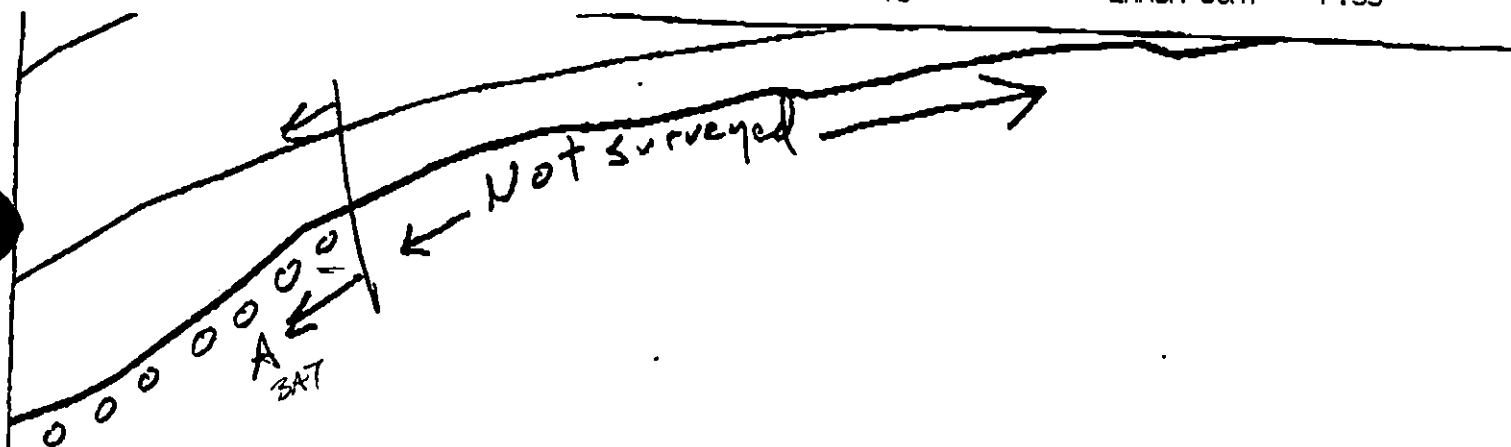
Map Key: KEN-BG-1f

Name: Randy Siegel

Date: 4/29/90

Date Entered:

24/46



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

oooo No. 0:1

BG-1

Approx. Segment Length: 4670m



Map Key: KEN-BG-19

Name: Ruby Siegel

Date: 4/29/90

35/46



XXXX Wide

/// Medium

-- Narrow

TTTT Very Light

OOOO No Oil

BG-1

Approx. Segment Length: 4670m

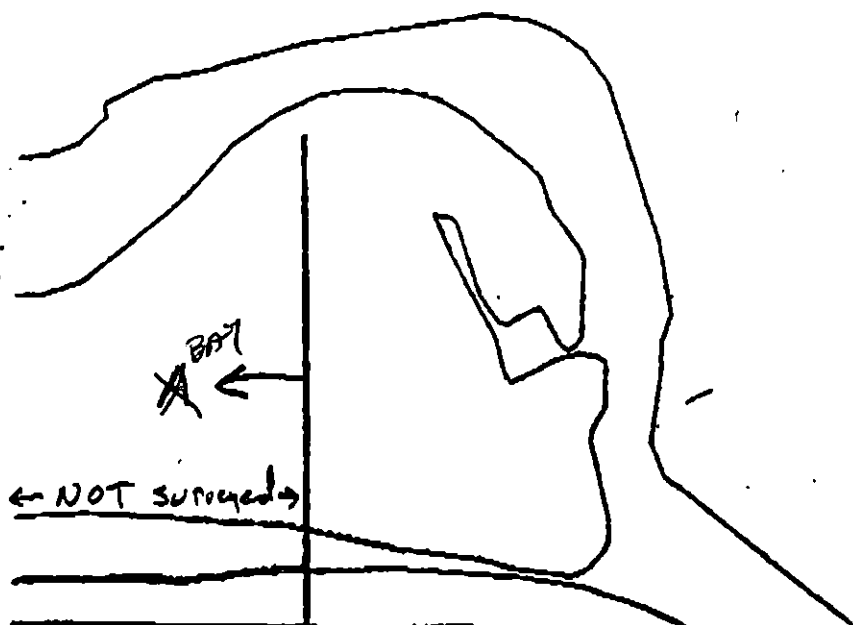


Map Key: KEN-BG-1k

Name: Ruby SinghDate: 4/29/90

Data Entered:

36/46



XXXX Wide

BG-1

/// Medium

--- Narrow

Approx. Segment Length: 4670m

TTTT Very Light

DDDD No D



Map Key: KEN-BG-11

Name: Randy Siegel

Date: 4/29/90

Date Entered:

27/46

SHORELINE EVALUATION

SEGMENT ST/ BG-01 SUBDIVISION A (1 OF 1) DATE 4/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
4LL National Parks
6U Recreation: Tent sites (6/1 to 9/15)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: J. David McMahon DATE: 5/10/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 3465 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

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

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 5/10/90
ADEC ART WEINER Art Weiner
EXXON Amel Tate Amel Tate
NOAA Burt Wescott Burt Wescott
USCG D. D. ROME D. D. Rome
FOSC: ML DATE: 5-12-90

OG Rans Siegel

SEGMENT ST/ BG-1

SUBDIVISION A

DATE 4/29/90

SKETCH MAP

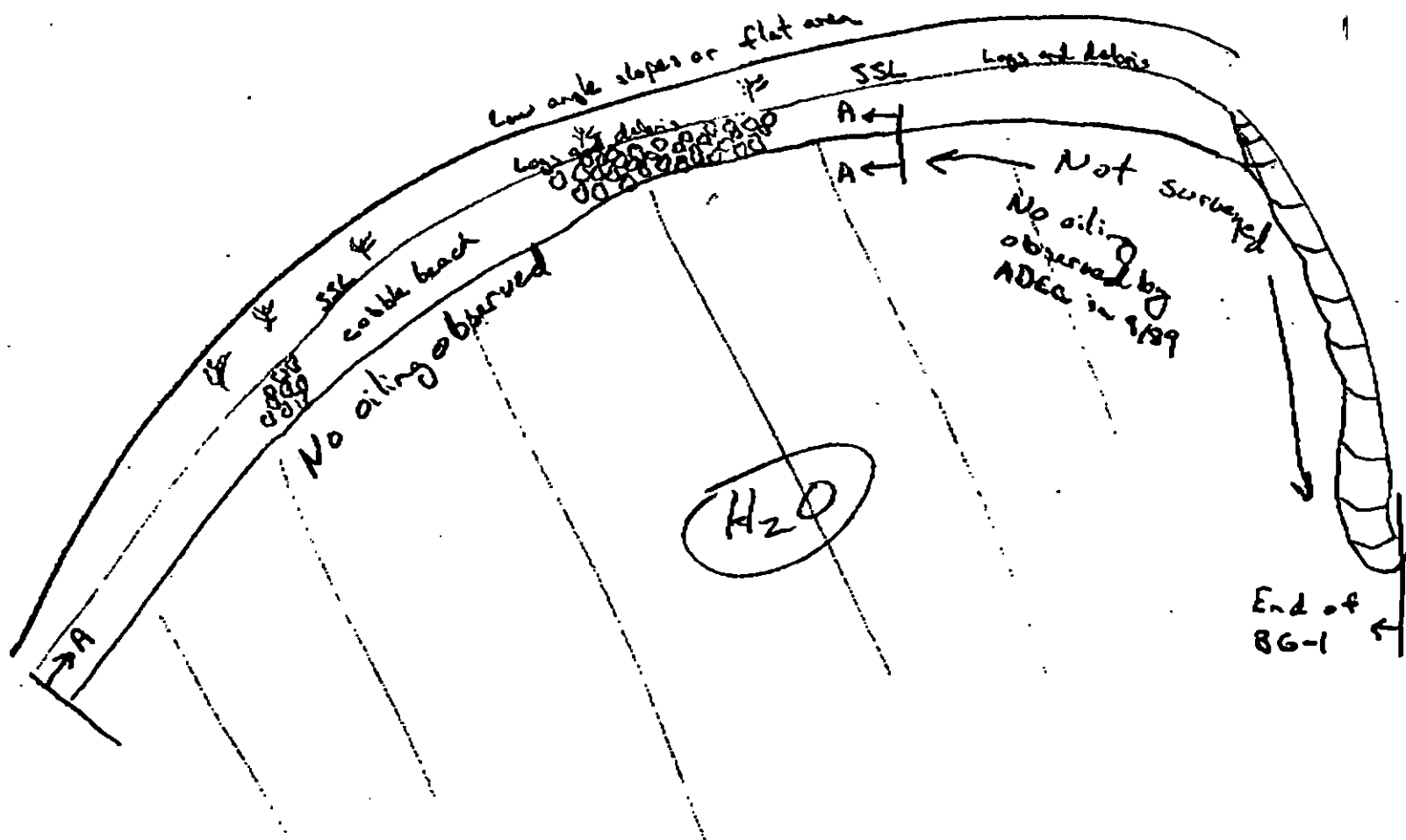
App. Scale
500 m

CHECKLIST

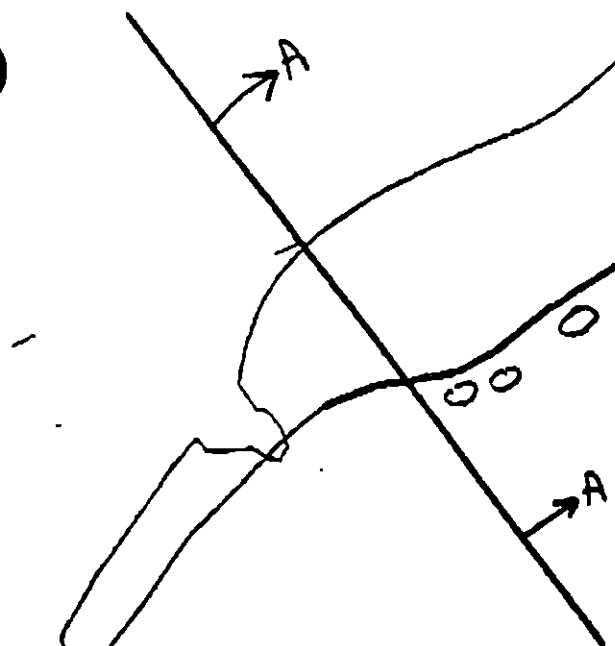
- ___ N Arrow
- ___ Approx. Scale
- ___ Seg/Sub Body
- ___ Oil Dist.
- ___ Width
- ___ Length
- ___ % Cover
- ___ Substrate Character
- ___ Est. HMW/LWL
- ___ SSL
- ___ Profile Location(s)
- ___ Profile(s)
- ___ PH Location(s)
- ___ Photo Location(s)

LEGEND

- 1 Δ
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 ϕ PO ϕ CV ϕ CT ϕ ST ϕ MS ϕ PT ϕ TB ϕ FL ϕ NO 3420



(2.1)

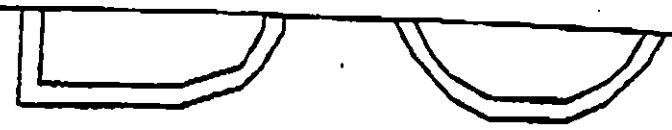
XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 OOOO No Oil

BG-1

Approx. Segment Length: 4670m



Map Key: KEN-BG-10
 Name: Ruby Seal
 Date: 4/29/90
 Data Entered:



P-2

XXXX Wide

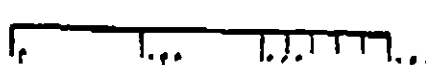
//// Medium

--- Narrow

TTTT Very Light

BG-1

Approx. Segment Length: 4670m

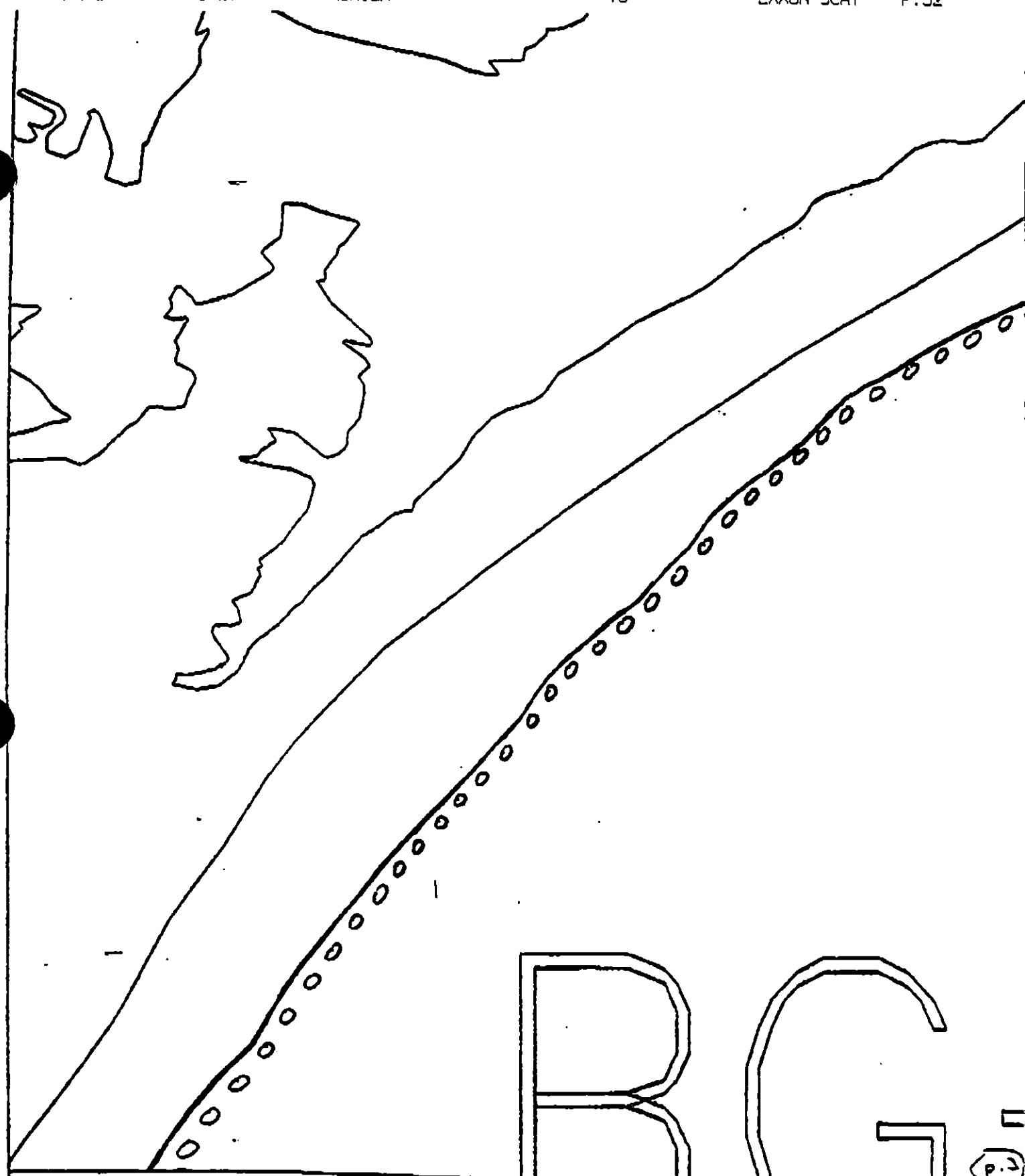


Map Key: KEN-BG-1b

Name: _____

Date: _____

33/46



BRG

P.2

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

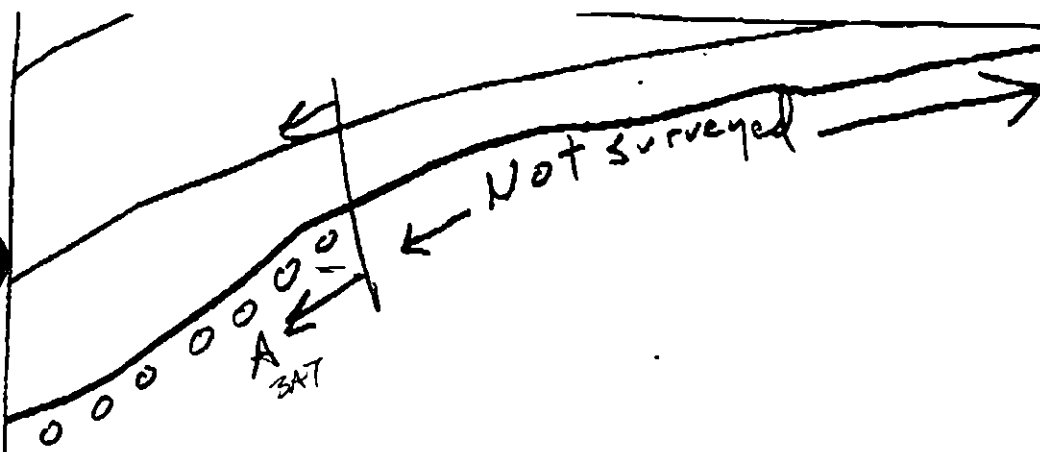
BG-1

Approx. Segment Length: 4670m



Map Key: KEN-BG-1f
Name: Randy Siegel
Date: 4/29/90
Date Entered:

34/46



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

BG-1

Approx. Segment Length: 4670m



Map Key: KEN-BG-19
 Name: Ruby Siegel
 Date: 4/29/90

(2.4)

35/46



XXXX Wide

/// Medium

-- Narrow

TTTT Very Light

OOOO No Oil

BG-1

Approx. Segment Length: 4870m



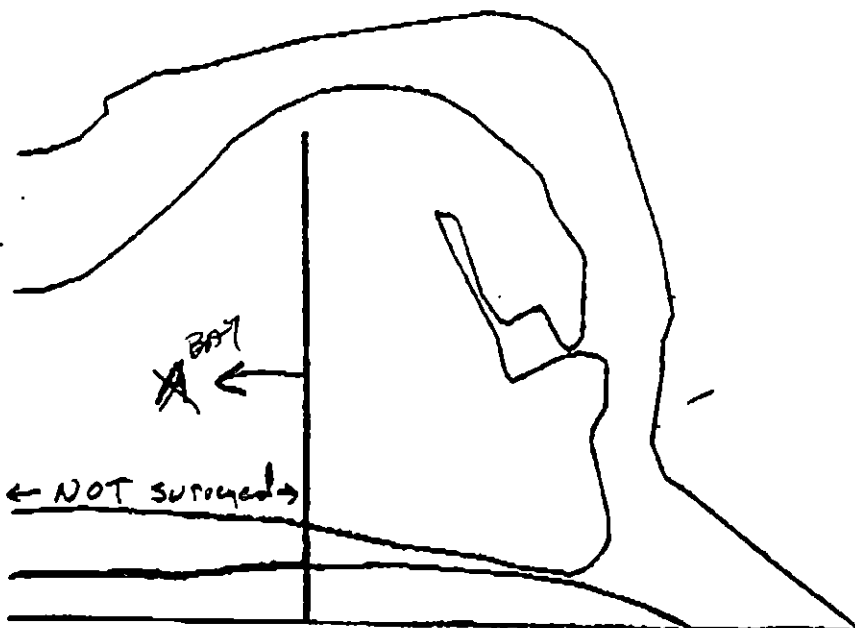
Map Key: KEN-BG-1k

Name: Ruby Singh

Date: 4/29/90

Date Entered:

36/46



XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

DDDD No D/I

BG-1

Approx. Segment Length: 4670m



Map Key: KEN-BG-11

Name: Randy Siegel

Date: 4/29/90

Date Entered:

37/46

REGION: KENAI

SEGMENT: ST/BG-02

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ BG-02 SUBDIVISION A (1 OF 1) DATE 4/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1J Purse seine area (7/20 to 9/30)
3N,3P Harbor seal and sea lion pupping (5/15 to 7/1)
3O,3Q Harbor seal and sea lion molting (8/15 to 9/15)
4GA Alaska State Wilderness Park
5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6U Recreation: Tent sites (6/1 to 9/15)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 2805 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

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

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

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

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

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

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

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

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

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

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

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

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

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

1H Remote release site

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ADF&G Don Calkins 267-2403

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

ADF&G Tom Roth 267-2206

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

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

Recreation:

Tent sites (8/1 to 9/15)

Anchorage (8/1 to 9/15)

Forest Service cabins (8/1 to 9/15)

Lodge (8/1 to 9/15)

Special use destination

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

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 / BG-2 SUBDIVISION: A DATE 4/29/90

USCG

NAME JERRY SCHULTZ

SIGNATURE Jerry Schultz

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ADEC

NAME Mike Ebel

SIGNATURE Michael Ebel

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

BG-2-A: No oil found.

LAND MANAGER NPS

NAME Michael Tetreau

SIGNATURE Michael Tetreau

☒ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

Good survey. No oiling observed.

SHORELINE OILING SUMMARY

Mike Tetreau (WPS)

REVISION NO. 04/13/90

OG Randy Siegel USCG Jerry Schultz SEGMENT ST/ 13G-2
 BIO Lewis Shuman LAND REP Peter Zollar (CAC) SUBDIVISION A (1 OF 1)
 EXXON Leonard Harbot ADEC Mike Ebel TIME 13:00 to 14:00
 TEAM NO. 12 TIDE LEVEL 0.4' to 3.0' DATE 4 / 29 / 90
 EST. SUBDIVISION LENGTH: 2935 m ☐ Sun ☐ Clouds ☒ Fog ☒ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: S to N
 SURFACE SEDIMENTS: R 10 % B 15 % C 20 % P 20 % G 15 % S 20 % M 0 % V 0 %
 SLOPE: Long 15 % Hang 85 % Vert 0 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 0 m NO 2935 m

SURFACE OIL

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

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

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash	X		
Debris			

DID YOU COLLECT DEBRIS?

YES ☒ NO ☐TYPE Oiled Trash#BAGS 1

Photographs:

Roll No. None

Frames _____

SUBSURFACE OIL No pits dug - see comments

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
		OF	OR	OL	OF	NO		UO	UC	1	2	3	4	5	SU	UI	ME	U				

COMMENTS

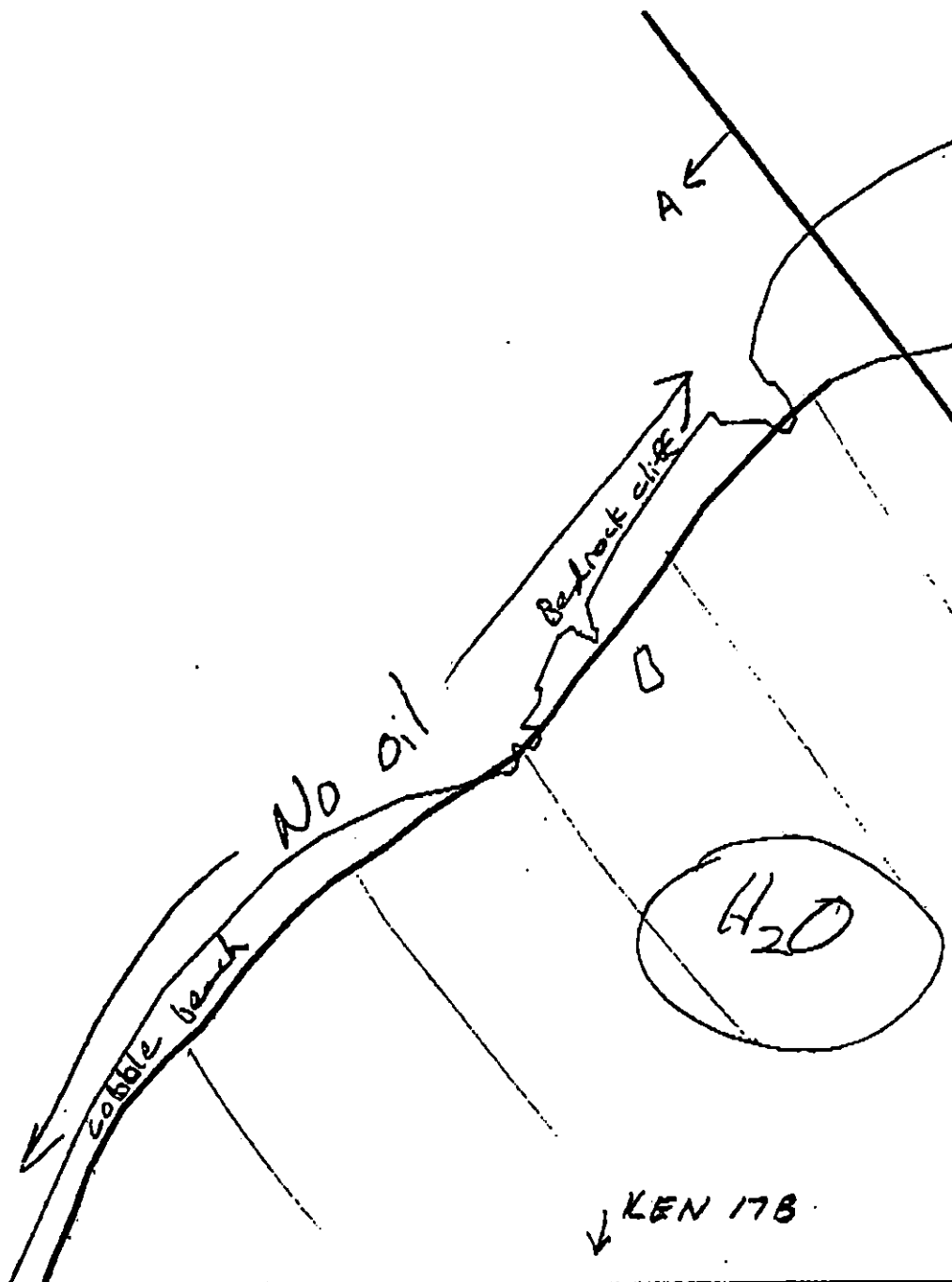
Segment consists of high energy beach, with zones of sand, pebbles and cobbles. No oil at all observed across segment most of it was walked +
 remainder is a little or no oiling observed previously by ADEC + NPS. No pits dug
 surveyed by boat due to results from former surveys which indicated no significant subsurface oil was present.

REVIEWED

BAT

DATE 1 MAY 90

- 7 / 116



XXXX Wide

BG-2

/// Medium

--- Narrow

ADEC Segment Length: 2743m

TTTT Very Light

0000 No Oil



METERS

Map Key: KEN-17b

Name: By Sign

Date: 4/29/90

Date Entered:

KEN-17A ↑

Oil Character Length

AP Ø

PO Ø

CV Ø

CT Ø

ST Ø

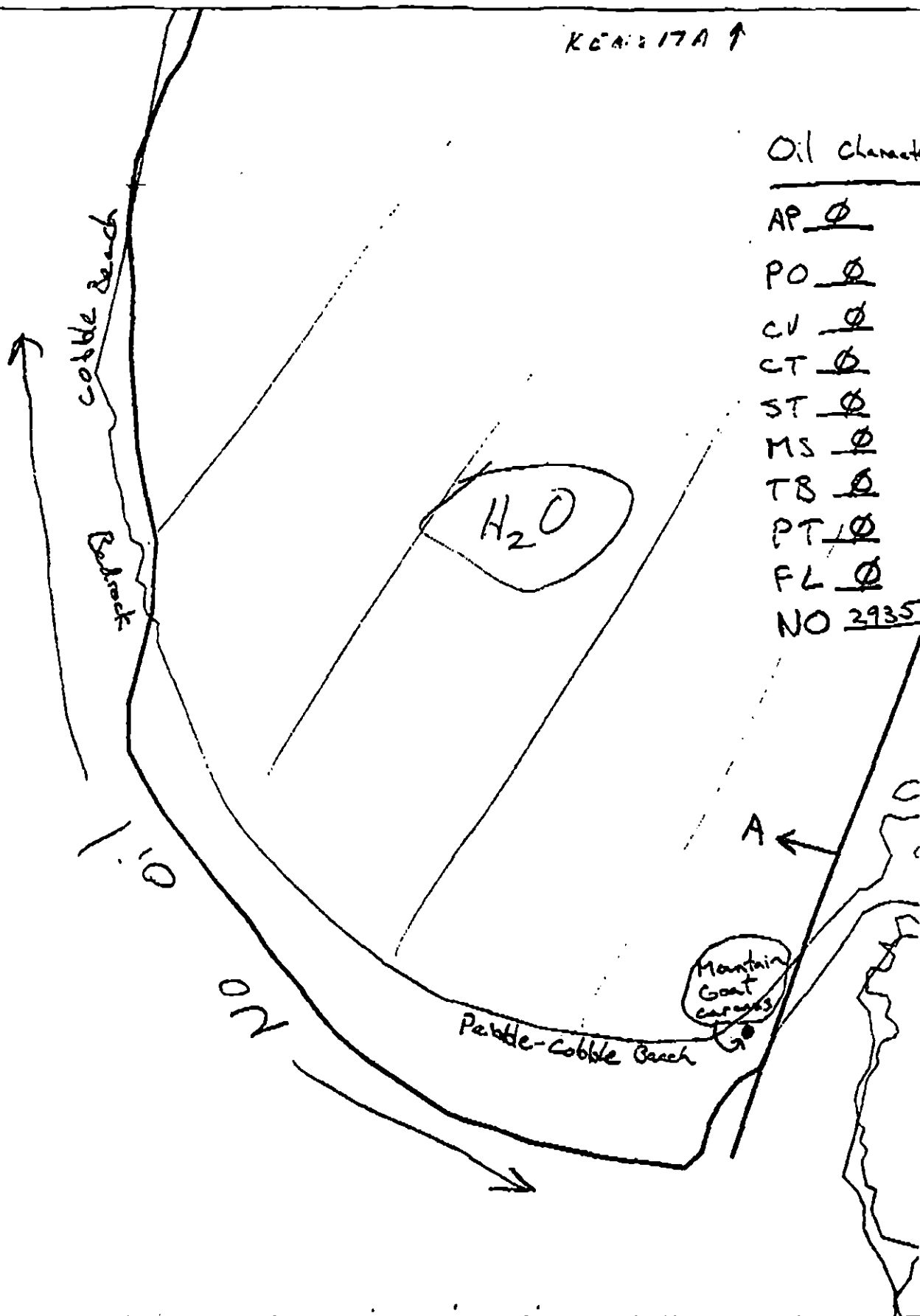
MS Ø

TB Ø

PT Ø

FL Ø

NO 2935



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

BG-2

ADEC Segment Length: 2743m

0 100 200 300

Map Key: KEN-17a

Name: Ruby Siegel

Date: 4/29/90

2/1/92

SHORELINE ECOLOGICAL SUMMARY

REVISION: 02/22/9

Segment ST / BG-2 Subdivision A Date (mo / day / yr) 4/29/90

Time (24 hr) 1300-1355 Biologist SHARMAN

(A) Substrate type and % of segments: SHADIV.
(1) Bedrock 10 (2) Boulder 15 (3) Cobble 20 (4) Pebble 20 (5) Sand 35 (6) Silt ^{+ granule}

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

(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 (ANCELA, LITTORINA, LYMAETE)

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

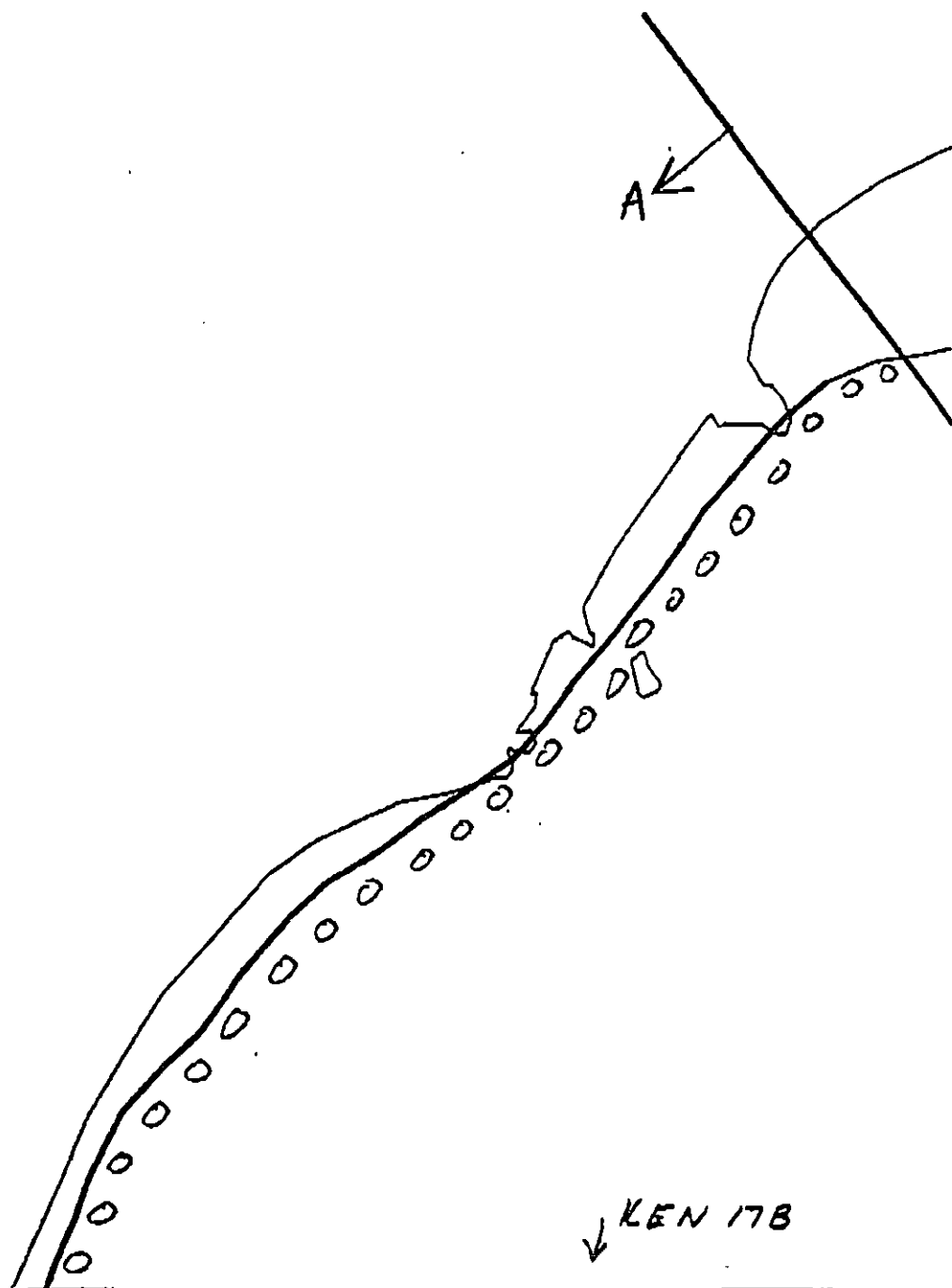
NOT PRESENT

Wildlife Observations/ General Comments: 1 pair oystercatchers, 2 glaucous-winged gulls, 1 adult eagle, 1 subadult eagle, 3 cormorants, 18 surf scoters, 2 gulls on cliffs, 1 gull carcass in MTZ - brownish (no shell), probably subadult, no oil, canal of death unknown, but, poor legs bone marrow may indicate starvation/malnutrition. This entire segment is quite oligometic, biotically (intertidal), over the beach walls. Not at all unusually so, however, given the black dynamite/substrate type/exposure.

Ecological Considerations:

We received no information regarding resource sensitivities previously identified for this segment. The only biological sensitivity apparent to me on this highly eroded coast that is free of silty is the importance of the exposed narrow rock & sea stack cliffs at the S.E. end of the segment to nesting seabirds and pinnipeds (haulouts).

28/46



XXXX Wide

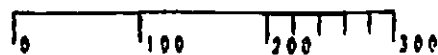
//// Medium

--- Narrow

TTTT Very Light

BG-2

ADEC Segment Length: 2743m



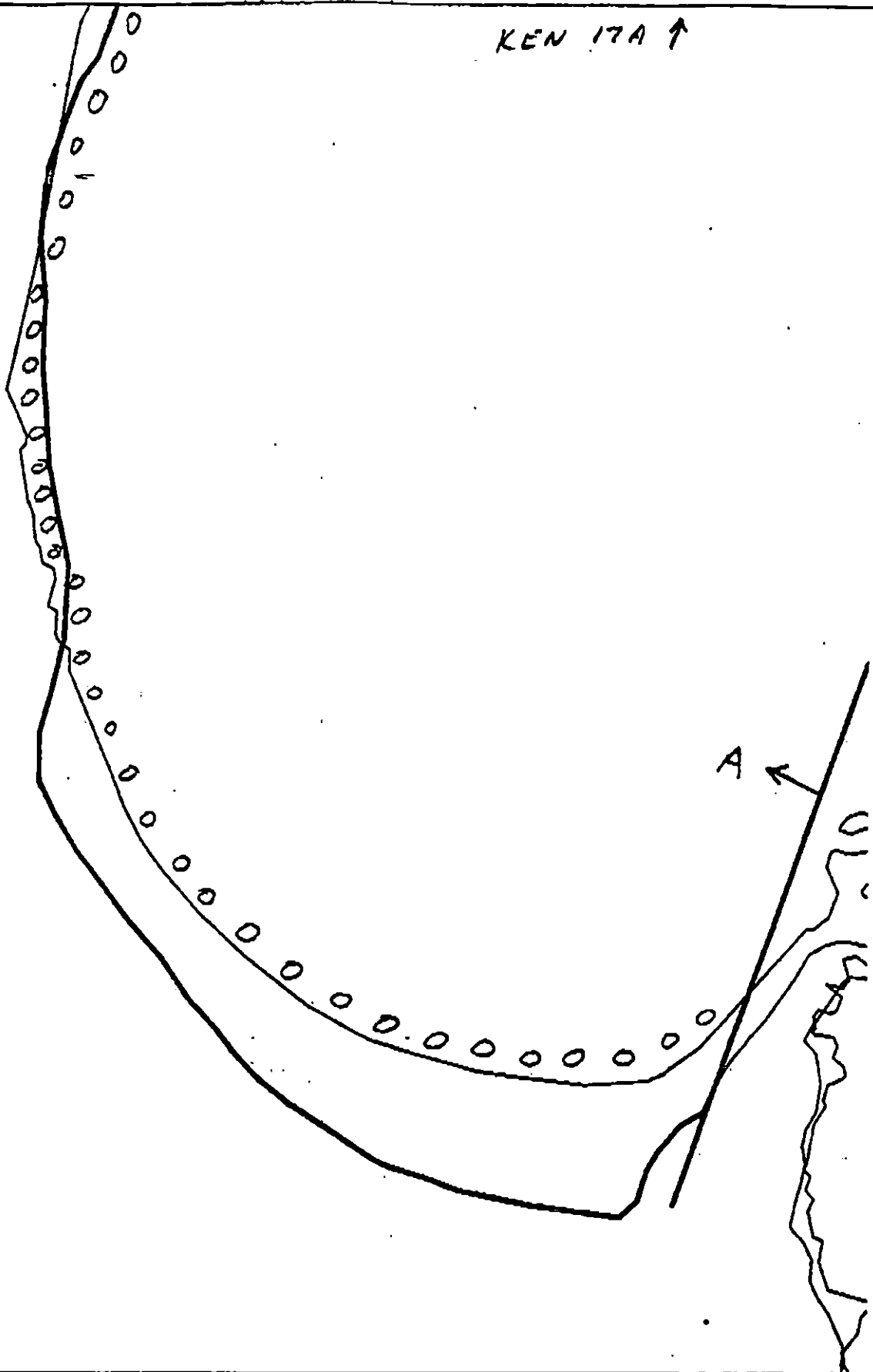
Map Key: KEN-17b

Name: Rudy L. Lenz

Date: 4/29/90

11/11

KEN 17A ↑



XXX Wide

/// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

BG-2

ADEC Segment Length: 2743m



Map Key: KEN-17a

Name: Andy SiegelDate: 4/29/90Data Entered: 23/06

SHORELINE EVALUATION

SEGMENT ST/ BG-02 SUBDIVISION A (1 OF 1) DATE 4/29/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1J Purse seine area (7/20 to 9/30)
3N,3P Harbor seal and sea lion pupping (5/15 to 7/1)
3O,3Q Harbor seal and sea lion molting (8/15 to 9/15)
4GA Alaska State Wilderness Park
5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6U Recreation: Tent sites (6/1 to 9/15)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: [Signature] DATE: 5/11/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 0 m: No Oil 2805 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

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

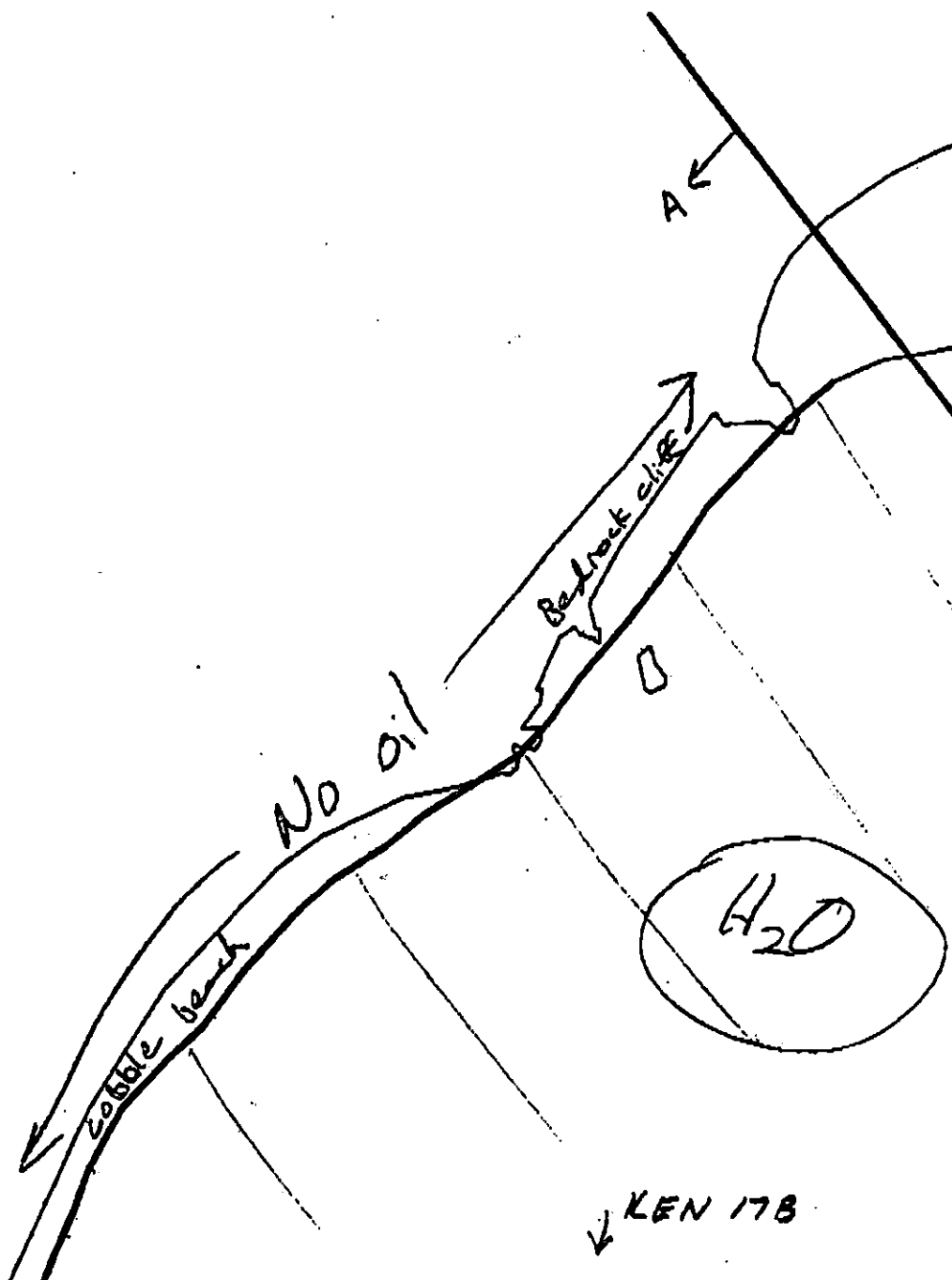
COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 5/11/90

ADEC Art Weiner Antle Valley
EXXON ANDY TATE Corral
NOAA Isaiah Telbott
USCG D. D. Rome

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



XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

0000 No Oil

BG-2

ADEC Segment Length: 2743m



Map Key: KEN-17b

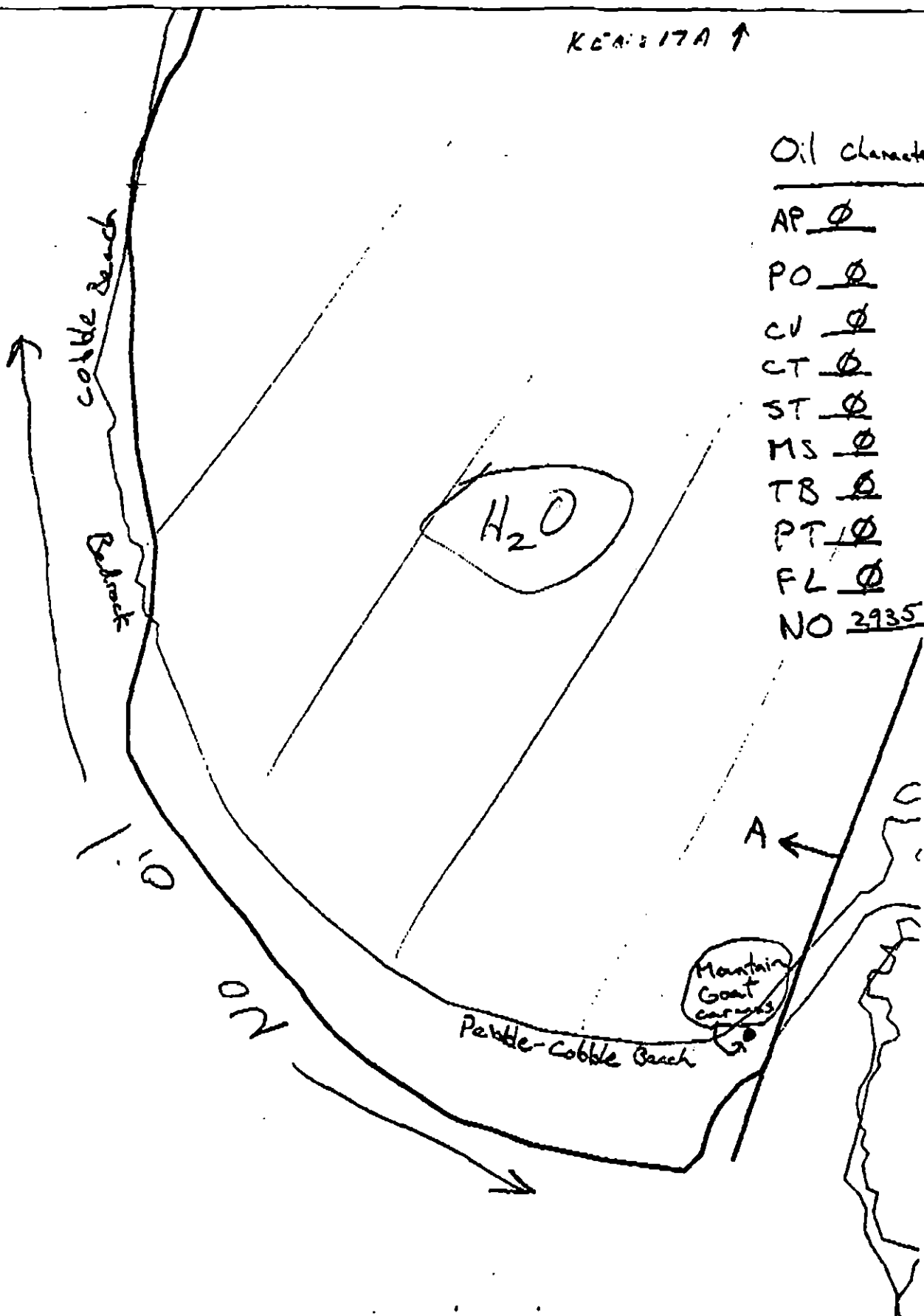
Name: By Sea

Date: 4/29/90

Data Entered:

KEN-17A ↑

Oil Character Length

AP ØPO ØCV ØCT ØST ØMS ØTB ØPT ØFL ØNO 2935

XXXX Wide

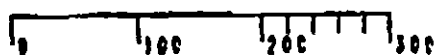
//// Medium

--- Narrow

TTTT Very Light

BG-2

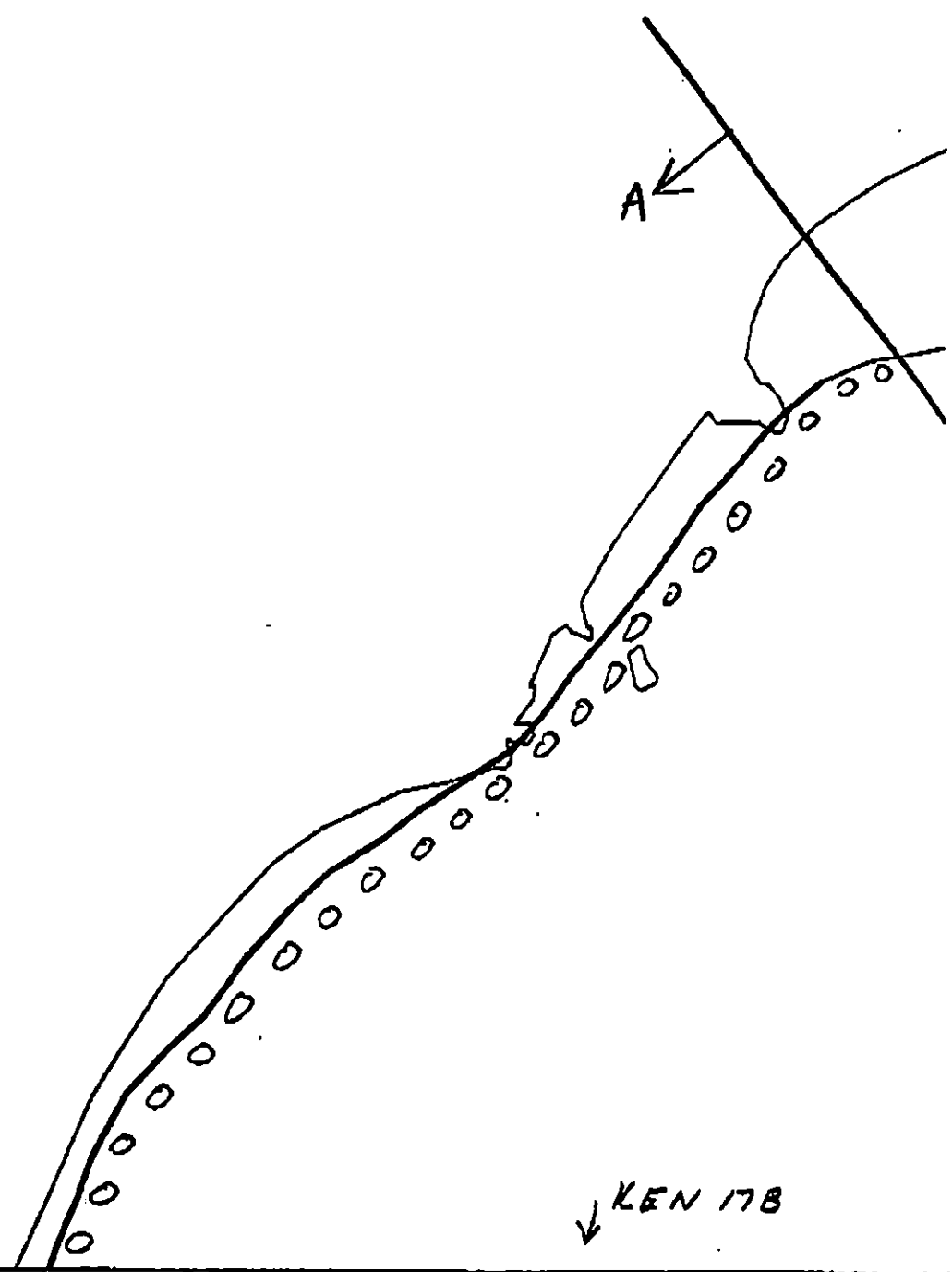
ADEC Segment Length: 2743m



Map Key: KEN-17a

Name: Ruby SiegelDate: 4/29/90

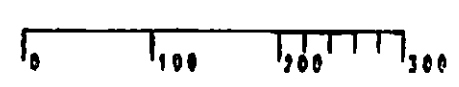
..... 2/11/90



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

BG-2

ADEC Segment Length: 2743m



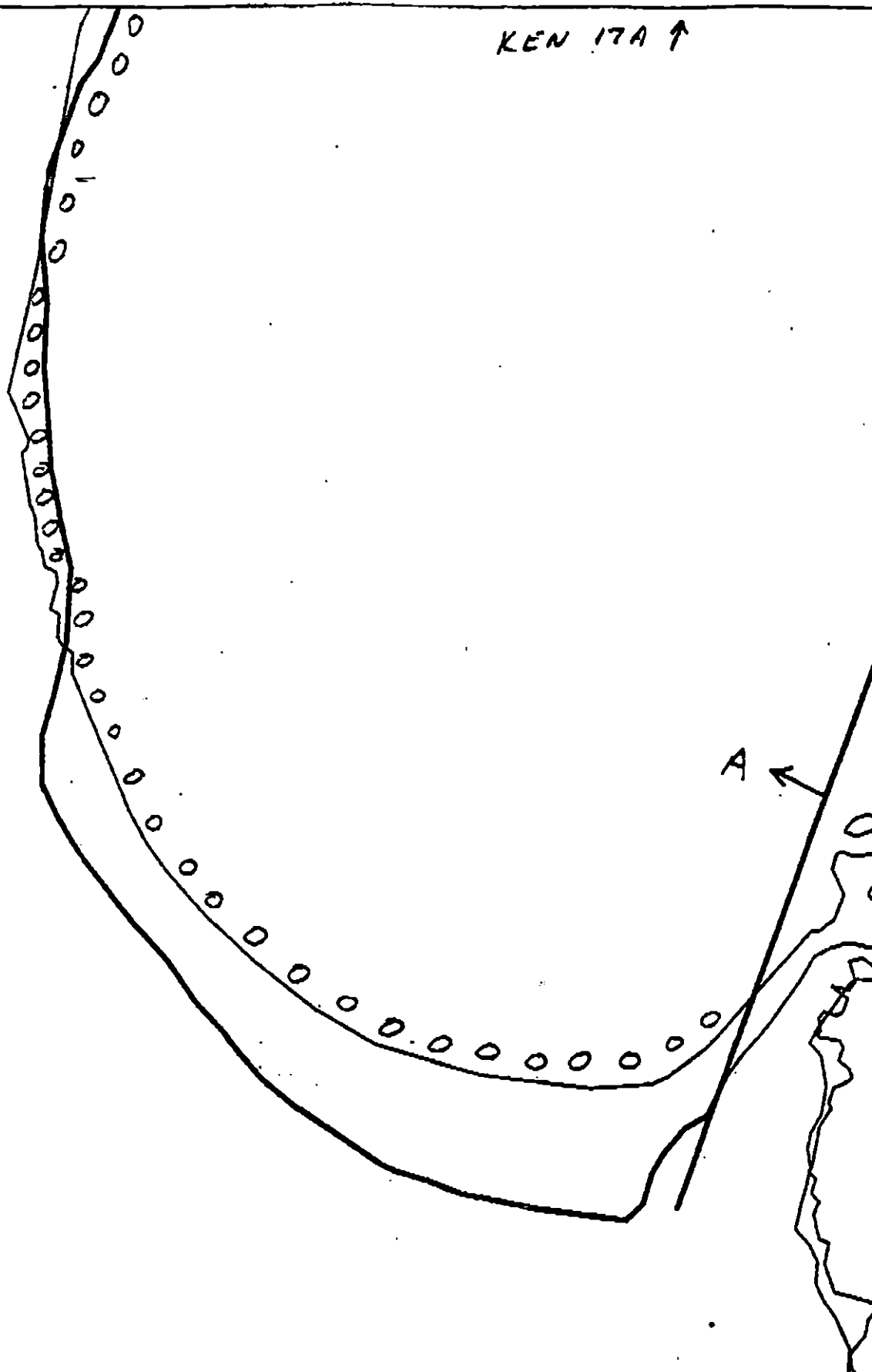
Map Key: KEN-17b

Name: Ruby L. Gray

Date: 4/29/90

11/1/92

KEN 17A ↑



XXX Wide

/// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

BG-2

ADEC Segment Length: 2743m



Map Key: KEN-17a

Name: Emily Siegel

Date: 4/29/90

Data Entered: 23/46

REGION: KENAI

SEGMENT: ST/ BM-001

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ BM-001 SUBDIVISION A (1 OF 1) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Kenai Fiords National Park (4LL) - no time constraints.

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

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 42 m: V.Light 1111m: No Oil 94 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

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

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / BMOI SUBDIVISION: A DATE APR 2, 1990

USCG / NOAA

JACQUI MICHEL

SIGNATURE Michel

☒ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

Although there is oil on the vertical walls of the fissures, it poses little environmental risk to wildlife, and there are no treatment techniques that could be used here. It should be noted that there has been little natural removal of oil from this sheltered area over the winter, so natural removal will be slow.

ADEC

NAME JOHN R. REED

SIGNATURE John R. Reed

☒ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

The oiled band on the vertical walls of fissured granite is in a location where it should not go anywhere and would be a hazard to workers. I have read and agree with all information on S.S.A.T Forms.

LAND MANAGER

NPS

NAME Michael Tetreau

SIGNATURE Michael Tetreau

☐ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

I feel That This segment was sufficiently surveyed and The information on This form is accurate. Little weathering has occurred on This oil although it has hardened significantly. Mousse and patties on small substrate can be removed with hand tools and some of The heavier cover and coat could be removed with sorbents if The oil becomes softer during The summer.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG MANN USCG/NOAA MICHEL SEGMENT ST/ BM 01
 BIO CARR LAND REP TETRAU - NPS SUBDIVISION A
 EXXON BOYER ADEC REED TIME 10:40 to 12:30
 TEAM NO.: 18 TIDE LEVEL: +6.0 to +1.8 DATE 4/2/90
 EST. SUBDIVISION LENGTH: 1200 m ☐ Sun ☐ Clouds ☐ Fog ☒ Rain ☒ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: EAST to WEST
 SURFACE SEDIMENTS: R 90 % B 5 % C 5 % P 0 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Lang 20 % Hang 20 % Vert 60 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 30 m VL 1110 m NO 60 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	IC	IB	IP	IS	SL BR	SL RW	SL GW	SL SL	SL TL	SL LB	SU	UI	M	U		
ASPHALT PAVEMENT																
POOLED																
COVER			✓	X		✓					✓	X	✓			
COAT	✓		X			✓					✓	X	✓			
STAIN				✓		✓					✓					
MOUSSE			✓					✓			✓					
PATTIES				✓				✓			✓					
TARBALLS																
FILM																
NO OIL											✓			✓		

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

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

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

Photographs:

We collected 1/4 bags of patties.Roll No. ST 18-3Frames (1-11)

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CM)	BELOW		OIL / FILM COLOR								PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	SL BR	SL RW	SL GW	SL SL	SL TL	SL LB	SU	UI	M	U				
1	20					✓	-									✓				N	C.B.P. throughout		
2	20					✓	-									✓				N	B.C "		
3	20					✓	-									✓				N	C.B "		
4	20					✓	-									✓				N	C.B "		
5	20					✓	-									✓				N	C.B "		
6	20					✓	-									✓				N	C.B "		

COMMENTS

Along outer bedrock and boulder surfaces that border the cove, oil consists of scattered coat and cover splashes. Several patches of several meters long and ~1m wide occur on vertical faces. Little wave abrasion of oil was observed. The one location of concern is where oil coats the walls of fissures between exfoliating granite slabs. This small area (~30m long) is illustrated in an attached sketch.

OG Mar
SEGMENT ST. BM-1
SUBDIVISION A
DATE 4, 2 90

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 Δ

PI - No Subsurface Oil

2 Δ

PI - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

Oiled Vegetation

1 $\rightarrow$

Photo location, direction,
and number

No sketch map - see

GIS map.

*largely due to Jacqui Michel's
input
Dean Dale of NOAA concurs

Brian: We* compute oil character length in the following way:

① Where oiling is in discontinuous groupings of splatters, we compute oil character length based on estimates of what % of the total shoreline classified as very ^{light} ~~light~~ has some oil category type (ie CV, CT, ST). For instance, on segment XXX-1, we estimate that ^(clumps of) CV/S occupies only 1% of a 1000m shoreline. This yields an oil character length of 10m.

② where oiling is continuous, we compute oil char. length in the obvious manner.

Oil Character Length (m): AP 0 PO 0 CV 560 CT 560 ST 560 MS 20 PT 365 TB 0 FL 0 NO 640

REVISION: 03/24/90



N

BM-1
2 April 90
Chance COVE
Subdiv. A

~~SEVEN POST TREATMENT
ENGINE ASSESSMENT~~

~~24 OCT 1989~~

~~GREEN LAKE~~

NO EXXON MAP
WAS IN MY PACKET.
Please transfer to
Exxon map.

No Oil observed
on bedrock and
boulder shoreline
on 24 OCT 1989

BM001

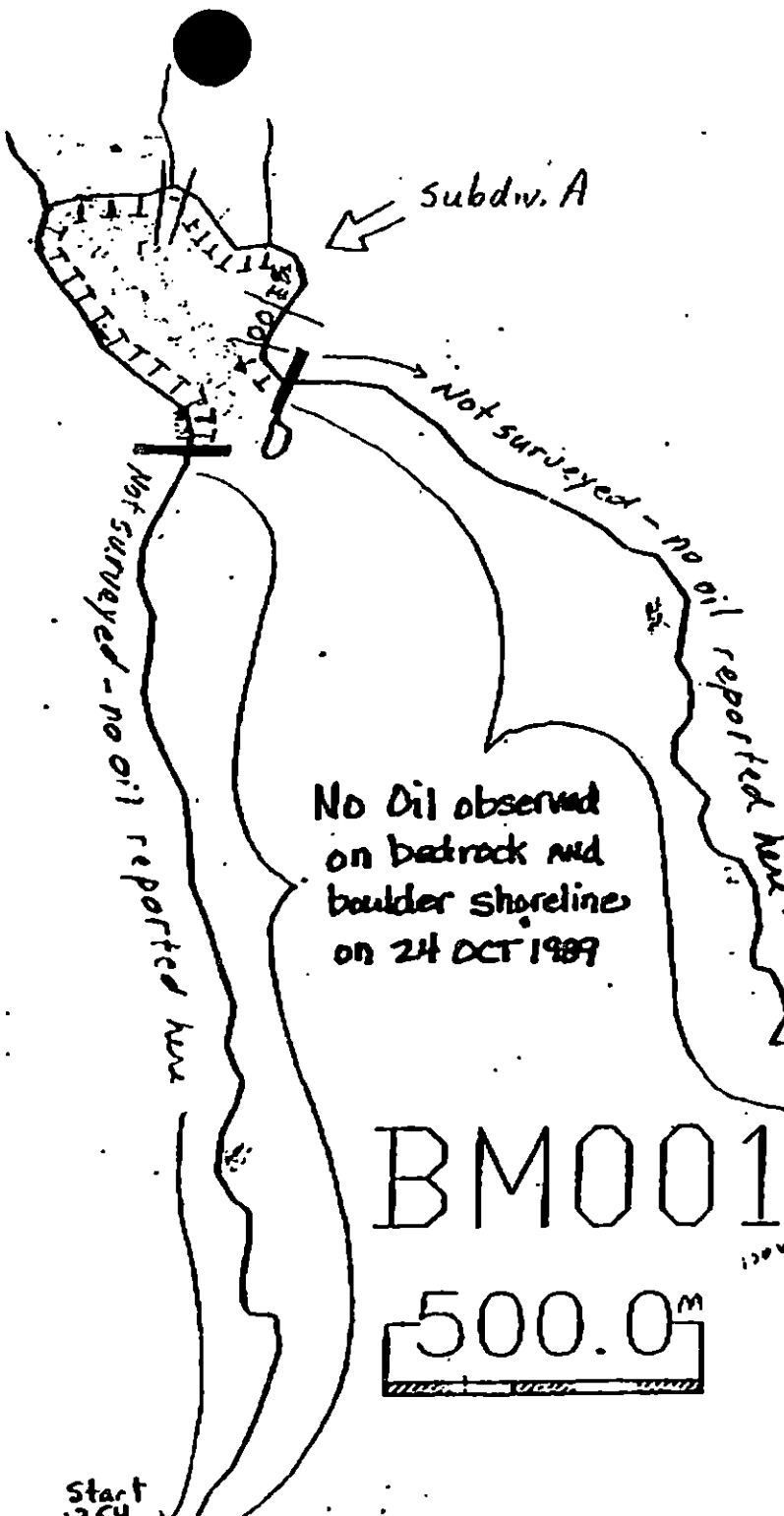
500.0m

EXPOSED
BEDROCK HEADLAND

CHANCE COVE

OILING	
H	Heavy
M	Moderate
L	Light
VL	Very Light
N	None
NS	Not Surveyed

Start
scu



3 BM-1

MOANN

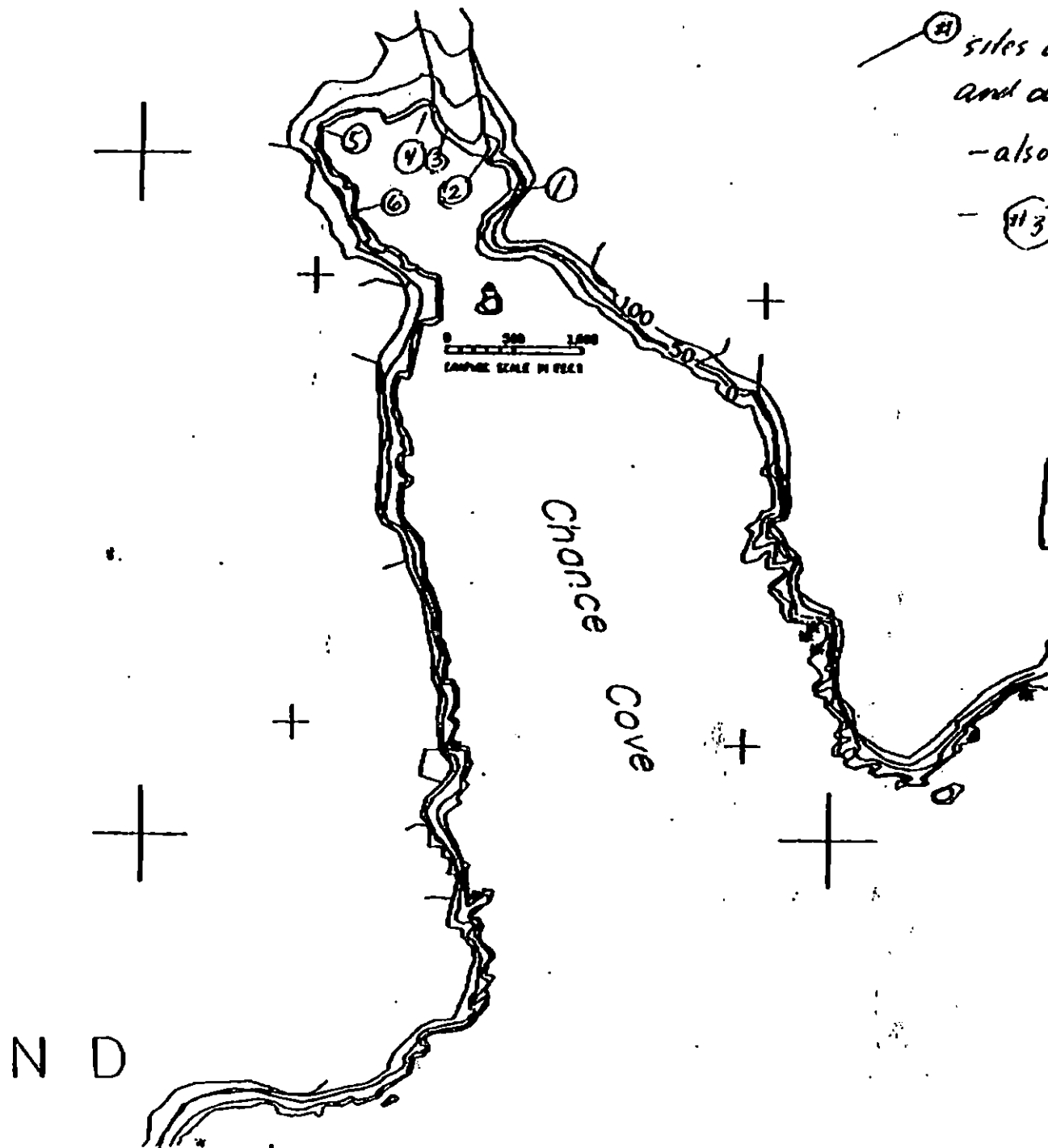
2 April 1990

KEY

① sites where we landed, took photographs,
and dug pits.

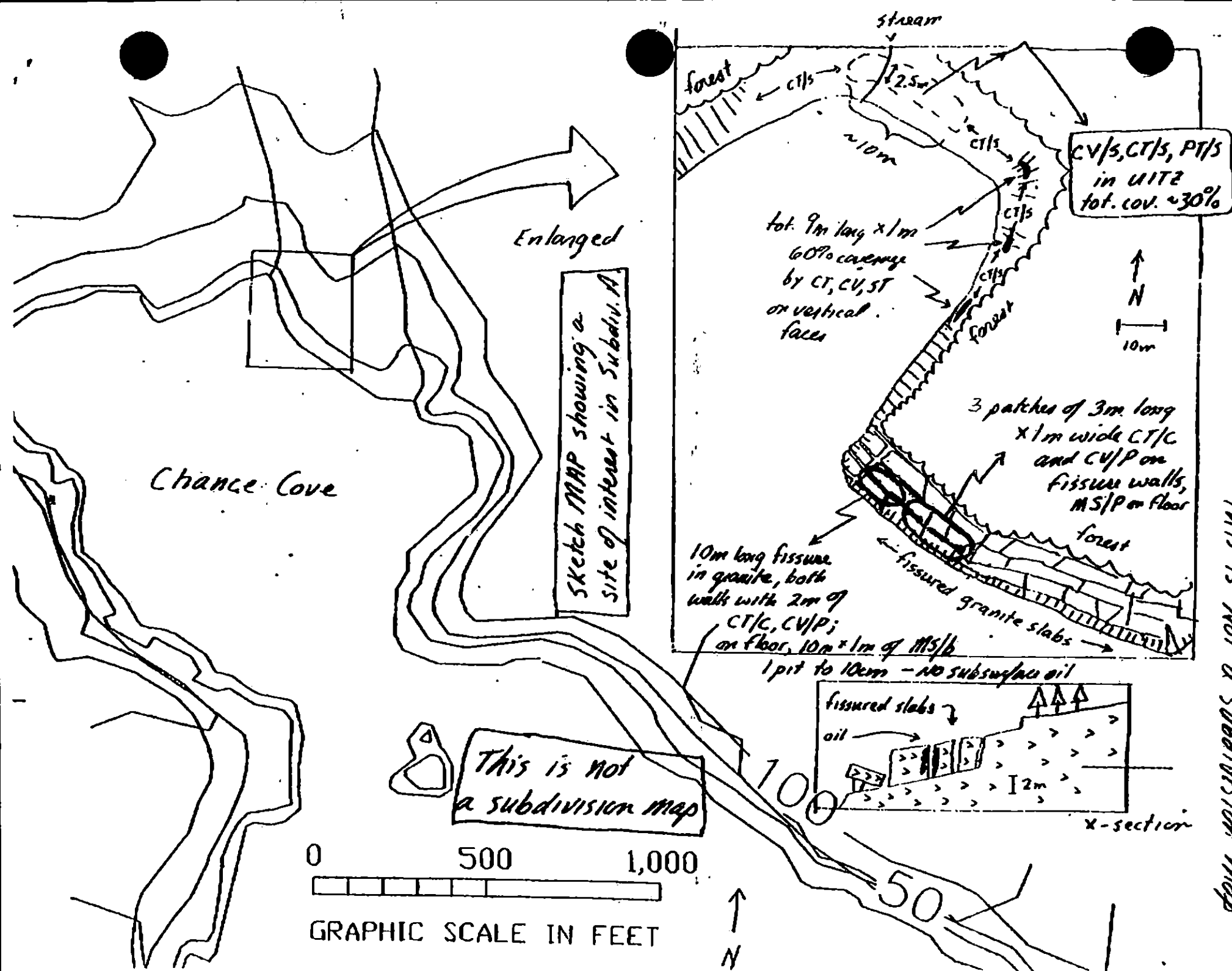
- also photo. locations

- ③ is fissure/slab site



This is not a subdivision
map.

