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[Shoreline evaluations, 1991].

Prince William Sound CH-11 to CH-20

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SHORELINE EVALUATION

SEGMENT ST/ CH-11 SUBDIVISION A (1 OF 1) DATE 4/23/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

3N,3P Harbor seal and sea lion pupping (5/15 to 7/1)
30,3Q Harbor seal and sea lion molting (8/15 to 9/15)
5T-2 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6Y Recreation: Special use destination
6V Recreation: Anchorages (6/1 to 9/15)
7II Subsistence area: Deer harvesting (8/15 to 2/28)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: Charles J. H. H. H. DATE: 5/5/90

OILING CATEGORIZATION:

Wide 0 m: Medium 122 m: Narrow 0 m: V.Light 1038 m: No Oil 75 m
Subsurface Oil Observed: Yes X No Maximum Depth 22 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>NO</u> <u>X</u> Absorbents (pads, rolls, etc)
<u>X</u> Bioremediation	<u>NO</u> <u>X</u> Spot Washing: <u>X</u> Wands
<u>X</u> Tarmat Removal	<u> </u> Beach Cleaner
	<u> </u> Other (see comments)

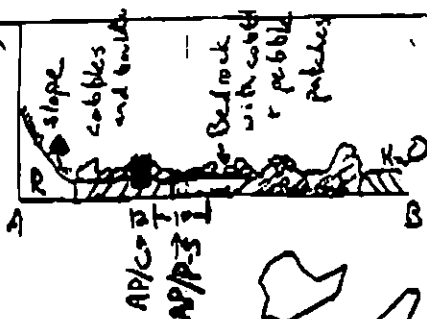
COMMENTS: Recommended treatment includes 1) manual pickup of tarballs in area indicated on sketch map, 2) manual removal of tarmat in area indicated on sketch map, and 3) bioremediation of area indicated on sketch map. Work should be conducted between 7/1 and 8/15 due to pinniped constraints and with approval of USFWS regarding eagle nest. Inipol application should be conducted between 7/2 and 7/31 to protect pinnipeds.

TAG COMMENTS: Manually till areas near pits 3, 5, 6 and 20. Spot wash as necessary

TAG APPROVAL DATE: May 5 1990

ADEC ART WEINER Art Weiner
EXXON Mark N. Silber Mark N. Silber FOSC: DATE: 6-17-90
NOAA Gary Petrac Gary Petrac
USCG G.A. REITER G.A. Reiter

10 m



SKETCH MAP

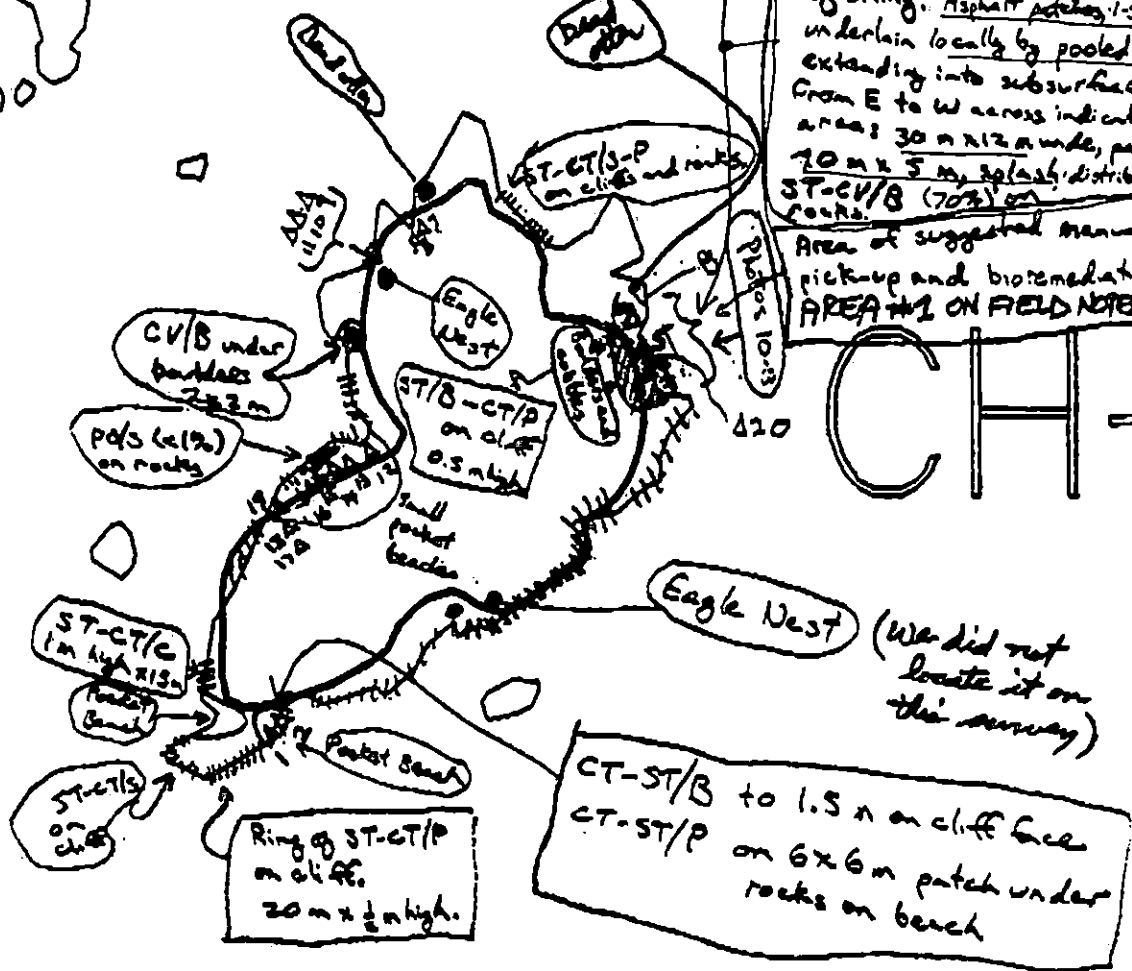
MANUALLY PICKUP TAR BALLS,
MANUALLY REMOVE TARMAT, &
BIOREMEDIATE AREA WHERE
TARMAT WAS REMOVED.

Manually till and
spot wash as necessary

Area about 20 meters in
from shoreline had band
of oiling. Asphalt patches 1-5
underlain locally by pooled
extending into subsurface
from E to W across indicat
area: 30 m x 12 m wide, pa
70 m x 5 m, splash distrib
ST-CV/B (70%) on
rocks.

Area of suggested manu
pickup and bioremediat.
AREA #1 ON FIELD NOTE

CH-



Oil Character Length (m):

AP 100 PO 100 CV 10 CT 100 ST 100 MS 10 PT 10 TB 10 FL 10

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

0000 No Oil

CH-11A

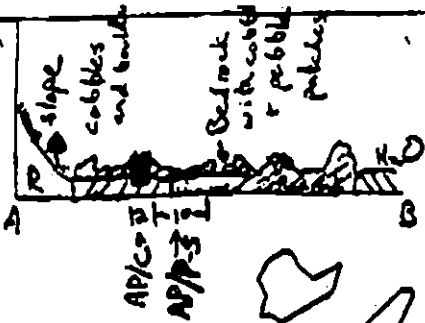
ADEC Segment Length: 1235m

0 100 200 300
METERS

Map Key: PWS-37

Name: Poly SiegelDate: 4/23/90Data Entered: 38/46

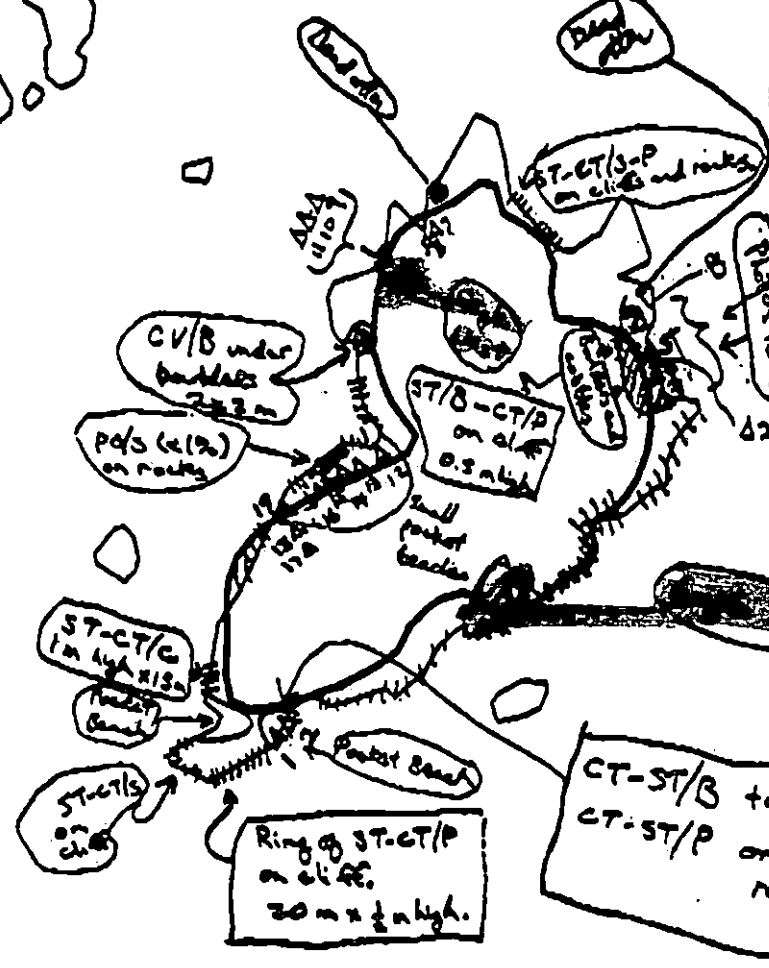
SKETCH MAP ECOLOGICAL MAP



ST(2)
BNF 3CQ
6Y, 6V
7II

Area about 20 meters from shoreline had been oiled. Asphalt patches underlain locally by rocks extending into subarea from E to W across island area: 30 m x 12 m and 70 m x 5 m, splash-d. ST-CV/B (70%) on rocks.
Area of suggested for pick-up and bioremediation
AREA #2 ON FIELD

CH



(We did not locate it on this survey)

Oil Character Length (m):

AP 100 PO 100 CV 10 CT 100 ST 100 MS 10 PT 10 TB 10 FL 10

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

CH-11A

ADEC Segment Length: 1235m



Map Key: PWS-37

Name: Ruby Singh

Date: 4/22/90

120

1991 MAYSAP EVALUATION

SEGMENT: CH 011 SUB: A REGION: PWS SURVEY DATE: 5/1/91

ENVIRONMENTAL SENSITIVITIES:

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

Ecological/Constraints (see page two for details) Eagle nest,
Subsistence - Deer harvesting

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.

Subsistence - Deer Harvesting: Unlimited treatment prior to 8/15.

TEAM NO. HSEGMENT CH011SUBDIVISION ADATE 1 MAY 1991

ADEC

NAME Dianne MunsonSIGNATURE Dianne Munson☐ NTR ☐ Treatment Recommended

Heavy areas of tar mats, asphalt and sork observed were removed. Have some reservations not recommending treatment. Much of the oil removed was under a top layer of cobbles and the oil was very heavy. Do not feel comfortable in saying that heavy oiling does not exist under other sections of cobble veneer.

EXXON

NAME LARRY D. OLSONSIGNATURE Larry D. Olson

☒ NTR VECO crew removed 26 G.O. Bags of tar balls/patties from area indicated on sketch map. Vegetation was diverse with what appeared to be healthy growth in lower tidal zones.

LANDMANAGER

NAME LARRY EVANOFF OF CVCSIGNATURE LM 600☐ NTR ☒ TREATMENT RECOMMENDED

NORTH END OF ISLAND WAS THE WORST AREA. AP/TB/PATTIES WERE FOUND. VECO CREW WORKED THIS AREA AND REMOVED A CONSIDERABLE AMOUNT. I BELIEVE MORE OILED DEBRIS CAN BE REMOVED. I RECOMMEND MANUAL REMOVAL. NO BIOREMEDIATION RECOMMENDED.

USCG/NOAA

NAME JERRY SCHULTZSIGNATURE Jerry Schultz☒ NTR

FURTHER REMOVAL OPERATIONS WOULD CAUSE MORE ENVIRONMENTAL HARM THAN THE OIL TO BE REMOVED

MAYSAP SHORELINE OILING SUMMARY

PAGE 1

TEAM NO. 4OG J. SempelsBIO J. BerrySEGMENT CH 011ADEC D. MunsonLANDMANAGER L. Ebenoff for SUBDIVISION AEXXON L. OlsonUSCG/NOAA G. SchultzDATE 1 MAY 1991TIME 10:15 to 11:40TIDE LEVEL -1.0 ft. to +5.0 ft.ENERGY LEVEL: ☐ H ☒ M ☐ LSURVEYED FROM: ☒ FOOT ☒ BOAT ☐ HELOWEATHER: ☐ SUN ☒ CLOUDS ☐ FOG ☐ RAIN ☐ SNOWTOTAL LENGTH SHORELINE SURVEYED: 1235 mNEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONEEST. OIL CATEGORY LENGTH: W 0 m M 0 m N 25 m VL 60 m NO 115 m US 0 m

L O C	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE VHML	AREA		ZONE				NOTES
	AP	MS	TB	SOF	CV	CT	ST	FL	DB	NO			WIDTH m	LENGTH m	S	UI	MI	LI	
A1	P										rbpb	L	1	5		✓			See map.
A2	P										"	L	1	5		✓			
A3	P										"	L	1	5		✓			
A4	P										"	L	1	5		✓			
A5	P										"	L	1	5		✓			
A6				S							"	H	1	20		✓			
A7						S					Red	V	1	20		✓			
A8						S					"	"	1	20		✓			

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

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

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
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SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS:

See notes on map.

Reviewed: MC 5/10/91
reviewed 5/10/91 KG

Og Sketch Map

CH011-A

HM Samples

1 MAY 91

1015 - 1140

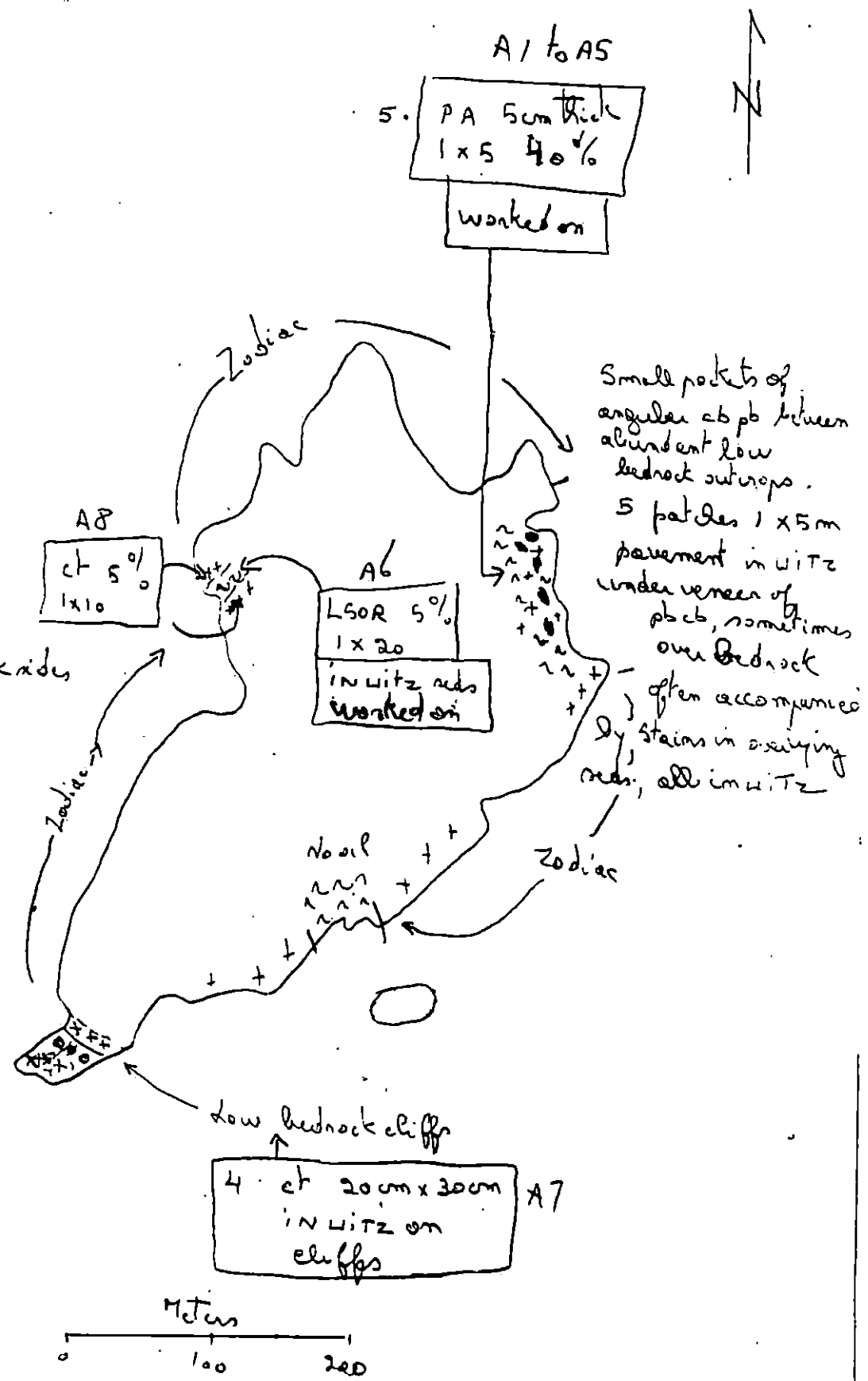
Legend

[+] Bedrock

[o] pb

[n] cbpb

Very small pocket beach
of cbpb, steep beach face
it is a beach 1x10m
< 5% in WITZ on bedrock sides
of cove.



Reviewed: MC 5/10/91

Reviewed by: MC

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 4 DATE/TIME May 1, 1991 1019 - 1140
 SEGMENT # CH011 TIDAL HEIGHT (Range) -1.0 => +5.0
 SUBDIVISION A BIOLOGIST JIM BARRY
 AREA STATE Cala WIND SPEED/DIRECTION Variable 0-5 kt., cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A,B= Oiled site (CT) is located in the upper intertidal along a small bedrock cliff.
 A7 Biota include scattered black lichen, and sparse moss. Below the oil on the cliff, barnacles, limpets, littorines, and mussels, are sparse. Below the cliff there is a flat beach in the high zone with drift algae, clam shells. In the low intertidal, some distance away (ca 40 m), eel grass and brown algae (Agarum) are abundant.

Clean-up activities would have little impact on the biota in the vicinity (ca 15 - 20 m) of the oiled site.

C=A8 Oiled area (CT) is located in the upper intertidal zone on the bedrock outcrops bordering a cobble beach. Bedrock at oiled site has mosses, black lichen, and little else. Lower zones have sparse Fucus, moderate barnacles densities (Balanus). Little biota is present on the cobble beach.

Clean-up activities will have little impact on the biota at the site.

D=A6 Oiled area (LSOR) at same tide level as C (above). Biota are filamentous green algae (Urospora?) and little else. Lower in the intertidal, scattered barnacles, moderate littorine densities are present.

Clean-up activity will not adversely impact the biota of the site.

E=A1-A5 This pocket beach and complex headland region has several small patches of asphalt pavement (see OG map), located in the upper zone bordering the cobble beaches and bedrock outcrops. Biota at the oiled sites include beach grass, black lichen, and little else. The beach grass is abundant in a couple areas, with sprouts emerging from the senescent tufts amongst the pavement patches. Biota are sparse near the oiled site on the cobble beaches below.

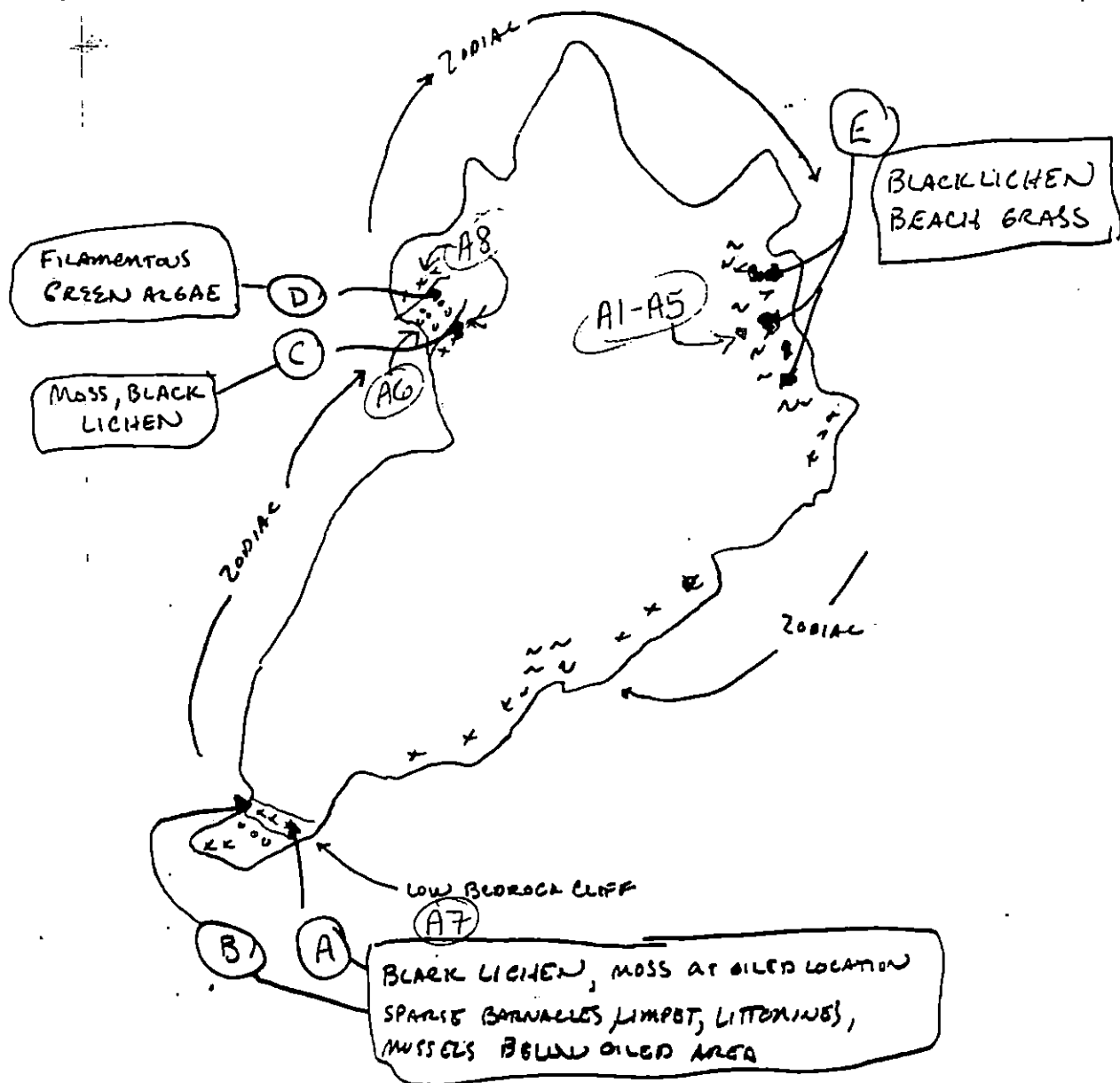
MANUAL CLEAN-UP PERFORMED DURING SURVEY. Clean-up activities should not negatively impact the local biota.

WILDLIFE OBSERVATIONS - Completed on all subdivisions

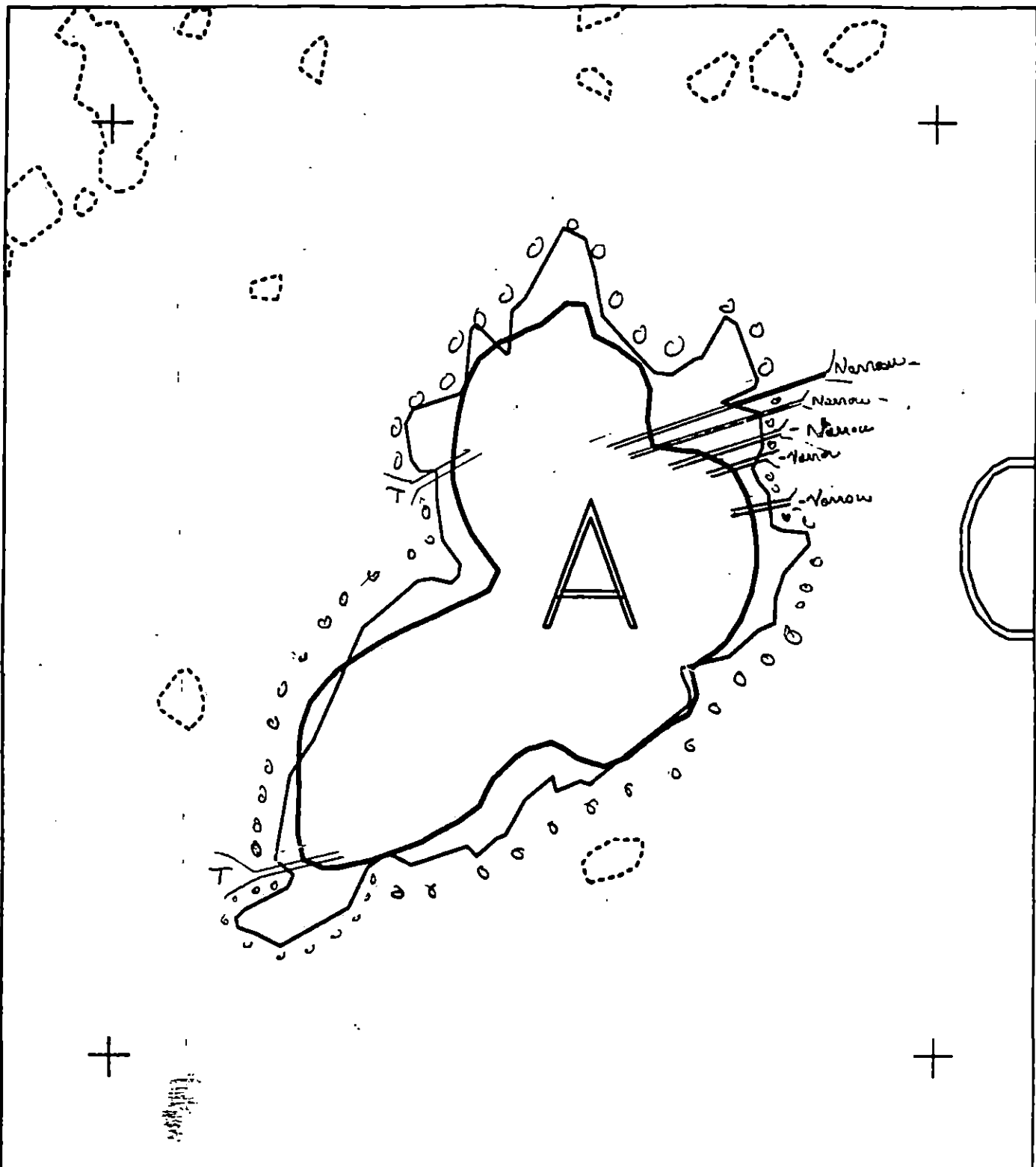
BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles (nest listed but not found)	1	1	
Seabirds			
Waterfowl	2	5	
Gulls/Kittiwakes	2	7	
Shorebirds	1	2	
Corvids	1	3	
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	1	Sitka Deer	1

Shoreline subdivision map showing important biological features attached.