This is not a subdivision map



SHORELINE ECOLOGICAL SUMMARY

REVISION: 000000

Segment ST / BM-1 Subdivision A (of A) Date (mo / day / yr) 4 / 2 / 90Time (24 hr) 1040 Biologist M. LARR(A) Substrate type and % of segments:
(1) Bedrock 90 (2) Boulder 5 (3) Cobble 5 (4) Pebble (5) Sand (6) Silt (B) Overall % cover of biota (% of segment): Dense 80 Moderate 10 Low 10

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

Photographs: Roll No. 3Frames 1-11

BARNACLES

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

MYTILUS

Dense			Moderate			Sparse			Rare			NOT PRESENT <i>Not present on these substrates.</i>
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

GASTROPODS

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

FUCUS

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

Wildlife Observations/ General Comments:

White-winged scoters - (4)

Ecological Considerations:

Sensitivity codes: 4-LL (National Park)

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / BM-01 SUBDIVISION: A DATE 2/4/90

USCG

NAME _____ SIGNATURE _____

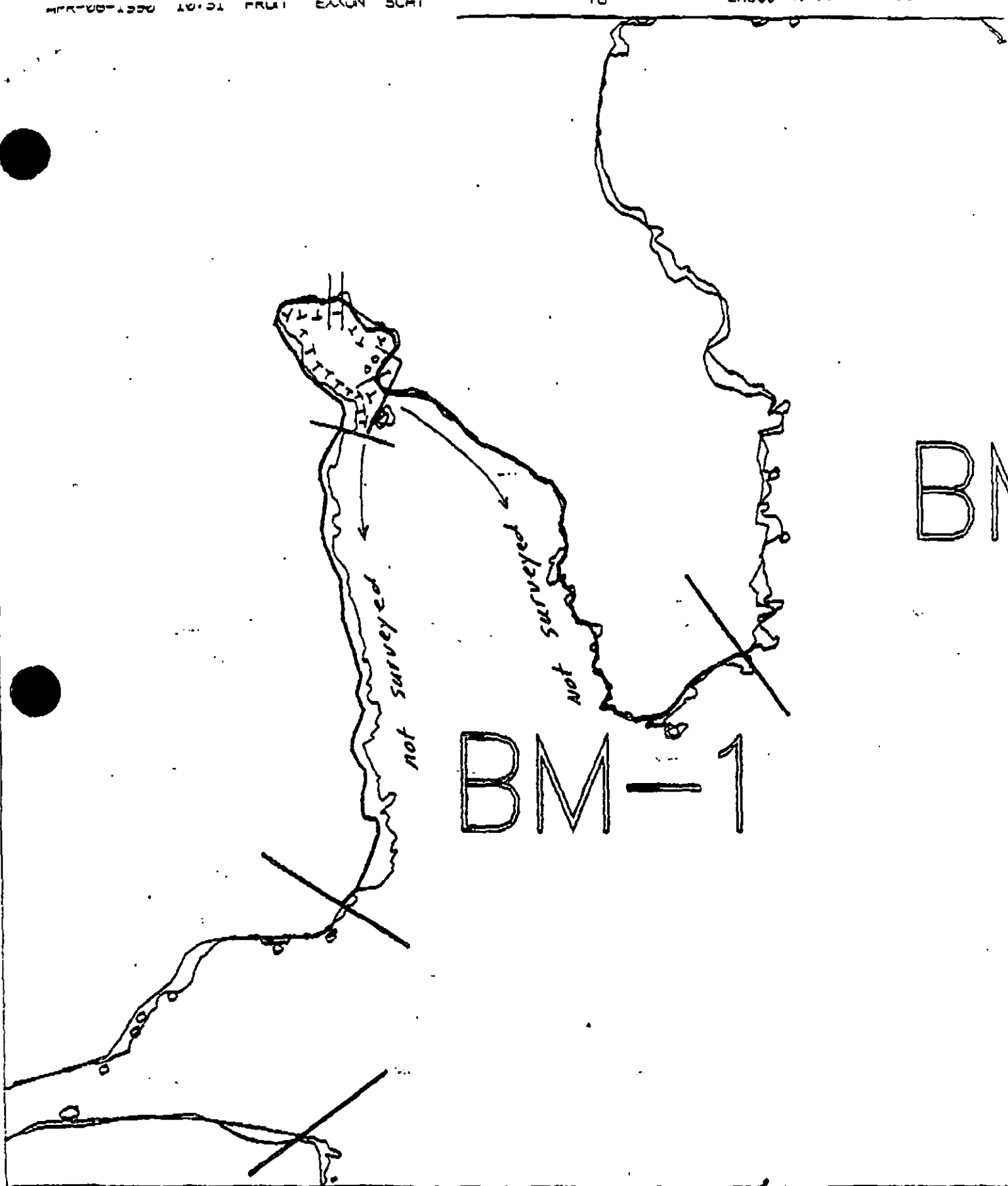
☐ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

ADEC

NAME _____ SIGNATURE _____

☐ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTEDLAND MANAGER CACNAME Peter Zellers SIGNATURE [Signature]☐ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

I WAS NOT present for the BM-1 Assessment-4/2/90. I did review all information collected by the visiting SSAT members, and sat in on their deliberations with regard to site treatment. Based on my five visits last summer and fall to BM-1, I feel that present oil conditions, as described by SSAT, poses little environmental threat to the Area. I do believe that a reassessment in mid summer would be appropriate as a responsible followup measure.



BM

BM-1

XXXX Wide

/// Medium

--- Narrow

TFTT Very Light

0000 No Oil

BM-1

ADEC Segment Length: 8404m



Map Key: PWS-BM-1

Name: Mann

Date: 4/2/90

Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ BM-001 SUBDIVISION A (1 OF 1) DATE 4/4/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Kenai Fiords National Park (4LL) - no time constraints.

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

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

SHPO SIGNATURE: Charles H. Jones DATE: April 12, 1990

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 42 m: V.Light 1111 m: No Oil 94 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

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

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 4/12/90

ADEC John Bauer
EXXON Andy Galt
NOAA Burl Wescott
USCG M. J. Hall

FOSC:

DATE: 4-20-90

Consultation between NOAA + NPS on 13 April revealed that NPS agrees NTR.

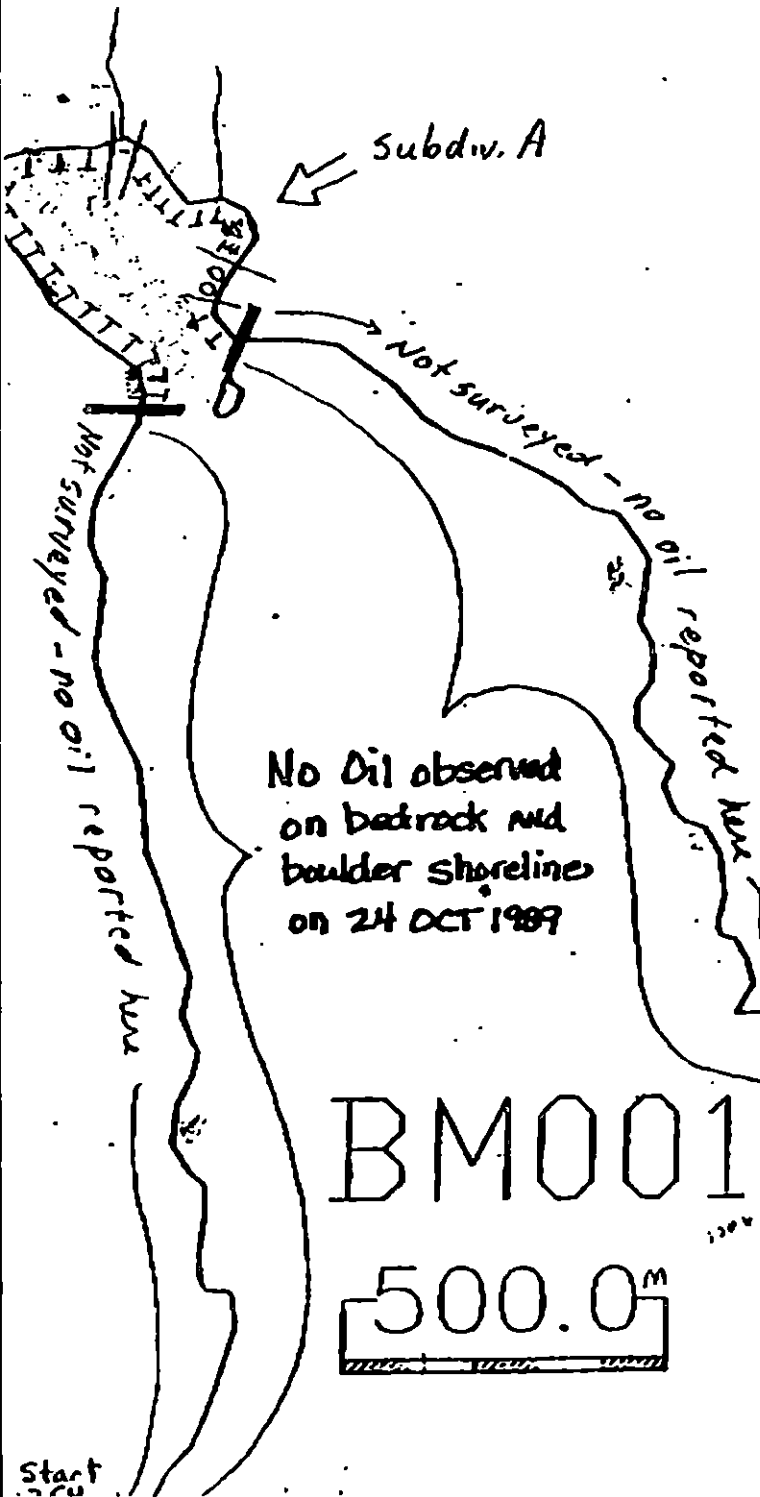
BM-1
2 April 90
Chance COVE
Subdiv. A

~~SEVERE POST TREATMENT
ENGINE ASSESSMENT~~

~~24 OCT. 1989~~

~~GARY L. BENTZ~~

NO EXXON MAP
WAS IN MY PACKET.
Please transfer to
Exxon map.



CHANCE COVE

OILING	
H	Heavy
M	Moderate
L	Light
VL	Very Light
N	None
NS	Not Surveyed

Bm-1

Mon

2 April 1990

KEY

① sites where we landed, took photographs,
and dug pits.

- also photo. locations

- ③ is fissure/slab site

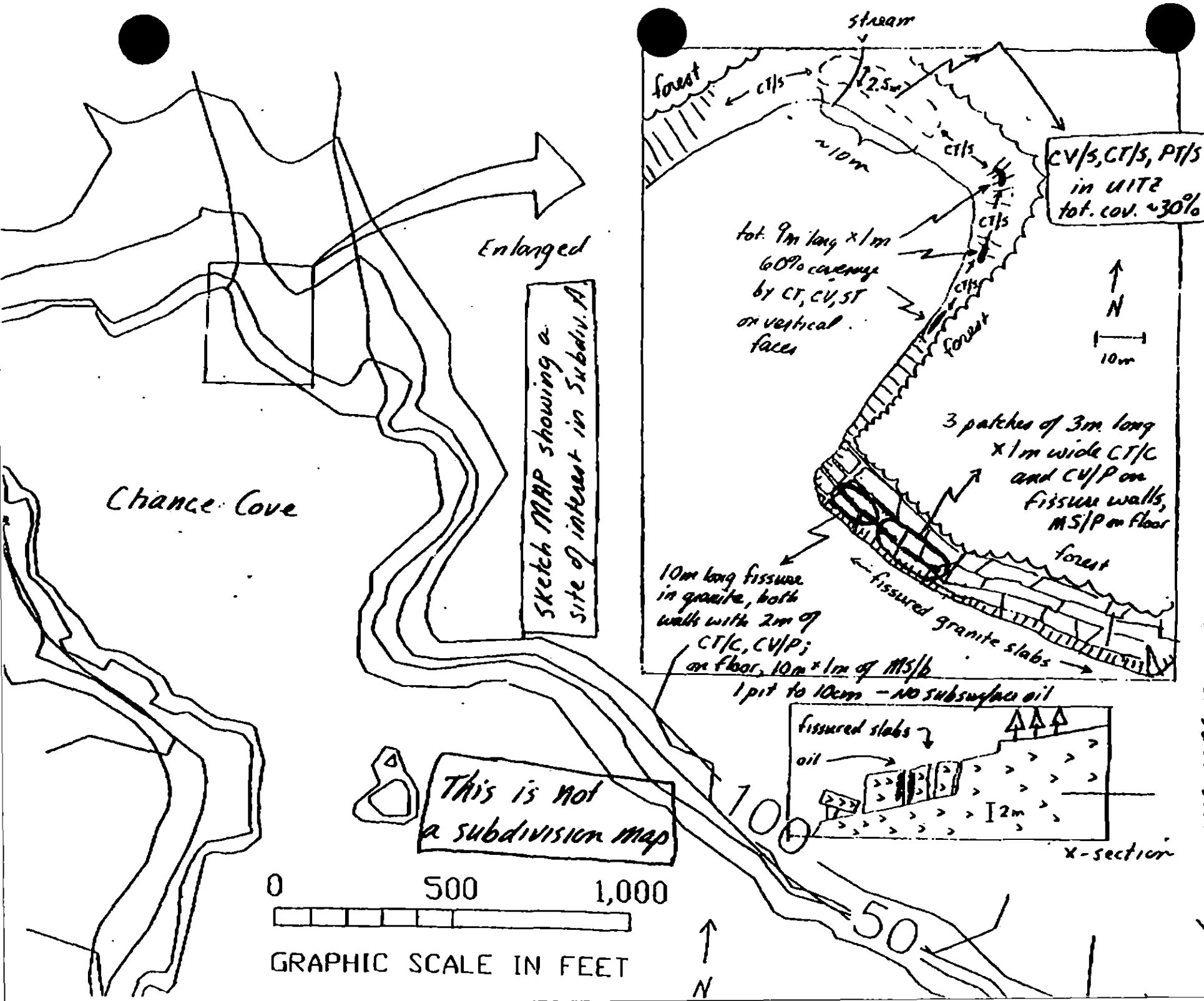
0 200 1,000
GRAPHIC SCALE IN FEET

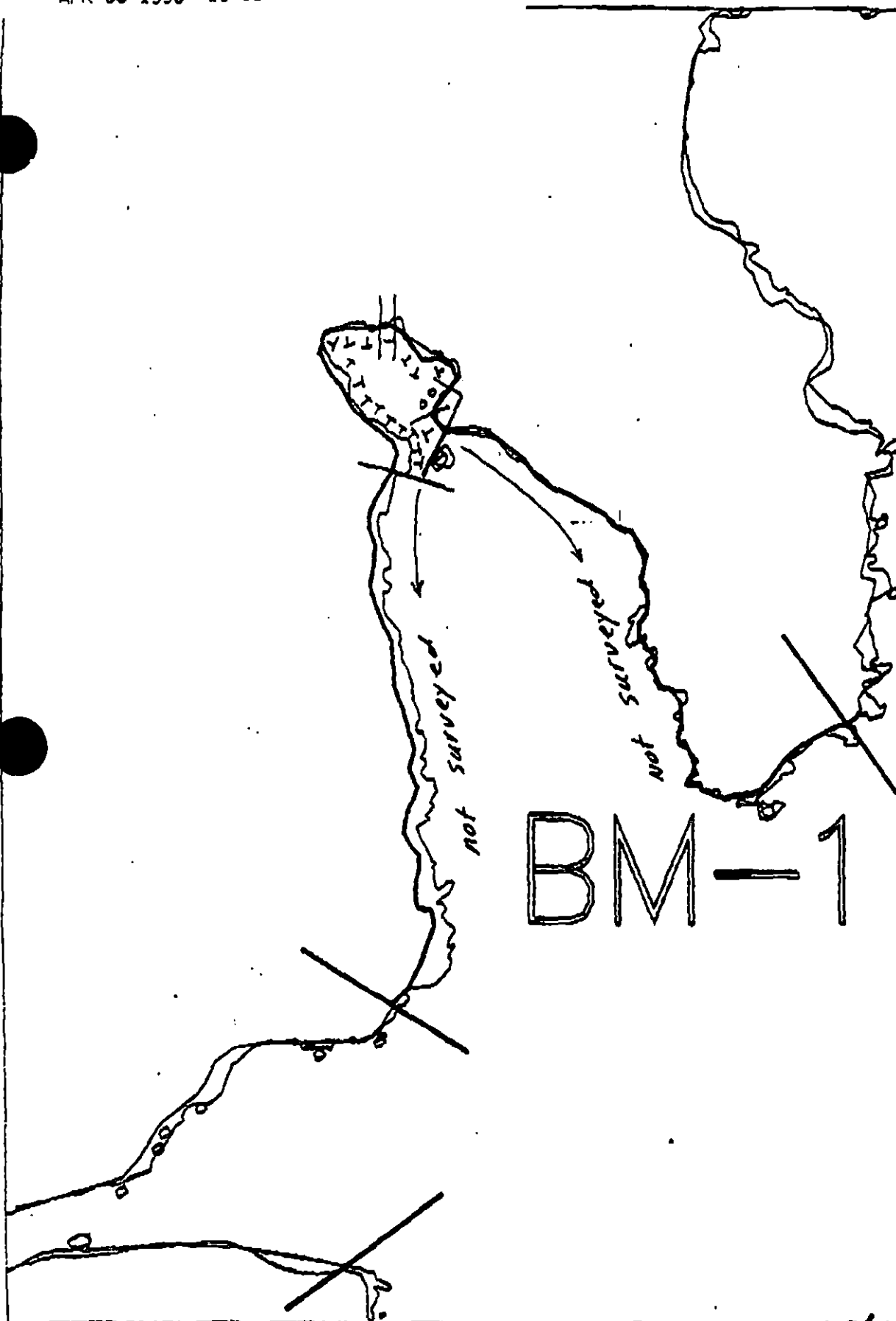
Chance
Cove

This is not a subdivision
map.

N D

This is not a subdivision map





BM-1

BM

XXXX Wide

//// Medium

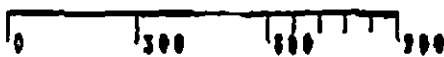
---- Narrow

TFTT Very Light

0000 No Oil

BM-1

ADEC Segment Length: 8404m



Map Key: PWS-BM-1

Name: Mann

Date: 4/2/90

Data Entered:

REGION: KENAI

SEGMENT: ST/BM-03

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ BM-03 SUBDIVISION A (1 OF 1) DATE 4/28/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

2M Herring spawning (4/1 to 6/15)
4LL National Parks
5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 1720 m: No Oil 14071 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

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

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

- 1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
 1B Salmon stream mouth - spawning (7/10 to 8/31)
 No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream. Contact ADF&G Habitat Division prior to treatment for permits.
- 1C Salmon fry nursery area (4/31 to 7/31)
 1D Esther Hatchery release (4/15 to 6/1)
 1E Main Bay Hatchery release (4/20 to 5/10)
 1F Sawmill Bay Hatchery release (4/15 to 6/1)
 1G Cannery Creek Hatchery release (4/21 to 6/1)
 1H Remote release site
 1I Gill net area (6/7 to 8/31)
 1J Purse seine area (7/20 to 9/30)
 1K Purse seine hook-off (7/20 to 9/30)
 1L Set net sites (6/11 to 7/25)
 For Codes 1C through 1L contact ADF&G for specific dates, locations and constraints.
- 2M Herring spawning (4/1 to 6/15)
 Restrict boat traffic to essential minimum. Avoid damage to uncoiled intertidal and subtidal algae and seagrass. Contact ADF&G for specific dates and locations.
- 3N, 3P Harbor seal and sea lion pupping (5/15 to 7/1)
 3O, 3Q Harbor seal and sea lion molting (8/15 to 9/15)
 Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts.
- 5R Seabird colony (5/1 to 9/1)
 Restrict air traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance. Contact ADF&G and USFWS prior to treatment.
- 5S Shorebird/waterfowl concentration (4/1 to 5/15)
 Restrict all activity to essential minimum, especially air traffic.
- 5T All Bald Eagle nests (3/1 to 6/1)
 Active Bald Eagle nests (3/1 to 9/1)
 Restrict air traffic to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
- 6U Recreation: Tent sites (6/1 to 9/15)
 6V Anchorages (6/1 to 9/15)
 6W Forest Service cabins (6/1 to 9/15)
 6X Lodge (6/1 to 9/15)
 6Y Special use destination
- 7Z Subsistence area: Salmon harvesting (5/1 to 9/30)
 7HH Finfish harvesting
 7I 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/ BM-3 SUBDIVISION: A DATE 4/28/90

USCG

NAME JERRY SCHULTZ

SIGNATURE

Jerry Schultz

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ADEC

NAME Mike Ebel

SIGNATURE

Michael J. Ebel

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

BM-3-A: This long segment (16,020 m) was mostly without oil. Three areas were found with VL contamination, two with minor splashes of stain and coat (of no significance) on the SW end of segment. The third area on the NW corner of segment had a VL distribution of splashed: coat, tarballs, stain, patties and pooled oil (low that frequency of occurrence) scattered throughout a range of about 2 m from the ST boundary down into the WT. We picked up what was recoverable. No further impact recommended.

LAND MANAGER

NPS

NAME Michael Tetreau

SIGNATURE

Michael Tetreau

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

Good survey. The only area where treatment might be necessary would be The band of scattered pooled oil in The west arm. Treatment would be very difficult and The benefits would be marginal.

SHORELINE OILING SUMMARY

EMERGENCY SCAT P. 02

REVISION NO. 04-12-90

OG Randy Siegel USCG Jerry Schultz Mike Tetrenu (NPS) SEGMENT ST/ BM-3
 BIO Lewis Sherman LAND REP Peter Zollar (Cava) SUBDIVISION A (LOF/1)
 EXXON Leonard Herbst ADEC Mike Ebel TIME 07:15 to 10:50
 TEAM NO. 12 TIDE LEVEL 5.5' to 2.7' DATE 4/28/90
 EST. SUBDIVISION LENGTH: 16,020 m ☒ Sun. ☐ Clouds ☐ Fog ☐ Rain ☐ Snow 45°F
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: SW to NW
 SURFACE SEDIMENTS: R 75 % B 10 % C 5 % P 5 % G 5 % S 0 % M 0 % V 0 %
 SLOPE: Long 0 % Hang 90 % Vert 10 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 1440 m NO 14580 m

SURFACE OIL

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

PAVEMENT H F S 0 sq. m by 0 cmPATTIES / TARBALLS 3 BAGSNEAR SHORE SHEEN? ☒ NO BR RW SL TL

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

DID YOU COLLECT DEBRIS?

YES ☒ NO ☐TYPE Plastic#BAGS 1

Photographs:

Roll No. NONEFrames ---

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM)	BELOW		OIL / FILM COLOR					PIT ZONE				A N A	SHEEN (Y/N)	▽	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OP	NO		UO	UC	1	2	3	4	5	SU	U	M	L				
1	40					X	0.0		X						X					-	-	C, P
							.															
							.															
							.															
							.															
							.															

COMMENTS

~~Very~~ Very long segment (over 9 miles) consisting primarily of hi-angle bedrock cliffs. Much of it surveyed by boat with stops at beaches. No oiling observed over most of the segment. Minor coat-stain on boulders on one beach and a length of coat-stain-pooled oil was observed ~~on~~ boulders on a second beach. Large boulders prevented digging ~~very~~ many pits.

REVIEWED YWDATE 4/30/90→ YW

US Handy Siegel
 SEGMENT STA -3
 SUBDIVISION A
 DATE 4/28/90

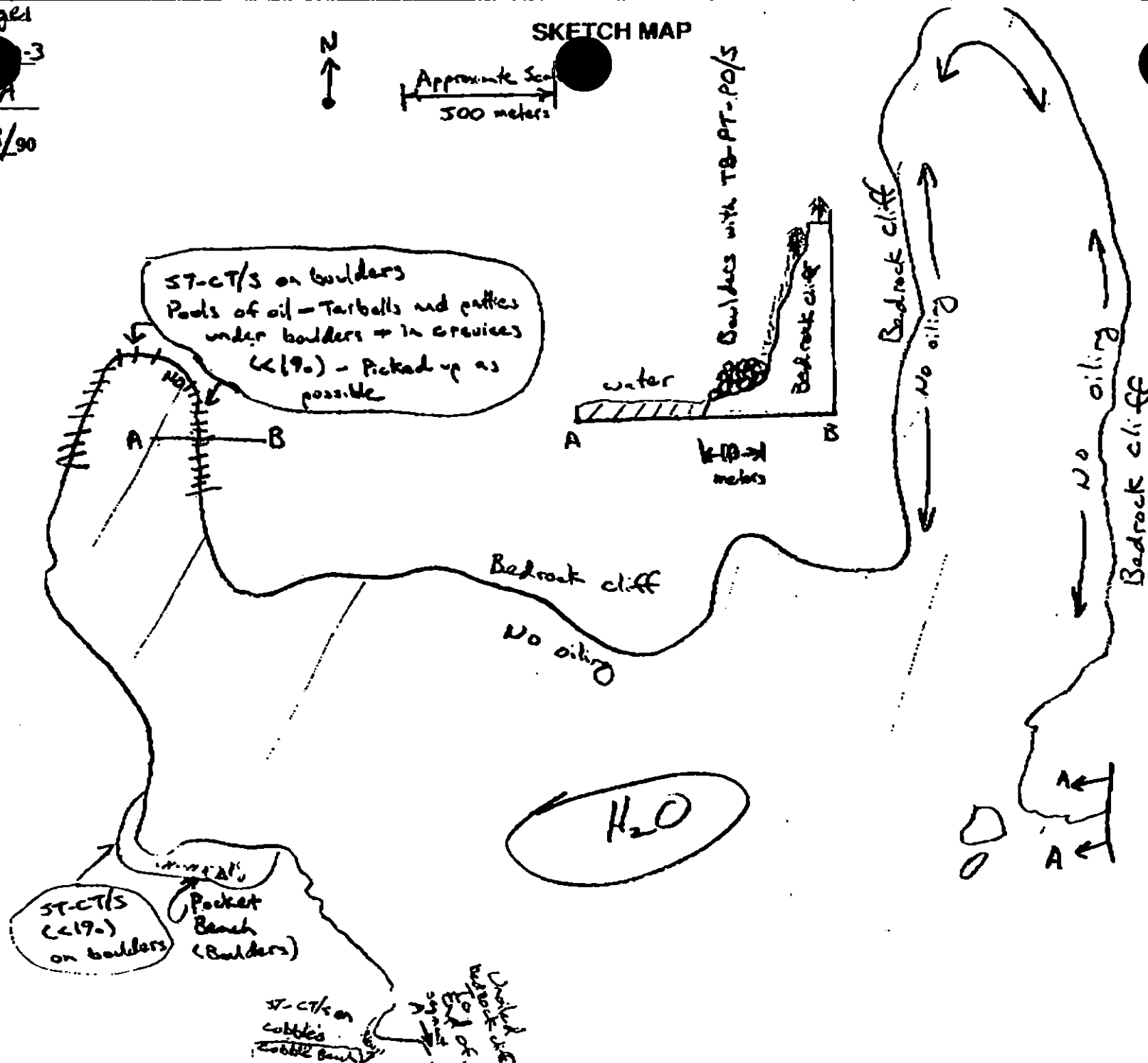
N
 SKETCH MAP
 Approximate Scale
 500 meters

CHECKLIST

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

LEGEND

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



3/46

Character Length (m): AP ϕ PO 300 CV ϕ CT 1400 ST 1400 MS ϕ PT 300 TB 300 FL ϕ NO 14580

SHORELINE ECOLOGICAL SUMMARY (Page 1 of 3)

REVISION: 08/23/90

Segment ST / B7-3 Subdivision A Date (mo / day / yr) 4/28/90

Time (24 hr) 0720-1100 Biologist SHARMAN

(A) Substrate type and % of segments: SUBDIV.
(1) Bedrock 75 (2) Boulder 10 (3) Cobble 5 (4) Pebble 5 (5) Sand 5 (6) Sm 5

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

(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 (ALCELA, LITTORINA, LIMPETS)

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: 5 pairs oystercatchers, 1 surf scoter, ~45 harbor seal pups, 2 crows, 12 pigeon guillemots, 2 murrelets, 1 northern eagle, 1 cormorant, 6 mountain goats on cliffs (incl. 2 nursing with yearling kid). The cliffs at the S. end of the segment are clearly a seabird nesting colony (presently 50+ pairs of glaucous-winged gulls) - also 15 sea lions hauled out on N. most rock (cont.)

Ecological Considerations:

We received no information regarding resource sensitivities previously identified for this segment. See attached map for location of seabird nesting cliffs and pinpoints (probably only sea lions) haulouts. These areas are clearly very important and are very sensitive to human disturbance. Overall, the marine intertidal zone is normal + healthy, and would not benefit from attempts to recover/mitigate oiling effects.

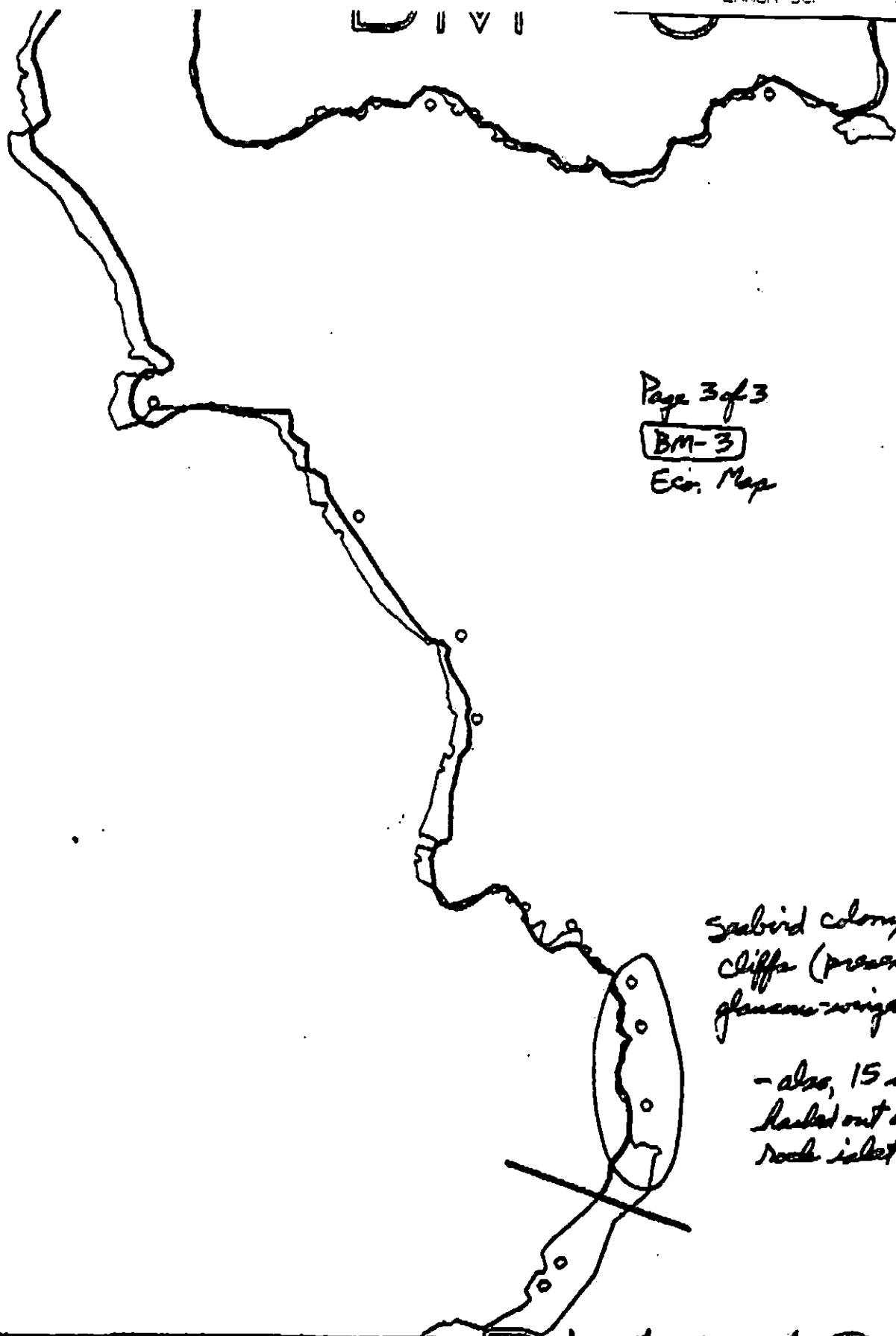
10/46

BM-3

Shoreline Ecological Survey (cont.)
(Page 2 of 3)Sharman
4/28/90General Comments (cont.):

islet. See attached Eco. Map. The intertidal communities, as with other semisubmerged $\rightarrow$ exposed rocky habitats along this Kona coast, are extremely diverse and productive. The LTR, particularly, is exceedingly rich, containing dozens of algal species, several types of sponges and tunicates, and Cryptochiton stelleri. Species richness is easily 100+. Barnacles, mussels, Fucus, and gastropods all seem to be recruiting satisfactorily, primarily in the LTR - none are recruiting in particularly dense/abundant numbers except for mussels locally settling around adults. LTR littorinids here are unusually large. These intertidal communities are quite healthy except for a few areas where there is a discontinuous LTR weathered oil (coat/pave) band on vertical bedrock faces at the top of the barnacle zone - barnacle mortality here is ~80% within this band, 10% outside the band. Subtidally, there are a few small Nereocystis beds just offshore from rocky points where remnants of last summer's kelp forests have persisted. As have all areas we have surveyed in the region, beaches here evidently subsided during the 1964 earthquake - dead trees along supratidal fringe.

11/46



Page 3 of 3

BM-3

Eco. Map

Saabird colony on
cliffs (presently 100+
glaucous-winged gulls)

- also, 15 sea lions
hauled out on N. near
rock islet.

XXXX Wide

//// Medium

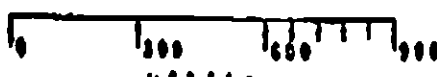
--- Narrow

TTTT Very Light

OOOO No. 0:1

BM-3

Approx. Segment Length: 1542m



Map Key: KEM-BM-3a

Name: _____

Date: _____

Date Printed: _____

17/11/17

BM-4

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

BM-3

Approx. Segment Length: 15424m



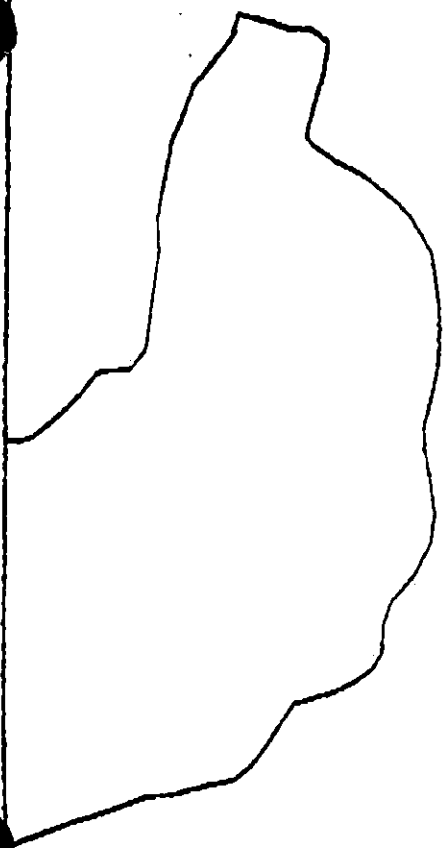
Map Key: KEN-BM-3d

Name: Redy Siegel

Date: 4/28/90

Data Entered:

7/46



BM-3

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

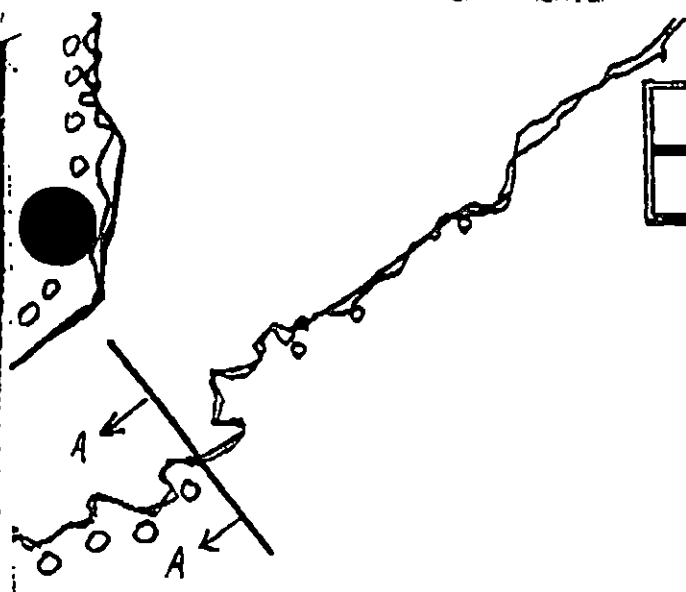
Approx. Segment Length: 15424

BM-3



Map Key: KEN-BK-3c
Name: Reddy Ridge
Date: 4/28/90
L/H/L

BM-101



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

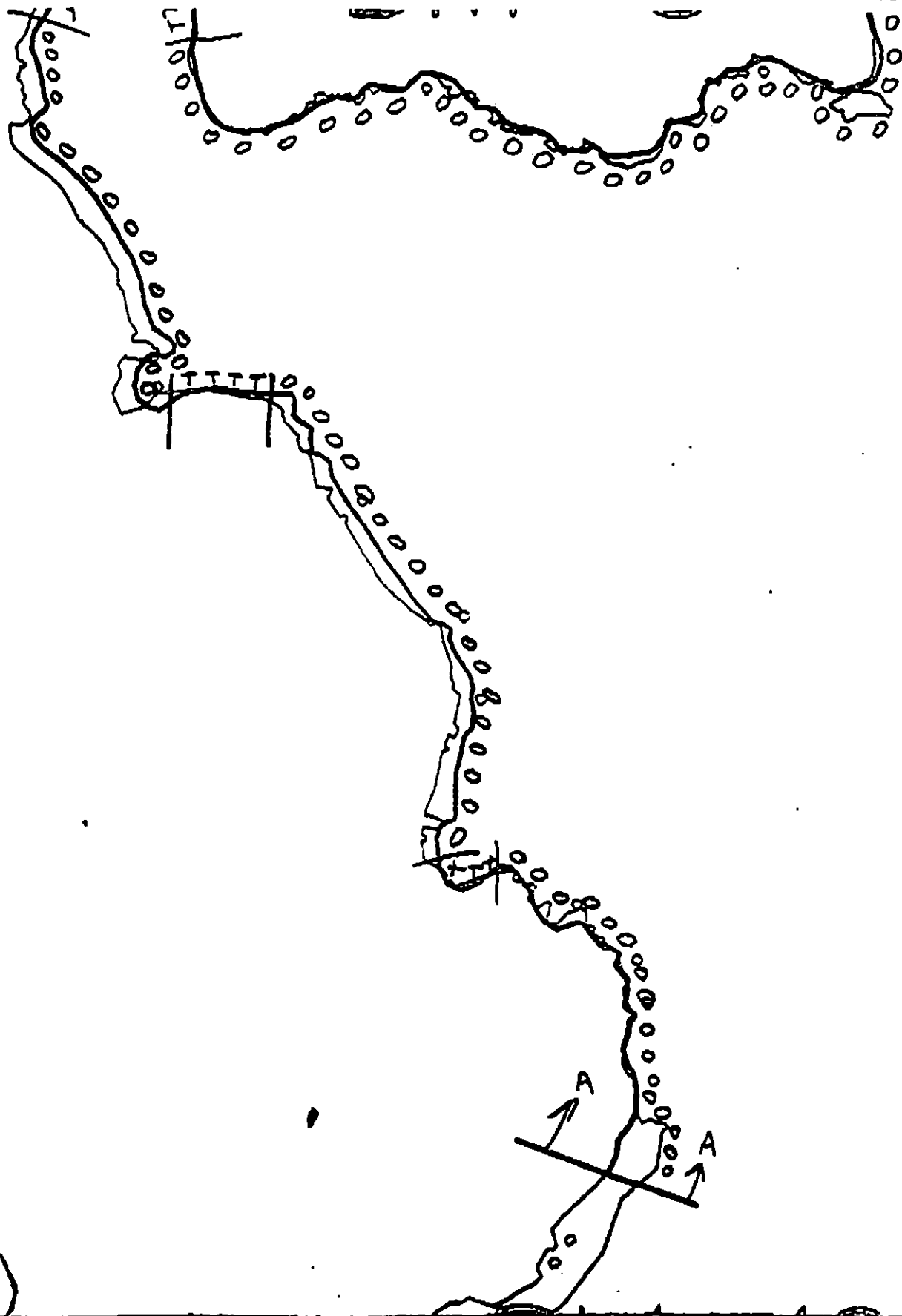
BM-3

Approx. Segment Length: 15424



Map Key: KEM-BX-36
Name: Bob Siegel
Date: 4/28/90
Date Entered:

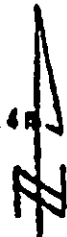
5/42



XXXX Wide
 //// Medium
 --- Narrow
 TTTT Very Light
 OOOO No. 0:1

BM-3

Approx. Segment Length: 15426



Map Key: KEN-BV-3a

Name: Paul Siegel

Date: 4/28/90

Date received:

11/11/90

SHORELINE EVALUATION

SEGMENT ST/ BM-03 SUBDIVISION A (1 OF 1) DATE 4/28/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

2M Herring spawning (4/1 to 6/15)
4LL National Parks
5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: J. Daniel McMahon DATE: 5/11/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 1720 m: No Oil 14071 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

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

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 1 5/11/90
ADEC ART WILSON Art Wilson
EXXON ANDY TEAR Andy Tear FOSC: W L DATE: 5-15-90
NOAA JOHN TALBOT John Talbot
USCG D. D. Rome D. D. Rome

DATE 4 / 28 / 90

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Endry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HWT/LWT
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ PR Location(s)
- ☐ Photo Location(s)

LEGEND

1 Δ
PK - No Subsurface Oil

2
Pit - Subsurface Of

CT/C
Continuous Distribution

CT/B
Broken Distribution

CT/P

Patchy Distribution

[C1/5]
Spliced Distribution

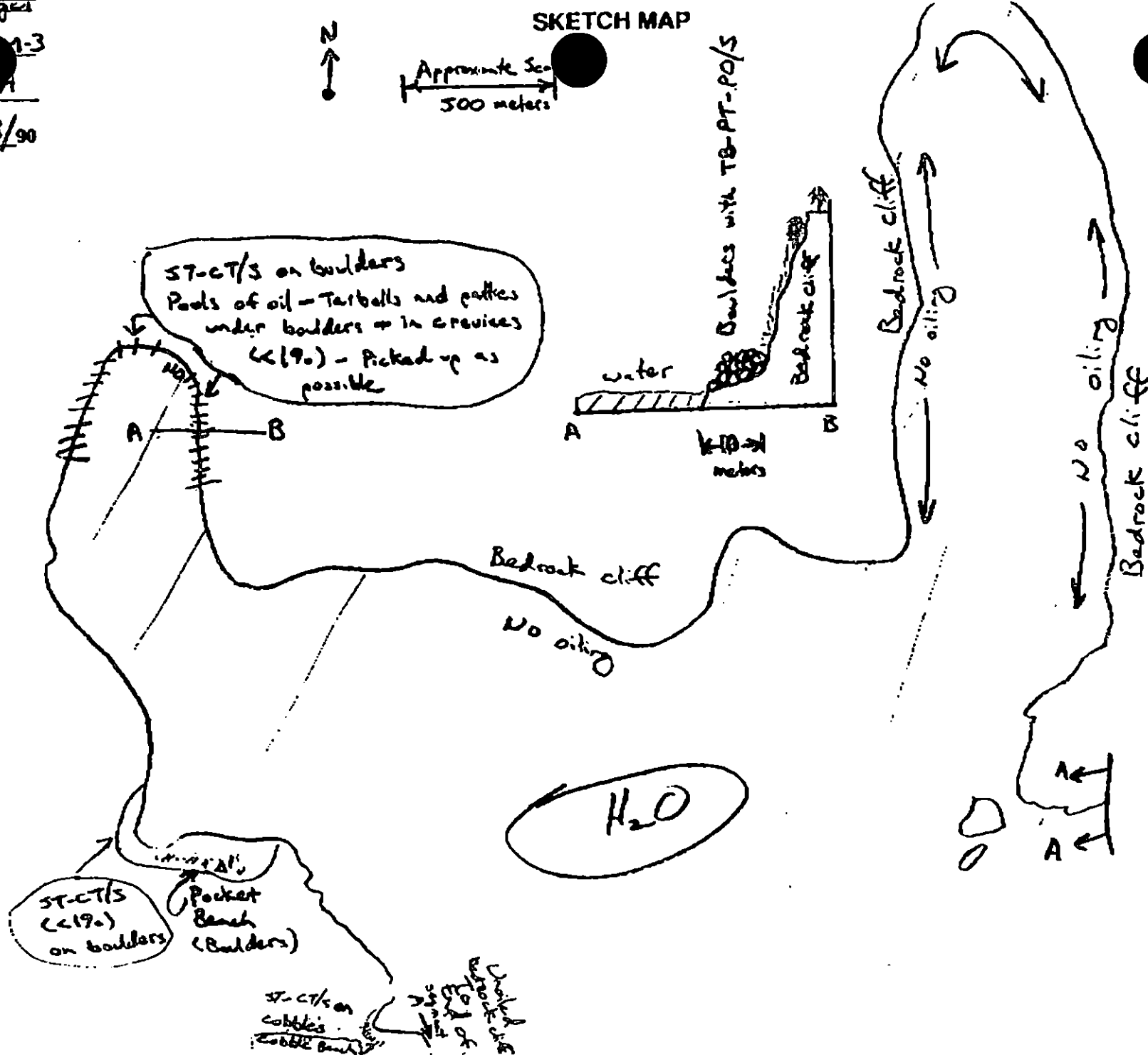
llv.
Old Vegetation

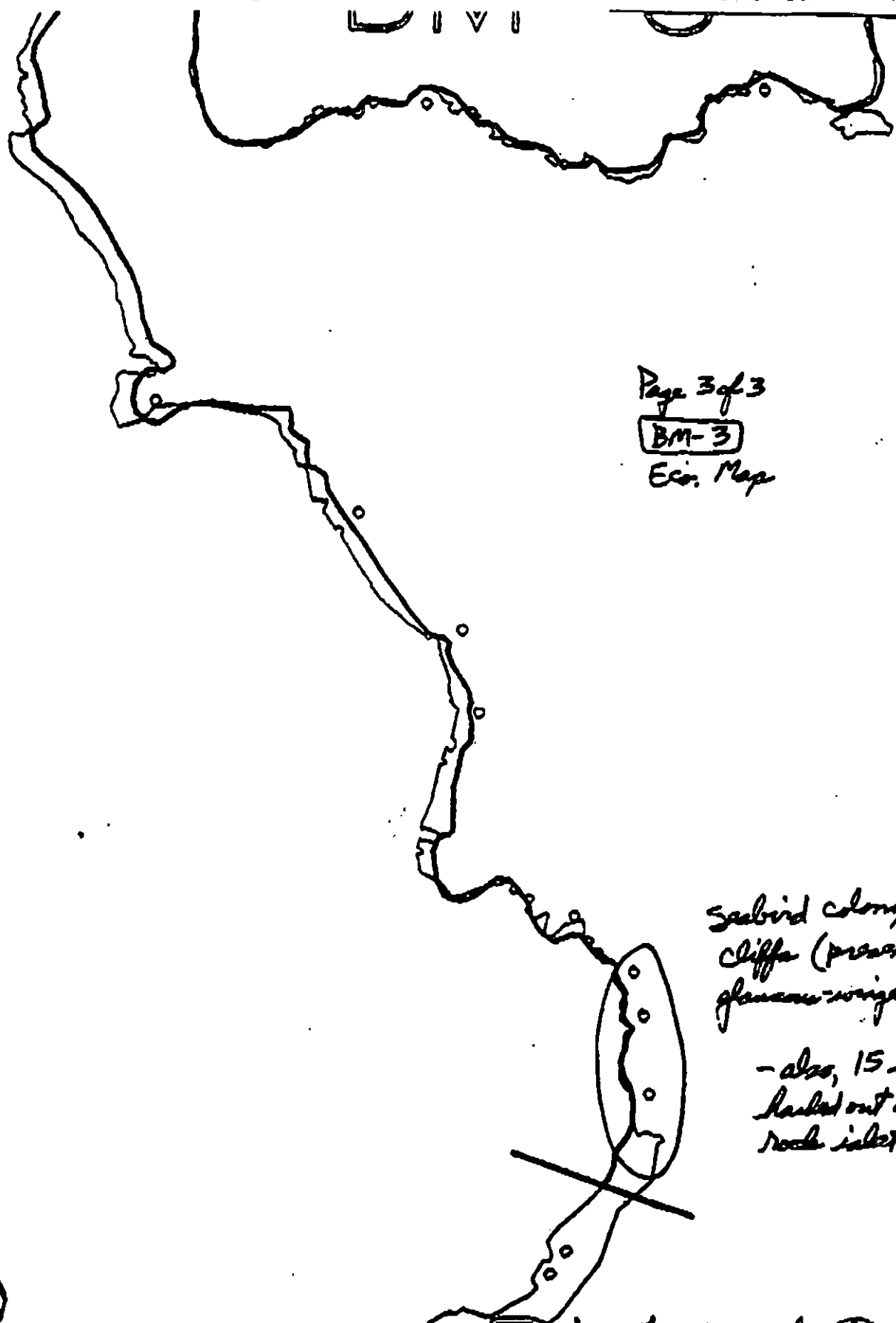
1 ~~SECRET~~

**Photo location, direction,
and number**

3/45

Oil Character Length (m): AP φ PO 300 CV φ CT 1400 ST 1400 MS φ PT 300 TB 300 FL φ NO 14580

[illegible]



Page 3 of 3

BM-3

Eco. Map

Seabird colony on
cliffs (presently 100+
glaucous-winged gulls)

- also, 15 sea lions
hauled out on N. near
rock inlet.

XXXX Wide

//// Medium

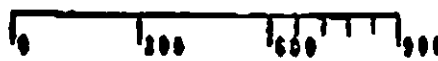
--- Narrow

TTTT Very Light

OOOO No. 0:1

BM-3

Approx. Segment Length: 15424m



Map Key: KEN-BM-3a

Name: _____

Date: _____

Date Printed: _____

12/46

BM-4

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

BM-3

Approx. Segment Length: 15424m



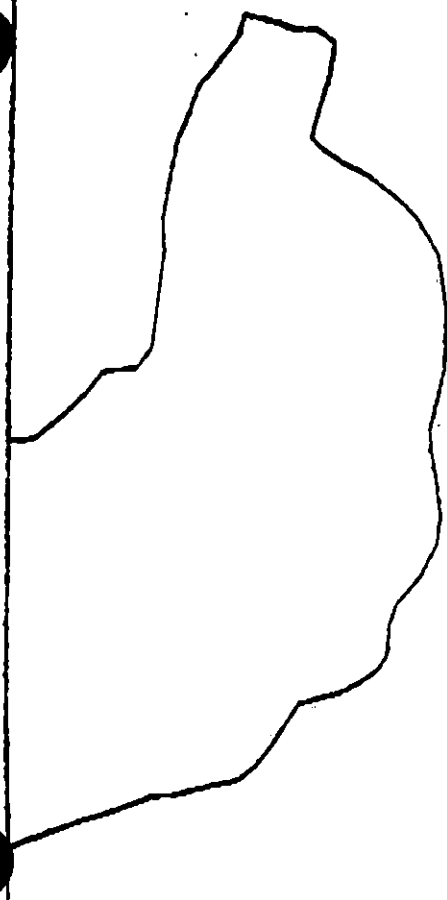
Map Key: KEM-BM-3d

Name: Redy Siegel

Date: 4/28/90

Date Entered:

7/46



BM-3

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

Approx. Segment Length: 15424

BM-3

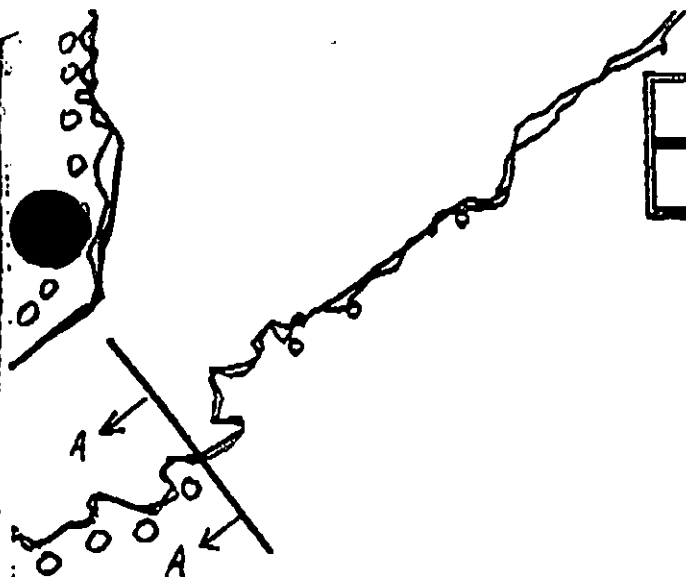
Map Key: KEX-BM-3c

Name: *Reddy Island*

Date: 4/28/90

L/HG

BM-101



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

BM-3

Approx. Segment Length: 1542m



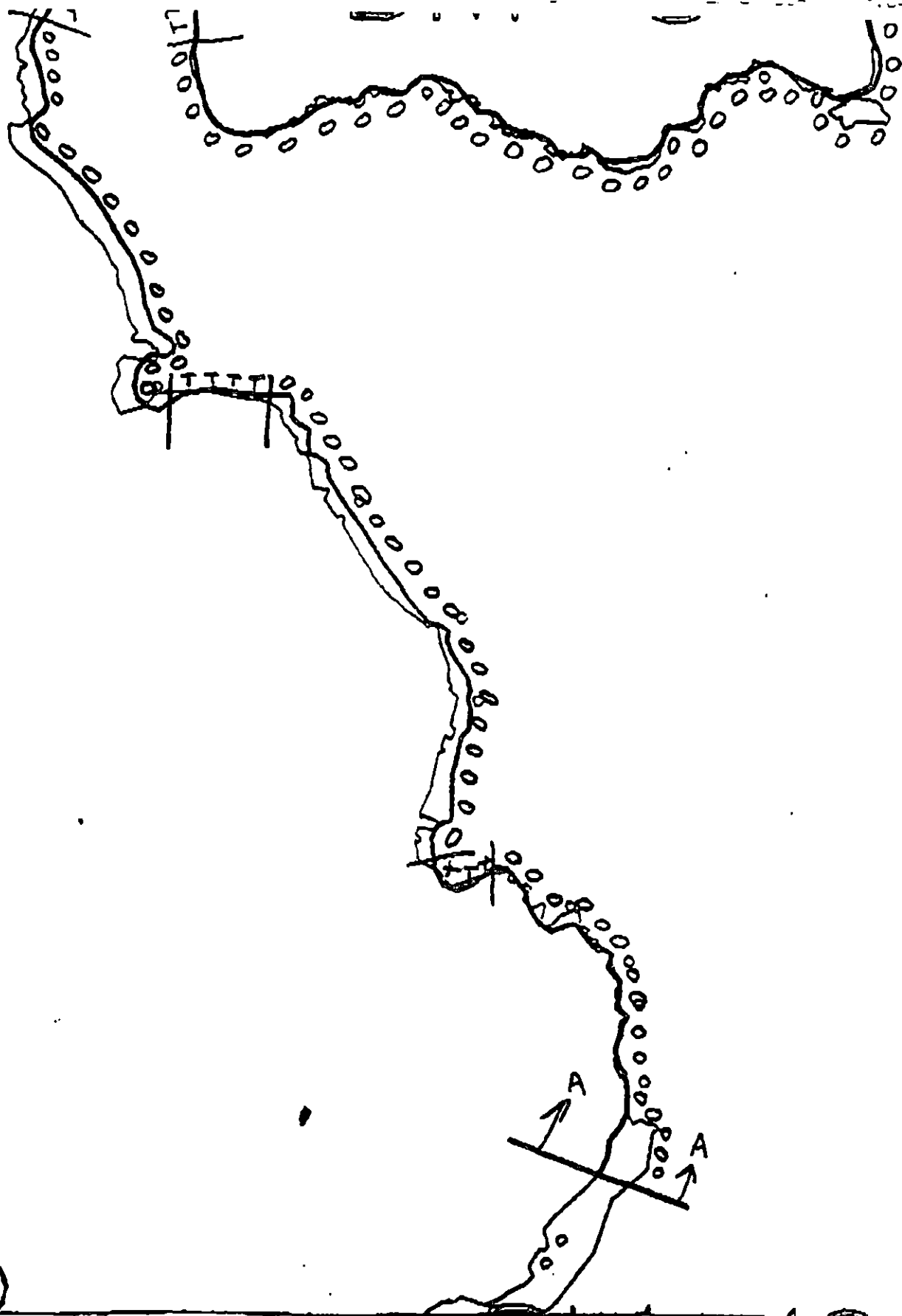
Map Key: KEM-BM-3b

Name: Bob Smith

Date: 4/28/90

Date Entered:

5/46



XXXX Wide

//// Medium

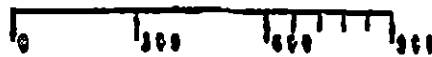
--- Narrow

TTTT Very Light

OOOO No Data

BM-3

Approx. Segment Length: 15424m



Map Key: KEN-BV-3a

Name: Paul Siegel

Date: 4/28/90

Drawn by: U/W

REGION: KENAI

SEGMENT: ST/BM-004

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ BM-004 SUBDIVISION A (1 OF 1) DATE 4/9/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

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

See attached Ecological Constraint Sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to uncoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

DILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 39 m: No Oil 6922 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

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

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: _____

DEC _____
XXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

SEGMENT ST/ BM-4 SUBDIVISION: A DATE 6/9/95

USCG/NOAA

NAME JACQUI MITCHELL SIGNATURE [Signature]

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

Thunder Bay is exposed to direct wave attack from the SE. This segment is the first one where we failed to find oil in specific areas mapped in the Fall 1989, as oiled (though the Fall oiling was very light). The cobble beaches are very steep and obviously reworked by waves (we saw multiple berms on most beaches). No further treatment is warranted.

ADEC

NAME JOHN R. REED SIGNATURE [Signature]

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

No oil was observed in this segment. I have read and agree with all data on SSAT Forms. The Anadromous stream mouth was clean.

LAND MANAGER NPS

NAME Michael Tetreau SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

Most of the areas we surveyed are very high energy beaches and oil that was reported in previous surveys was not found. The small patch of oil that was found does not warrant cleaning. The extensive reworking of these beaches may have buried oil which may resurface as the beach profile changes. Significant amounts of oil, however, should not be expected.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG Mann USCG NOAA Michel SEGMENT ST/ BM-4
 BIO Carr LAND REP Tefrean-NPS SUBDIVISION A
 EXON Boyer ADEC Reed TIME 17:00 to 20:15
 TEAM NO.: 18 TIDE LEVEL: +6 to +1 DATE 7/19/90
 EST. SUBDIVISION LENGTH: 16429 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock SNOW
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: all to over
 SURFACE SEDIMENTS: R 40 % B 20 % C 25 % P 15 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 35 % Hang 25 % Vert 40 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 2 m NO 7200 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	C	B	P	S	SP	BR	OR	OL	OT	SL	TL	LR	SU	U	M	L
ASPHALT PAVEMENT																
POOLED																
COVER																
COAT			✓			✓							✓			
STAIN																
MOUSSE																
PATTIES																
TARBALLS																
FILM																
NO OIL													✓		✓	✓

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

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED ☒ YES ☐ NOTYPE NON-oiled
trash
#BAGS 4

Photographs:

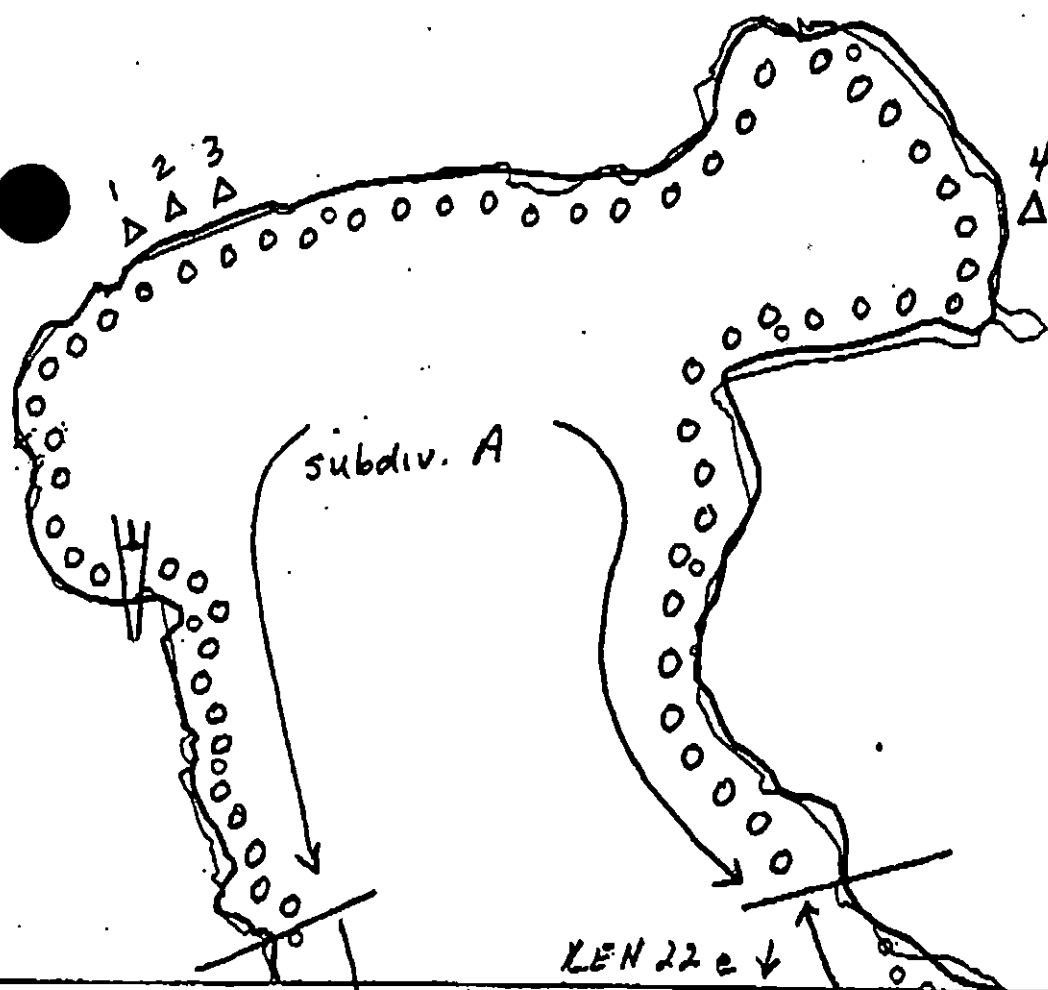
Roll No. 18-5 18-6Frames 35-39 (1-5)

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CM)	BELOW		OIL / FILM COLOR								PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	SP	BR	OR	OL	OT	SL	TL	LR	SU	U	M	L		
1	60					✓	-											✓				N	PC throughout
2	75					✓	-											✓				"	"
3	50					✓	-											✓				"	"
4	75					✓	-											✓				"	"
							-																
							-																

COMMENTS Segment BM-4 comprises Thunder Bay, a spectacular fjord surrounded by steep snow-avalanche slopes and cliffs. The pocket beaches are very energy with steep double and triple beams of rounded pebbles and cobbles. An exception is the NE beach which has a marked low tide platform armored by angular rock. We could find only 1 m² of CT/P. No other remnant of previously report oiling was found, despite a determined search by 5 trained observers. REVIEWED BAV DATE 12 Apr 90

BN

 Δ pit location

XXX Wide $\downarrow$ Not observed
 /// Medium
 --- Narrow
 TTTT Very Light
 0000 No Oil

BM-4 NOT OBSERVED
 ADEC Segment Length: 33294m

0 300 600 900
 meters

Map Key: KEN-22h

Name: MannDate: 4/9/90

Data Entered:

OG MANNA

SKETCH MAP

SEGMENT ST/ BH-4

SUBDIVISION A

DATE 7 19 90

CHECKLIST

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

LEGEND

1 

PH - No Subsurface Oil

2 

PH - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

Oiled Vegetation

1 

Photo location, direction,
and number

NO SKETCH.

Oil Character Length (m): AP 0 PO 0 CV 0 CT 2 ST 0 MS 0 PT 0 TB 0 FL 0 NO 7200

NOT OVS. 9227

REVISION: 03/24/90

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST BAL-4 Subdivision A of A Date (mo / day / yr) 4 / 9 / 90Time (24 hr) 1:00 Biologist M. JARR

- (A) Substrate type and % of ^{SUBDIVISION} segments:
 (1) Bedrock 10 (2) Boulder 20 (3) Cobble 25 (4) Pebble 15 (5) Sand — (6) Silt —
- (B) Overall % cover of biota (% of ^{SUBDIVISION} segment): Dense 50 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 (O)

Photographs: Roll No. 6Frames 1-5

BARNACLES

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

NOT PRESENT

NOT PRESENT IN ANY ZON.

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

NOT PRESENT IN UPPER ZON.

STROPODS

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

NOT PRESENT

NOT PRESENT IN UPPER ZON.

FUCUS

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

NOT PRESENT IN UPPER ZON.

NOT PRESENT

NOT PRESENT IN ANY ZON.

Wildlife Observations/ General Comments:

Bald eagle (2) mature, (1) immature.

Surf scoter (1)

Mountain goat (1)

Ecological Considerations:

Sensitivity codes:

1-A (stream mouth, salmon fry outmigration)

1-B (stream mouth, salmon spawning)

5-T (Bald eagle nest)

5-R (sea bird colony)

①-LL (National Park)

Golden-eye (5)

N.W. crows (2)

Harlequin ducks (31)

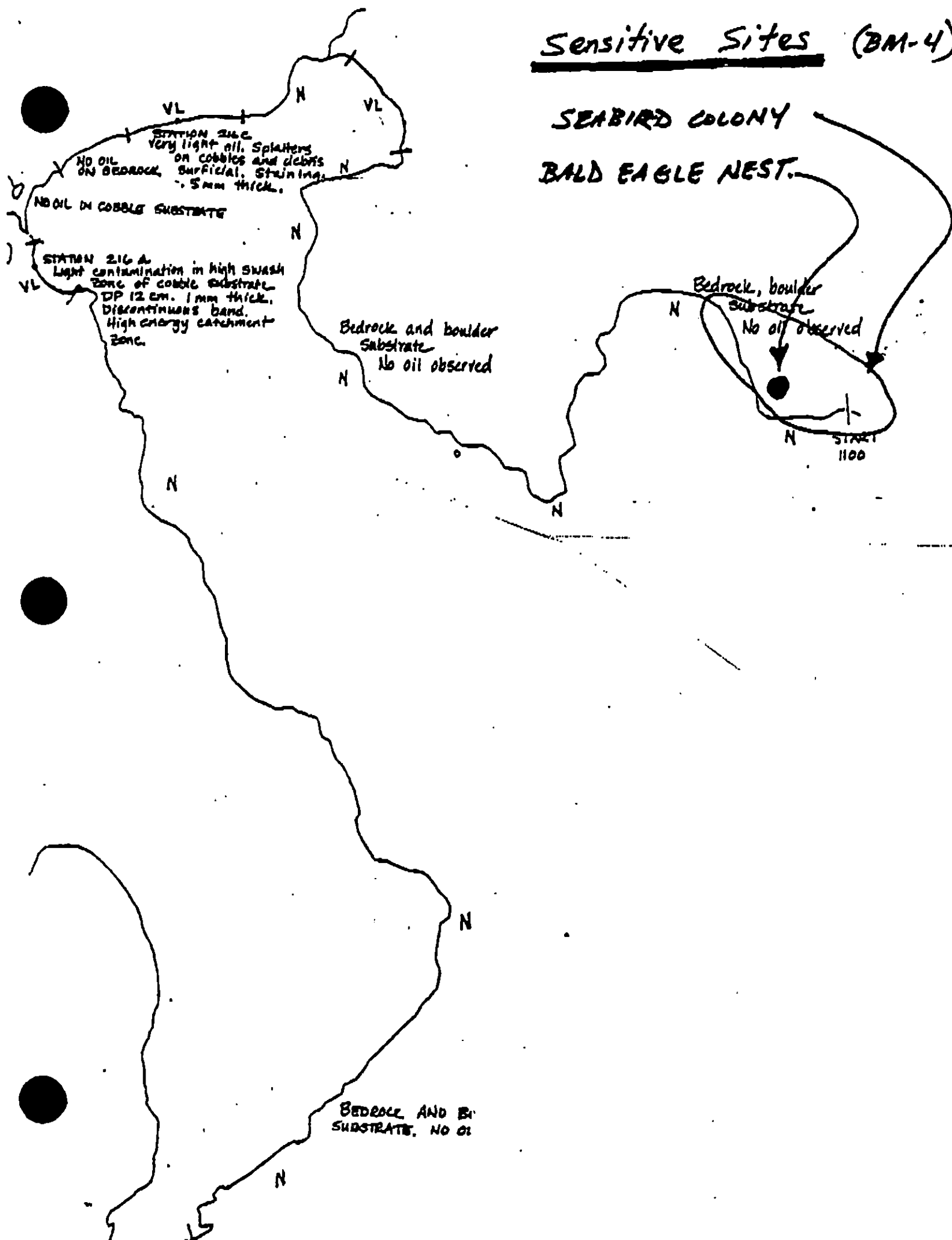
Magpie (6)

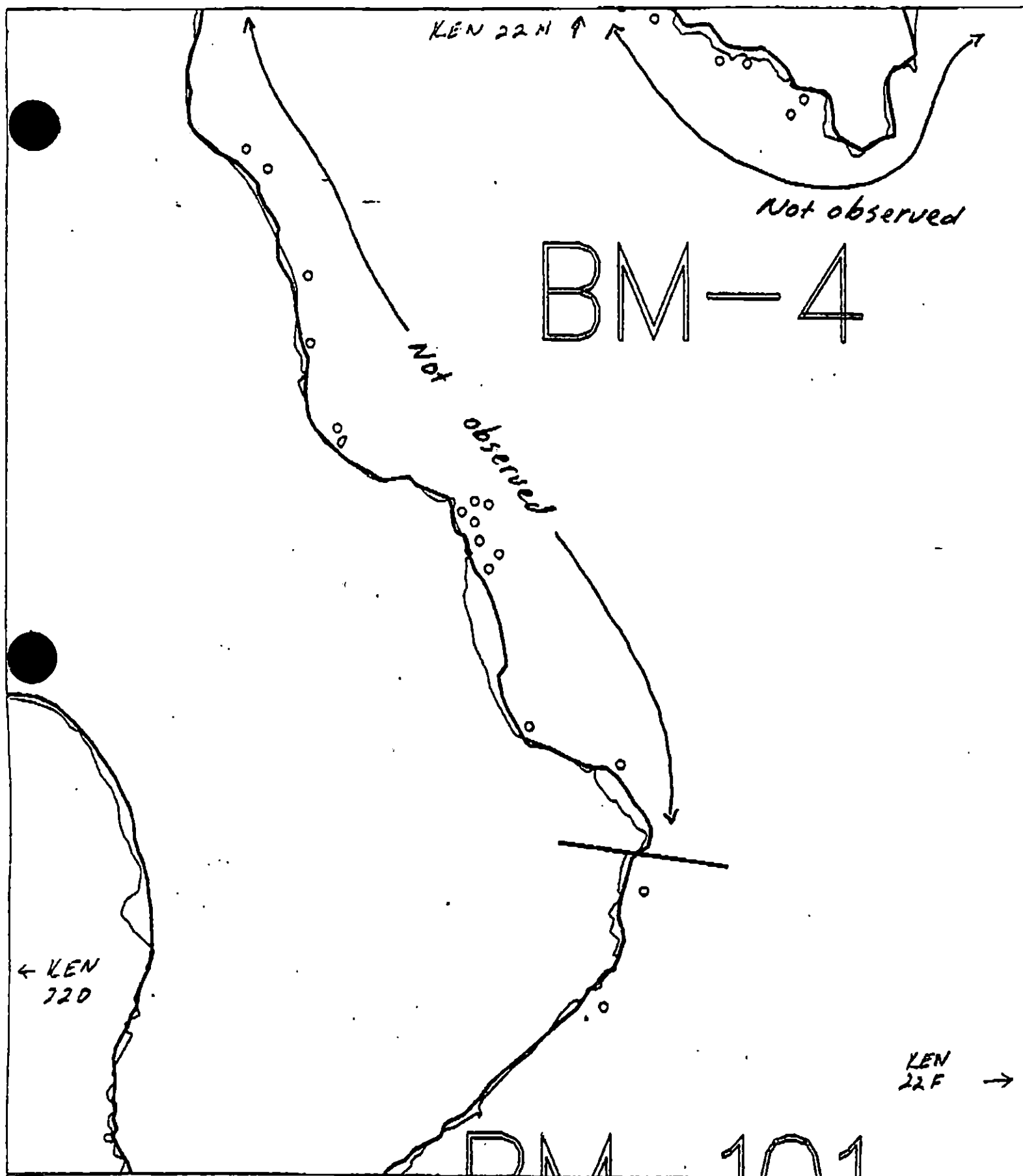
U-V (Recreation anchorage)

Sensitive Sites (BM-4)

SEABIRD COLONY

BALD EAGLE NEST.





XXX Wide
/// Medium

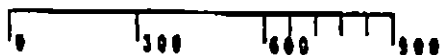
--- Narrow

TTTT Very Light

OOOO No Oil

BM-4

ADEC Segment Length: 33294m



Map Key: KEN-22e.

Name: MANN

Date: 4/9/90

Data Entered:

not observed

↑
KEN 22 i

← KEN
22E

XXX Wide

//// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

BM-4

ADEC Segment Length: 33294m

0 300 600 900

Map Key: KEN-22i

Name: Marr

Date: 4/9/90

Data Entered:



XXXX Wide

//// Medium

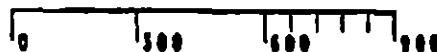
---- Narrow

TTTT Very Light

OOOO No Oil

BM-4

ADEC Segment Length: 33294m



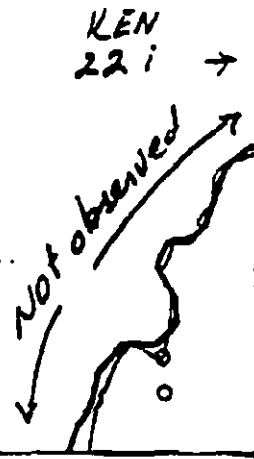
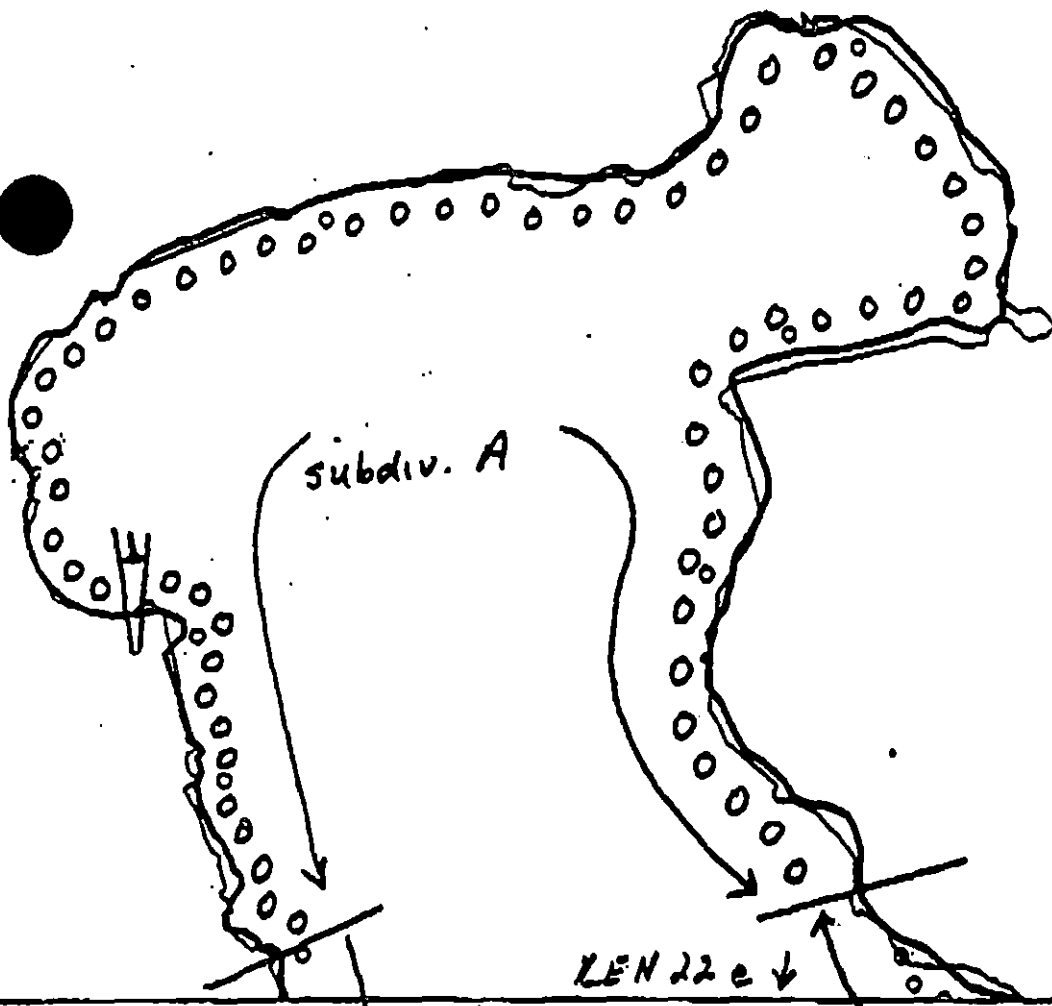
Map Key: KEN-22i

Name: Mann

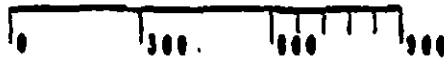
Date: 4/9/90

Data Entered:

BN



XXX Wide Not observed BM-4 NOT OBSERVED
/// Medium
--- Narrow ADEC Segment Length: 33294m
TTTT Very Light
OOOO Not observed



Map Key: KEN-22h

Name: Mann

Date: 4/9/90

SHORELINE EVALUATION

SEGMENT ST/ BM-004 SUBDIVISION A (1 OF 1) DATE 4/9/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

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

See attached Ecological Constraint Sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid disturbance/damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: *Charles Z. Hume* DATE: 4/18/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 39 m: No Oil 6922 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

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

COMMENTS:

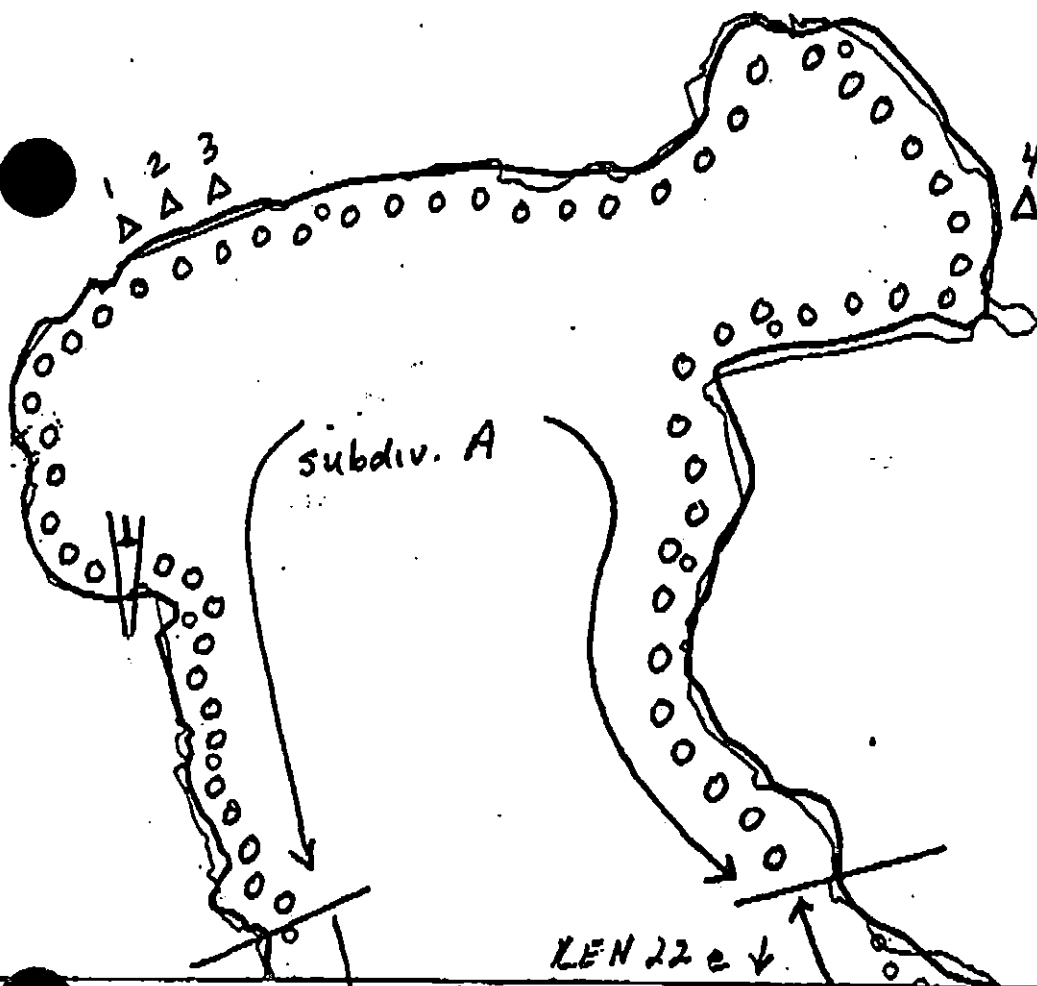
TAG COMMENTS:

TAG APPROVAL DATE: 4/18/90

ADEC *ART WEINER*
EXXON *ANDY GAZ*
NOAA *Burt Wescott*
USCG *G.A. Bester*

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

BN

 Δ pit location

XX Wide Not observed BM-4 NOT OBSERVED
 /// Medium
 --- Narrow ADEC Segment Length: 33294m
 TTTT Very Light

Map Key: KEN-22h

Name: MannDate: 4/9/90

SKE MAP

OG MANNA
 SEGMENT ST/ BH-4
 SUBDIVISION A
 DATE 4 / 9 / 90

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Entry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HWW/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

Oil Vegetation
 1 ➡
 Photo location, direction,
 and number

NO SKETCH.

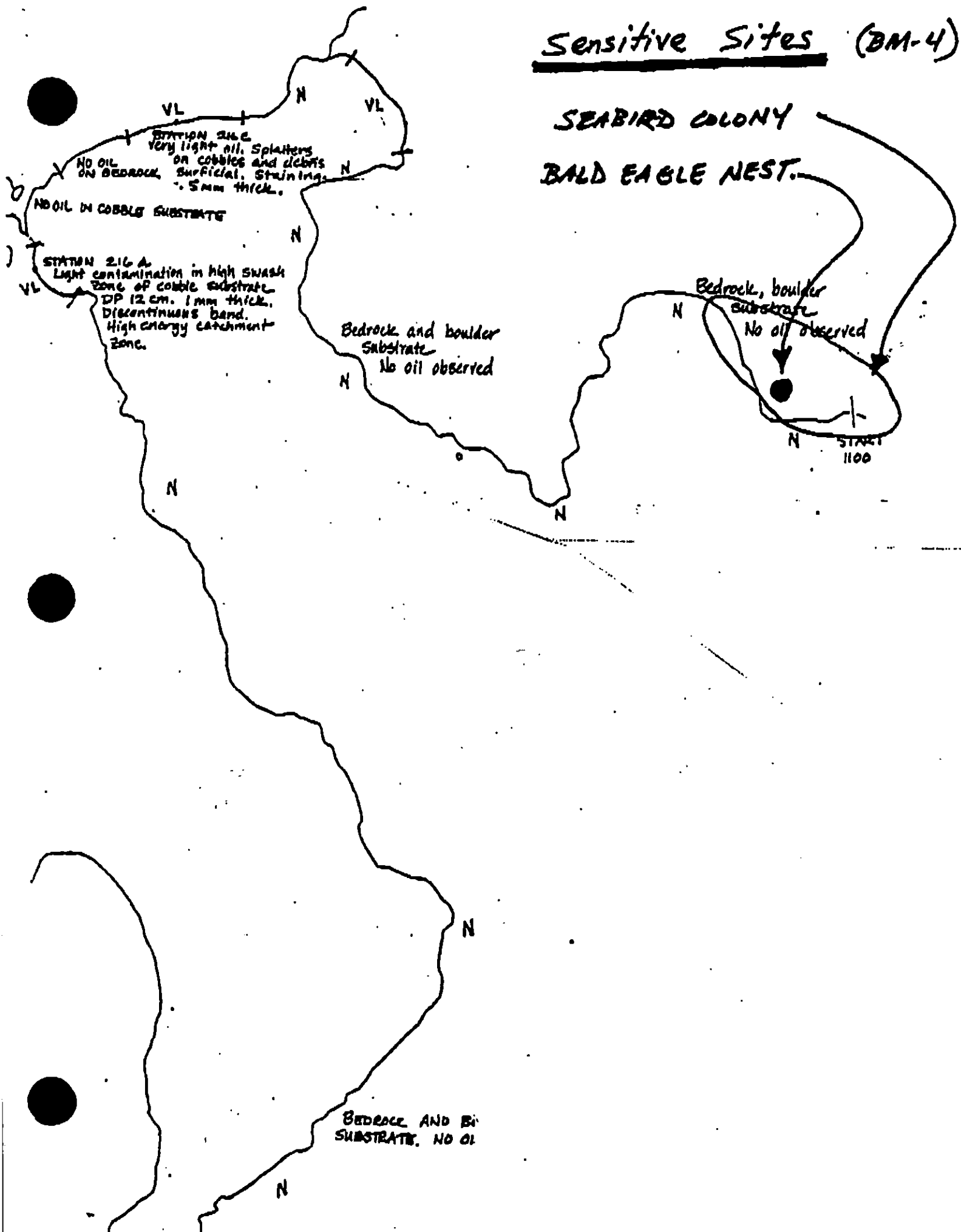
|| Character Length (m): AP 0 PO 0 CV 0 CT 2 ST 0 MS 0 PT 0 TB 0 FL 0 NO 7200

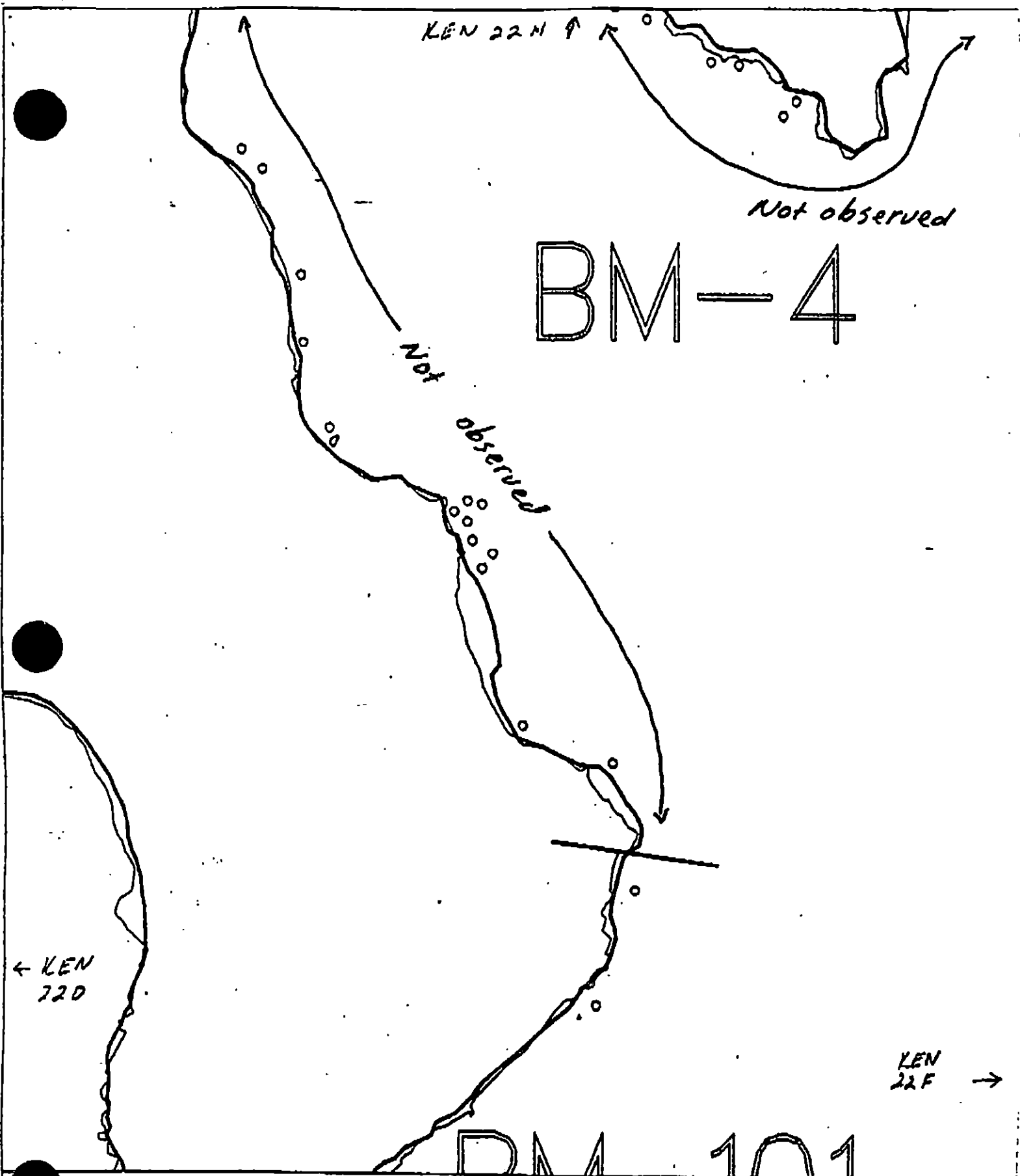
NOT OPS. 9227

Sensitive Sites (BM-4)

SEABIRD COLONY

BALD EAGLE NEST.





BM-4

XXX Wide

/// Medium

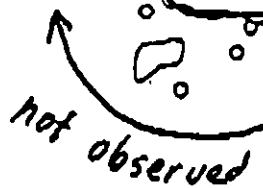
--- Narrow

TTTT Very Light

ADEC Segment Length: 33294m

Map Key: KEN-220.

Name: MANNDate: 4/9/90



not observed

↑
KEN 221

← KEN
22E

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

BM-4

ADEC Segment Length: 33294m

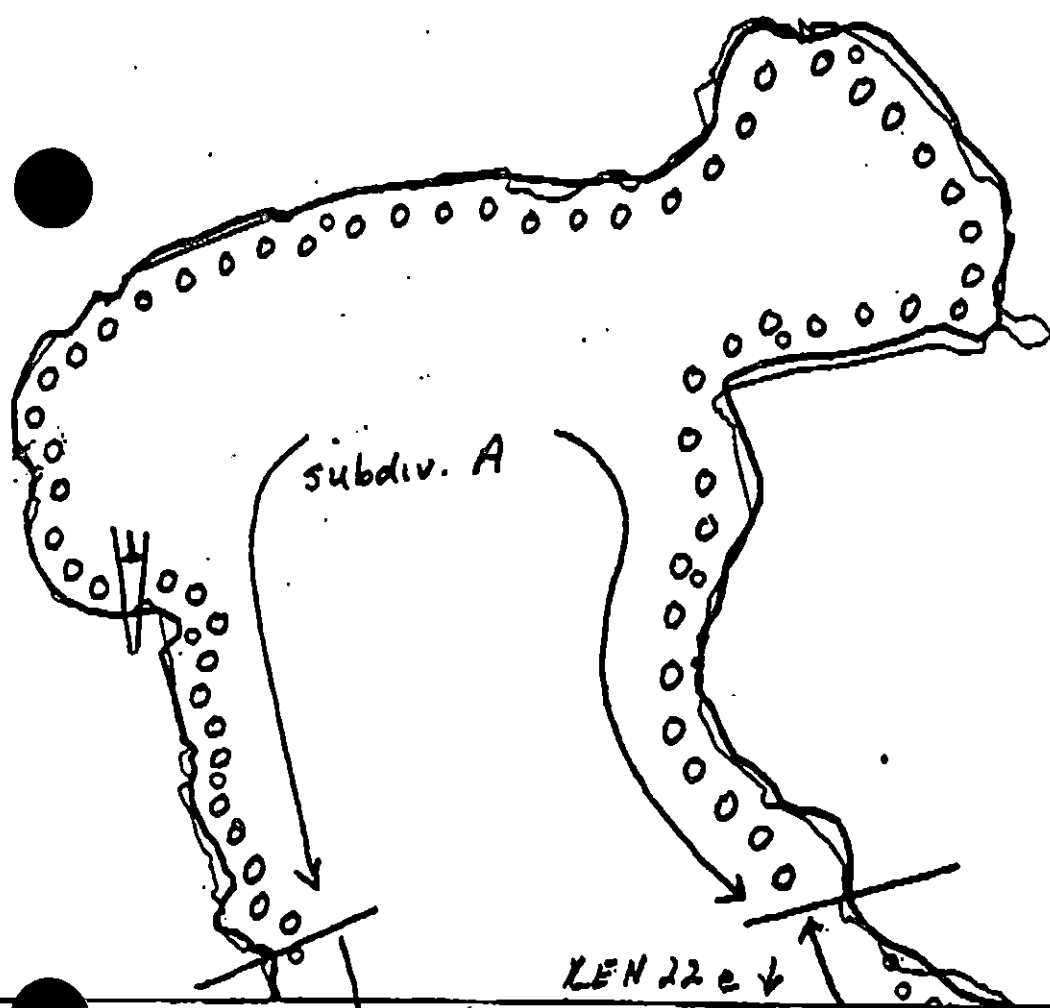
0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

Map Key: KEN-221

Name: Marer

Date: 4/9/90

BN



KEN 22 i →

Not observed →

KEN 22 e ↓

XX Wide Not observed BM-4 NOT OBSERVED
//// Medium
--- Narrow ADEC Segment Length: 33294m
TTTT Very Light

Map Key: KEN-22h

Name: Mann

Date: 4/9/90

REGION: KENAI

SEGMENT: ST/BM-05

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ BM-05 SUBDIVISION A (1 OF 1) DATE 4/28/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
2M Herring spawning (4/1 to 6/15)
5S Shorebird/Waterfowl concentration (4/1 to 5/15)
5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6U Recreation: Tent sites (6/1 to 9/15)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 92 m: V.Light 276 m: No Oil 8262 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) manual pickup of pooled oil, and 2) bioremediation of areas as indicated on attached sketch map #2. Work should be conducted between 6/15 and 7/10 based on herring and salmon constraints, with USFWS approval regarding eagle nest.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

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

USCG

NAME JERRY SCHULTZ

SIGNATURE Jerry Schultz

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS THE 42m BAND INDICATED ON MAP NEEDS TREATMENT. CONSIDERING THE CONSTRAINTS OF BIOREMEDIATION IN THE PARK, THE ONLY OTHER VIABLE ALTERNATIVE IS MANUAL PICKUP & REMOVAL WITH HAND WIPING THE LARGER ROCKS WHERE THE RESIDUE OIL IS MORE MOBILE

ADEC

NAME Mike Ebel

SIGNATURE Michael J. Ebel

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

1-5-A: The segment had two locations of oiling. On the SE end of this shoreline a band of splash cast was degrading into stain, all very light and being removed well by natural washing. The second area is the N shore of the lagoon found at the NW end of segment. It is a narrow band (20m W) extended 20m having pooled oil 2cm thick immediately under the surface cover. This band then changed from a broken distribution into a patchy and splashy distribution; the transition was abrupt as the band graded into splashy distribution (cont

LAND MANAGER NPS

NAME Michael Tetreau

SIGNATURE Michael Tetreau

☒ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

Manual removal of The band of pooled oil in Toroka Lagoon is needed as This is a popular anchorage and a relatively high use recreation area. Removal of oiled sediment would be easy by moving The armor cobbles aside and scraping up The oiled layer with shovels.

(cont.) BM-5-A SSAT 4/28/90 Mike Ebel ADE

and extended on another 20m, tapering in width as it went. Thus, the total band was 42m in L. If this was a section of shoreline outside of the National Park I would recommend stirring up the surface along the band with long-tined rakes and sprinkling granular fertilizer while stirring the sedo, which is the first part of treatment proposed. However, if after ~~another~~ another winter the oil was still persisting and not at least 75% degraded I would recommend manual removal of the contaminated sediments. This second step is recommended because we are dealing with park-land.

Because of recreational use I would not be opposed to immediate manual removal but feel that there is not an urgency to do so (the oil is below the layer of surface armor and will be washed away if bioenhancement does what is promised). There is not a significant risk to the limited intertidal biota found on the site to preclude granular fertilizer and it would appear to consume the least ~~amount~~ amount of resources as a method, in contrast to generating more solid waste to transport about.

★ Note sketch maps. End

Michael J. Ebel ADEC

31/40

SHORELINE OILING SUMMARY

REVISION NO 04.13.90

OG Randy Siegel USCG Jerry Schultz SEGMENT ST/ BM-5
 BIO Lewis Sherman LAND REP Jerry Dollar (CGAC) SUBDIVISION A (1 OF 1)
 EXXON Leonard Herbst ADEC Mike Ebel TIME 12:00 10/13/95
 TEAM NO. 12 TIDE LEVEL 35' to 40.65' DATE 4/28/90
 EST. SUBDIVISION LENGTH: 9093 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☐ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: SW to NE
 SURFACE SEDIMENTS: R 70 % B 20 % C 5 % P 3 % G 1 % S 1 % M 0 % V 0 %
 SLOPE: Long 0 % Hang 8.5 % Vert 15 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 41 m VL 30 m NO 9022 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	10	15	20	25	30	35	40	45	50	SU	U	M	L
ASPHALT PAVEMENT													
POOLED		X	1	0					X		X		
COVER													
COAT			X	✓		X	✓				X	✓	
STAIN			X	✓		X	✓				X	✓	
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 0

#BAGS 0

Photographs: None

Roll No. ST-12-7

Frames 14-16

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL	BELOW		OIL / FILM COLOR					PIT ZONE				A N A	SHEEN (Y/N)	▽	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	30	35	40	45	50	SU	U	M	L				
1	12					X	0-0	X							X					-	-	P, C
2	25					X	0-0	X							X					-	-	P
3	20					X	0-0	X							X					-	-	P, G
4	35					X	0-0	X							X					-	-	P, G
5	31					X	0-0	X							X					-	-	P, G
6	33					X	0-0	X							X					-	-	B, P, G

COMMENTS

Segment consists primarily of bedrock cliff. Much of segment was surveyed by boat and no oiling observed. Taroka Lagoon in NW corner of segment had a band of oiling in UI. Broken distribution of pooled oil under cobbles/boulders for 22 meters and splashes of pooled oil for 19.21 meters.

REVIEWED YW

DATE 4/30/90

15/46

SHORELINE OILING SUMMARY (PAGE 2)

REVISION 04-13-90

SEGMENT ST/ BM-5 SUBDIVISION A (2 OF 2)

SUBSURFACE OIL (CONTINUED)

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM)	BELOW		OIL / FILM COLOR						PIT ZONE				A	N	A	SHEEN (Y/N)	!	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UO	BU	U	M	U	U	U	BU	U	M	U						
7	22					X	0-0		X								X						-	-	C, P
* 8	10					X	0-0.2		X							X	X						-	-	C, P, B
9	23					X	0-0		X								X						-	-	C, P, B
10	30					X	0-0		X								X						-	-	P
							.																		
							.																		
							.																		
							.																		
							.																		
							.																		
							.																		
							.																		
							.																		
							.																		
							.																		

COMMENTS

* Not subsurface

 REVIEWED YW DATE 4/30/90
 16/46

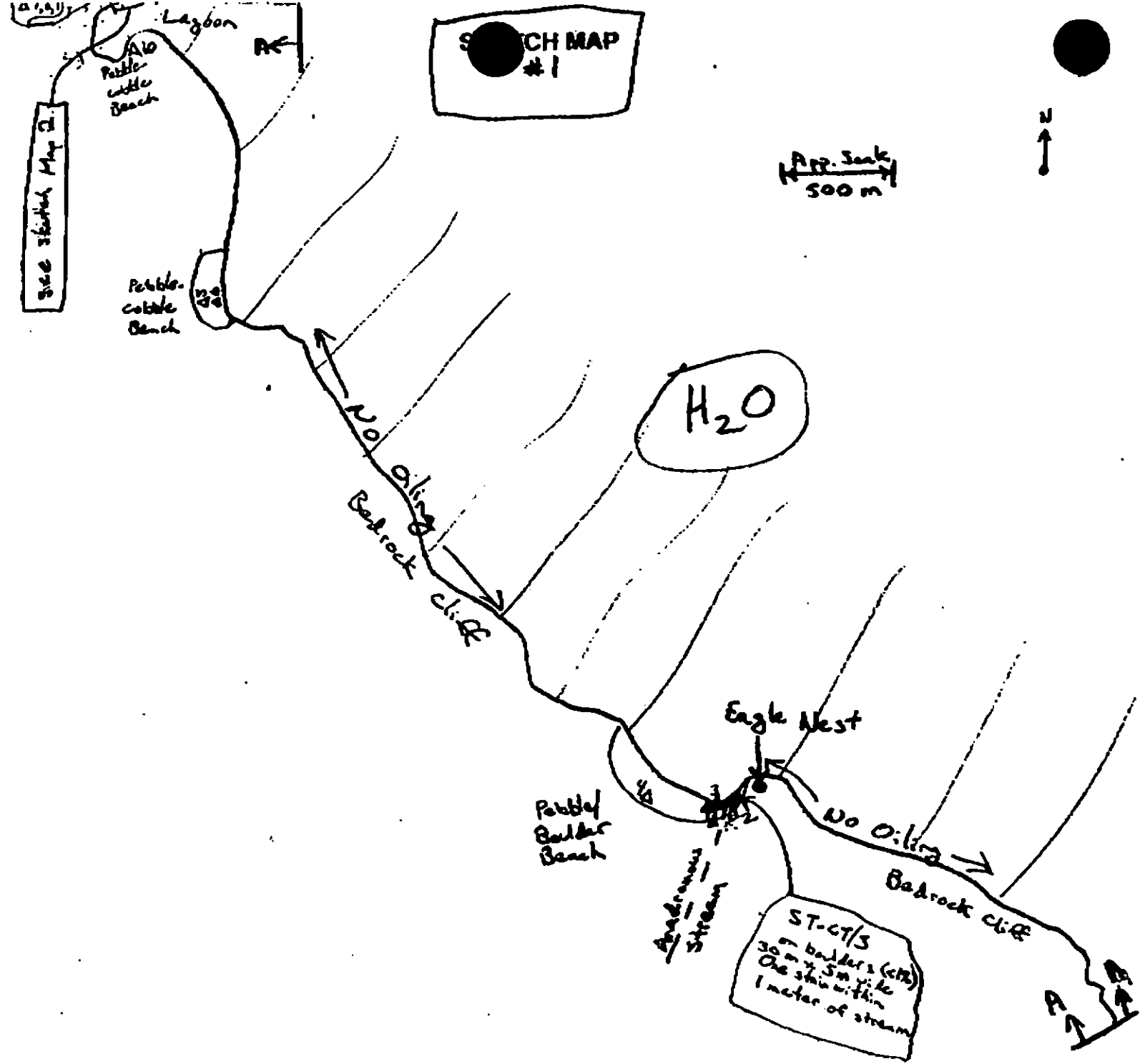
00 Randy Siegel
 SEGMENT ST-1-5
 SUBDIVISION A
 DATE 4/28/80

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Entry
- ☐ OB Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HW/LWL
- ☐ SCL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ P/L Location(s)
- ☐ Photo Location(s)

LEGEND

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



Oil Character Length (m): AP ϕ PO 41 CV ϕ CT 71 ST 71 MS ϕ PT ϕ TB ϕ FL ϕ NO 9022

OG Rand Siegel

SEGMENT S-11-5

SUBDIVISION A

DATE 4 / 28 / 90

CHECKLIST

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

LEGEND

1 Δ

PT - No Subsurface Oil

2 Δ

PT - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

eee

Oil on Vegetation

1 →

Photo location, direction, and number

ATCH MAP
#2

N

Shrubs

Low-angle slope

Snow cover at SSL

16 m

2 m

22 meters

16

Pooled Oil under boulders splash distribution

ST-CT/P on boulders
Pooled Oil under boulders
~2 m deep Broken boulders

Pooled Oil under boulders
~2 m deep

ST-CT/S on boulders

Cobble Beach

Boulder beach

cobble beach

H₂O

Taroka Lagoon

REMOVE
POOLED OIL
BDO

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

See sketch map #1

REVISION 000000

SHORELINE ECOLOGICAL SUMMARY (Page 1 of 4)

Segment ST / BM-5 Subdivision A Date (mo / day / yr) 4/28/90

Time (24 hr) 1205-1350 Biologist SHARMAN

(A) Substrate type and % of segments: SHADIV
 (1) Bedrock 70 (2) Boulder 20 (3) Cobble 5 (4) Pebble 3 (5) Sand 2 (6) Silt 2 + granules

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

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

Photographs: Roll No. ST-12-7

Frames 14, 15, 16

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 (ALICELLA, LITTORINA, LIMPAETE)

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: 100 glaucous-winged gulls, 5 cormorants, 25 pigeon guillemots, 10 booby goldeneyes, 2 murrelets, 150 surf scoters, 20 harlequin ducks, 1 pair myiarchos. 1 pair bald eagles (nest not associated with any known nest). 1 subadult eagle. 2 blue lions, 1 mountain goat on cliffs. 1 inactive eagle nest (see map). 1 dipper in stream "A" (see map).

Ecological Considerations:

We received no information regarding resource sensitivities previously identified for this segment. Note, however, the presently inactive eagle nest and the collecting pair of adults (nest location unknown - probably somewhere near N. end of segment). Some information re. the 2 anadromous streams (see map) is gleaned from a recent draft report to the NPS by Milner: stream "A" may desiccate in summer but the stream-lake system has a run (cont.)

25/46

BM-5

Shoreline Ecological Summary (cont.)
(Page 2 of 4)

Sherman
4/28/90

General Comments (cont.):

(see eco. map). The lake is still mostly ice-covered. River otter scat at lake margin. The intertidal zone here is perfectly healthy and normal. Even the area of oiling concern in Taroka Lagoon does not appear to have been significantly impacted biotically. All species appear to be recruiting normally, albeit in generally quite low numbers. As with other beaches in this Kona area, these appear to have subsided during the '64 earthquake, as evidenced by dead trees along the supratidal fringe.

Ecological Considerations (cont.):

of 100-200+ pink and sockeye spawners. Stream "B" in the lagoon apparently supports a pink run on the order of 60+, with the lagoon itself supporting several hundred probable brook spawners. Neither of these streams apparently is catalogued by ADF & G. Significantly, seine netting last July in the lagoon produced over 2,000 herring.

↑
KEN
23C

BM-5

Page 3 of 4
(BM-5)
Eco. Map

presently
inactive
eagle nest

Anadromous
stream "A"

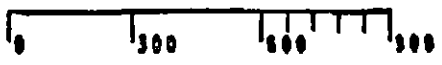
Lake

KEN
23B →

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

BM-5

ADEC Segment Length: 8629m



Map Key: KEN-230

Name: _____

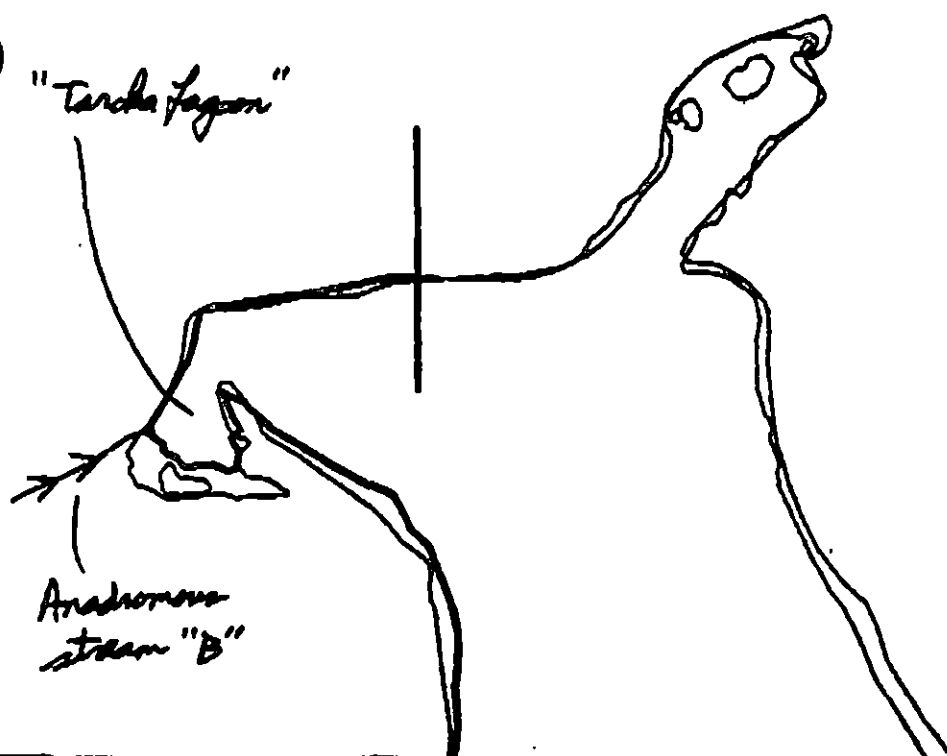
Date: _____

Date Entered: 7/7/96

Page 4 of 4

BM-5

Eco. Map



BM-6

↓ ILEN
23B

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

BM-5

ADEC Segment Length: 8629m



METERS



Map Key: KEN-23c

Name: _____

Date: _____

Data Entered: _____

701.01

Sketch
Map 2

BM-6

↓ KEN
23B

XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

0000 No Oil

BM-5

ADEC Segment Length: 8629m

0 1000 2000 3000
METERS

Map Key: KEN-23c

Name: Ruby Seeg

Date: 4/28/90

Data Entered:

21/1/90

BM-5

↑
KEN
23C

KEN
23B -

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

BM-5

ADEC Segment Length: 8629m

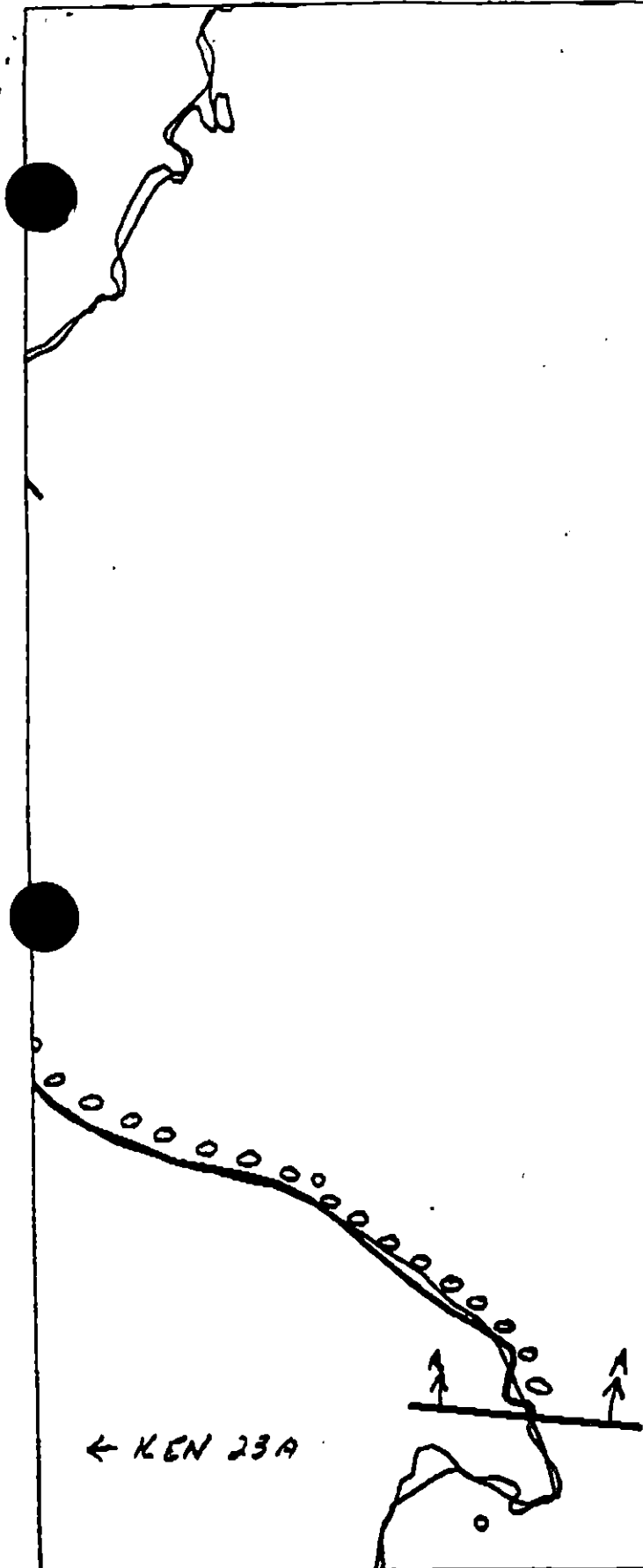


Map Key: KEN-23a

Name: Randy Liezel

Date: 4/28/90

Date Entered: 1.1.1



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

BM-5

ADEC Segment Length: 8629m



Map Key: KEN-23b

Name: Rob Siegel

Date: 4/29/90

Date Entered: 5/1/90

SHORELINE EVALUATION

SEGMENT ST/ BM-05 SUBDIVISION A (1 OF 1) DATE 4/28/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

- 1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
- 1B Salmon stream mouth - spawning (7/10 to 8/31)
- 2M Herring spawning (4/1 to 6/15)
- 5S Shorebird/Waterfowl concentration (4/1 to 5/15)
- 5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
- 6U Recreation: Tent sites (6/1 to 9/15)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

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

mo
5/15/90 *is*

SHPO SIGNATURE: *Michael A. Anger* DATE: 5/15/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 92 m: V.Light 276 m: No Oil 8262 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) manual pickup of pooled oil, and 2) bioremediation of areas as indicated on attached sketch map #2. Work should be conducted between 6/15 and 7/10 based on herring and salmon constraints, with USFWS approval regarding eagle nest.

TAG COMMENTS: SPX WASH IF REQUIRED FOLLOWING REMOVAL OF POOLED OIL

TAG APPROVAL DATE: 5/15/90

ADEC *Art Wanner*
EXXON *Andy Tom* FOSC: *[Signature]* DATE: 5-20-90
NOAA *Joseph Talbot*
USCG *G.A. Reiter*

00 Rand Siegel
 SEGMENT SM-5
 SUBDIVISION A
 DATE 4/28/00

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Segment Entry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. NWFL/LWL
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(n)
- ☐ PI Location(s)
- ☐ Photo Location(s)

LEGEND

- 1 Δ
PI - No Subsurface Oil
- 2 Δ
PI - Subsurface Oil
- CT/C

Continuous Distribution
- CT/B

Broken Distribution
- CT/P

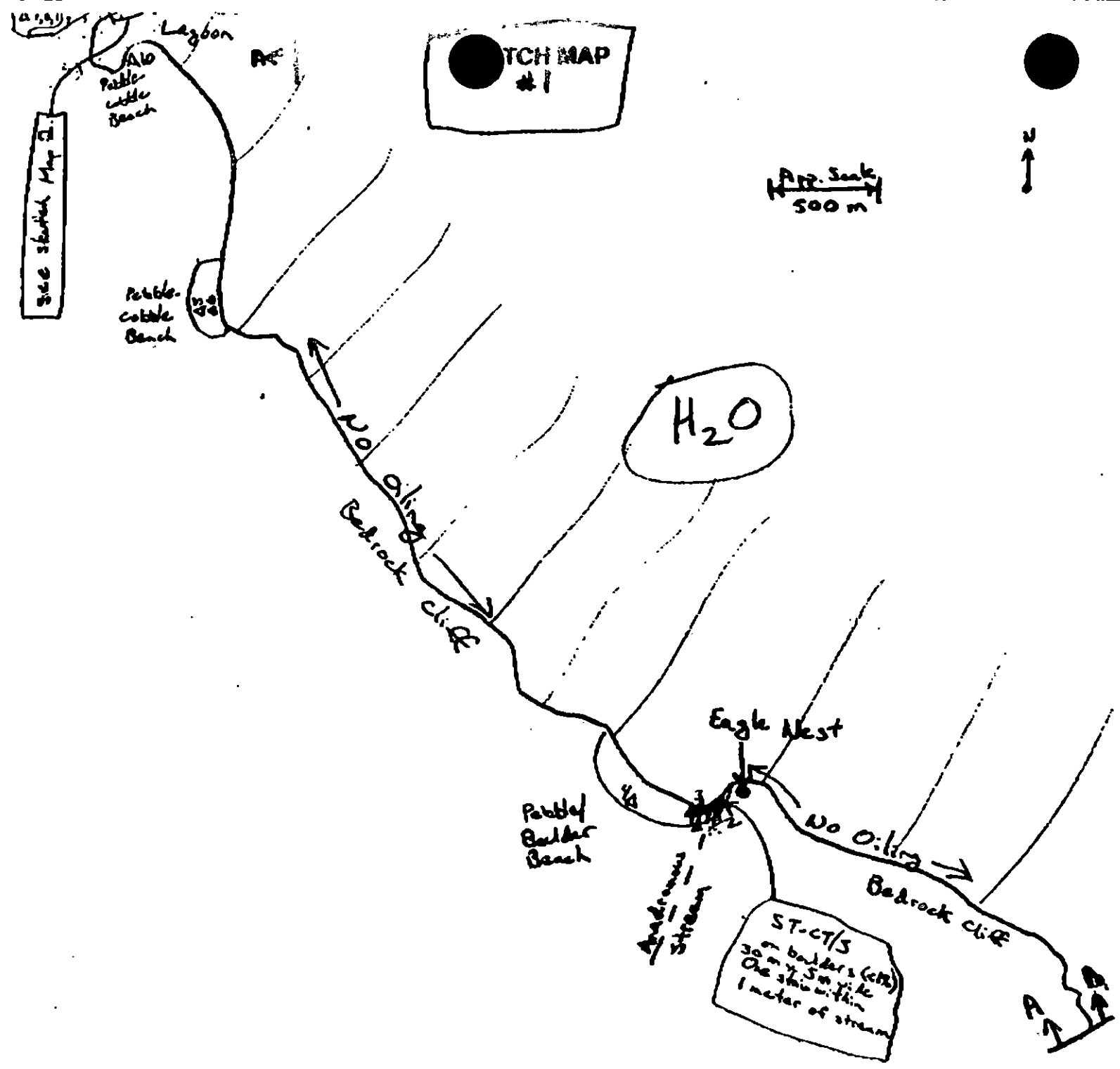
Patchy Distribution
- CT/S

Splashed Distribution
- lll
Oiled Vegetation
- 1 $\circ$
Photo location, direction, and number

17/16

ATCH MAP
#1

App. Scale
500 m



Oil Character Length (m): AP ϕ PO 41 CV ϕ CT 71 ST 71 MS ϕ PT ϕ TB ϕ FL ϕ NO 9022

OG Randy Siegel

SEGMENT BM-5

SUBDIVISION A

DATE 4/28/90

CHECKLIST

☐ H Area
☐ Approx. Scale
☐ Seg/Sub Entry
☐ OB Dist.
☐ Width
☐ Length
☐ % Cover
☐ Substrate Character
☐ Est. HW/LWL
☐ SSL
☐ Profile Location(s)
☐ Profile(s)
☐ PI Location(s)
☐ Photo Location(s)

LEGEND

1 Δ

PI - No Subsurface Oil

2 Δ

PI - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

lll

Old Vegetation

1 ●→

Photo location, direction, and number

ETCH MAP

#2



Oil Character Length (m) AP PO CV OF ST MS PT TB FL NO

See sketch map #1

REVISION 000000

↑
KEN
23C

BM-5

Page 3 of 4
BM-5
Eco. Map

presently
inactive
eagle nest

Anadromous
stream "A"

KEN
23B →

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

BM-5

ADEC Segment Length: 8629m

0 500 600 700

Map Key: KEN-230

Name: _____

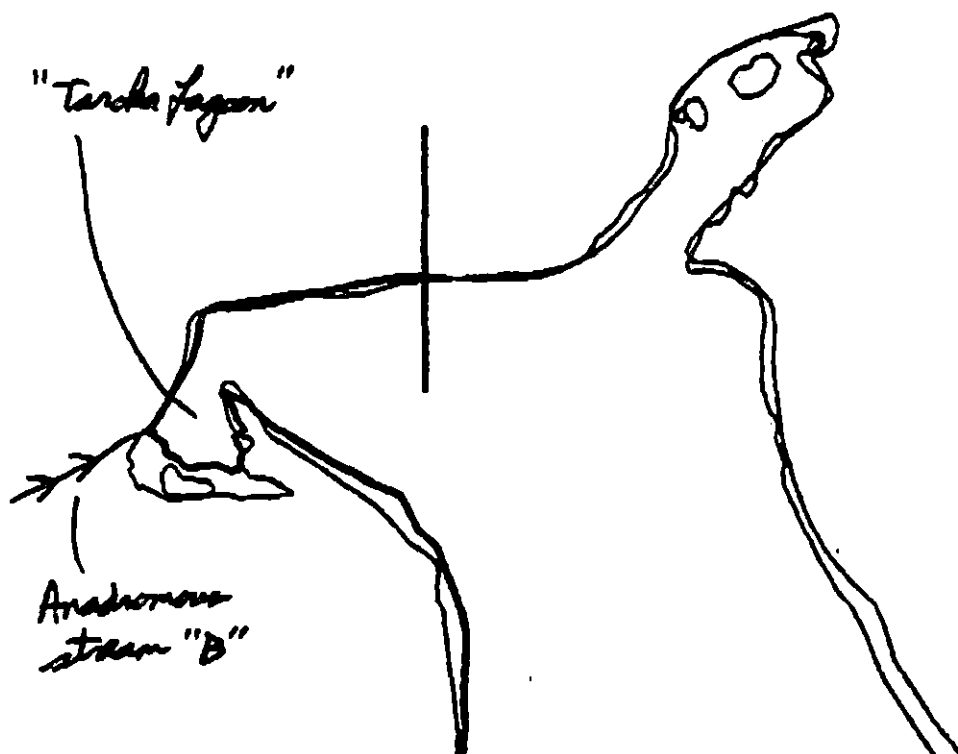
Date: _____

Date Entered: 27/46

Page 4 of 4

BM-5

Eco. Map



BM-6

↓ ILEN
23B

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

0000 No Oil

BM-5

ADEC Segment Length: 8629m



Map Key: KEN-23c

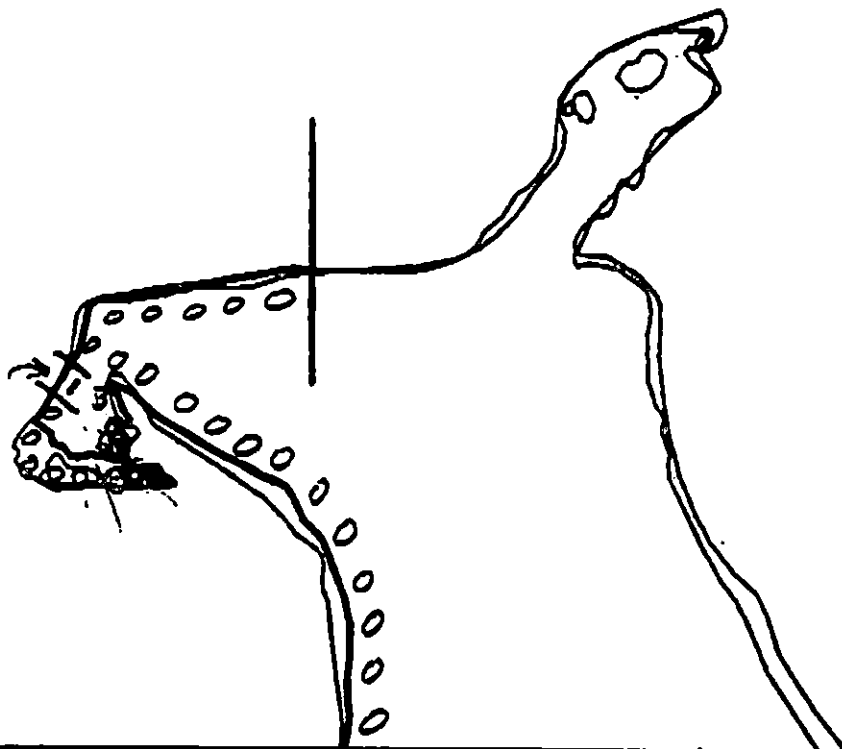
Name: _____

Date: _____

Date Entered: _____

28/46

Sketch
Map 2



BM-6

↓ KEN
23B

XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

0000 No Oil

BM-5

ADEC Segment Length: 8629m



Map Key: KEN-23c

Name: Ruby Leed

Date: 4/28/90

Date Entered:

21/46

↑
KEN
23C

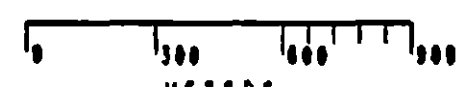
BM-5

KEN
23B →

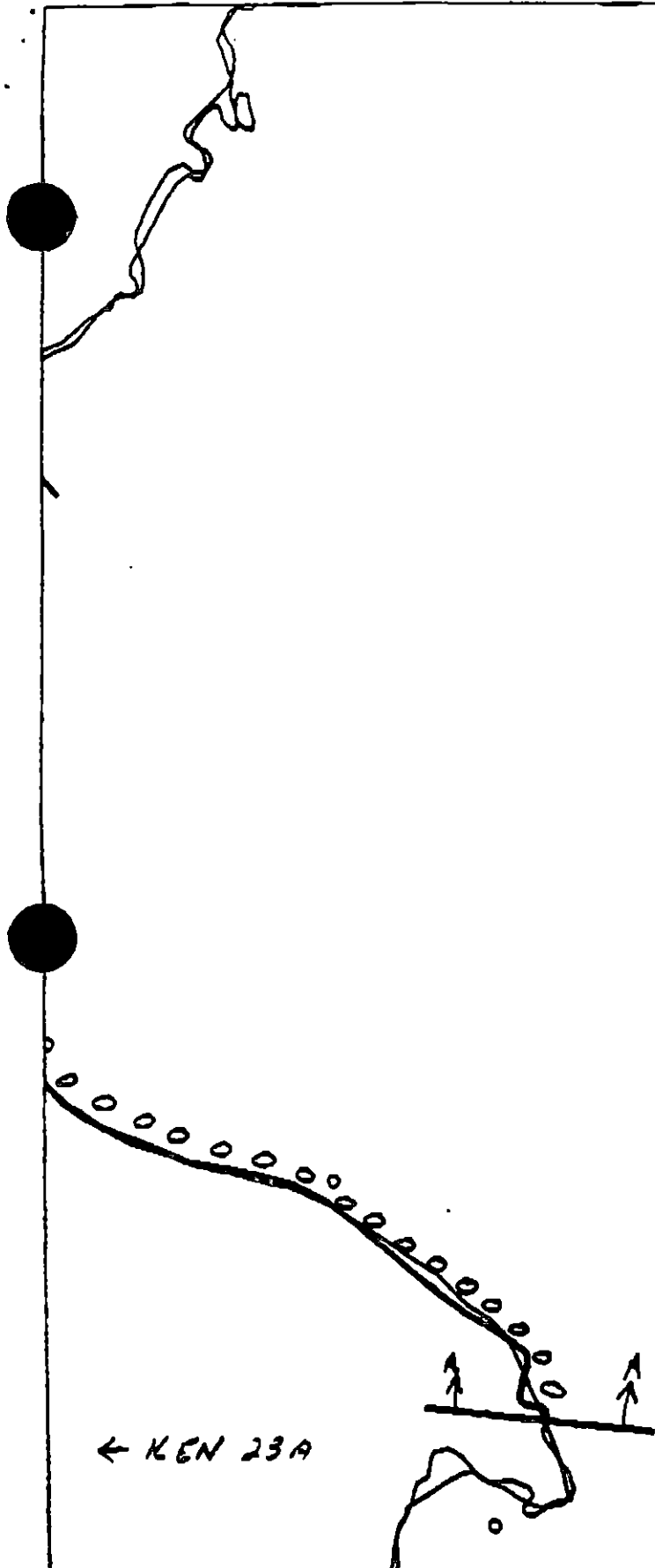
XXXX Wide
//// Medium
--- Narrow
TTTT Very Light
OOOO No Oil

BM-5

ADEC Segment Length: 8629m



Map Key: KEN-230
Name: Randy Siegel
Date: 4/28/90
Data Entered: 20/46



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

BM-5

ADEC Segment Length: 8629m



Map Key: KEN-23b
Name: Rob Siegel
Date: 4/23/90
Data Entered:
19/46

WORK PLAN ADDENDUM

Segment ST/BM-005

Subdivision A

Dated 5/22/90

MODIFICATION

1. REASON FOR MODIFICATION

- FOSC Request
- Landowner comments

2. ADJUSTMENT TO WORK PLAN

- No bioremediation

SHPO APPROVAL NEEDED YES _____ SHPO SIGNATURE _____

NO X

TAG APPROVAL DATE 5/31/90

ADEC ART WEINER Art Wiener

EXXON ANDY TEAL

FOSC [Signature] DATE 5/31/90

NOAA Joseph Talbott

USCG G.A. REITER G.A. Reiter

SHORELINE EVALUATION

SEGMENT ST/ BM-05 SUBDIVISION A (1 OF 1) DATE 4/28/90

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- 1B Salmon stream mouth - spawning (7/10 to 8/31)
- 2M Herring spawning (4/1 to 6/15)
- 5S Shorebird/Waterfowl concentration (4/1 to 5/15)
- 5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
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mo
5/15/90

SHPO SIGNATURE: [Signature] DATE: 5/15/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 92 m: V.Light 276 m: No Oil 8262 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

- | | |
|---|---|
| <u> </u> No Treatment Recommended | <u> </u> Snare/Absorbent Booms |
| <u>X</u> Treatment Recommended | <u> </u> Oil Snares (pom poms) |
| <u>X</u> Manual Pickup | <u> </u> Absorbents (pads, rolls, etc) |
| <u>X</u> Bioremediation <u>of 5/31/90</u> | <u>X</u> Spot Washing: <u>X</u> Wands |
| <u> </u> Tarmat Removal | <u> </u> Beach Cleaner |
| | <u> </u> Other (see comments) |

COMMENTS: Recommended treatment includes 1) manual pickup of pooled oil, and 2) bioremediation of areas as indicated on attached sketch map #2. Work should be conducted between 6/15 and 7/10 based on herring and salmon constraints, with USFWS approval regarding eagle nest.

TAG COMMENTS: SPOT WASH IF REQUIRED FOLLOWING REMOVAL OF POOLED OIL

TAG APPROVAL DATE: 5/15/90

ADEC Art Wainwright

EXXON Andy Tan

NOAA Joseph Talbot

USCG G.A. BELTER

FOSC: [Signature] DATE: 5-20-90

00 Randy Siegel

SEGMENT ST-71

SUBMISSION A

DATE 4/28/80

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Entry
- ☐ OS Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. H/W/L/V/L
- ☐ SCL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ P/L Location(s)
- ☐ Photo Location(s)

LEGEND

1 Δ

PI - No Substrate OS

2 Δ

PI - Substrate OS

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

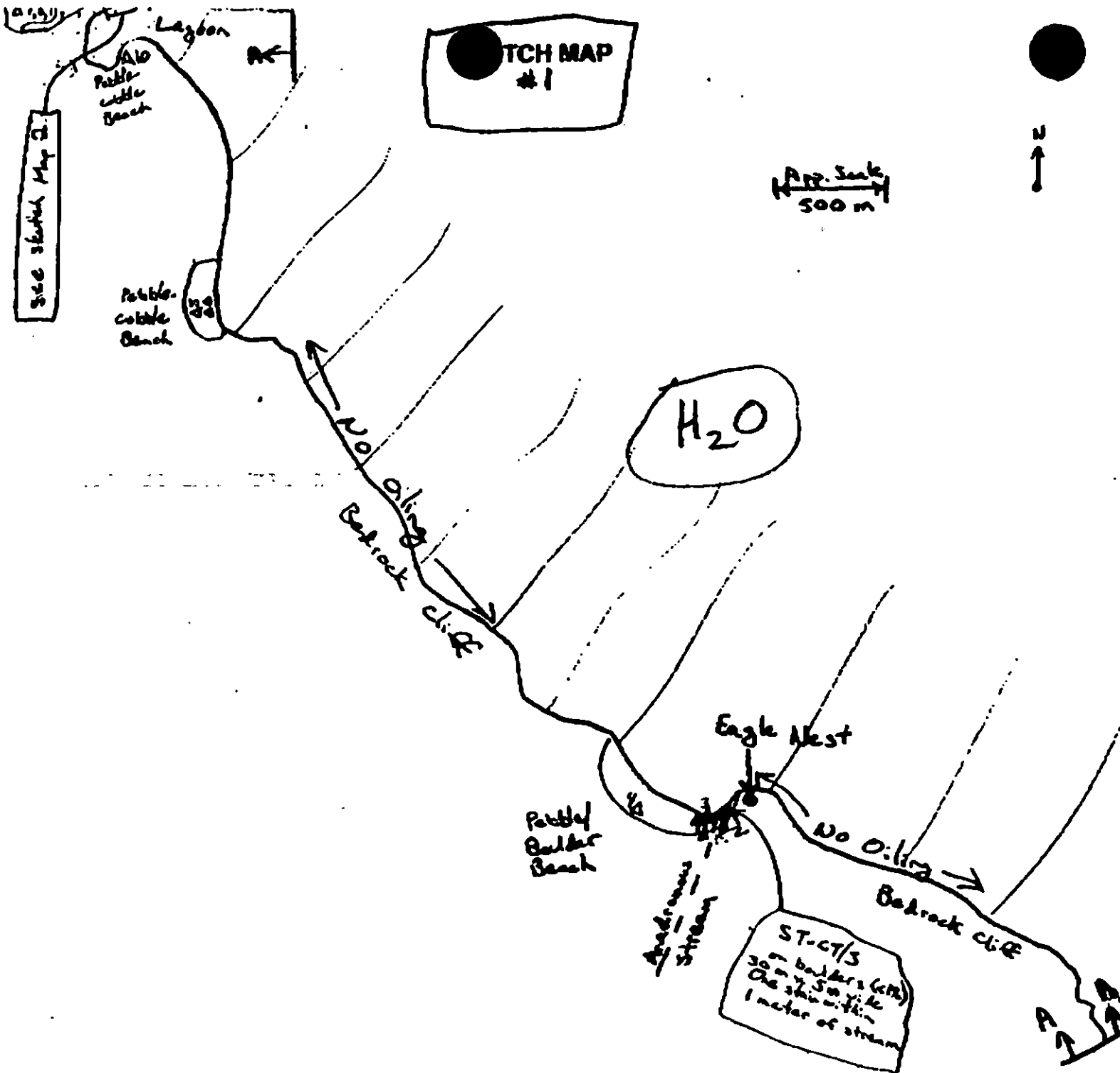
CT/S

Spotted Distribution

lll
Clad Vegetation

1 00

Photo location, direction,
and number



OS Character Length (m): AP 0 PO 41 CV 0 CT 71 ST 71 MS 0 PT 0 TB 0 FL 0 NO 9022

REVISION: 000000

OG R. Siegel

SEGMENT ST/ B11-5

SUBDIVISION A

DATE 4/28/90

CHECKLIST

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

LEGEND

1 Δ
PI - No Subsurface Oil

2 Δ
PI - Subsurface Oil

CT/C
Concentrated Distribution

CT/D
Broken Distribution

CT/P
Patchy Distribution

CT/S
Splashed Distribution

eee
Clad Vegetation

1 ●
Photo location, direction, and number

→ N

SKETCH MAP
#2



Oil Character Length (m) AP PO CV OT ST MS PT TB FL NO

REVISION 000000

↑
KEN
23C

BM-5

Page 3 of 4
BM-5
Eco. Map

presently
inactive
eagle nest

Anadromous
stream "A"

Lake

KEN
23B →

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

BM-5

ADEC Segment Length: 8629m

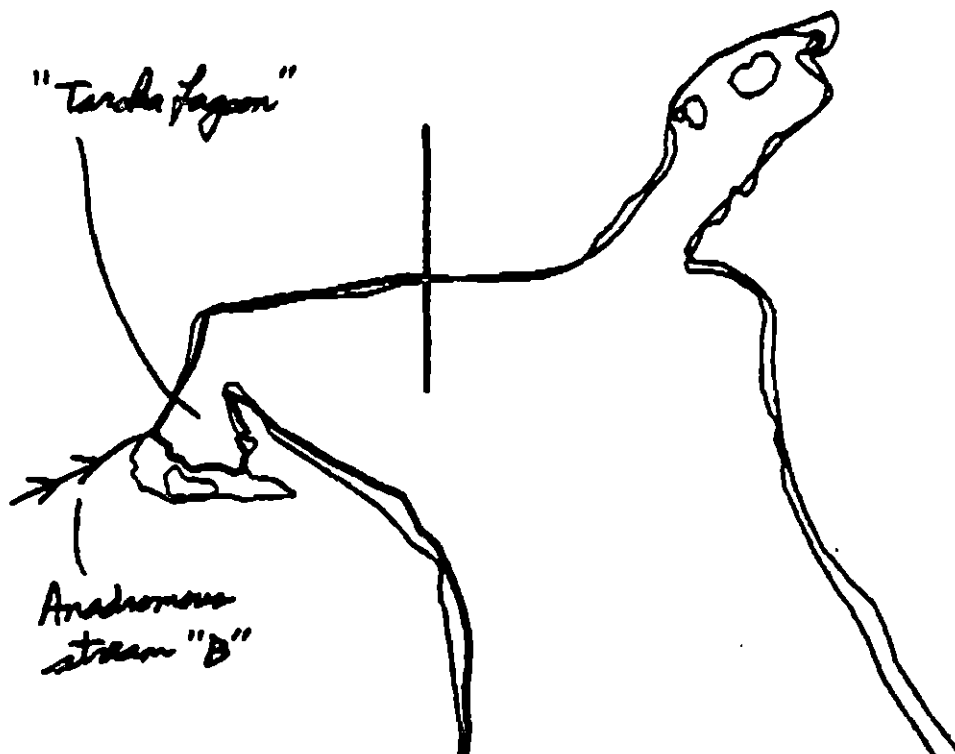


Map Key: KEN-23a
Name: _____
Date: _____
Data Entered: 27/46

Page 4 of 4

BM-5

Eco. Map



BM-6

↓ ILEN
23B

XXXX Wide.

//// Medium

--- Narrow

TTTT Very Light

0000 No Oil

BM-5

ADEC Segment Length: 8629m



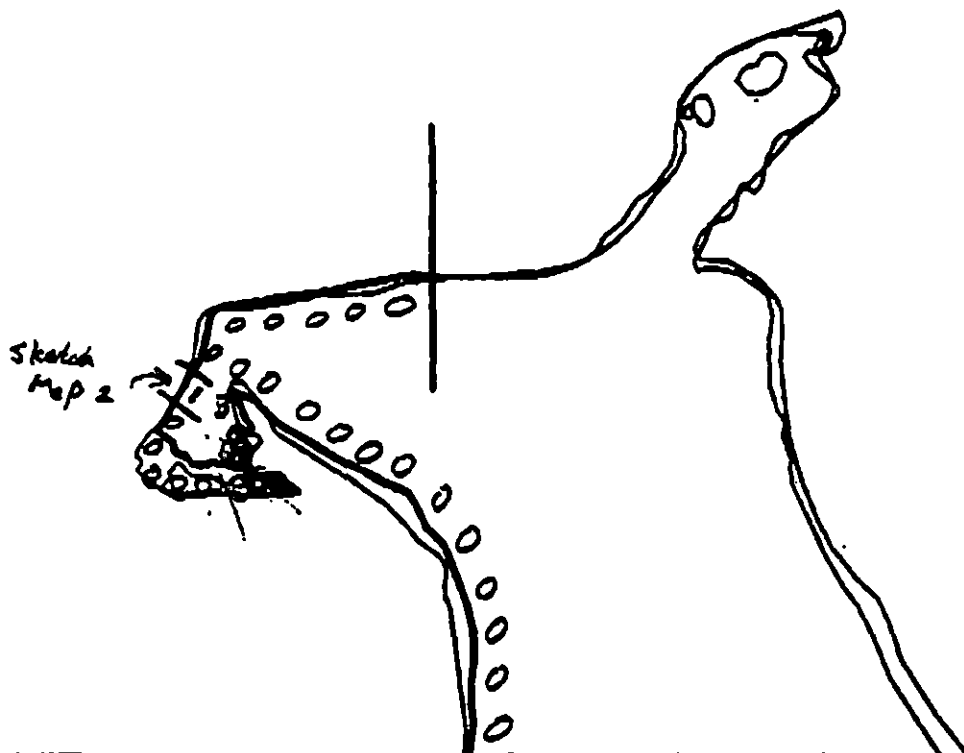
Map Key: KEN-23c

Name: _____

Date: _____

Date Entered: _____

28/46



BM-6

↓ KEN 23B

XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

0000 No Oil

BM-5

ADEC Segment Length: 8629m



Map Key: KEN-23c

Name: Randy Seay

Date: 4/28/90

Date Entered:

21/46

↑
KEN
23C

BM-5

KEN
23B

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

BM-5

ADEC Segment Length: 8629m



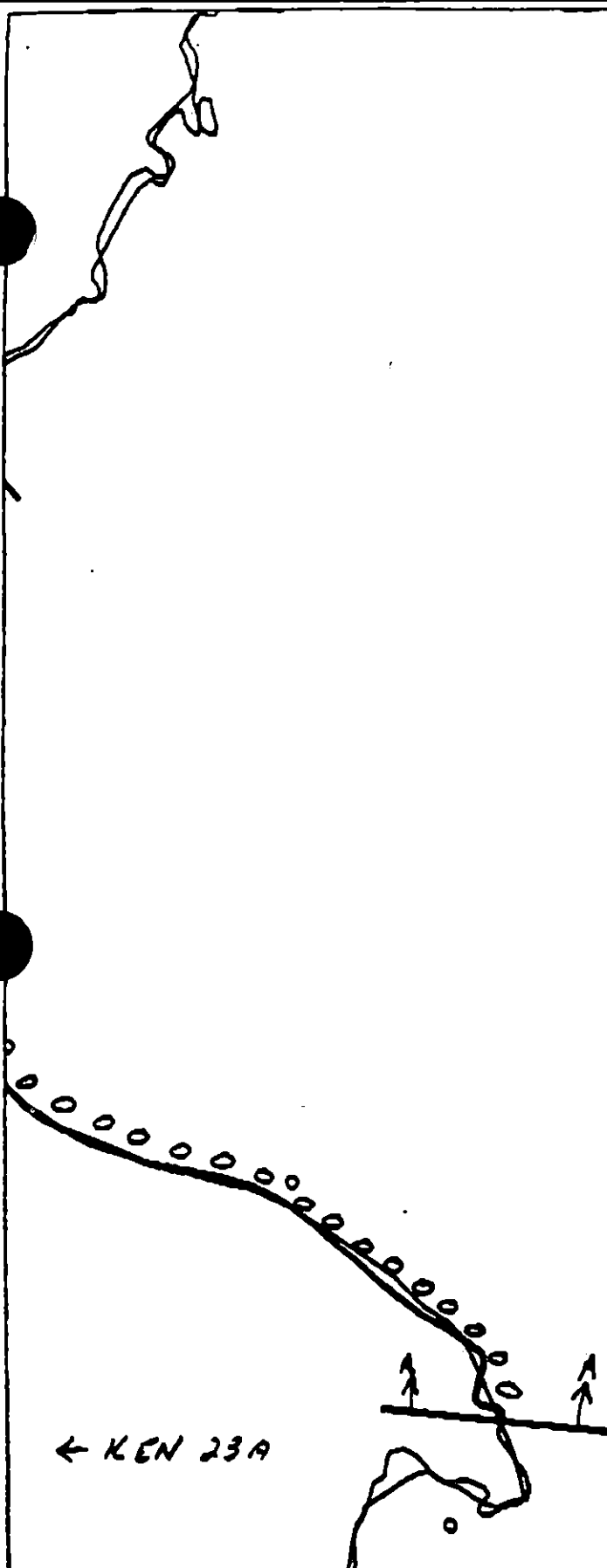
Map Key: KEN-230

Name: Randy Siegel

Date: 4/28/90

Date Entered:

7/21/96



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

0000 No Oil

BM-5

ADEC Segment Length: 8629m



Map Key: KEN-23b

Name: Ray Siegel

Date: 4/23/90

Date Entered:

19/46

1991 MAYSAP EVALUATION

SEGMENT: BM 005 SUB: A REGION: KEN SURVEY DATE: 5/13/91

ENVIRONMENTAL SENSITIVITIES:

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

Ecological/Constraints (see page two for details) Eagle nest,
Anadromous stream, Herring spawning

ARCHAEOLOGICAL CONSTRAINTS:

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

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

RECOMMENDATIONS:

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

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: May 24 1991

FOSC APPROVAL DATE: 5/29/91

ADEC [Signature]

FOSC [Signature]

EXXON [Signature]

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

USCG [Signature]

NOAA [Signature]

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

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

Herring Spawning: No treatment before June 1. Avoid disturbance to kelp and eelgrass.

MAYSAP FIELD SHORELINE COMMENT SHEET

DM885A

TEAM NO. 4 SEGMENT BM. 005 SUBDIVISION A DATE 8/1/91

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara S. Crosby☒ NTR

no treatment recommended, - no oiling observed was collected.

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles 5/13/91☒ NTR

No oil was observed therefore I recommend no treatment.

LANDMANAGER

NAME

Michael P. Tetreau OF NPS

SIGNATURE

Michael P. Tetreau☒ NTR

Site That was treated last year looks very good. Only four little patches of mousse/asphalt were found and These were retrieved by VECO personnel. You can walk across This site now without getting oil on your boots. Very little to no visible oil remaining. No oil was observed near The stream on The SW beach.

USCG/NOAA

NAME

NOA2 J. Mc NATION

SIGNATURE

J. Mc NATION☒ NTR

AREA VERY CLEAN!

NOAA/ DONALD A. MACDONALD

Donald A. Macdonald

MAYSAP SHORELINE OILING SUMMARY

PAGE 2 OF 14

TEAM NO. 41

OG 17 Semvch

BIO L. Barry

SEGMENT B7-DOS

ADEC Crosby

LANDMANAGER Tetreau for NPS

SUBDIVISION A

EXXON Stiles

USCG/NOAA MAHON/MACDONALD

DATE 13 / MAY / 91

TIME 06:10 to 07:39

TIDE LEVEL -0.64 ft. to -2.3 ft.

ENERGY LEVEL: ☒ H ☐ M ☐ L

SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO

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

TOTAL LENGTH SHORELINE SURVEYED: 600 m

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

EST. OIL CATEGORY LENGTH: W____m M____m N____m VL____m NO 600 m US 8029 m

[illegible]

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

MAY 5 APR. 4. 2. 8 to 21

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

PHOTO ROLL # MAYSAP- - FRAMES

[illegible]

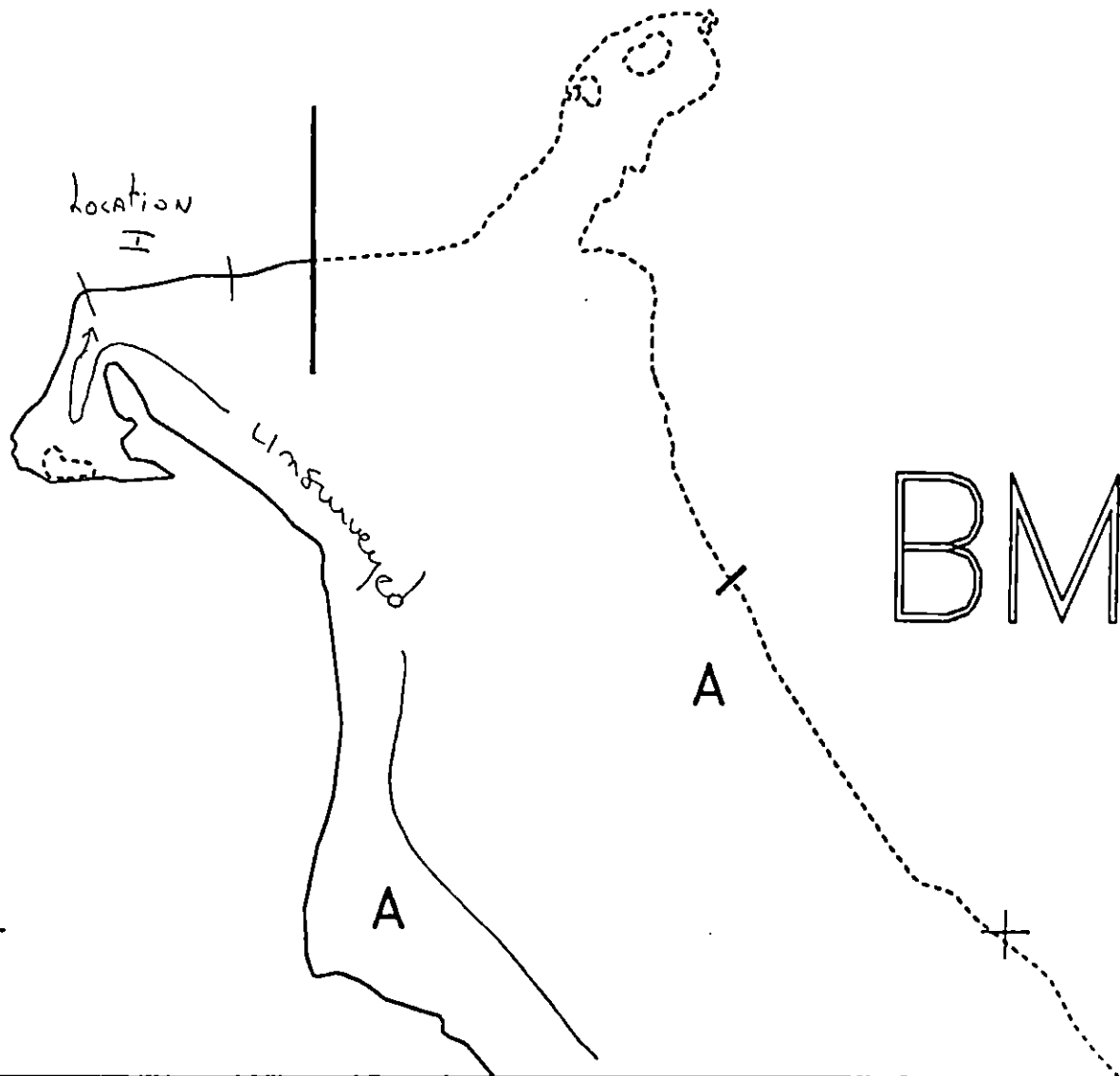
SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS:

See attached map.