BIO SKETCH MAP CHOLLA-A 1 MAY 91



XXXX	Wide	CH011 A ADEC Subsegment Length: 1235m METERS 0 100 200 AK State Plane Zone 4 pch011a	 	Subdivision Field Map
////	Medium			Map Key: PWSCH011A
----	Narrow			Name: <u>17 Semper</u>
TTTT	Very Light			Date: <u>1 May 91</u>
0000	No Oil			Date Entered:

Reviewed: MC 5/10/91
reviewed 5/6/91

1991 MAYSAP EVALUATION

SEGMENT: CH 011 SUB: A REGION: PWS SURVEY DATE: 5/1/91

ENVIRONMENTAL SENSITIVITIES:

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

Ecological/Constraints (see page two for details) Eagle nest,
Subsistence - Deer harvesting

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: Lochlan Oate Date: 5/17/91

RECOMMENDATIONS:

	INITIAL	TAG	FOSC
TREATMENT REQUIRED (Y or N)	<u>N</u>	<u>N</u>	<u>R</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 17 1991 FOSC APPROVAL DATE: 25 MAY 1991

ADEC [Signature] FOSC E.E. PAGE, CDR, USCG

EXXON [Signature] CHIEF OF STAFF FOSC

USCG [Signature]

NOAA [Signature]

→ The state will evaluate the need for further treatment.

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

Subsistence - Deer Harvesting: Unlimited treatment prior to 8/15.

MAYSAP FIELD SHORELINE COMMENT SHEET CHOII-A 1/6

TEAM NO. 4 SEGMENT CHOII SUBDIVISION A DATE 1 MAY 1991

ADEC

NAME Dianne Munson SIGNATURE Dianne Munson☐ NTR ☐ Treatment Recommended

Heavy areas of tarmats, asphalt and sork observed were removed. Have some reservations not recommending treatment. Much of the oil removed was under a top layer of cobbles and the oil was very heavy. Do not feel comfortable in saying that heavy oiling does not exist under other sections of cobble veneer.

EXXON

NAME LARRY D. OLSON SIGNATURE Larry D. Olson

☒ NTR VECO crew removed 26 G.O. Bags of tar balls/patties from area indicated on sketch map. Vegetation was diverse with what appeared to be healthy growth in lower tidal zones.

LANDMANAGER

NAME LARRY EVANDY OF CVC SIGNATURE LM☐ NTR ☒ TREATMENT RECOMMENDED

NORTH END OF ISLAND WAS THE WORST AREA. AP/TB/PATTIES WERE FOUND. VECO CREW WORKED THIS AREA AND REMOVED A CONSIDERABLE AMOUNT. I BELIEVE MORE OILED DEBRIS CAN BE REMOVED. I RECOMMEND MANUAL REMOVAL, NO BIOREMEDIATION RECOMMENDED.

USCG/NOAA

NAME JERRY SCHULTZ SIGNATURE Jerry Schultz☒ NTR

FURTHER REMOVAL OPERATIONS WOULD CAUSE MORE ENVIRONMENTAL HARM THAN THE OIL TO BE REMOVED

PAGE 1 OF 1

DATE 1 / MAY / 91

EST. OIL CATEGORY LENGTH: W 0 m M 0 m N 25 m VL 60 m NO 115 m US 0 m

Reviewed: MC 5/10/91
reviewed 5/6/91 KG

Og Sketch Map

CH011-A

+M Samps

1 MAY 91

1015 - 1140

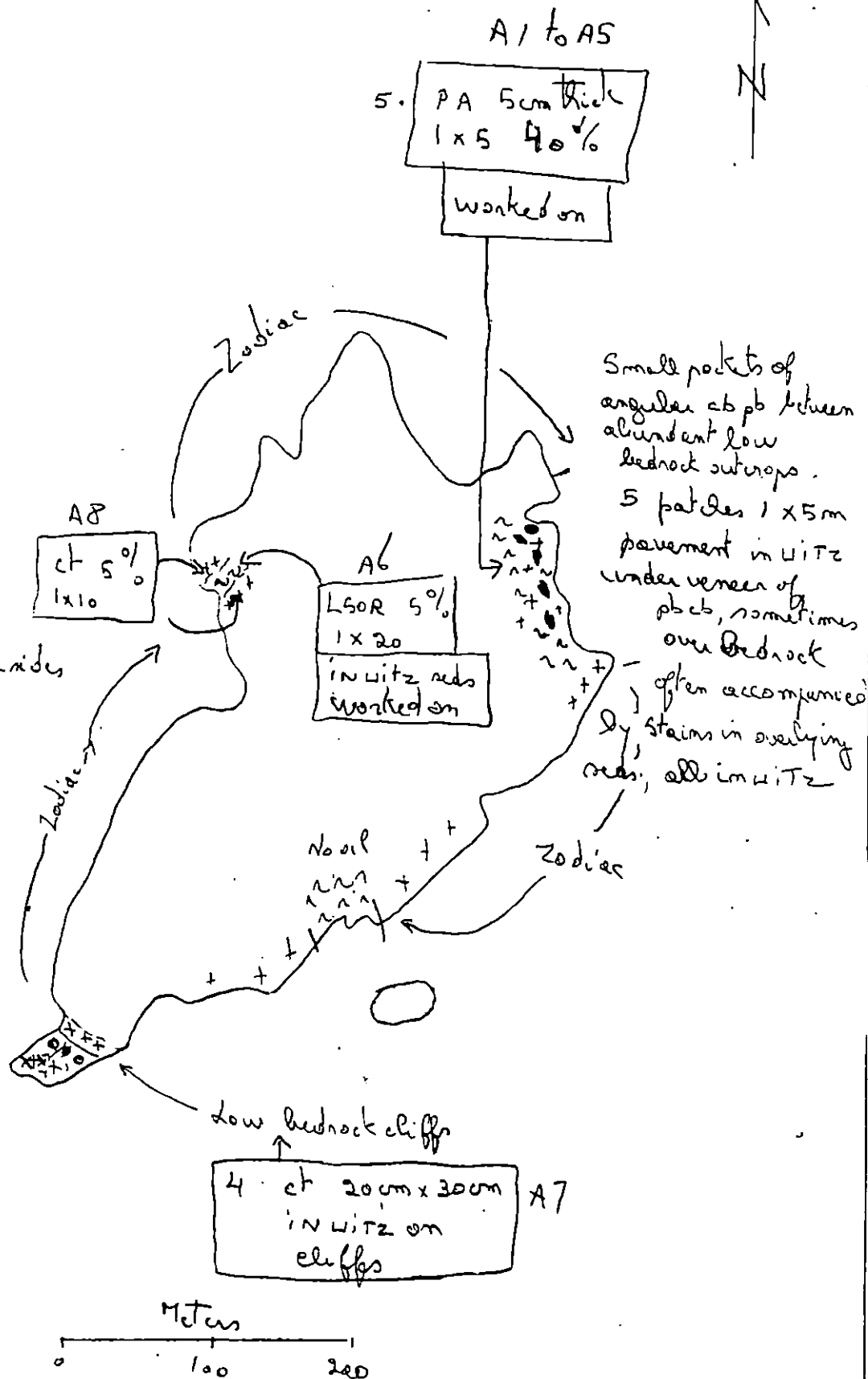
Legend

[+] Bedrock

[a] pb

[n] cbpb

Very small pocket beach
of cbpb, steep beach face
ct in 2 bands 1x10m
< 5% in WITZ on bedrock sides
of cove.



REVIEWED: MC 5/10/91

. reviewed 5/6/91 KC

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 1, 1991 1019 - 1140
SEGMENT #	CH011	TIDAL HEIGHT (Range)	-1.0 => +5.0
SUBDIVISION	A	BIOLOGIST	JIM BARRY
STATE	Calif	WIND SPEED/DIRECTION	Variable 0-5 kt., cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

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 A7 Biota include scattered black lichen, and sparse moss. Below the oil on the cliff, barnacles, limpets, littorines, and mussels, are sparse. Below the cliff there is a flat beach in the high zone with drift algae, clam shells. In the low intertidal, some distance away (ca 40 m), eel grass and brown algae (Agarum) are abundant.

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Clean-up activity will not adversely impact the biota of the site.

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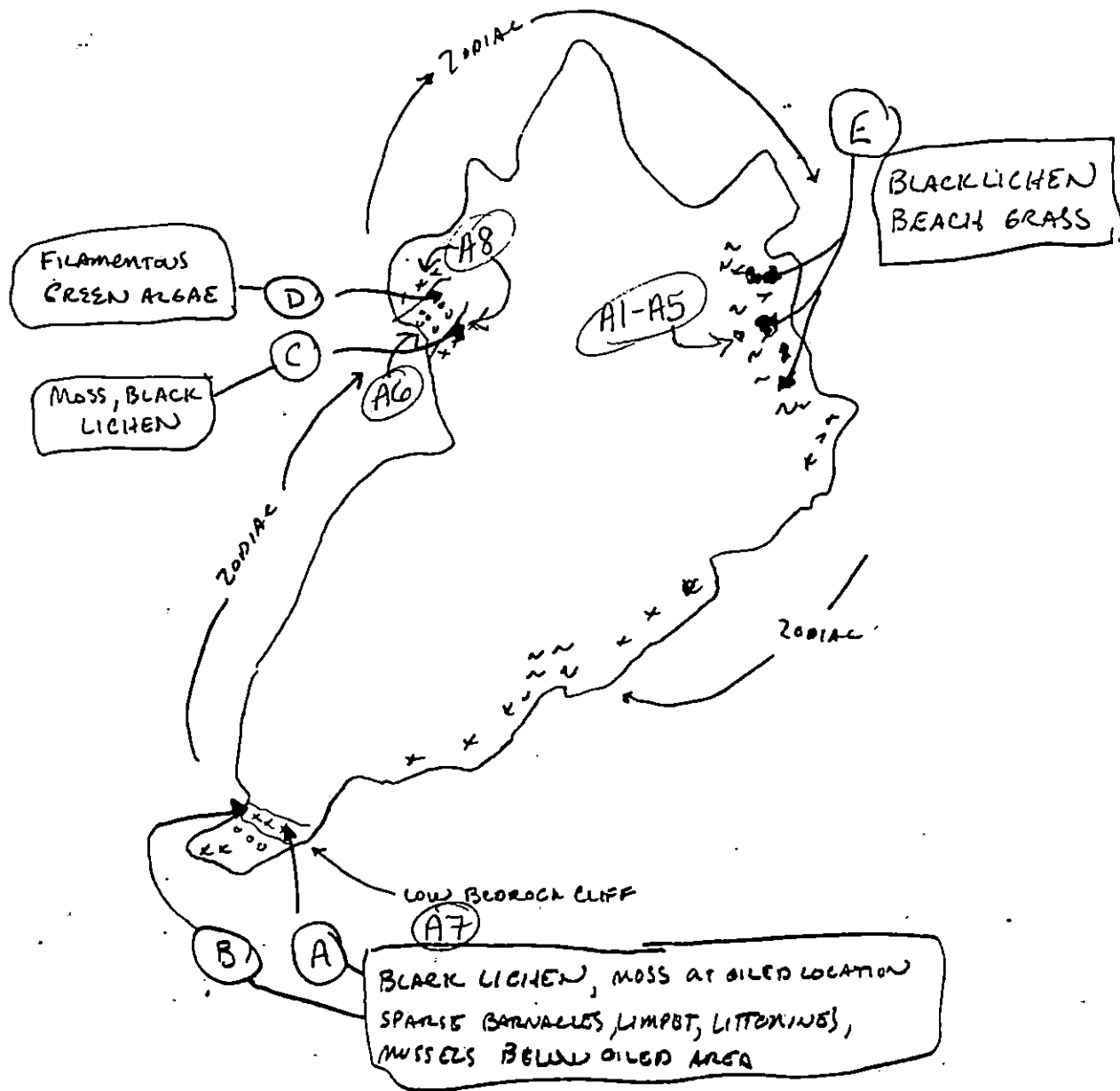
MANUAL CLEAN-UP PERFORMED DURING SURVEY. Clean-up activities should not negatively impact the local biota.

WILDLIFE OBSERVATIONS - Completed on all subdivisions

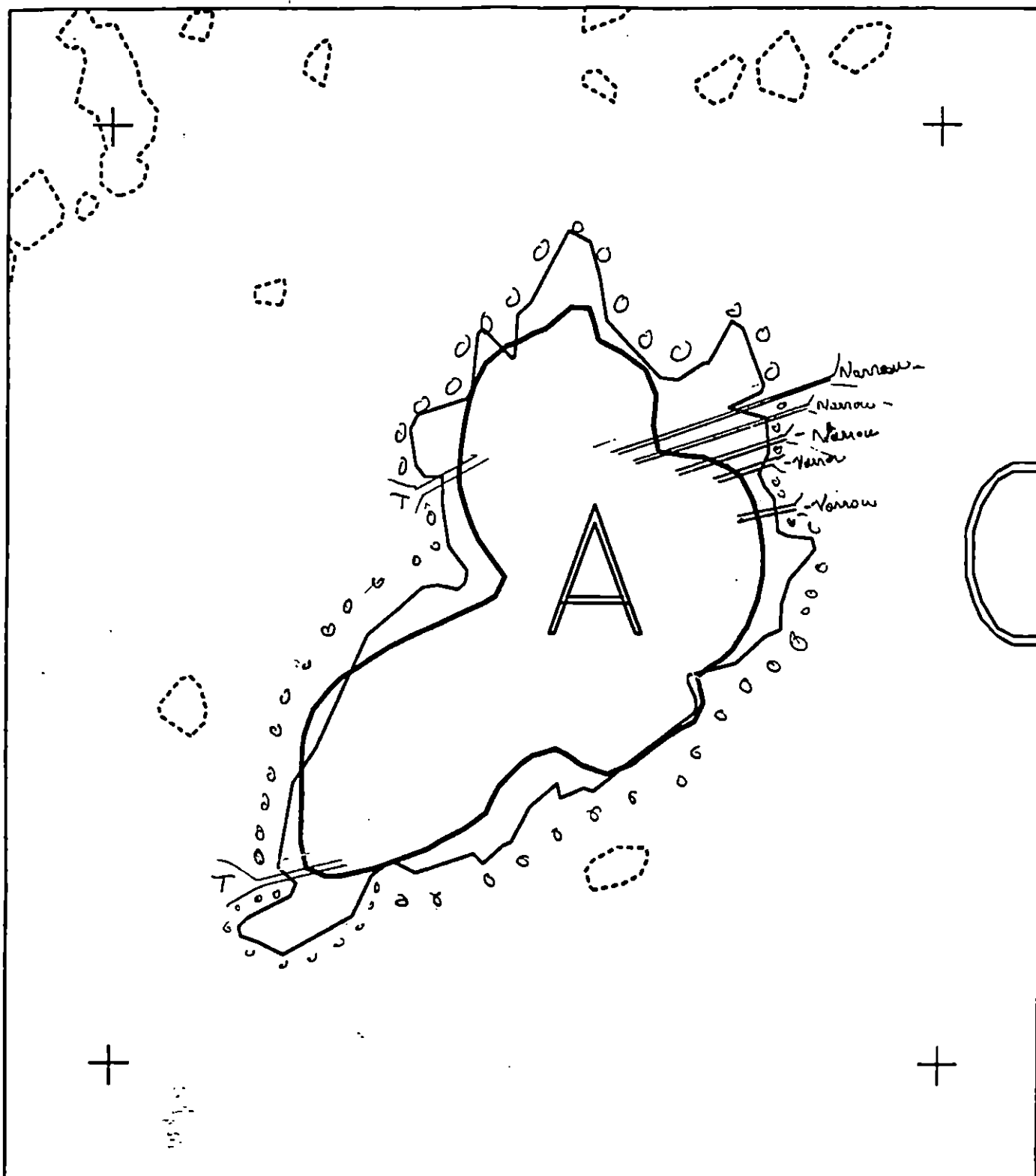
BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles (nest listed but not found)	1	1	
Seabirds			
Waterfowl	2	5	
Gulls/Kittiwakes	2	7	
Shorebirds	1	2	
Corvids	1	3	
Other Birds			

WILDLIFE	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	1	Sitka Deer	1

Shoreline subdivision map showing important biological features attached.



BIO SKETCH MAP CHOI-A 1 MAY 91



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

CHO 11 A

ADEC Subsegment Length: 1235m

METERS

0 100 200
 AK State Plane Zone 4
 960110



Subdivision Field Map

Map Key: PWSCH011A

Name: 17 SamplesDate: 1 May 91

Data Entered:

Reviewed MC 5/10/91

reviewed 5/6/91 KG

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT CH-11 SUBDIVISION A (1 of 1)

WORK WINDOW	
Manual Pickup Tarmat Removal	CLOSED
Bioremediation Spot Washing Manual Tilling Other Approved Treatment	CLOSED

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

3N,O,P,Q	Harbor Seal & Sea Lion Pupping and Molting	NO TIME CONSTRAINT. Authorized per memorandum dated 5/14/90 from Kathryn Frost/ADF&G to Mark Kuwada/ADF&G.
5T	Bald Eagle Nest	USFWS bald eagle impact assessment conducted on 5/12/90 by Mike Lockhart indicates an active nest in the Subdivision. Subdivision closed to manual pickup, tarmat removal, bioremediation, spot washing, manual tilling and other approved treatment within the buffer zone established by USFWS.
7II	Subsistence: Deer Harvesting	Closed to bioremediation, spot washing, manual tilling, and other approved treatment after 8/15. No constraint to manual pickup and tarmat removal.

OTHER ECOLOGICAL CONSIDERATIONS

If eagle nest constraint is removed, other ecological considerations will apply.

FOSC

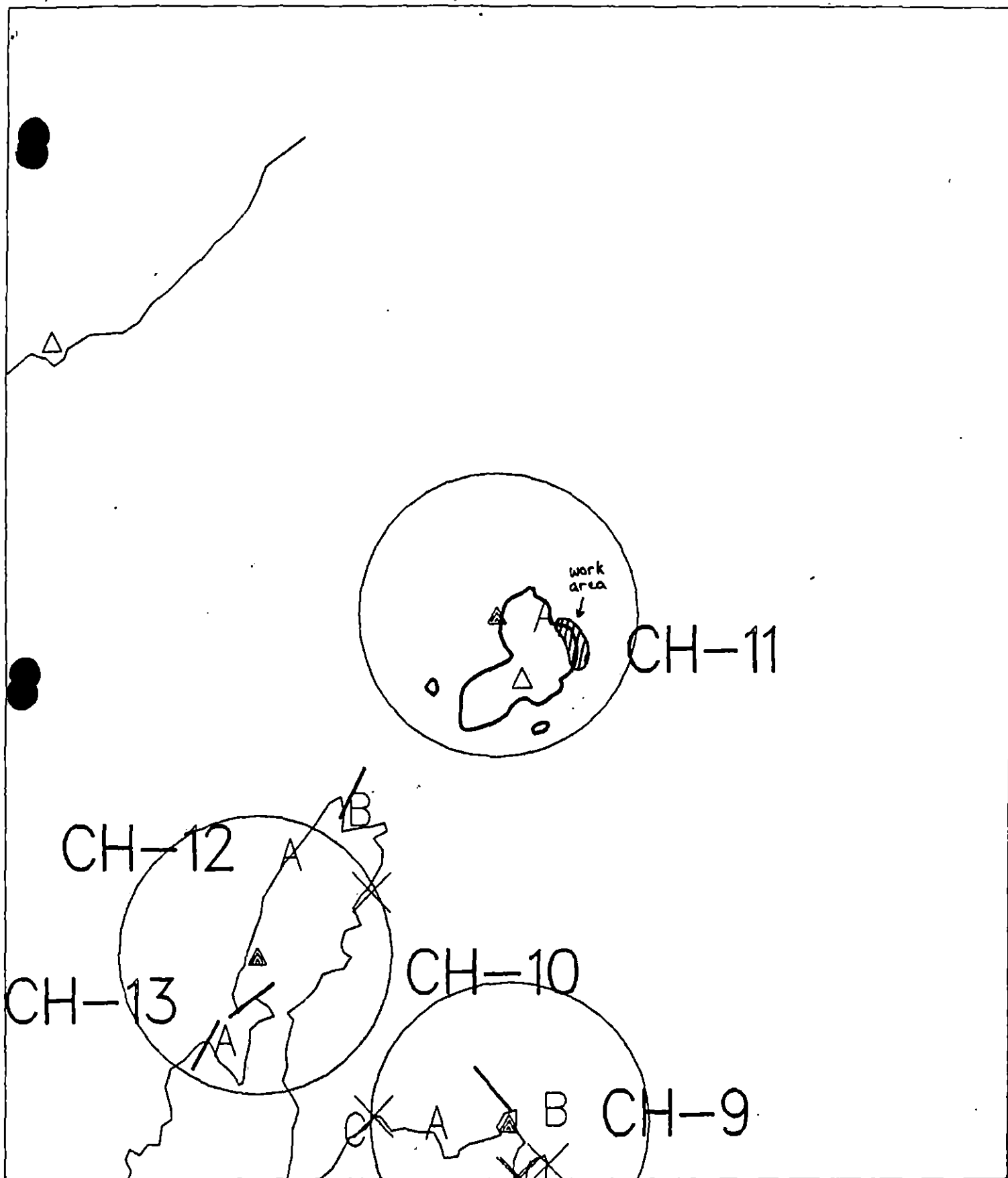
Date

7-12-90

Prepared by

Date

7/12/90



Exxon Company, USA
Map Key: PWS-CH-11
June 08, 1990



ECOLOGY MAP
SEGMENT CH-11
SUBDIVISION A (1 of 1)
METERS
0 378 756

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

1 inch = 1240 feet

SHORELINE EVALUATION

SEGMENT ST/ CH-11 SUBDIVISION A (1 OF 1) DATE 4/23/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

3N,3P Harbor seal and sea lion pupping (5/15 to 7/1)
3O,3Q Harbor seal and sea lion molting (8/15 to 9/15)
5T-2 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6Y Recreation: Special use destination
6V Recreation: Anchorages (6/1 to 9/15)
7II Subsistence area: Deer harvesting (8/15 to 2/28)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: Charles E. Holmes

DATE: 5/5/90

OILING CATEGORIZATION:

Wide 0 m: Medium 122 m: Narrow 0 m: V.Light 1038 m: No Oil 75 m
Subsurface Oil Observed: Yes X No Maximum Depth 22 cm

RECOMMENDATIONS:

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

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

COMMENTS: Recommended treatment includes 1) manual pickup of tarballs in area indicated on sketch map, 2) manual removal of tarmat in area indicated on sketch map, and 3) bioremediation of area indicated on sketch map. Work should be conducted between 7/1 and 8/15 due to pinniped constraints and with approval of USFWS regarding eagle nest. Inipol application should be conducted between 7/2 and 7/31 to protect pinnipeds.

SEE CONSTRAINTS ADDENDUM DATED 7/12/90/PP

TAG COMMENTS: Manually till areas near pits 3, 5, 6 and 20. Spot wash as necessary

TAG APPROVAL DATE: May 5, 1990

ADEC ART WEINER Art Weiner

EXXON Mark N. Silber Mark N. Silber FOSC:

NOAA Gary Petras Gary Petras

USCG G.A. REITER G.A. Reiter

DATE: 6-17-90

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/CH-11

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ CH-11 SUBDIVISION A (1 OF 1) DATE 4/23/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

3N,3P Harbor seal and sea lion pupping (5/15 to 7/1)
30,3Q Harbor seal and sea lion molting (8/15 to 9/15)
5T-2 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6Y Recreation: Special use destination
6V Recreation: Anchorages (6/1 to 9/15)
7II Subsistence area: Deer harvesting (8/15 to 2/28)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 122 m: Narrow 0 m: V.Light 1038 m: No Oil 75 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 22 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 tarballs in area indicated on sketch map, 2) manual removal of tarmat in area indicated on sketch map, and 3) bioremediation of area indicated on sketch map. Work should be conducted between 7/1 and 8/15 due to pinniped constraints and with approval of USFWS regarding eagle nest. Inipol application should be conducted between 7/2 and 7/31 to protect pinnipeds.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

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

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

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

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

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

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

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

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

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

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

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

1H Remote release site

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ADF&G Don Calkins 267-2403

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

ADF&G Tom Roth 267-2206

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

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

6U Recreation:

Tent sites (6/1 to 9/15)

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

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/ CH11 SUBDIVISION: A (ENTIRE SEGMENT) DATE 4/23/90

USCG

NAME JERRY SCHULTZ

SIGNATURE Jerry Schultz

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

RECOMMEND BIOREMEDIATION IF DONE WITHIN CERTAIN TIME CONSTRAINTS BENEFITTING WILDLIFE CONCERNS. WOULD ALSO RECOMMEND MANUAL PICKUP FOR ANY REMAINING ASPHALT. THIS TREATMENT SHOULD BE LIMITED TO AREA INDICATED ON SEGMENT MAP.

ADEC

NAME MIKE EBEL

SIGNATURE Michael J. Ebel

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

CH-11-A: This small island was composed mostly of steep bedrock cliffs interwoven with small gravel/cobble pockets. Most bedrock had a band of stain and coat ranging from 1C through 1S at the UTZ. The average value for this band would probably be a 1B coat, 1/2 m in height. On the west side of island a 1B cover was found under the boulders ~ 2 m². south of this spot occasional splashes of pool tar (very small) were found in bedrock interstices. On the east - NE side of island a wide band was found on the lowering angled part of beach in the UTZ. (cont.)

LAND MANAGER

NAME DAT SELANOFF (CK)

SIGNATURE Dat Selanoff

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

TREATMENT: Manual pick up + ~~100% removal~~ WASH DOWN would be my suggested action. If necessary bioremediation. It is possible to get a rig in this area.

43/46

2.)

(cont.)

CH-11-A

Mike Ebel ADEC

4/23/90

be sure to schedule in accordance with all ecologic constraints and windows.

* My recommendation would be to manually remove the aforementioned AP band to a depth of about half way down into the OR sedo the remainder of the oil, and of this zone of contamination (in total $\approx$ 70 m X 10 m W as it grades into patchy and splashed distribut could be agitated carefully with garden rakes (especially if some custom made rakes were made, having perhaps seven tines — each being $\approx$ six inches long — with a good solid handle) and then seeded with

* granular fertilizers. An LCM could access the area if careful — and specially adapted 2 wheel garden carts (having wide flotation tires, pneumatic) could take the place of wheel barrows ~~and~~ and could be made to be moved by an out-of-the-way handle ~~for~~ for hand use, ~~and~~ and also equipped with a hitch to pull around ~~by~~ by four-wheelers viz. into the LCM.

Note: The overall dimension of the E-NE shoreline is given in approximate, angular areal dimension. In reality all of the distributions and textures taper in all 3 dimensions. The oiling was treated as such for estimations of treatment operations. End

Michael J. Ebel ADEC

SHORELINE OILING SUMMARY

REVISION NO. 04-13-90

OG Randy Siegel USCG Jerry Schultz SEGMENT ST/ CH-11
 BIO Lewis Sherman LAND REP Pat Salanoff (USC) SUBDIVISION A (1 OF 1)
 EXXON Garrett Herbst ADEC Mike Ghel TIME 08:00:00
 TEAM NO. 12 TIDE LEVEL +0.3 to +3.2 DATE 4/23/90
 EST. SUBDIVISION LENGTH: 1947 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: SE to NW to SE (1.6)
 SURFACE SEDIMENTS: R 40 % B 20 % C 15 % P 15 % G 10 % S 0 % M 0 % V 0 %
 SLOPE: Long 60 % Hang 40 % Vert 0 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 150 m N 0 m VL 1677 m NO 120 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	C	R	P	S	1	2	3	4	5	SU	U	M	V
ASPHALT PAVEMENT			X	✓	X	✓				X	✓		
POOLED			X	✓				X	✓	X	✓		
COVER		✓		X	X	✓				X	✓		
COAT	X	✓	0	+	X	✓	0	+		+	✓	0	+
STAIN	X	✓	0	+	X	✓	0	+		X	✓	0	+
MOUSSE													
PATTIES													
TARBALLS													
FILM													
NO OIL										✓		✓	✓

PAVEMENT (H) F S 75 sq. m by 2 cmPATTIES / TARBALLS 0 BAGS

NEAR 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 debris#BAGS 1

Photographs:

Roll No. ST-12-7Frames 10-13

SUBSURFACE OIL Δ - OILED INTERVAL < 5cm IN PITS 3, 5 AND 6 DOES NOT CONSTITUTE SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm)	BELOW		OIL / FILM COLOR					PIT ZONE				A	N	SHEEN (Y/N)	↓	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UO	1	2	3	4	5	SU	U	M	V					
1	40					X	0-0	X							X						-	-	G
2	20					X	0-0	X							X						-	-	S
Δ*	3	X					0-15	X			X				X						-	-	P, R
4	20					X	0-0	X							X						-	-	P
Δ*	5	X					0-15	X			X				X						-	-	P
Δ*	6	X					0-13	X			X				X						-	-	P

COMMENTS: *worst oiling type found. Some OR (LBN) was present in each indicate. This segment consists of an island. Uplands are variable - often bedrock

outcrops with gravel-puddle beaches or gravelly areas. A lot of coating-staining of bedrock cliffs or boulders around perimeter of island. The northern end of the island had ^{continuous} asphalt several meters in width with variable distribution. ^{away from the beach} The asphalt was underlain by light brown, soft ^{pooled} oil, which penetrated as deeply as 22 cm locally. Manual pickup + bioremediation in this area were discussed by Exxon, USC ADEC + Land Manager. A lot of oost in this area appears to have provided

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SHORELINE OILING SUMMARY (PAGE 2)

REVISION 06/13/90

SEGMENT ST/ CH-11 SUBDIVISION A (2 OF 2)

SUBSURFACE OIL (CONTINUED)

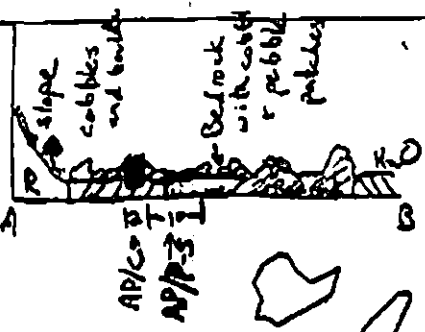
PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL	BELOW		OIL / FILM COLOR	PIT ZONE				A N A	SHEEN (Y/N)	▼	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC		BU	U	M	U				
7	33					X	0-0		X			X				Y	23	P
8	30					X	0-0		X			X				-	-	P
9	25					X	0-0		X			X				-	-	P
10	15					X	0-0		X			X				N	14	P
11	18					X	0-0		X			X				-	-	P
12	20					X	0-0		X			X				Y	16	P
13	20					X	0-0		X			X				-	-	P
14	20					X	0-0		X				X			N	12	P
15	30					X	0-0		X				X			Y	20	P
16	22					X	0-0		X			X				-	-	P
17	25					X	0-0		X			X				-	-	G
18	17					X	0-0		X			X				-	-	G
19	30					X	0-0		X			X				-	-	G
* 20	33	X					5-22		X			X				-	-	P

COMMENTS

37/46

REVIEWED JW DATE 4-25-90

10

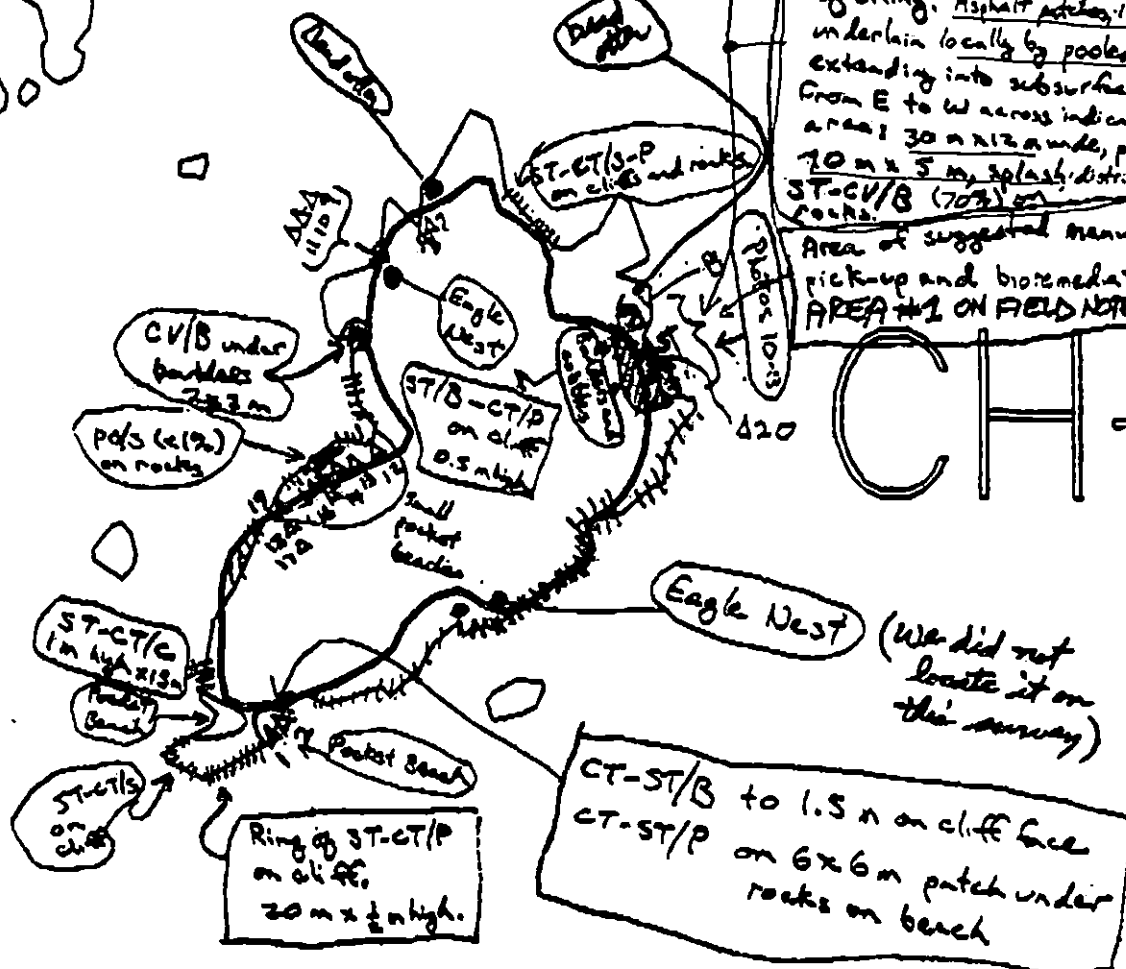


SKETCH MAP

MANUALLY PICKUP TAR BALLS,
MANUALLY REMOVE TARMAT, 4.
(30m x 12m)
BIOREMEDIATE AREA WHERE
TARMAT WAS REMOVED.

Area about 20 meters in
from shoreline had band
of oiling. Asphalt patches, 1-5.
underlain locally by pooled
extending into subsurface
from E to W across indicate
area: 30 m x 12 m wide, pa
10 m x 5 m, splash distrib
ST-CV/B (70%) on
rocks.
Area of suggested manu
pickup and bioremediat.
AREA #1 ON FIELD NOTE

CH=



Oil Character Length (m):

AP 100 PO 50 CV 10 CT 1600 ST 1600 MS 5 PT 5 TB 5 FL 5 NO 12

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

0000 No Oil

CH-11A

ADEC Segment Length: 1235m



Map Key: PWS-37

Name: Ruby LangelDate: 4/23/90Data Entered: 38/46

Segment ST / CH-11 Subdivision A Date (mo / day / yr) 4/23/90

Time (24 hr) 0805-0900 Biologist SHARMAN

(A) Substrate type and % of segment: SUBDIV.
(1) Bedrock 40 (2) Boulder 20 (3) Cobble 15 (4) Pebble 15 (5) Sand 10 (6) Silt gravel

(B) Overall % cover of biota (% of segment): Dense SUBDIV. 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 10, 11, 12, 13

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, 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: 10 pairs unidentified gulls (probably glaucous-winged), 20 pairs herring gulls, 5 pairs oystercatchers, 4 pairs (?) cormorants, ~ 8 crows, 1 magpie, 1 adult eagle, 1 Canada goose. Almost all these birds associated w/ islets off N. end of island. For the first time this spring, the birds appear to be getting serious about nesting. Saw seagulls. 2 other cormorants (one adult male) - lower + side, (cont.)

Ecological Considerations:

Resource sensitivities previously identified for this segment include use as a pinniped haulout (harbor seal/sea lion pupping/nesting - codes 3N, O, P, Q), 2 bald eagle nests (code 5T), anchorage (code 6V), Special Use Destination (code 6Y), and subsistence deer harvesting (code 7II). (cont.)

40/46

Shoreline Ecological Summary (cont.)

(Page 2 of 2)

Sherman
4/23/90

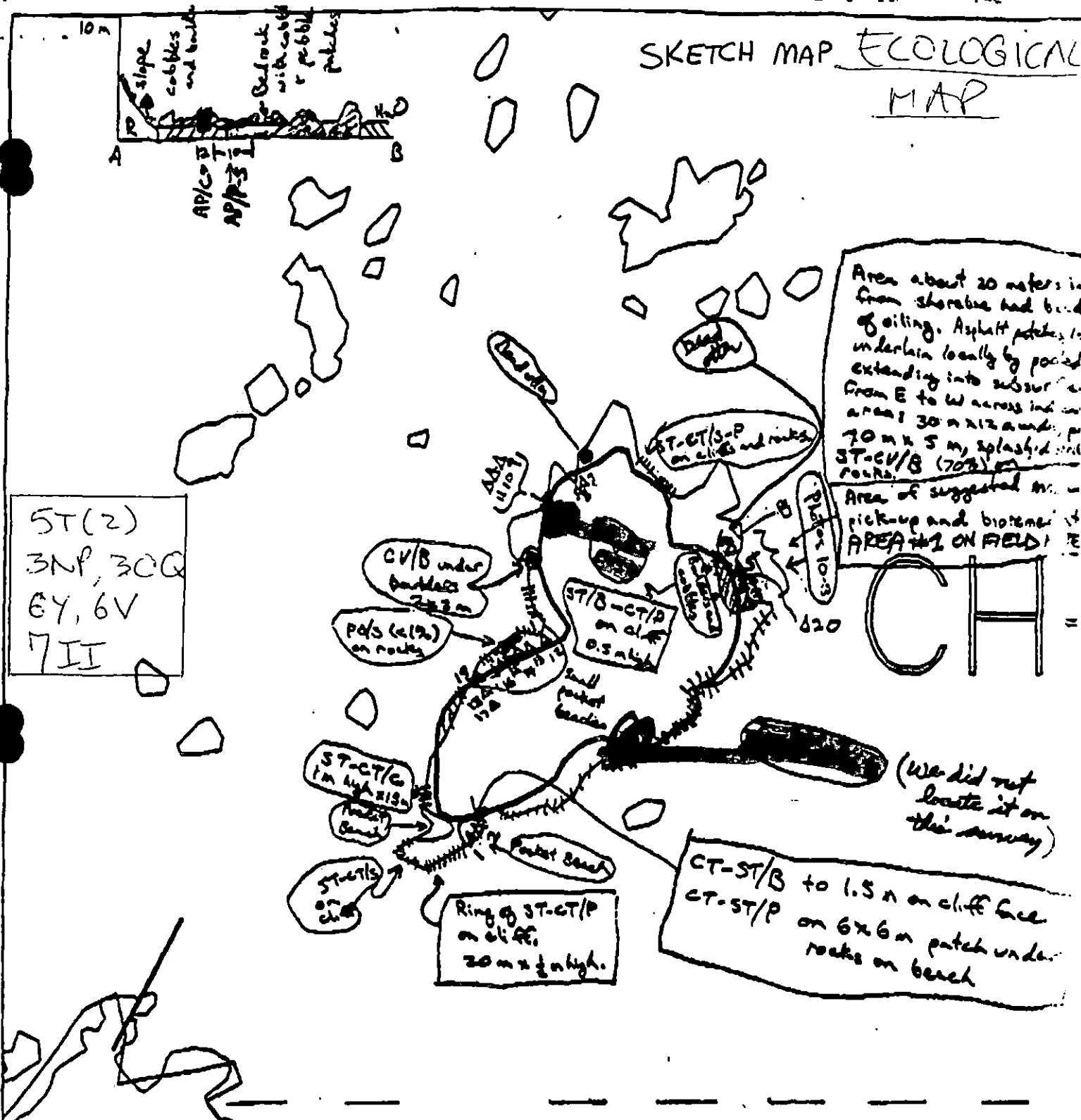
General Comments (cont.):

uncoiled, both older adults, cause of death unknown. The E. + N. ends of the island (at least) appear to have been downlifted 3-4m by the 1964 earthquake - in situ large tree stumps in the RTE + UTE, exposed sedge peat platforms in intertidal zone, forest soil (?) organic horizons in UTE overlain by several cm of black material. (These organic layers appear to be a very effective barrier to depth penetration by oil). Locally there are large volumes of drift in wrack lines - all are oil-free. Intertidal communities normal + healthy, locally very productive, especially LTE. Edgroom in some rock tidepools, + much of island is surrounded by shallow subtidal eelgrass communities. Locally there are vertical bands of weathered oil coat on high-angle bedrock/large boulder surfaces - barnacle mortality is to 60% within this band, 5% outside the band. We missed the previously-ruined eagle nest on the E. shore, but did see the other one (see map) - it appeared inactive. A diverse rocky LTE sloping out to fine-grained bivalve/worm/diverse algae/edgroom shallow subtidal community. Fine-grained pocket beaches have Sepidomus/Mya/Macoma shells.

Ecological Considerations (cont.):

The rocky points + especially the offshore islets N. side are clearly critical pinpoint habitat as well as important seabird/shorebird nesting habitat. Timing constraints should be carefully considered since these animals can be severely impacted during highly sensitive time periods by human activity. Note the possibility that the presently inactive eagle nests may yet become active. The shallow offshore eelgrass system is extremely productive spawning/rearing habitat for a variety of marine species of commercial/subsistence importance + such systems are known to be fairly sensitive to physical disturbance. In general, this island can be considered to be sensitive to human intrusion + accompanying physical disturbance at a level of 8 on a scale of 1-10 (5 = normal, average sensitivity; 10 = extreme sensitivity).

SKETCH MAP ECOLOGICAL MAP



Oil Character Length (m):

AP 100 PD 100 CV 10 CT 100 ST 100 MS 10 PT 10 TB 10 FL 10

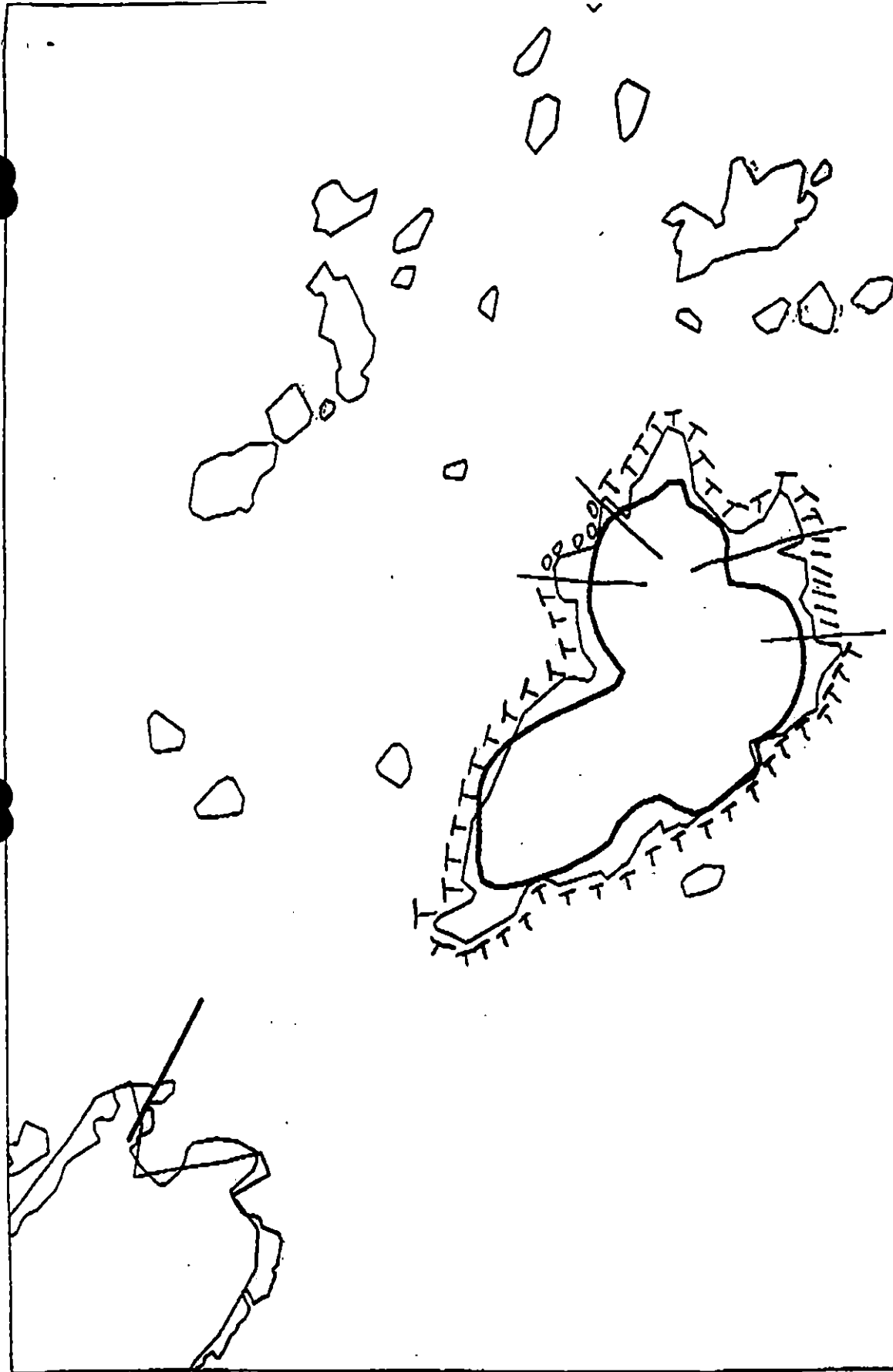
XXXX Wide
 /// Medium
 --- Narrow
 TTTT Very Light
 0000 No Oil

CH-11A

ADEC Segment Length: 1235m



Map Key: PWS-57
 Name: Polygraph
 Date: 4/23/90
 Date Entered: 3E



CH

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

CH-11A

ADEC Segment Length: 1235m



Map Key: PWS-37

Name: Randy Siegel

Date: 4/23/90

Date Entered:

39/46

SHORELINE EVALUATION

SEGMENT ST/ CH-012 SUBDIVISION A (1 OF 1) DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

3N,3P Harbor seal and sea lion pupping (5/15 to 7/1)
3O,3Q Harbor seal and sea lion molting (8/15 to 9/15)
5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6V Recreation: Anchorages (6/1 to 9/15)
7II Subsistence area: Deer harvesting (8/15 to 2/28)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: [Signature] DATE: 4/20/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 85 m: V.Light 226 m: No Oil 451 m
Subsurface Oil Observed: Yes X No Maximum Depth 5 cm

RECOMMENDATIONS:

<u> </u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u>X</u> Treatment Recommended	<u>X</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 a) removal of oiled debris, b) removal of pooled oil, c) removal of tarmats and d) bioremediate areas indicated on sketch map. Work should be conducted between 7/2 and 8/14 due to above listed constraints.

TAG COMMENTS:

TAG APPROVAL DATE: 4/20/90
ADEC Art Weimer
EXXON Andy TGR
NOAA Burt Wescott
USCG Kenneth Keane

FOSC: [Signature] DATE: 5-9-90
cvc Rep to be present

CH-12

CH-

"A"

CH-12

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

ADEC Segment Length: 762m



Map Key: PWS-38

Name: N. Bigger

Date: 7/6/90

Data Entered:

RJE
ADEC

1991 MAYSAP EVALUATION

SEGMENT: CH 012 SUB: A REGION: PWS SURVEY DATE: 5/1/91

ENVIRONMENTAL SENSITIVITIES:

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

Ecological/Constraints (see page two for details) Eagle nest,
Subsistence - Deer harvesting

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.

Subsistence - Deer Harvesting: Unlimited treatment prior to 8/15.

TEAM NO. 4 SEGMENT CH012 SUBDIVISION A DATE 1/17/91

ADEC

NAME Dianne Munson

SIGNATURE Dianne Munson

☐ NTR ☒ Treatment Recommended

Area A₄ is heavily oiled from 2-5 centimeters under a coarse veneer of pebbles and cobble. The area is producing Brown mobile sheen in pits interstitial water. The area is 1-2m x 20m x 2-5 cm. would be very easy to rake off pebble cobble veneer and manually remove OR sediments. At most one days work by small crew (5-6)

EXXON

NAME LARRY D. OLSON

SIGNATURE Larry D. Olson

☒ NTR Segment appeared to be in good condition. 2 beaches on this segment showed signs of SOC to L SOC. Lower tidal areas along this segment indicated Very good growth and Vegetation.

LANDMANAGER

NAME LARRY EVANOFF OF CIC

SIGNATURE Larry Evanoff

☐ NTR ☒ TREATMENT RECOMMENDED

SCATTERED TB/PATTIES IN THIS SEGMENT. I THINK FURTHER WORK CAN BE DONE. ONE WOULD NEED RAKES TO REMOVE ~~THE~~ SURFACE COBBLE TO ~~ACCESS~~ ACCESS AN OILED AREA 1-2m x 20m x 3-5cm. NO BIOREMEDIATION RECOMMENDED.

USCG/NOAA

NAME JERRY SCHULTZ

SIGNATURE Jerry Schultz

☒ NTR

FURTHER REMOVAL OPERATIONS WOULD CAUSE MORE ENVIRONMENTAL HARM THAN THE OIL TO BE REMOVED

revised 5/6/91
REVIEWED CEB 10 MAY

og sketch map.

C14012 A

JM Sengels

MAY 91

1347 - 1347

Legend

(+) Bedrock / Bb
10 cl / pb

A1
LSOR 10%
2x15 in LITZ

A2
CT 10%
1x5

1x20 41% splatens
CT 10%
1m²

20cm x 10cm peltie picked up

SOR 10%
1x20

Meters
0 100 200

reviewed 5/6/91
REVIEWED CD 10 MAY

CH012-A 5/8 NAVSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 1, 1991 1251 => 1349
SEGMENT #	CH012	TIDAL HEIGHT (Range)	+5.0 => +6.5
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm, cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A=A4 Oiled site (SOR) is located on a medium exposure beach of angular small cobble in the upper intertidal. Bedrock shale is scattered in the site. Biota in direct proximity (<1m) to oiled location: Fucus (adults and juveniles, scattered), barnacles (Balanus adults and spat, sparse), limpets (scattered adults and juveniles), littorines (sparse to moderate adults, juveniles). Below the oiled location, the dominant species were Fucus (moderate to dense in spots), barnacles (moderate Balanus density, adults, spat), mussels (sparse to moderate adults and juveniles), green algae (Ulva, filamentous species), filamentous red algae.

Cleanup operations will not adversely impact this intertidal region.

B=B3 Oiled area (CT) is located in the upper intertidal zone of a boulder and angular cobble (small) beach. Biota at oiled site: Fucus on bedrock (small adults and juveniles, sparse), barnacles (Balanus adults, moderate), littorines (adults, juveniles, moderate), and limpets (sparse). This assemblage, with the addition of other species (e.g. mussels) becomes denser at lower tidal levels. Even so, the cobble beach is not densely populated or covered throughout the observed tidal range (ca +3.0 and above).

Cleanup activities will not adversely affect this intertidal community.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles - Nest on Map (not sighted, 0 eagles)			
Seabirds			
Waterfowl	1	2	
Gulls/Kittiwakes	1	3	
Shorebirds			
Corvids	1	2	
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	0		
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

Bound 5/1/91

CH012-A Biology Report - (continued)

C = Oil is located on a cobble beach along the upper tidal zone. Little biota is attached to cobble at this level on the beach. Biota of oiled area: littorines (all stages, moderate), barnacles (sparse, Balanus adults, spat), limpets (sparse to rare, adults, juveniles). Lower zone have increasingly greater, but still low, cover and density of the key species (see B (above)).

Cleanup activities will not adversely affect this intertidal community.

The oiled areas on this subdivision are located on pocket beaches with a low to perhaps medium exposure. These beaches are composed of small angular cobble, with scattered outcrops of headlands. Most of the oiled areas occur in the high intertidal and, in some cases, up to the supratidal zone. The most common organisms near the spills are the dominant forms of these beaches, but always are present in quiet low concentrations at this tide level. The lower zones of these beaches have more attached biota, but still low or sparse cover. Bedrock outcrops have higher cover than the beaches. Fucus is particularly abundant on some of these headlands.

Due to the low abundance of biota on these cobble beaches and the absence of sensitive habitats below the oiled site in the low intertidal or subtidal, there is no restriction on cleanup activities along this subdivision.

Summary of Biological Characteristics of CH012-A

The segment consist primary of low to medium exposure cobble beaches and bedrock cliffs. The key species are low in abundance on the beaches. On the bedrock outcrops and cliff faces, Fucus, barnacles, littorines, and limpets are very abundant. Fucus, in particular, often has nearly 100% cover along the middle intertidal zone at headland areas. Mussels are fairly abundant, but not present in a distinct zone as often observed on more exposed shores. Associated species, such as sea stars, whelks, red and brown algae, are in greatest abundance on the low shore of bedrock habitats.

Recruitment is very evident for several species. Fucus sporlings and small juveniles are dense in locations from the middle to upper zones. Barnacle spat and larvae (Balanus?) are scattered in moderate to high densities in the middle and high zones. Egg cases of several species of gastropod snails are common under boulders or cobble throughout the segment. Juvenile mussels are common amongst the adults and under cobble throughout the segment.