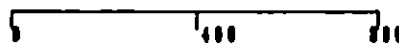
revised 5.16.91 QY
revised slip

Location Map 1



BM005 A

METERS



AK State Plane Zone 4
NAD83

Subdivision Field Map

Map Key: KENBM005Ac

Name: J. J. Sample

Date: May 13/91

reviewed 5/16/91 gy
revised 5/16

Location Map 2

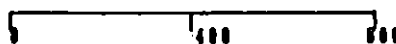
BM-5

unsurveyed



BM005 A

METERS



AK State Plane Zone 4
NAD83

Subdivision Field Map

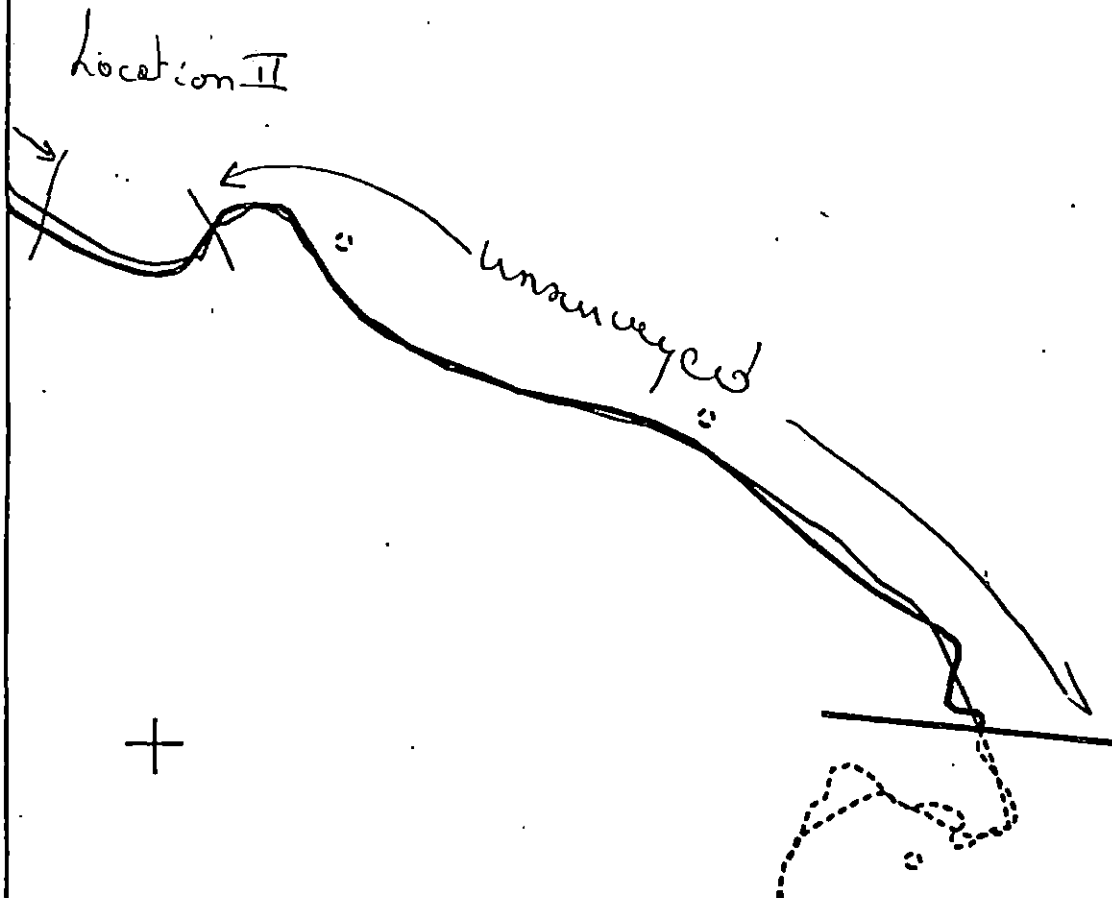
Map Key: KENBM005Aa

Name: for Samples

Date: May 13/91

reviewed 5.16.91 gy
5/16

Location Map 3



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

BM005 A

ADEC Subsegment Length: 8628m

METERS

0 400 800

AK State Plane Zone 4
NAD83



Subdivision Field Map

Map Key: KENBM005Ab

Name: JM Sengels

Date: May 13/91

Date Entered:

Reviewed 5.16.91 JY
25 reviewed 5/16

Og sketched map.

B7.005.A

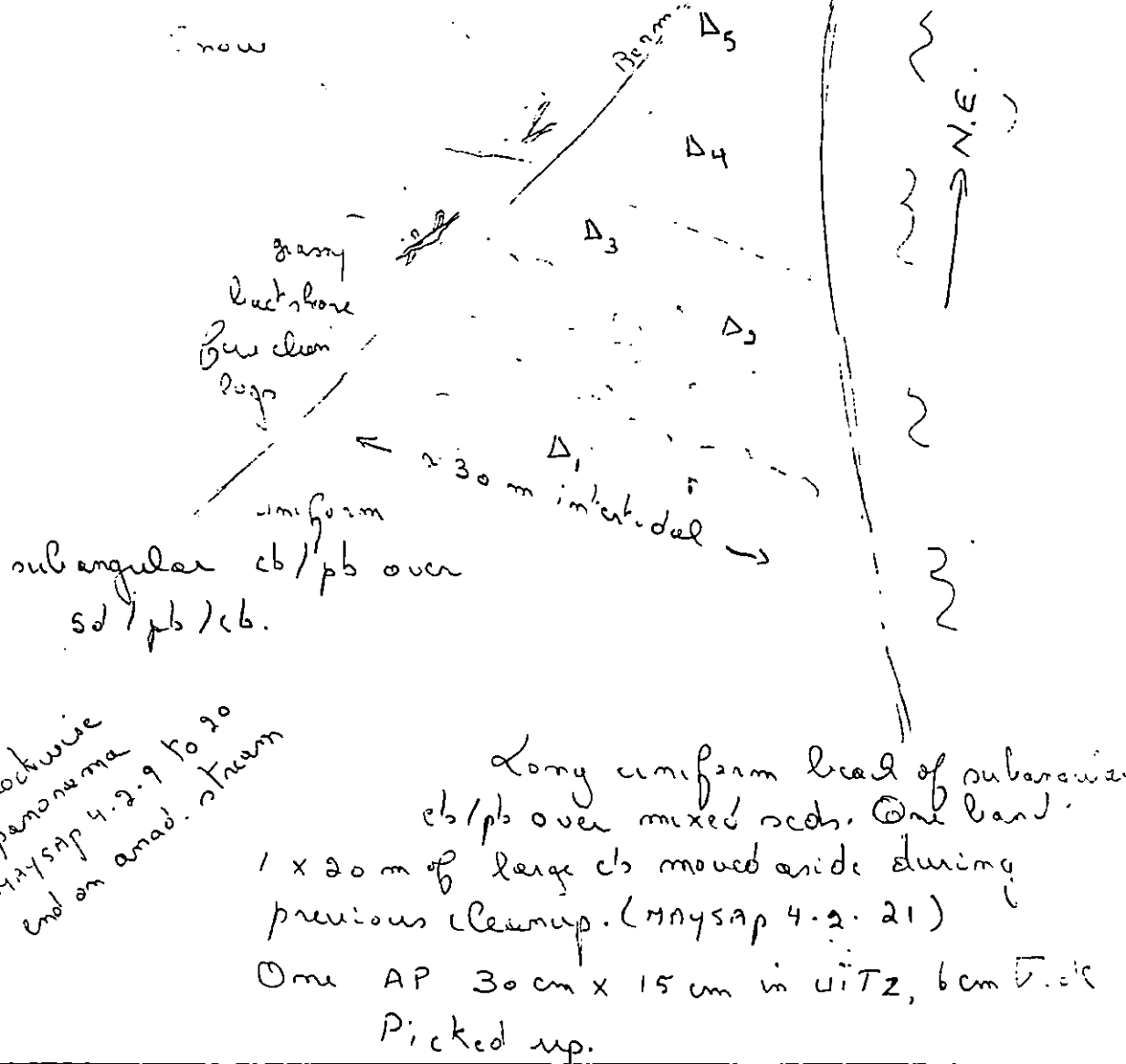
Location I

47 Samples

May 13/91

0610 Q-06362

No oil
A1 on cover sheet.



reviewed 5.16.91
E reviewed 5/16

Og Sketch Map.

BN-005.A

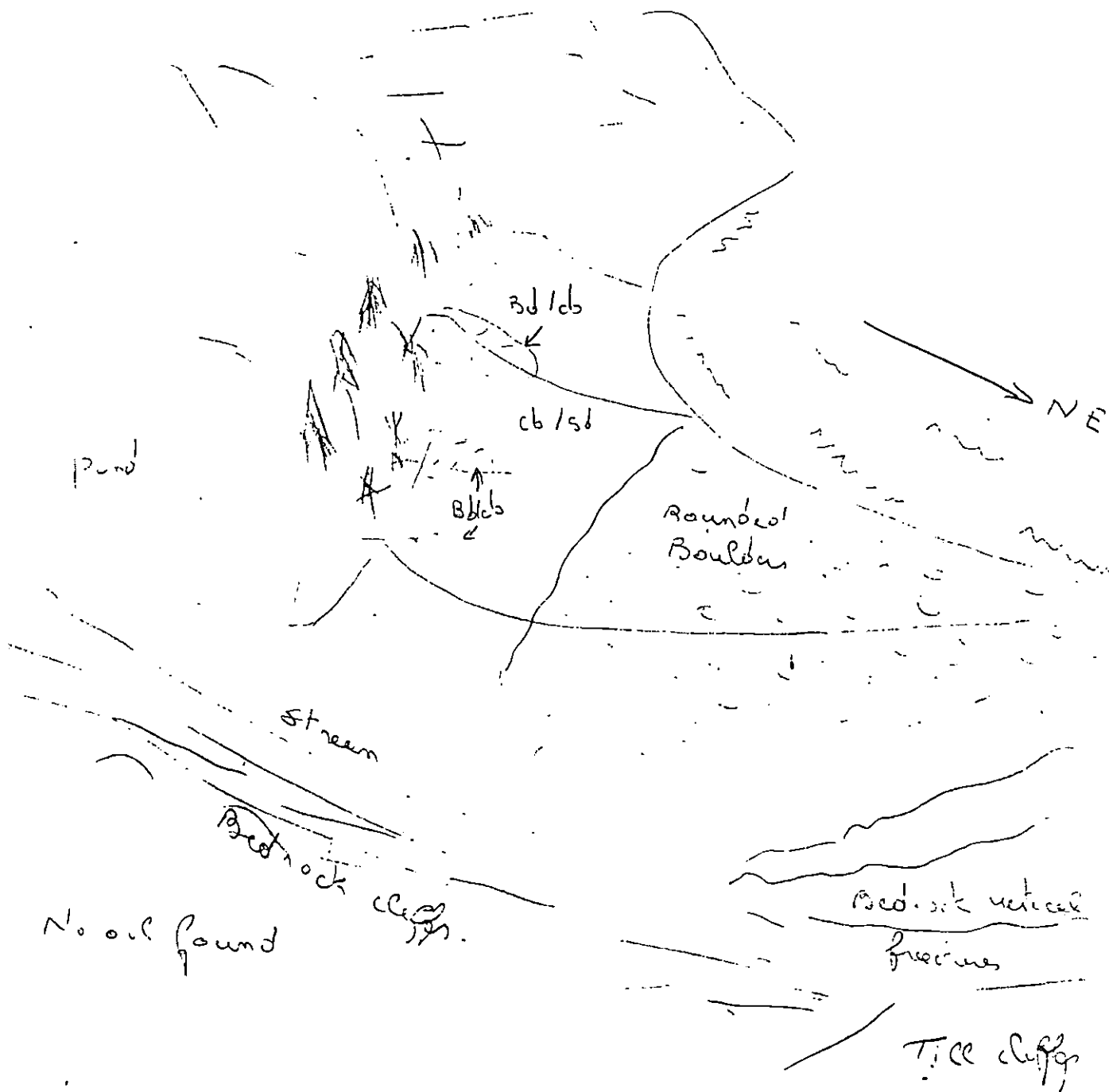
Location II

47 Samples

MAY 13/91

0723-0739

NO OIL
AD on cover sheet



reviewed 5.16.91 96
5/16

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 13, 1991 0615 - 0711
SEGMENT #	BH005	TIDAL HEIGHT (Range)	-0.64 → -2.27
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Location I - (A1)

Very little oil was found on this beach, of which most was removed during the survey. The beach is composed of subangular cobble of roughly uniform size with an increase in fine grained material in the lower zone. This site appears to be exposed occasionally, perhaps rarely, to medium sized waves. The oiled area is in the upper intertidal zone where little biota is present. Those present are in low densities or cover. Filamentous green algae (Urospora) are the most abundant species in this zone, and are particularly abundant slightly below the high zone. Littorine snails, limpets, and barnacles are scattered throughout the high zone near the oiled site. Below the highest zone the biota increase in diversity and abundance, grading from very low cover, to nearly 100% cover of algae and invertebrates. Barnacles (Balanus sp) are the dominant species in from the middle to low zone. Fucus is sparsely abundant on the larger cobble of the beach. Other brown algae, mainly filamentous forms, as well as red and green algae (Porphyra and Ulva), are very abundant in the middle zone. In the low zone, mussels and clams are more abundant, and barnacles remain abundant on cobble. Several other invertebrates are very abundant amongst and under cobble in the low zone, including polychaete worms, nemertean worms, littorine snails, limpets, hermit crabs, isopods, amphipods, encrusting bryozoans, stichaeid fishes (pricklebacks), and several gastropods. The subtidal zone adjacent to the beach is covered thickly by large brown algae.

Manual cleanup was performed on this beach. Additional cleanup will probably not be necessary, since most or all of the remaining oil was removed. If recommended, however, cleanup will have little effect on the intertidal biota, as long as the low to middle zone mussel/clam/barnacle assemblage is not disturbed.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	4	27	
Waterfowl	4	48	
Gulls/Kittiwakes	2	25	
Shorebirds	3	13	
Corvids			
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters		River Otter	Tracks
Pinnipeds (specify)		Fox	Tracks
Whales (specify)		Mountain Goat	1

Shoreline subdivision map showing important biological features attached.

BM005-A Biology Report, continued

Location II - (A2)

No oil was found at this location.

Biota are nearly absent from much of the beach, which is exposed to high waves and is composed of rounded cobble. The lower zones of the more protected southern end of the beach has high cover of red and green algae, with scattered patches of barnacles, littorines, Fucus, and mussels.

No fish were observed in the anadromous stream or the lake. River otter scat and tracks were common near the lake. A mountain goat was observed very near the beach during the survey.

Wildlife Observed on BM005-A

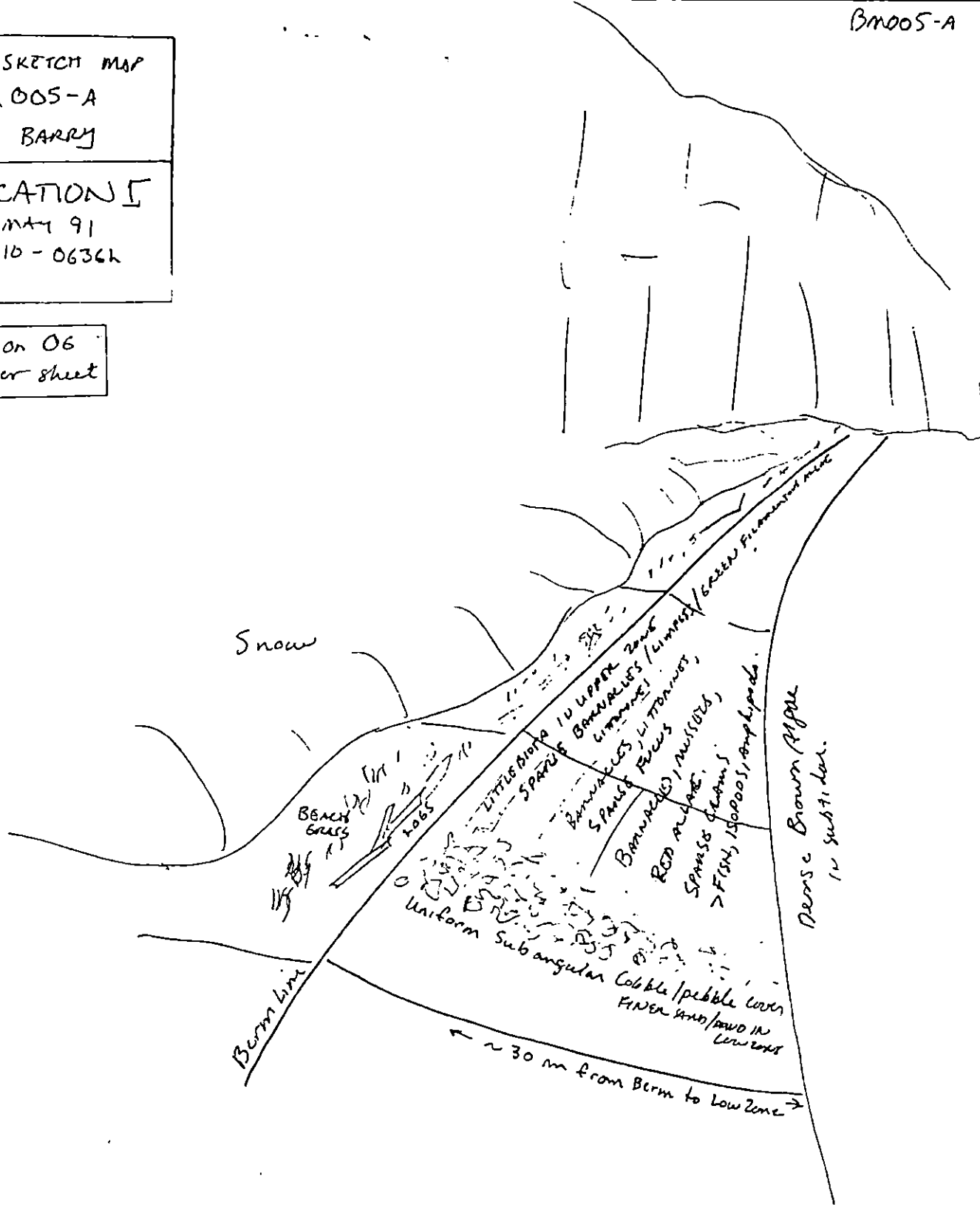
Seabirds-	Red- ^{face} throated Cormorant (5), Pigeon Guillemot (10), ? Murrelet (10), Rhinoceros Auklet (2)
Gulls/Kittiwakes-	Glaucous-winged Gull (5), Black-legged Kittiwake (20)
Waterfowl	Green-winged Teal (30), Red- necked ^{breasted} Merganser (3), Harlequin Duck (5), Surf Scoter (10)
Shorebirds	Semi-palmated Plover (1), Western Sandpiper (10), Black Oystercatcher (2)
River Otter	tracks and scat
Fox	tracks

BIO SKETCH MAP
BM 005-A
JP BARRY

LOCATION I

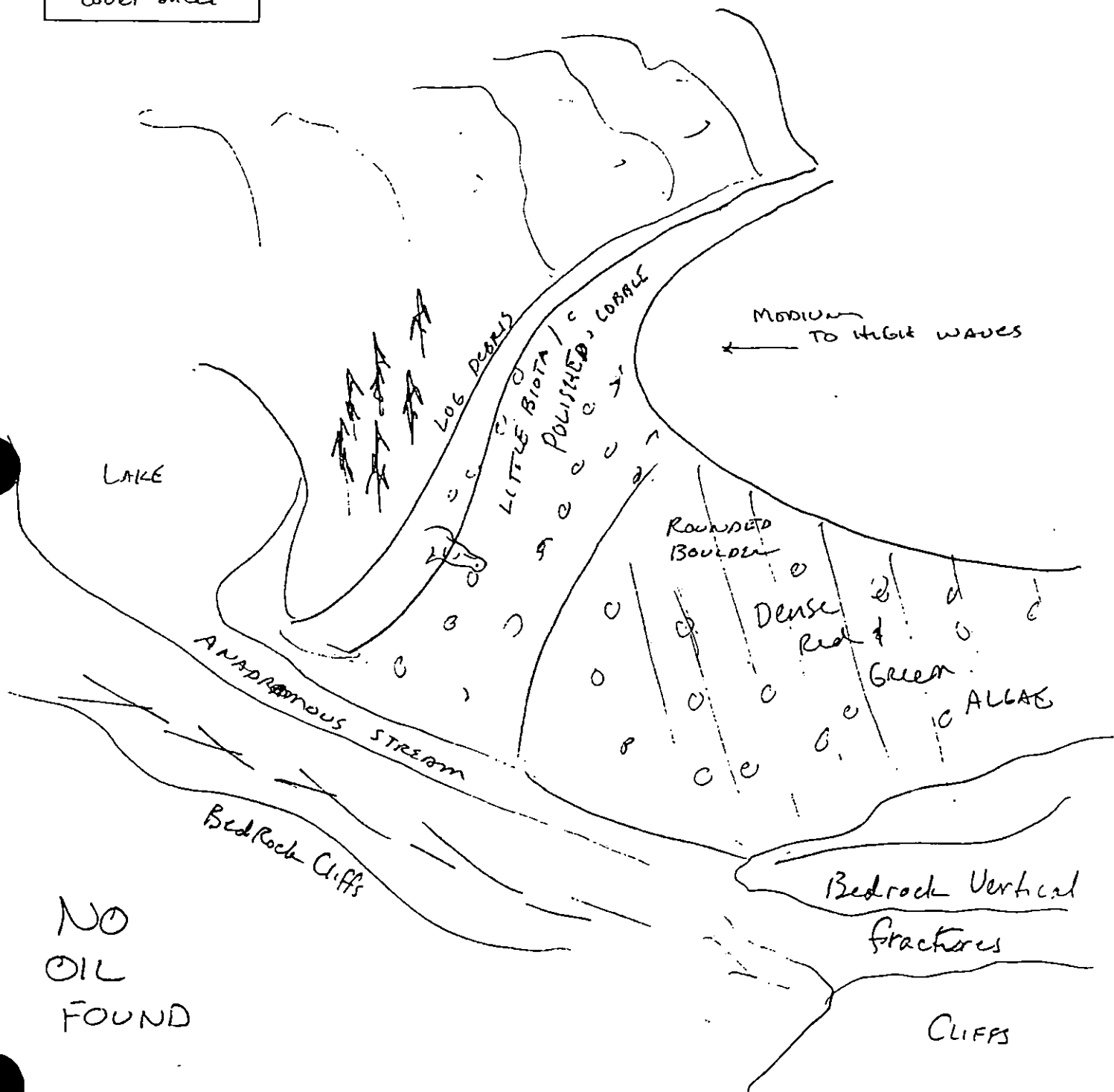
13 MAY 91
0610 - 0636h

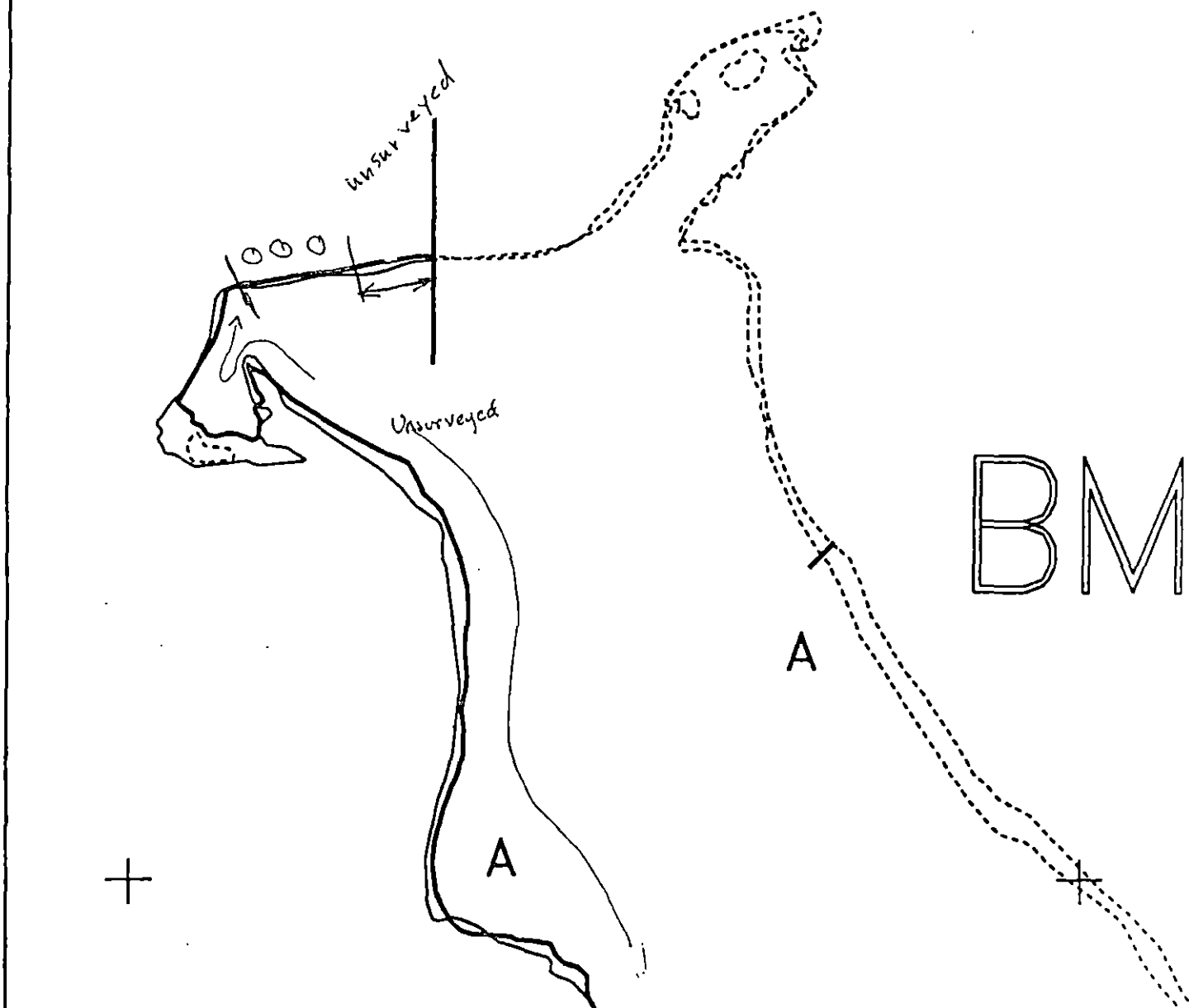
AI on O6
cover sheet



BIO SKETCH MAP
BM 005-A
LOCATION II
JP BAREY
13 MAY 1991
0723-0739

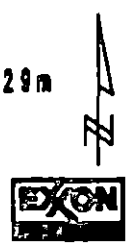
AZ on OG MAP
Cover Sheet





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

BM005 A
ADEC Subsegment Length: 8629m
METERS
AK State Plane Zone 4
sbm005ac



Subdivision Field Map
Map Key: KENBM005Ac
Name: for Sample
Date: May 13/91
Data Entered:

Reviewed 5.16.91
5/16

BM-5

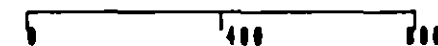
unsurveyed

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

BM005 A

ADEC Subsegment Length: 8629m

METERS



AK State Plane Zone 4
 abm005aa



Subdivision Field Map

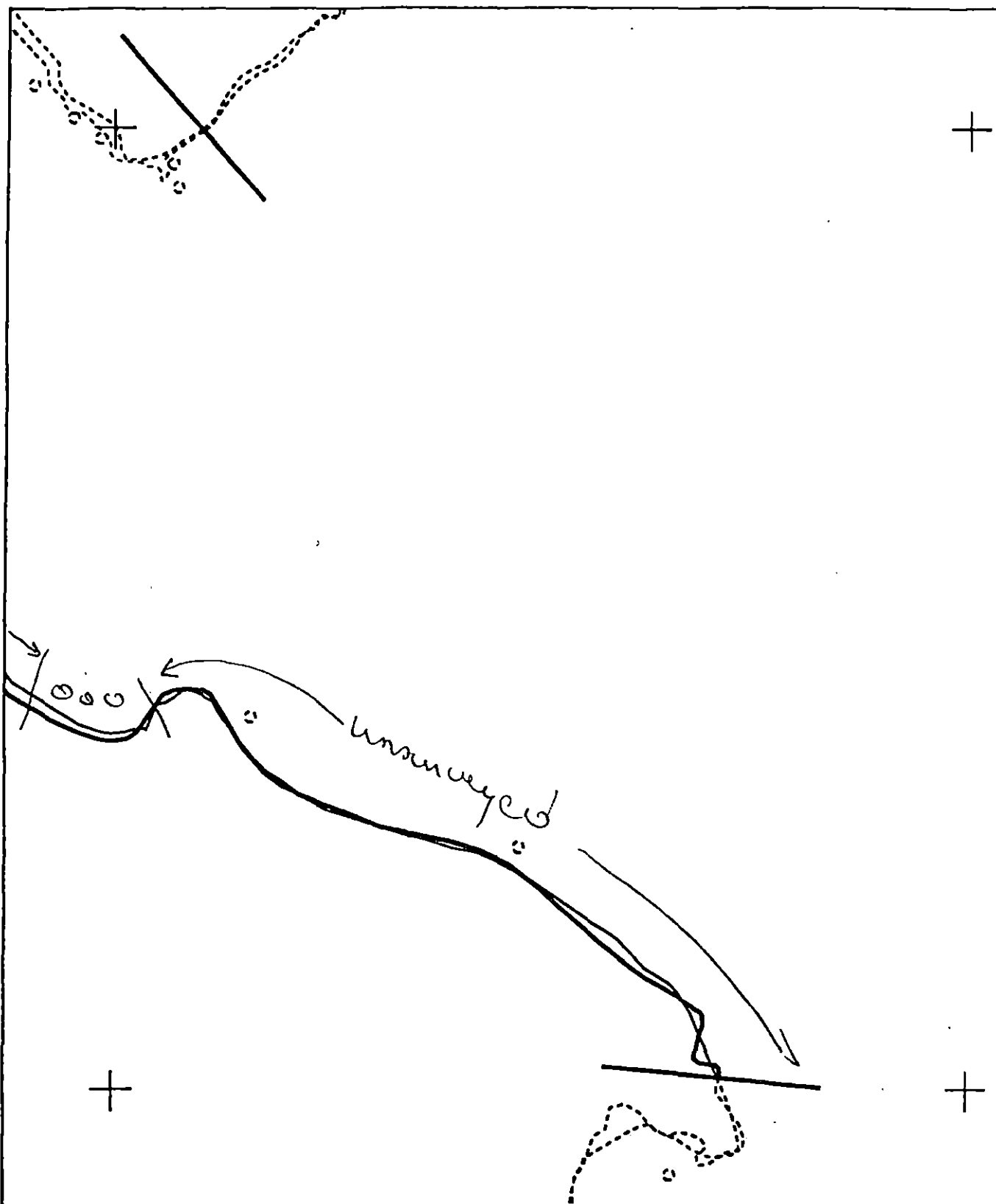
Map Key: KENBM005Aa

Name: J. M. Sempala

Date: May 13/91

Data Entered:

reviewed 5.16.91 2
 E. continued 5/16



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

BM005 A
 ADEC Subsegment Length: 8629m
 METERS
 0 400 800
 AK State Plane Zone 4
 abm005ab



Subdivision Field Map
 Map Key: KENBM005Ab
 Name: JM Samples
 Date: May 13/91
 Data Entered:

Reviewed 5.16.91
 ES reviewed 5/16

1991 MAYSAP EVALUATION

SEGMENT: BM 005 SUB: A REGION: KEN SURVEY DATE: 5/13/91ENVIRONMENTAL SENSITIVITIES:Work Window(s) RESTRICTED 3/1 - 9/15Ecological/Constraints (see page two for details) Eagle nest,
Anadromous stream, Herring spawningARCHAEOLOGICAL CONSTRAINTS:If treatment is planned, a cultural resource evaluation is
required prior to shoreline treatment.SHPO Signature: Robert Dan Dan Date: 5/24/91RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

NNN

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL:

TAG:

FOSC:

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

ADEC

FOSC

EXXON

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

USCG

NOAA

ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

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

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

Herring Spawning: No treatment before June 1. Avoid disturbance to kelp and eelgrass.

MAYSAP FIELD SHORELINE COMMENT SHEET

BM005A

TEAM NO. 4 SEGMENT BM. 005. SUBDIVISION A DATE 8/1/91

ADEC

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

no treatment recommended - no oiling observed was collected.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/13/91☒ NTR

No oil was observed therefore I recommend no treatment.

LANDMANAGER

NAME Michael P. Tetreau OF NPS SIGNATURE Michael P. Tetreau☒ NTR

Site That was treated last year looks very good. Only four little patches of mousse/asphalt were found and These were retrieved by VECD personnel. You can walk across This site now without getting oil on your boots. Very little to no visible oil remaining. No oil was observed near The stream on The SW beach.

USCG/NOAA

NAME LTJG J. Mc NATION SIGNATURE J. Mc NATION☒ NTR

AREA VERY CLEAN!

NOAA/ DONALD A. MacDONALD

Donald A. MacDonal

PAGE 2 OF 19

SEGMENT B7-005

SUBDIVISION A

DATE 13 / MAY / 91

ENERGY LEVEL: ☒ H ☐ M ☐ L

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

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

EST. OIL CATEGORY LENGTH: W_____m M_____m N_____m VL_____m NO 666 m US 8029 m

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

MAY 5 Ap. 4. 2. 8 to 21

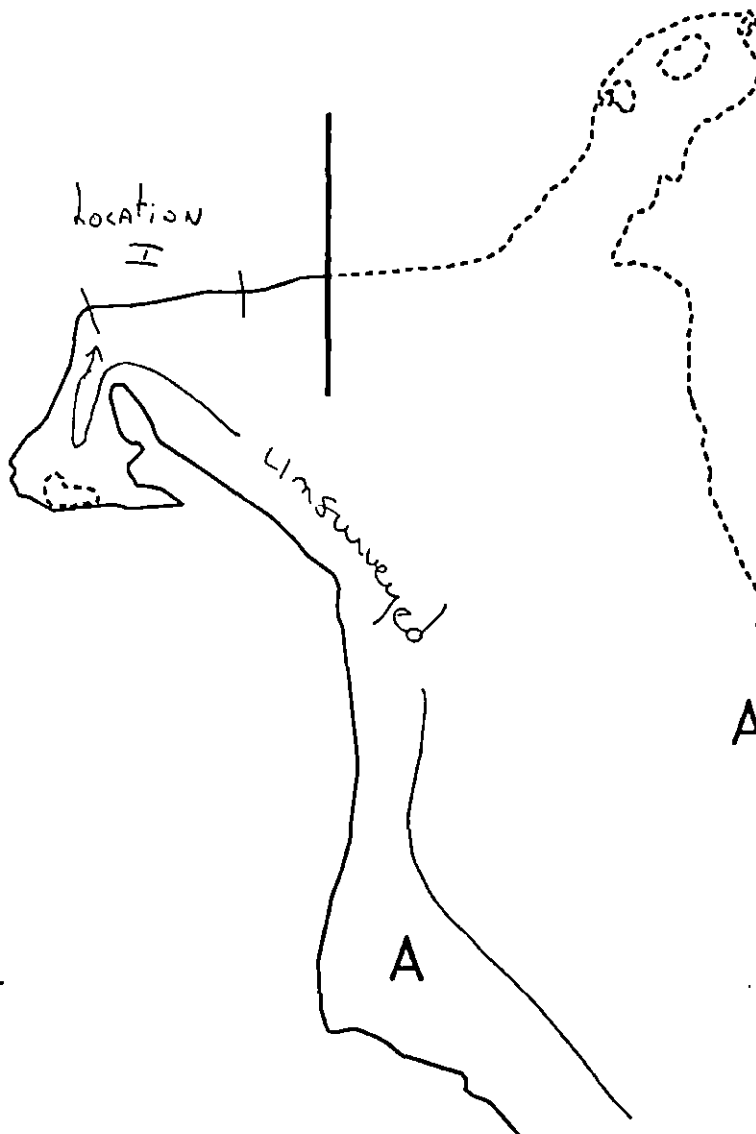
SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE PHOTO ROLL # MAYSAP- - FRAMES

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

See attached map.

revised 5/16/91 4y
 5/16/91

Location Map 1



BM

A

A

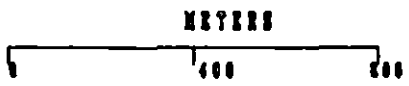
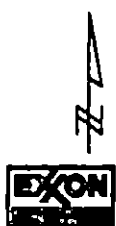
BM005 A

Subdivision Field Map

Map Key: KENBM005Ac

Name: J. J. Sempala

Date: May 13/91



AK State Plane Zone 4
BM005A

Reviewed 5/16/91 gy
Reviewed 5/16

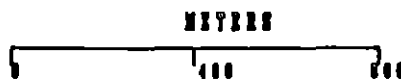
Location Map 2

BM-5

unsurveyed



BM005 A



AK State Plane Zone 4
NAD83

Subdivision Field Map

Map Key: KENBM005Aa

Name: for Samples

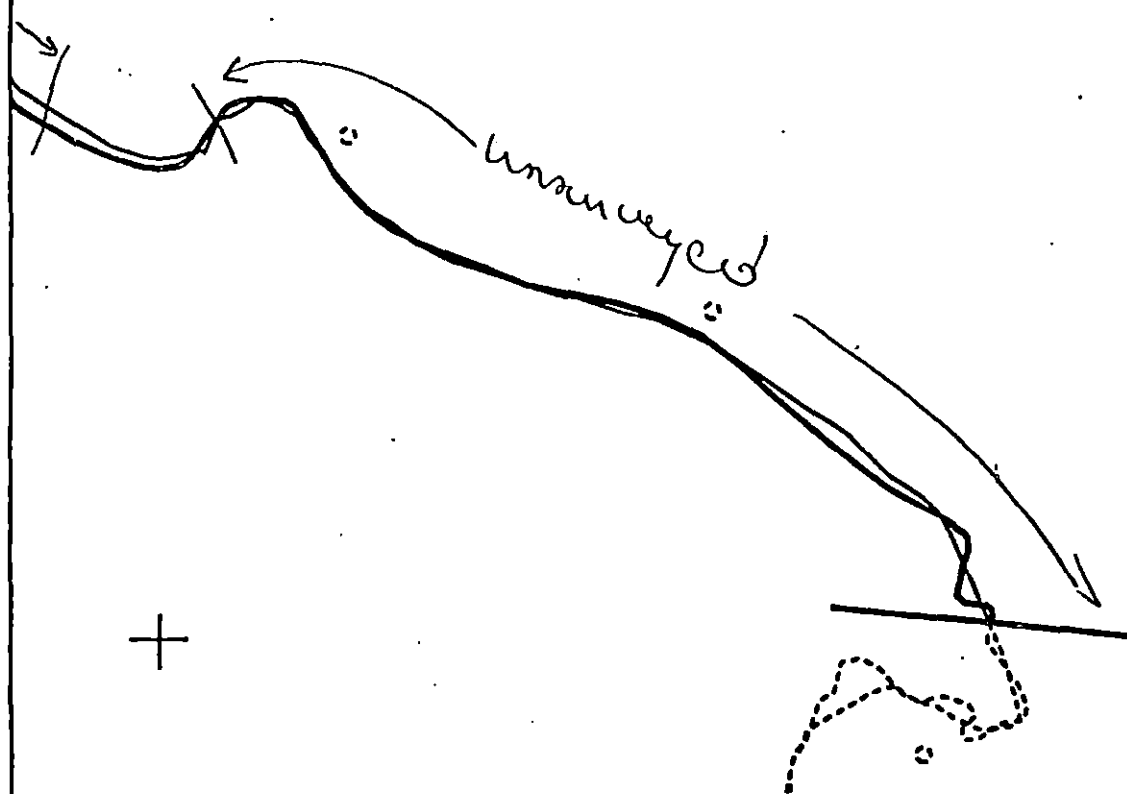
Date: May 13/91

reviewed 5.16.91 gy
25mwa & 5/16

Location Map 3



Location II



XXXX	Wide	BM005 A	Subdivision Field Map
////	Medium	ADEC Subsegment Length: 8629m	Map Key: KENBM005Ab
----	Narrow	METERS	Name: <u>JM Sempels</u>
TTTT	Very Light	0 400 800	Date: <u>May 13/91</u>
0000	No Oil	AK State Plane Zone 4 BM005Ab	Date Entered:



Reviewed 5.16.91 gy
25 reviewed 5/16

Og sketch map.

Bm .005. A

Location I

7 Samples

May 13/91

0610 R - 0636 R

No oil
AI on cover sheet

now

grassy backshore
fine clean
logs

uniform
subangular cb / pb over
sd / pb / cb.

Δ₁ Δ₂ Δ₃ Δ₄ Δ₅

~ 30 m intertidal

N.E.

MAYSAP 4.2.8

clockwise
peronema
MAYSAP 4.2.9 to 20
end on anad. stream

Long uniform bed of subangular
cb / pb over mixed sed. One band.
1 x 20 m of large cb moved aside during
previous cleanup. (MAYSAP 4.2.21)
One AP 30 cm x 15 cm in U1T2, 6 cm E side
Picked up.

reviewed 5.16.91
ES reviewed 5/16

Og Sketch Map.

B11-005.A

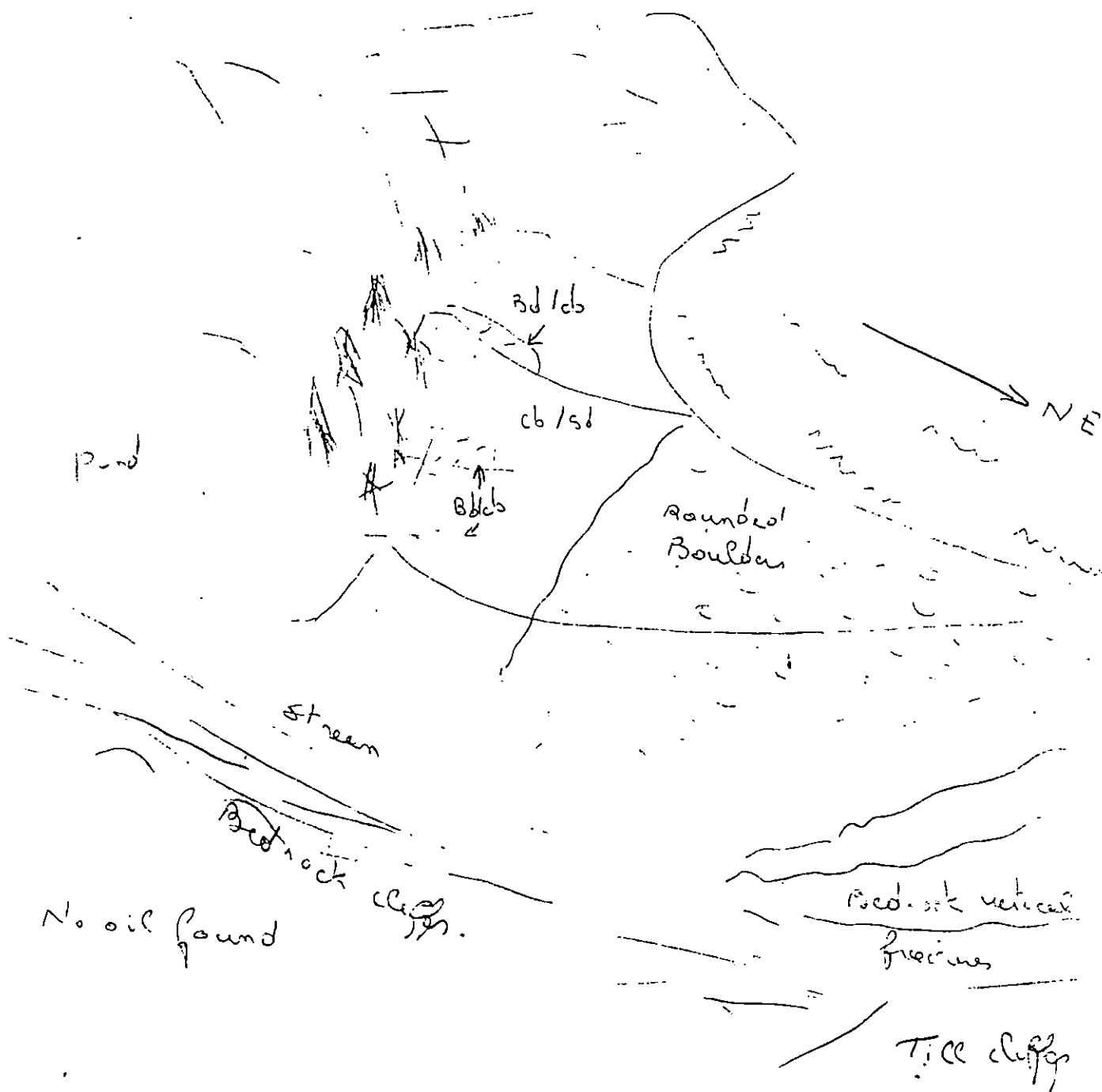
Location II

41 Samples

MAY 13/91

0723-0739

NO OIL
AD on cover sheet



reviewed 5.16.91 94
re-reviewed 5/16

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 13, 1991 0615 - 0711
SEGMENT #	Bm005	TIDAL HEIGHT (Range)	-0.64 → -2.27
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Location I - (A1)

Very little oil was found on this beach, of which most was removed during the survey. The beach is composed of subangular cobble of roughly uniform size with an increase in fine grained material in the lower zone. This site appears to be exposed occasionally, perhaps rarely, to medium sized waves. The oiled area is in the upper intertidal zone where little biota is present. Those present are in low densities or cover. Filamentous green algae (Urospora) are the most abundant species in this zone, and are particularly abundant slightly below the high zone. Littorine snails, limpets, and barnacles are scattered throughout the high zone near the oiled site. Below the highest zone the biota increase in diversity and abundance, grading from very low cover, to nearly 100% cover of algae and invertebrates. Barnacles (Balanus sp) are the dominant species in from the middle to low zone. Fucus is sparsely abundant on the larger cobble of the beach. Other brown algae, mainly filamentous forms, as well as red and green algae (Porphyra and Ulva), are very abundant in the middle zone. In the low zone, mussels and clams are more abundant, and barnacles remain abundant on cobble. Several other invertebrates are very abundant amongst and under cobble in the low zone, including polychaete worms, nemertean worms, littorine snails, limpets, hermit crabs, isopods, amphipods, encrusting bryozoans, stichaeid fishes (pricklebacks), and several gastropods. The subtidal zone adjacent to the beach is covered thickly by large brown algae.

Manual cleanup was performed on this beach. Additional cleanup will probably not be necessary, since most or all of the remaining oil was removed. If recommended, however, cleanup will have little effect on the intertidal biota, as long as the low to middle zone mussel/clam/barnacle assemblage is not disturbed.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	4	27	
Waterfowl	4	48	
Gulls/Kittiwakes	2	25	
Shorebirds	3	13	
Corvids			
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters		River Otter	Tracks
Pinnipeds (specify)		Fox	Tracks
Whales (specify)		Mountain Goat	1

Shoreline subdivision map showing important biological features attached.

BM005-A Biology Report, continued

Location II - (A2)

No oil was found at this location.

Biota are nearly absent from much of the beach, which is exposed to high waves and is composed of rounded cobble. The lower zones of the more protected southern end of the beach has high cover of red and green algae, with scattered patches of barnacles, littorines, Fucus, and mussels.

No fish were observed in the anadromous stream or the lake. River otter scat and tracks were common near the lake. A mountain goat was observed very near the beach during the survey.

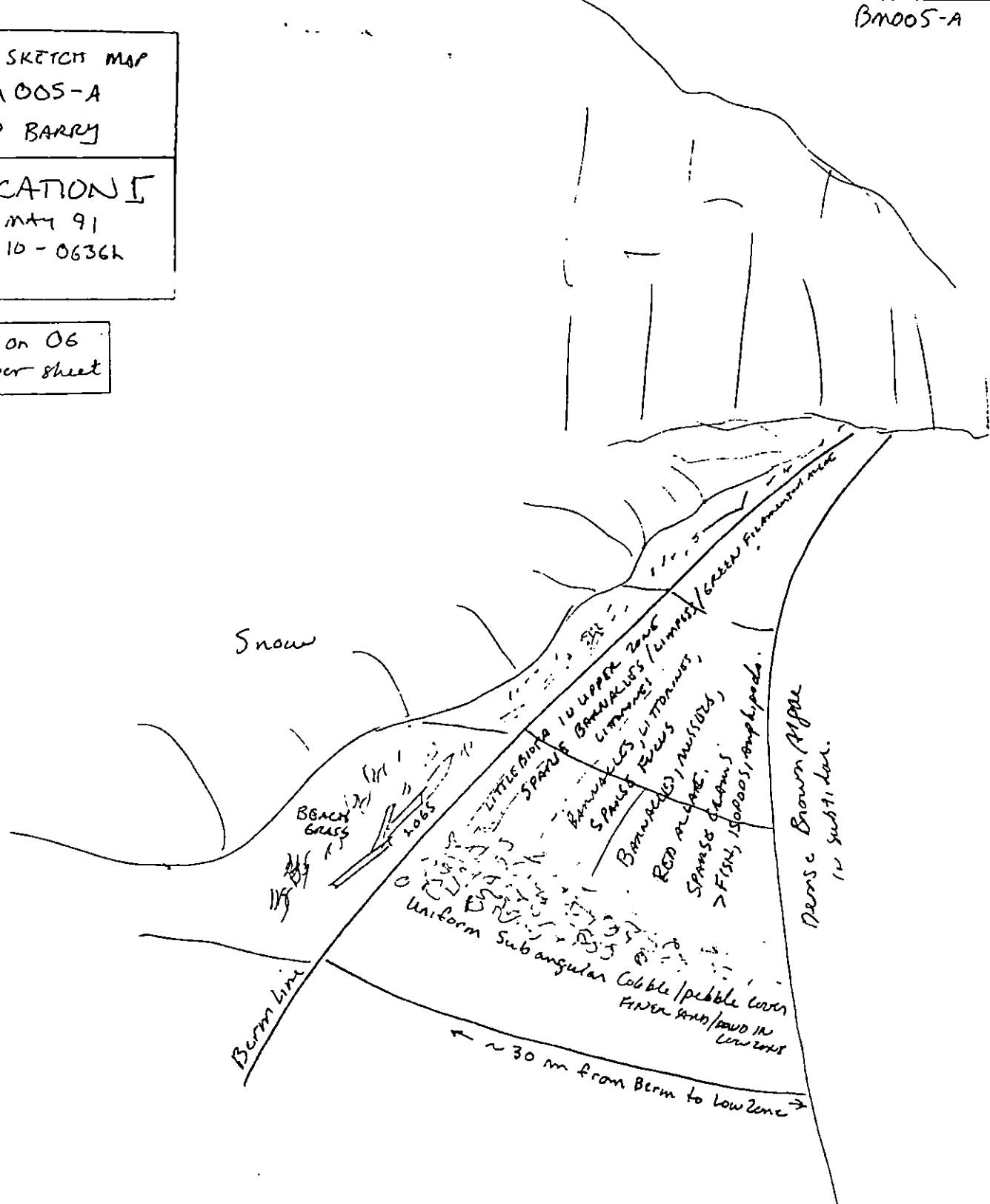
Wildlife Observed on BM005-A

Seabirds-	Red- ^{headed} throated Cormorant (5), Pigeon Guillemot (10), ? Murrelet (10), Rhinoceros Auklet (2)
Gulls/Kittiwakes-	Glaucous-winged Gull (5), Black-legged Kittiwake (20)
Waterfowl	Green-winged Teal (30), Red- necked ^{breasted} Merganser (3), Harlequin Duck (5), Surf Scoter (10)
Shorebirds	Semi-palmated Plover (1), Western Sandpiper (10), Black Oystercatcher (2)
River Otter	tracks and scat
Fox	tracks

BIO SKETCH MAP
BM 005-A
JP BARRY

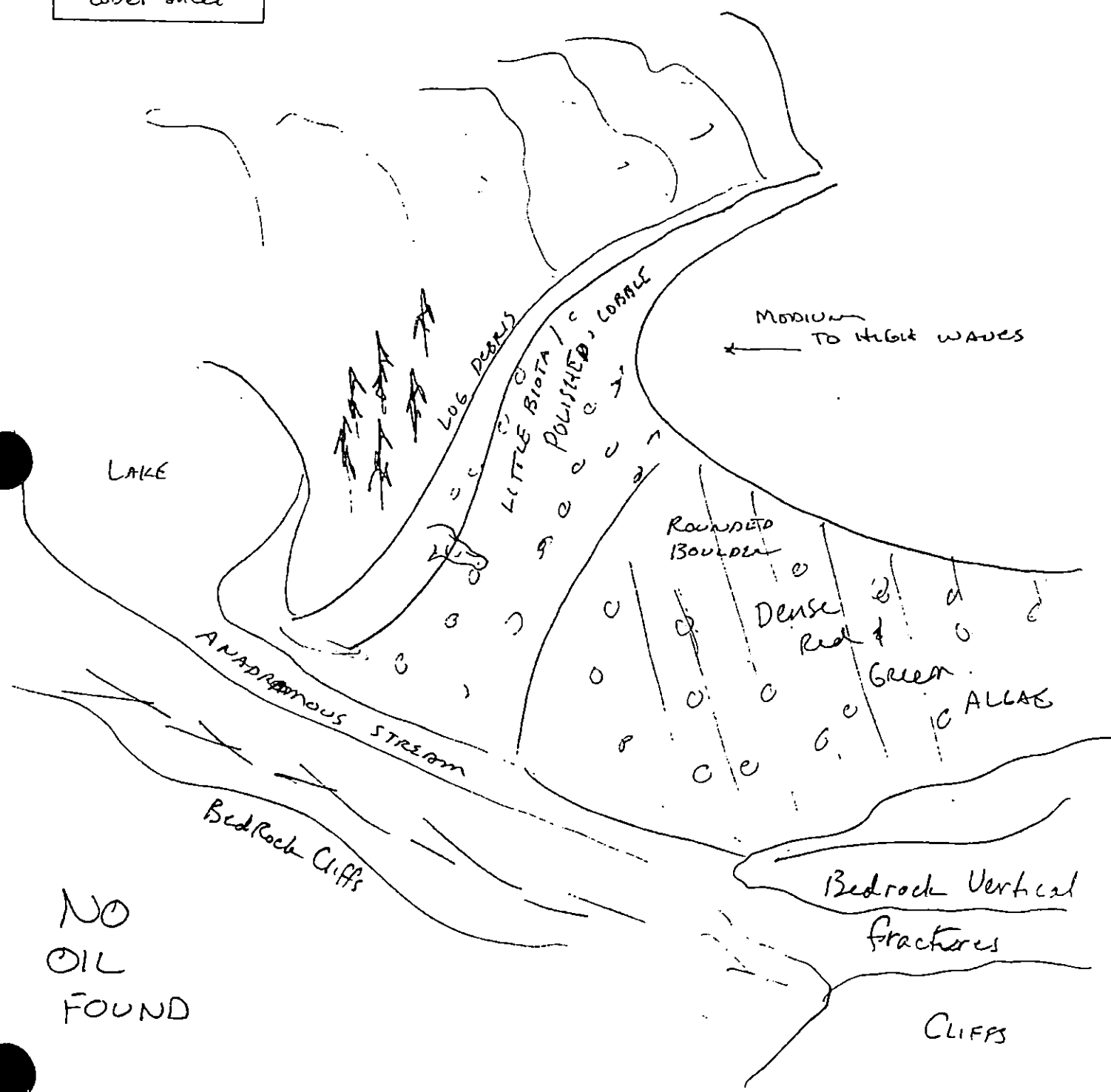
LOCATION I
13 MAY 91
0610 - 0636h

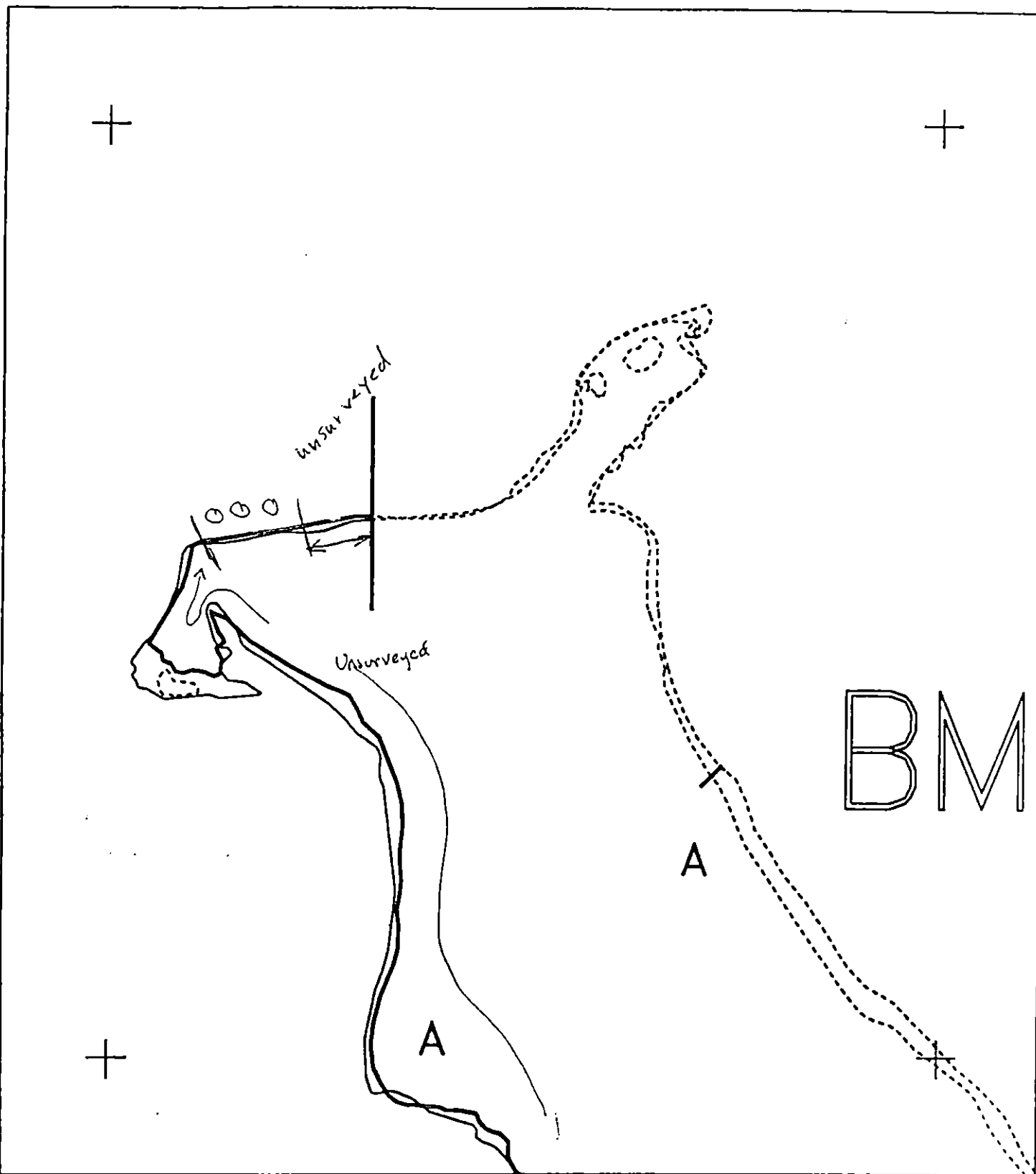
AI on 06
cover sheet



B10 SKETCH MAP
 BM 005-A
 LOCATION II
 SP BARRY
 13 MAY 1991
 0723-0739

A2 on OG MAP
 Cover Sheet





BM

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

BM005 A

ADEC Subsegment Length: 8629m

METERS

0 400 800

AK State Plane Zone 4
 NAD83



Subdivision Field Map

Map Key: KENBM005Ac

Name: *Jon Sample*

Date: *May 13/91*

Data Entered:

Reviewed 5.16.91
 95 revised 5/16

+

+

BM-5

unsurveyed

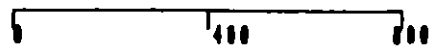
+

+

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

BM005 A

ADEC Subsegment Length: 8629m
METERS



AK State Plane Zone 4
NAD83



Subdivision Field Map

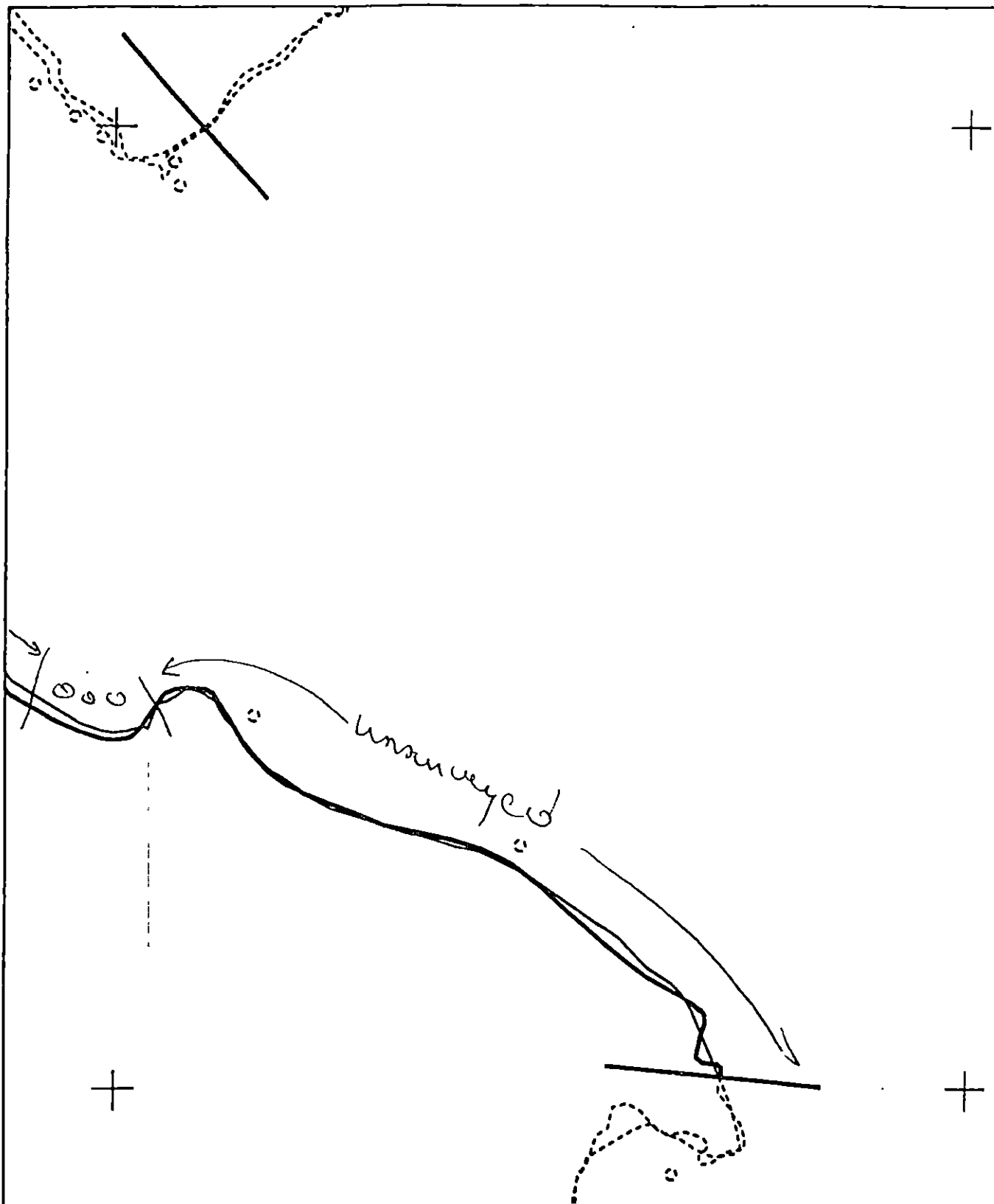
Map Key: KENBM005Aa

Name: 17 Samples

Date: May 13 / 91

Data Entered:

reviewed 5-16-91 gy
Ei reviewed 5/16

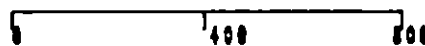


XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

BM005 A

ADEC Subsegment Length: 8629m

METERS



AK State Plane Zone 4
 NAD83



Subdivision Field Map

Map Key: KENBM005Ab

Name: J. M. Semples

Date: May 13/9

Data Entered:

reviewed 5.16.91
 ES reviewed 5/16

1991 MAYSAP EVALUATION

SEGMENT: BM 005 SUB: A REGION: KEN SURVEY DATE: 5/13/91

ENVIRONMENTAL SENSITIVITIES:

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

Ecological/Constraints (see page two for details) Eagle nest, Anadromous stream, Herring spawning

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: _____ Date: _____

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

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____ FOSC APPROVAL DATE: _____

ADEC _____ FOSC _____

EXXON _____

USCG _____

NOAA _____

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

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

Herring Spawning: No treatment before June 1. Avoid disturbance to kelp and eelgrass.

MAYSAP FIELD SHORELINE COMMENT SHEET

DM005A

71

TEAM NO. 4 SEGMENT BM. 005 SUBDIVISION A DATE 3/14/91

ADEC

NAME

Clara S. Crosby

SIGNATURE

Clara S. Crosby☒ NTR

no treatment recommended - ~~no~~ oiling observed was collected.

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles 5/13/91☒ NTR

No oil was observed therefore I recommend no treatment.

LANDMANAGER

NAME

Michael R. Tetreau OF NPS

SIGNATURE

Michael R. Tetreau☒ NTR

Site That was treated last year looks very good. Only four little patches of mousse/asphalt were found and These were retrieved by VECO personnel. You can walk across This site now without getting oil on your boots. Very little to no visible oil remaining. No oil was observed near the stream on the SW beach.

USCG/NOAA

NAME

NOA2 J. McArthur

SIGNATURE

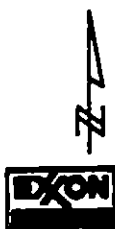
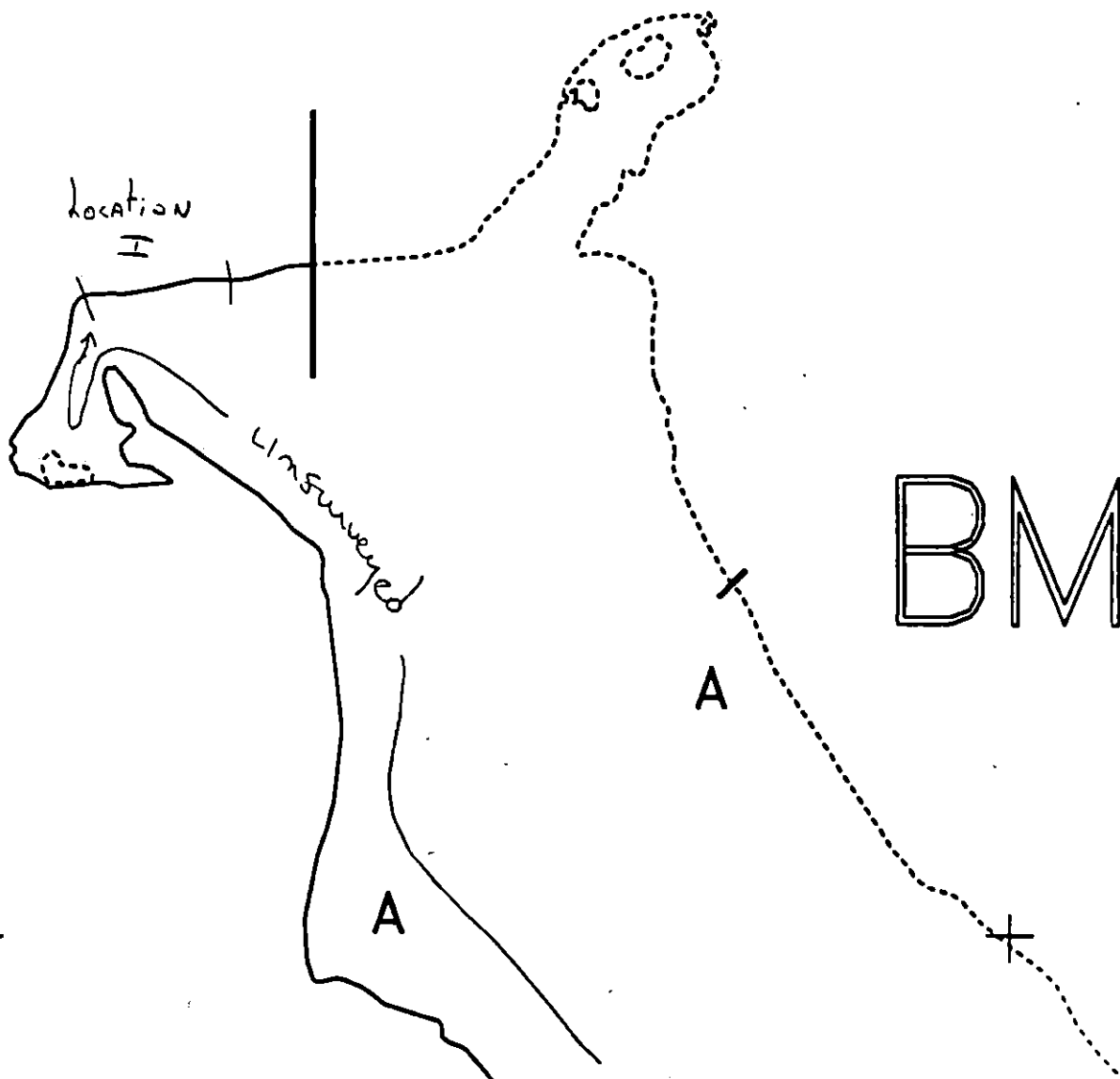
J. McArthur☒ NTR

AREA VERY CLEAN!

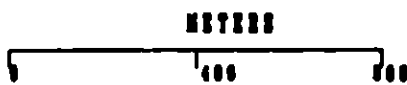
NOAA

DONALD H. MACDONALDDonald H. Macdonald

Location Map 1



BM005 A



AK State Plane Zone 4
contiguous

Subdivision Field Map

Map Key: KENBM005Ac

Name: J. Simpson

Date: May 13/10

Reviewed 5.16.9: JG
Reviewed 5/10

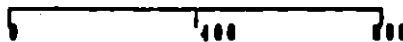
Location Map 2

BM-5

Unsurveyed

BM005 A

METERS



AK State Plane Zone 4
Datum: NAD 83



Subdivision Field Map

Map Key: KENN005Aa

Name: J. M. Simpson

Date: May 13/91

Reviewed 5.16.91 T-j
Reviewed 5/16

Location Map 3

Location II

unannounced

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

BM005 A
 ADEC Subsegment Length: 8628m
 METERS

AK State Plane Zone 4
 400 600
 86005ab



Subdivision Field Map
 Map Key: KENBM005Ab
 Name: J. M. Sempels
 Date: May 13/91
 Date Entered:

reviewed 5.16.91 J-1
 25 reviewed 5/16

Og sketch map.