List of Common Species on CH012-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Acrosiphonia sp., Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Agarum fimbriatum, Fucus distichus, Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Corallina sp., Cumagloia andersonii, Membranoptera dimorpha, Odonthalia floccosa, Rhodomela larix
5. Higher Plants
Zostera marina (eel grass), Leymus mollis (beach rye grass)

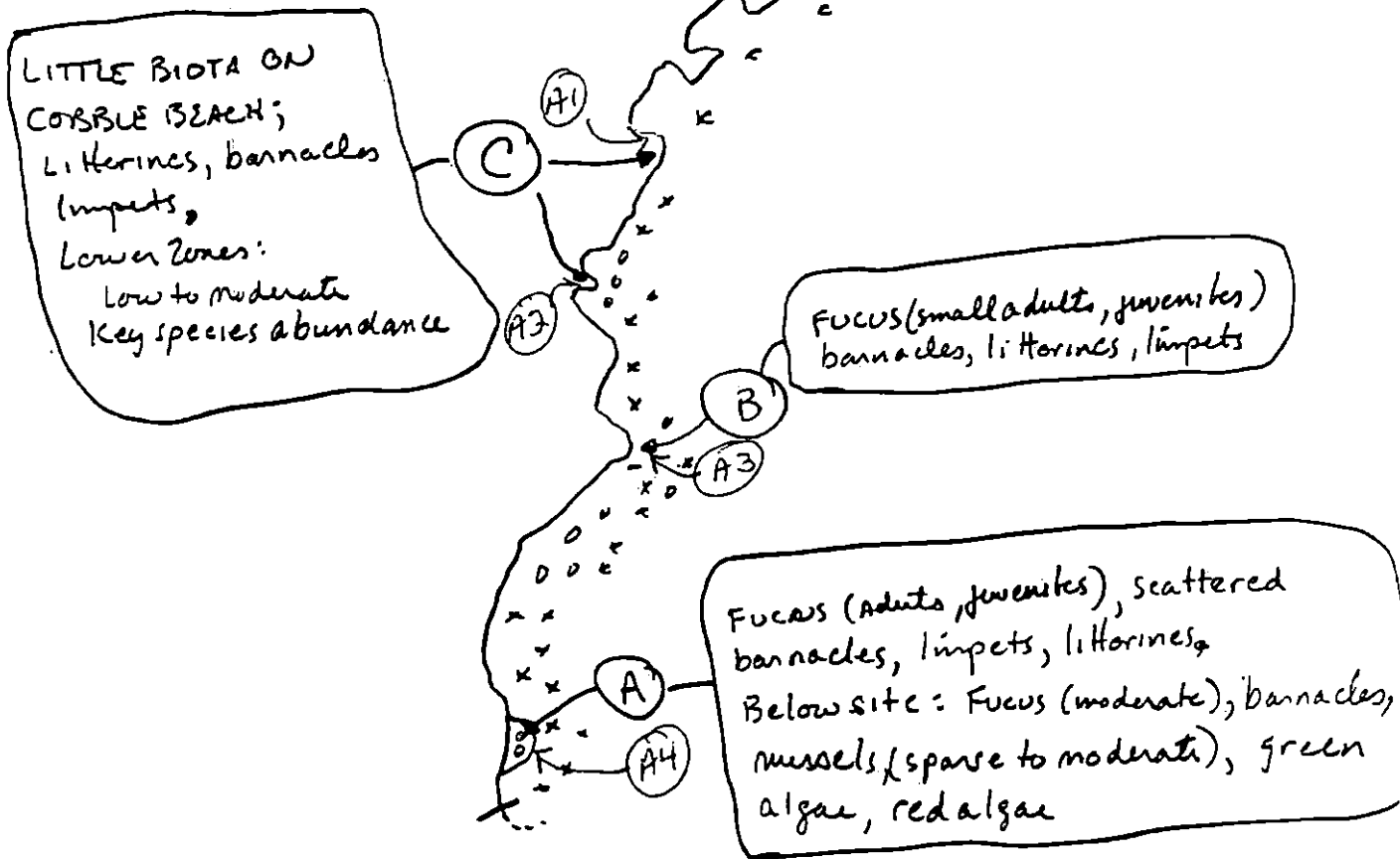
I. Marine Animals

2. Anemones - Anthopleura artemesia
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile

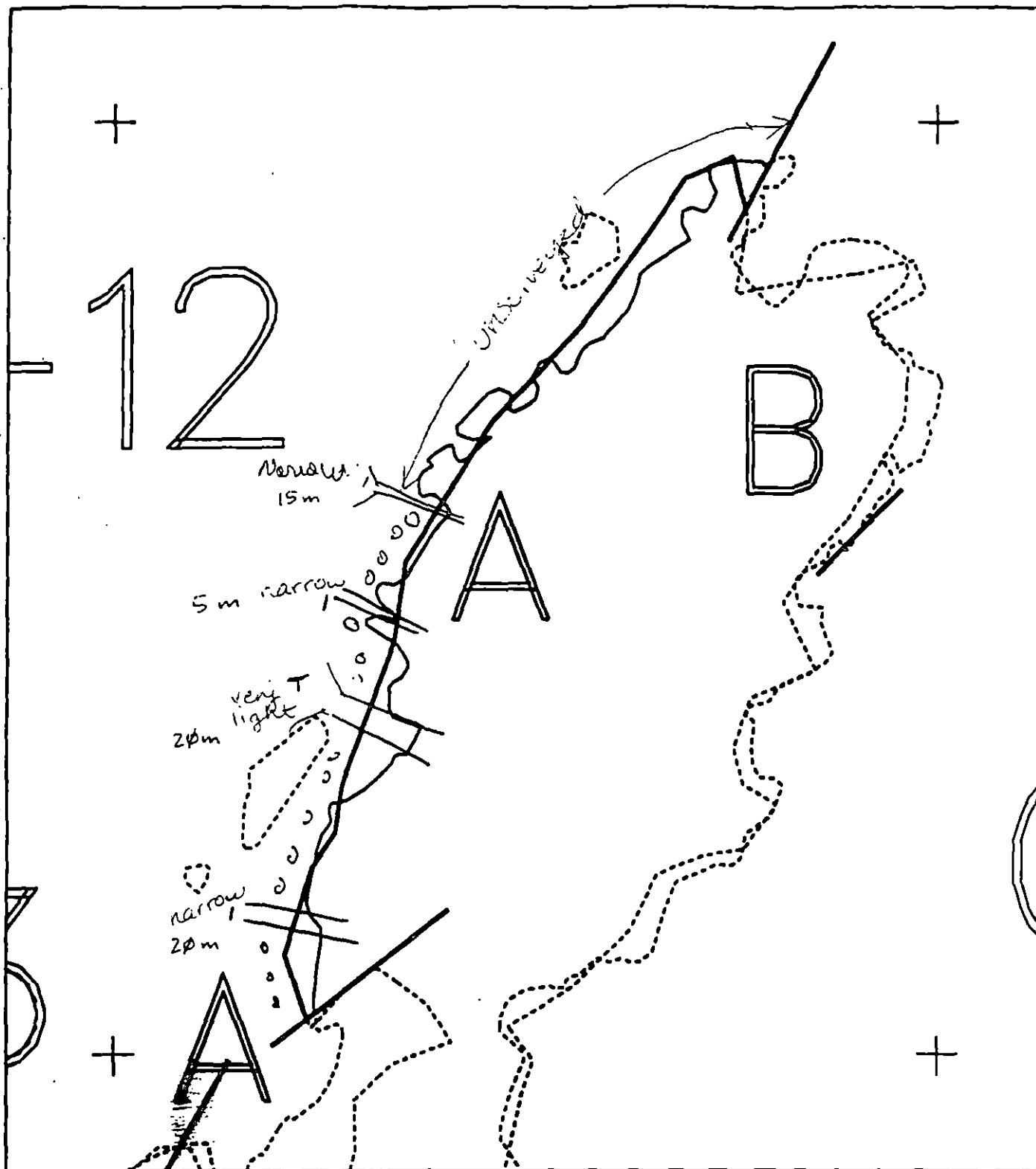
CHO12-A Biology Report - (continued)

7. Polychaete Worms -
 - Nereidae - Nereis spp.
 - Serpulidae
 - Crucigera sp., Eudistylia polymorpha
 - Spirorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii worm)
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles - Balanus glandula,
 - c. Crabs
 - Hemigrapsus oregonensis, Paguridae (hermit crabs)
11. Mollusca
 - a. Chitons - Mopalia mucosa
 - b. Snails - Gastropods
 - Littorina scutulata, L. sitkana, Natica clausa, Nucella lamellosa, N. lima
 - c. Limpets - Lottia digitalis, L. persona
 - d. Mussels and Clams
 - Clinocardium sp., C. nuttalli, Macoma sp., Mya arenaria (soft-shell clam), Mytilus edulis, Prototheca staminea, Saxidomus giganteus
12. Echinoderms
 - b. Sea stars
 - Dermasterias imbricata, Evasterias truscheli, Leptasterias hexactis, Pycnopoda helianthoides
 - c. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Schizoporella sp.
15. Fishes
 - Cottidae - 2-3 species
 - Liparidae - Liparis callyodon
 - Stichaeidae - Xiphister atropurpureus, X. mucosus

BIO SKETCH MAP CHOIZ-A 1M4491



Meters
 0 100 200



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

CH012 A
 ADEC Subsegment Length: 762m
 METERS

AK State Plane Zone 6
 pch012a



Subdivision Field Map
 Map Key: PWSCH012A
 Name: J. J. Sempala
 Date: MAY 1/91
 Date Entered:

revised 5/6/91 - G
 REVISED CD 10 MAY

1991 MAYSAP EVALUATION

SEGMENT: CH 012 SUB: A REGION: PWS SURVEY DATE: 5/1/91

ENVIRONMENTAL SENSITIVITIES:

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

Ecological/Constraints (see page two for details) Eagle nest,
Subsistence - Deer harvesting

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: Rachel Ann Davis Date: 5/21/91

<u>RECOMMENDATIONS:</u>	<u>INITIAL</u>	<u>TAG</u>	<u>FOSC</u>
TREATMENT REQUIRED (Y or N)	<u>N</u>	<u>N</u>	<u>N</u>
Manual Pickup (Check as Req.)	<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 21 1991 FOSC APPROVAL DATE: 6/1/91

ADEC FOSC

EXXON *[Signature]* CHIEF OF STATE *[Signature]*

USCG *W. J. Mass* for the treatment.

NOAA *[Signature]*

FOSC

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

→ The staff will decide the need for further treatment.

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

Subsistence - Deer Harvesting: Unlimited treatment prior to 8/15.

TEAM NO. 4 SEGMENT CH012 SUBDIVISION A DATE 1/17/91

ADEC

NAME Dianne MonsonSIGNATURE Dianne Monson☐ NTR ☒ Treatment Recommended

Area A₄ is heavily oiled from 2-5 centimeters under a coarse veneer of pebbles and cobble. The area is producing Brown mobile sheen in pits interstitial water. The area is 1-2 m x 20 m x 2-5 cm. would be very easy to rake off pebble cobble veneer and manually remove OR sediments. At most one days work by small crew (5-6)

EXXON

NAME LARRY D. OLSONSIGNATURE Larry D. Olson

☒ NTR Segment appeared to be in good condition. 2 beaches on this segment showed signs of silt to Lsilt. Lower tidal areas along this segment indicated. Very good growth and Vegetation.

LANDMANAGER

NAME LARRY EVANOFF OF CICSIGNATURE [Signature]☐ NTR ☒ TREATMENT RECOMMENDED

SCATTERED TB/PATTIES IN THIS SEGMENT. I THINK FURTHER WORK CAN BE DONE. ONE WOULD NEED RAKES TO REMOVE ~~THE~~ SURFACE COBBLE TO ~~ACCESS~~ ACCESS AN OILED AREA 1-2 m x 20 m x 3-5 cm. NO BIOREMEDIATION RECOMMENDED.

USCG/NOAA

NAME JERRY SCHULTZSIGNATURE Jerry Schultz☒ NTR

FURTHER REMOVAL OPERATIONS WOULD CAUSE MORE ENVIRONMENTAL HARM THAN THE OIL TO BE REMOVED

revised 5/6/91 KG
REVIEWED CE 10 MAY

09 sketch map

C14019 A

HM Samples

MAY 91

1347 - 1347

Legend

(+) Bedrock / Bb

(o) cl / pb

A1
LSOR 10%
2x15 in LITZ

A2
CT 10%
1x5

1x20 41% splatters

CT 10%
1m²

1 20cm x 10cm peltie picked up

SOR 10%
1x20

Meters
0 100 200

reviewed 5/6/91 KG
REVIEWED CD 18 MAY

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 1, 1991	1251 => 1349
SEGMENT #	CH012	TIDAL HEIGHT (Range)	+5.0 => +6.5	
SUBDIVISION	A	BIOLOGIST	JIM BARRY	
STATE	Calif	WIND SPEED/DIRECTION	Calm, cloudy	

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A=A4 Oiled site (SOR) is located on a medium exposure beach of angular small cobble in the upper intertidal. Bedrock shale is scattered in the site. Biota in direct proximity (<1m) to oiled location: Fucus (adults and juveniles, scattered), barnacles (Balanus adults and spat, sparse), limpets (scattered adults and juveniles), littorines (sparse to moderate adults, juveniles). Below the oiled location, the dominant species were Fucus (moderate to dense in spots), barnacles (moderate Balanus density, adults, spat), mussels (sparse to moderate adults and juveniles), green algae (Ulva, filamentous species), filamentous red algae.

Cleanup operations will not adversely impact this intertidal region.

B=A3 Oiled area (CT) is located in the upper intertidal zone of a boulder and angular cobble (small) beach. Biota at oiled site: Fucus on bedrock (small adults and juveniles, sparse), barnacles (Balanus adults, moderate), littorines (adults, juveniles, moderate), and limpets (sparse). This assemblage, with the addition of other species (e.g. mussels) becomes denser at lower tidal levels. Even so, the cobble beach is not densely populated or covered throughout the observed tidal range (ca +3.0 and above).

Cleanup activities will not adversely affect this intertidal community.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles - Nest on Map (not sighted, 0 eagles)			
Seabirds			
Waterfowl	1	2	
Gulls/Kittiwakes	1	3	
Shorebirds			
Corvids	1	2	
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	0		
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

CH012-A Biology Report - (continued)

C = Oil is located on a cobble beach along the upper tidal zone. Little biota is attached to cobble at this level on the beach. Biota of oiled area: littorines (all stages, moderate), barnacles (sparse, *Balanus* adults, spat), limpets (sparse to rare, adults, juveniles). Lower zone have increasingly greater, but still low, cover and density of the key species (see B (above)).

Cleanup activities will not adversely affect this intertidal community.

The oiled areas on this subdivision are located on pocket beaches with a low to perhaps medium exposure. These beaches are composed of small angular cobble, with scattered outcrops of headlands. Most of the oiled areas occur in the high intertidal and, in some cases, up to the supratidal zone. The most common organisms near the spills are the dominant forms of these beaches, but always are present in quiet low concentrations at this tide level. The lower zones of these beaches have more attached biota, but still low or sparse cover. Bedrock outcrops have higher cover than the beaches. *Fucus* is particularly abundant on some of these headlands.

Due to the low abundance of biota on these cobble beaches and the absence of sensitive habitats below the oiled site in the low intertidal or subtidal, there is no restriction on cleanup activities along this subdivision.

Summary of Biological Characteristics of CH012-A

The segment consist primary of low to medium exposure cobble beaches and bedrock cliffs. The key species are low in abundance on the beaches. On the bedrock outcrops and cliff faces, *Fucus*, barnacles, littorines, and limpets are very abundant. *Fucus*, in particular, often has nearly 100% cover along the middle intertidal zone at headland areas. Mussels are fairly abundant, but not present in a distinct zone as often observed on more exposed shores. Associated species, such as sea stars, whelks, red and brown algae, are in greatest abundance on the low shore of bedrock habitats.

Recruitment is very evident for several species. *Fucus* sporlings and small juveniles are dense in locations from the middle to upper zones. Barnacle spat and larvae (*Balanus*?) are scattered in moderate to high densities in the middle and high zones. Egg cases of several species of gastropod snails are common under boulders or cobble throughout the segment. Juvenile mussels are common amongst the adults and under cobble throughout the segment.

List of Common Species on CH012-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Acrosiphonia sp., *Enteromorpha* sp., *Ulva* sp., *Urospora* sp.
3. Brown Algae - Phaeophyta
Agarum fimbriatum, *Fucus distichus*, *Syctosiphon lomentaria*
4. Red Algae - Rhodophyta
Corallina sp., *Cumagloia andersonii*, *Membranoptera dimorpha*, *Odonthalia floccosa*, *Rhodomela larix*
5. Higher Plants
Zostera marina (eel grass), *Leymus mollis* (beach rye grass)

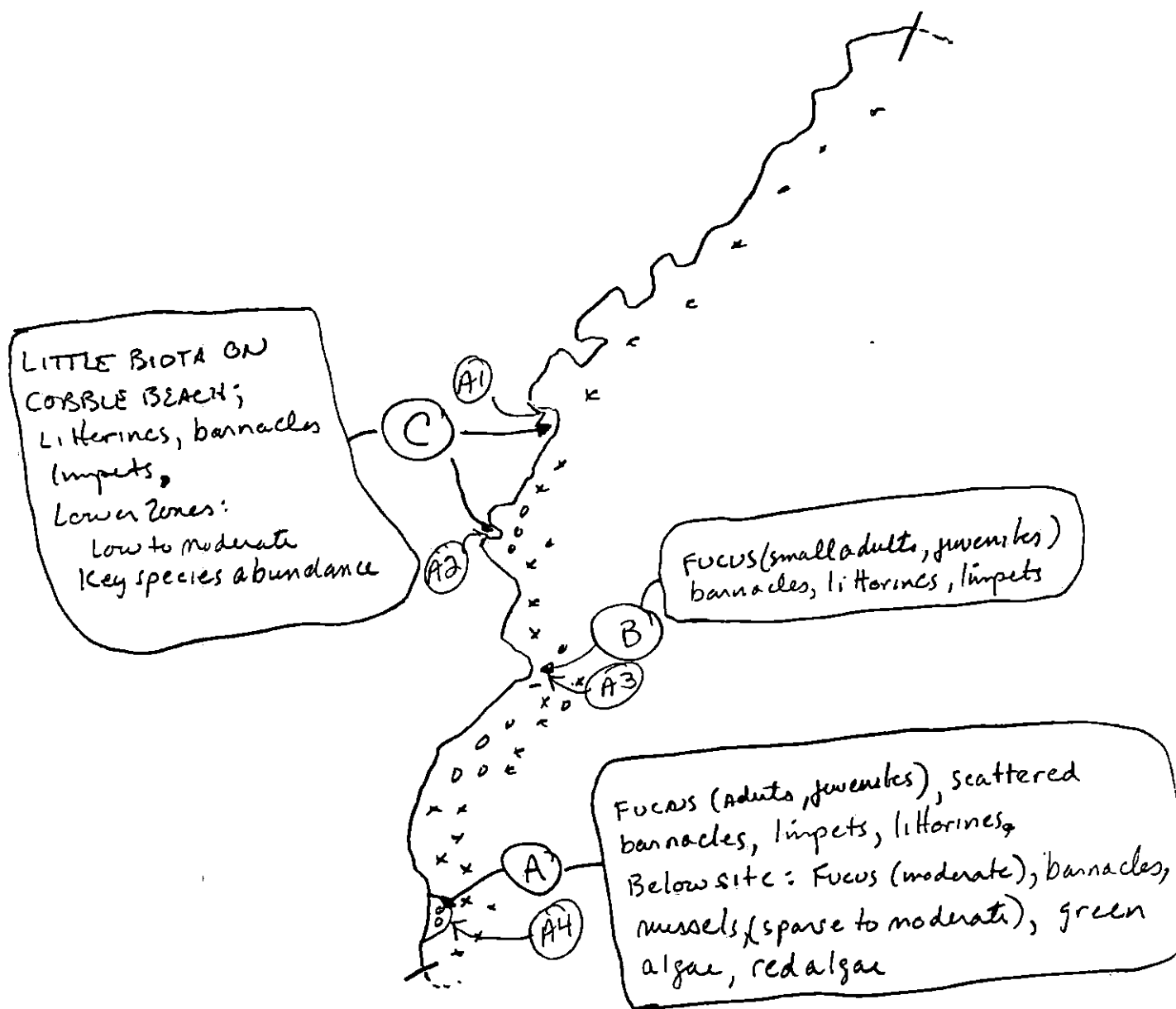
I. Marine Animals

2. Anemones - *Anthopleura artemesia*
5. Flatworms - *Platyhelminthes* - Polyclads
6. Nemertean Worms - Ribbon Worms - *Emplectonema gracile*

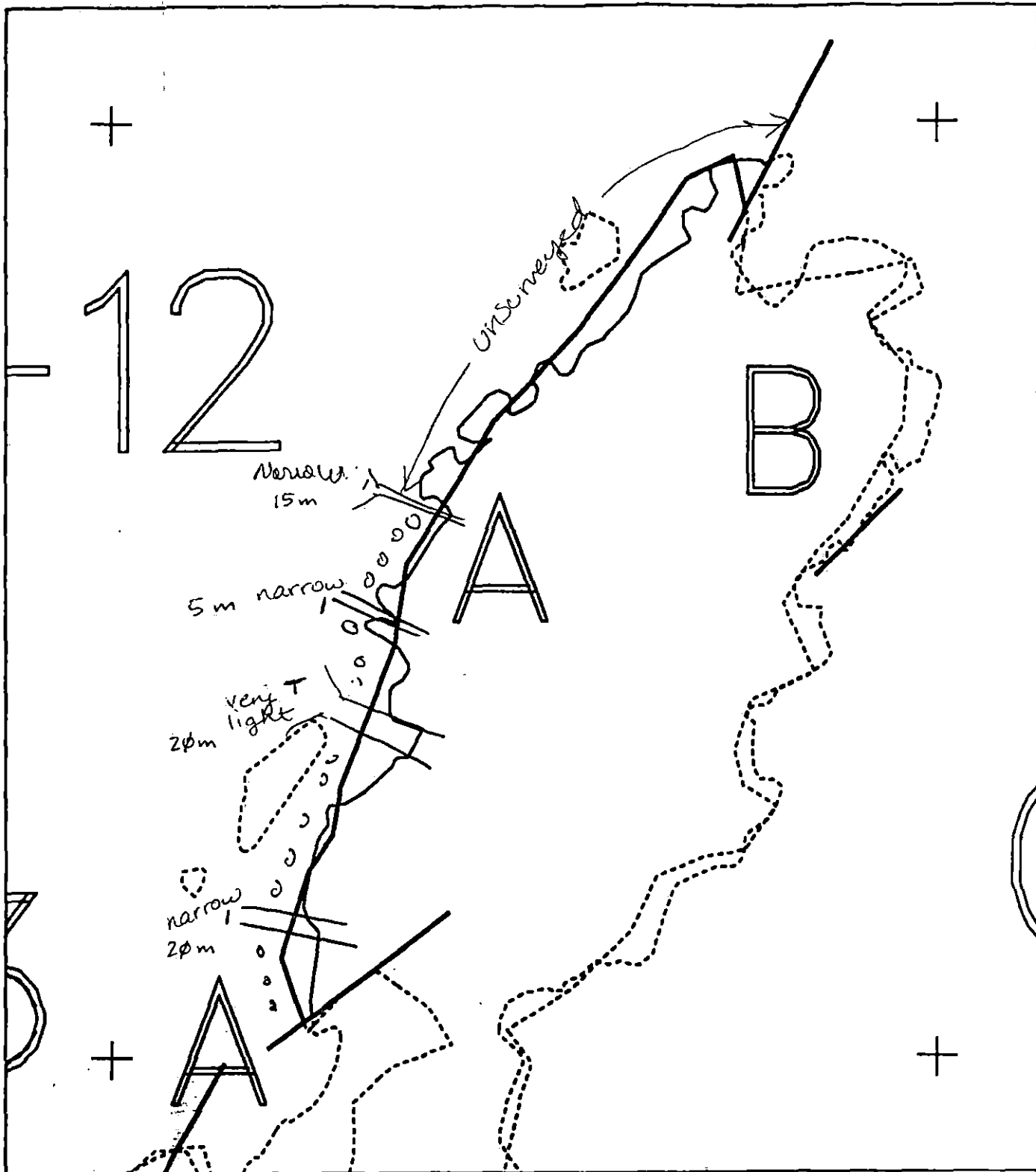
CHO12-A Biology Report - (continued)

7. Polychaete Worms -
 - Nereidae - Nereis spp.
 - Serpulidae
 - Crucigera sp., Eudistylia polymorpha
 - Spirorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii worm)
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles - Balanus glandula,
 - c. Crabs
 - Hemigrapsus oregonensis, Paguridae (hermit crabs)
11. Mollusca
 - a. Chitons - Mopalia mucosa
 - b. Snails - Gastropods
 - Littorina scutulata, L. sitkana, Natica clausa, Nucella lamellosa, N. lima
 - c. Limpets - Lottia digitalis, L. persona
 - d. Mussels and Clams
 - Clinocardium sp., C. nuttalli, Macoma sp., Mya arenaria (soft-shell clam), Mytilus edulis, Prototheca staminea, Saxidomus giganteus
12. Echinoderms
 - b. Sea stars
 - Dermasterias imbricata, Evasterias truscheli, Leptasterias hexactis, Pycnopoda helianthoides
 - c. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Schizoporella sp.
15. Fishes
 - Cottidae - 2-3 species
 - Liparidae - Liparis callyodon
 - Stichaeidae - Xiphister atropurpureus, X. mucosus

BIO SKETCH MAP CHOIZ-A 1M4491



Meters
0 100 200



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

CH012 A
 ADEC Subsegment Length: 762m
 METERS
 0 100 200
 AK State Plane Zone 4:
 pch012a



Subdivision Field Map
 Map Key: PWSCH012A
 Name: J. M. Sempels
 Date: MAY 1 / 91
 Date Entered:

revised 5/6/91 KG
 REVISED CD 10 MAY

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/CH-012

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ CH-012 SUBDIVISION A (1 OF 1) DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

3N,3P Harbor seal and sea lion pupping (5/15 to 7/1)
30,3Q Harbor seal and sea lion molting (8/15 to 9/15)
5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6V Recreation: Anchorages (6/1 to 9/15)
7II Subsistence area: Deer harvesting (8/15 to 2/28)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 85 m: V.Light 226 m: No Oil 451 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 5 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 a) removal of oiled debris, b) removal of pooled oil, c) removal of tarmats and d) bioremediate areas indicated on sketch map. Work should be conducted between 7/2 and 8/14 due to above listed 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 unopened intertidal and subtidal algae and seagrass.
 Contact ADF&G for specific dates and locations.
- 3N, 3P Harbor seal and sea lion pupping (5/15 to 7/1)
 3O, 3Q Harbor seal and sea lion molting (8/15 to 9/15)
 Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m
 horizontal and 300m vertical distance from haulouts.
- 5R Seabird colony (5/1 to 9/1)
 Restrict air traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m
 vertical distance. Contact ADF&G and USFWS prior to treatment.
- 5S Shorebird/waterfowl concentration (4/1 to 5/15)
 Restrict all activity to essential minimum, especially air traffic.
- 5T All Bald Eagle nests (3/1 to 6/1)
 Active Bald Eagle nests (3/1 to 9/1)
 Restrict air traffic to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from
 and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to
 treatment for confirmation of dates.
- 6U Recreation: Tent sites (6/1 to 9/15)
 6V Anchorages (6/1 to 9/15)
 6W Forest Service cabins (6/1 to 9/15)
 6X Lodge (6/1 to 9/15)
 6Y Special use destination
- 7Z Subsistence area: Salmon harvesting (5/1 to 9/30)
 7HH Finfish harvesting
 7II Deer harvesting (8/15 to 2/28)
 7JJ Invertebrate harvesting
 For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.