B7.005. A

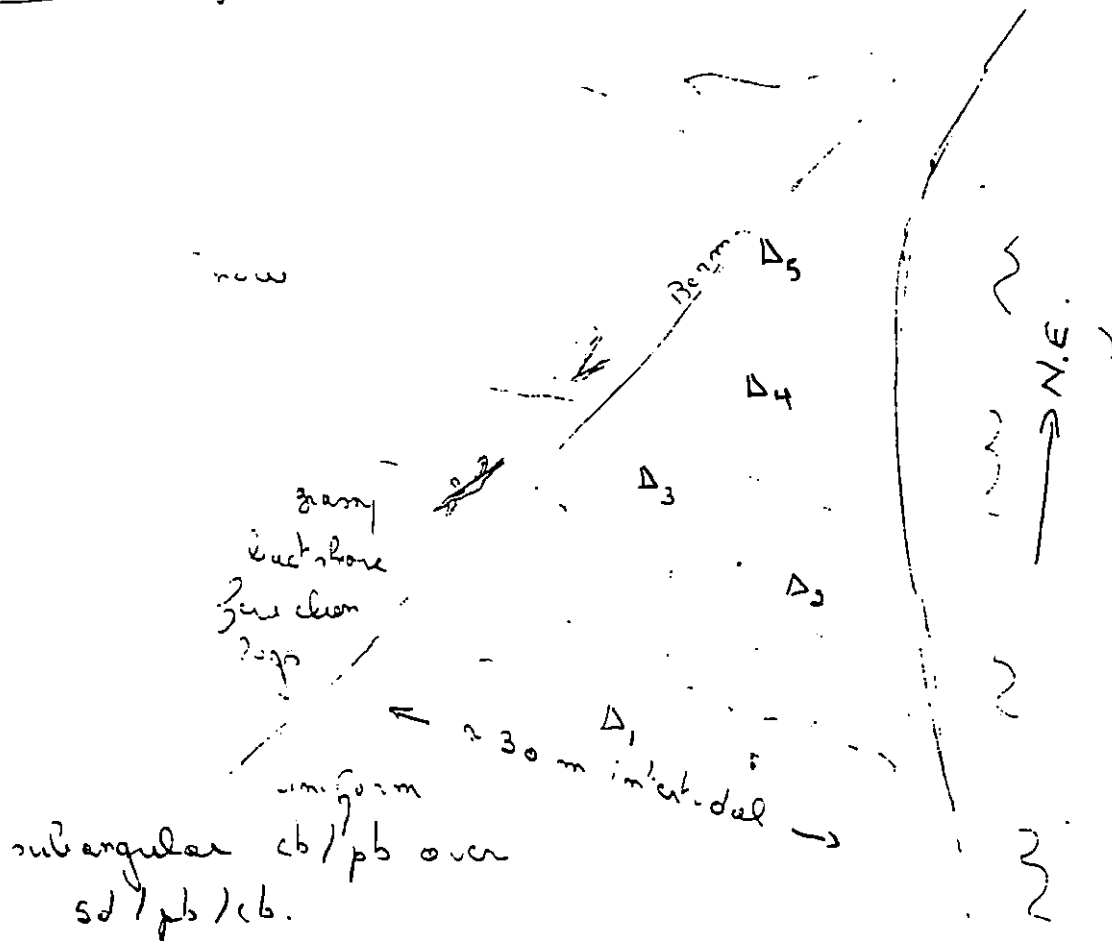
Location I

47 Samples

May 13/91

0610 Q - 0636 Z

Al on cover sheet



MAYSAP 4.2.8

clockwise
permeability
MAYSAP 4.2.9 to 20
end on anad. stream

Long uniform bed of subangular
cb/pb over mixed rcds. One band
1 x 20 m of large cb moved aside during
previous cleanup. (MAYSAP 4.2.21)
One AP 30 cm x 15 cm in U1T2, 6 cm
Picked up.

Og Sketch Map.

BN-005.A

Location III

47 Samples

MAY 13/91

0723-0739

NO OIL
AD on cover sheet



reviewed 5/10/91
5/10

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 13, 1991 0615 - 0711
SEGMENT #	BM005	TIDAL HEIGHT (Range)	-0.64 → -2.27
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Location I - (A1)

Very little oil was found on this beach, of which most was removed during the survey. The beach is composed of subangular cobble of roughly uniform size with an increase in fine grained material in the lower zone. This site appears to be exposed occasionally, perhaps rarely, to medium sized waves. The oiled area is in the upper intertidal zone where little biota is present. Those present are in low densities or cover. Filamentous green algae (*Urospora*) are the most abundant species in this zone, and are particularly abundant slightly below the high zone. Littorine snails, limpets, and barnacles are scattered throughout the high zone near the oiled site. Below the highest zone the biota increase in diversity and abundance, grading from very low cover, to nearly 100% cover of algae and invertebrates. Barnacles (*Balanus* sp) are the dominant species in from the middle to low zone. *Fucus* is sparsely abundant on the larger cobble of the beach. Other brown algae, mainly filamentous forms, as well as red and green algae (*Porphyra* and *Ulva*), are very abundant in the middle zone. In the low zone, mussels and clams are more abundant, and barnacles remain abundant on cobble. Several other invertebrates are very abundant amongst and under cobble in the low zone, including polychaete worms, nemertean worms, littorine snails, limpets, hermit crabs, isopods, amphipods, encrusting bryozoans, stichaeid fishes (pricklebacks), and several gastropods. The subtidal zone adjacent to the beach is covered thickly by large brown algae.

Manual cleanup was performed on this beach. Additional cleanup will probably not be necessary, since most or all of the remaining oil was removed. If recommended, however, cleanup will have little effect on the intertidal biota, as long as the low to middle zone mussel/clam/barnacle assemblage is not disturbed.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	4	27	
Waterfowl	4	48	
Gulls/Kittiwakes	2	25	
Shorebirds	3	13	
Corvids			
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters		River Otter	Tracks
Pinnipeds (specify)		Fox	Tracks
Whales (specify)		Mountain Goat	1

Shoreline subdivision map showing important biological features attached.

BM005-A Biology Report, continued

Location II - (A2)

No oil was found at this location.

Biota are nearly absent from much of the beach, which is exposed to high waves and is composed of rounded cobble. The lower zones of the more protected southern end of the beach has high cover of red and green algae, with scattered patches of barnacles, littorines, Fucus, and mussels.

No fish were observed in the anadromous stream or the lake. River otter scat and tracks were common near the lake. A mountain goat was observed very near the beach during the survey.

Wildlife Observed on BM005-A

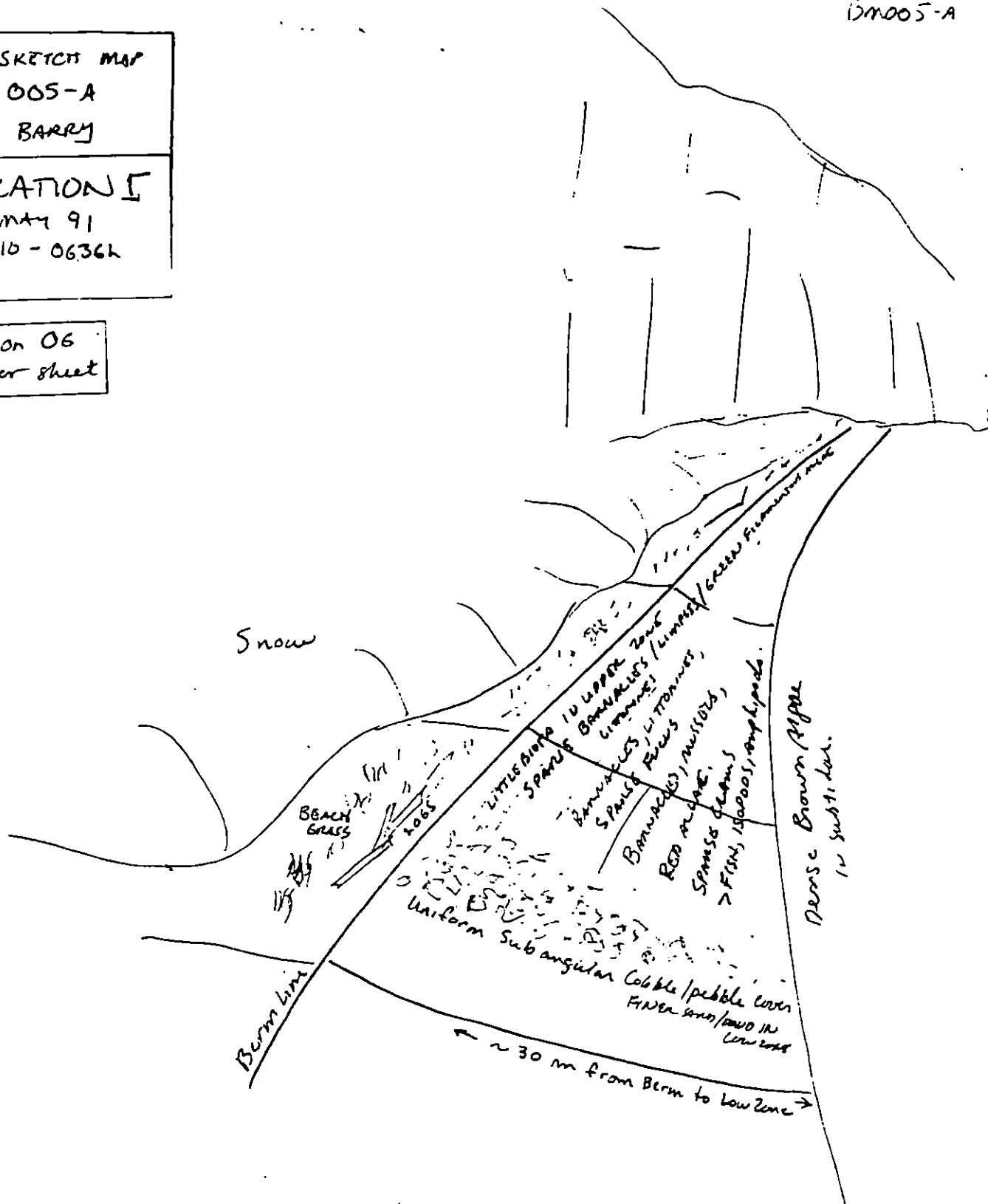
Seabirds-	^{face} Red-throated Cormorant (5), Pigeon Guillemot (10), ? Murrelet (10), Rhinceros Auklet (2)
Gulls/Kittiwakes-	Glaucous-winged Gull (5), Black-legged Kittiwake (20)
Waterfowl	Green-winged Teal (30), Red- backed ^{breasted} Merganser (3), Harlequin Duck (5), Surf Scoter (10)
Shorebirds	Semi-palmated Plover (1), Western Sandpiper (10), Black Oystercatcher (2)
River Otter	tracks and scat
Fox	tracks

BIO SKETCH MAP
BM 005-A
JP BARRY

LOCATION I

13 MAY 91
0610 - 0636h

A1 on O6
cover sheet



BIO SKETCH MAP

BM 005-A

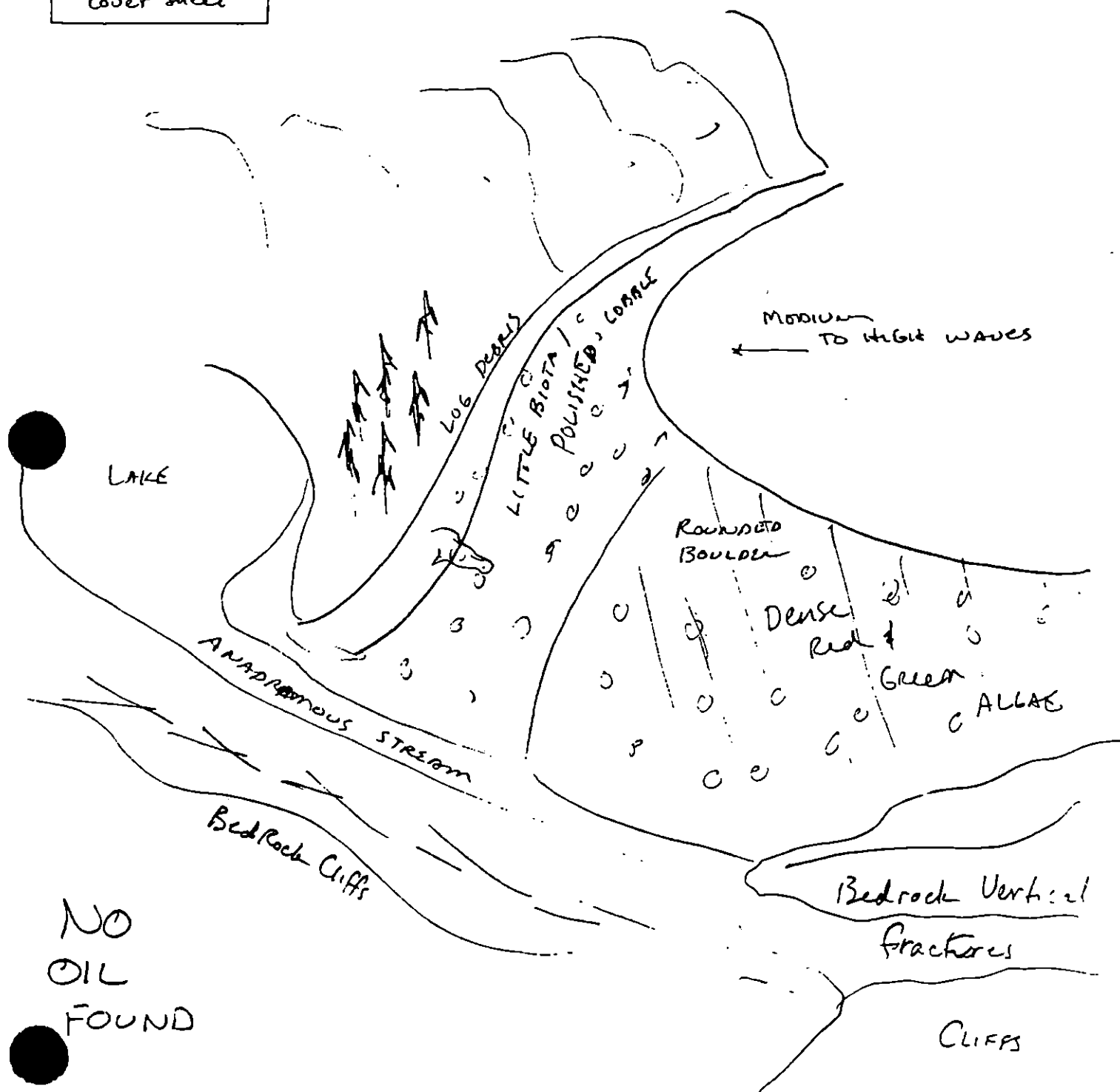
LOCATION II

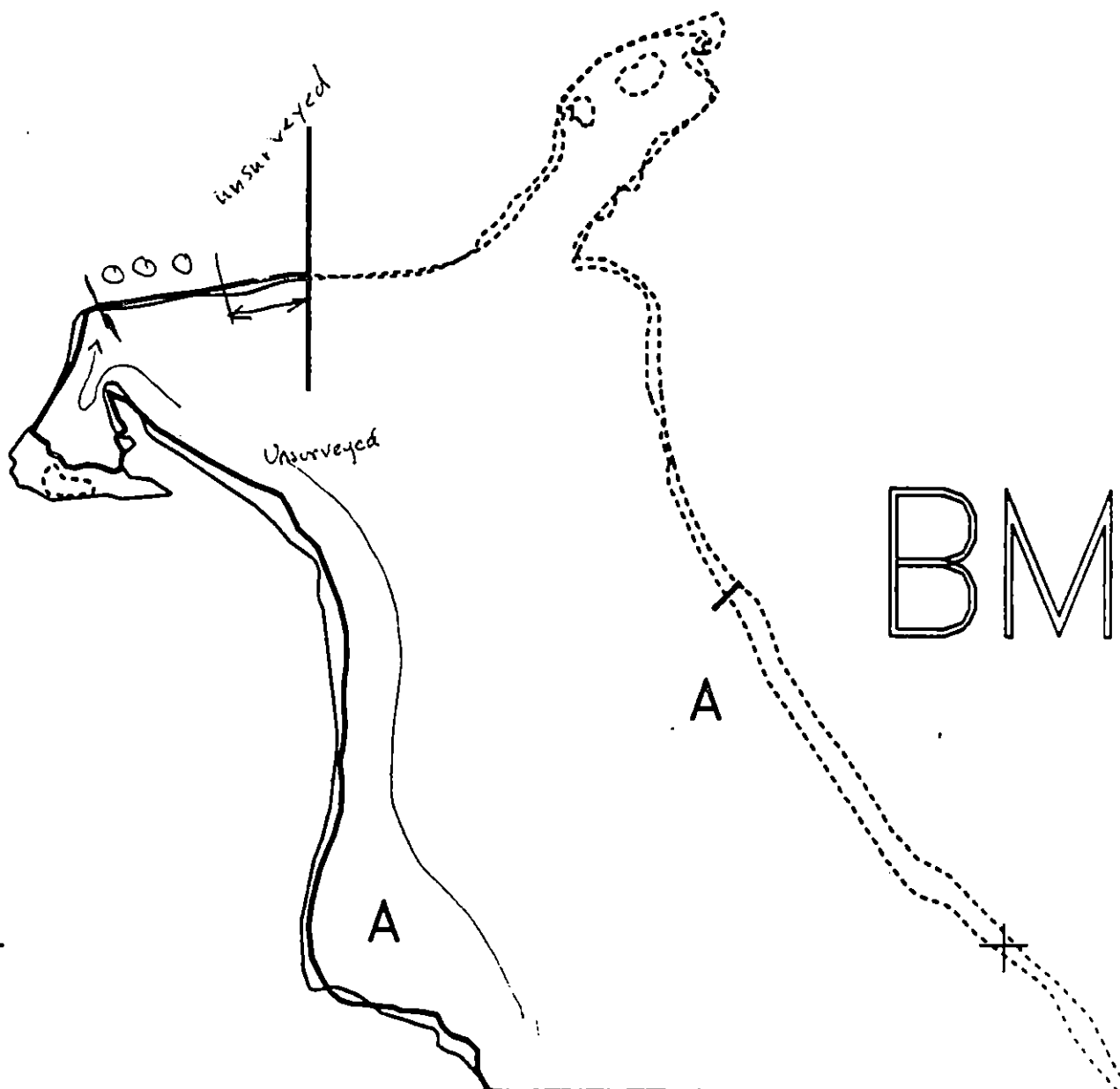
JP BARRY

13 MAY 1991

0723-0739

AZ on OG MAP
COVER SHEET



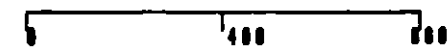


XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

BM005 A

ADEC Subsegment Length: 8628m

METERS



AK State Plane Zone 4
 NAD83



Subdivision Field Map

Map Key: KENBM005Ac

Name: Jon Sampson

Date: May 13/01

Date Entered:

Reviewed 5/16/01
 E. Peterson

BM-5

unimproved

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

BM005 A

ADEC Subsegment Length: 8620m
 METERS

0 400 800

AK State Plane Zone 4
 NAD83



Subdivision Field Map

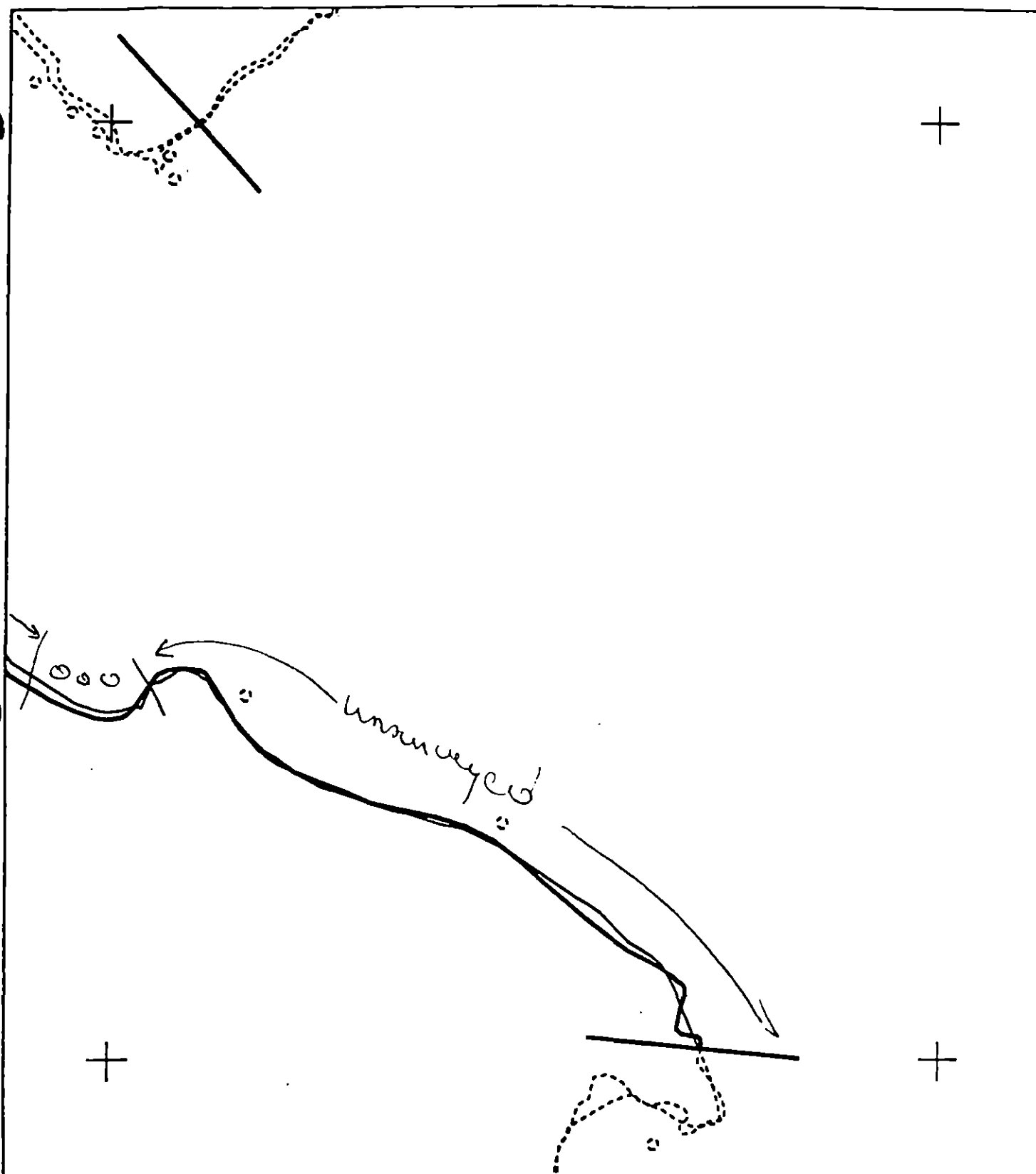
Map Key: KENBM005Aa

Name: J. M. Sempine

Date: May 13, 1991

Date Entered:

reviewed 5-16-91
 E. M. S. 5/16



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

BM005 A
 ADEC Subsegment Length: 8828m
 METERS
 0 100 200
 AK State Plane Zone 4
 abm005ab



Subdivision Field Map
 Map Key: KENBM005Ab
 Name: JM Sempine
 Date: May 13/00
 Date Entered:

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT BM-5 SUBDIVISION A (1 of 1)

WORK WINDOW	
Manual Pickup	OPEN
Spot Washing Less Than 100m From Stream	WORK 6/15 - 7/10 (ADF&G MONITOR REQ.)
Spot Washing More Than 100m From Stream	WORK AFTER 6/15

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B Salmon Stream

ADF&G catalogued anadromous streams (232-30-10350, 232-30-10355, 232-10-10375) are in Subdivision A. This subdivision is closed to spot washing less than 100m from stream 7/10 to 8/31. Before 7/10, spot washing is permitted less than 100m from stream with on-site ADF&G monitor or ADEC alternate present. No constraint to spot washing more than 100m from stream. No constraint to manual pickup.

2M Herring Spawning

Closed to spot washing before 6/15. No constraint to manual pickup.

5S Shorebird/Waterfowl Concentration

No constraint to manual pickup.

5T Bald Eagle Nest

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

OTHER ECOLOGICAL CONSIDERATIONS

No disturbance to stream bed or banks. Restrict boat traffic to essential minimum. Avoid any unnecessary disturbance or damage to unloiled substrate and biota especially intertidal and subtidal algae and seagrass.

FOSC

[Signature]

Date

6/16/90

Prepared by

[Signature]

Date

6/14/90

ANAD STRM
100m Buffer Zone

BM-6

WORK
AREA

232-30-10350

232-30-10355

BM-5

Seabird
Colony

232-30-10375

BM-102



Exxon Company, USA



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

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

WORK PLAN ADDENDUM

Segment ST/BM-005

Subdivision A

Dated 5/22/90

MODIFICATION

1. REASON FOR MODIFICATION

- FOSC Request
- Landowner comments

2. ADJUSTMENT TO WORK PLAN

- No bioremediation

SHPO APPROVAL NEEDED YES _____ SHPO SIGNATURE _____
NO X

TAG APPROVAL DATE 5/31/90

ADEC ART WEINER Art Weiner

EXXON ANDY TALL Andy Tall

NOAA Joseph Talbott Joseph Talbott

USCG G.A. REITER G.A. Reiter

FOSC [Signature] DATE 5/31/90

SHORELINE EVALUATION

SEGMENT ST/ BM-05 SUBDIVISION A (1 OF 1) DATE 4/28/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
2M Herring spawning (4/1 to 6/15)
5S Shorebird/Waterfowl concentration (4/1 to 5/15)
5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6U Recreation: Tent sites (6/1 to 9/15)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

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

mo
5/15/90 ~~18~~

SHPO SIGNATURE: *[Signature]* DATE: 5/15/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 92 m: V.Light 276 m: No Oil 8262 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) manual pickup of pooled oil, and 2) bioremediation of areas as indicated on attached sketch map #2. Work should be conducted between 6/15 and 7/10 based on herring and salmon constraints, with USFWS approval regarding eagle nest.

SEE CONSTRAINTS ADDENDUM DATED 6/14/90

TAG COMMENTS: SPT WASH IF REQUIRED FOLLOWING REMOVAL OF POOLED OIL

TAG APPROVAL DATE: 5/15/90

DEC *[Signature]*
EXXON *[Signature]* FOSC: *[Signature]* DATE: 5-20-90
NOAA *[Signature]*
USCG *[Signature]*

REGION: KENAI

SEGMENT: ST/BM-06

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ BM-06 SUBDIVISION A (1 OF 1) DATE 4/28/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
2M Herring spawning (4/1 to 6/15)
4LL National Parks
5R Seabird colony (5/1 to 9/1)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 61 m: V.Light 575 m: No Oil 3056 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes manual pickup of pooled oil in area indicated on sketch map. Work should be conducted between 6/15 and 7/10 with approval of ADF&G and USFWS due to seabird colony, herring spawning and salmon stream constraints.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

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

USCG

NAME JERRY SCHULTZ

SIGNATURE Jerry Schultz

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ADEC

NAME Mike Ebel

SIGNATURE Michael Ebel

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

BM-6-A: From NW end of segment moving SE the following were observed: Three asphalt patches near lagoon (were retrieved); small drips of splash, stain/coat on bedrock (inconsequential); South of the sand beach (refer to sketch map) a splashy zone of mostly stem with small amounts of coat drips and 2 cobbles with cover spots was found in the area where the formerly observed tar mat existed (it was not seen); this led to a small band of pooled oil (4.5m L X 1m W) under the surface cover (con

LAND MANAGER NPS

NAME Michael Tetreau

SIGNATURE Michael Tetreau

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

Did not survey where no oil was noted before.

After an extensive survey of The area where oil was previously noted, we failed to find The tar mat documented on 3/12/90. We did find a 5m band of pooled oil similar to That at BM-5, but much more concealed under cobbles. This band could be manually removed. The coated cobbles and sandy tarballs That were found may be remnants of The

(cont.) BM-6-A SSAT 4/28/90 Mike Ebel ADEC

that had a broken distribution. This light brown oil apparently was the final remnant of the former contamination found on the shoreline. There was a moderate exposure to this beach and the evidence of one oiled cobble found in a test pit (no other found in the 5 pits around it) would suggest the beach had been broken up enough over the winter to disintegrate the tar mat; nevertheless, it was not found — nor was any subsurface oil encountered.

Recommended treatment (only because of the recreational use and the National Park status) would be to stir granular fertilizer (with rakes) into the area of pooled, surface (below cobbles) oil and allow natural washing to finish the work it has mostly performed.

* Note: refer to sketch map. END

Michael J. Ebel ADEC

SHORELINE OILING SUMMARY

REVISION NO 04-13-90

OG Randy Siegel USCG Terry Schulte (SEGMENT ST/ BM-6)
 BIO Lewis Shorman LAND REP Peter Zollar (CAG) (SUBDIVISION A) (1 OF 1)
 EXXON Leonard Herbst ADEC Mike Ebel TIME 13:40:15:00 *
 TEAM NO. 12 TIDE LEVEL 4.2' to 7.85' DATE 4/28/90
 EST. SUBDIVISION LENGTH: 2790 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: N to S
 SURFACE SEDIMENTS: R 5 % B 10 % C 30 % P 30 % G 10 % S 15 % M 0 % V 0 %
 SLOPE: Long 20 % Hang 90 % Vert 0 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 5 m VL 625 m NO 2160 m

SURFACE OIL

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

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

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS?

YES ☐ NO ☒TYPE AP/PT#BAGS 1Photographs: NoneRoll No. ST-12-7Frames 17

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	1	2	3	4	5	SU	U	M	L				
1	31					X	0-0		X						X					-	-	S
2	22					X	0-0		X						X					-	-	S
3	42					X	0-0		X						X					-	-	S
4	17					X	0-0		X						X					-	-	S, R
5	20					X	0-0		X							X				-	-	S, P
6	22					X	0-0		X							X				-	-	S, P

COMMENTS

* Survey actually ended at 1430 when tide window ended. Last 30 minutes spent digging pits in UI.

** One oiled pebble found in hole - depth unknown - no other oil in pit observed or in other nearby pits.

Segment consists of sand beach and pebble - cobble beach. The southern portion was not surveyed - tide window closed and no oil detected previously. A band of pooled oil found along length of shoreline, beneath cobbles. Very difficult to.

REVIEWED W DATE 4/30/90

SHORELINE OILING SUMMARY (PAGE 2)

REVISION 04-13-1

SEGMENT ST/ BM-6 SUBDIVISION A (2 OF 2)

SUBSURFACE OIL (CONTINUED)

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM - FEET)	BELOW		OIL / FILM COLOR								PIT ZONE				A N A	SHEEN (Y/N)	!	SURFAC SUBSURF SEDIMEN
		OP	OR	OL	OF	NO		VO	UC	BR	BL	GR	GP	GL	GU	LT	LB	SU	U	M	LI				
7	17					X	0-0		X										X				-	-	S
8	20					X	0-5		X										X				-	-	C, P
9	32					X	0-0		X										X				-	-	P, G
10	22					X	0-0		X										X				-	-	S, G
11	20					X	0-0		X											X			-	-	C, G
12	27					X	0-5		X						X				X				-	-	C, P, G
							.																		
							.																		
							.																		
							.																		
							.																		
							.																		
							.																		
							.																		
							.																		

COMMENTS

REVIEWED

JW

DATE

4/30/90

OG Randy Sigel
 SEGMENT ST/ 1-6
 SUBDIVISION A

Approx Scale
 800 meters

SKETCH MAP

→ N.

DATE 4/28/90

CHECKLIST

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

LEGEND

1
 P/L - No Subsurface Oil

2
 P/L - Subsurface Oil

Continuous Distribution

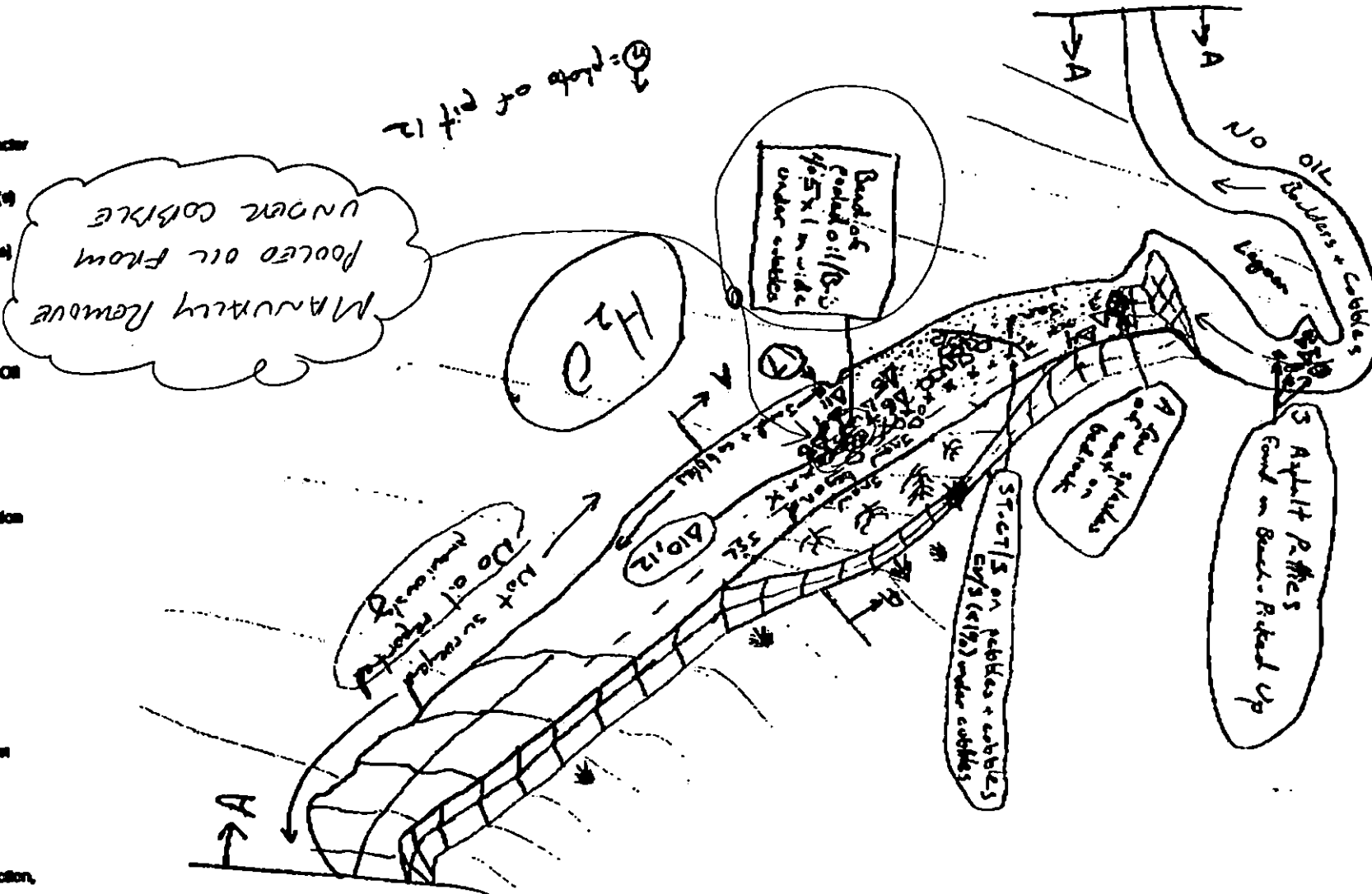
Broken Distribution

Patchy Distribution

Splashed Distribution

Oiled Vegetation

1
 Photo location, direction, and number



Oil Character Length (m): AP 0 PO 15 CV 50 CT 600 ST 600 MS 0 PT 0 TB 0 FL 0 NO 2160

SHORELINE ECOLOGICAL SUMMARY (Page 1 of 3)

REVISION: 001

Segment ST / B-6 Subdivision A Date (mo / day / yr) 4/28/90

Time (24 hr) 1355-1500 Biologist SHARMAN

(A) Substrate type and % of segments: SAND + granules
(1) Bedrock 5 (2) Boulder 10 (3) Cobble 30 (4) Pebble 30 (5) Sand 25 (6) Silt

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

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

Photographs: Roll No. ST-12-7

Frames 17

BARNACLES

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

MYTILUS

Dense			Moderate			Sparse			Rare			
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	NOT PRESE
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 (NACELLA, LITTORINA, LIMPETE)

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

FUCUS

Dense			Moderate			Sparse			Rare			
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	NOT PRESE
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: Did not observe LTZ. 1 pair myristicivora, 6 harlequin ducks, 1 cormorant, 1 subadult bald eagle. River otter tracks in sand LTZ. Adult black bear 200' above sea NW side of stream estuary. Fine-grained blacker have low densities of shells of *Sipidomys*, *Photolacca*, *Mytilus*, *Mya*, *Macoma*, *Chione*. Collected in stream estuary support some barnacles, (Cont.)

Ecological Considerations:

We received no information regarding resource sensitivity previously identified for this segment. The stream noted on the attached geo. map, however, is identified as anadromous (no ADF+G #) by Milner in a recent draft NPS report - he counted 3,000-5,000 pink + 25 sockeye salmon holding in the estuary last August. This estuary is apparently quite productive & clearly is important to terrestrial, marine, & anadromous (cont.)

22/10

B/M-6

Shoshone Ecological Summary (cont.)
(Page 2 of 3)

Shannon
4/28/90

General Comments (cont.):

Fucos, + Enteromorpha. Barnacles, mussels, gastropods, and Fucos appear to be recolonizing in low numbers (not abnormally low). For the beach types surveyed in this segment, the intertidal biota appears to be normal and healthy.

Ecological Considerations (cont.):

for foraging + resting habitat. It is likely an important rearing/nursery area for some local marine species, + a foraging area for terrestrial mammals. These types of areas typically are important biotically far beyond their aerial extent, as well as being highly sensitive to human intrusion and particularly physical disturbance of the substratum.

Page 3 of 3

BM-6

Eco. Map

Anadromous
stream

BM-6

BM-5

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

OOOO No Oil

BM-6

ADEC Segment Length: 5275m

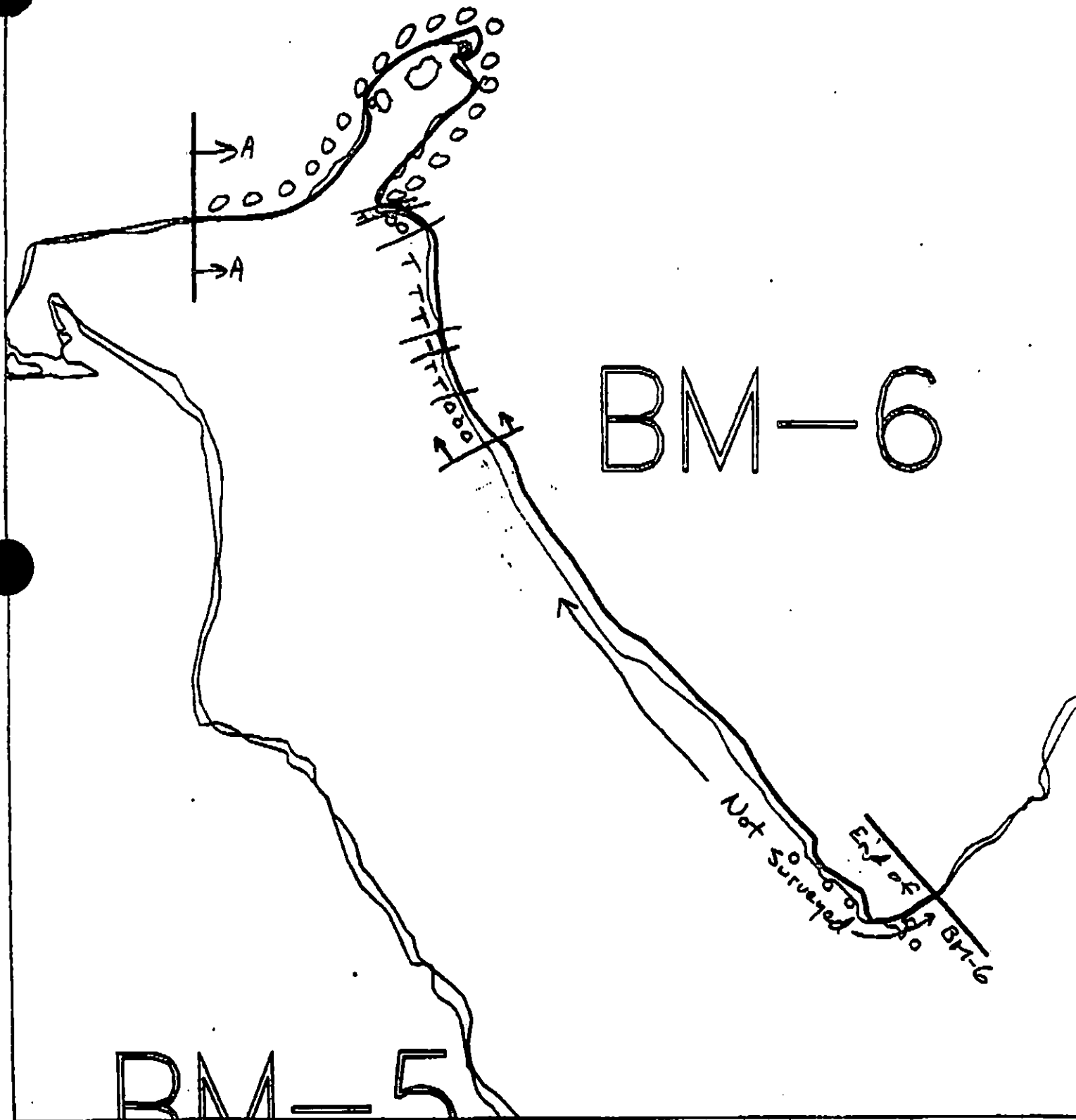
0 500 600 700

Map Key: KEN-24

Name: _____

Date: _____

Data Entered: 1/1



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

OOOO No. 0:1

BM-6

ADEC Segment Length: 9275m



Map Key: KEN-24

Name: E. J. Siegel

Date: 4/28/90

Date Entered: 1.1r

SHORELINE EVALUATION

SEGMENT ST/ BM-06 SUBDIVISION A (1 OF 1) DATE 4/28/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

- 1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
- 1B Salmon stream mouth - spawning (7/10 to 8/31)
- 2M Herring spawning (4/1 to 6/15)
- 4LL National Parks
- 5R Seabird colony (5/1 to 9/1)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: *Paul M. Mahan*

DATE: 5/11/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 61 m: V.Light 575 m: No Oil 3056 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes manual pickup of pooled oil in area indicated on sketch map. Work should be conducted between 6/15 and 7/10 with approval of ADF&G and USFWS due to seabird colony, herring spawning and salmon stream constraints.

TAG COMMENTS: FOLLOWING MANUAL REMOVAL OF POOLED MOUSSE APPLY CUSTOMBLEN TO ANY REMAINING OIL.

TAG APPROVAL DATE: 5/11/90.

ADEC *Art Weimer*
EXXON *Amy Tom*
NOAA *Joseph Talbot*
USCG *D.D. Rome*

FOSC: *[Signature]*

DATE: 5-15-90

Add custumblen to the 5m x 1m patch after pooled mousse has been removed.

OG Rand Siegel
SEGMENT ST BT-6

Approx scale
900 meters

SCH MAP

N

SUBDIVISION A

DATE 4/28 90

CHECKLIST

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

LEGEND

1 Δ
Pit - No Subsurface Oil

2 Δ
Pit - Subsurface Oil

CT/C
Continuous Distribution

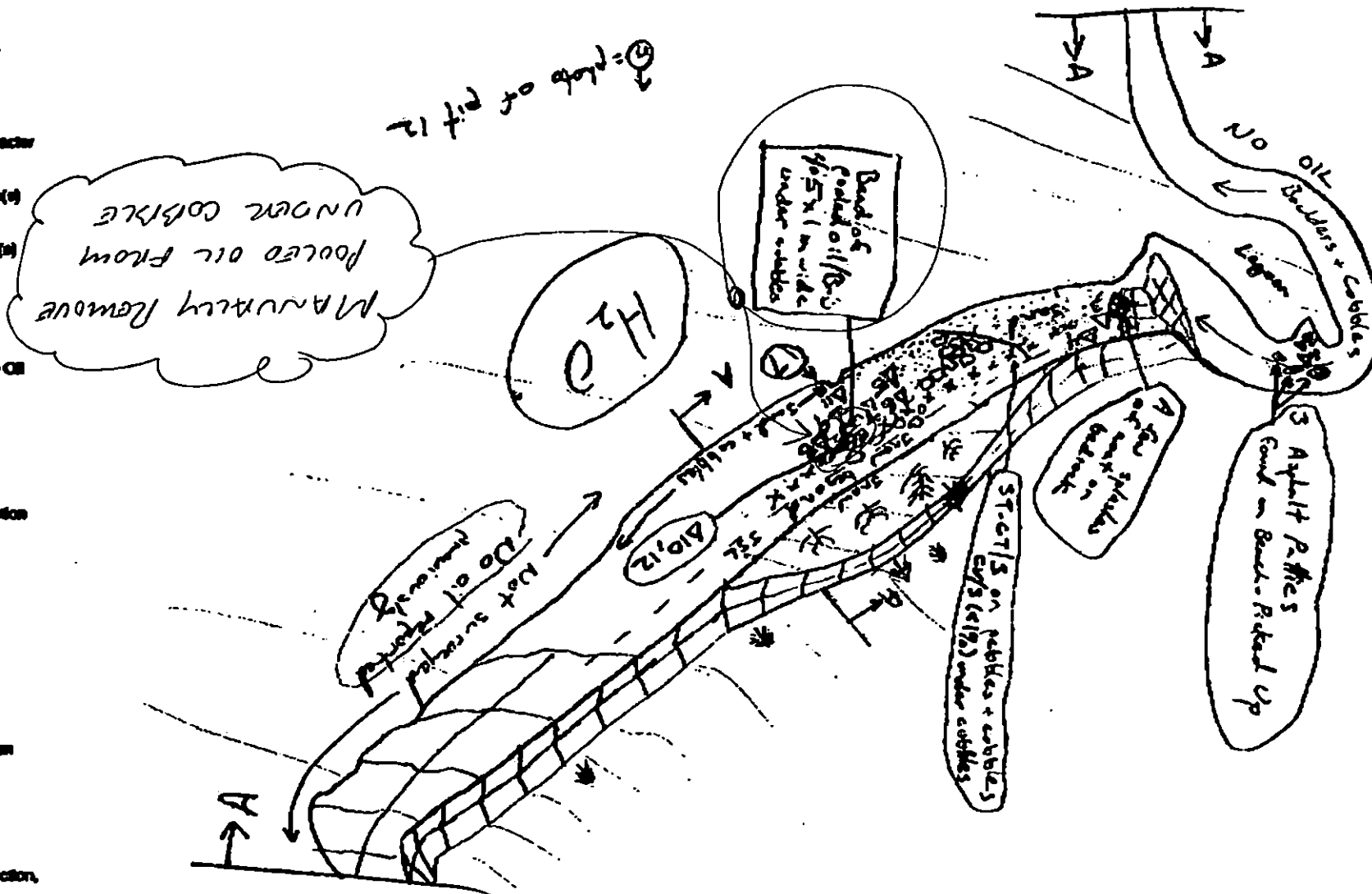
CT/B
Broken Distribution

CT/P
Patchy Distribution

CT/S
Splashed Distribution

eee
Oiled Vegetation

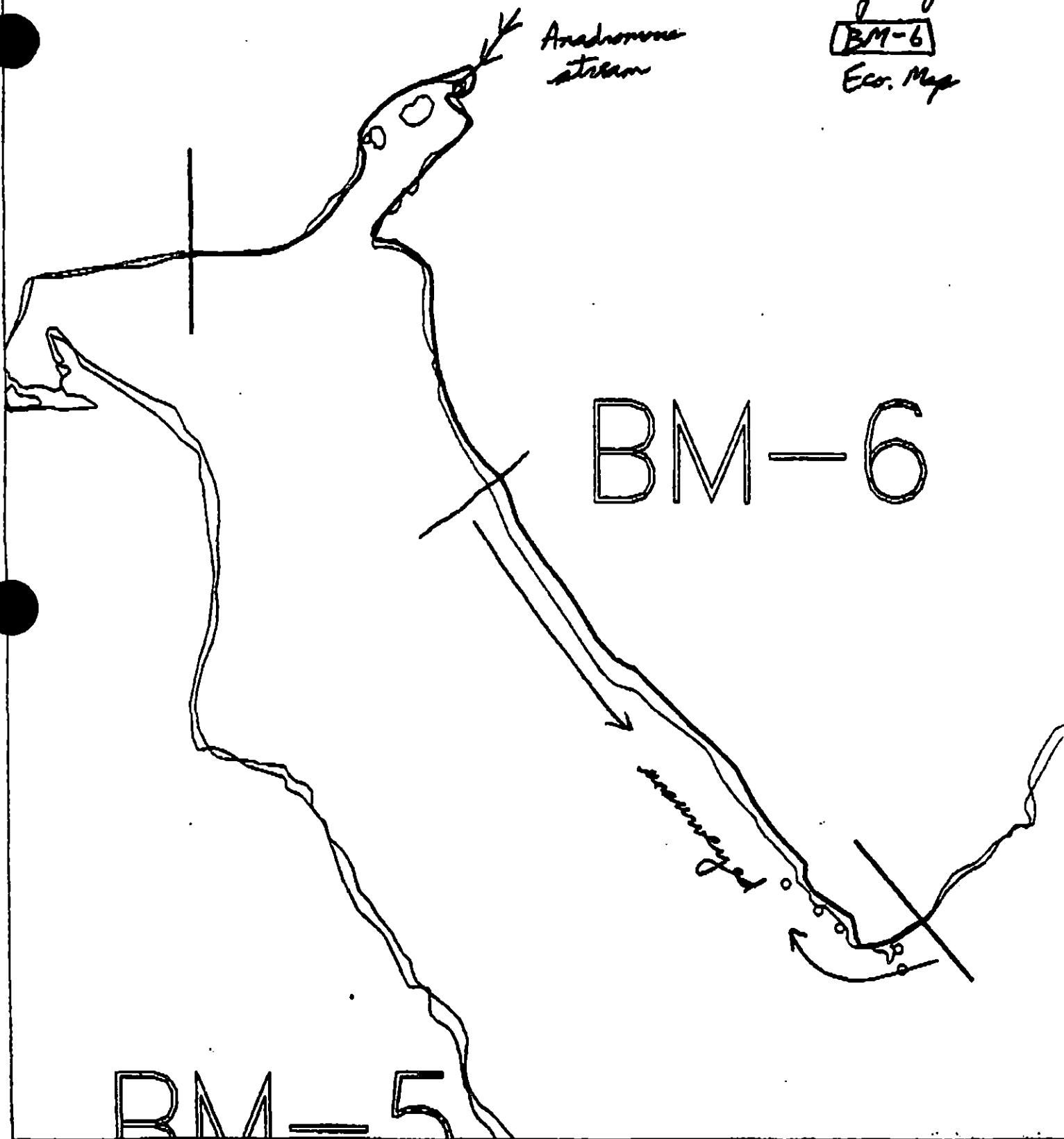
1 $\rightarrow$
Photo location, direction,
and number



Oil Character Length (m): AP ϕ PO 15 CV 50 CT ~~600~~ ST ~~600~~ MS ϕ PT ϕ TB ϕ FL ϕ NO ~~2160~~

REVISION 003400

Page 3 of 3
 BM-6
 Eco. Map



XXXX Wide

//// Medium

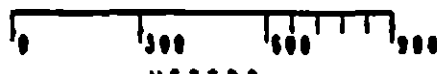
--- Narrow

TTTT Very Light

OOOO No Oil

BM-6

ADEC Segment Length: 5275m

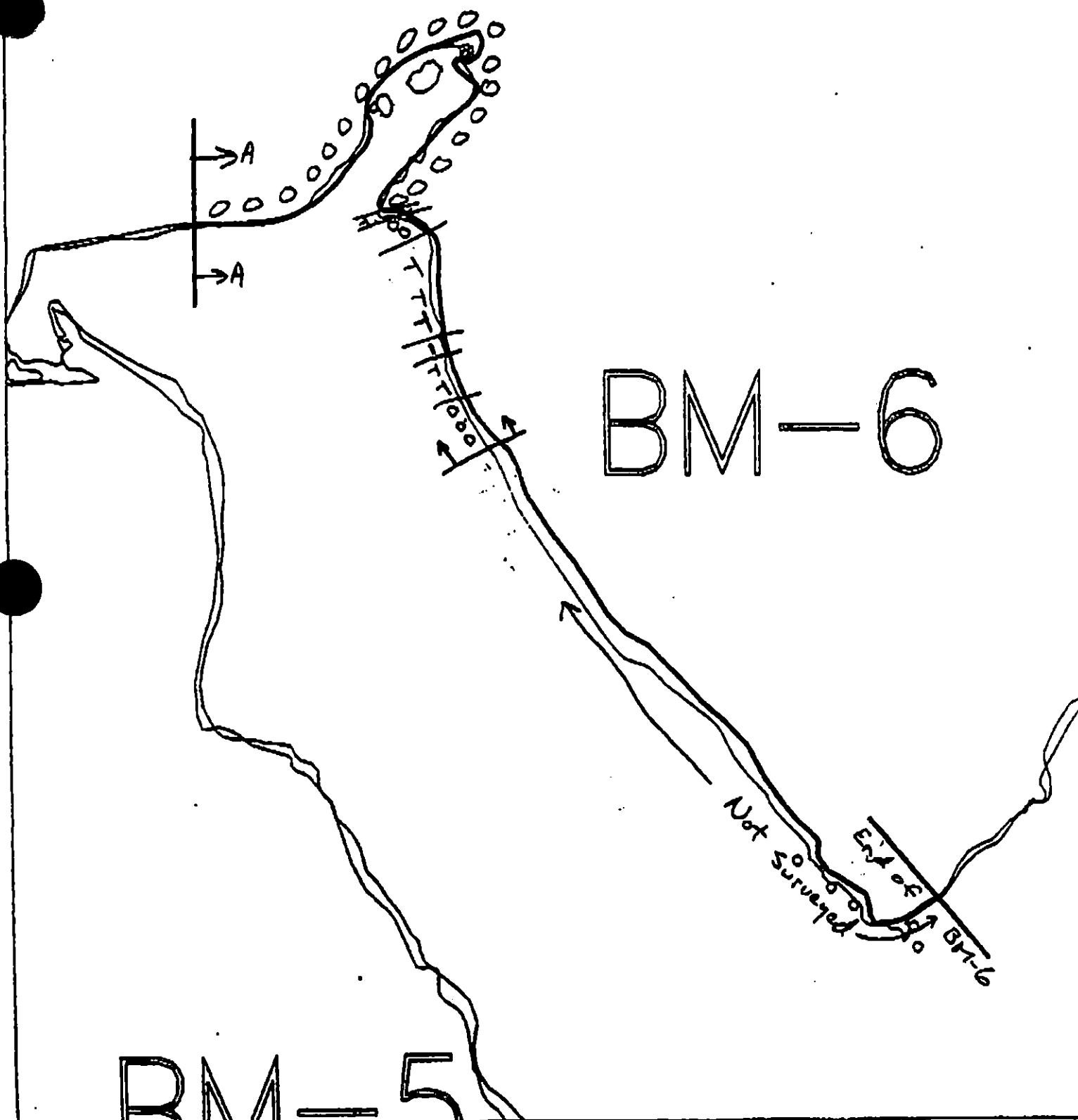


Map Key: KEN-24

Name: _____

Date: _____

Data Entered: 1/1/1



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

BM-6

ADEC Segment Length: 5275m



Map Key: KEN-24

Name: *R. J. Siegel*

Date: *4/28/90*

Data Entered: *25/11/90*

1991 MAYSAP EVALUATION

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

ENVIRONMENTAL SENSITIVITIES:

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

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: _____ Date: _____

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____

FOSC APPROVAL DATE: _____

ADEC _____

FOSC _____

EXXON _____

USCG _____

NOAA _____

ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

Herring Spawning: No treatment before June 1. Avoid disturbance to kelp and eelgrass.

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

TEAM NO. 4 SEGMENT 37. 006 . A SUBDIVISION A DATE May 13 1991

ADEC

NAME

CLARA S. CROSBY

SIGNATURE

CLARA S. CROSBY☒ NTR

Based on this survey I would not recommend treatment.

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles 5/13/91☒ NTR

No oil was observed therefore I recommend no treatment.

LANDMANAGER

NAME

Michael D. Tetreau OF NPS

SIGNATURE

Michael D. Tetreau☒ NTR

No oil was observed except for some possible stain on cobbles. The beach has changed quite a bit and There is more sand than before. No oil could be found at The site That was worked in 1990.

USCG/NOAA

NAME

CD02 J. MC MAHON

SIGNATURE

J. Mc Mahon☒ NTR

NO OIL OBSERVED.

NOAA

DAVID N. MACDONALDDavid N. MacDonald

PAGE 2 OF 8

SEGMENT 137.006

SUBDIVISION A

DATE 7A-1 / 13 / 91

ENERGY LEVEL: ☒ H ☐ M ☐ L

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

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

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

DISTRIBUTION: C = 81-100%; B = 61-80%; P = 41-60%; S = 1-10%; T = <1%

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

MAY 500 4.2. 22 to end.

PHOTO ROLL & MAYSAP-

FRAMES

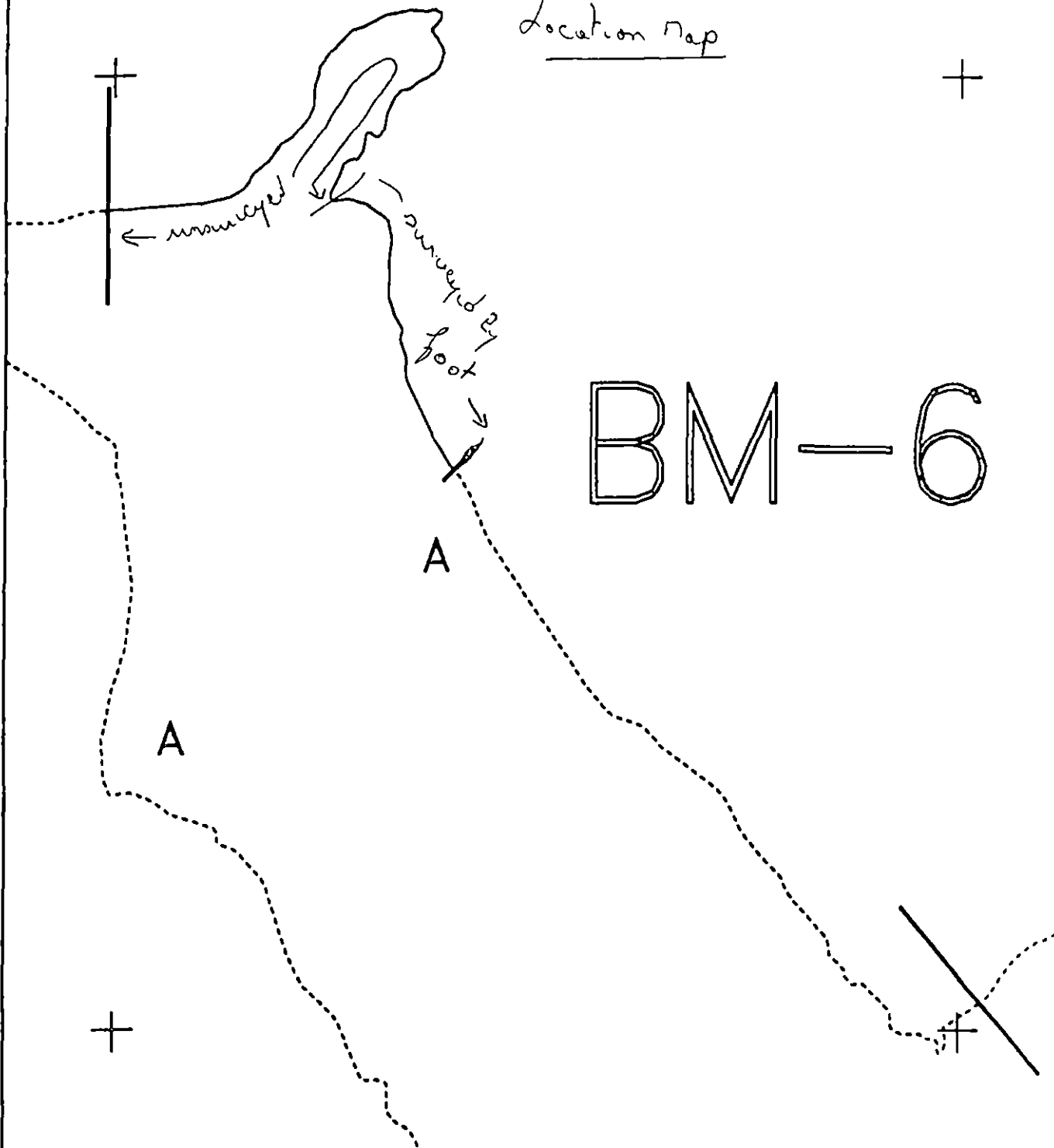
SHEEN COLOR: B = BROWN: R = RAINBOW: S = SILVER: N = NONE

OG COMMENTS:

OG COMMENTS: Long moderately sloping beach, well sorted sand at northern extremity, pebbles/cobbles under ocean sand/pebbles elsewhere. Bedrock backshore at northern extremity, and grassy backshore to the south. Clear logs on the well developed dune. No oil found.

ST raised S/no

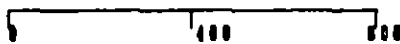
Location map



BM006 A



METERS



1E State Plane Zone 4
NAD83

Subdivision Field Map

Map Key: KENBM006Aa

Name: J. A. Simpson

Date: May 13/21

25 reviewed 5/16

Obj Sketch Map

BH 006.A

In Samples

MAY 13/91

0650 - 0705

Legend

Bedrock

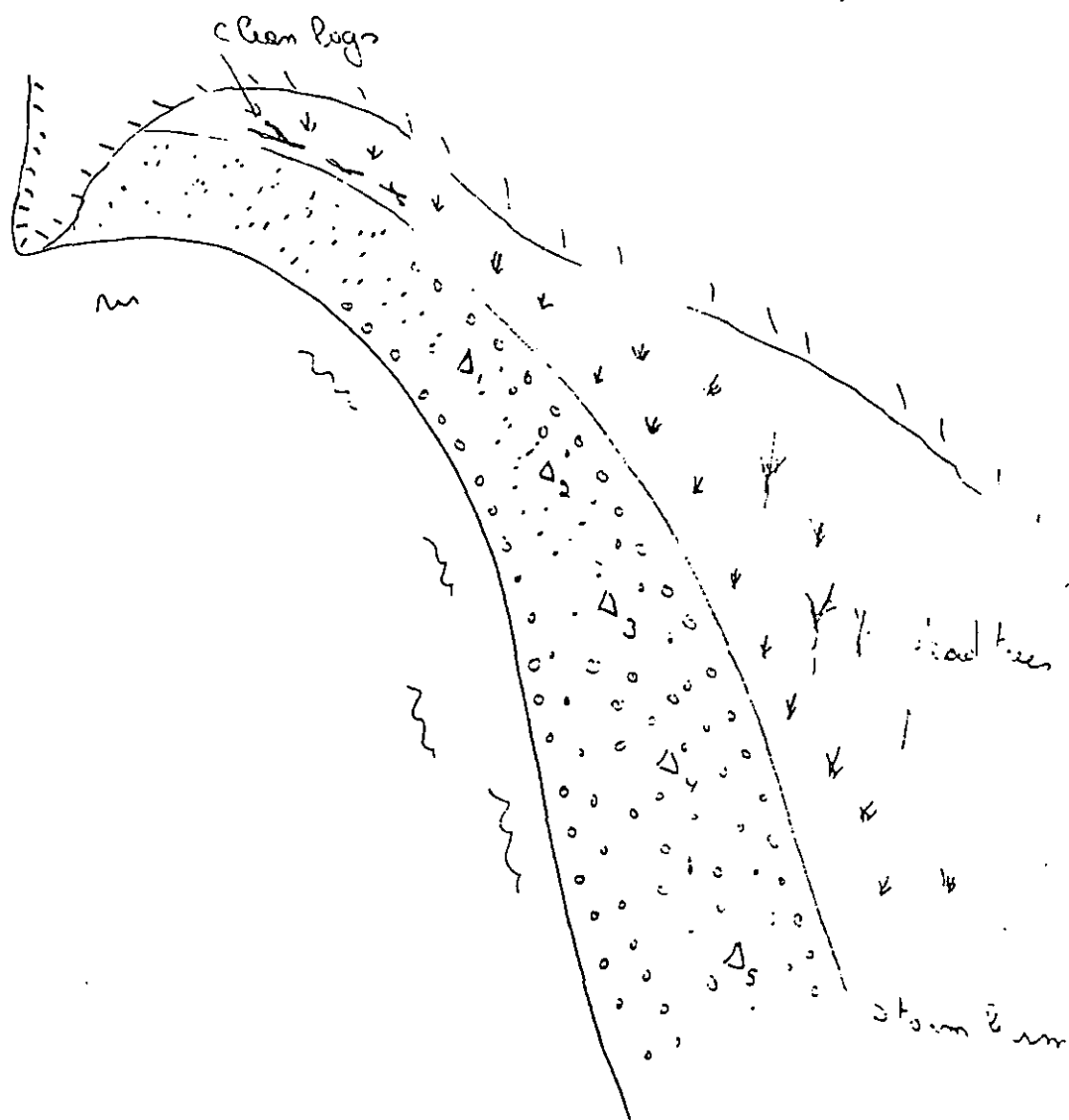
Sand

cb/pb

vegetative
backshore

0 100
meters

N



removed the fire
as removed s/w

HAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 13, 1991 0650 - 0705
SEGMENT #	BM006	TIDAL HEIGHT (Range)	-1.8 => -2.2
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Location I (A1)

This beach is composed of sandy sediment in the central portion of the bay and cobble/pebble/sand towards the southern end of the subdivision. No Oil was found on this beach.

The sandy beach has little biota. Biota are also sparse on the upper intertidal zone of cobble/pebble portion of the beach and somewhat dense zonation in the lower zones. Barnacles are sparse in the upper zone below the storm berm and increase in abundance in the lower zones. Fucus is moderately abundant in the middle zone, as are mussels. These species decrease in abundance through the middle zone and are replaced by red algae and barnacles (Semibalanus) in the low zone. Several other species are abundant under and amongst cobble on this segment. Isopods, amphipods, small pricklyback fishes, littorine snails, limpets, polychaete worms, nemertean worms, and bryozoans are quite abundant in the lowest zone. Large brown algae are the dominant biota of the shallow subtidal zone, and eel grass appears to be common along the sandy portion of the beach.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	4	27	
Waterfowl	4	48	
Gulls/Kittiwakes	2	25	
Shorebirds	3	13	
Corvids			
Other Birds			

Recorded w/ BM005
M.B. 5/16/91

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters		River Otter	Tracks
Pinnipeds (specify)		Fox	Tracks
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

Reviewed M.B. 5/16/91

Common Species found on BH006-B

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Agarum fimbriatum, Costaria costata, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Laminaria saccharina, Nereocystis leutkeana, Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Cryptosiphonia woodii, Cumagloia andersonii, Endocladia muricata, Halosaccion glandiforme, 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.
2. Anemones
Anthopleura artemesia, 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., Crucigera sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
11. Mollusca
 - a. Chitons
Mopalia sp., Katharina tunicata, Tonicella lineata,
 - b. Snails - Gastropods
Littorina sp., Natica clausa, N. lima,
 - c. Limpets
Lottia sp., Tectura persona, T. scutum, Siphonaria thersites, S. sp.
 - e. Mussels and Clams
Agriodesma saxicola, Chlamys hastata, Clinocardium sp., C. nuttalli, Hiatella arctica, Macoma sp., Modiolus modiolus, Mya arenaria (soft-shell clam), Mytilus edulis, Pododesmus cepio, Prototheca staminea
12. Echinoderms
 - b. Sea stars - Orthasterias keohleri, Pisaster ochraceus, Pycnopoda helianthoides, Solaster sp.
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Microporina borealis, Schizoporella sp.
15. Fishes
Stichaeidae - Xiphister atropurpureus, X. mucosus

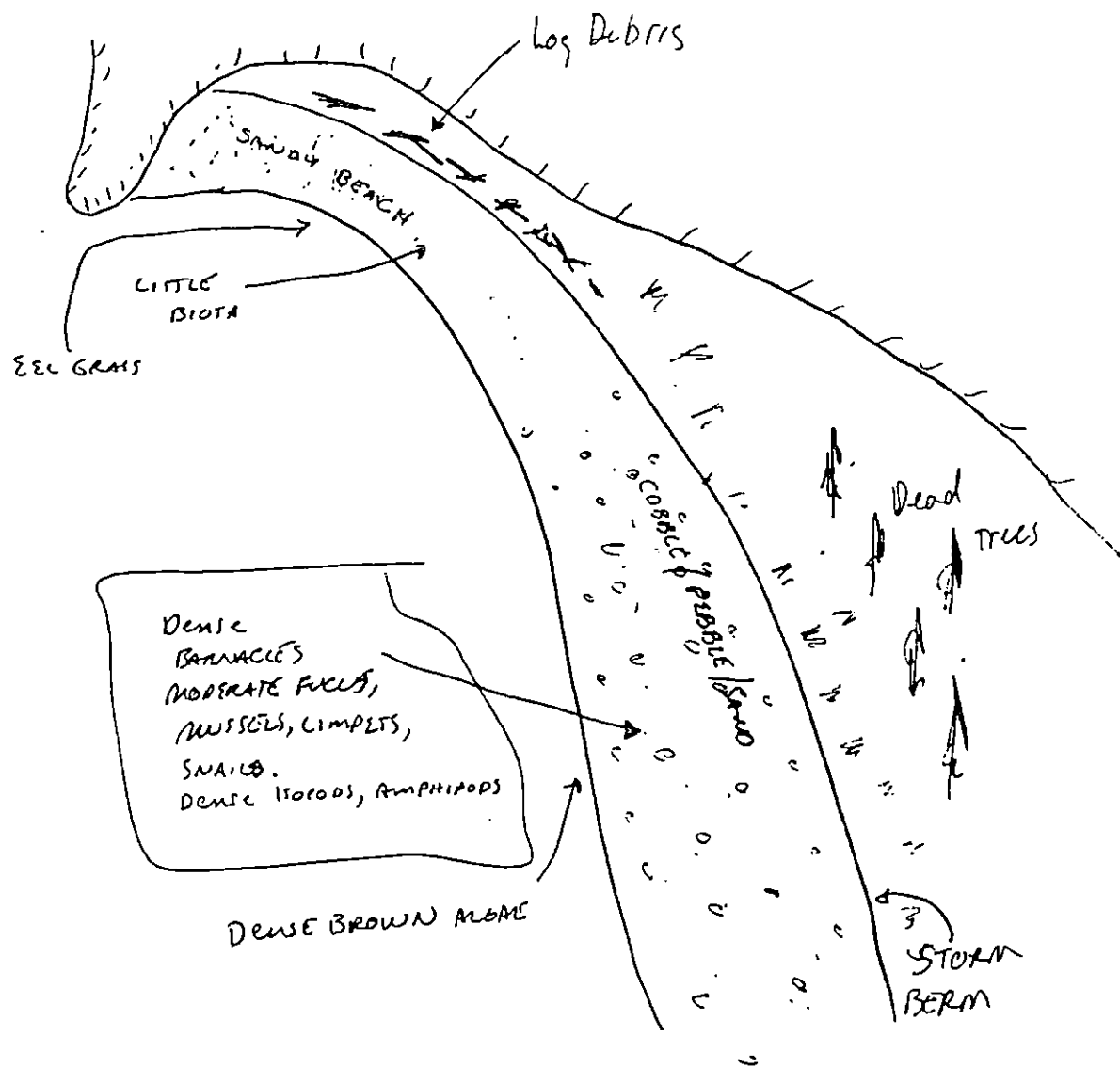
DIO SKETCH MAP

BM006-A

JP BARRY

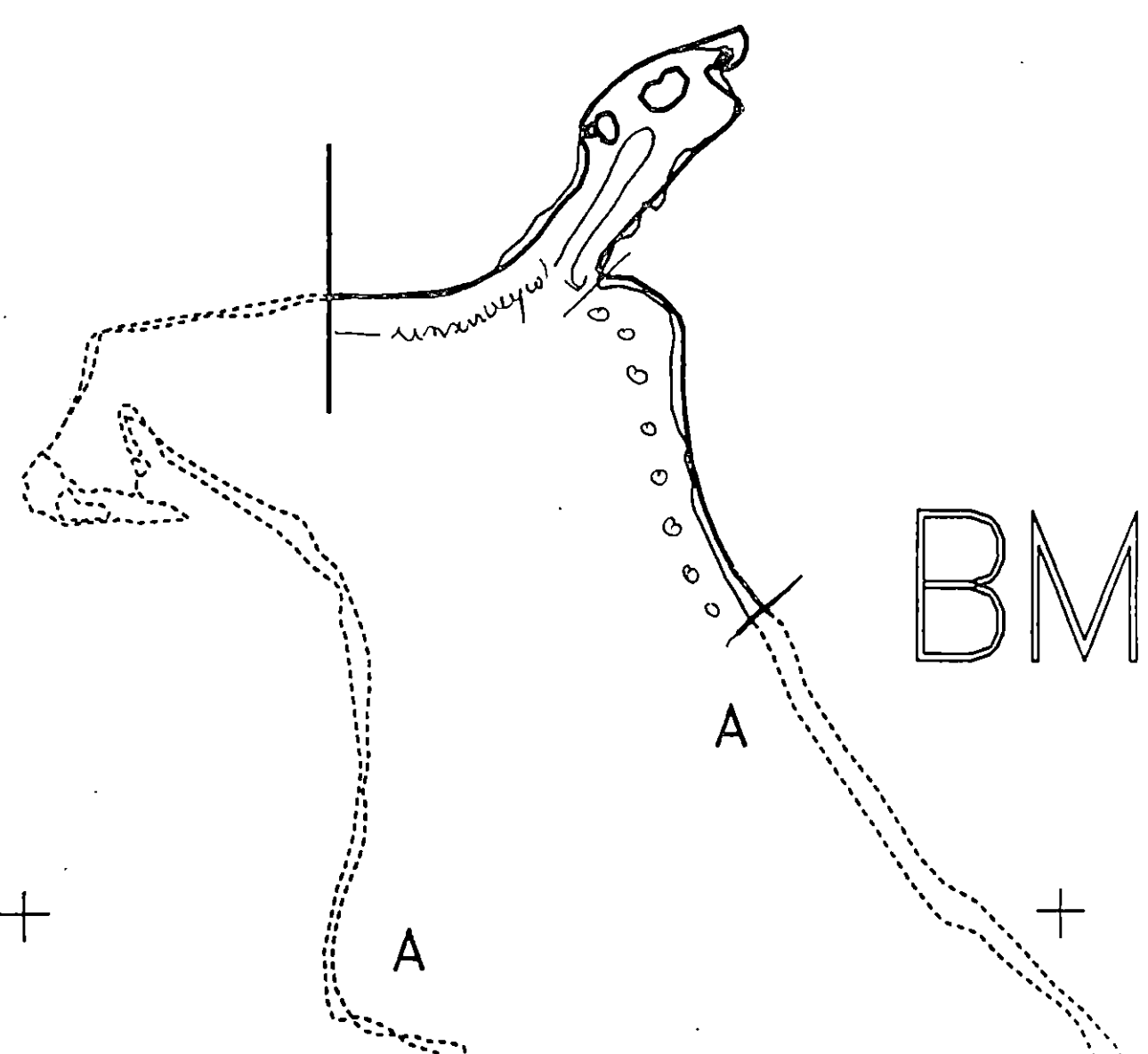
13 MAY 91

0650-0705



Reviewed M.B. 5/16/91

+



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

BM006 A
ADEC Subsegment Length: 3692m
METERS
AK State Plane Zone 4
abm006a



Subdivision Field Map
Map Key: KENBM006A
Name: J M Sample
Date: MAY 13/91
Date Entered:

1991 MAYSAP EVALUATION

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

ENVIRONMENTAL SENSITIVITIES:

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

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: Lachel Don Owen Date: 5/24/91

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

N

A

A

h

h

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Custombien

Other

Other

COMMENTS :

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: MAY 24 1991

FOSC APPROVAL DATE: 5/29/91

ADEC

FOSC

EXXON

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

USCG

NOAA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Herring Spawning: No treatment before June 1. Avoid disturbance to kelp and eelgrass.