FIELD SHORELINE COMMENT SHEET

(13)

SEGMENT ST / CH-012 SUBDIVISION: _____ DATE 06 APR 90

USCG

NAME Kevin L. Dreher SIGNATURE CWO 2 K.L. Dreher☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

Light to medium oiling with patchy asphalt areas. Recommend manual removal of asphalt areas; tilling and bioremediation in lower tidal areas. Pockets of pooled oil; if not removed may re-mobilize when temperatures rise this summer. Isolated spots behind rocks away from wave action have formed hard tar coatings with embedded pine needles and will be very difficult to remove; I suggest leaving these layers on stains alone, I don't see that they could cause a problem later.

ADEC

NAME Patrick Endres SIGNATURE Patrick J. Endres☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS The oiling seemed to occur around the 7-10 ft tide height in a band of 1-3 m depending on the slope of the shoreline. Oil characteristics varied from a surface coat/cover/asphalt with penetration in areas to 5+ cm. The Northern most portion of segment had only sporadic patches of mousse. Oiling increased to asphalt and surface saturation as we moved SW towards CH-13. Much of the oil is trapped in the vertical slate talus that is difficult to move or agitate. I recommend manual removal wherever possible on the entire segment with a few priority spots highlighted on the OG map. Manual tilling/agitation of surface sediments may accelerate natural remediation, where possible (low wave action) I think some passive snare boom placement may contain any bleed off. I reviewed the Exxon OPS sheet and concur for the most part, the till + bioremediation recommendation should only follow manual removal.

LAND MANAGER

NAME Larry M. Eganoff SIGNATURE [Signature]☐ NO TREATMENT RECOMMENDED☒ TREATMENT SUGGESTED

COMMENTS

I CONCUR WITH ADEC, EXCEPT WITH BIOREMEDIATION.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/89

OG N. Biggan USCG K. Dreher SEGMENT ST/ CH-012
 BIO E. Coates LAND REP L. Evanoff CVC SUBDIVISION A 1051
 EXXON G. Stiles ADEC P. Endres TIME 12:35 to 15:35; 17:55
 TEAM NO.: 14 TIDE LEVEL: +10 to +1 DATE 4/6 190 18:40
 EST. SUBDIVISION LENGTH: 1042 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: N to S
 SURFACE SEDIMENTS: R 50 % B 2 % C 40 % P 18 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Lang 50 % Hang 20 % Vert 30 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 104 m VL 200 m NO 730 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR						IMPACTED ZONES			
	10	15	20	25	30	35	40	45	50	55	SU	U	M	L
ASPHALT PAVEMENT		X				X					X			
POOLED	X							X			X			
COVER	X					+		X			X			
COAT	X	0		+				X	+		X			
STAIN				X				X			X			
MOUSSE				X						X	X			
PATTIES														
TARBALLS														
FILM														
NO OIL											S		X	X

PAVEMENT: H F (S) 7 sq. m by 5 cmPATTIES / TARBALLS 0 BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

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

DEBRIS COLLECTED

☐ YES ☒ NOTYPE 0#BAGS 0Photographs: 2 pom pomRoll No. 2Frames 10, 11, 12

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	30	35	40	45	50	55	SU	U	M	L		
1	15					X	.		X							X					P
* 2	10		X				0-2		X			X				X					S.P.G., V (peat)
* 3	7		X				0-2		X			X				X					S.P.G., V (peat)
4	15					X	.		X							X					P.G., C
5	15					X	.		X							X					P.G., C
6	10	X					0-2		X			X				X					C.P.G.

COMMENTS * oiled interval < 5cm in pits # 2, 3, & 17 does not constitute subsurface oil.

The more extensive oiling was concentrated in the S 1/2 of the segment.

It consistently appeared as either a band on the vertical rock faces, or a band at the comparable elevation on the beach sediments. Where most concentrated, it forms a soft asphalt mat, some of the areas labeled as TO are close to being a soft asphalt.

ADEC
DOE

SHORELINE OILING SUMMARY (PAGE 2 of 2)

REVISION 02/22/90

SEGMENT ST/ CH. 012 SUBDIVISION A

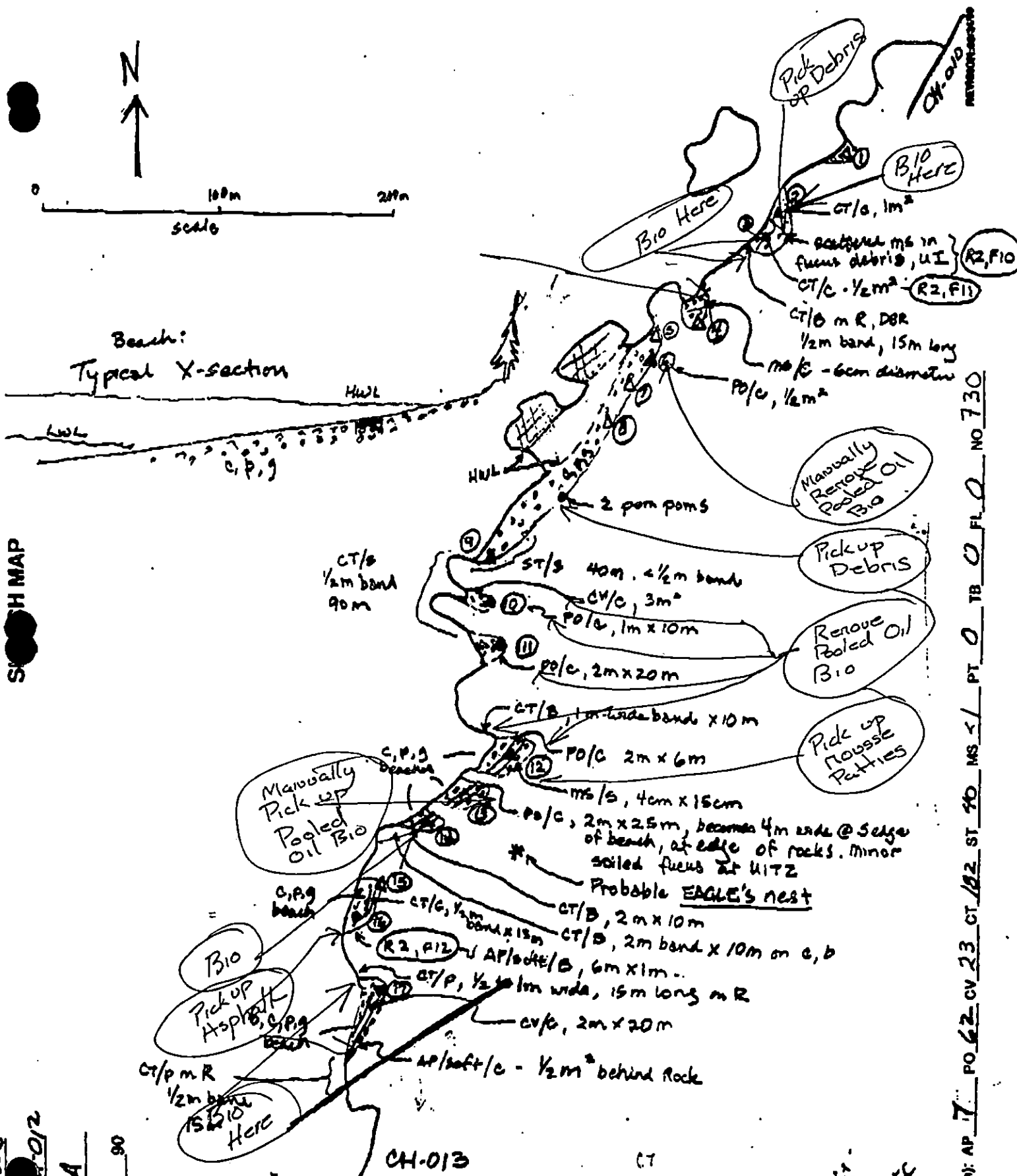
SUBSURFACE OIL (CONTINUED)

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CM)	BELOW		OIL / FILM COLOR					PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UO	1	2	3	4	5	SU	U	M	L		
7	15					X	.		X							X				C, P, g
8	15					X	.		X							X				C, P, g
9	10	X					0.5		X			X				X				C, P, g
10	10	X					0.5		X			X				X				b, c, P, g
11	10	X					2.5		X			X				X				C, P, g
12	10	X					0.5		X			X				X				C, P, g
13	10	X					0.5		X	X						X				C, P, g
14	10		X				0.5		X	X						X				C, P, g
15	15					X	.		X						X					C, P, g
16	10	X					0.5		X	X	X					X				b, c, P, g
17	10	X					0.5		X			X				X				P, CORN R
							.													
							.													
							.													

COMMENTS * oiled interval < 5cm in pits #2, 3, & 17 does not constitute subsurface oil

ADBC
PTEREVIEWED 7W DATE 4/7/90

SH MAP



OG N. Biggins

SEGMENT ST/CT-012

SUBDIVISION A

DATE 4/6/90

CHECKLIST

- ☒ N Area
- ☒ Approx. Scale
- ☒ Sub/Div Entry
- ☒ Oil Dist.
- ☒ Width
- ☒ Length
- ☒ % Cover
- ☒ Substrate Character
- ☒ Est. HML/LWL
- ☒ SSI
- ☒ Profile Location(s)
- ☒ Profile(s)
- ☒ PI Location(s)
- ☒ Photo Location(s)

LEGEND

- 1 Δ PI - No Subsurface Oil
- 2 Δ PI - Subsurface Oil
- CT/C Contaminant Distribution
- CT/B Broken Distribution
- CT/P Patchy Distribution
- CT/S Saturated Distribution
- CT/V Cited Vegetation
- 1 ● Photo location, direction, and number

APC R2

Oil Character Length (m): AP 17 PO 62 CV 23 CT 182 ST 40 MS 1 PT 0 TB 0 FLO NO 730

SHORELINE ECOLOGICAL SUMMARY

1 of 3
REVISION: 08/22/88

Segment ST / CH012 Subdivision - 4 - Date (mo / day / yr) 04.06.90

Time (24 hr) 1255-1535 Biologist KA Coates
1753-1840

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

(B) Overall % cover of biota (% of segment): Dense 50% Moderate 25% Low 25%

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

Photographs:
Roll No. _____

Frames _____

BARNACLES

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

NOT PRESENT

MYTILUS

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

NOT PRESENT

GASTROPODS

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

NOT PRESENT

FUCUS

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

NOT PRESENT

Wildlife Observations/ General Comments: Deer droppings on most headlands in supralittoral kingfisher; eagle nest (see map) - not occupied on 6 April; red breasted merganser male known sensitivities; eagle nesting; deer harvesting; recreational; seal and sea lion pupping; molting. Grebes also seen offshore. Mussel harvesting possible.

Ecological Considerations: Complex and productive subdivision, including 11 pocket beaches, barrier islands and islets and more exposed bedrock walls and dykes between beaches. Mussel beds are dense on beaches, especially those sheltered by islands, from lower upper intertidal to lower mid and sometimes slightly below. Algal populations in lower intertidal were dense (>100% cover) and diverse. Very dense patches of gastropods with new

RAEL
PTE

Segment STCH012 Subdivision-A Date: 04.06.90
 Time: 1255-1535 Biologist: KA Coates
 1753-1840

Notes:

1. Segment with 4-11 pocket beaches. One or two with large amounts supralittoral algal wash primarily Fucus with a little surfgrass (? Phyllospadix). New wash with large numbers spirorhids. No anadromous streams in segment, at most with subsurface freshwater under beach.
2. In areas of bedrock, upper intertidal pools with Endocladia and Spongomorpha-type green with very dense Littorines (primarily sittkana) including new settlement (1-2 mm). Small mussels (< 1 cm) also dense in pools and adjoining sheltered crevices.
3. Small limpets moderately abundant on underside of cobbles overlying pebbles and silt of beaches throughout mid intertidal.
4. Other fauna on beaches under cobbles: mid to lower int. amphipods - moderate; nemerteans - sparse; Nucella ? canaliculata with egg cases - moderate.
5. Some animals seen just subtidal - Dermasterias imbricata - moderate; Pycnopodia helianthoides - moderate; Lower intertidal algae including Habosaccion, Palmeria, Ulva etc. dense cover.
 → Serpulids dense on underside cobbles at low water; small topshells moderate under cobble
6. Generally, mussel beds denser on more sheltered cobble beaches from mid-intertidal to lower intertidal.

ADEL
PTE

3 of 3

Segment STCH012 Subdivision ~~A~~ Date: 04.06.90
Time: 1255-1535 Biologist: KA Coates
1753-1846

Notes (cont'd)

6 (cont'd). Densest mussel populations in northernmost area of segment inside islands, contiguous with CH010. — mussel tombolo — berm of mussels and sand. Mussel harvesting possible throughout segment.

ADEL
PTE

CH-12

"A"

CH-

XXXX Wide

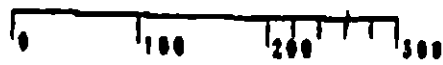
//// Medium

--- Narrow ADEC Segment Length: 762m

TTTT Very Light

OOOO No Oil

CH-12



Map Key: PWS-38

Name: N. Bigger

Date: 4/6/90

PTE
ADEC

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT CH-12 SUBDIVISION A (1 of 1)

WORK WINDOW	
Manual Pickup and Tarmat Removal Less Than 400m From Nest	CLOSED
Manual Pickup and Tarmat Removal More Than 400m From Nest	OPEN
Bioremediation and Other Approved Treatment Less Than 400m From Nest	CLOSED
Bioremediation and Other Approved Treatment More Than 400m From Nest	WORK BEFORE 8/15

ARCHEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

3N,O Harbor Seal & Sea Lion
3P,Q Pupping and Molting

NO TIME CONSTRAINT. Authorized per memorandum dated 5/14/90 from Kathryn Frost/ADF&G to Mark Kuwada/ADF&G.

5T Bald Eagle Nest

USFWS bald eagle impact assessment completed on 5/12/90 by Mike Lockhart indicates an active nest within 400m of the work area. Closed to manual pickup, tarmat removal, bioremediation and other approved treatment less than 400m from active nest. No constraint to manual pickup, tarmat removal, bioremediation, and other approved treatment more than 400m from active nest.

7II Subsistence: Deer
Harvesting

No constraint to manual pickup and tarmat removal. Closed to bioremediation and other approved treatment 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. Restrict boat and air traffic and beach disturbance to essential minimum. When working on or near haulouts, complete the job as quickly as possible with minimum personnel, equipment, and noise. Keep boats and personnel as far from actual haulouts as is practical to do the work specified. Minimize air traffic near haulouts, maintain elevation as is practical, and avoid repeated overflights of the same haulout areas. Avoid any unnecessary disturbance or damage to unrolled blots and substrate.

FOSC

W L

Date 6-10-90

Incorporated information from
USFWS Bald Eagle Survey 5/12/90

Boat/Aircraft
Access

WORK
AREA

Active
Nest

106

64

CH-11

CH-12

Active
Nest

16

CH-13

NO ACCESS

CH-10

Access

CH-9

Active
Nest

65

CH-2

NOT
Surveyed

NOT
Surveyed

17



Exxon Company, USA
Map Key: PWS-CH-12



ECOLOGY MAP 5/28
SEGMENT CH-12
SUBDIVISION A (1 of 1)
METERS



Seabird Colony



Eagle Nest

SHORELINE EVALUATION

SEGMENT ST/ CH-012 SUBDIVISION A (1 OF 1) DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

3N,3P Harbor seal and sea lion pupping (5/15 to 7/1)
3O,3Q Harbor seal and sea lion molting (8/15 to 9/15)
5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6V Recreation: Anchorages (6/1 to 9/15)
7II Subsistence area: Deer harvesting (8/15 to 2/28)
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).

SHPC SIGNATURE: [Signature] DATE: 4/20/90

ILLING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 85 m: V.Light 226 m: No Oil 451 m
Subsurface Oil Observed: Yes X No Maximum Depth 5 cm

RECOMMENDATIONS:

<u> </u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u>X</u> Treatment Recommended	<u>X</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 a) removal of oiled debris, b) removal of pooled oil, c) removal of tarmats and d) bioremediate areas indicated on sketch map. Work should be conducted between (7/2) and (8/14) due to above listed constraints.

See Constraint Addendum Dated 6/9/90 with

TAG COMMENTS:

TAG APPROVAL DATE: 4/20/90

ADEC [Signature]
EXXON [Signature]
NOAA [Signature]
USCG KENNETH KEANE

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

cvc Rep to be present

SHORELINE EVALUATION

SEGMENT ST/ CH-013 SUBDIVISION A (1 OF 1) DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

3N,3P Harbor seal and sea lion pupping (5/15 to 7/1)
3O,3Q Harbor seal and sea lion molting (8/15 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
7II Subsistence area: Deer harvesting (8/15 to 2/28)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: Charles J. F. Dine DATE: 4/20/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 197 m: V.Light 192 m: No Oil 178 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)

+ Pom Pom

COMMENTS: Recommend manual removal of tarmats and asphalt; raking followed by bioremediation in areas indicated on sketch map. Work should be conducted from 7/2 to 8/14 due to above listed constraints.

TAG COMMENTS:

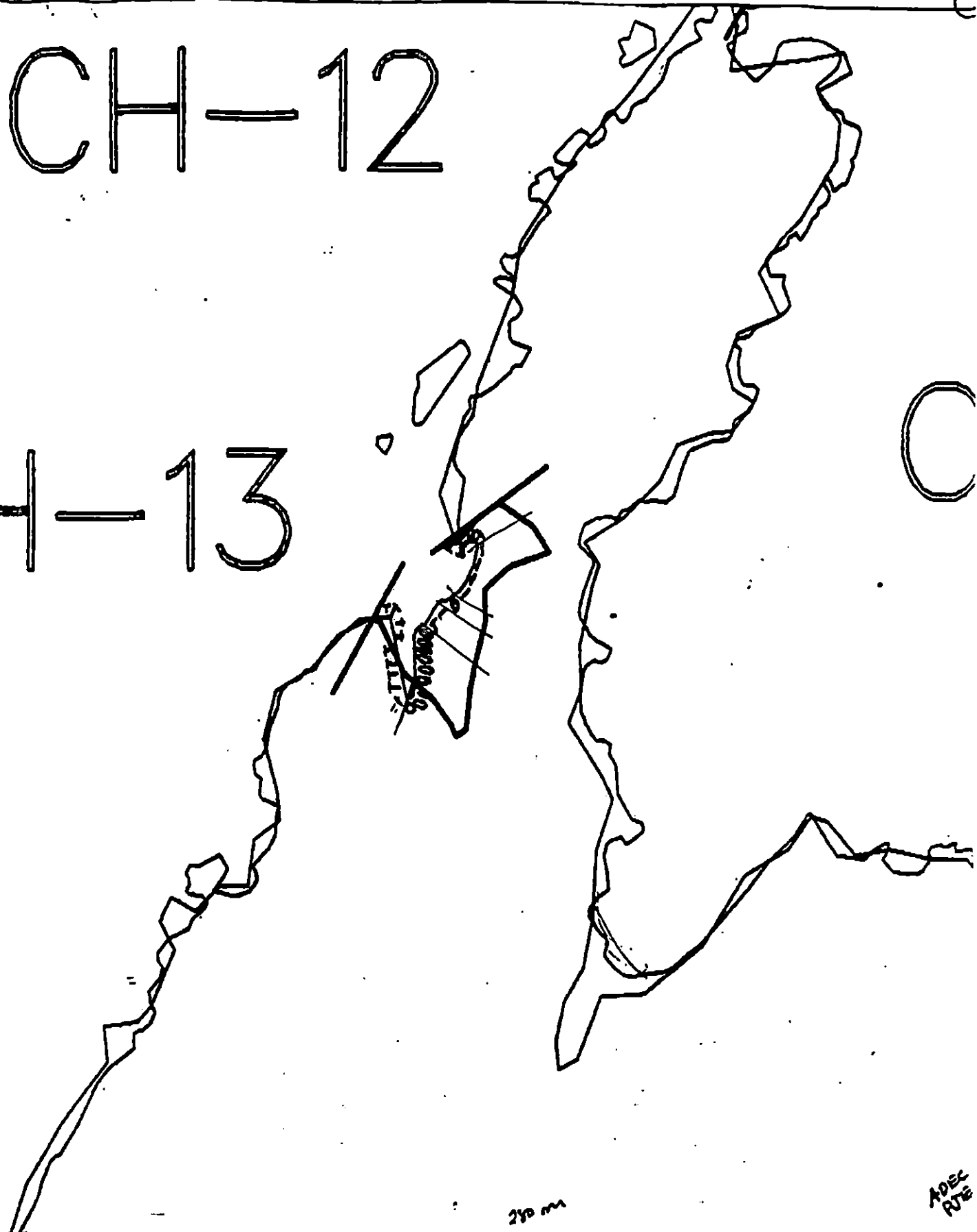
TAG APPROVAL DATE: 4/19/90
ADEC ART WENGER
EXXON ART WENGER
NOAA Burt Wescott
USCG KENNETH KIRNE

FOSC: W L DATE: 5-9-90
Cvc / Rep to be present

CH-12

CH-13

C



250 m

ADEC
RTE

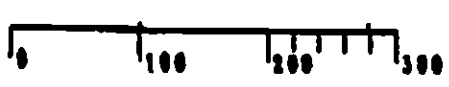
XXXX Wide
//// Medium

CH-13

--- Narrow

ADEC Segment Length: 567m

TTTT Very Light



Map Key: PWS-39

Name: N. Biggar

Date: 4/6/90

Date Entered:

1991 MAYSAP EVALUATION

SEGMENT: CH 013 SUB: A REGION: PWS SURVEY DATE: 5/1/91

ENVIRONMENTAL SENSITIVITIES:

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

Ecological/Constraints (see page two for details) Eagle nest,
Subsistence - Deer harvesting

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.

Subsistence - Deer Harvesting: Unlimited treatment prior to 8/15.

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT CH 013 SUBDIVISION A DATE 1 MAY 1991

ADEC

NAME Dianne Munson SIGNATURE Dianne Munson☐ NTR ☒ Treatment Recommended

Although some oil was removed during the survey, tar balls, tar patties and msor remain. Recommend C.V.C. crew for manual pickup.

EXXON

NAME LARRY D. OLSON SIGNATURE Larry D. Olson

☒ NTR Survey found patches of **MSOR**. Although weathered, an option would be to have CVC clean up crew remove patches as located on 06 sketch map.

LANDMANAGER

NAME LARRY EVANOFF OF CVC SIGNATURE LE☐ NTR ☒ TREATMENT RECOMMENDED

THIS SEGMENT STILL NEEDS TO BE WORKED ON.

TB/PATTIES NEED TO BE REMOVED. NO BIOREMEDIATION RECOMMENDED

USCG/NOAA

NAME JERRY SCHULTZ SIGNATURE Jerry Schultz☒ NTR

ALTHOUGH SOME MSOR WAS FOUND, THE PATCHES WERE WEATHERED TO THE POINT THEY WERE INERT. AS AN OPTION THE CVC WORK CREW COULD WORK THIS SUBDIVISION

revised 5.4 | 94
Rabinovich 5/5/91 M.C.

OG. Sketch Map

CH 0.3 A

+M Samples

MAY 1, 91

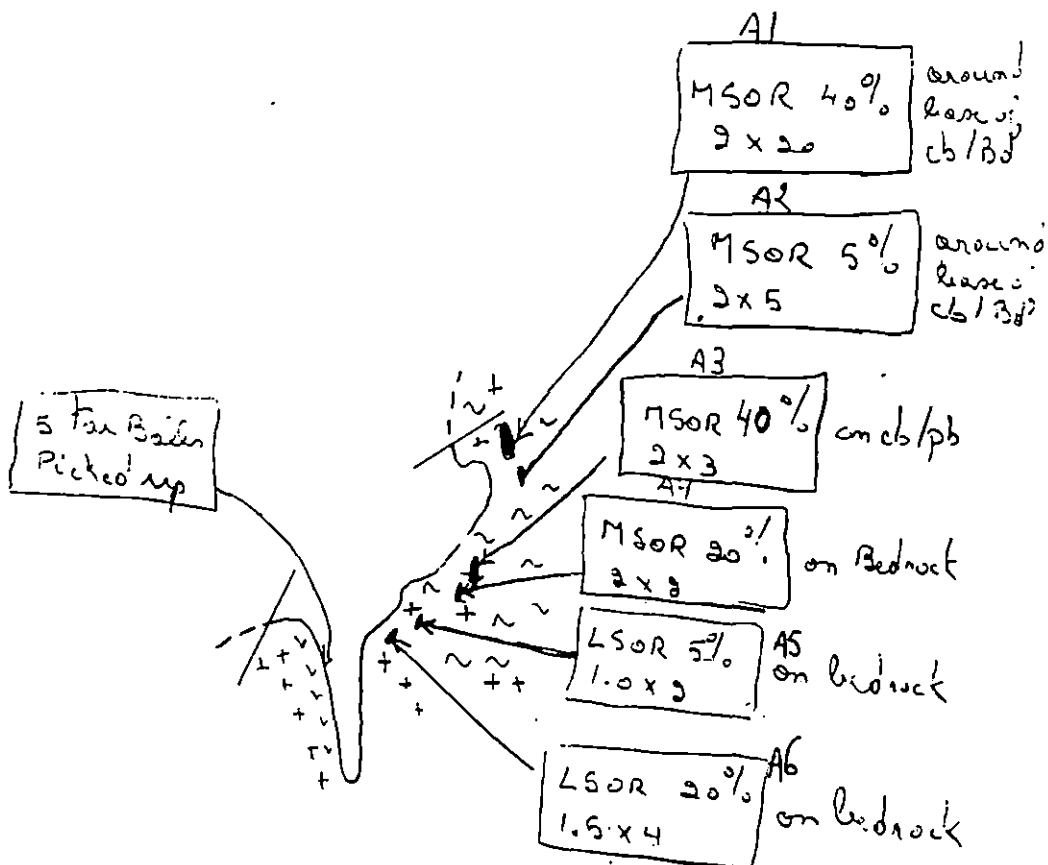
217 - 1840

Legend

[+] Bed-rock

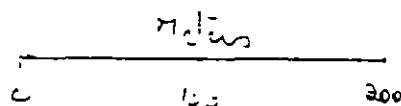
[v] talus cb

[~] pb/cb



All units were worked
on during survey
Also picked up scattered
tan pebbles.

All in Uitz



Reviewed: 5/5/91 MC

reviewed 5.4 7

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 1, 1991 1220 => 1248
SEGMENT #	CH013	TIDAL HEIGHT (Range)	+4.0 => +5.0
SUBDIVISION	A	BIOLOGIST	JIM BARRY
STATE	Cala	WIND SPEED/DIRECTION	Calm, Cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A PU Oiled site (Tar Balls) located along the drift line between the upper intertidal and supratidal zones. This is a small pocket beach with small angular cobble and pebbles. The biota at the immediate area of the oil are beach grass (moderate), a few littorines and limpets, and sparse black lichen. Below the oiled location, the beach forms a ramp to the water with moderate cover of Fucus, and barnacles, as well as sparse to moderate densities of mussels and littorines.

MANUAL PICK-UP OF OILED SEDIMENTS PERFORMED DURING SURVEY. Further clean-up, if necessary, will have little adverse effect on the intertidal biota.

A3 6 This site has oil (L/MSOR) in the upper intertidal zone on a zone of small broken cobble and pebbles. At this site there are moderate densities of littorines (adults, juveniles, eggs), limpets, and sparse barnacles. Fucus is present both above and below the oiled sediments, primarily on the bedrock outcrops where high numbers of juveniles are growing within the small crevices and cracks. The lower zones bordering the site form a medium angle cobble beach, with a small bedrock outcrop. Fucus is sparse in this lower zone beach and barnacles are present in moderate densities in the lower shore.

MANUAL PICKUP PERFORMED DURING SURVEY. Additional cleanup, if recommended, will not adversely affect the intertidal biota.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	Nest Marked on Map, but not Observed, 0 eagles		
Seabirds			
Waterfowl	2	6	
Gulls/Kittiwakes	2	6	
Shorebirds	1	2	
Corvids	1	3	
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters		River Otter	1
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

Subdivision CH013-A, Biology Report, (continued)

Oil Site (MSOR) is located in the upper zone of a cobble/boulder and scattered bedrock beach. The site has a low cover of *Fucus* on the bedrock above the oiled site, with sparse densities of barnacles, and moderate densities of limpets and littorine snails. The densities of *Fucus*, mussels, barnacles and littorines, as well as green and red algae, increase to moderate levels towards the low intertidal on this fairly narrow (ca 15 - 25 m) cobble beach.

PARTIAL MANUAL REMOVAL OF OILED SEDIMENTS PERFORMED ON THIS LOCATION. Additional clean-up operations, if performed, will have little adverse effect on the intertidal biota of the site.

Summary of Biological Features of CH013-A

This short subdivision has two major habitat types; 1) cobble beaches and 2) bedrock headlands. The beaches are mostly low to medium exposure habitats with low cover of attached biota. The most abundant species are small littorine snails, limpets, and scattered barnacles. Densities of these species increase towards the lower intertidal. The bedrock habitats have higher abundances of organisms, mainly *Fucus*, both in the low and upper intertidal zones.

Juveniles, egg masses, or spat of many species were present on the subdivision, although in generally low densities on the cobble beaches. *Fucus*, barnacles, and littorine snails are notable in their recent reproductive output.

Cleanup operations will have little impact on the beaches, due to their generally sparse abundances of biota, and due to the lack of sensitive habitats (e.g. eel grass and clam beds) in subtidal habitats contiguous with the oil-impacted beaches.

List of Common Species on Subdivision CH013-A

A. Marine Plants

1. Diatoms. Blue Greens
2. Green Algae - Chlorophyta
Acrosiphonia sp., *Enteromorpha* sp., *Ulva* sp., *Urospora* sp.
3. Brown Algae - Phaeophyta
Agarum fimbriatum, *Fucus distichus*, *Syctosiphon lomentaria*
4. Red Algae - Rhodophyta
Corallina sp., *Cumagloia andersonii*, *Membranoptera dimorpha*, *Odonthalia floccosa*, *Rhodomela larix*
5. Higher Plants
Zostera marina (eel grass), *Leymus mollis* (beach rye grass)

II. Marine Animals

2. Anemones - *Anthopleura artemesia*
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - *Emplectonema gracile*
7. Polychaete Worms -
 Nereidae - *Nereis* spp.
 Serpulidae
 Crucigera sp., *Eudistylia polymorpha*
 Spirorbidae - *Spirorbis* sp.
9. Peanut worms - Sipunculids - *Phascolosoma agassizii* worm)

CH013-A Biology Report - (continued)

10. Crustaceans
 - a. Amphipods - *Orchestia* sp.?
 - b. Barnacles - *Balanus glandula*.
 - c. Crabs
Hemigrapsus oregonensis, Paguridae (hermit crabs)
11. Mollusca
 - a. Chitons - *Mopalia mucosa*
 - b. Snails - Gastropods
Littorina scutulata, *L. sitkana*, *Natica clausa*, *Nucella lamellosa*, *N. lima*
 - c. Limpets - *Lottia digitalis*, *L. persona*
 - d. Mussels and Clams
Clinocardium sp., *C. nuttalli*, *Macoma* sp., *Mya arenaria* (soft-shell clam), *Mytilus edulis*, *Prototheca staminea*, *Saxidomus giganteus*
12. Echinoderms
 - b. Sea stars
Dermasterias imbricata, *Evasterias truscheli*, *Leptasterias hexactis*, *Pycnopoda helianthoides*
 - c. Urchins - *Strongylocentrotus droebachiensis*
13. Bryozoans - *Schizoporella* sp.
15. Fishes

Cottidae - 2-3 species
Liparidae - *Liparis calliodon*
Stichaeidae - *Xiphister atropurpureus*, *X. mucosus*

BIO SKETCH MAP

CH013-A

1 MAY 91

6/1



U



C

revised 5-2

20F7

ASAP FOLLOWUP RECOMMENDATIONS - TEAM 3

Segment: AS/ CH-13 Subd.: A Site: 1 Date: B-4 1990

Conditions Observed: SEVERAL AREAS IDENTIFIED BY THE SPRING
ASSESSMENT SKETCH WERE TREATED WITH MANUAL PICKUP AND BIO PREVIOUS TO
MOSTLY TALMAT REMOVAL WAS IDENTIFIED. CURRENTLY SURFACE OILING
IN THE BORDERLINE AP-SOR CATEGORY STILL EXIST. SEE ATTACHED SKETCH MAP.

Followup Recommendations: SURFACE OILING IN THE CATEGORIES OF
BORDERLINE AP, SOR RANGE WERE BROKEN UP BY VECO ASAP CREW. A
REASSESSMENT OF MORE MANUAL TILLING AND BIOREMEDIATION
IS RECOMMENDED. (DON BOLLINGER BIO SQUAD WILL BE IN THE AREA ON
8-7-90.

Completed by Pickup Crew: ☐ YES ☒ NO

Priority for Addressing in 1990: ☒ High ☐ Mod. ☐ Low

DEC

Don McCreary
 (name)

Robert B. McCreary
 (signature)

Comments: _____

Exxon

RANDALL K. BOYER
 (name)

Randall K. Boyer
 (signature)

Comments: AREAS WHERE ALPHAKIT MATS HAVE BEEN REMOVED SHOULD BE
REASSESSED BY A BIOREMEDIATION CREW. ADDITIONAL INIPOL APPLICATION
COULD BE BENEFICIAL. VECO ASAP ACCOMPLISH MOST OF THE MANUAL TILLING.

USCG

Don Davis
 (name)

Don Davis
 (signature)

Comments: Concur.

Land Rep.

Steve WARD CUC
 (name)

Steve W. Ward
 (signature)

Comments: Exxon Comments Good.

SEGMENT AS / CH-13 SUBDIVISION: A SITE: 1 DATE 8-4-90

USCG

NAME David Nee NOAA
Don Davis (USCG)SIGNATURE David C. Nee / Don Davis☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

Although some patches in area have been treated, there is one area at the head of the slough that hasn't been worked. Would give moderate priority to further 1990 treatment & to 1991 assessment.

ADEC

NAME Bob McCrearySIGNATURE Robert B. McCreary☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

Throughout Northern 3/4's of segment, several areas where tar and removal and bioremediation occurred. In areas of manual treatment some residual OR oil remains. A Work Order Mod. Rec. has been submitted recommending manual tilling of the above areas followed by bioremediation (both fungal and custombion).

LAND MANAGER

NAME Steve Ward CVCSIGNATURE Steve Ward☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

This area needs more manual work. There are several areas that were missed. Must be looked at again in 91, and would be a likely candidate for 90 manual and D.O. work.

EXXON

NAME RANDALL E. BOYERSIGNATURE Randall E. Boyer☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

THIS SITE WAS INIPILED & CUSTOMBIENED IN 1990 AFTER SURFACE OIL WAS REMOVED. SOME AREAS WERE DESCRIBED AS SOR AND THOSE WERE BROKENUP BY ASAP VECO. A WORK MODIFICATION HAS BEEN INITIATED FOR INIPIOL RETREATMENT. ASSESSMENT OF THE EFFECTIVENESS OF BIOREMEDIATION SHOULD BE CONDUCTED IN 1991.

INDIAN TERRITORY
BOB McCREARY
DATE 8/4/90
TOTAL EST LENGTH OF SHORELINE SURVEYED: 567 m
SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WEATHER: ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
CATEGORY LENGTH: W m M m N 35 m VL 45 m NO 482 m US m

SURFACE OIL

SITE 1

SITE 2

SITE 3

CHARACTER	DISTRIBUTION				OILED ZONES			
	/C	/B	/P	/S	SU	UI	MI	LI
ASPHALT								
S.O.R			X			X		
POOLED								
COVER	X					X		
COAT	X			X		X		
STAIN				X		X		
MOUSSE								
PATTIES/T.B.				X		X		
FILM								
NO OIL					X		X	X
EST. SITE LENGTH					567			

[illegible][illegible]

SUBSURFACE OIL

[illegible]

Photographs:

Roll No.

Frames

COMMENTS

COMMENTS
SITE INCLUDED, SOR/CU/CT/ST/TB. - THE TB WERE PICKED UP BY THE
FIELD CREW, AND SITES OF SOR/ST/CT WERE RAKED AND UNDERWENT SYNTHETIC PICK-UP.
- A BIO. BALLOON WAS ALSO RECOVERED.

REVISION NO. 7/27/95

SEARCH MAP

DB Connection Length (mg). AD

8/4/90
CT/S
PREVIOUSLY
TREATED

1111

Chlorine

R. P/c

— p m R, - up to 500 m

27/6 m R - 1 to 2 m w/ thin

PICKER

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

10

682

T/S
04124

[Handwritten signature]



30 Callaway length (in) AP 30 PO 0 CV 139 CI 115 SI 2 MS 0 PT 0 TB 0 RL 1 NO 164

OC N. Bickel

SEGMENT SIX CH-013

SURVEYSON A

DATE 4/16/80

CHECKLIST

✓ Name
✓ Approx. Date
✓ Approx. Locality
✓ Notes

✓ Elevation
✓ Soil
✓ Vegetation
✓ Land Use
✓ Other

LEGEND

1. A
2. A
3. A
4. A
5. A
6. A
7. A
8. A
9. A
10. A

CT/C

CT/B

CT/D

CT/E

CT/F

CT/G

CT/H

CT/I

CT/J

20 Character Length (sq) AP 30 PO 0 CV 150 CT 115 ST 0 MS 0 PT 0 TB 0 FL 1 NO 164

CH MAP

2 PATTIES
PICKED-AP

R2, P15

THISS AREAS
W OILCRO BY
FIELD CRO

Pick up
Rampart
Asphalt

CUK
SH24
ST/S

Pick up
Rampart
Asphalt

Pick up
Rampart
Asphalt

R2, P14

Pick up
Rampart
Asphalt

Pick up
Rampart
Asphalt

R2, P10

N

GENERAL DATA

SEG ID: CH-13 SBOV: A SITE: 1 TEAM: 3 DATE: 8-4-90
SITE LGTH: 567 OIL CATEGORIES: W - M - N 35 VL 45 NO 407 U -
1991 REASSESSMENT: USCG: Y ADEC: Y LDNGR: Y EXXON: Y

SURFACE DATA

CHAR #: 1 OIL CHAR: SOR OIL DIST: CONT - BRKN - PTCH X SPLH -
TIDAL ZONE: SU - UI X MI - LI -

CHAR #: 2 OIL CHAR: CV OIL DIST: CONT X BRKN - PTCH - SPLH -
TIDAL ZONE: SU - UI X MI - LI -

CHAR #: 3 OIL CHAR: CT OIL DIST: CONT X BRKN - PTCH - SPLH X
TIDAL ZONE: SU - UI X MI - LI -

CHAR #: 4 OIL CHAR: ST OIL DIST: CONT - BRKN - PTCH - SPLH X
TIDAL ZONE: SU - UI X MI - LI -

CHAR #: 5 OIL CHAR: PT OIL DIST: CONT - BRKN - PTCH - SPLH X
TIDAL ZONE: SU - UI X MI - LI -

CHAR #: 6 OIL CHAR: NO OIL DIST: CONT - BRKN - PTCH - SPLH -
TIDAL ZONE: SU X UI - MI X LI X

CHAR #: 7 OIL CHAR: - OIL DIST: CONT - BRKN - PTCH - SPLH -
TIDAL ZONE: SU - UI - MI - LI -

CHAR #: 8 OIL CHAR: - OIL DIST: CONT - BRKN - PTCH - SPLH -
TIDAL ZONE: SU - UI - MI - LI -

CHAR #: 9 OIL CHAR: - OIL DIST: CONT - BRKN - PTCH - SPLH -
TIDAL ZONE: SU - UI - MI - LI -

CHAR #: 10 OIL CHAR: - OIL DIST: CONT - BRKN - PTCH - SPLH -
TIDAL ZONE: SU - UI - MI - LI -

ASAP DATA ENTRY FORM

SUBSURFACE DATA

PAGE 2 OF 2

SEGMENT ID: C14-13 SUBDIV: A SITE: 1

PIT # 0 PIT DEPTH OIL CHARACTER OIL INTVAL: FROM TO
CLEAN BELOW: PIT ZONE: SU UI MI LI

SUBSURF SEDIMENT: BRK BLD COB PEB GRN SAN MUD VEG

PIT # PIT DEPTH OIL CHARACTER OIL INTVAL: FROM TO

CLEAN BELOW: PIT ZONE: SU UI MI LI

SUBSURF SEDIMENT: BRK BLD COB PEB GRN SAN MUD VEG

PIT # PIT DEPTH OIL CHARACTER OIL INTVAL: FROM TO

CLEAN BELOW: PIT ZONE: SU UI MI LI

SUBSURF SEDIMENT: BRK BLD COB PEB GRN SAN MUD VEG

PIT # PIT DEPTH OIL CHARACTER OIL INTVAL: FROM TO

CLEAN BELOW: PIT ZONE: SU UI MI LI

SUBSURF SEDIMENT: BRK BLD COB PEB GRN SAN MUD VEG

PIT # PIT DEPTH OIL CHARACTER OIL INTVAL: FROM TO

CLEAN BELOW: PIT ZONE: SU UI MI LI

SUBSURF SEDIMENT: BRK BLD COB PEB GRN SAN MUD VEG

PIT # PIT DEPTH OIL CHARACTER OIL INTVAL: FROM TO

CLEAN BELOW: PIT ZONE: SU UI MI LI

SUBSURF SEDIMENT: BRK BLD COB PEB GRN SAN MUD VEG

PIT # PIT DEPTH OIL CHARACTER OIL INTVAL: FROM TO

CLEAN BELOW: PIT ZONE: SU UI MI LI

SUBSURF SEDIMENT: BRK BLD COB PEB GRN SAN MUD VEG

PIT # PIT DEPTH OIL CHARACTER OIL INTVAL: FROM TO

CLEAN BELOW: PIT ZONE: SU UI MI LI

SUBSURF SEDIMENT: BRK BLD COB PEB GRN SAN MUD VEG

PIT # PIT DEPTH OIL CHARACTER OIL INTVAL: FROM TO

CLEAN BELOW: PIT ZONE: SU UI MI LI

SUBSURF SEDIMENT: BRK BLD COB PEB GRN SAN MUD VEG

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/CH-013

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ CH-013 SUBDIVISION A (1 OF 1) DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

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

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

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

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

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 197 m: V.Light 192 m: No Oil 178 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

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

COMMENTS: Recommend manual removal of tarmats and asphalt; raking
followed by bioremediation in areas indicated on sketch map. Work
should be conducted from 7/2 to 8/14 due to above listed 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 (6/1 to 9/15)
 6V ~~Anchorages~~ 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.

5

USCG

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

Light oiling with patchy asphalt pads in talus rock areas in low energy tidal areas. Recommend manual removal where possible, the filling or raking, and bioremediation. Observed several small adsorbent poms poms and one stained log in tidal pool that should be removed.

ADEC

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS Oiling consisted of oat/cover/soft asphalt and surface saturation within a 1-3 meter band varying according to slope of shoreline. The segment is a low energy area and not much natural remediation happening due to wave action. Asphalt patches in and around vertical talus slate protruding from bedrock (difficult to remove but should be removed wherever possible by shovel or trowel) A lot of the surface saturated areas (up to 5 cm) contain black shiny oil that is mobile and will bleed off in sheen form. I recommend manual agitation and raking prior to bioremediation (if that is an option) after all surface asphalt is removed. I have reviewed Exxon's OPI map and concur except with the suspended question on Bioremediation. Due to the sporadic patches of oiling ADEC monitoring is priority in cleanup operations. Note: pom pom.

LAND MANAGER

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED

COMMENTS

I RECOMMEND MANUAL REMOVAL OF ALL SOFT ASPHALT AND MOWERS
THEN ~~BE~~ FLUSHED. ONE IS GOING TO HAVE TO BE CAREFUL BECAUSE
THE VEGETATION (POAT) IS VERY NEAR THE SURFACE. ~~IF THERE IS SOME~~
~~LEFT~~ WILL NEED TILING/RAKING THEN FLUSHED. POH POH AND OILED
PUCKS NEED TO BE PICKED UP.

SHORELINE OILING SUMMARY

REVISION NO. 03/23/90

OG Norman B. Gagne USCG K-070 SEGMENT ST/ CH-013
 BIO Betty Coates LAND REP Larry Evans SUBDIVISION A 1 of 1
 EXXON George Stiles ADEC Patrick Endres TIME 15:35 to 18:00
 TEAM NO.: 14 TIDE LEVEL: +4' to +1' DATE 4/16/90
 EST. SUBDIVISION LENGTH: 349 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: N to S
 SURFACE SEDIMENTS: R 30 % B 15 % C 50 % P 5 % G 0 % S 0 % M 0 % V 0 %
 SLOPE: Long 80 % Hang 15 % Vert 9 % WAVE EXPOSURE: ☒ Low ☐ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 105 m VL 122 m NO 122 m

SURFACE OIL

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

PAVEMENT: H F (S) 14 sq. m by 5 cm

PATTIES / TARBALLS no 0 BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris	X		

DEBRIS COLLECTED

☐ YES ☒ NO

TYPE T

#BAGS 1

Photographs: 1 ppm

Roll No. 2

Frames 13, 14, 15

SUBSURFACE OIL * Oiled interval < 5cm in pit #6 does not constitute subsurface oil.

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm)	OIL / FILM COLOR					PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		30	35	40	45	50	SU	U	M	U		
1	10		X				0-5	X	X				X					c, p, g
2	10					X		X					X					c, p, g
3	10		X				0-5	X	X				X					c, p, g
4	10					X		X					X					c, p, g
5	5	X					0-2	X	X				X					c, p
6	5	X					0-5	X	X				X					p on R
7	10	X					0-5	X	X									c, p, m part

COMMENTS

The oil was concentrated in upper tidal zone, either on a soft asphalt pavement, on the cobble beach or on the water-cut rock surfaces. In other areas the surface cobbles were relatively clean and the oil was observed in the upper 2 to 5 cm of the subsurface. The segment is quite protected, with little wave action. On vertical rock faces there is a discontinuous band.

Artifact (rounded, flat cobbles - gravel?) seen on N end of beach (see map) - lt. green

N
↑

LOG NO. BIGGAR
SEGMENT ST/ CH-013
SUBDIVISION A
DATE 4/6/90

CHECKLIST

- ☒ N Arrow
☒ Approx. Scale
☒ Seg/Side Body
☐ CW ENL.
☐ Oil ENL.
☐ Length
☐ % Cover
☐ Substrate Character
☒ Est. HWA/AVE.
☒ GSA
☒ Profile Location(s)
☐ Profile(s)
☒ Pig Location(s)
☐ Photo Location(s)

LEGEND

1A

►

NO COMMENTS - Mr.

Construction Distribution

System Classification

Pachy Distribution

7월 1일

Unemployment, poverty

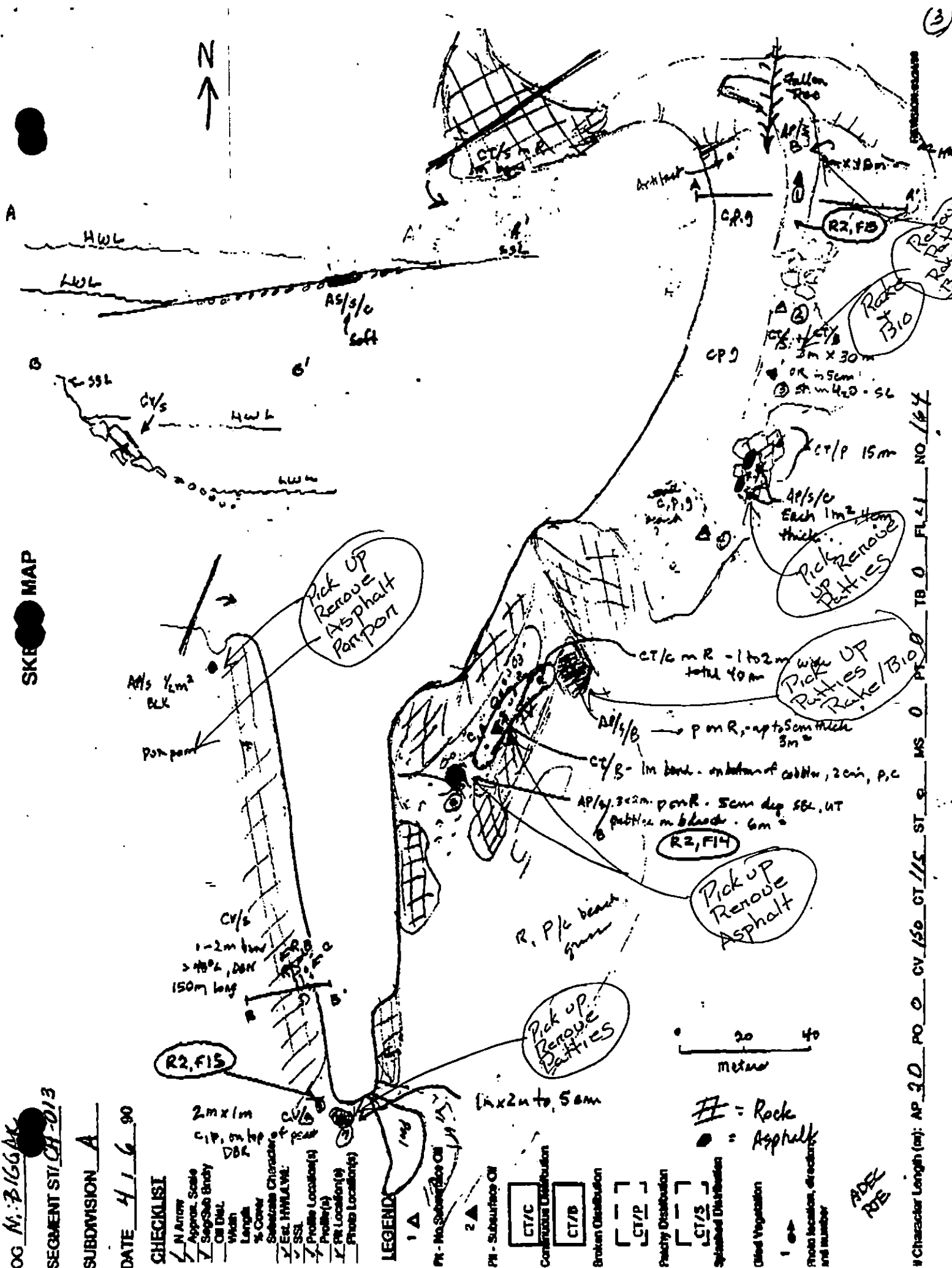
Protein localization, etc:

AS

100

Character Length (in): AP 20 PO 0 CV 150 GT 11C ST 0 MS 0 ~~100~~ TB 0 E41 NO 1/44

ADK
DE



SHORELINE ECOLOGICAL SUMMARY

1042 ✓
REVISION: 02/22/90

Segment ST / CH012 Subdivision A Date (mo / day / yr) 04.06.90

Time (24 hr) 1535-1750 Biologist KA Coates

- (A) Substrate type and % of segments:
(1) Bedrock 30 (2) Boulder 15 (3) Cobble 50 (4) Pebble 5 (5) Sand + (6) Silt + underlying/mi
- (B) Overall % cover of biota (% of segment): Dense 80% Moderate 20% Low 20%
- (C) Density, substrate preference (by number from A, above), & vertical zonation of major taxa: (upper-U; mid-M; low tidal-L); juveniles / adults (X), new settlement (O)

Photographs: ST-14-2
Roll No.

Frames 13-15

BARNACLES

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

MYTILUS

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

GASTROPODS

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

FUCUS

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

Wildlife Observations/ General Comments: Eagles vocalizing & perching; seal just offshore in small inlet; unidentified ducks - ? inc. mallards. Known sensitivities: deer harvest; recreation; seal and sea lion pupping and molting. Very heavy and recent (first or second day) spat fall of barnacles extending from U to L.

Ecological Considerations: Upper intertidal and low supralittoral pools with surfgrass, with dense populations of mussels, moderate amounts of Fucus, Lithothamnion, Endocladia and other brown algae. Elevation of large pool with stream about 3-4 metres. Fucus extends into marsh / beach grasses in supralittoral. Dense mussel populations in cobble, pebble, silt substrates from mid to lower intertidal. Generally, highly productive, relatively low energy habitats.

2 of 3

Segment: STCH013 Subdivision: A Date: 04.06.90
 Time: 1535-1750 Biologist: KA Coates

Notes:

1. On 06 April, very dense, very recent barnacle settlement seen throughout area. On rock surfaces from bedrock to pebbles, throughout intertidal area. About 80% of new settlement was in 1st attached form - i.e. plates not formed. Littorines about 1-2 mm also abundant in this segment, especially noticed on large *Balanus* in upper and upper mid-intertidal.
2. Silty areas in upper intertidal behind bedrock outcrops with permanent (?) overlying salt water, underlying turf. *Fucus* and some surfgrass, littorines abundant in these pools.
3. Upper intertidal "lagoon" with some bedrock substrate. At head of small inlet with 2-3 m. abrupt drop to small stream flowing through inlet. Not a recorded anadromous stream - ? upstream too shallow, steep, etc. - not observed. Lagoon community diverse with dense barnacle spat, mussels in crevices and on cobble, clam shells, *Endocladia*, *Phyllospadix*, *Lithothamnion*.
4. Clam shells abundant in soft mid to lower intertidal substrates along stream bed - including *Protothaca*, *Saxidomus*, large *Macoma* sp., *Macoma balthica*. Live *Hiatella arctica* also found.