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

MAYSAP FIELD SHORELINE COMMENT SHEET BM006-A

1/8

TEAM NO. 4 SEGMENT BM 006 A SUBDIVISION A DATE May 13 / 91

ADEC

NAME

CLARA S. Crosby

SIGNATURE

CLARA S. Crosby☒ NTR

Based on this survey I would not recommend treatment.

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles 5/13/91☒ NTR

No oil was observed therefore I recommend no treatment.

LANDMANAGER

NAME

Michael D. Tetreau OF NPS

SIGNATURE

Michael D. Tetreau☒ NTR

No oil was observed except for some possible stain on cobbles. The beach has changed quite a bit and there is more sand than before. No oil could be found at the site that was worked in 1990.

USCG/NOAA

NAME

CWO2 J. MC MAHON

SIGNATURE

J. Mc Mahon☒ NTR

NO OIL OBSERVED.

NOAA

DAVID A. McDONALDDavid A. McDonald

PAGE 2 OF 8

SEGMENT 37.006

SUBDIVISION A

DATE 7A-1 / 13 / 91

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

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

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

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

MAY 5AD 4.2. 22 to end.

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

PHOTO ROLL # MAYSAP-

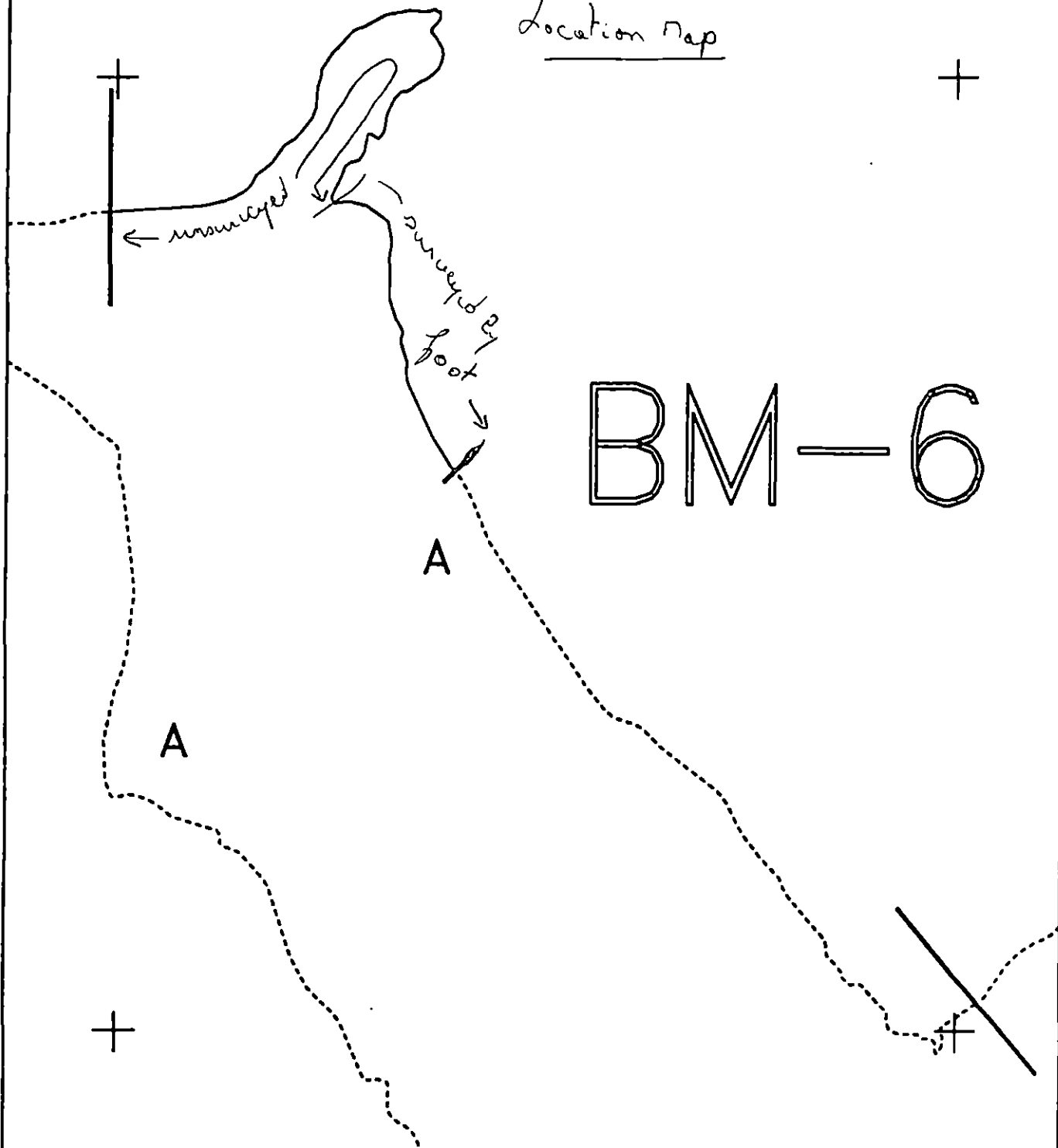
FRAMES

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

OG COMMENTS: Long moderately sloping beach, well sorted sand
at northern extremity, pebble/cobble veneer over sand/pl/cb
elsewhere. Bedrock backshore at northern extremity, wide grassy
backshore to the south. Clean logs on the well developed berm.
No oil found

revised 5/16/91 Kiz
ET revised 5/16

Location Map



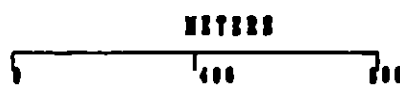
BM006 A

Subdivision Field Map

Map Key: KENDM006Aa

Name: J. M. Simpson

Date: MAY 13/91



AK State Plane Zone 4
NAD83

25 revised 5/16

og sketch map

Legend

BM 006.A

[diagonal lines] Bedrock

[dots] Sand

[circles] cb/pb

[v] vegetated
backshore

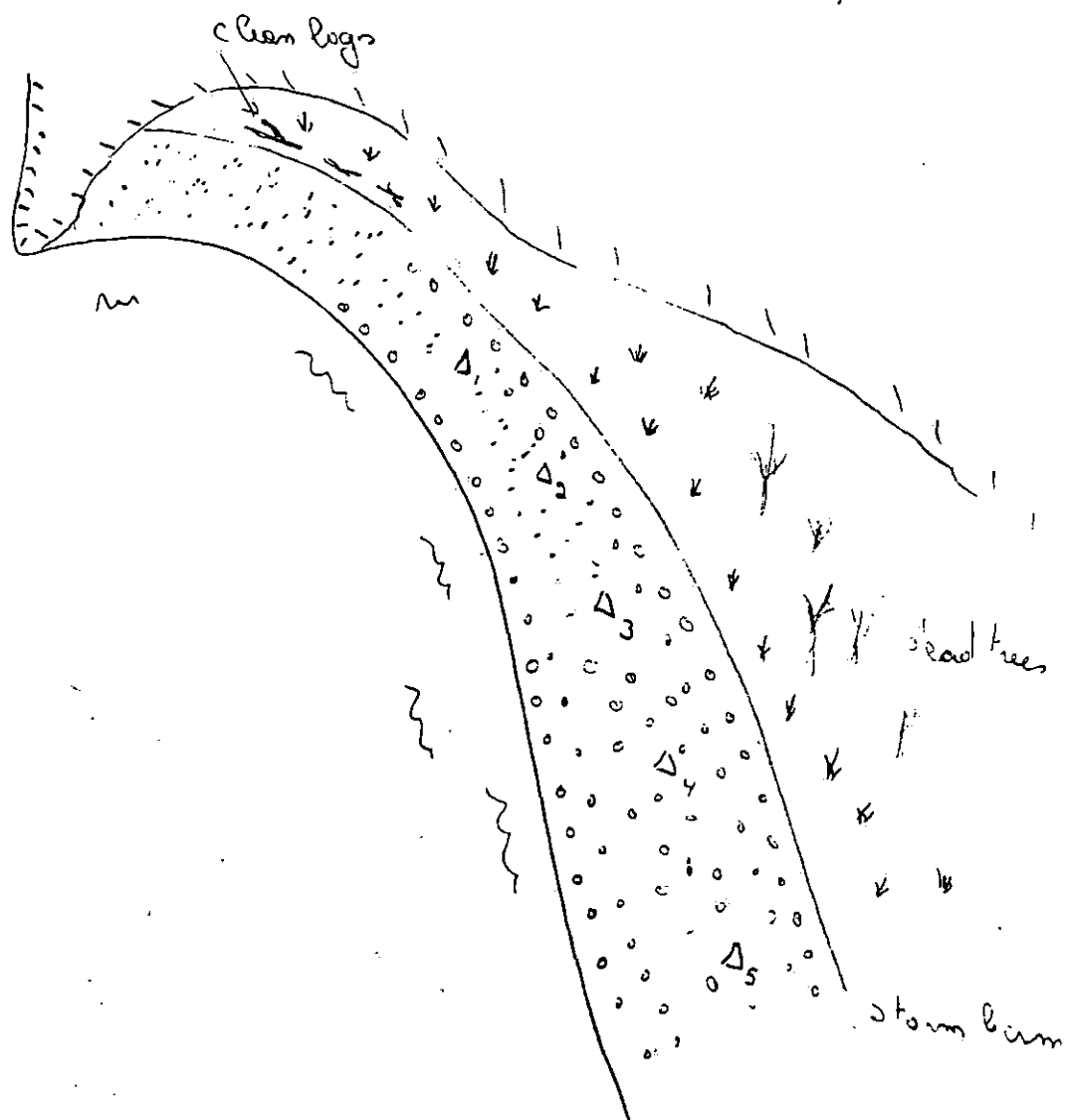
27 Samples

MAY 13/91

0650 - 0705

meter
0 100

N

reviewed 5/16/91 KB
ES reviewed 5/16

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 13, 1991 0650 - 0705
SEGMENT #	BM006	TIDAL HEIGHT (Range)	-1.8 => -2.2
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Location I (A1)

This beach is composed of sandy sediment in the central portion of the bay and cobble/pebble/sand towards the southern end of the subdivision. No Oil was found on this beach.

The sandy beach has little biota. Biota are also sparse on the upper intertidal zone of cobble/pebble portion of the beach and somewhat dense zonation in the lower zones. Barnacles are sparse in the upper zone below the storm berm and increase in abundance in the lower zones. Fucus is moderately abundant in the middle zone, as are mussels. These species decrease in abundance through the middle zone and are replaced by red algae and barnacles (Semibalanus) in the low zone. Several other species are abundant under and amongst cobble on this segment. Isopods, amphipods, small prickleback fishes, littorine snails, limpets, polychaete worms, nemertean worms, and bryozoans are quite abundant in the lowest zone. Large brown algae are the dominant biota of the shallow subtidal zone, and eel grass appears to be common along the sandy portion of the beach.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	4	27	
Waterfowl	4	48	
Gulls/Kittiwakes	2	25	
Shorebirds	3	13	
Corvids			
Other Birds			

Recorded w/ BM005 A
M.B. 5/16/91

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters		River Otter	Tracks
Pinnipeds (specify)		Fox	Tracks
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

Reviewed M.B. 5/16/91

BM006-B Biology Report, continued

Common Species found on BM006-B

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Agarum fimbriatum, Costaria costata, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Laminaria saccharina, Nereocystis leutkeana, Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Cryptosiphonia woodii, Cumagloia andersonii, Endocladia muricata, Halosaccion glandiforme, 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.
2. Anemones
Anthopleura artemesia, 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., Crucigera sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - d. Isopods - Cirrana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
11. Mollusca
 - a. Chitons
Mopalia sp., Katharina tunicata, Tonicella lineata,
 - b. Snails - Gastropods
Littorina sp., Natica clausa, N. lima,
 - c. Limpets
Lottia sp., Tectura persona, T. scutum, Siphonaria thersites, S. sp.
 - e. Mussels and Clams
Agriodesma saxicola, Chlamys hastata, Clinocardium sp., C. nuttalli, Hiatella arctica, Macoma sp., Modiolus modiolus, Mya arenaria (soft-shell clam), Mytilus edulis, Pododesmus cepio, Prototheca staminea
12. Echinoderms
 - b. Sea stars - Orthasterias keohleri, Pisaster ochraceus, Pycnopoda helianthoides, Solaster sp.
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Microporina borealis, Schizoporella sp.
15. Fishes
Stichaeidae - Xiphister atropurpureus, X. mucosus

BIO SKETCH MAP

BMO06-A

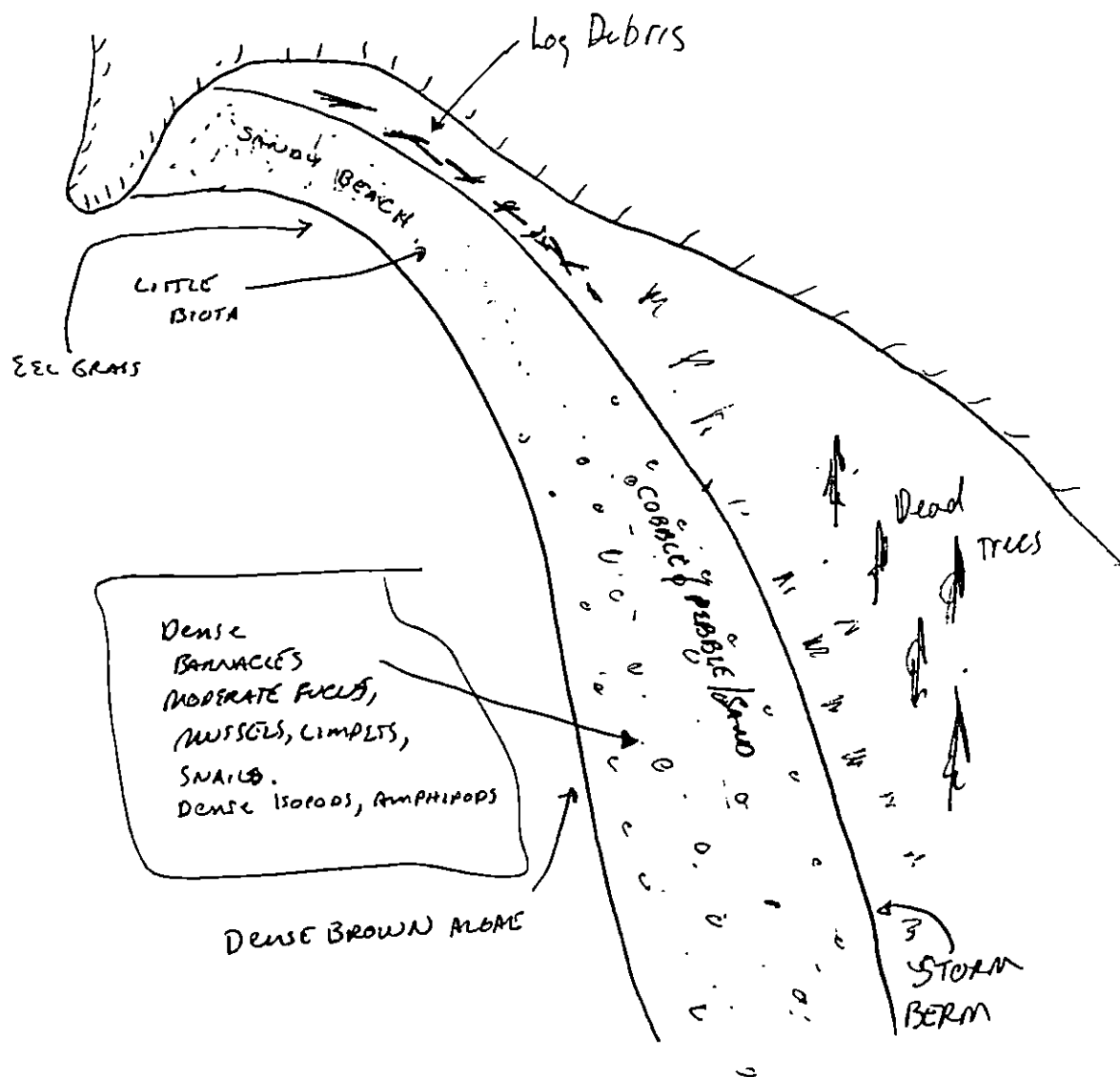
JP BARRY

13 MAY 91

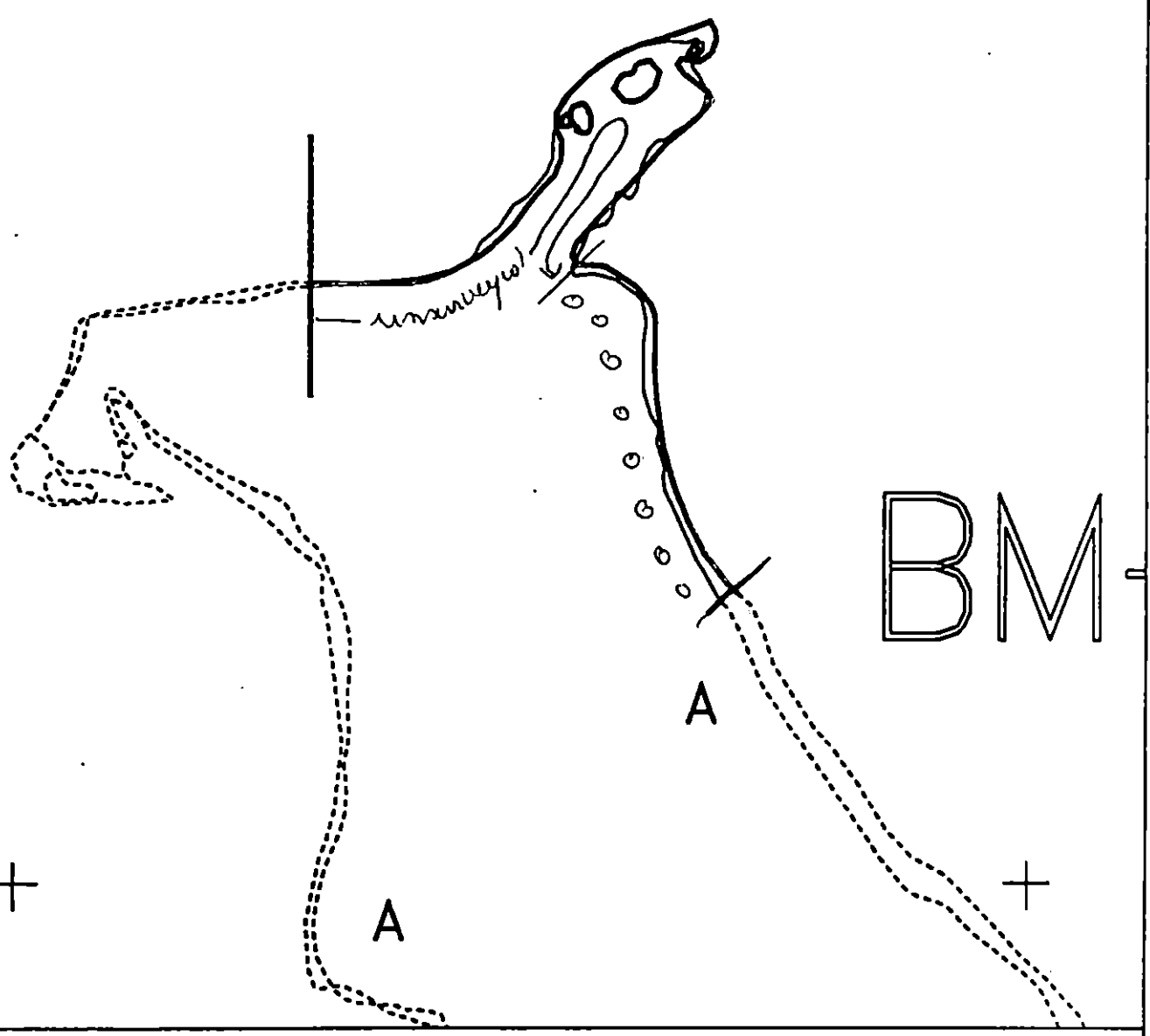
0650-0705

BMO06-A

4/8



Reviewed M.B. 5/16/91



XXXX	Wide	BM006 A ADEC Subsegment Length: 3692m METERS 0 400 800 AK State Plane Zone 4 55m006a	 	Subdivision Field Map
////	Medium			Map Key: KENBM006A
----	Narrow			Name: <u>for Sample</u>
TTTT	Very Light			Date: <u>May 13/91</u>
0000	No Oil			Date Entered:

reviewed 5/16/91 K6
SC reviewed 5/16

1991 MAYSAP EVALUATION

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

ENVIRONMENTAL SENSITIVITIES:

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

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: Lackl Jan Doe Date: 5/24/91

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

N

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: MAY 24 1991

FOSC APPROVAL DATE: 5/29/91

ADEC

FOSC

EXXON

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

USCG

NOAA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Herring Spawning: No treatment before June 1. Avoid disturbance to kelp and eelgrass.

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

TEAM NO. 4 SEGMENT BM. 006. A SUBDIVISION A DATE May 13 1991

ADEC

NAME

CLARA S. Crosby

SIGNATURE

CLARA S. Crosby☒ NTR

Based on this survey I would not recommend treatment.

EXXON

NAME

George P. Stiles

SIGNATURE

George P. Stiles 5/13/91☒ NTR

No oil was observed therefore I recommend no treatment.

LANDMANAGER

NAME

Michael D. Tetream OF NPS

SIGNATURE

Michael D. Tetream☒ NTR

No oil was observed except for some possible stain on cobbles. The beach has changed quite a bit and there is more sand than before. No oil could be found at the site that was worked in 1990.

USCG/NOAA

NAME

CWO2 J. MC MAHON

SIGNATURE

J. Mc Mahon☒ NTR

NO OIL OBSERVED.

NOAA

DAVID A. Mc DONALDDavid A. McDonald

PAGE 2 OF 8

SEGMENT B7: 006

SUBDIVISION A

DATE 7-1-13 / 91

ENERGY LEVEL: ☒ H ☐ M ☐ L

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

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

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

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

MAY 5AD 4.2. 22 To end

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

PHOTO ROLL # MAYSAP-

FRAMES

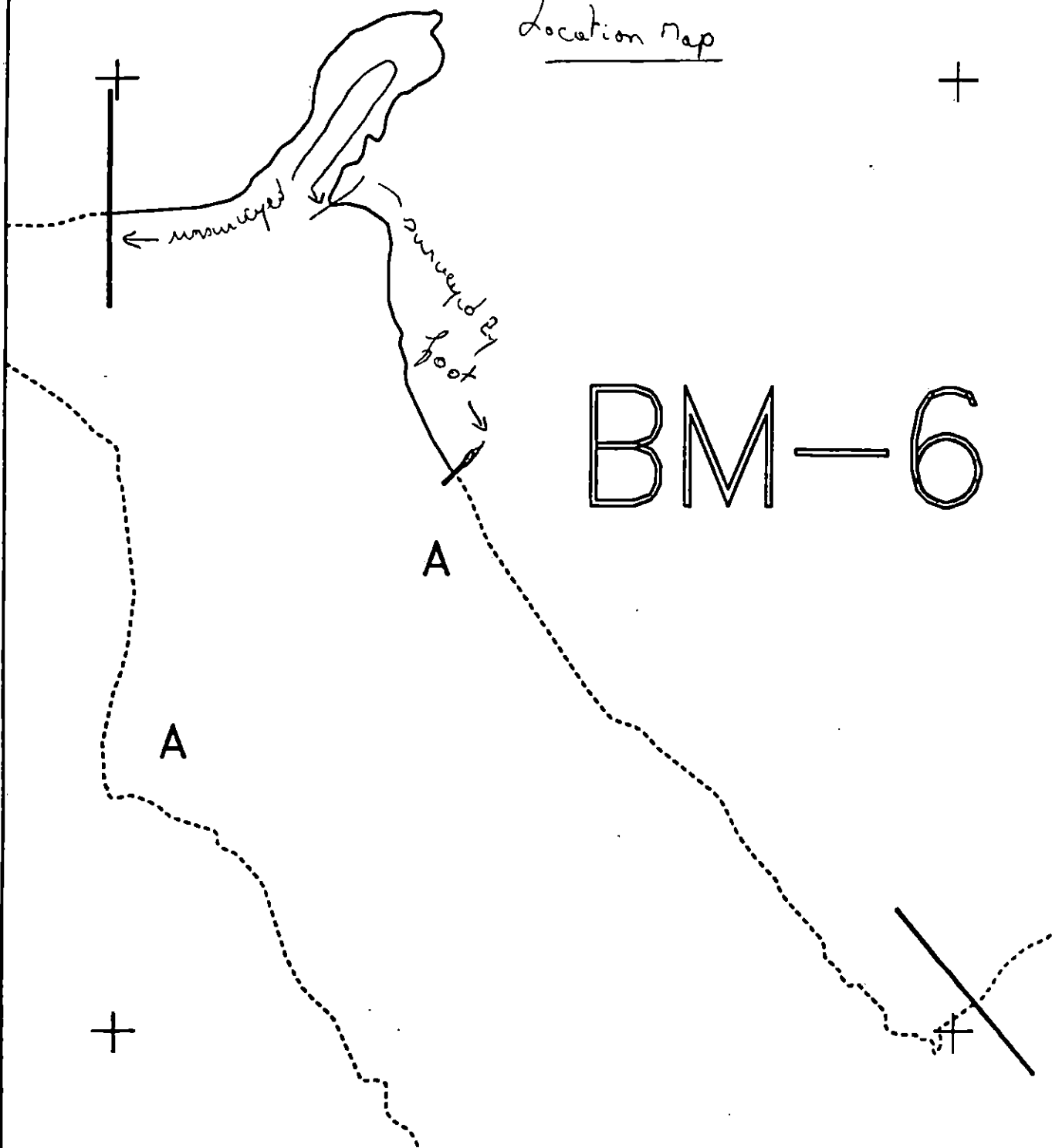
SHEEN COLOR: B = BROWN: R = RAINBOW: S = SILVER: N = NONE

OG COMMENTS:

OG COMMENTS: Long moderately sloping beach, well sorted sand at northern extremity, pebble/cobble veneer over sand/pl/cb elsewhere. Bedrock backshore at northern extremity, wide grassy backshore to the south. Clean logs on the well developed berm. No oil found

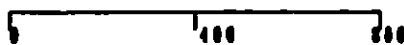
raised 5/16/91 KG
ET raised 5/16

Location map



BM006 A

METERS



AK State Plane Zone 4
Datum: NAD 83

Subdivision Field Map

Map Key: KENH0006Aa

Name: J. M. Simpson

Date: MAY 13/91

25 reviewed 5/16

og sketch map

Legend

BM 006.A

[diagonal lines] Bedrock

In Samples

[dots] Sand

MAY 13/91

[square with cross] cb/pb

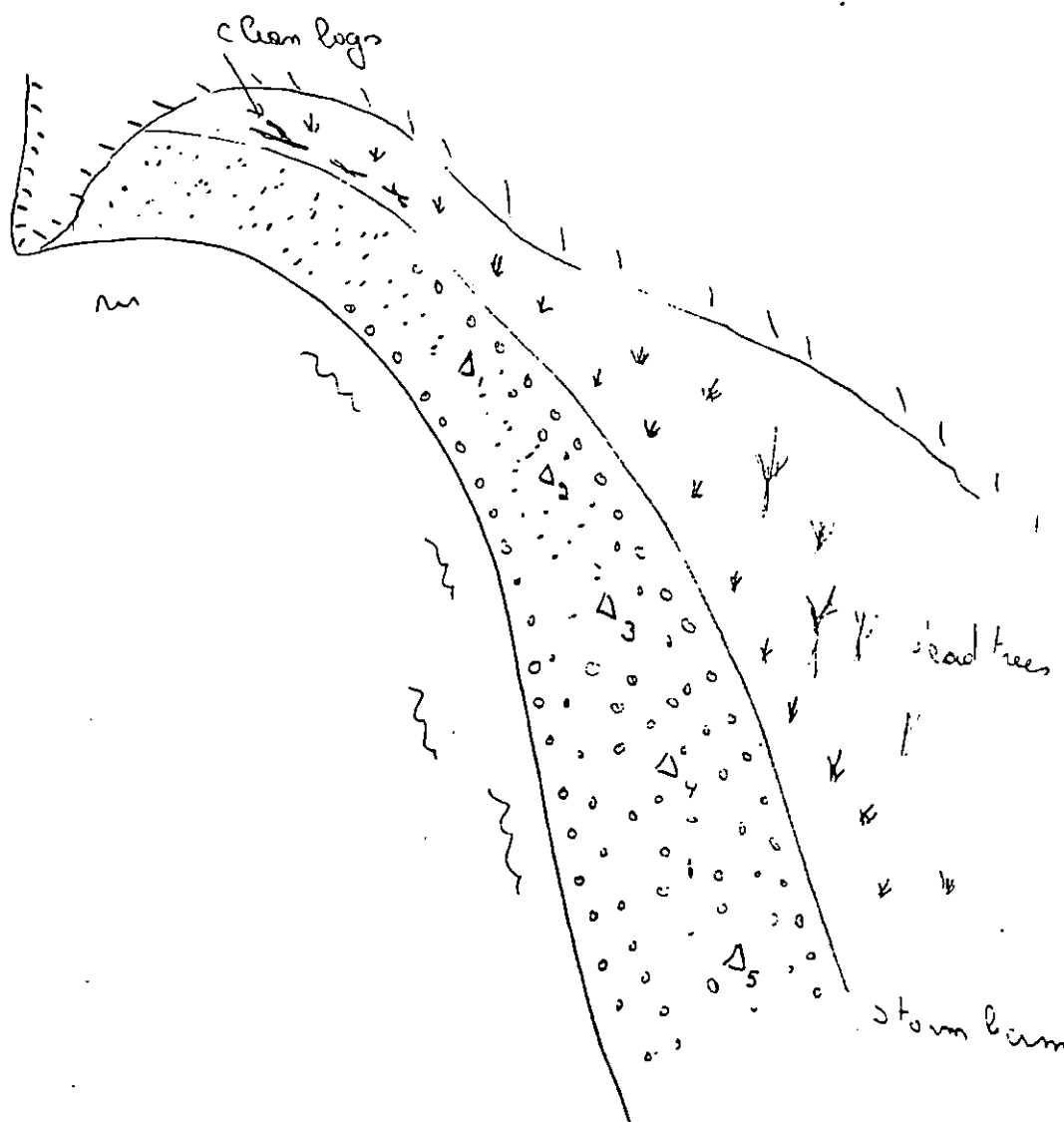
0650 - 0705

[square with v] vegetated
backshore

meter

0 100

N



reviewed 5/14/91 KB
 ES reviewed 8/16

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 13, 1991 0650 - 0705
SEGMENT #	Bm006	TIDAL HEIGHT (Range)	-1.8 => -2.2
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Location I (A1)

This beach is composed of sandy sediment in the central portion of the bay and cobble/pebble/sand towards the southern end of the subdivision. No Oil was found on this beach.

The sandy beach has little biota. Biota are also sparse on the upper intertidal zone of cobble/pebble portion of the beach and somewhat dense zonation in the lower zones. Barnacles are sparse in the upper zone below the storm berm and increase in abundance in the lower zones. Fucus is moderately abundant in the middle zone, as are mussels. These species decrease in abundance through the middle zone and are replaced by red algae and barnacles (Semibalanus) in the low zone. Several other species are abundant under and amongst cobble on this segment. Isopods, amphipods, small prickleback fishes, littorine snails, limpets, polychaete worms, nemertean worms, and bryozoans are quite abundant in the lowest zone. Large brown algae are the dominant biota of the shallow subtidal zone, and eel grass appears to be common along the sandy portion of the beach.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	4	27	
Waterfowl	4	48	
Gulls/Kittiwakes	2	25	
Shorebirds	3	13	
Corvids			
Other Birds			

Recorded w/ Bm006 A
M.B. 5/16/91

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters		River Otter	Tracks
Pinnipeds (specify)		Fox	Tracks
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

Reviewed M.B. 5/16/91

BM006-B Biology Report, continued

Common Species found on BM006-B

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Alaria marginata, Agarum fimbriatum, Costaria costata, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Laminaria saccharina, Nereocystis leutkeana, Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Cryptosiphonia woodii, Cumagloia andersonii, Endocladia muricata, Halosaccion glandiforme, 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.
2. Anemones
Anthopleura artemesia, 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., Crucigera sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - d. Isopods - Cirdana harfordi, Idotea wosnesenskii, Gnorimorsphaeroma oregonensis
11. Mollusca
 - a. Chitons
Mopalia sp., Katharina tunicata, Tonicella lineata,
 - b. Snails - Gastropods
Littorina sp., Natica clausa, N. lima,
 - c. Limpets
Lottia sp., Tectura persona, T. scutum, Siphonaria thersites, S. sp.
 - e. Mussels and Clams
Agriodesma saxicola, Chlamys hastata, Clinocardium sp., C. nuttalli, Hiatella arctica, Macoma sp., Modiolus modiolus, Mya arenaria (soft-shell clam), Mytilus edulis, Pododesmus cepio, Prototheca staminea
12. Echinoderms
 - b. Sea stars - Orthasterias keohleri, Pisaster ochraceus, Pycnopoida helianthoides, Solaster sp.
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.
 - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Microporina borealis, Schizoporella sp.
15. Fishes
Stichaeidae - Xiphister atropurpureus, X. mucosus

Reviewed M.B. 5/16/81

BIO SKETCH MAP

BM006-A

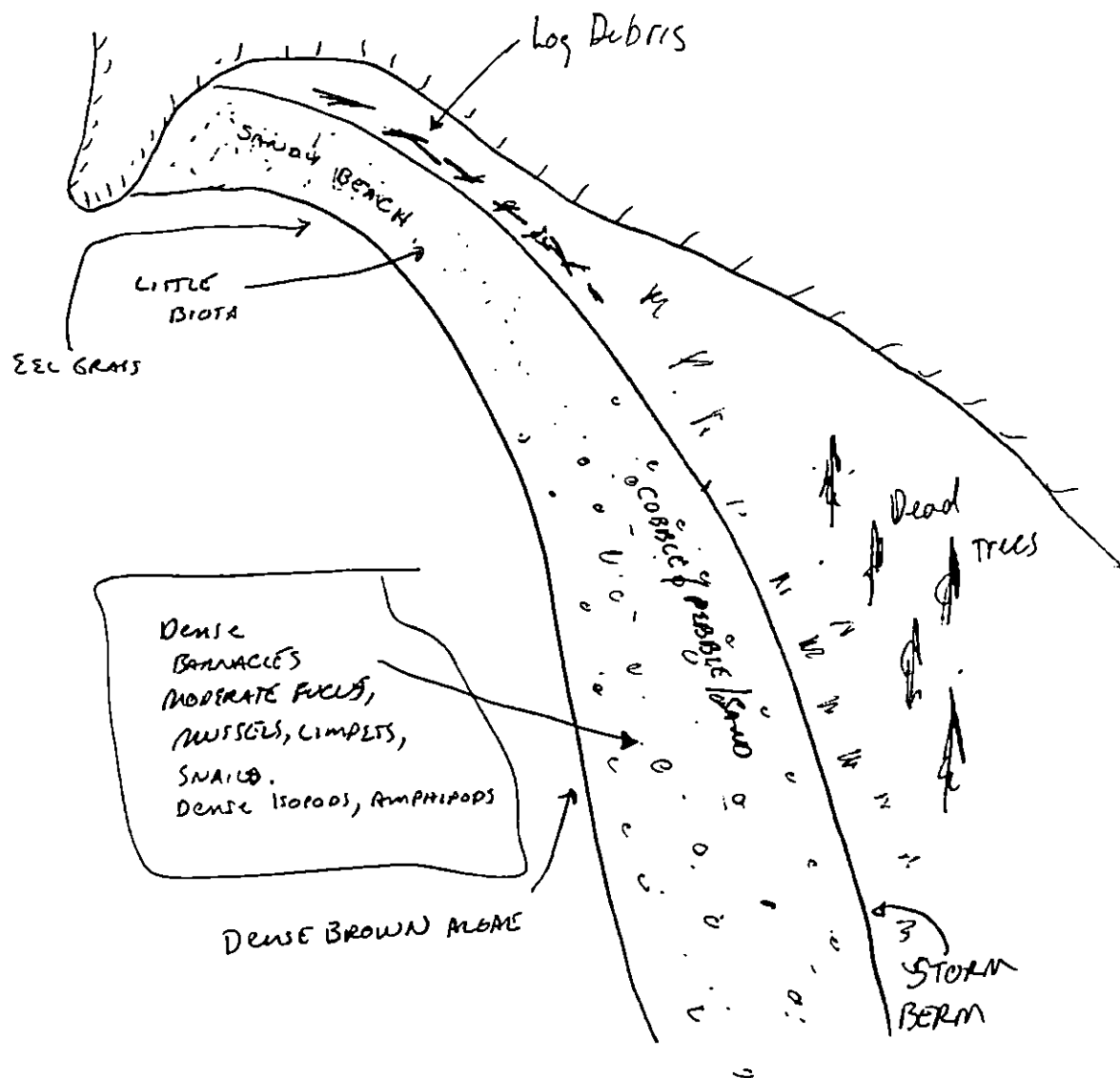
JP BARRY

13 MAY 91

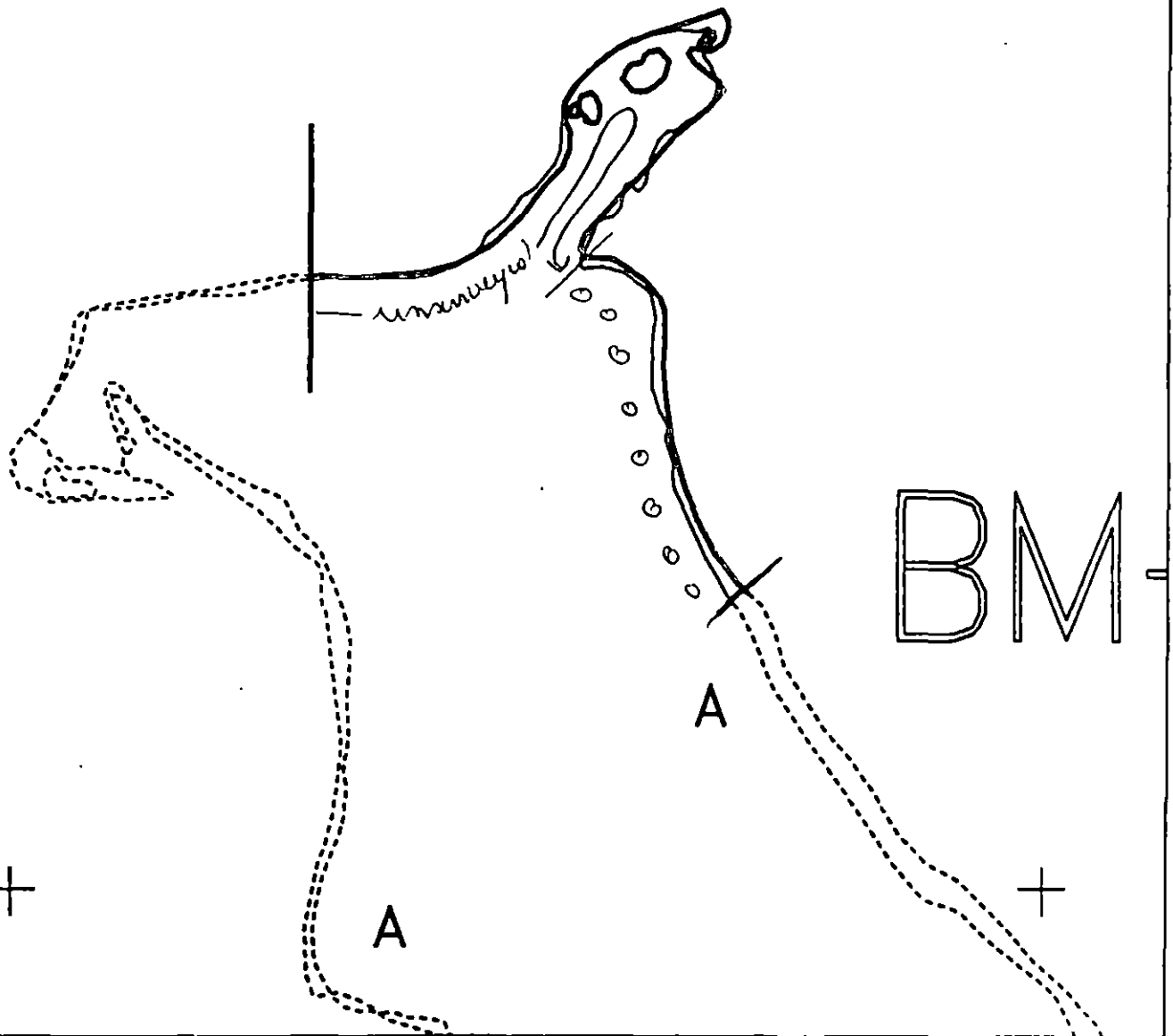
0650-0705

BM006-A

4/6



Reviewed M.B. 5/16/91



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

BM006 A
 ADEC Subsegment Length: 3692m
 METERS

5 400 800
 AK State Plane Zone 4
 55M006a



Subdivision Field Map

Map Key: KENBM006A

Name: J. M. Simpson

Date: May 13/91

Date Entered:

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT BM-6 SUBDIVISION A (1 of 1)

WORK WINDOW	
Manual Pickup	OPEN
Bioremediation	WORK AFTER 6/15

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B	Salmon Stream	ADF&G catalogued anadromous stream (232-30-10340) is in Subdivision A. No constraint to manual pickup and bioremediation. Work site is over 100m from stream.
2M	Herring Spawning	Closed to bioremediation before 6/15. No constraint to manual pickup.
5R	Seabird Colony	NO CONSTRAINT. Work site is more than 800m from seabird colony.

OTHER ECOLOGICAL CONSIDERATIONS

Restrict boat traffic to essential minimum. Avoid any unnecessary disturbance or damage to unrolled substrate and biota especially intertidal and subtidal algae and seagrass.

FOSC

[Signature]

Date

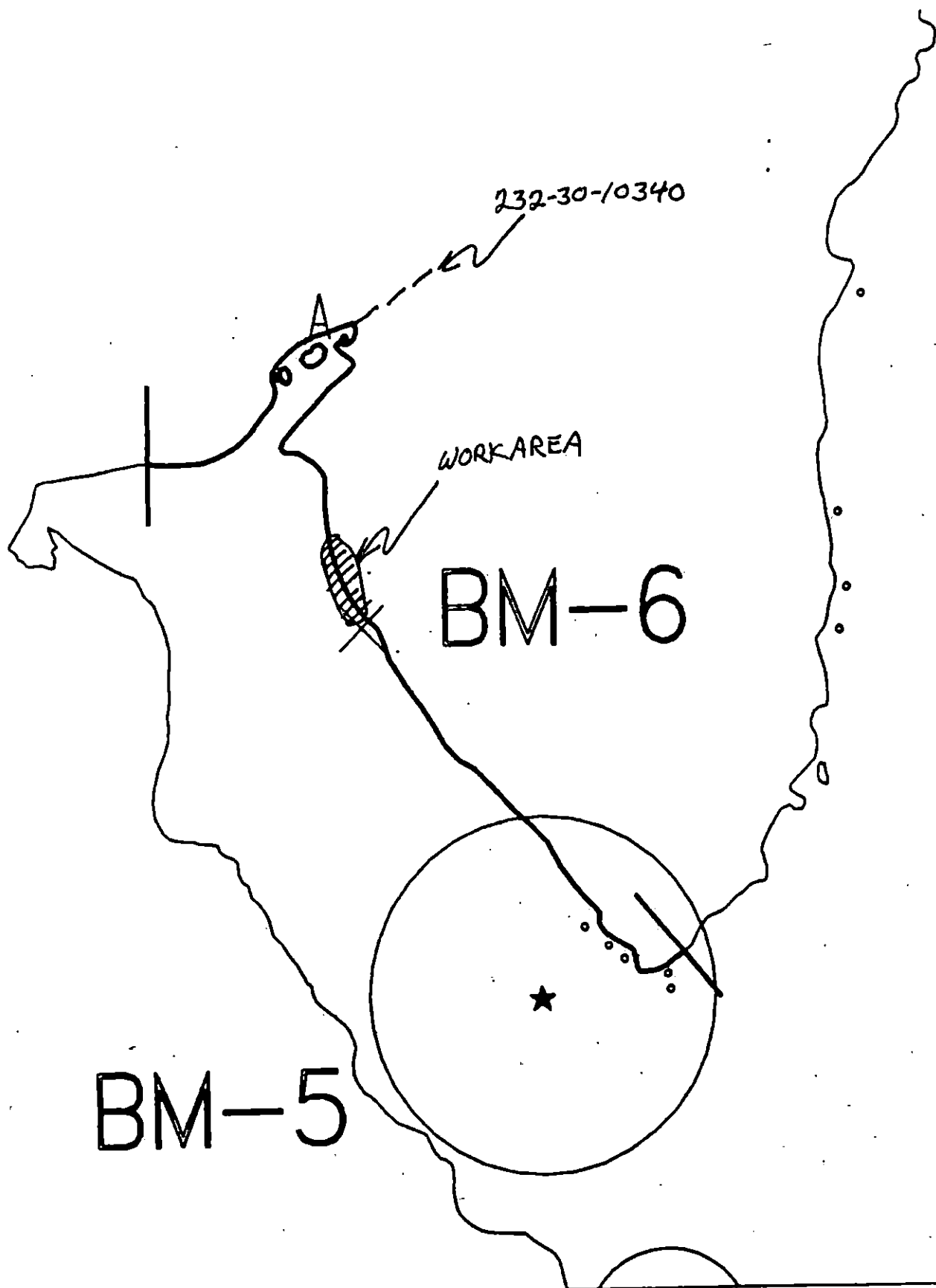
6/13/90

Prepared by

[Signature]

Date

6/12/90



Exxon Company, USA
Map Key: KEN-BT-6

ECOLOGY MAP
SEGMENT BM-6
SUBDIVISION A (1 of 1)
METERS

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

SHORELINE EVALUATION

SEGMENT ST/ BM-06 SUBDIVISION A (1 OF 1) DATE 4/28/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
 1B Salmon stream mouth - spawning (7/10 to 8/31)
 2M Herring spawning (4/1 to 6/15)
 4LL National Parks
 5R Seabird colony (5/1 to 9/1)
 See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: [Signature]

DATE: 5/11/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 61 m: V.Light 575 m: No Oil 3056 m
 Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes manual pickup of pooled oil in area indicated on sketch map. Work should be conducted between 6/15 and 7/10 with approval of ADF&G and USFWS due to seabird colony, herring spawning and salmon stream constraints.

TAG COMMENTS: FOLLOWING MANUAL REMOVAL OF POOLED MOUSSE APPLY CUSTOMERLEN TO ANY REMAINING OIL.

TAG APPROVAL DATE: 5/11/90.

ADEC Art Weener Art Weener
 EXXON Andy [Signature]
 NOAA Joseph Talbot
 USCG D.D. Rome

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

Add customerlen to the 5mx1m patch after pooled mousse has been removed.

REGION: KENAI

SEGMENT: ST/CB-01

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ CB-01 SUBDIVISION A (1 OF 1) DATE 4/26/90

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

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 245 m: Narrow 49 m: V.Light 3548 m: No Oil 398 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 30 cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) manual pickup of mousse in area indicated on sketch maps, 2) manual removal of tarmats in areas indicated on sketch maps, and 3) bioremediation of area indicated on sketch maps. Work should be conducted after 6/1 with approval of USFWS due to eagle nest constraint.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

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

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

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

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

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

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

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

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

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

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

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

1H Remote release site

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ADF&G Don Calkins 267-2403

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

ADF&G Tom Roth 267-2206

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

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

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

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

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

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

6Y Special use destination

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

7HH Finfish harvesting

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 CB-01 SUBDIVISION: A-1&1 DATE 04/26/90

USCG

NAME David G. Thomas SIGNATURE [Signature]

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ADEC

NAME Clara S. Crosby SIGNATURE Clara S. Crosby

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS AP @ SITE #2 - is concentrated @ end of Beach on Bedrock terrace - suggest removal - SITE #3 area for concern - suggest further monitoring SITE #4 suggest removal of 1g AP mat - SITE #5 - manual removal of AP along isthmus - SITE #6 - Considering area & distribution oiling is low end of WIDE - manual removal of MO displacement of B/C to expose residual oil to wave action - SITE #11 Subsurface oiling noted in S - Possible tell site - SITE #12 Removal of AP Although high energy area - Bedrock terrace & platform - AP is located in protected areas - Video taken

LAND MANAGER 04/27/90 - #90JEF008 - available from Homer ADEC office

NAME Dick Morrison SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

SHORELINE OILING SUMMARY

REVISION NO. 0A-12.00

OG RICK GILLIE USCG DAVE THOMAS SEGMENT ST/ CB-01
 NO DAVE LOHVE LAND REP DICK MOONIN SUBDIVISION A (1 OF 1)
 AXON FRANK BOX ADEC CLARA CROSSBY TIME 07:30 to 12:40
 TEAM NO. 13 TIDE LEVEL -2 to +7 DATE 04/26/90
 EST. SUBDIVISION LENGTH: 6.783 m ☒ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 30 % B 20 % C 20 % P 10 % G 10 % S 10 % M 0 % V 0 %
 SLOPE: Lang 40 % Hang 40 % Vert 20 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 150 m N 30 m VL 6.150 m NO 453 m

SURFACE OIL

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

PAVEMENT H F 50 sq. m by 5 cmPATTIES / TARBALLS 0 BAGSNEAR SHORE SHEEN? (NO) BR RW SL TL

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

DID YOU COLLECT DEBRIS?

YES ☒ NO ☐TYPE Bags#BAGS 1

Photographs:

Roll No. ST-13-5Frames 25-27

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	1	2	3	4	5	6	7	8					
1	40					X	.		X									X				P-P, G
2	30					X	.		X									X				P-P, G
3	45					X	.		X									X				G-G, S
4	50					X	.		X									X				S-S
5	40					X	.		X									X				S-S
6	40					X	.		X									X				S-S

COMMENTS

① SEDIMENT MORPHOLOGY: WIDE (100M) WAVE-CUT PLATFORMS WITH
 PEBBLE, COBBLE AND SAND BEACHES IN THE WEST BAY
 AND HIGH ANGLE ROCK AND Boulders IN THE EAST PART

② OILING: GENERALLY VERY LIGHT EXCEPT FOR AREAS OF CT/S
 NOIL DEBRIS AROUND AREAS OF CT/S
 4/20/90

SHORELINE OILING SUMMARY (PAGE 2)

REVISION 04.12.89

SEGMENT ST/ CB-01 SUBDIVISION A (1 OF 1)

SUBSURFACE OIL (CONTINUED)

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-GS)	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	SCREEN (MM)	↓	SURFACE SUBSURFACE SEDIMENTS			
		OP	OR	OL	OF	NO		UO	UC	20% 20% 20%	30% 30% 30%	40% 40% 40%	50% 50% 50%	60% 60% 60%	SU	U	M	U								
7	40					X	.		X								X								S-S, P	
8	40					X	.		X								X								S-S _C	
9	40					X	.		X								X								S-S	
10	40					X	.		X								X								S-S	
11	40					X	.		X								X								G-G	
12	40					X	.		X								X								G-C, B	
13	35					X	.		X								X								S-S	
14	30				X		.	?		X							X			Y	20				S-S	
15	30				X		.	?		X							X			Y	20				S-S _P	
16	30				X		.	?		X							X			Y	20				S-S _P	
17	30					X	.		X									X							S-S _P	
18	40		X				.		X				X				X								P-P	
19	50					X	.		X								X								S-S	
20	40		X				20-30		X	X							X									S-S

COMMENTS

PIT 13 Small pieces of mouse on individual pebbles.
Generally < 1% residue.

TW

4/30/90

OG RICK GILLIE
 SEGMENT ST/ CB-01
 SUBDIVISION A-10f1
 DATE 04/26/00

ATCH MAP (GENERAL)

CHECKLIST

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

LEGEND

1 Δ

Pit - No Subsurface Oil

2 Δ

Pit - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

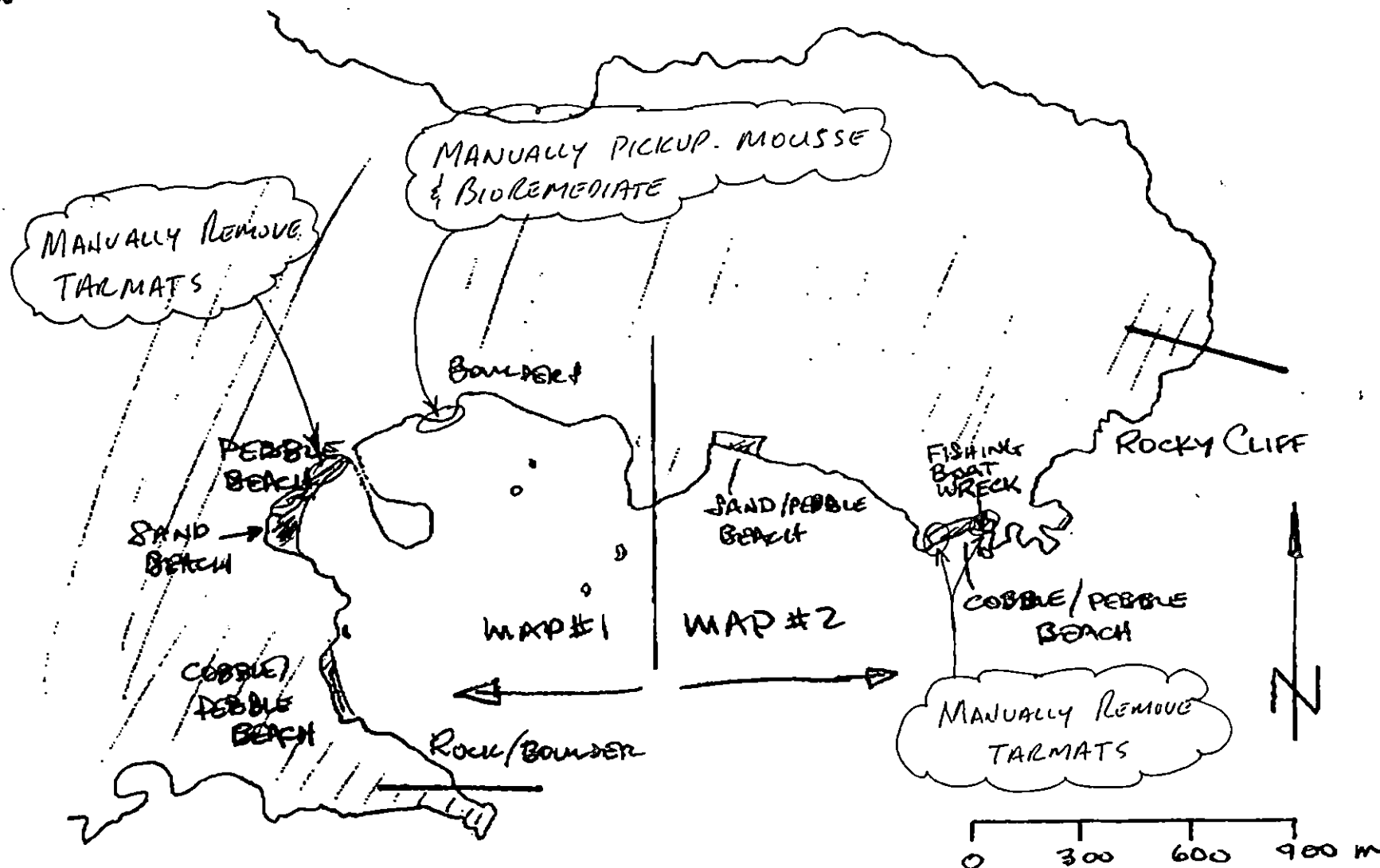
CT/S

Splashed Distribution

Oiled Vegetation

1 →

Photo location, direction, and number



CHUGACH BAY

Oil Character Length (m): AP 20 PO 0 CV 0 CT 100 ST 10 MS 5 PT 0 TB 0 FL 10 NO 6638
 (ENCLOSURE REFERENCE)

REVISION: 03/04/00

OG RICK GILLIE
 SEGMENT B-01
 SUBDIVISION A-1 of 1
 DATE 04/26/90

CHECKLIST

- ☒ N Arrow
- ☒ Approx. Scale
- ☒ Seg/Sub Entry
- ☐ Oil Dtl.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HM/L/VL
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☒ Pk Location(s)
- ☐ Photo Location(s)

LEGEND

1 ▲
Pk - No Subsurface Oil

2 ▲
Pk - Subsurface Oil

CT/C
Continuous Distribution

CT/B
Broken Distribution

CT/P
Patchy Distribution

CT/S
Sprinkled Distribution

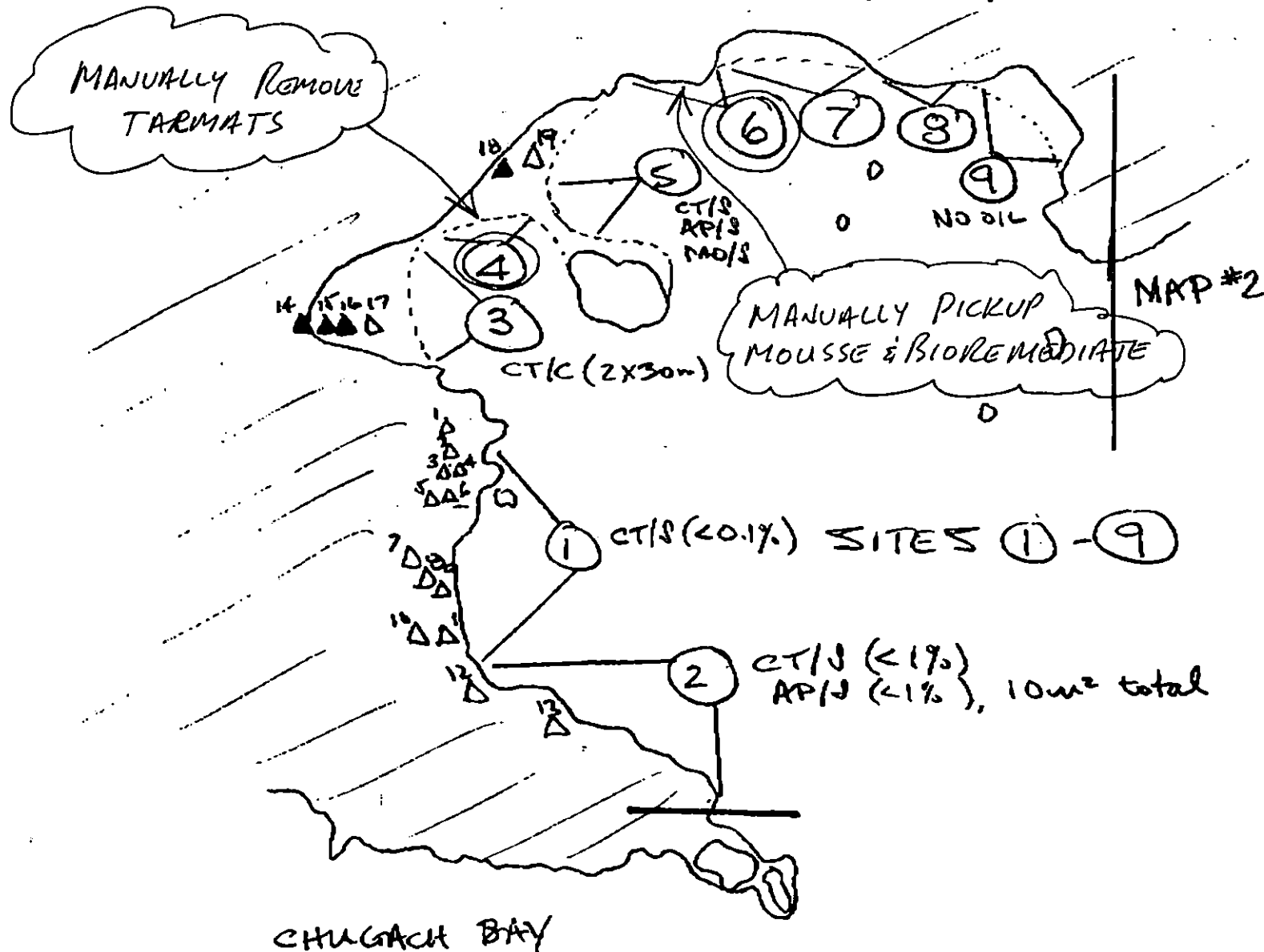
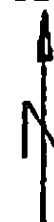
Oil Vegetation

1 ●→
Photo location, direction,
and number

SKETCH MAP

XP #1 (WEST HALF)

0 300 600m



CHUGACH BAY (CB-01)
SKETCH MAP #1 (WEST HALF)

1 of 3

SITE 1: LOW ANGLE PEBBLE/COBBLE/SAND BEACH
OVERLYING WAVE-CUT PLATFORM (500 M)

- ① - BEACH IN WITZ
- ② - BEDROCK REEF IN WITZ AND LITZ
- ③ - MINOR CT/S (< 0.1%) ON TREE ROOTS AND LOGS IN Su-WITZ.
- ④ - 9 PITS dug, NO SUBSURFACE OIL

SITE 2: LOW ANGLE BOULDER/COBBLE SHORELINE
OVERLYING W/C PLATFORM (500 M)

- ① - CT/S (< 1% COVER) ON LANDWARD SIDE OF VERTICAL ROCKS.
- ② - AP/S (< 1% COVER) ON COBBLE/PEBBLE SUBSTRATE IN WITZ BETWEEN BOULDERS. TOTAL OF 10 M² AND 3 CM THICK.

SITE 3: SAND BEACH (200 M LONG, 100 M WIDE)

- ① CT/C BAND (2 M X 30 M) ON ROCK AT SOUTH END
- ② OILED LOGS IN WITZ, LARGE AMOUNT OF DEBRIS
- ③ FILM FOR 5 M AT BEACH WATER TABLE EXPOSURE
- ④ PITS 14-16 INDICATE POSSIBLE FILM OF OIL ON SUBSURFACE SEDIMENTS

CHUGACH BAY (CB-01)

SKETCH MAP #1 (WEST HALF)

2 of 3

SITE 4: ~~PEBBLE~~/SAND BEACH, 400 M LONG

- ① OILED LOGS IN PUTZ
- ② PIT 13 CONTAINS RESIDUAL OIL
- ③ - LARGE PIECE OF SOFT ASPHALT PAVEMENT
2-3 m² IN AREA OF LOGS IN SU-UNITZ.
- PARTLY COVERED WITH SAND AND BURIED
TO 10 CM DEPTH.
- ASPHALT PAVEMENT IS FROM 3-8 CM THICK
- TOTAL AREA 15 m²

MANUALLY
REMOVE
TAR MATS

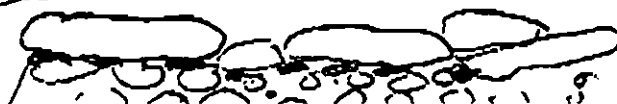
SITE 6: BOULDER ARMOUR OVER COBBLE/PEBBLE AND WAVE CUT-PLATFORM

- ① CT/P ON BOULDERS
- ② FL/P IN SOME TIDE POOLS
- ③ MO-AP/B - AREA 30m x 70m (50%)
- MOUSSE, MOUSSE SATURATED SEDIMENTS AND
SOFT ASPHALT PAVEMENT TYPICALLY 1-2 CM
THICK AND UP TO 5 CM PENETRATION
- NEED TO TURN BOULDER OVER TO EXPOSE OIL
- ④ MO/B - AREA SOUTH AND BEHIND BIG ROCK WITH
SPRUCE TREES:

UNITZ - 5x40 M,
MITZ - 10x50 M,

MO/P 1 UNDER BOULDERS
MO/P " "
(30%)

MANUALLY
PICK UP MOUSSE
& BIOREMEDIATE



- BOULDER ARMOUR
C. 100 - 1000 m

CHUGACH BAY (CB-01)

3 of 3

SKETCH MAP #1 (WEST HALF)

SITE 5: BOULDER/COBBLE/PEBBLE TOMBOLO (300M LONG)
TO ISLAND (300M)

- ① SPLATTER OF MOUND AND ASPHALT PAVEMENT UNDER AND AROUND BASE OF BOULDERS/COBBLES
- ② MS/S (<1%), MITZ
- ③ AP/S (<1%), SMALL PIECES, APPROX 10 CM DIAMETER EACH, EXTENDS INTO PORWEEED TIDE ZONE
- ④ CT/S (<1%) ON ISLAND
- ⑤ MO/S (10%) SOUTH SIDE NEAR ISLAND

SITE 6: BOULDER VENEER OVER WAVE-CUT
PLATFORM (100M WIDE)

SEE PAGE 2

SITE 7: PEBBLE/COBBLE BEACH (200M LONG)

- ① CT/S (<1% ON BOULDER)
- ② OTHERWISE NO OIL

SITE 8: HIGH ANGLE BOWDER / VERTICAL ROCK

- ① CT/S (<0.1% COVER)

SITE 9: PEBBLE/BOULDER/SAND BEACH (200M LONG)

- ① BEDROCK W/C PLATFORM IN MITZ
- ② NO OIL

CHUGACH BAY (CB-01)

SKETCH MAP #2 (EAST HALF)

1 of 1

SITE 10: HIGH ANGLE BEDROCK SLOPE (10 M HIGH)

- ① CT/S, AP/S (BOTH < 1% COVER) IN CREVICES OF ROCK
- ② TOTAL 2 m^2 AP
- ③ NO OIL ON MOST EAST SIDE

SITE 11: SAND / PEBBLE BEACH (80 M LONG)

- ① NO OIL ON SURFACE
- ② SUBSURFACE OIL IN PITS 20 + 21

SITE 12: COBBLE / BOULDER / SAND BEACH (200 M LONG)

- ① SITE AND MITE: SUBSTRATE OVER WAVE/CUT PLATFORM.
- OILED LOGS, LARGE AMOUNT OF WOOD DEBRIS
- ② MITE: BOULDERS WITH CT/P
AP/S IN COBBLE/PEBBLE SEDIMENT

BETWEEN BOULDERS, < 10% COVER, FL/S IN POOLS
- APPROX 10 m^2 AP NEAR WRECKED BOAT (KATHY JOANNE)

- ③ - APPROX 20 m^2 AP (MAX 8 CM THICK) AT WEST END
MITE BEHIND REEF AND BELOW "STORAGE SITE". MAY BE PARTLY COVERED BY GRAVEL.

SITE 13: HIGH ANGLE ROCK PLATFORM

- ① - FL/S, < 0.1% COVER
- ② ST/S, CT/S < 1% COVER
- ③ AP/S, < 1% COVER IN SUBSTRATE BETWEEN ROCKS AND BOULDERS < 10 m^2

MANUALLY
REMOVE
TAR MATS

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST/CBOO1 Subdivision A Date (mo / day / yr) 4-26-90Time (24 hr) 7:15 Biologist David White

- (A) Substrate type and % of segments:
 (1) Bedrock 30 (2) Boulder 20 (3) Cobble 20 (4) Pebble 10 (5) Sand 20 (6) Silt
- (B) Overall % cover of biota (% of segment): Dense 35 Moderate 35 Low 30
- (C) Density, substrate preference (by number from A, above), & vertical zonation of major taxa: (upper-U; mid-M; low tidal-L); juveniles / adults (X), new settlement (3)

Photographs:
Roll No. ST-13-5Frames 25-27

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:

Unknown - no information available

Shoreline Ecological Summary

Lot 2

Segment ST-CB001

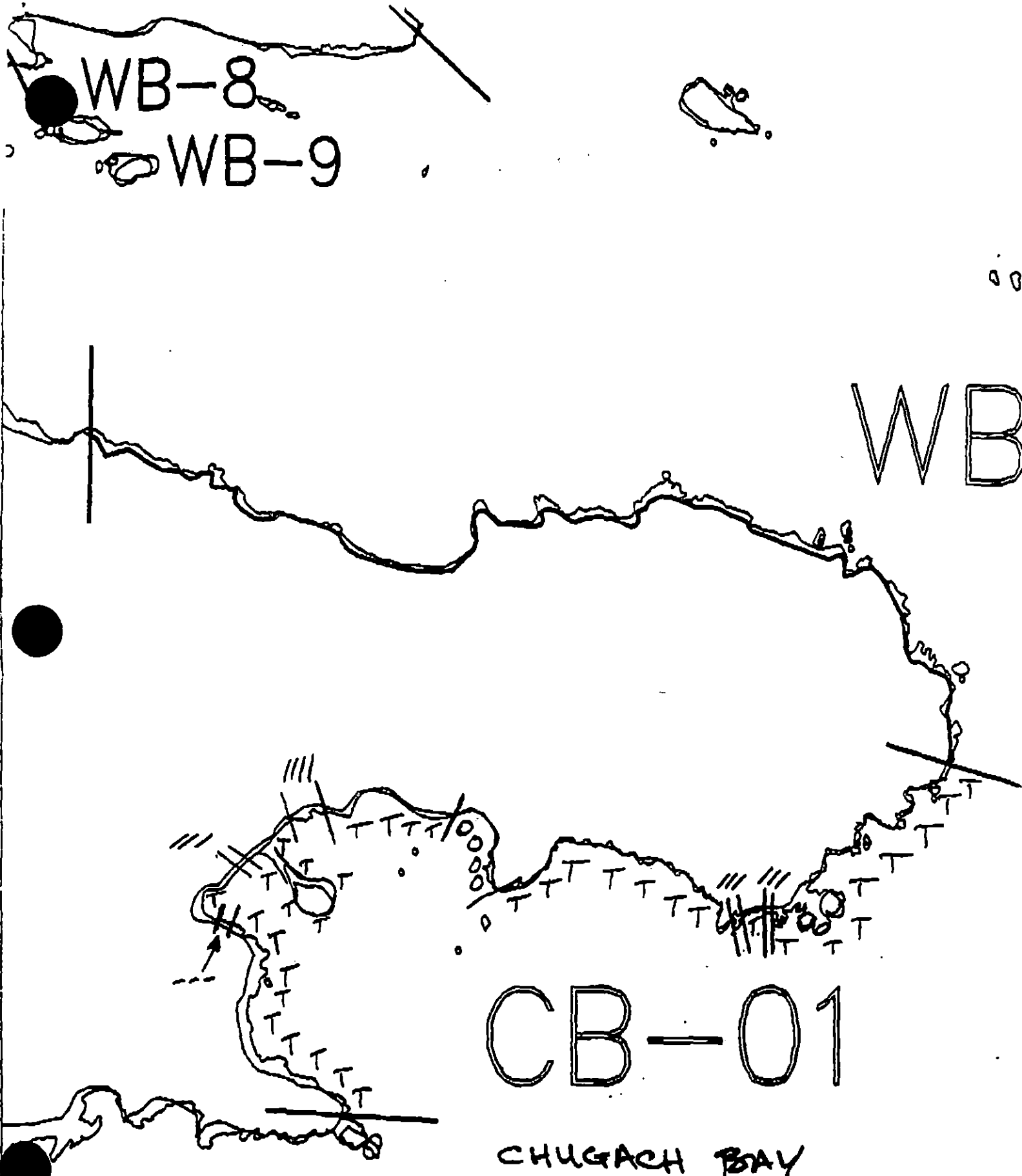
Subdivision A

4-26-90

Biologist: David Lohse

Wildlife Observations/General Comments

1. Present in low intertidal: *Alaria*, *Laminaria*, *Ulva*, *Enteromorpha*, *Pisaster ochraceus*, *Halosaccion*, *Porphyra*, *Epiactus*, *Mimocladia*(?), *Desmarestia*, *Pycnopodia*, coralline algae, *Katharina tunicata*, *Cucumaria*, *Darmasterias*, *Spirorbis*, unidentified bryozoan, serpulids, unidentified sponges (pinks and yellows), unidentified red algal "blade"
- mid intertidal: *Nucella*, *Katharina tunicata*, *Halosaccion*, sculpins, *Tealia*, coralline algae, *Pisaster ochraceus*, *Ulva*, *Enteromorpha*, *Epiactus*, *Amphipleura*, *Porphyra*, *Ectocarpus*, *Zostera*, *Spirorbis*, *Scytosiphon*, *Endocladia*, *Pycnopodia*, *Mopalia*, *Callithamnion*, *Pagurus*
- high intertidal: *Enteromorpha*, *Scytosiphon* (in tide pools)
2. 1 cormorant, 1 mature bald eagle, 3 Harlequin ducks, and many gulls spotted in a
3. Much of the *Zostera* found in mid-intertidal bedrock bleached.
4. Littorine egg masses were found on mid-intertidal boulders
5. A few small patches of byssal threads were found on mid-intertidal bedrock
6. Algal cover in low intertidal was 100% on boulders (estimate of 1 site), and 95-100 on bedrock (2 sites estimated)
7. Bear tracks were found at high tide line at one location. Appeared to be digging in beach wrack
8. O.I covered barnacles were found on high intertidal bedrock at one location. Mortality was estimated to be ~50%.
9. Mortality of barnacles on high intertidal boulders was ~50% (estimate of one site), and was ~10% on mid-intertidal bedrock (2 sites estimated).
10. Several *Styela* were found unattached in low intertidal tide pools, but no attached ones were observed.