MEX
RUE

3 of 3

Segment STCH013 Subdivision-A- Date: 04.06.90
Time: 1535-1750 Biologist: KA Coates

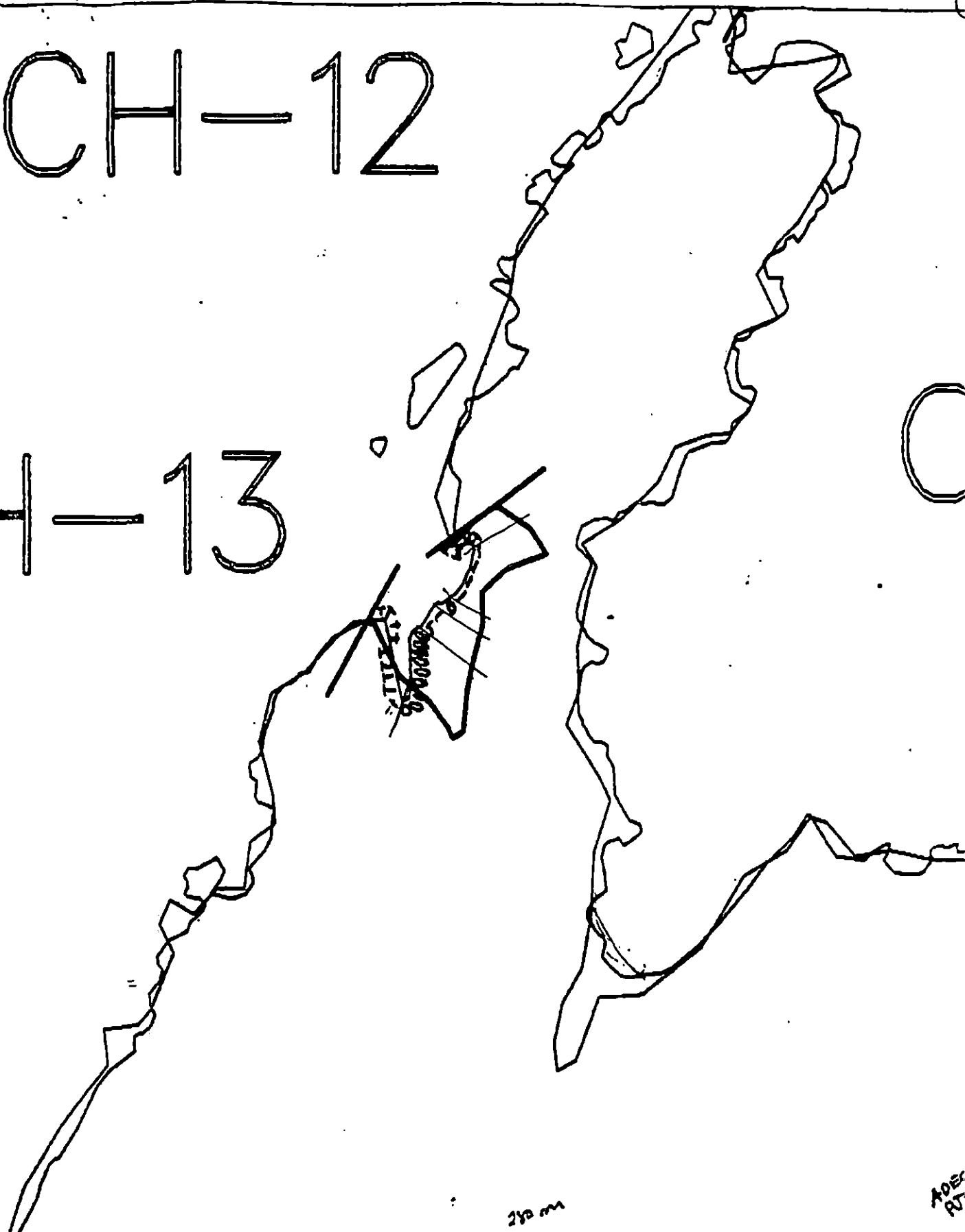
Notes (contd)

5. Other invertebrates seen in segment: hermit crabs under cobble in upper mid intertidal; Nucella under cobble at lower mid - with eggs; Leptasterias ^(spawning) under cobble over silt at low intertidal; amphipods under cobbles and pebbles at water line from mid intertidal and lower; Dermasterias below water, shallow subtidal; Pycnopodia shallow subtidal; Strongylocentrotus sp. (white/pale short spines - overall pink → purple) shallow subtidal; serpulids very abundant at low water, under cobble.
6. Lower intertidal algae including Palmeria, Ulva, Enteromorpha (also to upper mid tide in fw seepages), dense cover "slimy" filamentous brown, Holosaxon.
7. Re: seal - (CVC landowner noted that he hadn't seen or heard of seals in the area (near shore) for "sometime" - ? since the spill.

ADK
PJE

CH-12

CH-13



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

CH-13

ADEC Segment Length: 567m



Map Key: PWS-38

Name: N. BiggenDate: 4/6/90ADEC
PT

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT CH-13 SUBDIVISION A (1 of 1)

WORK WINDOW	
Tarmat Removal Manual Pickup	CLOSED
Bioremediation Manual Raking Other Approved Treatment	CLOSED

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

3N,P Harbor Seal and Sea Lion
3O,Q Pupping and Molting

NO TIME CONSTRAINT. Authorized per memorandum dated 5/14/90 from Kathryn Frost/ADF&G to Mark Kuwada/ADF&G.

5T Bald Eagle Nest

USFWS 6/1/90 map indicates an active nest in Subdivision A. Closed to tarmat removal, manual pickup, bioremediation, manual raking and other approved treatment within 400m of active nest.

7II Subsistence: Deer Harvesting

No constraint to manual pickup and tarmat removal. Closed to bioremediation and manual raking and other approved treatment after 8/15.

OTHER ECOLOGICAL CONSIDERATIONS

If eagle nest constraint is removed, other ecological considerations will apply.

TAG APPROVAL DATE 6/04/90
ADEC Ray Morris
EXXON Amey TGM
NOAA Joyan Talbott
USCG G.A. Reiter

FOSC

[Signature] Date 6/4/90

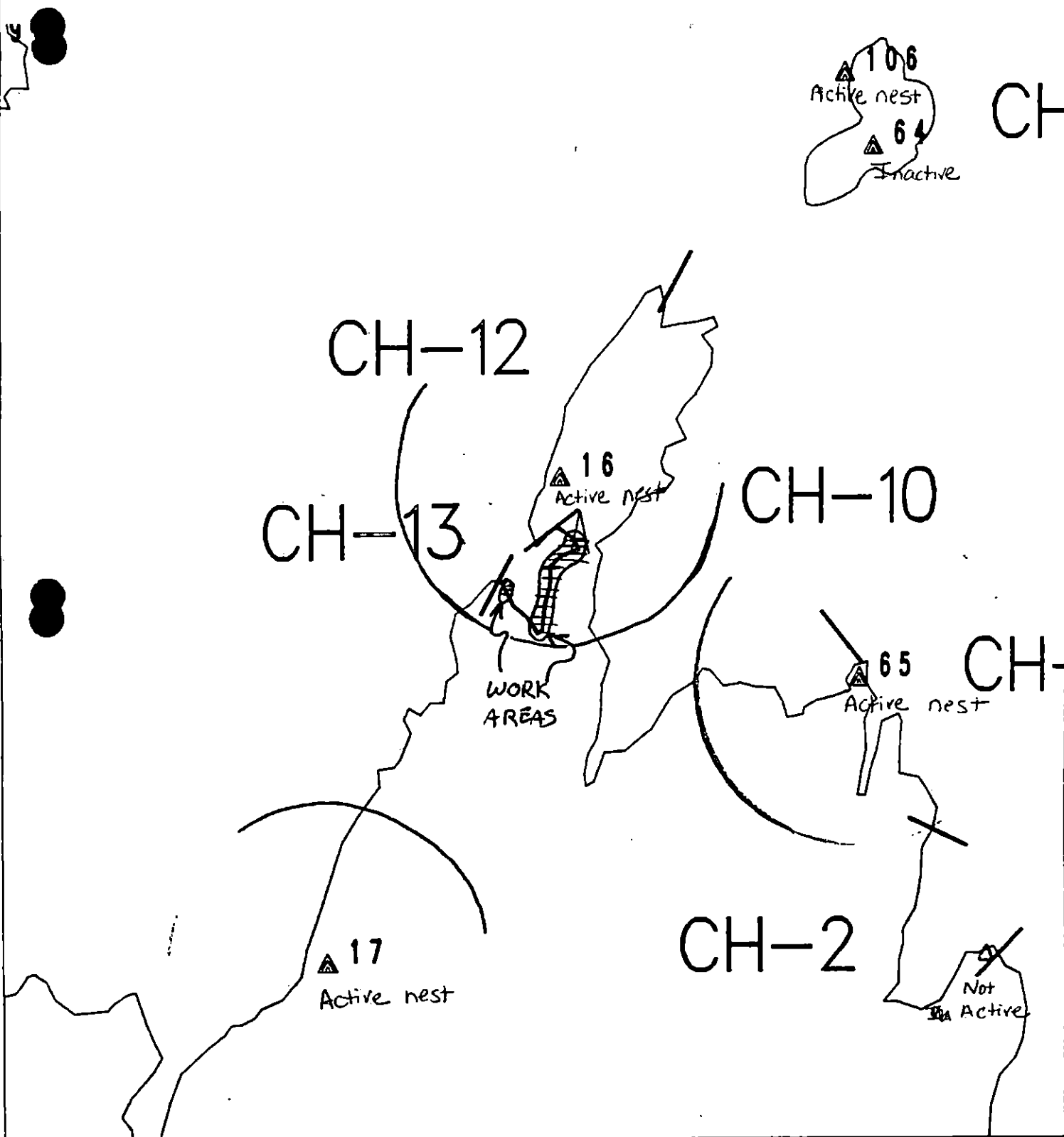
Prepared by

[Signature]

Date

6/3/90

Data from USFWS 61140 map.
of eagle nests.



Exxon Company, USA

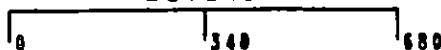
Map Key: PMS-CH-13

May 11, 1990



ECOLOGY MAP
SEGMENT CH-13
SUBDIVISION A (1 of 1)

METERS



Seabird Colony



Eagle Nest

1 inch = 1115 feet

SHORELINE EVALUATION

SEGMENT ST/ CH-013 SUBDIVISION A (1 OF 1) DATE 4/6/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

3P Harbor seal and sea lion pupping (5/15 to 7/1)
30,3Q Harbor seal and sea lion molting (8/15 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
7II Subsistence area: Deer harvesting (8/15 to 2/28)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: [Signature] DATE: 4/20/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 197 m: V.Light 192 m: No Oil 178 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>X</u> Tarmat: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> <u>X</u> Removal	<u> </u> Other (see comments)

+ Pom Pom

COMMENTS: Recommend manual removal of tarmats and asphalt; raking
followed by bioremediation in areas indicated on sketch map. Work
should be conducted from 7/2 to 8/14 due to above listed constraints.

TAG COMMENTS: See Addendum dated 6/3/90 JPP

TAG APPROVAL DATE: 4/19/90
DEC ART WENGER
EXON ANTHONY
NOAA Burt Wescott
USCG KENNETH KETNER

FOSC: W L DATE: 5-9-90
CVC Rep to be present

ANADROMOUS FISH STREAM EVALUATION

SEGMENT ST/ CH-14 STREAM NO: 226-20-16255 DATE 4/25/90

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)

6Y Recreation: Special use destination

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

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

7HH Subsistence area: Finfish harvesting

7JJ Subsistence area: Invertebrate harvesting

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to uncoiled biota and substrate. Subject stream is located within Subdivision A (1 of 1).

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: D. David M. Mahern DATE: 5/9/90

Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

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
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81	1
82	1
83	1
84	1
85	1
86	1
87	1
88	1
89	1
90	1
91	1
92	1
93	1
94	1
95	1
96	1
97	1
98	1
99	1
100	1

Manual Pickup

Bioremediation

X Tarmat Removal

 Snare/Absorbent Booms

Oil Snares (pom poms)

Absorbents (pads, rolls, etc)

Spot Washing: Wands

Beach Cleaner

Other (see comments)

COMMENTS: Recommended treatment includes manual removal of tarmats in areas indicated on sketch maps. Work should be conducted between 5/15 and 7/10.

TAG COMMENTS: _____

TAG APPROVAL DATE: 5/9/90

ADEC ART WEINER Art Weiner

EXXON AmvY T&A Real

NOAA Burl Wescott Burl Wescott

USCG D. D. Rome *DD Rome*

FOSC: DATE: 5-18-90

NOTIFY DVC 24 HRS IN ADVANCE
OF WORK

ECOLOGICAL MAP

CH-14

1A, 1B

6Y, 6U, 6V

7HH, 7JT

SALMON STREAM
226-20-16255
(P₃, 2/90)
CH-14 A (1 of 1)

3/39

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

CH-14

ADEC Segment Length: 1056m

Map Key: PWS-40

Name: Randy Siegel

Date: 4/19/90

00 WILLIAM REID
SEGMENT ST/ 14

SKETCH MAP

STREAM 226-20-16255

DATE / / 90

CHECKLIST

☐ N Area
☐ Approx. Scale
☐ Top/Bottom Boundary
☐ On Dist.
☐ Width
☐ Length
☐ % Cover
☐ Substrate Character
☐ Ext. HWA/LVL
☐ SSI
☐ Profile Location(s)
☐ Profile(s)
☐ PR Location(s)
☐ Photo Location(s)

LEGEND

1 Δ

1 - No Substrate On

2 Δ

2 - Substrate On

CT/C

Continuous Distribution

CT/B

Island Distribution

CT/P

Point Distribution

CT/S

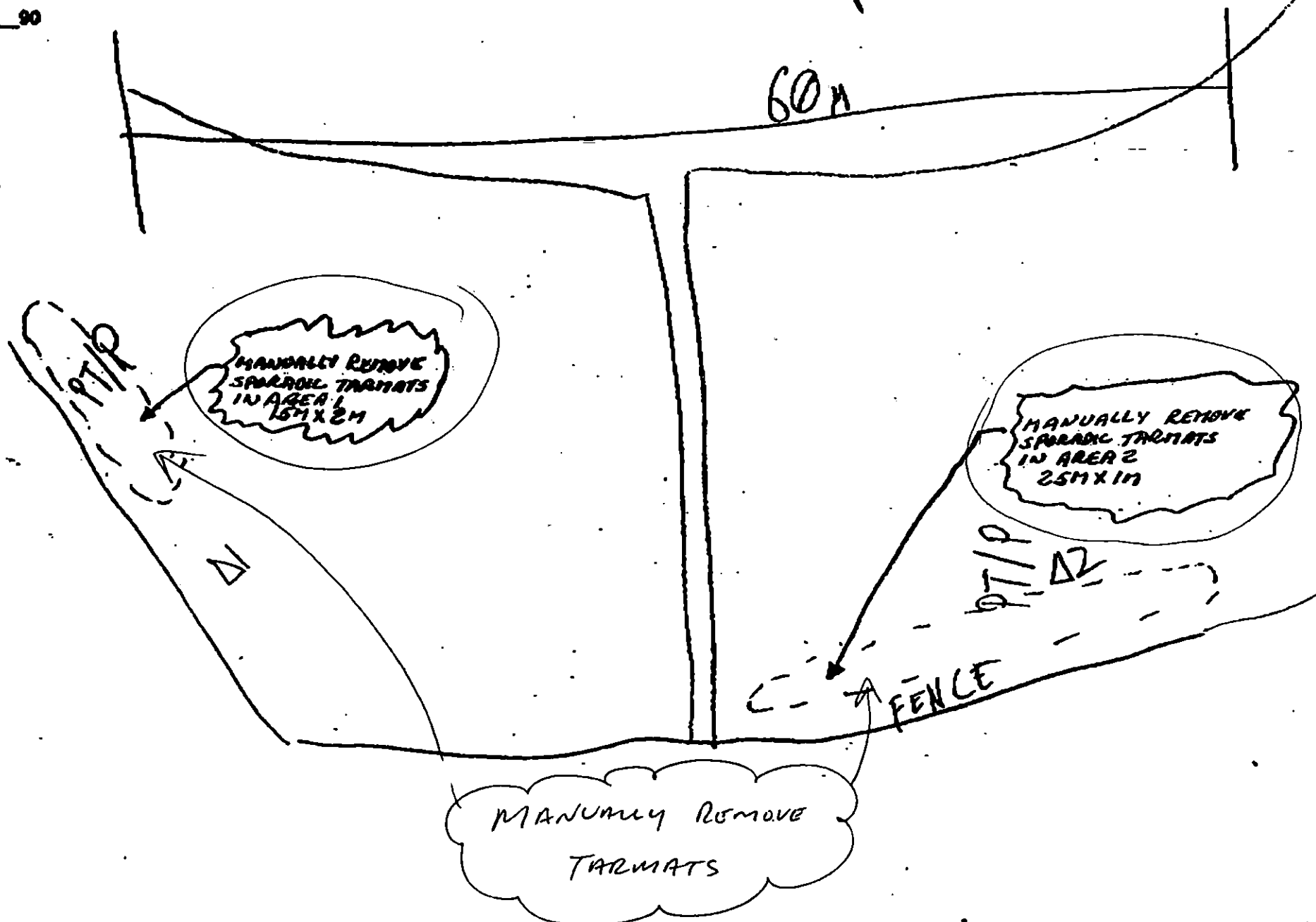
Shaded Distribution

eee

Red Vegetation

1 ●

Note location, direction,
and number



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

REVISION 22/2/90

32154

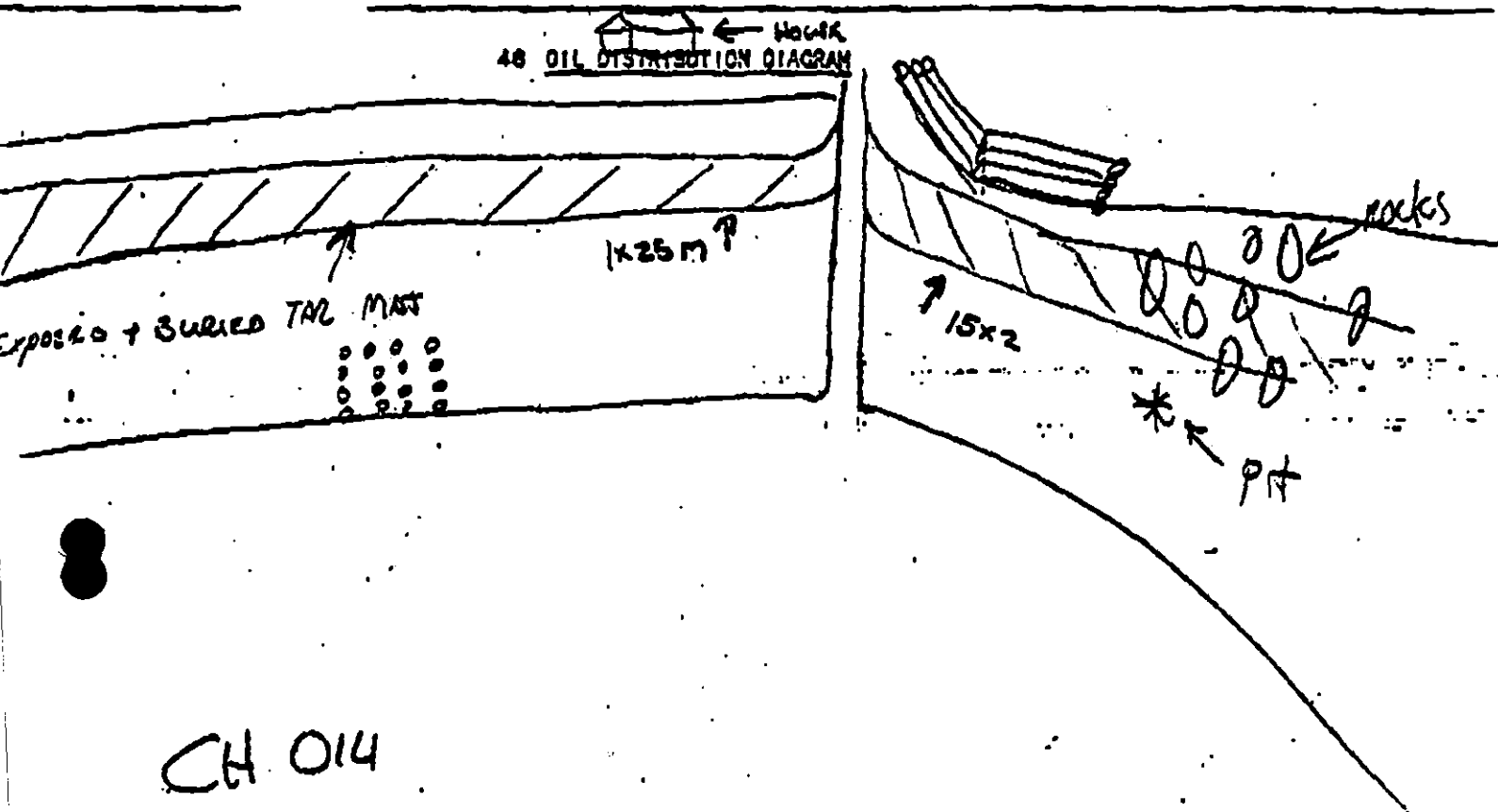
NAME(S)

DESCRIPTION

RECOMMEND: MANUAL REMOVAL OF TAR MAT

I agree with recommendation. *Mr. H. H. H.*

48 OIL DISTRIBUTION DIAGRAM



CH 014

226-20-16255

4/25/90

TWC

3/15/90

OG WILLIAM REID

SEGMENT ST/ CUBIA

STREAM 22620 - 16255

DATE 25 / APR 90

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Entry
- ☐ Oil Det.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HW/LA/VL
- ☐ 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/D

Broken Distribution

[CT/P]

Patchy Distribution

[CT/S]

Splashed Distribution

eee

Old Vegetation

1 ●→

Photo location, direction,
and number

ETCH MAP

N

60M

↓4 23

PT/P

Δ1

PT/P Δ2

FENCE

MANUALLY REMOVE
TARMATS

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

REVISION 000000

ANADROMOUS FISH STREAM EVALUATION ADDENDUM

CONSTRAINTS FOR STREAM NO. 226-20-16255

SEGMENT CH-14 SUBDIVISION A

WORK WINDOW	
Tarmat Removal	OPEN

ARCHAEOLOGICAL MONITOR REQUIRED ON SITE.

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

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B Salmon Stream

ADF&G catalogued anadromous stream (226-20-16255) is in Subdivision A. No constraint to tarmat removal.

7HH Subsistence: Finfish Harvesting

No constraint to tarmat removal.

7JJ Subsistence: Invertebrate Harvesting

No constraint to tarmat removal.

OTHER ECOLOGICAL CONSIDERATIONS

No disturbance to stream bed or banks. Restrict boat and air traffic and beach disturbance to essential minimum after 7/1.

SEE SUBDIVISION CONSTRAINT ADDENDUM CH-14A
FOR ADDITIONAL CONSTRAINT INFORMATION.

FOSC

Date

6-10-90

Prepared by

Date

6/10/90

CH-14

ANADROMOUS STREAM
226-20-16255

WORKAREAS

Active Nest

CH-18

CH-16

Active Nest

CH-15

Active Nest

CH

ANADROMOUS STREAM
EVALUATION



Exxon Company, USA
Map Key: PWS-CH-15
June 04, 1990

ECOLOGY MAP
SEGMENT CH-15
SUBDIVISION A (1 of 1)
METERS

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

ANADROMOUS FISH STREAM EVALUATION

SEGMENT ST/ CH-14 STREAM NO: 226-20-16255 DATE 4/25/90

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)
6Y Recreation: Special use destination
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
7HH Subsistence area: Finfish harvesting
7JJ Subsistence area: Invertebrate harvesting

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to uncoiled biota and substrate. Subject stream is located within Subdivision A (1 of 1).

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: [Signature] DATE: 5/7/90

Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

<u> </u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u>X</u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u> </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)

COMMENTS: Recommended treatment includes manual removal of tarmats in areas indicated on sketch maps. Work should be conducted between 5/15 and 7/10.

ANAD. FISH
SDT, ADDENDUM dated 6/10/90 JPP

TAG COMMENTS:

TAG APPROVAL DATE: 5/9/90

ADEC ART WEINER
EXXON ANDY TET
NOAA Burl Wescott
USCG D. D. ROME

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

NOTIFY CVC 24 HRS IN ADVANCE
OF WORK

ANADROMOUS FISH STREAM ASSESSMENT

REGION: PRINCE WILLIAM SOUND

SEGMENT: CH-14

STREAM NO: 226-20-16255

ANADROMOUS FISH STREAM EVALUATION

SEGMENT ST/ CH-14 STREAM NO: 226-20-16255 DATE 4/25/90

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)

6Y Recreation: Special use destination

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

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

7HH Subsistence area: Finfish harvesting

7JJ Subsistence area: Invertebrate harvesting

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to uncoiled biota and substrate. Subject stream is located within Subdivision A (1 of 1).

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

_____ No Treatment Recommended

X Treatment Recommended

_____ Manual Pickup

_____ Bioremediation

X Tarmat Removal

_____ Snare/Absorbent Booms

_____ Oil Snares (pom poms)

_____ Absorbents (pads, rolls, etc)

_____ Spot Washing: _____ Wands

_____ Beach Cleaner

_____ Other (see comments)

COMMENTS: Recommended treatment includes manual removal of tarmats in areas indicated on sketch maps. Work should be conducted between 5/15 and 7/10.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

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

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

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

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

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

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

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

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

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

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

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

1H Remote release site

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ADF&G Don Calkins 267-2403

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

ADF&G Tom Roth 267-2206

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

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

6U Recreation: Tent sites (8/1 to 9/15)

6V Anchorages (8/1 to 9/15)

6W Forest Service cabins (8/1 to 9/15)

6X Lodge (8/1 to 9/15)

6Y Special use destination

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

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 104 014 SUBDIVISION: 16 255 DATE 4/25/90

USCG

NAME CWO MR MALON SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

1. MANUAL CLEAN-UP; REMOVE TAR MATS
LEFT + RIGHT.

ADFG

ADEC

NAME TOM GROVE SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

MANUALLY REMOVE TARMAT/ASPHALT ON LEFT +
RIGHT SIDE OF CREEK AT UPPER INTERTIDAL AREA. CARE
SHOULD BE TAKEN TO RECOGNIZE THAT THIS ASPHALT
IS COVERED IN PLACES WITH 1/2" TO 1/2" OF FRESH GRAVEL
AND IS HARD TO SPOT.

LAND MANAGER

NAME _____ SIGNATURE _____

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ASC # 226-42-16280

Segment CH-001

Observations A tar band covering a gravel substrate extends along the high tide line south of the channel. This band has not appreciably weathered since ADF&G staff visited the site in early December. No other oil, either surface or subsurface, was observed at the site.

Treatment Recommendations Manually remove the tar band.

ASC # 226-20-16258

Segment CH-016

Observations One tar patty was found along the boulder rubble east of the channel. A very light and sporadic stain coated a region of the lower and mid intertidal zone west of the channel. No significant amounts of subsurface oil were observed.

Treatment Recommendations The insignificant quantities observed at the site do not warrant further treatment.

ASC # 226-20-16255

Segment CH-014

Observations Sporadic tar mats and patties coat cobbles along high tide line of this moderately exposed site. Some of the patties lie just beneath the surface (see ADF&G Multi-Assessment Data Form diagram).