XXXX Wide
 /// Medium
 --- Narrow

~~CB-1~~
 CB-1
 ADEC Segment Length: -53+3m-

Map Key: PWS-718a

Name: Rick Gillie

.... 04/26/90

SHORELINE EVALUATION

SEGMENT ST/ CB-01 SUBDIVISION A (1 OF 1) DATE 4/26/90

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

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: A. David M. McKee DATE: 5/8/90

OILING CATEGORIZATION:

Wide 0 m: Medium 245 m: Narrow 49 m: V.Light 3548 m: No Oil 398 m
Subsurface Oil Observed: Yes X No Maximum Depth 30 cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) manual pickup of mousse in area indicated on sketch maps, 2) manual removal of tarmats in areas indicated on sketch maps, and 3) bioremediation of area indicated on sketch maps. Work should be conducted after 6/1 with approval of USFWS due to eagle nest constraint.

TAG COMMENTS: _____

TAG APPROVAL DATE: 5/7/90.
 ADEC Art Weiner Dst Weiner
 EXXON Andy Tarr FOSC: W L DATE: 5-18-90
 NOAA Gary Petrus Gary Petrus
 USCG G.A. Breiter G.A. Breiter

OG RICH GILLIE
 SEGMENT ST/ CB-01
 SUBDIVISION A-1 of 1
 DATE 04, 26/ 90

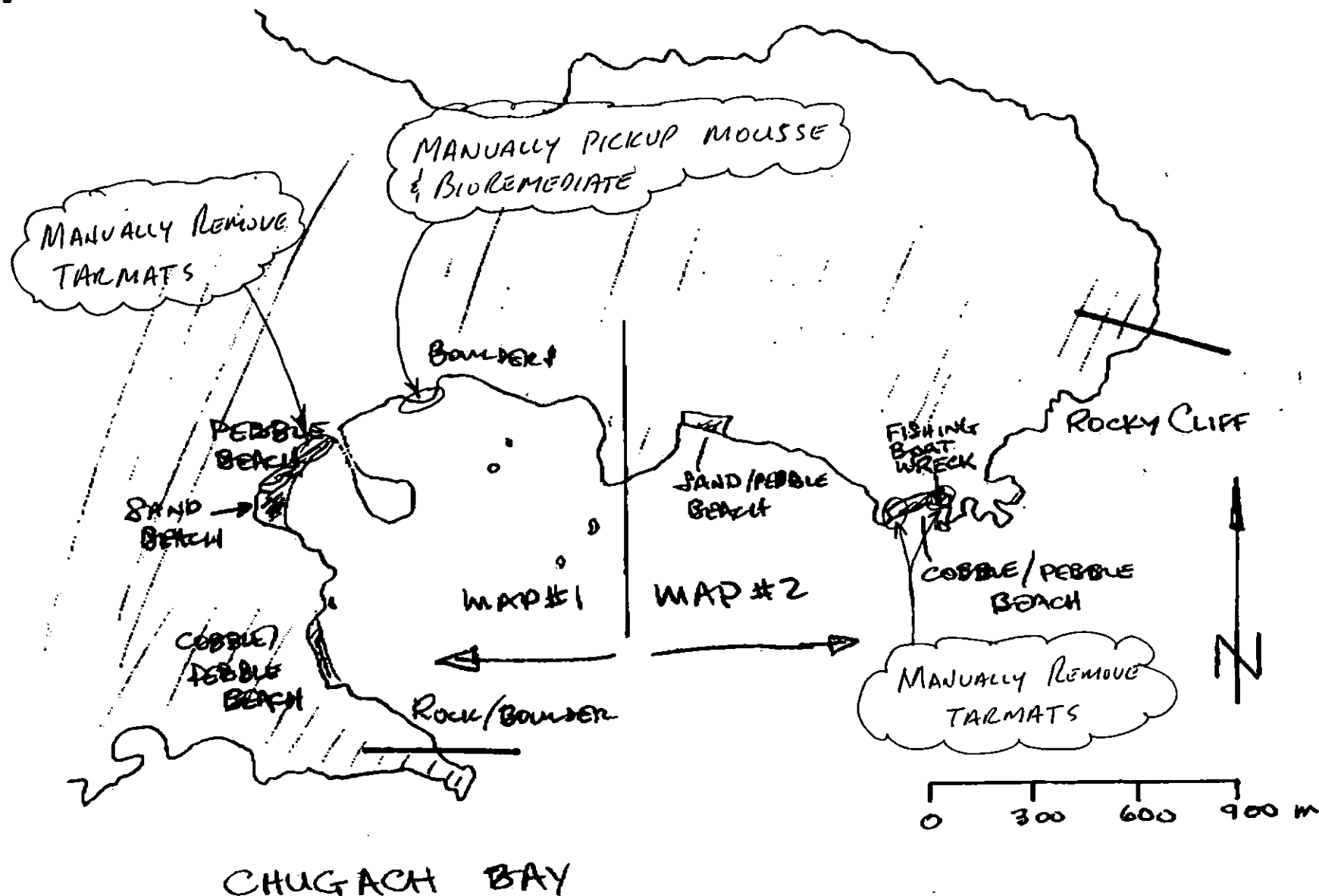
TCH MAP (GENERAL)

CHECKLIST

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

LEGEND

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



CHUGACH BAY

Oil Character Length (m): AP 20 PO 0 CV 0 CT 100 ST 10 MS 5 PT 0 TB 0 FL 10 NO 6638

(FOR ENTIRE SEGMENT)

REVISION: 06/24/98

OG RICK GALLIE
 SEGMENT ST/ CB-01
 SUBDIVISION A-1 of 1
 DATE 04/26/90

CHECKLIST

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

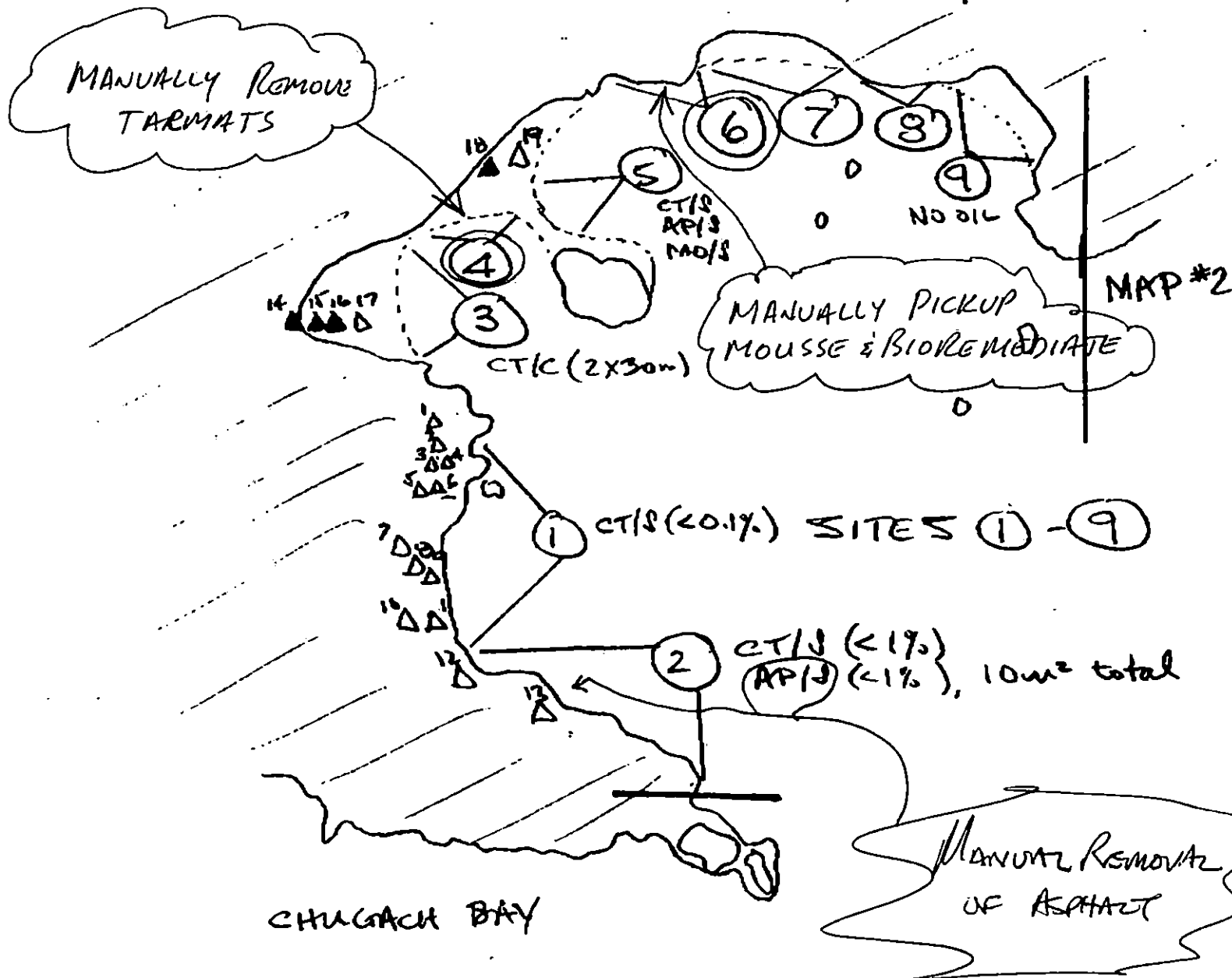
LEGEND

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

ATCH MAP
 MAP #1 (WEST HALF)

0 300 600m

N



RICK G. F.

3MENT ST/ CB-01

BDIVISION A-1 of 1

TE 04/26/90

HECKLIST

N Arrow
Approx. Scale
Seg/Sub Bdry
Oil Dist.
Width
Length
% Cover
Substrate Character
Est. HW/L/VL
SSL
Profile Location(s)
Profile(s)
Pt Location(s)
Photo Location(s)

EGEND

1 Δ
- No Subsurface Oil

2 Δ
- Subsurface Oil

CT/C
Continuous Distribution

CT/B
Broken Distribution

CT/P
Patchy Distribution

CT/S
Scattered Distribution

Used Vegetation

1 ●→
Photo location, direction,
and number

SKETCH MAP

MAP #2 (EAST HALF)

0 300 600 m



MAP #1

20 21
▲ ▲

BIOREMEDIATION

11

Boat Survey

10

CT/S
RP/S

WRECKED
FLUXNET
BOAT

12

CT/S
RP/S (10m²)

13

ST/S
CT/S

Boat Survey

SITES (10) - (13)

MANUALLY REMOVE
TAR MATS

APR-28-1990 15:10 FROM SEA TRADER

TO

EXXON&SHELL

P. 10

REVISION 00/04/90

Character Legend: AP NO CT ST RP PT TB FC NO

WB-8

WB-9

WB

CB-01

CHUGACH BAY

XXXX Wide

//// Medium

--- Narrow

TTTT

~~CB-1~~
ADEC Segment Length: -53+3m-

Map Key: PWS-718a

Name: Rick Gillette

Date: 09/26/90

1991 MAYSAP EVALUATION

SEGMENT: CB 001 SUB: A REGION: KEN SURVEY DATE: 5/29-30/91

ENVIRONMENTAL SENSITIVITIES:

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

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: _____ Date: _____

RECOMMENDATIONS:

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

COMMENTS:

INITIAL: Manual pickup at easily accessible AP. Apply Customblen.

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 CB001 SUBDIVISION A DATE May 129/91

ADEC

NAME Steve Ferguson SIGNATURE Steve Ferguson☐ NTR ☒ TREATMENT RECOMMENDED

RECOMMEND TREATMENT OF SHIPWRECK POINT. A VERY DEFINITIVE AREA OF ASPHALTING NEEDS TO BE REMOVED. ~~THE~~ REST OF SUBDIVISION HAD TRACE AMOUNTS OF OILING.

EXXON

NAME George L. Stiles SIGNATURE George L. Stiles 5/29/91

☐ NTR No appreciable oil found on West end. At shipwreck point there is a area of Asphaltting (3m x 17m) 40% coverage.

LANDMANAGER

NAME Pat Dorman OF Port Graham SIGNATURE Pat Dorman

☐ NTR oil found was partially picked up; remaining oil should eventually erode away. However if time permits shipwreck point needs to be looked at to see if the subsurface oil remains. was not surveyed due to large swells. Helo survey 5-30-91 Steve Ferguson will represent as land manager for this segment. see attached letter

USCG/NOAA

NAME McMahon/McDonald SIGNATURE James McMahon☒ NTR

sporadic mussels patches less than 10%
no subsurface oil EAST END ONLY

☐ Treatment for West end - heavy AP
Shipwreck pt.

Donald McDonald

5/29/91

This is to designate Steve Ferguson
of ADEC as Acting Land manager
rep for The Port Graham Corporation
to survey shipwreck point during
MAY SAP survey 1991, He will Advise
me of teams finding upon completion
of the segment. The reason for this
is to reduce logistical problems of
providing Land rep from Port Graham

Patricia Nours
5/29/91

TEAM NO. 4OG B TrimBIO J RothSEGMENT C3431ADEC S FERGUSONLANDMANAGER P Norman for PT GrahamSUBDIVISION AEXXON G STILESUSCG/NOAA McMahan / McDonaldDATE MAY 130 191TIME 11:22 to 11:46 (29h) TIDE LEVEL -1.60 to 3.27 ENERGY LEVEL: ☒ H ☐ M ☐ LSURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO WEATHER: ☐ SUN ☐ CLOUDS ☐ FOG ☒ RAIN ☐ SNOWTOTAL LENGTH SHORELINE SURVEYED: 1460 m NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONEEST. OIL CATEGORY LENGTH: W 0 m M 17 m N 0 m VL 218 m NO 1225 m US 4792 m

L O C	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE VHML	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO			WIDTH m	LENGTH m	S	UI	MI	LI	
A		T				T					R	M	1	5			X		
B		T									R	H	1	10		X			
C				T			T				RS	H	2	12		X			SOR-M
D						S	S				RB	H	1	40		X			
E				T							B	M	2	15		X			SOR-M
F					S	S	S				R	V	1	5		X			
G			T								R	M	1	10			X		
H						S	S				R	H	2	10		X			
I		S		S							C	L	2	8			X		HUV SOR PARTIAL P/U
J		T									B	H	2	20		X			PARTIAL P/U
K		T									C	L	1	60			X	X	PARTIAL P/U
L		T									C	M	1	15		X			PARTIAL P/U
M				T		T	T				BR	M	3	35		X			SURROUNDINGS LOCAL - N
N	P										BR	M	3	17		X			
O						T	T				R	H	1	5		X			

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

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE PHOTO ROLL # MAYSAP- 4(III)-14 FRAMES 10-15

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	52							X	---	Y	---	---	X				G3P-G3P	W END SUBDIVISION
2	45							X	---	Y	---	---		X			PG-PG	SHIPWRECK P-
									-									
									-									
									-									
									-									
									-									
									-									
									-									

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

OG COMMENTS:

BADGER COVE

LOCATION N' AT SHIPWRECK POINT HAS SOFT ASPHALT IN BOULDERS, TRACE AMOUNTS OF STAIN, COAT & MEDIUM SOR SURROUND ASPHALT. (LOCATION 'M')

MOXSE TYPICALLY FOUND IN ROCK CREVICES

Revised: MC 6/1/91
Revised 5.31 98

0 400
meters

B001-A
OG SKETCH MAP
29 MAY 91
0422-1146
BRYAN TRIMM
MAP 1 OF 2

SPI. PWEEN PT
SKETCH 'B'

TREES

COBBLES

SAND & PEBBLES

H
CT, ST, 5%
2x10m

K
MS < 1%
1x60m
PARTIAL PICKUP

L
MS < 1%
1x15m
PARTIAL PICKUP

F
CV, CT, ST 2%
1x5m

I
MS, SUR, M 2%
2x8m
PARTIAL PICKUP

M
10cm
PU

G
TB < 1%
1x10m

WOODEN
BOULDER
TALS

E
SOR-M, ST < 1%
2x15m

D
CT, ST 3%
1x40m

BOULDERS

J
MS < 1%
2x20m
PARTIAL PICKUP

C
SOR-M, ST < 1%
2x12m

MAYSAP
4(100) 14.15

B
MS < 1%
1x10m

WAVE CUT PLATEAU
BACK SAND

A
CT, MS < 1%
1x5m

MAYSAP 4(100) 14.10-14

reviewed 5.31.98

3001-A
 SKETCH MAP
 30 MAY - 91
 1138-1153
 30 JAN TRIM
 MAP 2 OF 2

0 400
 meters

BADGER
 COVE

SHIPWRECK
 POINT

N
 AP (SOFT) 40%
 3x17m

SHIPWRECK

TREES

SAND-PEBBLE

BOULDERS

WAVE CUT ROCK PLATFORM

M
 50.2 M < 1%
 ST. CT < 1%
 3x35m

O
 CT. ST < 1%
 1x5m

reviewed 5.31 94
 RE-REVIEWED: MC 6/1/94

TEAM # 4 DATE 29-30 May '91
 SEGMENT # CB001 TIDAL HEIGHT(Range)-1.62 to +3.0 ON 29 MAY
 SUBDIVISION A BIOLOGIST Jim Roth
 SEA STATE 2 1/2 FT SWELLS (29 MAY) WIND SPEED/DIRECTION
 PHOTOGRAPHS: ROLL # FROM +1.50 TO +2.36 ON 30 MAY

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

- A. BEDROCK/BOULDER W/ SPARSE FUCUS; DENSE MUSSELS; BARNACLES, LITTORINES; MODERATELY DENSE LIMPETS.
 B. BEDROCK W/ VERRUCARIA.
 C. BEDROCK W/ SPARSE FUCUS; DENSE BARNACLES, LITTORINES; MODERATELY DENSE MUSSELS AND LIMPETS.
 D. E. BEDROCK W/ DENSE BARNACLES, MUSSELS, LITTORINES, LIMPETS.
 E. BEDROCK W/ MODERATELY DENSE BARNACLES (AS WELL AS MANY DEAD ONES), LITTORINES.
 G. BEDROCK, BOULDERS W/ MODERATELY DENSE FUCUS, MUSSELS; DENSE BARNACLES, LITTORINES.
 H. BEDROCK W/ VERRUCARIA; SPARSE LITTORINES.
 I. COBBLE/PEBBLE W/ MODERATELY DENSE BARNACLES, SMALL MUSSELS, WORMS; SPARSE LITTORINES, LIMPETS.
 J. BOULDER/COBBLE W/ SPARSE FUCUS; DENSE SMALL MUSSELS; MODERATELY DENSE BARNACLES, LITTORINES, LIMPETS.
 K. COBBLE/PEBBLE W/ MODERATE BARNACLES, MUSSELS, LITTORINES, LIMPETS.
 L. BEDROCK/BOULDER W/ SPARSE LITTORINES, LIMPETS; BEACH-HOPPERS.
 M., N. BEDROCK/BOULDER THAT COVERS A GRADIENT FROM DENSE LITTORINES AND LIMPETS IN THE DOWNSLOPE SECTION, TO MOSS AND BEACH HOPPERS IN THE UPPER (SUPRA) SECTION. (SEE ATTACHED SHEET)

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles (BAND)		3	
Seabirds			
Waterfowl			
Gulls/Kittiwakes			
Shorebirds			
Cormorants			
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS	# OBSERVED
Sea Otters		RIVER OTTER	1
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

Reviews MC 6/1/9
 Rev. 1/1/9

M., N., (CONTINUED). THERE WAS NO OBVIOUS DIFFERENCE IN LITTORINE OR LIMPET DENSITY BETWEEN OILING ZONES M (SOR, M; ST, CT) AND N (AP); DENSITY OF THESE GASTROPODS WAS RELATED TO ELEVATION.

O. BEDROCK W/ VERRUCARIA.

GENERAL COMMENTS: SURVEYED AREAS IN THIS SUBDIVISION INCLUDE BOTH THE WESTERNMOST SHORE OF BADGER COVE (SURVEYED ON 29 MAY) AND SHIPWRECK POINT (SURVEYED ON 30 MAY). BADGER COVE IS A HIGH-ENERGY ENVIRONMENT; THE WESTERN SHORE CONSISTS OF 3 SMALL BEACHES, THE SOUTHERNMOST OF WHICH IS PROTECTED BY AN OFFSHORE BEDROCK PLATFORM. THE INTERTIDAL BIOTA IS MOST LUXURIANT ON THIS PLATFORM AND IN OTHER AREAS WHERE BEDROCK OUTCROPS IN THE COVE. MANY COMPONENTS OF THE INTERTIDAL BIOTA ARE SHIFTED UPWARD BY FREQUENT WAVES BREAKING HIGH ON THE SHORE. THUS, ALTHOUGH MOST OF THE OIL OCCURS IN THE UPPER INTERTIDAL ZONE, MANY ORGANISMS MORE TYPICAL OF THE MIDDLE ZONE ARE FOUND THERE (EXAMPLES INCLUDE FOCUS, BARNACLES, MUSSELS, LITTORINES, LIMPETS). THE COVE INCLUDES A SMALL ISLAND, WHICH IS CONNECTED TO THE MAINLAND BY AN ISTHMUS IN THE LOWER INTERTIDAL ZONE. OIL FOUND HERE HAD NO OBVIOUS EFFECT ON THE BIOTA, AS WAS ALSO THE CASE IN UPPER INTERTIDAL AREA WHERE OIL WAS FOUND.

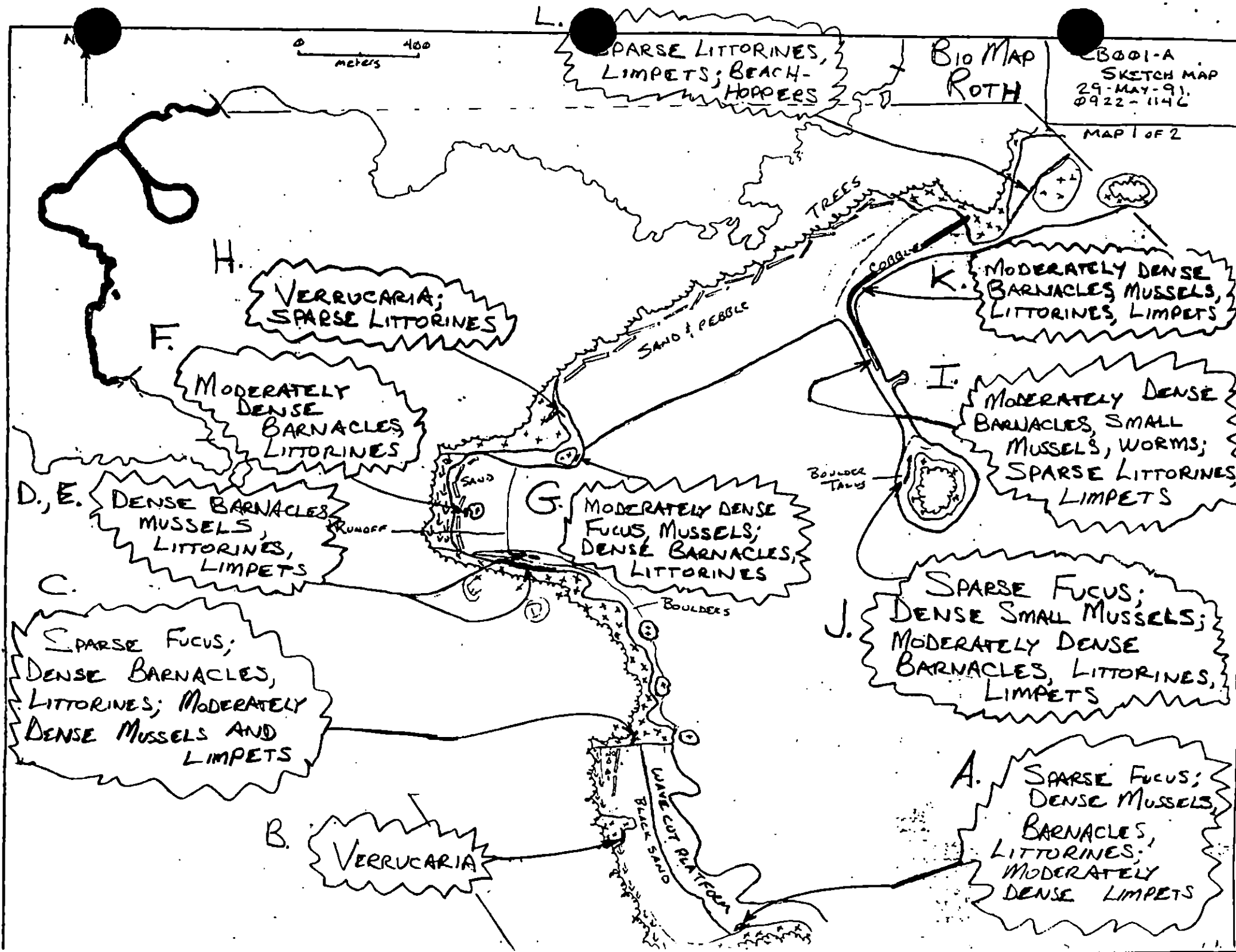
SHIPWRECK POINT IS ALSO A HIGH-ENERGY BEACH PROTECTED BY AN OFFSHORE BEDROCK PLATFORM. AS WAS NOTED ABOVE, LITTORINE DENSITY DID NOT APPEAR TO BE INFLUENCED BY THE AMOUNT OF OIL WITH WHICH IT WAS FOUND.

REVIEWED: MCG/1/91
(SEE NEXT PAGE)

CB001-A 29-30 MAY 91 Jim ROTH

BIRD AND MAMMAL NOTES: 3 BALD EAGLES WERE SEEN IN THE SUBDIVISION, ALTHOUGH NO NEST WAS NOTICED. TWO BIRDS HAD IMMATURE PLUMAGE AND SOARED CLOSE OVERHEAD. THE THIRD (ADULT) BIRD DID NOT APPROACH AS CLOSELY. ALL 3 ULTIMATELY DISAPPEARED AROUND THE POINT TO THE EAST OF THE SHIPWRECK.

A RIVER OTTER — EVIDENTLY RETURNING FROM FORAGING IN THE INTERTIDAL ZONE — SCAMPERED UP THE BEACH A FEW FEET FROM MEMBERS OF TEAM 4 (WAITING FOR HELICOPTER) AND DARTED INTO A HATCH ON THE FOREDECK OF THE WRECKED SHIP. THE OTTER'S CURIOSITY WAS EVIDENTLY AROUSED, AS IT POKED IT'S NOSE OUT FROM IT'S SHELTER TO OBSERVE US.

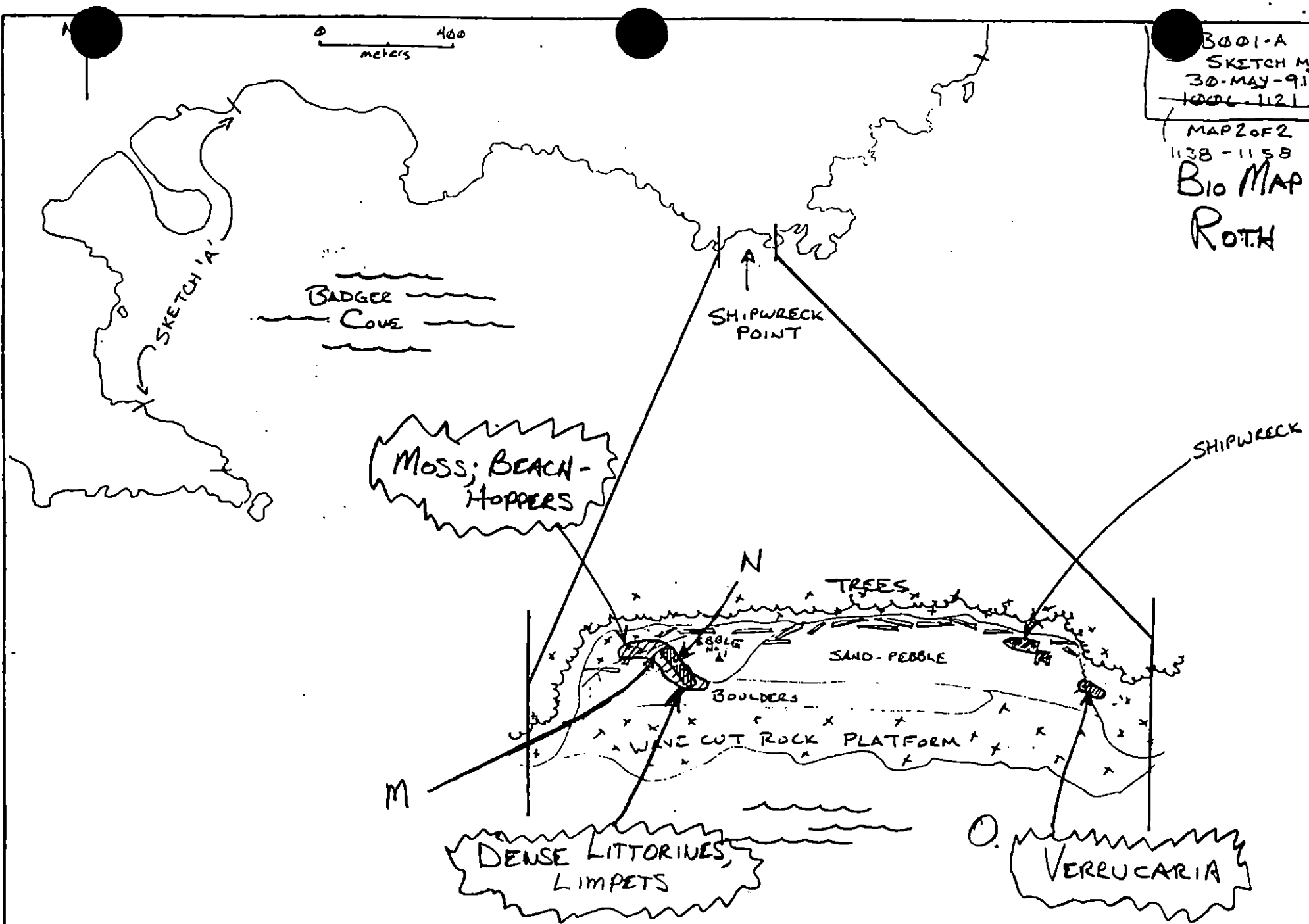


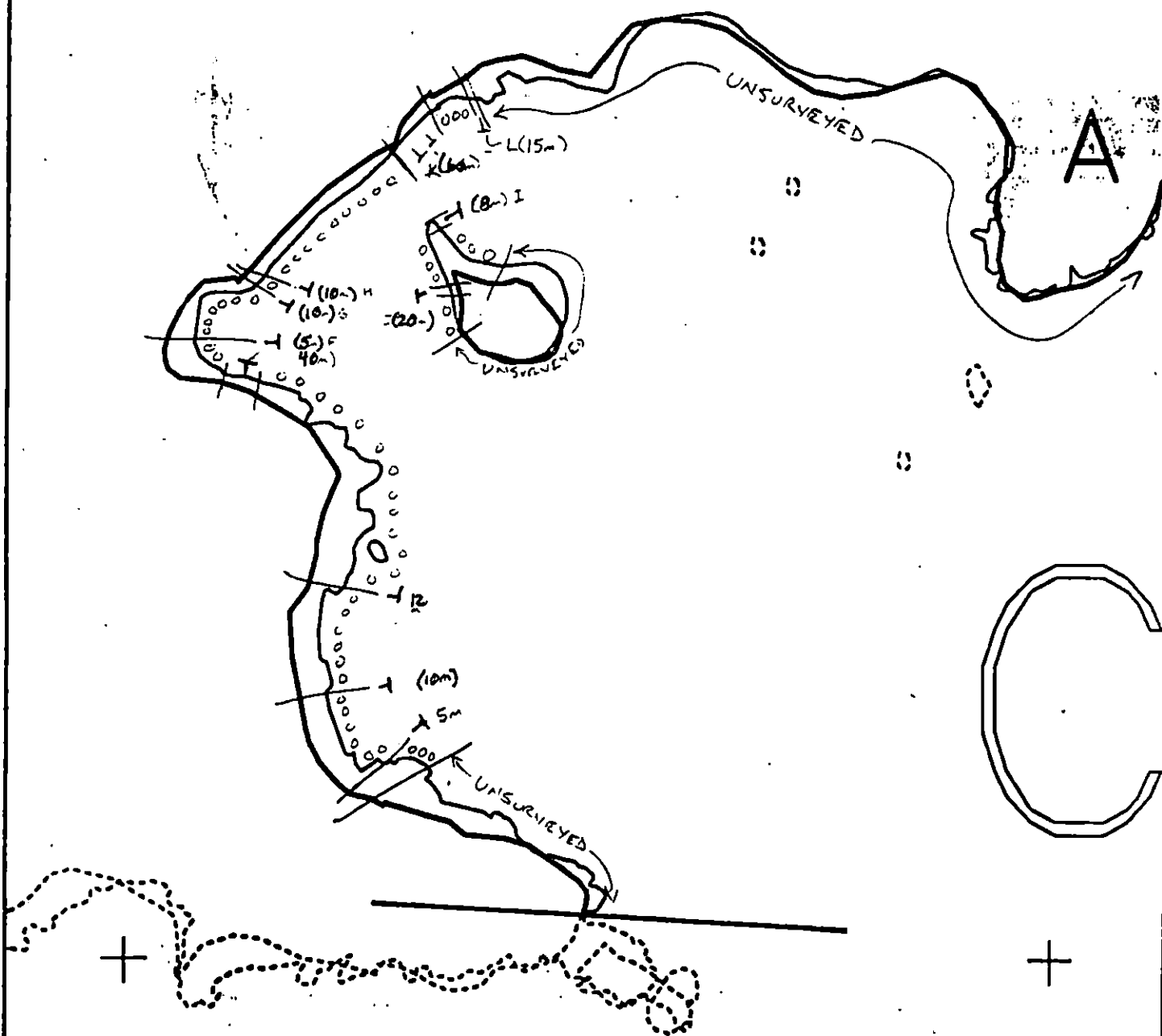
0 400
meters

3001-A
SKETCH MAP
30-MAY-91
~~1006-1121~~

MAP 2 OF 2
1138-1158

BIO MAP
ROTH





XXXX
////

TTTT
0000

Wide
Medium
Narrow
Very Light
No Oil

CB001 A

ADEC Subsegment Length: 6252m
METERS

0 200 400

AK State Plane Zone 4
NAD83



Subdivision Field Map

Map Key: KENC001Aa

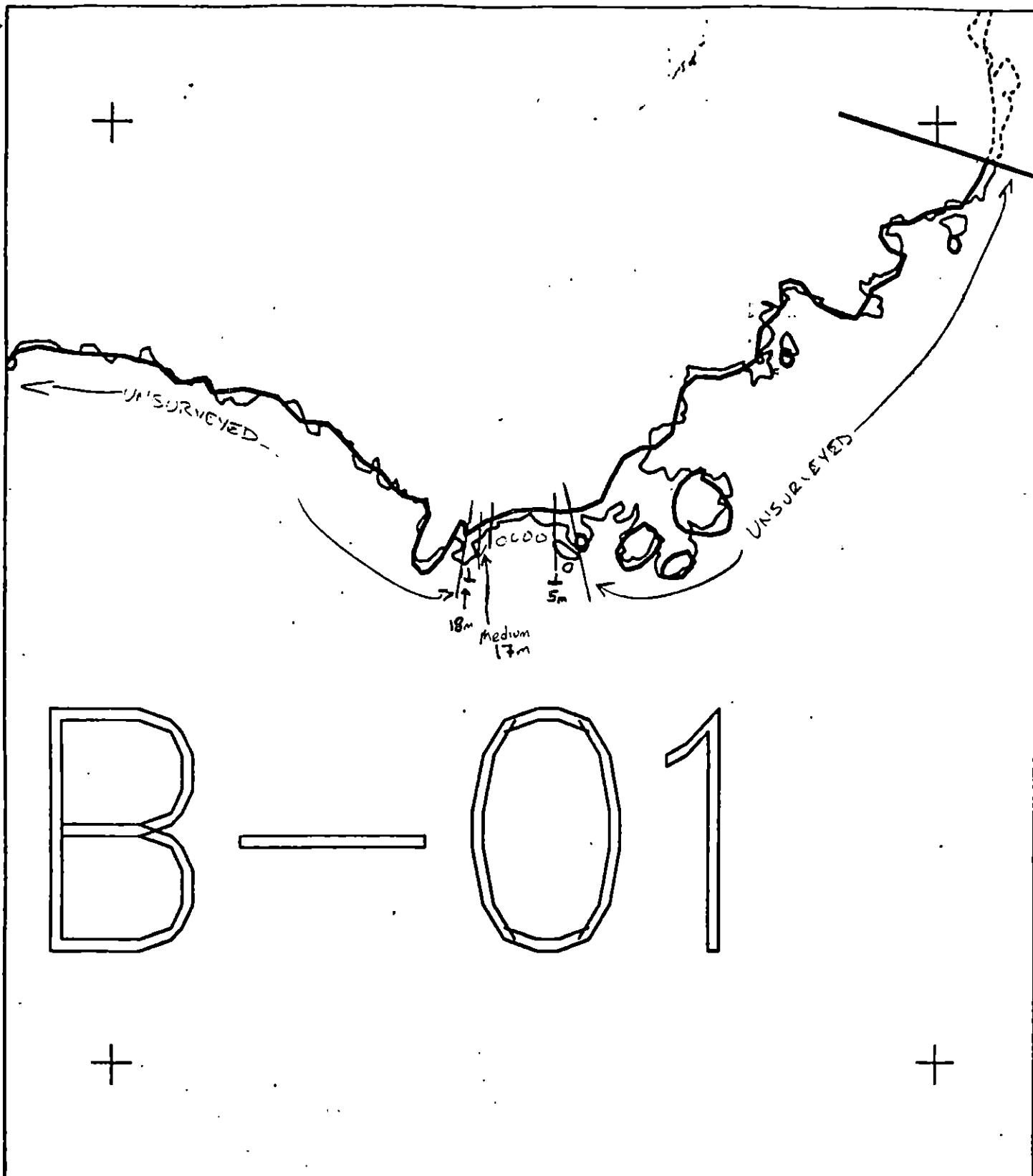
Name: TRIMM

Date: 29/31-MAY-91

Date Entered:

- SURFACE OIL CATEGORY MAP -

Reviewed: mc 6/1/91
reviewed 5.31.94



B-01

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

CB001 A
 ADEC Subsegment Length: 6252m
 METERS

5 100 200
 AK State Plane Zone 4
 acb001ab



Subdivision Field Map

Map Key: KENC001Ab

Name: TRIMM

Date: 29/30-MAY-91

Date Entered:

- SURFACE OIL CATEGORY MAP -

Reviewed: MC 6/1/91
 reviewed 5-31-91

1991 MAYSAP EVALUATION

SEGMENT: CB 001 SUB: A REGION: KEN SURVEY DATE: 5/29-30/91

ENVIRONMENTAL SENSITIVITIES:

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

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

ARCHAEOLOGICAL CONSTRAINTS:

Consultation and inspection with an Exxon archaeologist is required prior to treatment. Specific on-site monitoring requirements will be determined at that time. PHONE 564-3276; 564-3657; (Anchorage) or 229-1514 (24 hrs.).

RECOMMENDATIONS:

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

COMMENTS:

INITIAL: Manual pickup at easily accessible AP. Apply Customblen.

TAG:

FOSC:

TAG APPROVAL DATE: JUNE 7 1991

FOSC APPROVAL DATE: 6/7/91

ADEC John Bane

FOSC lll

EXXON Real

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

USCG Ed Malo

NOAA John

**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 CB001 SUBDIVISION A DATE May 129/91

ADEC

NAME Steve Ferguson SIGNATURE Steve Ferguson

☐ NTR ☒ TREATMENT RECOMMENDED

RECOMMEND TREATMENT OF SHIPWRECK POINT. A VERY DEFINITIVE AREA OF ASPHALTING NEEDS TO BE REMOVED. ~~THE~~ REST OF SUBDIVISION HAD TRACE AMOUNTS OF OILING.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/29/91

☒ NTR No appreciable oil found on West end. At shipwreck point there is a area of Asphaltting (3m x 17m) 40% coverage.

LANDMANAGER

NAME Pat Worman OF Port Graham SIGNATURE Pat Worman

☐ NTR oil found was partially picked up; remaining oil should eventually erode away. However if time permits shipwreck point needs to be looked at to see if the subsurface oil remains. was not surveyed due to large swells. Helo survey 5-30-91 Steve Ferguson will represent as land manager for this segment. see attached letter

USCG/NOAA

NAME McMahon/McDonald SIGNATURE James McMahon

☒ NTR sporadic manual patches less than 10% no subsurface oil EAST END ONLY

☐ Treatment for West end - heavy AP Shipwreck pt.

Ronald McDonald

5/29/91

This is to designate Steve Ferguson
of ADEC as Acting Land manager
rep for The Port Graham Corporation
to survey shipwreck point during
MAY SAP survey 1991, He will Advise
me of teams finding upon completion
of the segment. The reason for this
is to reduce logistical problems of
providing Land rep from Port Graham

Patricia Wons
5/29/91

MAYSAP SHORELINE OILING SUMMARY

PAGE 1 OF 1

TEAM NO. 4

OG B TRIMM

BIO J ROTH

SEGMENT C3001

ADEC S FERGUSON

LANDMANAGER P NORMAN for PT GRANAM

SUBDIVISION A

EXXON G STILES

USCG/NOAA McMAHON / McDONALD

DATE MAY 130 1991

TIME 39:22 to 11:53 (29th) TIDE LEVEL -1.60 3.27
11:38 to 11:53 (30th) ENERGY LEVEL: ☒ H ☐ M ☐ L

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

TOTAL LENGTH SHORELINE SURVEYED: 1460 m NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE

EST. OIL CATEGORY LENGTH: W 0 m M 17 m N 0 m VL 218 m NO 1225 m US 4792 m

L O C	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE VHML	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO			WIDTH m	LENGTH m	S	UI	MI	LI	
A		T				T					R	M	1	5			X		
B		T									R	H	1	10		X			
C				T			T				RS	H	2	12		X			SOR-M
D						S	S				RB	H	1	40		X			
E				T							B	M	2	15		X			SOR-M
F					S	S	S				R	V	1	5		X			
G			T								R	M	1	10			X		
H						S	S				R	H	2	10		X			
I		S		S							C	L	2	8				X	HUY SOC PARTIAL P/U
J		T									B	H	2	20		X			PARTIAL P/U
K		T									C	L	1	60			X	X	PARTIAL P/U
L		T									C	M	1	15		X			PARTIAL P/U
M				T		T	T				BR	M	3	35		X			SURROUND LOCAT N
N	P										BR	M	3	17		X			
O						T	T				R	H	1	5		X			

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

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE PHOTO ROLL # MAYSAP- 4 (UL) - 14 FRAMES 10-15

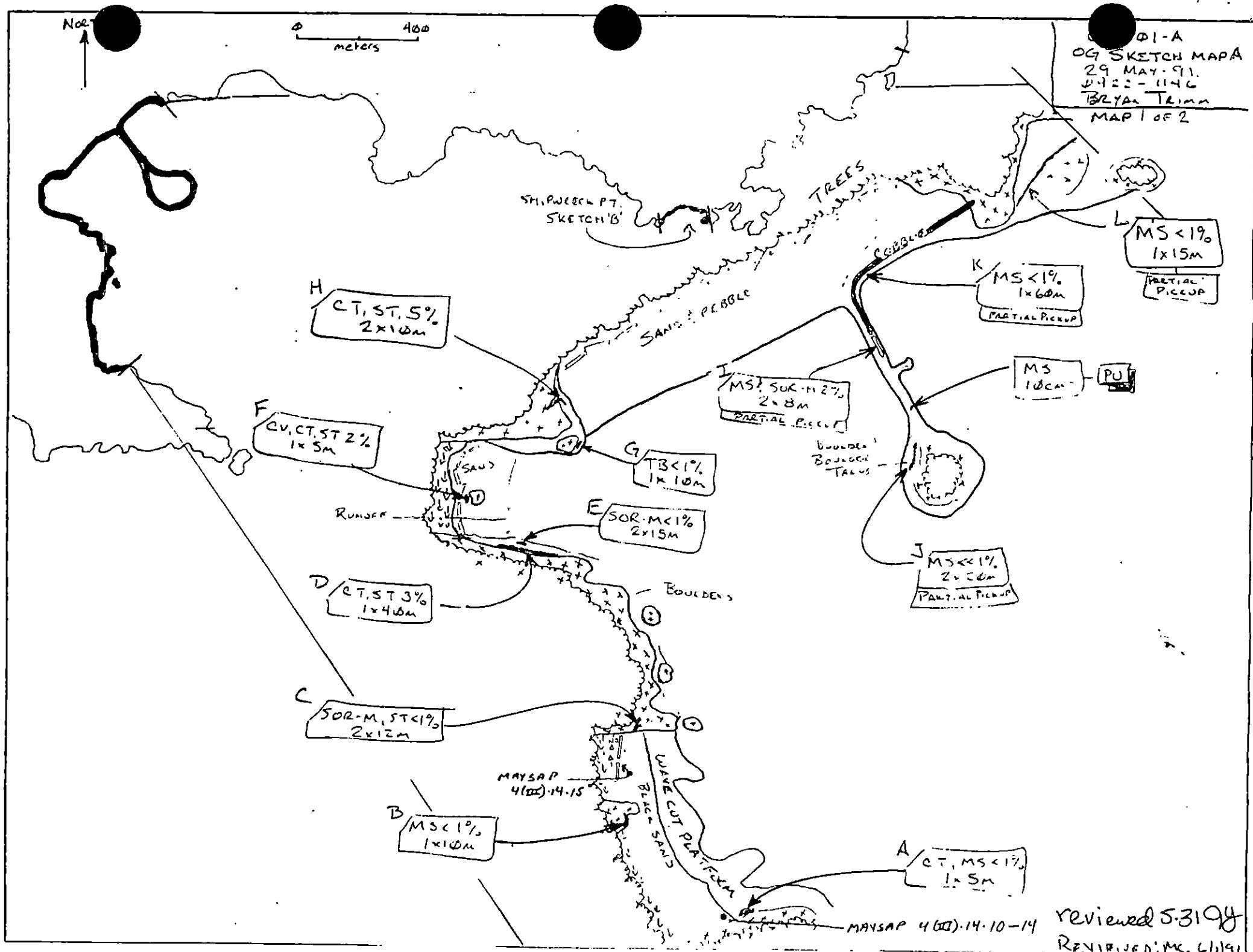
PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
1	52							X	—	Y	—	—	X				GSP - GSP	W END SUBDIVISION
2	45							X	—	Y	—	—		X			PG - PG	SHIPWRECK PT
									-									
									-									
									-									
									-									
									-									
									-									
									-									
									-									

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

OG COMMENTS:

BADGER COVE
 LOCATION N' AT SHIPWRECK POINT HAS SOFT ASPHALT IN BOULDERS, TRACE AMOUNTS OF
 STAIN, COAT & MEDIUM SOR SURROUND ASPHALT. (LOCATION M')
 MOUSSE TYPICALLY FOUND IN ROCK CREVICES

REMOVED: MC 6/1/91
 revised 5.31 94



01-A
 OG SKETCH MAP '81
 30 MAY - 91
 1138-1153
 BRYAN TRIMM
 MAP 2 OF 2

0 400
 meters

North
 ↑

BADGER
 COVE

SKETCH 'A'

SHIPWRECK
 POINT

N
 AP (SOFT) 40%
 3x17m

SHIPWRECK

TREES

SAND-PEBBLE

BOULDERS

WAVE CUT ROCK PLATFORM

M
 SOR. MC 1%
 ST. CT 1%
 3x35m

O/CT. ST 1%
 1x5m

reviewed 5.31 94
 REVIEWED: MC 6/1/94

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 4 DATE 29-30 May '91
 SEGMENT # CB001 TIDAL HEIGHT (Range) -1.62 to +3.0 on 29 May
 SUBDIVISION A BIOLOGIST JIM ROTH
 SEA STATE 2 1/2 FT SWELLS (29 May) WIND SPEED/DIRECTION
 PHOTOGRAPHS: ROLL # FRAME # +1.50 to +2.36 on 30 May

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

- A. BEDROCK/BOULDER w/ SPARSE FUCUS; DENSE MUSSELS, BARNACLES, LITTORINES; MODERATELY DENSE LIMPETS.
 B. BEDROCK w/ VERRUCARIA.
 C. BEDROCK w/ SPARSE FUCUS; DENSE BARNACLES, LITTORINES; MODERATELY DENSE MUSSELS AND LIMPETS.
 D. E. BEDROCK w/ DENSE BARNACLES, MUSSELS, LITTORINES, LIMPETS.
 E. BEDROCK w/ MODERATELY DENSE BARNACLES (AS WELL AS MANY DEAD ONES), LITTORINES.
 G. BEDROCK, BOULDERS w/ MODERATELY DENSE FUCUS, MUSSELS; DENSE BARNACLES, LITTORINES.
 H. BEDROCK w/ VERRUCARIA; SPARSE LITTORINES.
 I. COBBLE/PEBBLE w/ MODERATELY DENSE BARNACLES, SMALL MUSSELS, WORMS; SPARSE LITTORINES, LIMPETS.
 J. BOULDER/COBBLE w/ SPARSE FUCUS; DENSE SMALL MUSSELS; MODERATELY DENSE BARNACLES, LITTORINES, LIMPETS.
 K. COBBLE/PEBBLE w/ MODERATE BARNACLES, MUSSELS, LITTORINES, LIMPETS.
 L. BEDROCK/BOULDER w/ SPARSE LITTORINES, LIMPETS; BEACH-HOPPERS.
 M., N. BEDROCK/BOULDER THAT COVERS A GRADIENT FROM DENSE LITTORINES AND LIMPETS IN THE DOWNSLOPE SECTION, TO MOSS AND BEACH HOPPERS IN THE UPPER (SUPRA) SECTION. (SEE ATTACHED SHEET)

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles (Bald)	1	3	
Seabirds			
Waterfowl			
Gulls/Kittiwakes			
Shorebirds			
Cormorants			
Other Birds			

LAND MAMMALS

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

Shoreline subdivision map showing important biological features attached.

Reviews: MC 6/1/91

CB001-A 29-30 MAY '91 Jim ROTH

M., N., (CONTINUED). THERE WAS NO OBVIOUS DIFFERENCE IN LITTORINE OR LIMPET DENSITY BETWEEN OILING ZONES M (SOR, M; ST, CT) AND N (AP); DENSITY OF THESE GASTROPODS WAS RELATED TO ELEVATION.

O. BEDROCK W/ VERRUCARIA.

GENERAL COMMENTS: SURVEYED AREAS IN THIS SUBDIVISION INCLUDE BOTH THE WESTERNMOST SHORE OF BADGER COVE (SURVEYED ON 29 MAY) AND SHIPWRECK POINT (SURVEYED ON 30 MAY). BADGER COVE IS A HIGH-ENERGY ENVIRONMENT; THE WESTERN SHORE CONSISTS OF 3 SMALL BEACHES, THE SOUTHERNMOST OF WHICH IS PROTECTED BY AN OFFSHORE BEDROCK PLATFORM. THE INTERTIDAL BIOTA IS MOST LUXURIANT ON THIS PLATFORM AND IN OTHER AREAS WHERE BEDROCK OUTCROPS IN THE COVE. MANY COMPONENTS OF THE INTERTIDAL BIOTA ARE SHIFTED UPWARD BY FREQUENT WAVES BREAKING HIGH ON THE SHORE. THUS, ALTHOUGH MOST OF THE OIL OCCURS IN THE UPPER INTERTIDAL ZONE, MANY ORGANISMS MORE TYPICAL OF THE MIDDLE ZONE ARE FOUND THERE (EXAMPLES INCLUDE FOCUS, BARNACLES, MUSSELS, LITTORINES, LIMPETS). THE COVE INCLUDES A SMALL ISLAND, WHICH IS CONNECTED TO THE MAINLAND BY AN ISTHMUS IN THE LOWER INTERTIDAL ZONE. OIL FOUND HERE HAD NO OBVIOUS EFFECT ON THE BIOTA, AS WAS ALSO THE CASE IN UPPER INTERTIDAL AREA WHERE OIL WAS FOUND.

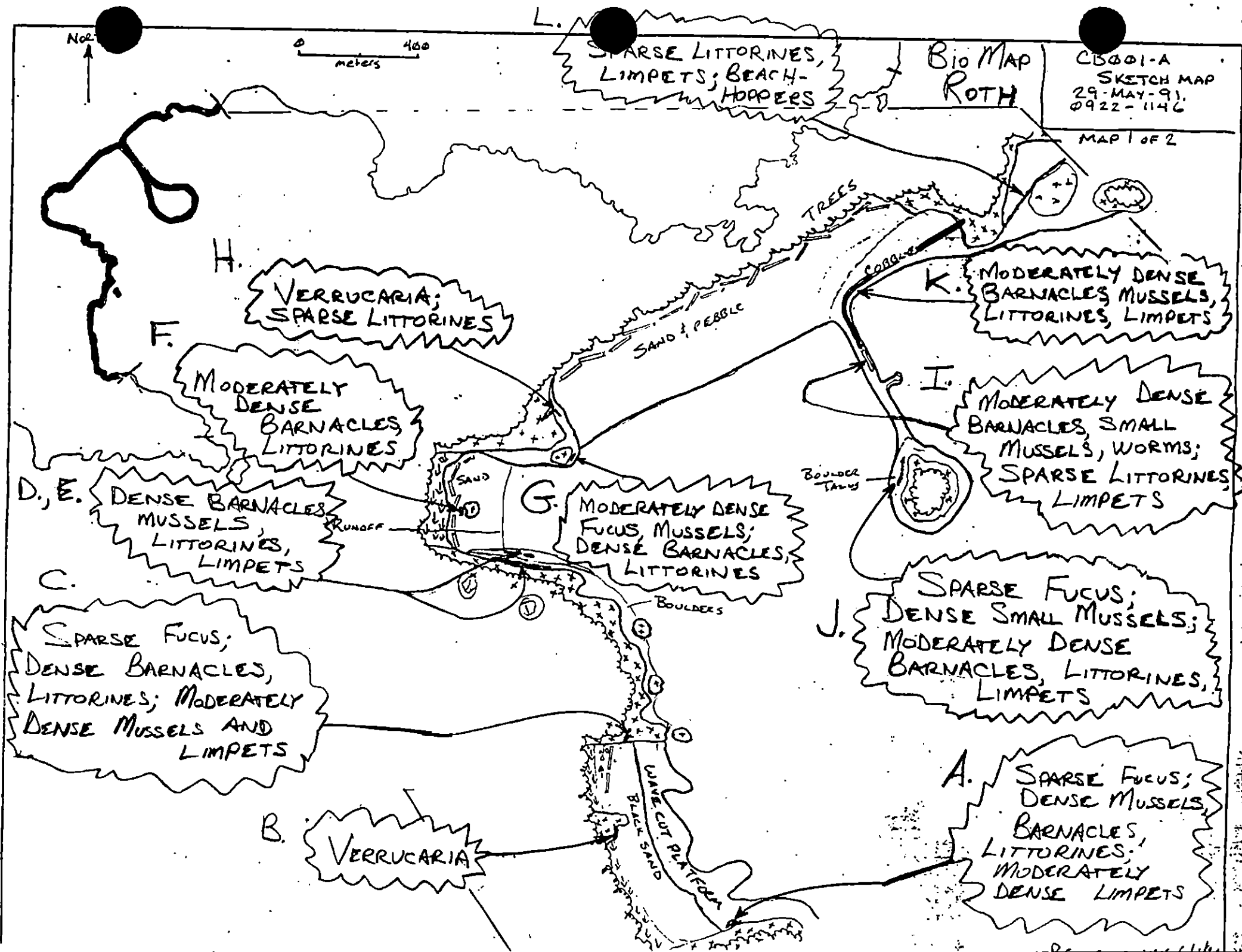
SHIPWRECK POINT IS ALSO A HIGH-ENERGY BEACH PROTECTED BY AN OFFSHORE BEDROCK PLATFORM. AS WAS NOTED ABOVE, LITTORINE DENSITY DID NOT APPEAR TO BE INFLUENCED BY THE AMOUNT OF OIL WITH WHICH IT WAS FOUND.

REVIEWED: MCG/1/91
(SEE NEXT PAGE)

CB001-A 29-30 MAY '91 Jim ROTH

BIRD AND MAMMAL NOTES: 3 BALD EAGLES WERE SEEN IN THE SUBDIVISION, ALTHOUGH NO NEST WAS NOTICED. TWO BIRDS HAD IMMATURE PLUMAGE AND SOARED CLOSE OVERHEAD. THE THIRD (ADULT) BIRD DID NOT APPROACH AS CLOSELY. ALL 3 ULTIMATELY DISAPPEARED AROUND THE POINT TO THE EAST OF THE SHIPWRECK.

A RIVER OTTER — EVIDENTLY RETURNING FROM FORAGING IN THE INTERTIDAL ZONE — SCAMPERED UP THE BEACH A FEW FEET FROM MEMBERS OF TEAM 4 (WAITING FOR HELICOPTER) AND DARTED INTO A HATCH ON THE FOREDECK OF THE WRECKED SHIP. THE OTTER'S CURIOSITY WAS EVIDENTLY AROUSED, AS IT POKED IT'S NOSE OUT FROM IT'S SHELTER TO OBSERVE US.



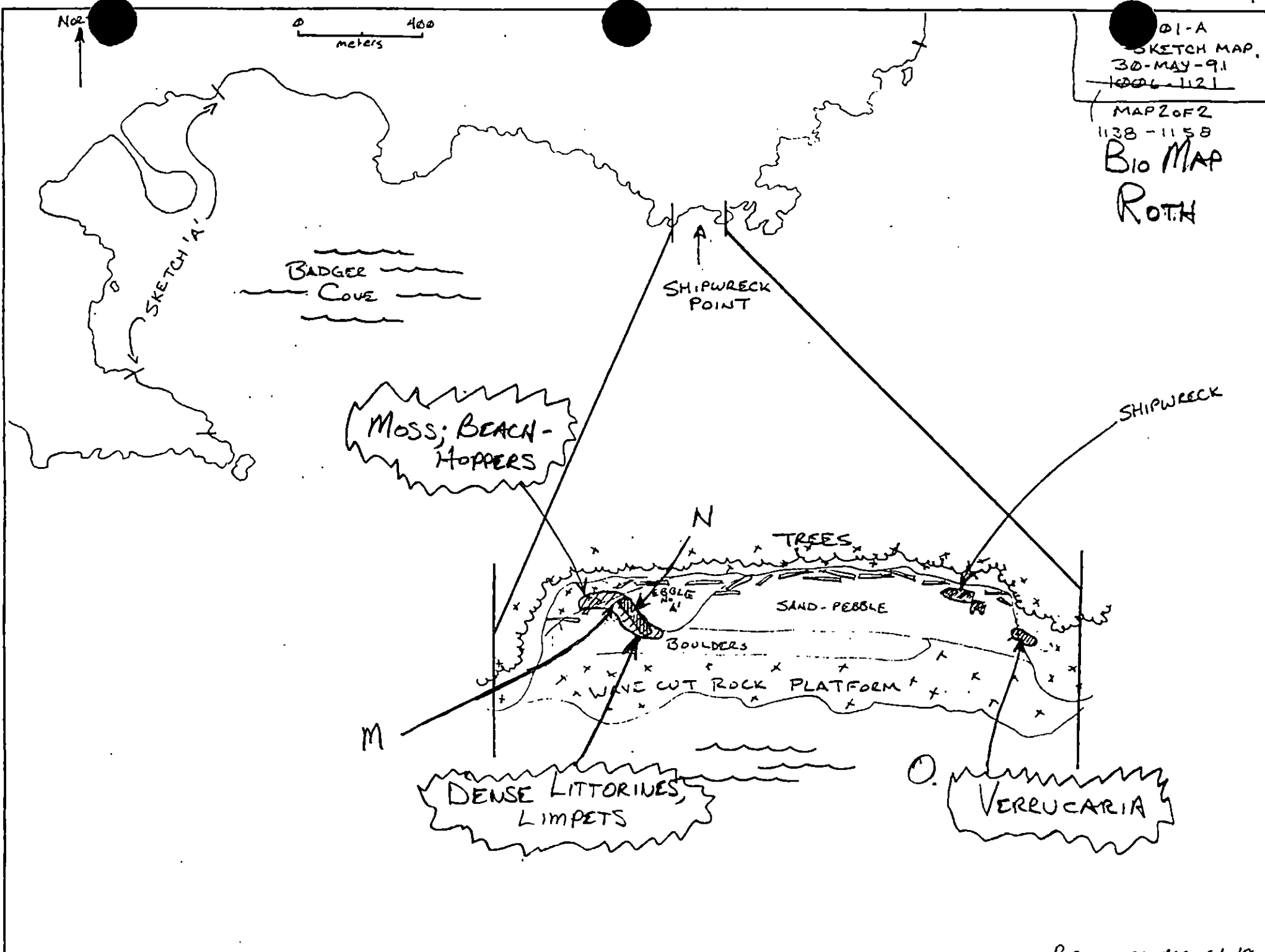
No. 2

0 400
meters

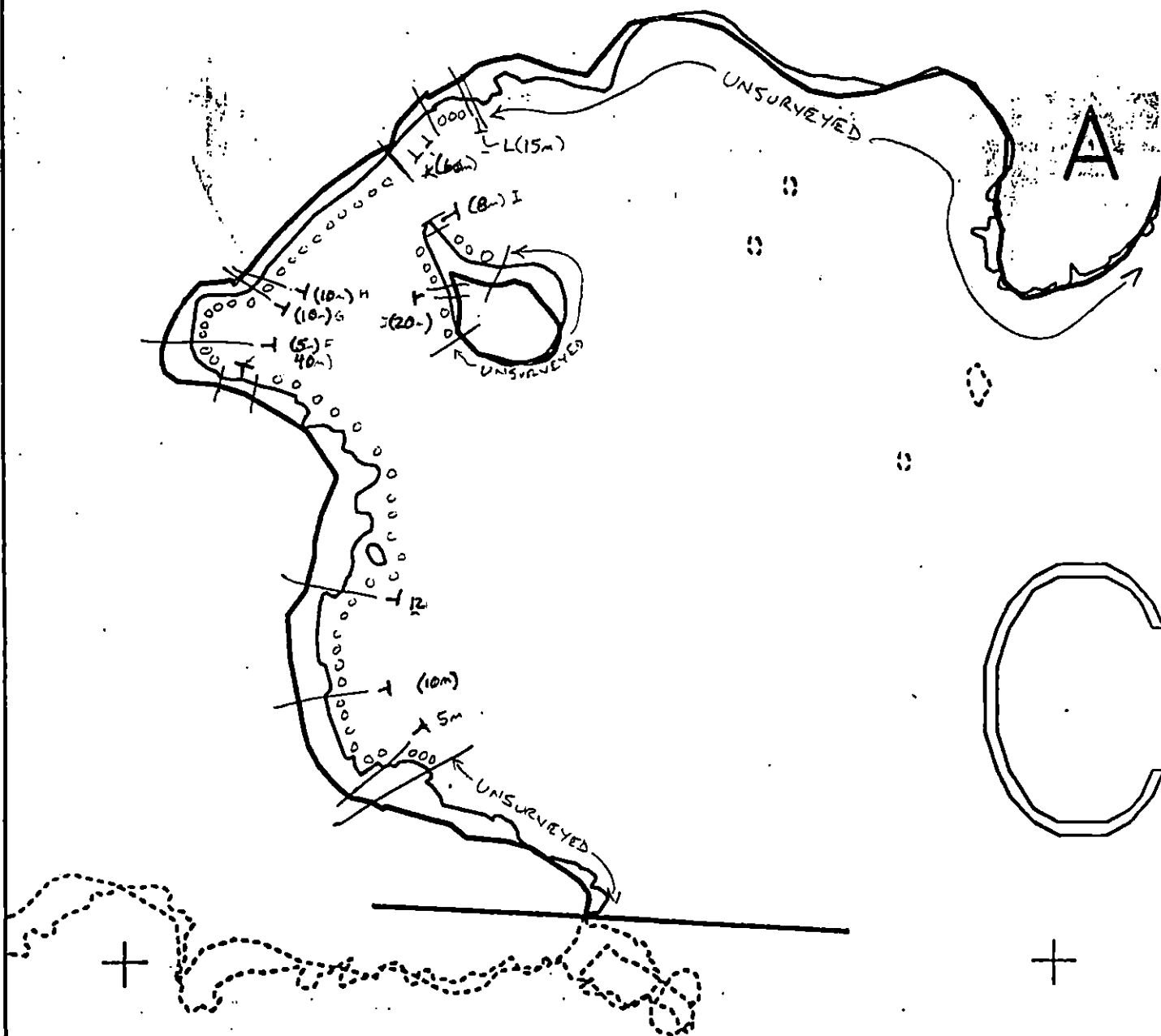
01-A
SKETCH MAP,
30-MAY-91
~~1006-1121~~

MAP 2 OF 2
1138-1158

Bio MAP
ROTH



REVIEWED: MC 6/1/91



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

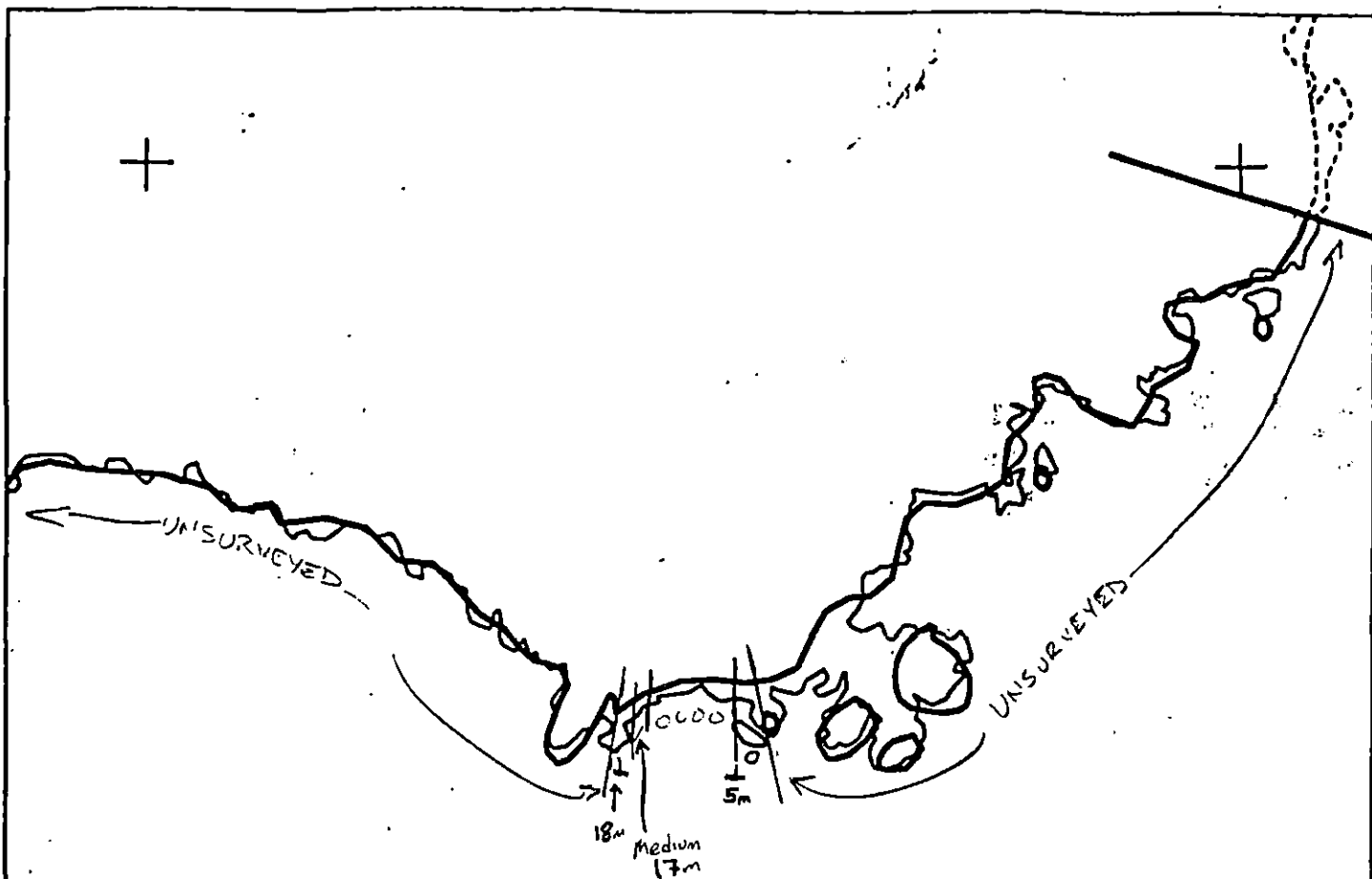
CB001 A
 ADEC Subsegment Length: 6252m
 METERS
 0 200 400
 AK State Plane Zone 4
 98080100



Subdivision Field Map
 Map Key: KENC001Aa
 Name: TRIM
 Date: 29/30-MAY-91
 Date Entered:

- SURFACE OIL CATEGORY MAP -

Reviewed: mc 6/1/91
 reviewed 5.31.94



B-01

XXXX
////

TTTT
0000

Wide
Medium
Narrow
Very Light
No Oil

CB001 A

ADEC Subsegment Length: 6252m

METERS



AK State Plane Zone 4
ac8001ab



Subdivision Field Map

Map Key: KENC001Ab

Name: TRIMM

Date: 29/30-MAY-91

Date Entered:

- SURFACE OIL CATEGORY MAP -

REVIEWED: MC 6/1/91
Reviewed S-319y

WORK PLAN ADDENDUM

Segment CB 01

Subdivision A

Dated 07/20/90

MODIFICATION

1. REASON FOR MODIFICATION

REQUEST FROM FIELD FOR MECHANICAL ASSISTANCE TO
ACCESS OIL BELOW BERM.

2. ADJUSTMENT TO WORK PLAN

MANUALLY ACCESS OIL IF POSSIBLE, SHOULD MECHANICAL
MEANS BE NECESSARY THIS IS AUTHORIZED. Removal of OP/mousse
followed by Customblen.

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

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

SHPO APPROVAL NEEDED YES X
NO

SHPO SIGNATURE Rachel Jean Dore 7/20/90

ABOVE INSPECTION CONSTRAINT APPLIES

TAG APPROVAL DATE 07/20/90

ADEC JOHN BAUER

EXXON ANDY TAN

NOAA Burl Wescott

USCG G.A. REITER

FOSC

DATE 7-28-90

WORK PLAN MODIFICATION RECOMMENDATION

SEGMENT CB-01 A SUBDIVISION A DATED 07/17/90MODIFICATION CLASS I CLASS II ✓ CLASS III

1. REASON FOR MODIFICATION

ADDITIONAL OILING FOUND. BKT ABOVE HIGH TIDE ZONE
 AREA WHERE OIL WAS FOUND 10' x 30', BURIED
 BY 12" TO 18" OF GRAVEL. OIL LENSE APPROX. 4"
 THICK. (SEE ATTACHED MAP FOR LOCATION.)

2. SUGGESTED ADJUSTMENT TO WORK PLAN

MECHANICAL REMOVAL OF OVERBURDEN. RECOVERY
 OF MOUND + SEDIMENT.

3. TIMING ISSUES

WHEN MECHANICAL EQUIPMENT IS AVAILABLE +
 IN THE AREA.

ADEC S. PatchEXXON Timothy W. Turner Timothy W. TurnerUSCG Pat R. VetterLAND MANAGER (If field rep is on scene)

OIL FOUND IN
STORM BARN ABOVE
BAROLOCK OUTCROP.

07/16/90 JH

WB-05

CB-01

WORK
AREAS



Exxon Company, USA



ECOLOGY MAP
SEGMENT CB-1
SUBDIVISION A (L-L-L-L)

- ★ Seabird Colony
- ▲ Eagle Nest

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT CB-1 SUBDIVISION A (1 of 1)

WORK WINDOW

* Manual Pickup and Tarmat Removal Less Than 400m From Active Nest	CLOSED
* Manual Pickup and Tarmat Removal More Than 400m From Active Nest	OPEN
Bioremediation Less Than 400m From Active Nest	CLOSED
Bioremediation More Than 400m From Active Nest	OPEN

* EXCAV 'A' Study Site AH-3 - DO NOT REMOVE STAKES FROM BACK OF INTERTIDAL ZONE

ARCHAEOLOGICAL INSPECTION/CONSULTATION REQUIRED.

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

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

5T Bald Eagle Nest

USFWS 6/1/90 map indicates an active nest in Subdivision A. Closed to manual pickup, tarmat removal, and bioremediation within 400m of active nest. No constraint to manual pickup, tarmat removal, and bioremediation more than 400m from active nest.

OTHER ECOLOGICAL CONSIDERATIONS

Restrict air traffic and all disturbance to essential minimum. No personnel or boat traffic within 400m of active nests. Air approach and takeoff from and to seaward only; maintain 400m horizontal, 300m vertical distance from active nests.

FOSC

[Signature]

Date

6/13/90

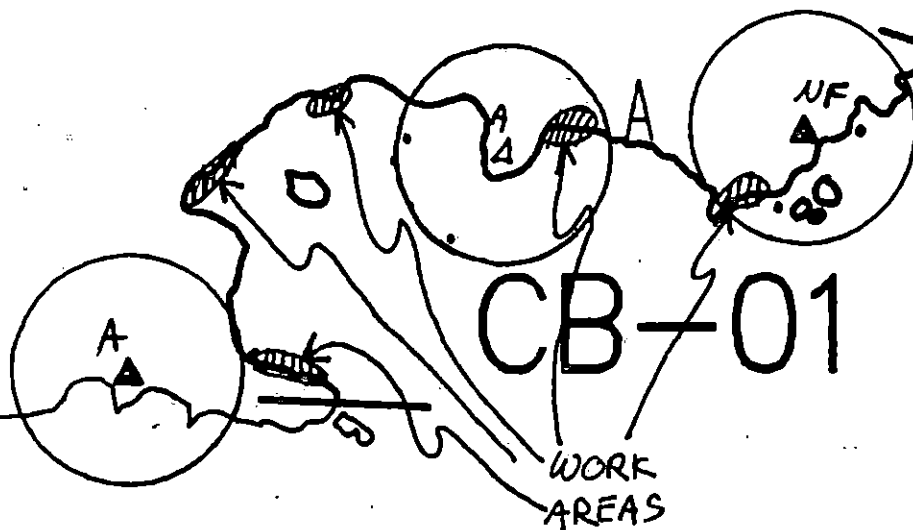
Prepared by

[Signature]

Date

6/12/90

WB-05



Exxon Company, USA



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

- ★ Seabird Colony
- ▲ Eagle Nest

SHORELINE EVALUATION

SEGMENT ST/ CB-01 SUBDIVISION A (1 OF 1) DATE 4/26/90

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

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: [Signature]

DATE: 5/2/90

OILING CATEGORIZATION:

Wide 0 m: Medium 245 m: Narrow 49 m: V.Light 3548 m: No Oil 398 m
Subsurface Oil Observed: Yes X No Maximum Depth 30 cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) manual pickup of mousse in area indicated on sketch maps, 2) manual removal of tarmats in areas indicated on sketch maps, and 3) bioremediation of area indicated on sketch maps. Work should be conducted after 6/1 with approval of USFWS due to eagle nest constraint.

SEE CONSTRAINT ADDENDUM dated 6/12/90 JPP

TAG COMMENTS:

TAG APPROVAL DATE: 5/17/90.

ADEC Art Weiner Dist. Weimer

EXXON Andy Tate

NOAA Gary Peters Gary Peters

USCG G.A. BREITER G.A. Breiter

FOSC:

DATE: 5-18-90

REGION: KENAI

SEGMENT: ST/CB-02

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ CB-02 SUBDIVISION A (1 OF 1) DATE 4/26/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1J Purse seine area (7/1 to 8/31)
5T-4 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 38 m: Narrow 46 m: V.Light 4998 m: No Oil 3039 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes manual removal of tarmats in areas shown on sketch map (east portion only). Work should be conducted after 6/1 with approval of USFWS regarding eagle nest constraint.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD, AND HOMER ECOLOGICAL CONSTRAINTS

- 1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
 1B Salmon stream mouth - spawning (7/10 to 8/31)
 No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream without authorization from ADF&G. No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G. Treatment which is not intrusive and which will not affect nearshore oil or toxicity levels, such as manual removal, can probably proceed without adherence to time constraints. In any case, contact ADF&G Habitat Division prior to treatment for consultation and/or permit application.
 AGENCY CONTACT PERSON: ADF&G John Morison 267-2324
- 1C Salmon fry nursery area (4/31 to 7/31)
 No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to July 31 unless authorized by ADF&G. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G prior to treatment for confirmation and advice.
 AGENCY CONTACT PERSON: ADF&G Larry Peltz 424-3214
- 1D Esther Hatchery release (4/15 to 6/15)
 1E Main Bay Hatchery release (4/20 to 6/15)
 1F Sawmill Bay Hatchery release (4/15 to 6/1)
 1G Cannery Creek Hatchery release (4/21 to 6/1)
 1H Remote release site
 No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G and/or PWS Aquaculture Association. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G or PWS Aquaculture Association for confirmation and authorization.
 AGENCY CONTACT PERSON: 1E ADF&G Larry Peltz 424-3214
 1D 1F 1G PWS Aquaculture Association John McMillan or Bruce Suzumoto 424-7511
- 1I Gill net area (6/7 to 8/31)
 1J Purse seine area (7/20 to 9/30)
 1K Purse seine hook-off (7/20 to 9/30)
 1L Set net sites (6/11 to 7/25)
 Contact ADF&G for specific dates, locations and constraints. Restrict boat and air traffic to essential minimum. When set net sites are present (1L) restrict beach operations to essential minimum as authorized by ADF&G. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G James Brady 424-3212
- 2M Herring spawning (4/1 to 6/15)
 Contact ADF&G for confirmation - dates and locations may vary. Restrict boat traffic to essential minimum. Avoid damage to unopened intertidal and subtidal algae and seagrass. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G Evelyn Biggs 424-3235
- 3F Harbor seal and sea lion pupping (5/15 to 7/1)
 3O, 3D Harbor seal and sea lion molting (8/15 to 9/15)
 Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts. No application of Inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31). Contact ADF&G and USFWS prior to treatment for confirmation.
 AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 586-7235
 ADF&G Don Calkins 267-2403
- 5R Seabird colony (5/1 to 9/1)
 Restrict air and boat traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from colony. Contact USFWS prior to treatment.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 5S Shorebird/waterfowl concentration (4/1 to 5/15)
 Restrict all activity to essential minimum, especially air traffic. Contact USFWS and ADF&G for confirmation.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
 ADF&G Tom Roth 267-2206
- 5T All Bald Eagle nests (3/1 to 6/1)
 Active Bald Eagle nests (3/1 to 9/1)
 Restrict air traffic and all disturbance to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 6U Recreation: Tent sites (6/1 to 9/15)
 6V Anchorages (6/1 to 9/15)
 6W Forest Service cabins (6/1 to 9/15)
 6X Lodge (6/1 to 9/15)
 6Y Special use destination
- 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/ CB-02 SUBDIVISION: A-10f1 DATE 04/26/90

USCG

NAME David Thomas SIGNATURE [Signature]☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

ADEC

NAME Clara S. Crosby SIGNATURE Clara S. Crosby☐ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

UL oiling within segment suggest manual removal
of AP which is concentrated in protected areas
on the base of bedrock platform at the
base of gravel beaches ^(beach) last ~ 200 m was not
surveyed on foot —

LAND MANAGER

NAME Dick Moenir SIGNATURE Dick Moenir☐ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTED

SHORELINE OILING SUMMARY

REVISION NO. 34-1-20

OG RICK GILLIE USCG DAVE THOMAS SEGMENT ST/ CB-02
 BIO DAVE LOHVE LAND REP DICK MOONIN SUBDIVISION A (1 OF 1)
 EXXON FRANK BOX ADEC CLARA CROSBY TIME 18:30 to 20:30
 TEAM NO. 13 TIDE LEVEL +6 to +2 DATE 04/26/90
 EST. SUBDIVISION LENGTH: 10,168 m ☒ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 50 % B 30 % C 15 % P 5 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Lang 50 % Hang 40 % Vert 10 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 5 m N 5 m VL 5000 m NO 4353 m

SURFACE OIL

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

PAVEMENT H F (S) 25 sq. m by 5 cmPATTIES / TARBALLS 0 BAGSNEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT			DID YOU COLLECT DEBRIS?
	SM	MD	LG	
Logs	X			YES ☐ - NO ☒
Vegetation				
Trash				
Debris				
				TYPE <u>0</u>
				#BAGS <u>0</u>

Photographs:

Roll No. JT-13-5Frames 28, 29

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm)	BELOW		OIL / FILM COLOR								PIT ZONE	A N A	SHEEN (Y/N)	▽	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		VO	VC	1	2	3	4	5	6	7	8					
1	20					X	.		X									X				C-P, S
2	30					X	.		X									X				C-C
3	30					X	.		X									X				C-C
4	25					X	.		X									X				P-P, S
							.															
							.															

COMMENTS

GEOMORPHOLOGY: - WEST 1/3 IS VERY STEEP UPLAND WITH BOWLER BEACHES.
 - MID 1/3 IS ROCKY CLIFF WITH COBBLE POCKET BEACHES
 - EAST 1/3 IS WIDE ROCK PLATFORM AND REEF WITH PEBBLE BEACHES.

OILING: MOSTLY NO OIL TO VERY LIGHT. 2 SMALL AREAS OF CONCENTRATED AP.

REVIEWED 7W DATE 4/30/90

OG RICK GILLIE
 SEGMENT ST/ B-02
 SUBDIVISION A-1 of 1
 DATE 04/26/90

CHECKLIST

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

LEGEND

1 Δ
 Pit - No Subsurface Oil

2 Δ
 Pit - Subsurface Oil

$\square$ CT/C
 Continuous Distribution

$\square$ CT/B
 Broken Distribution

$\square$ CT/P
 Patchy Distribution

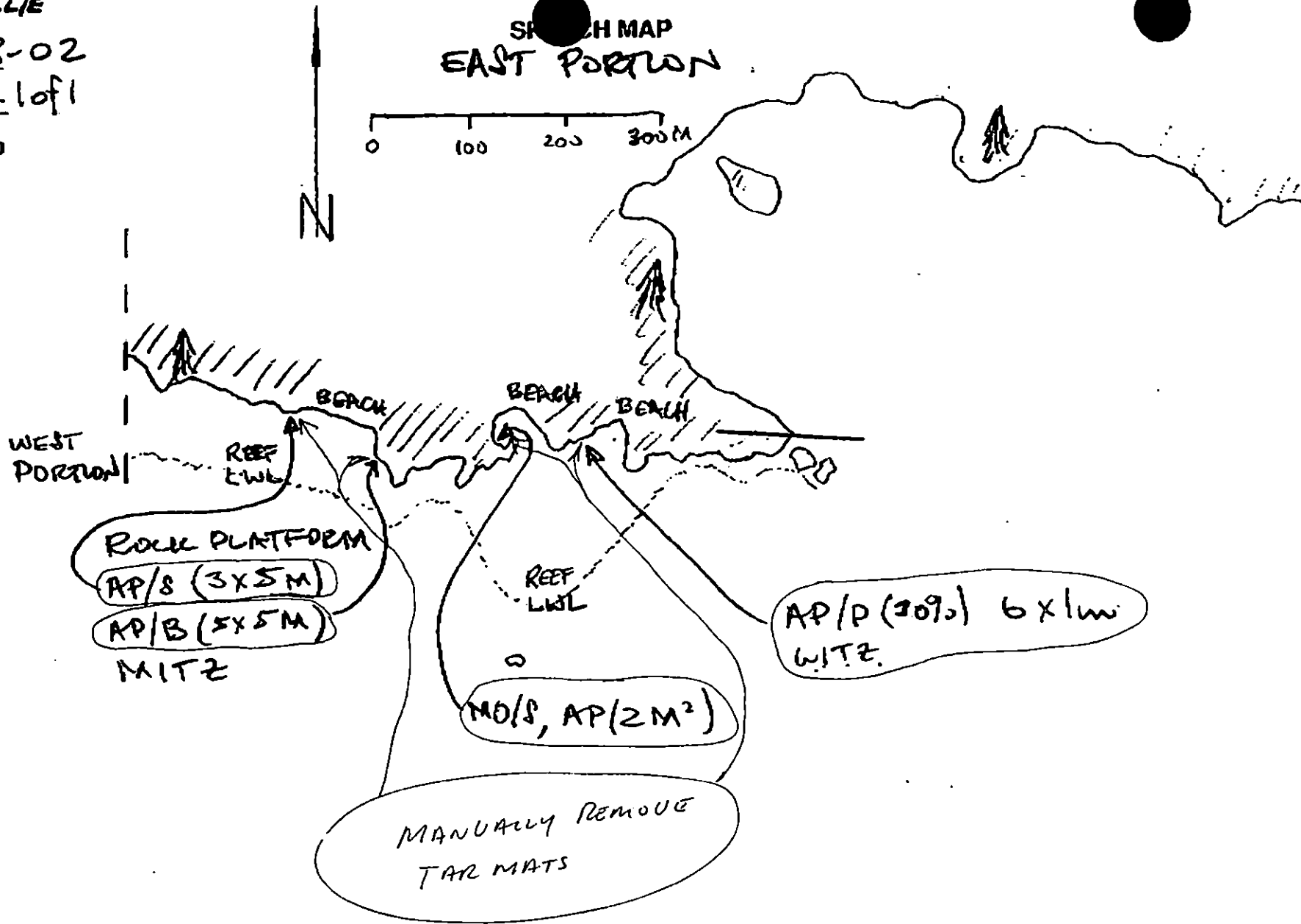
$\square$ CT/S
 Splashed Distribution

Oiled Vegetation

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

**SPREAD MAP
 EAST PORTION**

0 100 200 300 M



DG RICK GALLIE
 SEGMENT ST/ B-02
 SUBDIVISION A-10f1
 DATE 04, 26, 90

CHECKLIST

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

LEGEND

1 Δ
 PH - No Subsurface Oil

2 Δ
 Pit - Subsurface Oil

CT/C
 Continuous Distribution

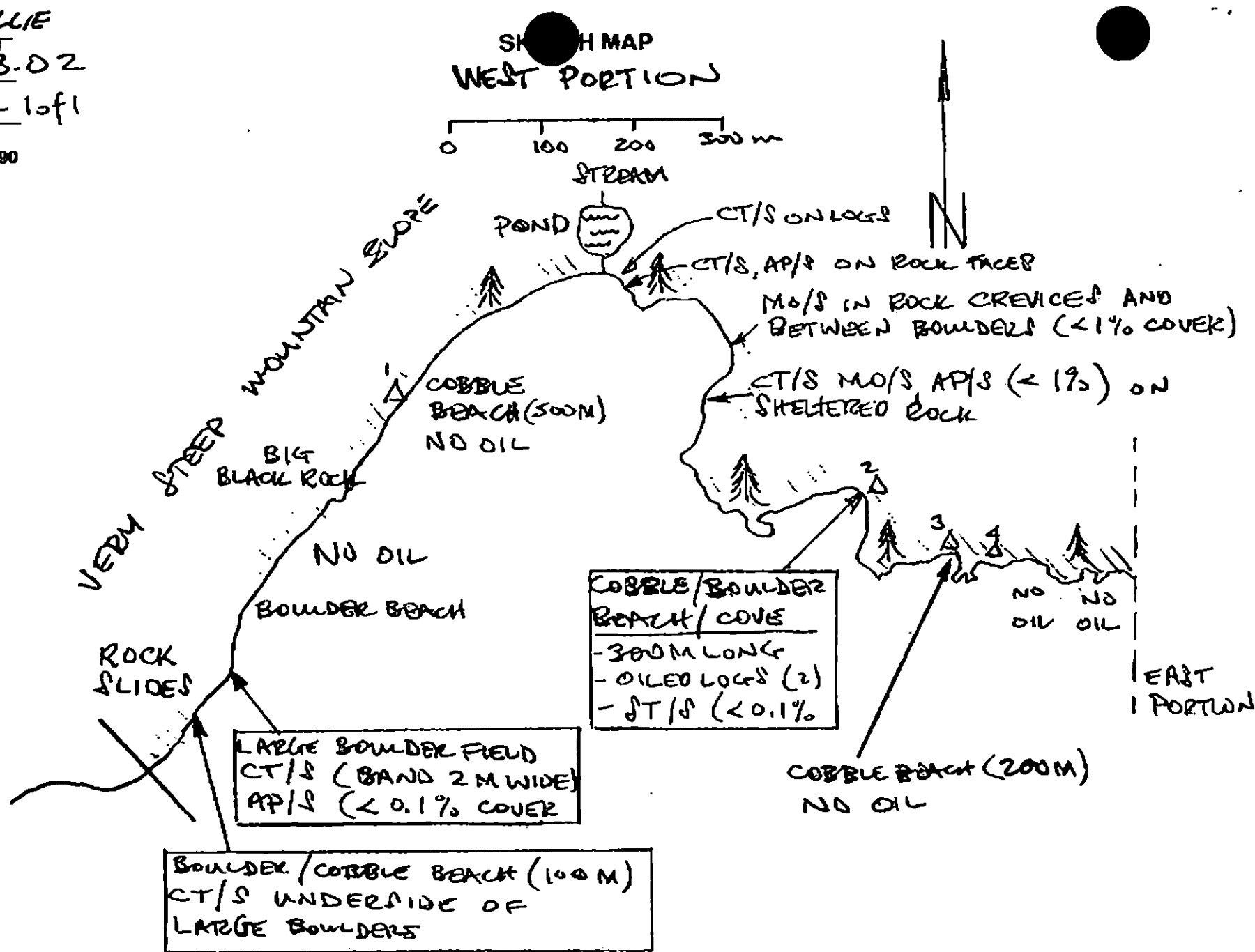
CT/B
 Broken Distribution

CT/P
 Patchy Distribution

CT/S
 Splashed Distribution

Oiled Vegetation

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



Oil Character Length (m): AP 23 PO 0 CV 0 CT 30 ST 10 MS 6 PT 0 TB 0 FL 0 NO 10, 109
 (FOR TOTAL PERCENT)

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST/LB002 Subdivision A Date (mo / day / yr) 4-27-90Time (24 hr) 7:00 Biologist David Lohse(A) Substrate type and % of segments:
(1) Bedrock 50 (2) Boulder 30 (3) Cobble 15 (4) Pebble 5 (5) Sand (6) Silt (B) Overall % cover of biota (% of segment): Dense 25 Moderate 40 Low 35

(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-13-5Frames 28, 29

BARNACLES

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

MYTILUS

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

GASTROPODS

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

FUCUS

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

Wildlife Observations/ General Comments:

See page 2

Ecological Considerations:

Unknown- no information available

Shoreline Ecological Summary

ZotZ

Segment ST-CB002

Subdivision A

4-27-90

Biologist: David Lohse

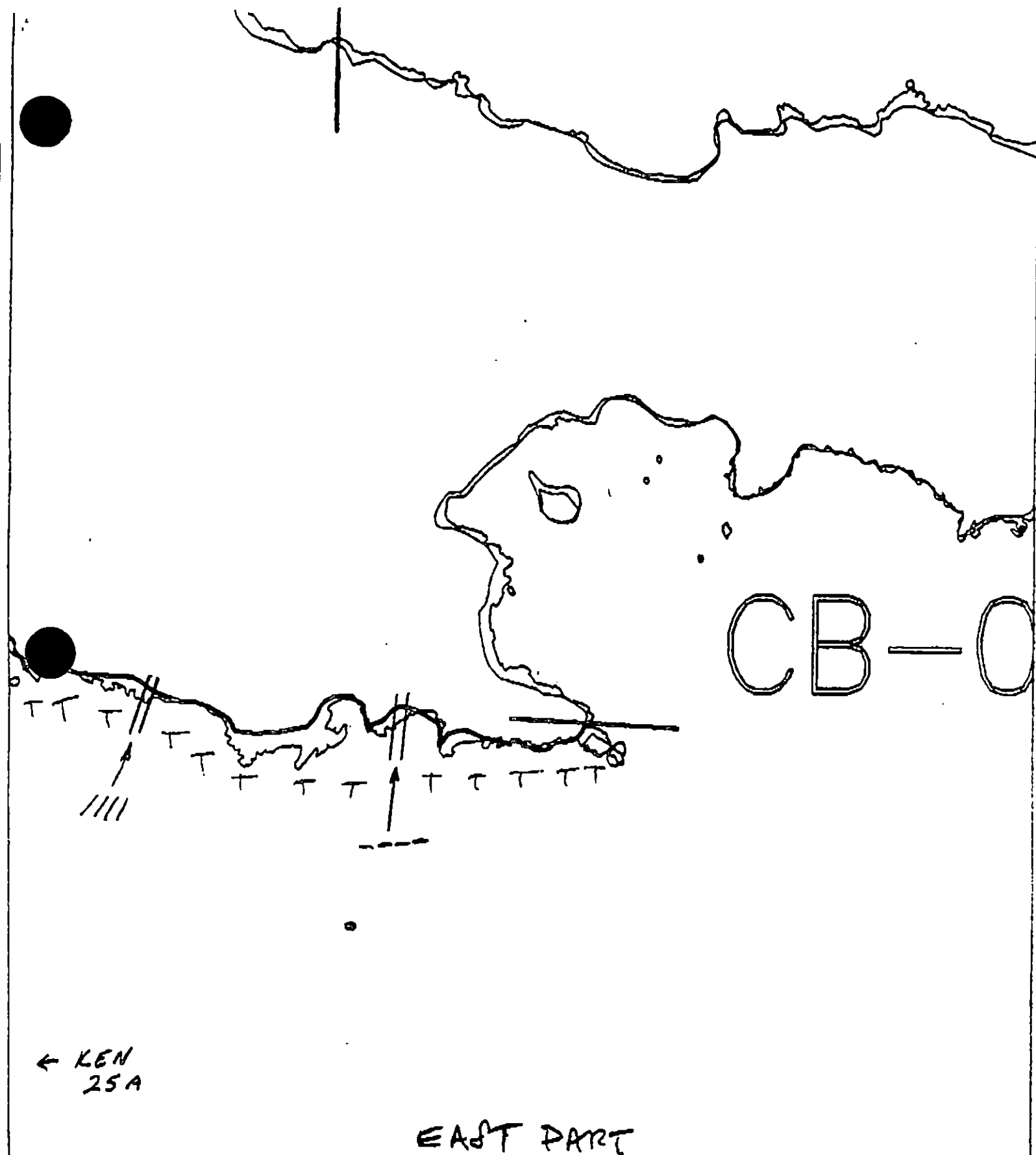
Wildlife Observations/General Comments

1. Present in low intertidal: Rhodomenia, Halosaccion, Ulva, Enteromorpha, Alaria, Evasterias, Zostera, Katharina tunicata, Nuella, coralline algae, Lampharia, Porphyra, Anelopus, Mopalia, Anthopleura, unidentified red algal "blade", unknown sponges (yellow, orange, pink).

mid intertidal: Ectocarpus, Enteromorpha, Ulva, Porphyra, Ralfsia, Endocladia, Nuella, Scytosiphon, Anthopleura, coralline algae, Katharina tunicata, Rhodomenia, unknown red "branch" (Rhodomenia?), Pycnopodia, Halosaccion, Siphonaria, unknown solid-yellow dorsal nudibranch, Zostera, Mopalia, unknown yellow sponge (in tide pool)

high - Porphyra

2. Several Harlequin ducks, gulls and cormorants, 3 land otters, one mature bald eagle, and one black bear were spotted in this segment. The bear was digging in beach wrack at high tide line.
3. Algal cover in low intertidal was ~95% on bedrock (one site estimated), and 75-80% on boulders (2 sites estimated).
4. Barnacle mortality on mid-intertidal boulders was ~30% (one ~~site~~ site estimated).
5. One stream found in segment. See OG map for location. No information available ^{to me} on whether ^{or not} anadromous streams are present in this segment.



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

CB-2

ADEC Segment Length: 8122m

Map Key: KEN-25b

Name: Rick GillieDate: 04/26/90

VVB—

CB—(

KEN
250 →

WEST PART

CB-2

XXX Wide

//// Medium

--- Narrow

TTTT Very light

ADEC Segment Length: 8122m

Map Key: KEN-250

Name: Rick Gillie

Date: 04/26/90

SHORELINE EVALUATION

SEGMENT ST/ CB-02 SUBDIVISION A (1 OF 1) DATE 4/26/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1J Purse seine area (7/1 to 8/31)
5T-4 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

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

OILING CATEGORIZATION:

Wide 0 m: Medium 38 m: Narrow 46 m: V.Light 4998 m: No Oil 3039 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

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

accessible and mouse

COMMENTS: Recommended treatment includes manual removal of tarmats in areas shown on sketch map (east portion only). Work should be conducted after 6/1 with approval of USFWS regarding eagle nest constraint.

TAG COMMENTS:

TAG APPROVAL DATE: May 5 1990

ADEC Art Weiner Art Weiner
EXXON Mark N. Whit Mark N. Silbert FOSC: My L DATE: 5-18-90
NOAA Gary Petrac Gary Petrac
USCG G.A. Renter G.A. Renter

OG RICK GILLIE
 SEGMENT ST/ B-02
 SUBDIVISION A-1 of 1
 DATE 04/26/90

CHECKLIST

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

LEGEND

1 Δ
 PI - No Subsurface Oil

2 Δ
 PI - Subsurface Oil

CT/C
 Continuous Distribution

CT/B
 Broken Distribution

CT/P
 Patchy Distribution

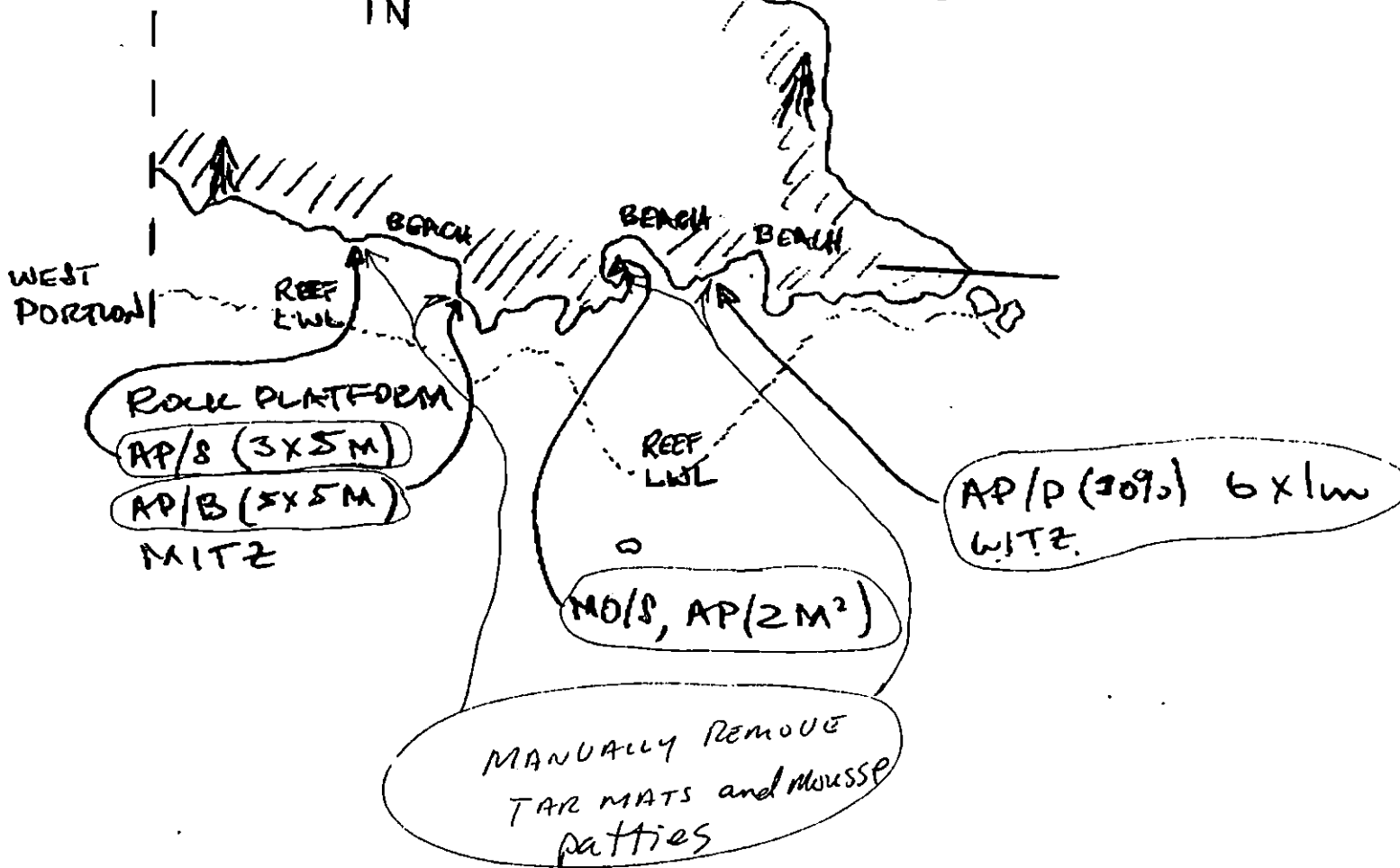
CT/S
 Splashed Distribution

Oiled Vegetation

1 →
 Photo location, direction,
 and number

SEARCH MAP EAST PORTION

0 100 200 300 M



OG RICK MILLIE
 SEGMENT ST/ CB-02
 SUBDIVISION A-10f1
 DATE 04, 26 90

CHECKLIST

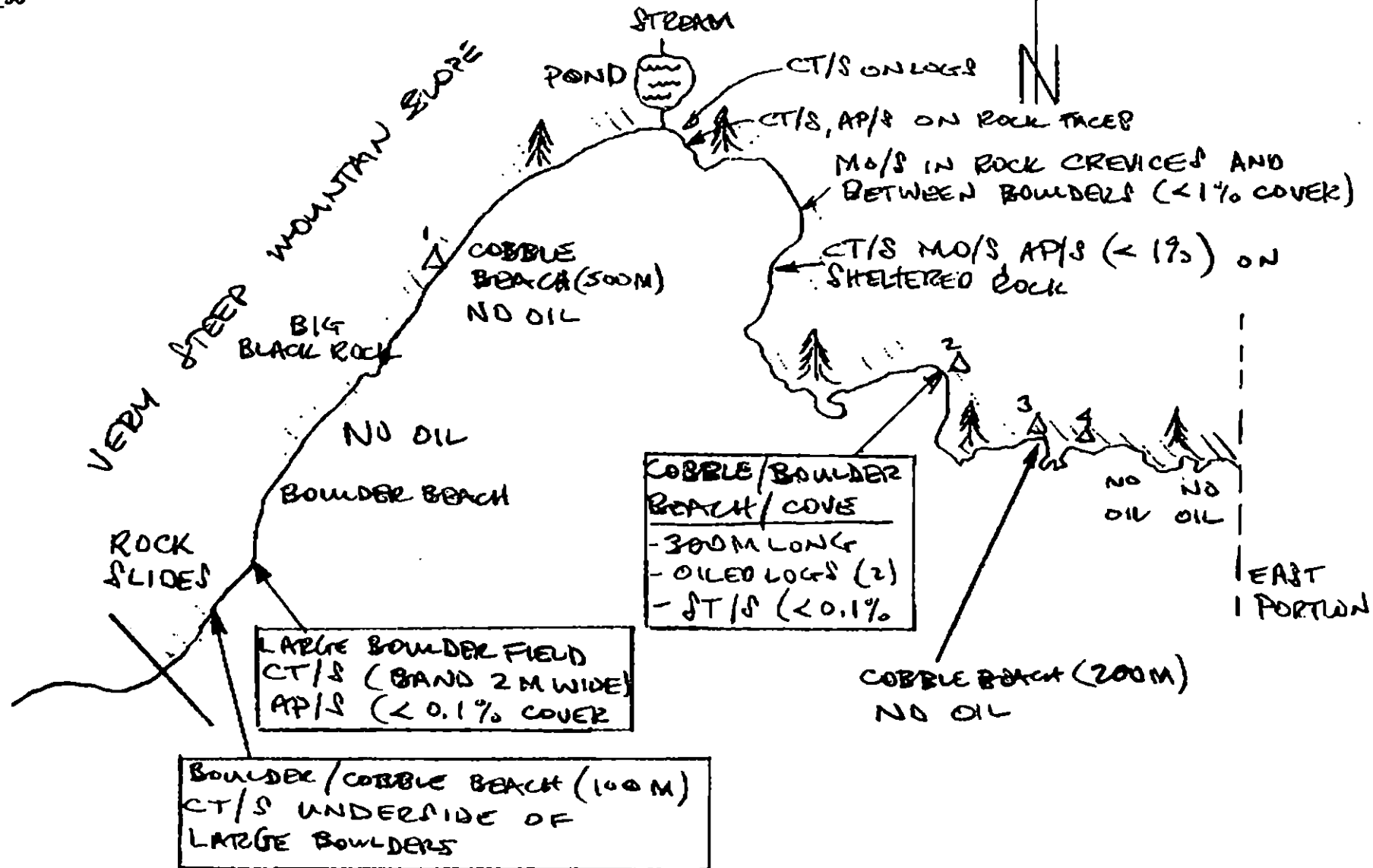
- ☒ N Arrow
- ☒ Approx. Scale
- ☒ Seg/Sub Body
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HWA/LWL
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ P/L Location(s)
- ☐ Photo Location(s)

LEGEND

- 1 Δ
- PII - No Subsurface Oil
- 2 Δ
- PII - 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

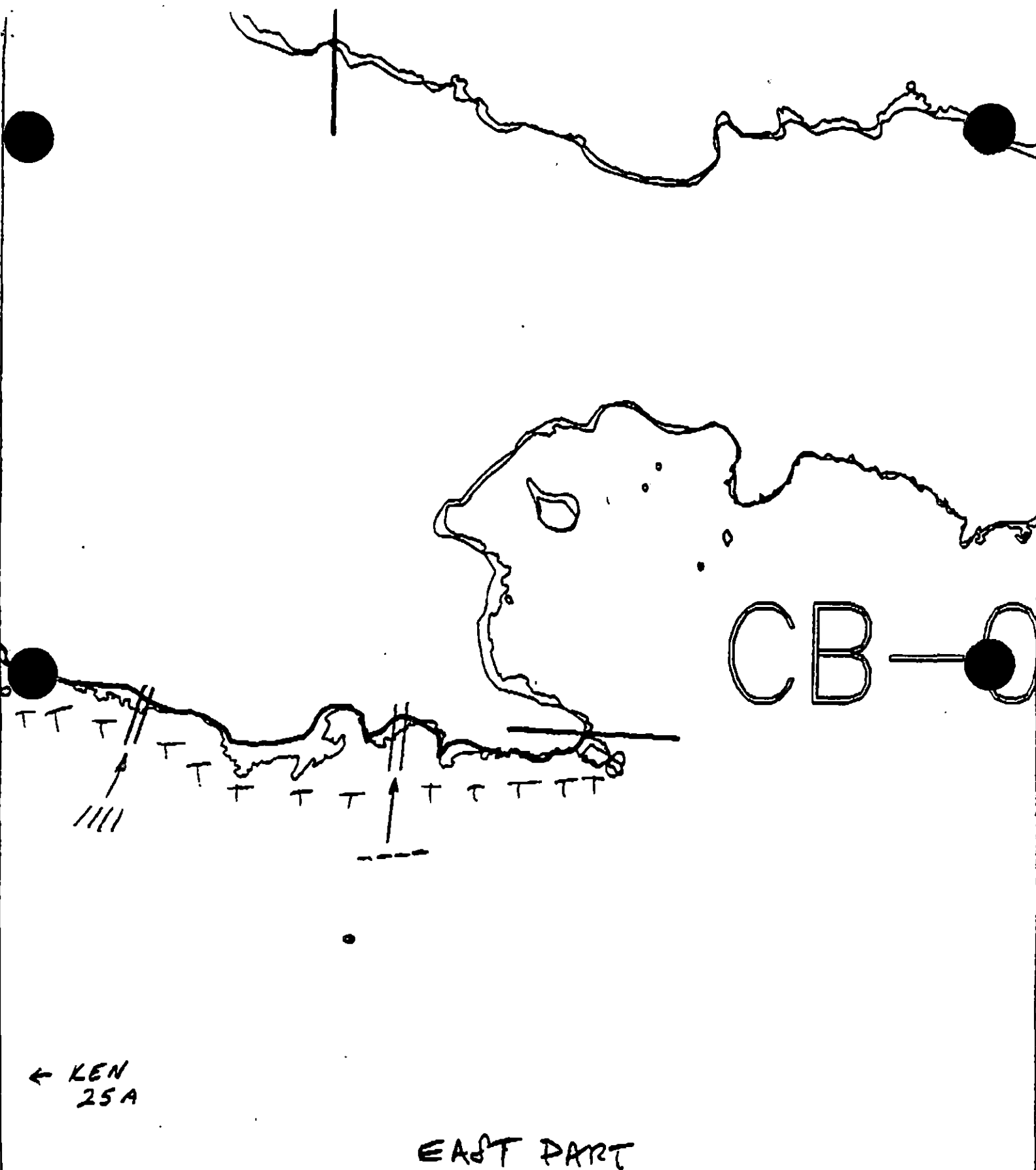
**SKETCH MAP
WEST PORTION**

0 100 200 300 m



Oil Character Legend: AP 23 PO 0 CV 0 CT 30 ST 10 MS 6 TB 0 FL 0 NO 10, 109

(FOR TOTAL PERCENTAGE)



● XXX Wide
//// Medium
--- Narrow
TTTT Very Light
ADEC Segment Length: 8122m

CB-2

0 500 600 900

Map Key: KEN-25b

Name: Rick Gillie

Date: 04/26/90

VVB—

CB—

KEN
253 →

WEST PART

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

OOOO " " " "

CB-2

ADEC Segment Length: 8122m

0 300 600 900

Map Key: KEN-250

Name: Rick Gillie

Date: 04/26/90

Data Entered:

1991 MAYSAP EVALUATION

SEGMENT: CB 002 SUB: A REGION: KEN SURVEY DATE: 5/29/91

ENVIRONMENTAL SENSITIVITIES:

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

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: _____ Date: _____

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____

FOSC APPROVAL DATE: _____

ADEC _____

FOSC _____

EXXON _____

USCG _____

NOAA _____

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

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

MAYSAF FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT CBOBZ SUBDIVISION A DATE MAY 29/91

ADEC

NAME Steve Ferguson SIGNATURE _____☒ NTR ☐ TREATMENT RECOMMENDED

TRACE OILING OBSERVED AT AREAS SURVEYED ALONG SUBDIVISION. NOTE THAT ALL SPOTS CHECKED, OILING WAS OBSERVED IN SOME FORM.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/29/91☒ NTR No appreciable oil found.

LANDMANAGER

NAME Pat Norman OF Port Gardner SIGNATURE Pat Norman☒ NTR remaining oil should be eroded away by wave action.

USCG/NOAA

NAME McMahon/McDonald SIGNATURE Jim McMahon☒ NTR very little oil found!Pat Norman

032-A
 CX1 SKETCH MAP
 29-MAY-91
 0756-0922
 BRYAN TRIMM

North


0 800
 meters

TSABER CONE

CHUGACH BAY

A
 CT 1%
 MS < 1%
 2x20m
 Mounds/venues
 of bedded
 sand, 2
 sand/granule
 pebble beaches

B / SOR.M 1%
 3x12m

D SOR.M < 1%
 1x40m

F / MS < 1%
 SOR.M < 1%
 3x15m

GRANULE SAND

SAND-GRANULE

B VENEER

E MS 10%
 1x3m
 IN CREVICES OF
 BEDDING/FOLIATION
 PLANE

WAVE CUT PLATFORM

C SOR.M < 1%
 2x5m
 IN CREVICES OF
 BEDDING/FOLIATION
 PLANE

SAND (BLACK)-GRANULE
 PEBBLE

WAVE CUT PLATFORM

0 100
 meters

MANISAP
 41° 11' N
 155° 10' W

CHUGACH BAY

reviewed 5.31.94

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #

4

DATE

29 MAY 91

SEGMENT #

CB002

TIDAL HEIGHT(Range) -0.60 TO -1.62

SUBDIVISION

A

BIOLOGIST

Jim ROTH

SEA STATE

G

WIND SPEED/DIRECTION

PHOTOGRAPHS: ROLL #

FRAME #

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

A. BEDROCK / BOULDER w/ SPARSE FUCUS, MODERATE TO DENSE BARNACLES, MUSSELS, LITTORINES, LIMPETS.

B, C — BOULDERS w/ DENSE TO MODERATE LITTORINES, LIMPETS; BEACH-HOPPERS.

D. BEDROCK w/ BEACHGRASS; MOSS.

E. BEDROCK w/ BEACH HOPPERS

F. BEDROCK w/ MODERATELY DENSE LITTORINES, LIMPETS.

GENERAL COMMENTS: IN THIS SUBDIVISION WE SURVEYED TWO AREAS: FIRST, A RELATIVELY SHELTERED SECTION IN A COVE IN THE WESTERN PART OF THE SUBDIVISION; AND SECOND, A MORE EXPOSED AREA NEAR THE EASTERN LIMIT OF THE SUBDIVISION. THE WESTERN AREA HAD A THRIVING AND HEALTHY INTERTIDAL BIOTA WITH TYPICAL ZONATION (MITE DOMINATED BY FUCUS/MUSSELS/BARNACLES/LIMPETS/LITTORINES. EVIDENCE OF RECRUITMENT WAS NOTED IN ALL OF THESE GROUPS. DOGKNINKLES (NUCELLA) AND THEIR EGG CASES WERE QUITE ABUNDANT AS WELL.

THE SECOND, MORE EXPOSED AREA CONSISTS OF THREE SMALL BEACHES TWO OF WHICH ARE PROTECTED FROM STORM ENERGY BY AN OFFSHORE BEDROCK PLATFORM. HERE SOME ELEMENTS OF THE INTERTIDAL BIOTA ARE SHIFTED UPWARD SOMEWHAT (SEE ATTACHED SHEET

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS # OF SPECIES TOTAL BIRDS FISH OBSERVED SPECIES PRESENT

Eagles			
Seabirds			
Waterfowl			
Gulls/Puffins			
Shorebirds			
Reptiles			
Other Birds			

MARINE MAMMALS

OBSERVED

LAND MAMMALS

SPECIES

OBSERVED

Sea Otters		BLACK BEARS	3
Pinnipeds (specify)		MOUNTAIN GOATS	2
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

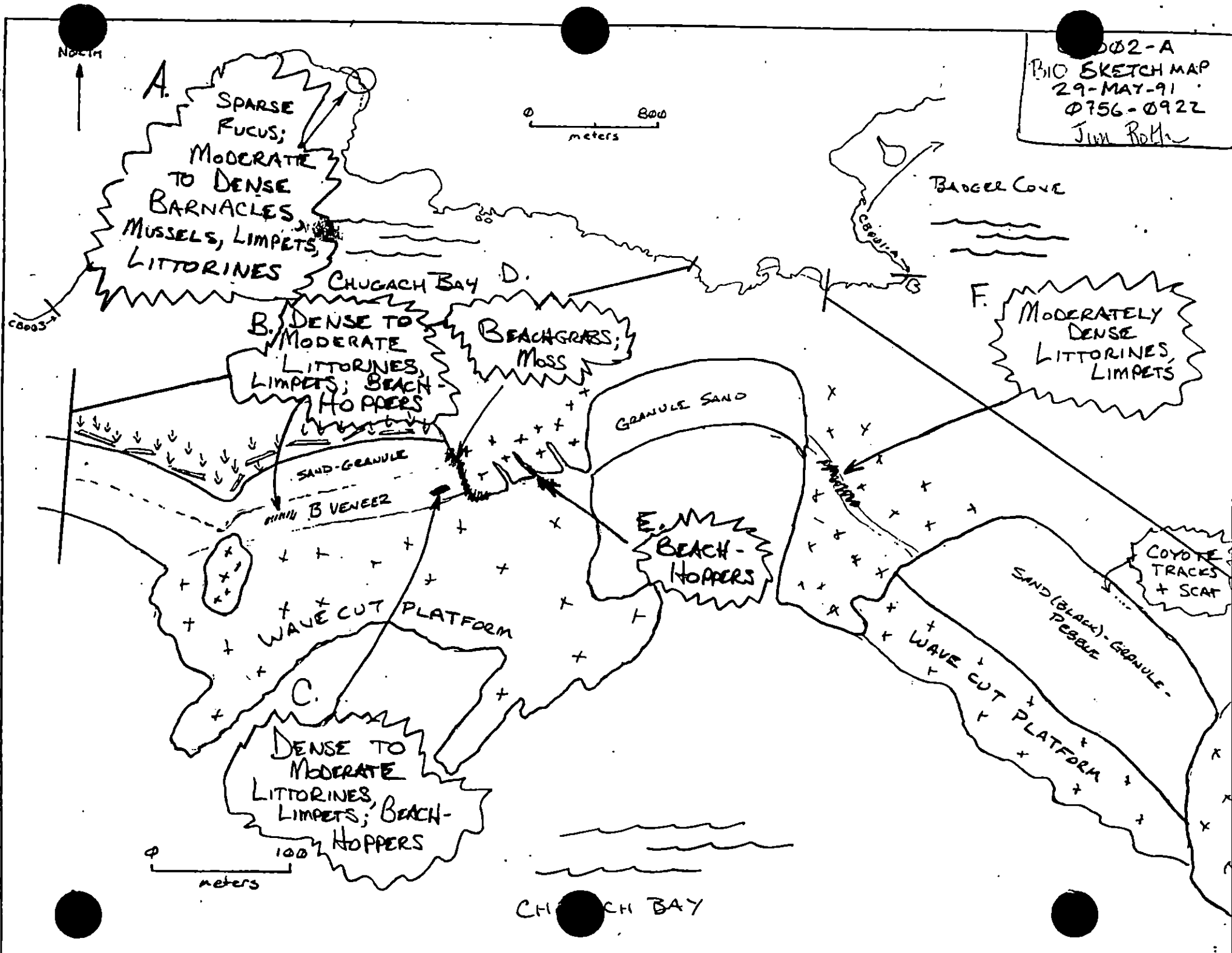
C.B002-A 29 MAY '91 JIM ROTH

DUE TO THE FREQUENT OCCURRENCE OF WAVES BREAKING HIGH ON THE SHORE. FOR THIS REASON OILED AREAS IN THE HITEZ IN SOME CASES CONTAINED LITTORINES AND LIMPETS IN DENSITIES MORE TYPICAL OF THE MIDDLE INTERTIDAL ZONE. OBSERVED OIL IN THIS SUBDIVISION HAD NO OBVIOUS EFFECT ON THE DISTRIBUTION OR ABUNDANCE OF THE INTERTIDAL BIOTA. THE LOWER AND MIDDLE INTERTIDAL ZONES HAD A THRIVING BIOTA, WITH EVIDENCE OF RECENT RECRUITMENT IN FUCUS, LITTORINES, MUSSELS, AND BARNACLES.

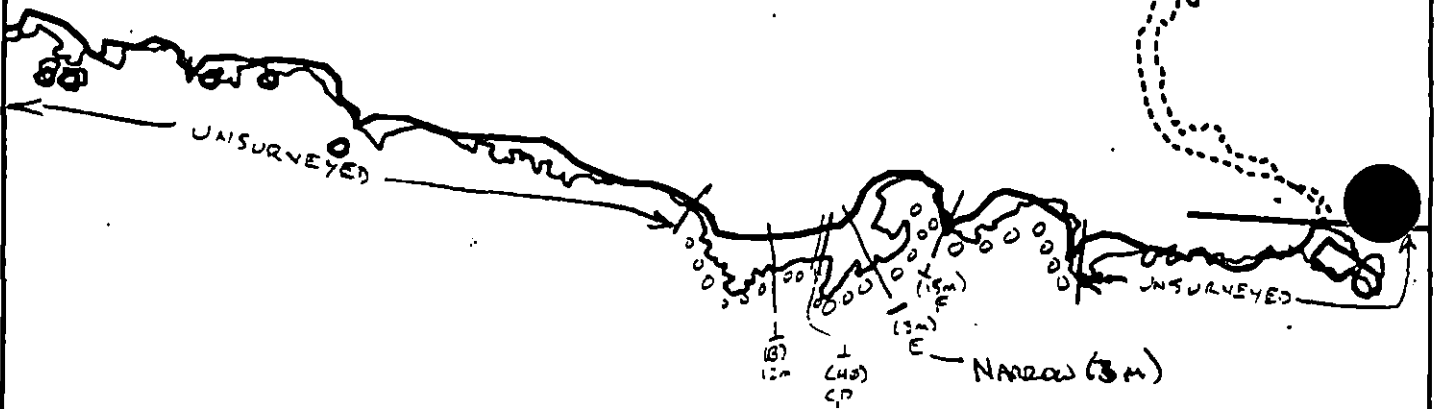
MAMMAL NOTES

1. 3 BLACK BEARS SEEN ON GRASSY HILLSIDE ABOUT $\frac{1}{2}$ MILE FROM SHORE. (OBSERVED FROM SKIFF)
2. 2 MOUNTAIN GOATS SEEN ON HILLSIDE (FROM SKIFF)
3. COYOTE TRACKS + FRESH SCAT SEEN ON BLACK SAND BEACH (SEE SKETCH).
4. BEAR AND MOOSE SCAT OBSERVED NEAR SUBDIVISION.

002-A
BIO SKETCH MAP
29-MAY-91
0756-0922
Jim Roth



B-02



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

CB002 A
 ADEC Subsegment Length: 10228m
 METERS

AK State Plane Zone 4
 000002ab



Subdivision Field Map

Map Key: KENC002Ab

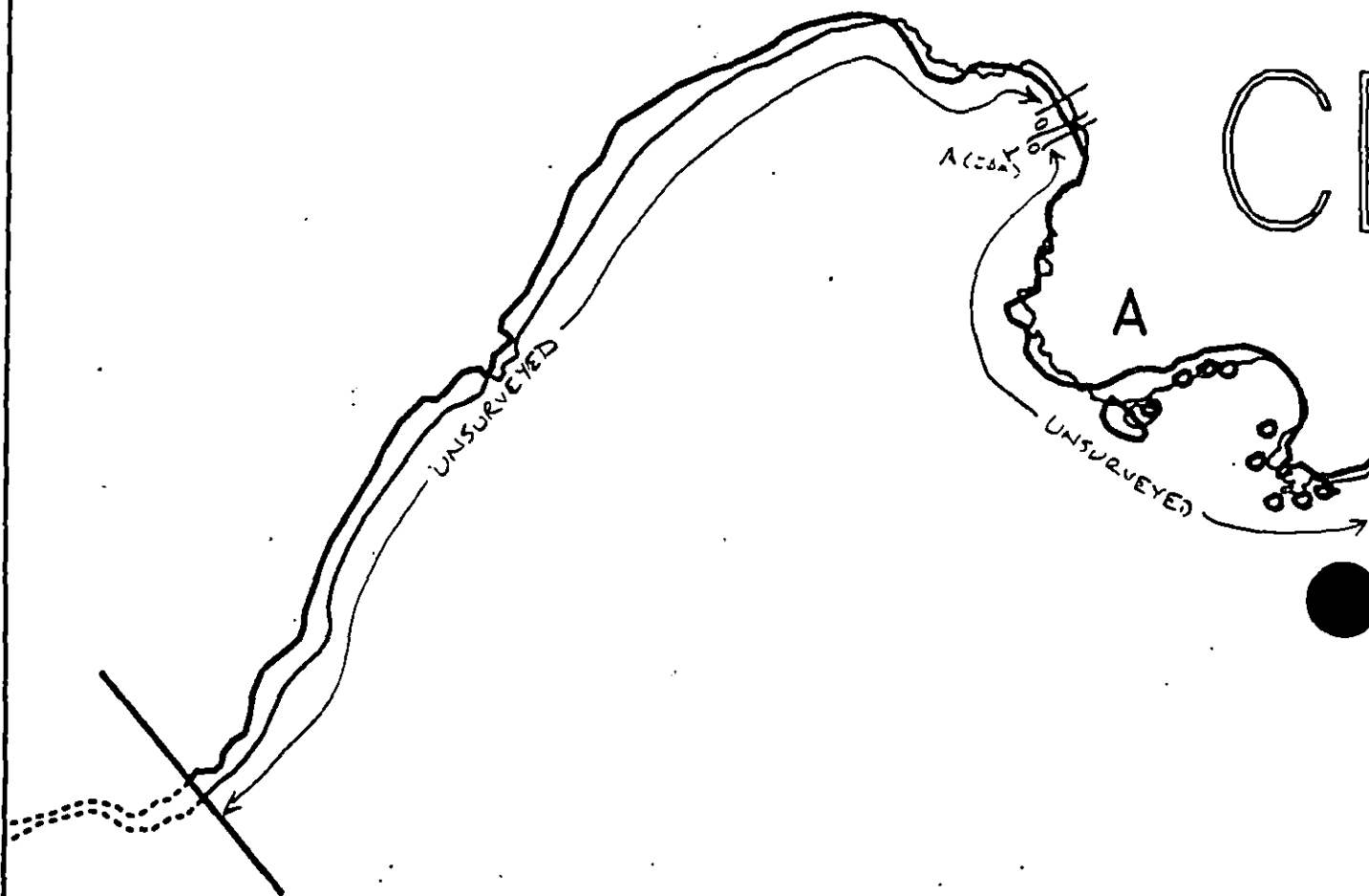
Name: TRIMM

Date: 29-MAY-91

Date Entered:

— SURFACE OIL CATEGORY MAP —

Revised: MC 6/1/91
 reviewed 5.31.94



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

CB002 A

ADEC Subsegment Length: 10228m
METERS

0 400 800
 State Plane Zone 4
 80300200



Subdivision Field Map
 Map Key: KENC002Ac
 Name: Trim

Date: 29-MAY-91
 Date Entered:

- SURFACE OIL CATEGORY MAP -

Reviewed: MC 6/1/91
 reviewed 5.30.94

1991 MAYSAP EVALUATION

SEGMENT: CB 002 SUB: A REGION: KEN SURVEY DATE: 5/29/91

ENVIRONMENTAL SENSITIVITIES:

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

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: Timothy P. Smith

Date: 6/07/91

RECOMMENDATIONS:

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

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: JUNE 7 1991

FOSC APPROVAL DATE: 6/14/91

ADEC

FOSC

EXXON

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

USCG

NOAA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

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

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT C002 SUBDIVISION A DATE MAY 29/91

ADEC

NAME Steve Ferguson SIGNATURE _____

☒ NTR ☐ TREATMENT RECOMMENDED

TRACE OILING OBSERVED AT AREAS SURVEYED ALONG SUBDIVISION. NOTE THAT ALL SPOTS CHECKED, OILING WAS OBSERVED IN SOME FORM.

EXXON

NAME George P. Stiles SIGNATURE George P. Stiles 5/29/91

☒ NTR No appreciable oil found.

LANDMANAGER

NAME Pat Norman OF Port Graham SIGNATURE Pat Norman

☒ NTR remaining oil should be eroded away by wave action.

USCG/NOAA

NAME McMahon/McDonald SIGNATURE Joe McMahon

☒ NTR very little oil found!

Joe McMahon

PAGE 1 OF 1

DATE May 129 191

ENERGY LEVEL: ☒ H ☐ M ☐ L

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

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

EST. OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 0 m NO 1110 m US 9026 m

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

SLOPE: V = VERTICAL: H = HIGH ANGLE: M = MEDIUM ANGLE: L = LOW ANGLE PHOTO ROLL # MAYSAP-4 (III) - 14 FRAMES 8

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

LOCATION 'A' IS PROBABLY REPRESENTATIVE OF THE SHORELINE WEST OF THE SITE.
VERY HIGH WAVE ENERGY SHORELINE !!!

reviewed 5.31.94
RUSSELL MC 6/1/94

North

0 50 meters

CB 2-A
OC1 SKETCH MAP
29-MAY-91
0756-0922
BRYAN TRIMM

BARBER CONE

CHUGACH BAY

A
CT 1%
MS < 1%
2x20m
Min. thickness
of bedded
material
2
small/pulver.
puffed beaches

B SOR.M 1%
3x12m

D SOR.M < 1%
1x40m

F MS < 1%
SOR.M < 1%
3x15m

GRANULE SAND

E MS 10%
1x3m
IN CREVICES OF
BEDDING/FOLIATION
PLANE

SAND-GRANULE
B VENEER

WAVE CUT PLATFORM

C SOR.M < 1%
2x5m
IN CREVICES OF
BEDDING/FOLIATION
PLANE

SAND (BLACK)-GRANULE
WAVE CUT PLATFORM

0 100 meters

CHUGACH BAY

MANISAR 11/11/91

reviewed 5.31.94

RAMS: MC 6/1/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 4 DATE 29 MAY 91
 SEGMENT # CB002 TIDAL HEIGHT (Range) -0.60 TO -1.62
 SUBDIVISION A BIOLOGIST Jim ROTH
 SEA STATE G WIND SPEED/DIRECTION
 PHOTOGRAPHS: ROLL # FRAME #

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

A. BEDROCK / BOULDER w/ SPARSE FUCUS; MODERATE TO DENSE BARNACLES, MUSSELS, LITTORINES, LIMPETS.

B, C — BOULDERS w/ DENSE TO MODERATE LITTORINES, LIMPETS; BEACH-HOPPERS.

D. BEDROCK w/ BEACHGRASS; MOSS.

E. BEDROCK w/ BEACH HOPPERS

F. BEDROCK w/ MODERATELY DENSE LITTORINES, LIMPETS.

GENERAL COMMENTS: IN THIS SUBDIVISION WE SURVEYED TWO AREAS: FIRST, A RELATIVELY SHELTERED SECTION IN A COVE IN THE WESTERN PART OF THE SUBDIVISION; AND SECOND, A MORE EXPOSED AREA NEAR THE EASTERN LIMIT OF THE SUBDIVISION. THE WESTERN AREA HAD A THRIVING AND HEALTHY INTERTIDAL BIOTA WITH TYPICAL ZONATION (MITE DOMINATED BY FUCUS/MUSSELS/BARNACLES/LIMPETS/LITTORINES. EVIDENCE OF RECRUITMENT WAS NOTED IN ALL OF THESE GROUPS. DOGWINKLES (NUCELLA) AND THEIR EGG CASES WERE QUITE ABUNDANT AS WELL.

THE SECOND, MORE EXPOSED AREA CONSISTS OF THREE SMALL BEACHES, TWO OF WHICH ARE PROTECTED FROM STORM ENERGY BY AN OFFSHORE BEDROCK PLATFORM. HERE SOME ELEMENTS OF THE INTERTIDAL BIOTA ARE SHIFTED UPWARD SOMEWHAT (SEE ATTACHED SHEET)

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

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

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters		BLACK BEARS	3
Pinnipeds (specify)		MOUNTAIN GOATS	2
Whales (specify)			

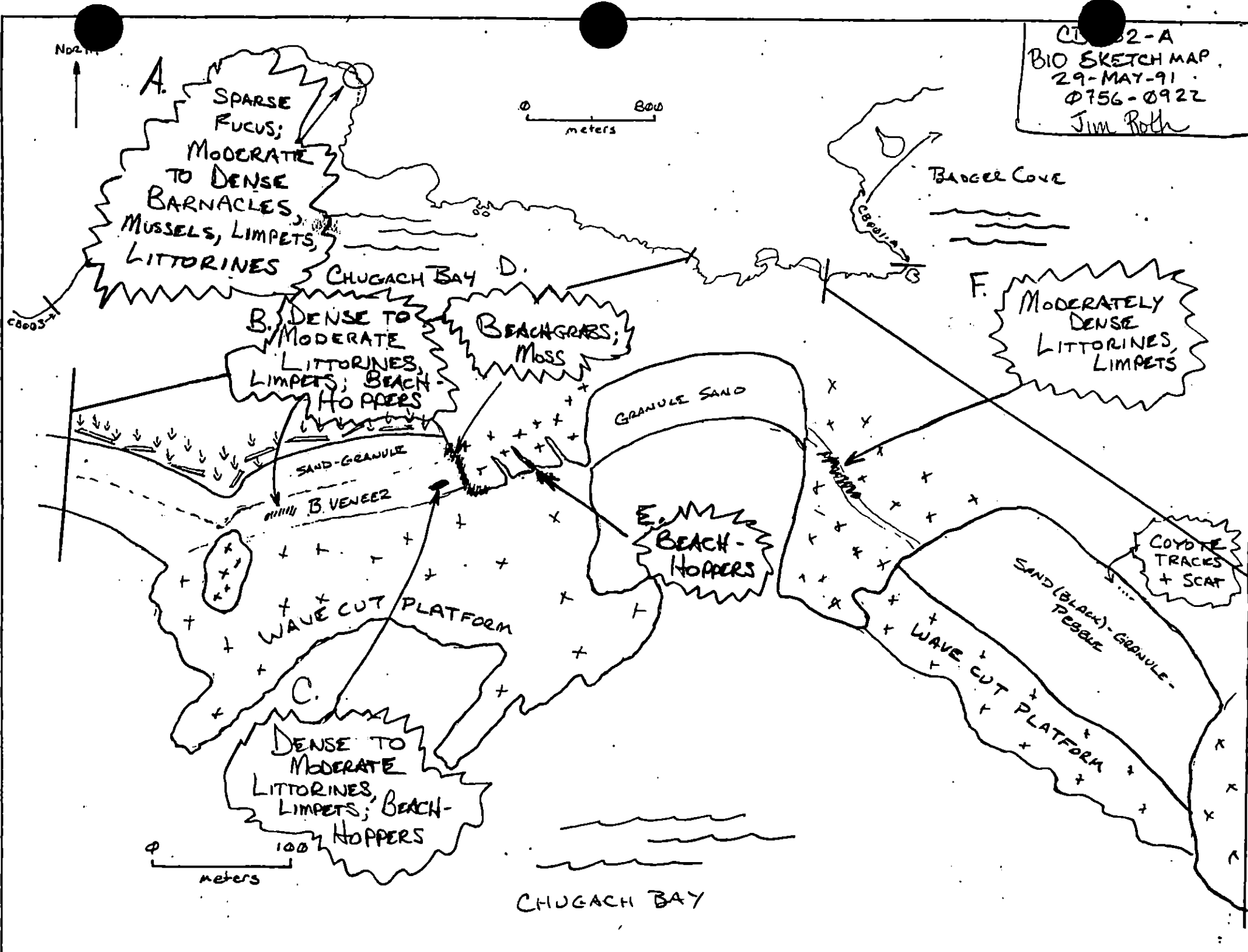
Shoreline subdivision map showing important biological features attached.

DUE TO THE FREQUENT OCCURRENCE OF WAVES BREAKING HIGH ON THE SHORE. FOR THIS REASON OILED AREAS IN THE HITEZ IN SOME CASES CONTAINED LITTORINES AND LIMPETS IN DENSITIES MORE TYPICAL OF THE MIDDLE INTERTIDAL ZONE. OBSERVED OIL IN THIS SUBDIVISION HAD NO OBVIOUS EFFECT ON THE DISTRIBUTION OR ABUNDANCE OF THE INTERTIDAL BIOTA. THE LOWER AND MIDDLE INTERTIDAL ZONES HAD A THRIVING BIOTA, WITH EVIDENCE OF RECENT RECRUITMENT IN FUCUS, LITTORINES, MUSSELS, AND BARNACLES.

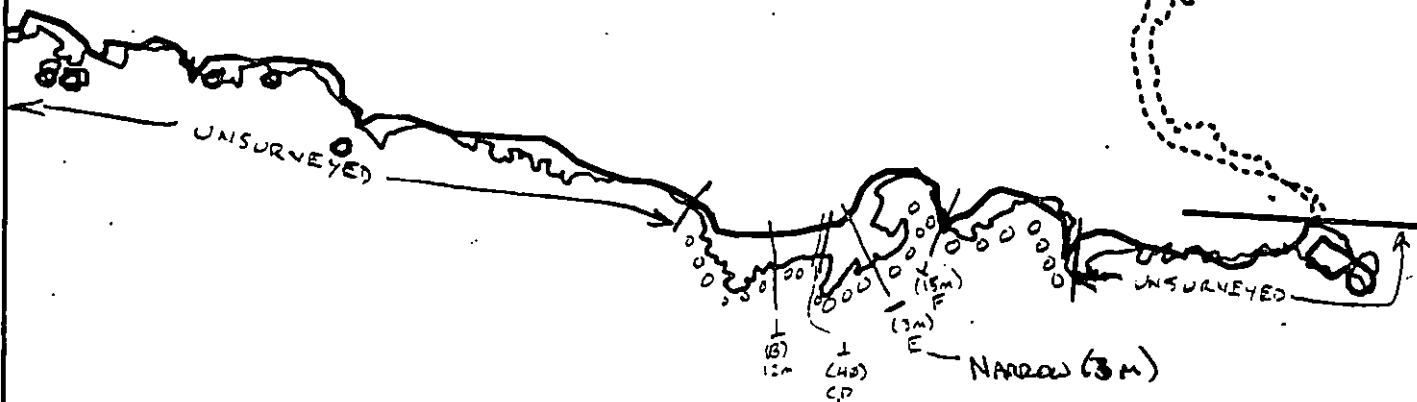
MAMMAL NOTES

1. 3 BLACK BEARS SEEN ON GRASSY HILLSIDE ABOUT $\frac{1}{2}$ MILE FROM SHORE. (OBSERVED FROM SKIFF)
2. 2 MOUNTAIN GOATS SEEN ON HILLSIDE (FROM SKIFF)
3. COYOTE TRACKS + FRESH SCAT SEEN ON BLACK SAND BEACH (SEE SKETCH).
4. BEAR AND MOOSE SCAT OBSERVED NEAR SUBDIVISION.

CL 32-A
BIO SKETCH MAP
29-MAY-91
0756-0922
Jim Roth

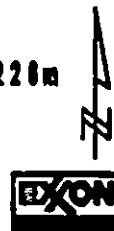


B-02



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

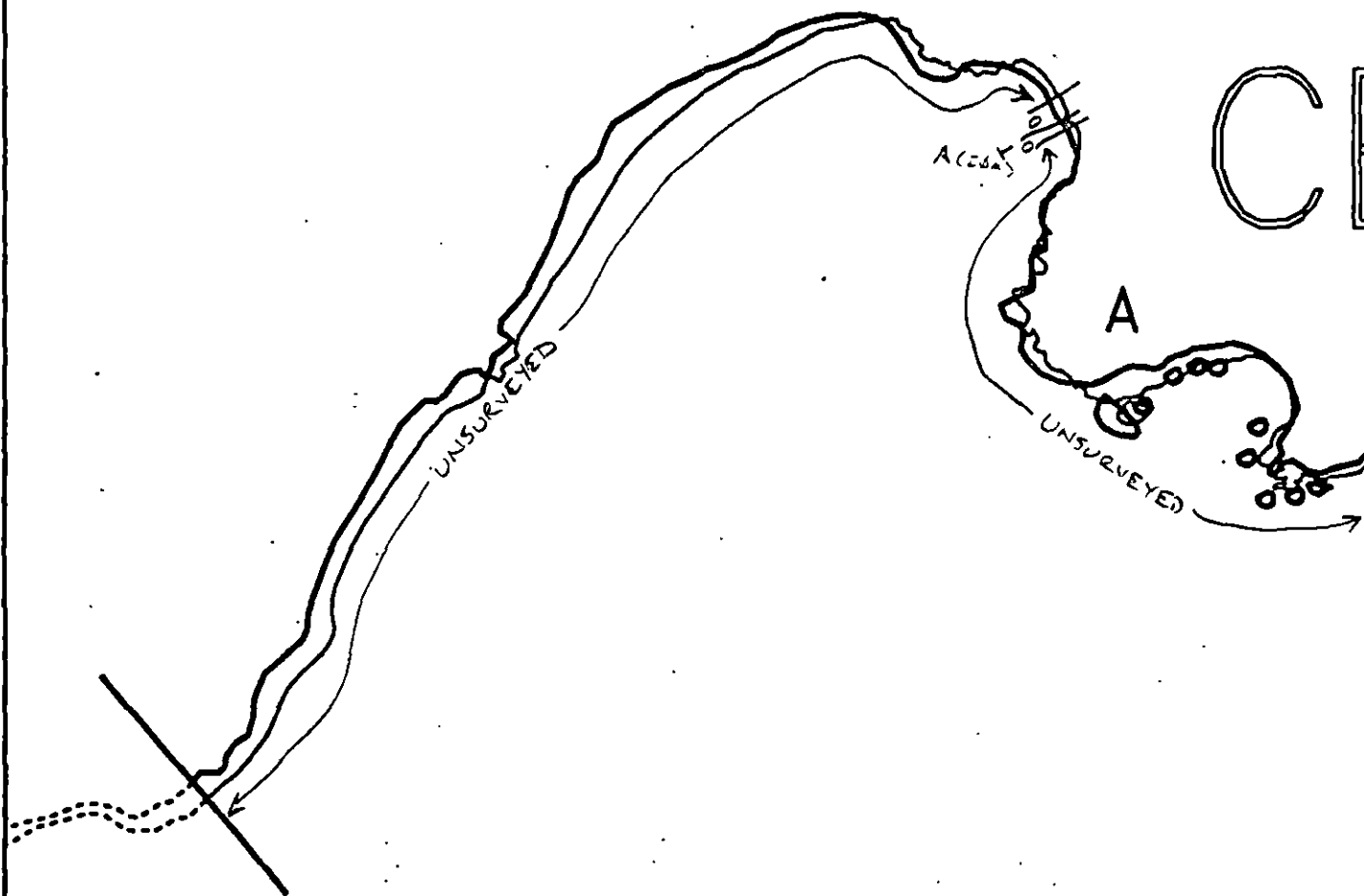
CB002 A
 ADEC Subsegment Length: 10226m
 METERS
 0 400 800
 AK State Plane Zone 4
 acb002ab



Subdivision Field Map
 Map Key: KENC002Ab
 Name: TRIMM
 Date: 29-May-91
 Date Entered:

— SURFACE OIL CATEGORY MAP —

Revised: MC 6/1/91
 reviewed 5.31.94



XXXX
////

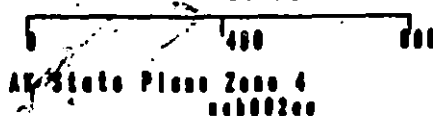
TTTT
0000

Wide
Medium
Narrow
Very Light
No Oil

CB002 A

ADEC Subsegment Length: 10226m

METERS



Subdivision Field Map

Map Key: KENC002Aa

Name: Trim

Date: 29-MAY-91

Date Entered:

- SURFACE OIL CATEGORY MAP -

Reviewed: MC 6/1/91
reviewed 5.30 94

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT CB-2 SUBDIVISION A (1 of 1)

WORK WINDOW

Tarmat Removal Less Than 400m From Active Nest

CLOSED

Tarmat Removal More Than 400m From Active Nest

OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

5T Bald Eagle Nest

USFWS 6/1/90 map indicates an active nest in Subdivision A. Closed to tarmat removal within 400m of active nest. No constraint to tarmat removal more than 400m from active nest.

1J Purse Seine Area

No constraint to tarmat removal.

OTHER ECOLOGICAL CONSIDERATIONS

If eagle nest constraint is removed, other ecological considerations will apply.

FOSC

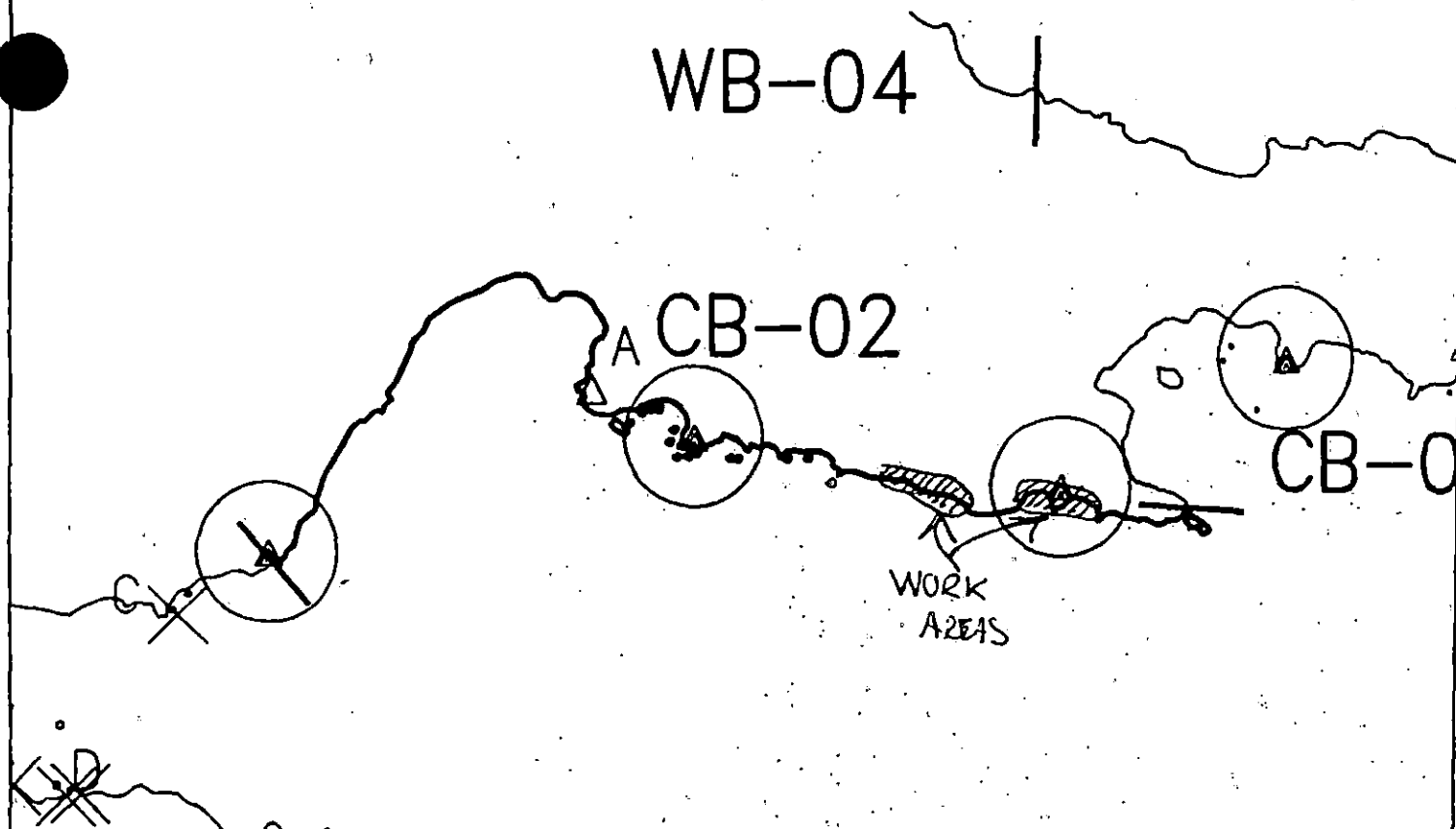
Date

Prepared by

Date

6/3/90

6/12/90



Exxon Company, USA

Map Keys KEN-CB-2

June 10, 1990



ECOLOGY MAP SEGMENT CB-2

SUBDIVISION --- (--- of ---)

METERS

0 1000 2161

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

1 inch = 3545 feet

SHORELINE EVALUATION

SEGMENT ST/ CB-02 SUBDIVISION A (1 OF 1) DATE 4/26/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1J Purse seine area (7/1 to 8/31)

5T-4 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: Mark N. Silbert

DATE: 5/5/90

OILING CATEGORIZATION:

Wide 0 m: Medium 38 m: Narrow 46 m: V. Light 4998 m: No Oil 3039 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)

*accessible
and mouse*

COMMENTS: Recommended treatment includes manual removal of tarmats in areas shown on sketch map (east portion only). Work should be conducted after 6/1 with approval of USFWS regarding eagle nest constraint.

SEE CONSTRAINTS ADDENDA dated 6/12/90

TAG COMMENTS:

TAG APPROVAL DATE: May 5, 1990

ADEC Art Weimer Dist. Dir.

EXXON Mark N. Silbert Mark N. Silbert FOSC:

NOAA Gary Petrac Gary Petrac

USCG G.A. BEGER G.A. Beiter

DATE: 5-15-90

SHORELINE

QUANTITIES

NO. OF UNITS

DATE

ALCOHOL

ALCOHOL

ALCOHOL

ALCOHOL

ALCOHOL

ALCOHOL

ARLIS

Alaska Resources
Library & Information Services
Anchorage, AK