Treatment Recommendations Manual removal of tar mats and patties. Care must be taken to ensure that buried tar patties are removed.

SHORELINE OILING SUMMARY (ANAD.)

REVISION NO. 6

OG WILLIAM LEID USCG McMAHON SEGMENT ST/ CHQ14 3654
 BIO MICHAEL FAWCETT LAND REP STRIP 226-20-16254 OF
 EXXON GUS GARCIA ADPG MIXE WARDER TIME 12:00
 TEAM NO. 15 TIDE LEVEL +1 M DATE 25 / APR / 90
 EST. SUBDIVISION LENGTH: 60 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo
 SURFACE SEDIMENTS: R 35 % B 65 % C 35 % P 65 % G 35 % S 35 % M 35 % V
 SLOPE: Lang 35 % Mang 35 % Vert 35 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 30 m M 30 m N 30 m VL 30 m NO 30

SURFACE OIL

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

PAVEMENT H F S 35 sq. m by 35

PATTIES / TARBALLS 1 B

NEAR SHORE SHEEN? ☒ NO BR RW SL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

Did You Col DEBRIS ☒ YES ☐ NO

TYPE 35

#BAGS 35

Photographs:

Roll No. 35

Frames 35

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL	BELOW		OIL / FILM COLOR					PIT ZONE				AN A	ZONES	Y	SURFA SUBSUR SEDIME
		OP	OR	OL	OF	NO		NO	NO	1	2	3	4	5	SU	M	M	U				
1	40					X									X					N		P/G
2	35					X									X					N		P/G/LC

COMMENTS

REVIEWED JW DATE 4-27-90

segment CH 014

Stream 226-20-16255

Ecological Summary

4/25/90

Michael Fawcett

The intertidal portion of this small stream is very short (about 30m), crossing a shale cobble/pebble/gravel beach littered with rusting iron junk. The sediments are unstable, and macrobiota is sparse, mainly patchy Fucus and barnacles around the stream mouth. Some small tar mats were found in UTZ north of the stream. Manual removal suggested. No ecological constraints.

M Fawcett

34/54

ADFG MULTI-ASSESSMENT DATA FORM

SURVEY TYPE: ES SS DS TS AVS SCH MMS PTA 2 REGION: PWS KP,CI K,AP

METHOD: Aerial Ground Boat

3 DATE: 4/25/90 16 HIGH TIDE TIMES: 1500 21 TEAM RECORDER: Tom Crowe

4 START TIME: 1155 18 HIGH TIDE HTS: +11.0 22 OBSERVERS: Mike Wilkerson

5 STOP TIME: 1230 17 LOW TIDE TIMES: 0815 23 AGENCY: ADFG (ANADSCOT)

6 SEGMENT #: CH-14 18 LOW TIDE HTS: -4.0 24 PHOTOS TAKEN: Y (N)

7 STATION #: 19 TIDE HT AT SURVEY: +6 FT Roll #: Frame:

8 X-UNIT: Ebb Slack Flood Slack 25 VIDEO TAKEN: Y (N) TAPES:

9 STAT AREA: 20 USCG QUAD: SEW B-3 Starts: Ends:

10 LAT: 11 LONG: 26 SAMPLES TAKEN Y N Mudoc

12 SOURCE: Map Loran Oil

13 LOCATION: CHENEGA VILLAGE Sediment

14 DESCRIPTION: Biological

Water

EXTENT OF OIL

	SHORELINE				STREAM			
	L	V	H	S	L	V	H	S
27 SURFACE COVERAGE	25	1			15	2		
28 SURFACE THICKNESS	4cm							
29 PENETRATION	SAME							

30 OVERALL OIL IMPACTS: N VL (L) M N

31 OIL TYPE: Pooled House Tar (Asphalt) Sticky Stain

32 OILED DISTRICT: Y (N)

33 SHORELINE TYPE: Headland Low-lying Rocks (Beach) Cove Lagoon Marsh

34 WAVE EXPOSURE: High (Moderate) Low

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

36 CATALOGED ANAD. FISH BREAK? Y N

37 CATALOG #: 226-20-16255

38 STREAM NAME:

39 OIL IN STREAM BED? Y (N)

40 OIL ON STREAM BANKS? Y (N)

41 OIL ON BEACH ADJACENT TO MOUTH? (within 50 meters) Y N

42 OIL WITHIN 1 MILE OF STREAM? Y N

43 ANADROMOUS FISH PRESENT? Y (N)

44 ANADROMOUS FISH OBSERVATION

Species	Aerial	Ground

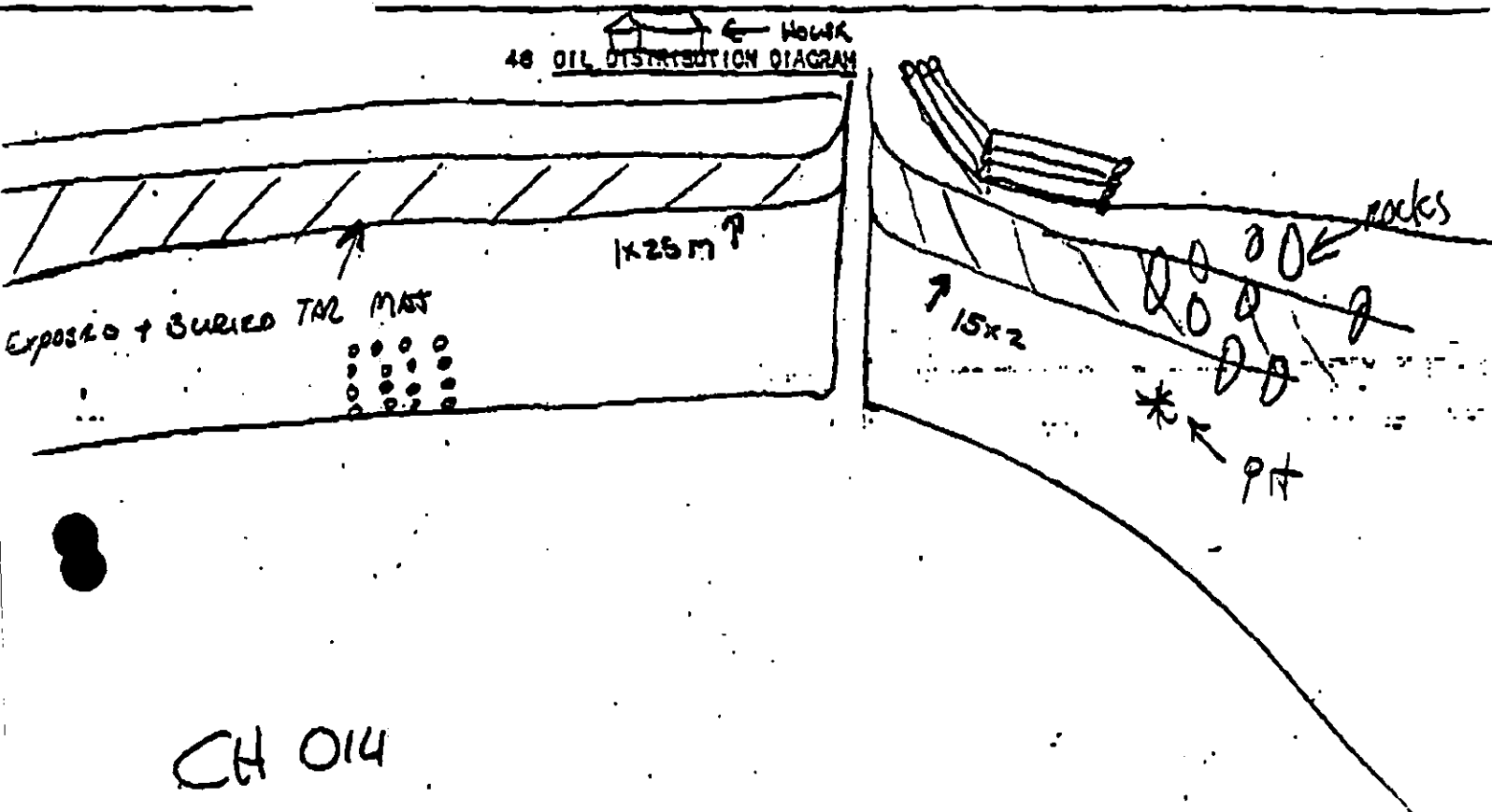
COMMENTS: SPORADIC TAR MAT/ASPHALT BAND 1 TO 2 METERS WIDE IN UPPER INTERTIDAL AREA. IN PLACES THIS BAND HAS BEEN COVERED BY 1/2" OF DRY GRAVEL.

FRAME(S) DESCRIPTION

RECOMMEND: MANUAL REMOVAL OF TAE MAT

I agree with recommendation. *M. H. Barrett*

48 OIL DISTRIBUTION DIAGRAM



CH 014

226-20-16255

4/25/90

TWC

DO: WILLIAM REID
SEGMENT ST/ CH-014

SKETCH MAP

STREAM 226-20-16255

DATE / / 90

CHECKLIST

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

LEGEND

1 Δ
No Subsurface Oil

2 Δ
Subsurface Oil

CT/C
Continuous Distribution

CT/B
Island Distribution

CT/P
Patchy Distribution

CT/S
Washed Distribution

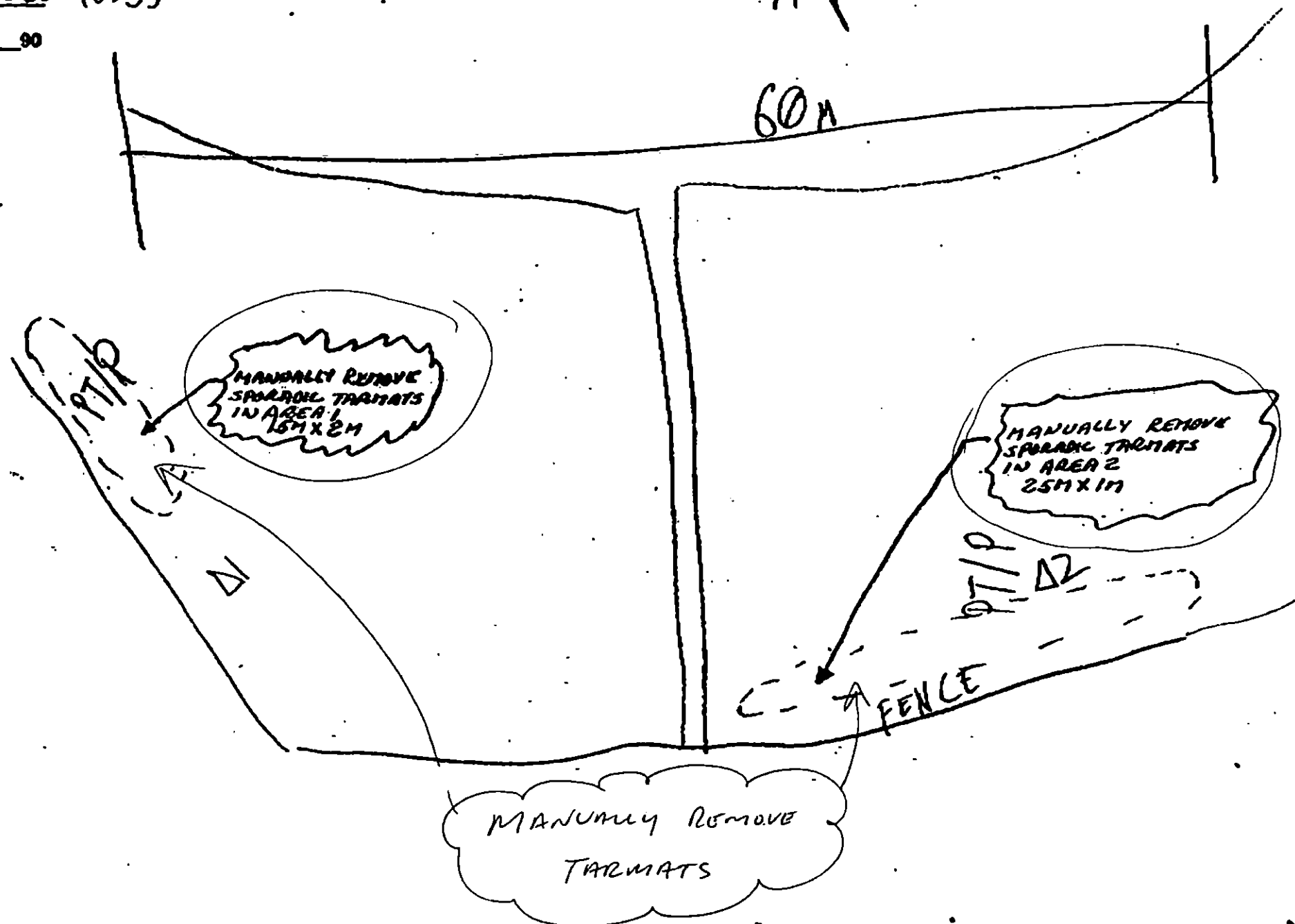
eee
Wet Vegetation

1 ●→
Note location, direction,
and number

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

REVISION 02/24/90

32/54



HS/LS

OG WILLIAM REID
SEGMENT CUBIA

ETCH MAP

STREAM 22620 - 16255

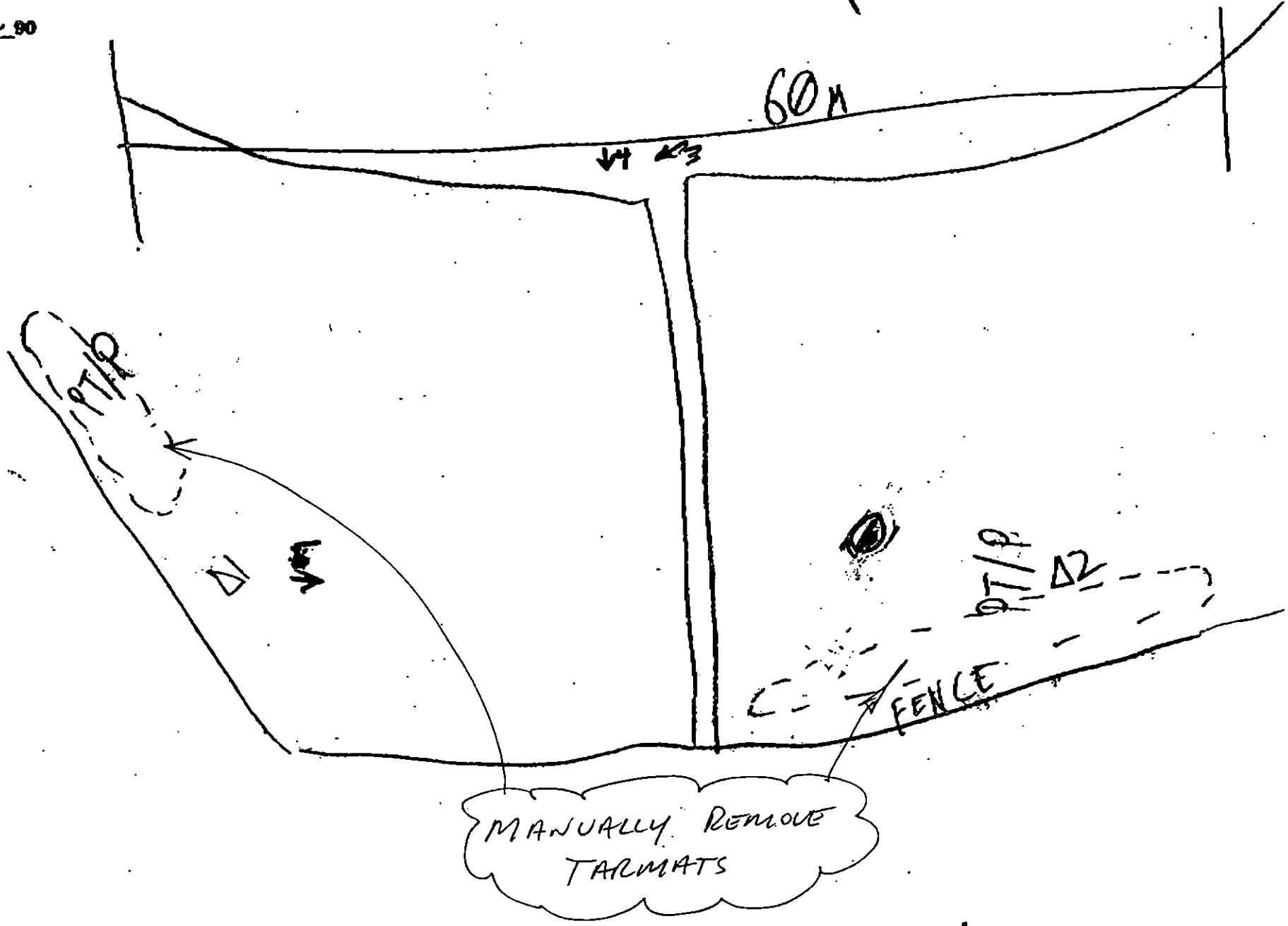
DATE 25 APR 80

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Segment Boundary
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HML/LVL
- ☐ 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/D
Broken Distribution
- CT/P
Patchy Distribution
- CT/S
Splashed Distribution
- eee
Oiled Vegetation
- 1 $\Rightarrow$
Photo location, direction, and number

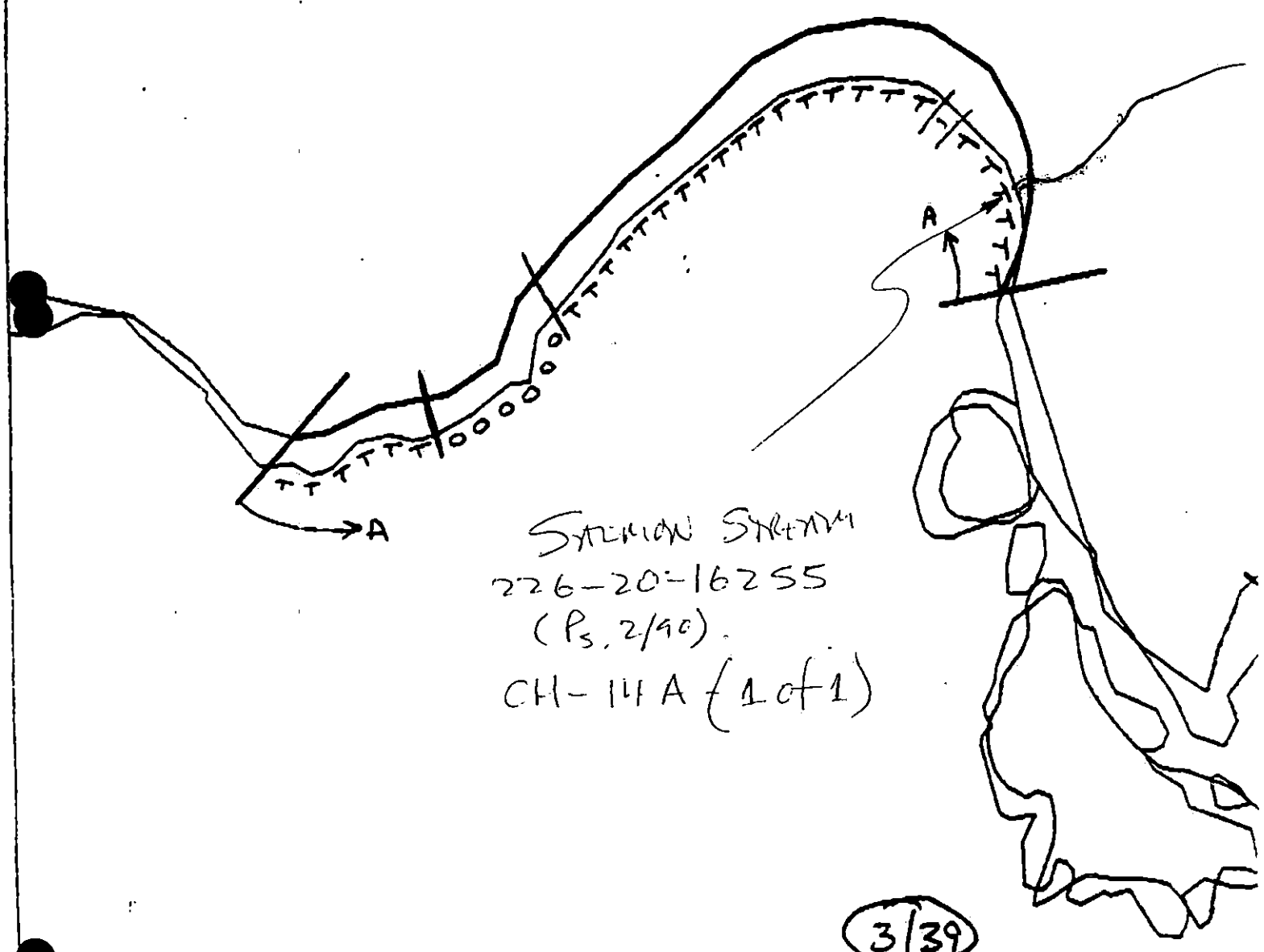


Oil Character Length (m): AP PD CV CT ST MS PT TB FL NO

ECOLOGICAL MAP

CH-14

1A, 1B
6Y, 6U, 6V
7HH, 7JS



STATION STREAM
226-20-16255
(P₅, 2/90)
CH-14 A (1 of 1)

3/39

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

CH-14

ADEC Segment Length: 1056m

Map Key: PWS-40

Name: Randy Siegel

Date: 4/19/90



1991 MAYSAP EVALUATION

SEGMENT: CH 014 SUB: A REGION: PWS SURVEY DATE: 5/3/91

ENVIRONMENTAL SENSITIVITIES:

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

Ecological/Constraints (see page two for details) Eagle nest,
Anadromous stream, Subsistence - Invertebrate harvesting,
Subsistence - Finfish harvesting

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: _____ Date: _____

RECOMMENDATIONS:

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

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____ FOSC APPROVAL DATE: _____

ADEC _____ FOSC _____

EXXON _____

USCG _____

NOAA _____

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

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.

Subsistence, Invertebrate Harvesting: Unlimited treatment except avoid disturbance of clam/mussel beds unless specifically directed by TAG Work Order.

Subsistence, Finfish Harvesting: Unlimited treatment.

TEAM NO. 4 SEGMENT CH14A SUBDIVISION _____ DATE 5/3/91

ADEC

NAME Dianne Monson SIGNATURE Dianne Monson☒ NTR ☐ Treatment Recommended

Scattered tar balls / mats and few coats.

Most tarballs and mats observed were removed.

EXXON

NAME LARRY D. OLSON SIGNATURE Larry D. Olson☒ NTR I agree with representatives recommendations.

LANDMANAGER

NAME LARRY EVANOFF OF CVE SIGNATURE LE☒ NTR ☐ TREATMENT RECOMMENDEDSCATTERED TAR BALLS / MATS FOUND AND PICKED UP BY
SURVEY AND VECO CREW. STAINING REMAINS. NO
BIOREMEDIATION RECOMMENDED.

USCG/NOAA

NAME JERRY SCHULTZ SIGNATURE Jerry Schultz☒ NTR REMAINING OIL RESIDUE WAS REMOVED AND NO FURTHER INTRUSION
IS NECESSARY

REVISED 5/6/91 KC
REVIEWED: 5/7/91 MC

og sketch map

CH 014-A

JM Samples

3 May 91

0724 - 0815

Legend

-  Bedrock cliffs
-  Bluffs or outcrop
-  talus. Bd. cl.
-  pl. sd cl., Bd

Few scattered TB at WITZ
Picked up.

P. 4.

AP, < 5%
4x20
remnants

P4

AP < 5%
20x30 cm

P4

Very few ct st
on Bd, bedrock, cl
in WITZ
ct, < 1%
1x5%

A1

Stream

Albers, grass

stream lemn / platy ph / gv

Platy ph / sd
stream
burn

old retaining wall.

Few TB in WITZ
Picked up

low outcrop
vertical foliation

Few small
secondary patches
remnant AP behind
bed, cl. P4.

ct 20x10 cm
on bedrock

P4.

7.2 m

revised 5.11.01

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 3, 1991 0720 - 0818
SEGMENT #	CH014	TIDAL HEIGHT (Range)	+6.0 => +3.5
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm, light rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A Oil (TB) located in the upper intertidal zone near the drift line and slightly lower. The substratum along this oiled area grades from talus boulders and cobble to the adjacent cobble and pebble beach. A few limpets (*Collisella* sp.) and amphipods (*Orchestia* sp.) are located under rocks in this area, and scattered spots of black lichen (*Verrucaria* sp.) and algal films (*Petrocelis* sp.?) are present. Below this zone, biota become slightly more abundant, but still sparse. Barnacles (*Balanus*) are present in small patches on larger cobbles in the beach and on small outcrops, along with similar cover of *Fucus*. Littorines, limpets, and hermit crabs are present in moderate densities. Littorine egg masses are common, and six-rayed sea stars (*Leptasterias*) are occasionally found brooding under larger cobble. On the boulders, these species are more abundant, especially *Fucus* and barnacles.

MANUAL PICK-UP PERFORMED DURING SURVEY. Additional cleanup would not adversely affect the intertidal biota at the site.

B Tar balls were found in this area of the middle intertidal zone. This cobble/pebble beach has little attached biota compared to bedrock substrata. *Fucus* is scattered in tufts on the larger cobble. Barnacles (*Balanus glandula*) is in dense, but small patches on some cobble. Littorines (*Littorina* sp.) and limpets (*Lottia* sp.) are moderately abundant amongst the larger cobble in the area. Mussels and mussel spat (<1cm) also are common on the larger cobble. Below the site, these species increase in abundance, with the addition of several species restricted to lower zones, such as sea stars (*Pycnopodia*, *Leptasterias*).

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

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

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

oreline subdivision map showing important biological features attached.

CH014-A Biological Report, continued

- C An oil coat at this site is located on a small bedrock outcrop in the high intertidal zone. Biota on the bedrock are more abundant than on the cobble beaches. Sparse cover of black lichen and algal films are present in the direct vicinity of the oiled site. A cobble beach and bedrock outcrop are located in the lower intertidal zones. The biota on this cobble beach are similar to the beach below location A above, but have somewhat higher densities of the same species. The bedrock outcrop is covered moderately (ca 50%) with *Fucus* in the middle to high zone. Below this, barnacles are moderately abundant. Limpets, littorines, and hermit crabs are moderately to densely abundant in this zone.

MANUAL PICK-UP PERFORMED DURING SURVEY. Additional cleanup would not adversely affect the intertidal biota at the site.

Summary of Subdivision CH014-A

This subdivision has a wide cobble/pebble beach which grades into a boulder talus and bedrock cliff coast. The beach has a small stream. Little attached biota is present on the beach, particularly in the upper zones. Lower in the intertidal, larger cobble, in particular, has patches of barnacles (*Balanus*), *Fucus*, and mussels. Littorines, hermit crabs, limpets, and scattered clams occur amongst the cobble in moderate densities. The boulder sized talus and bedrock substrata have richer communities of attached species, with *Fucus* and barnacles as the most abundant and apparent species. Mussels are present as scattered patches. Limpets, littorines, hermit crabs, are also moderately abundant. In the low intertidal and subtidal, red and brown algae become more abundant and sea stars, small crabs, shrimps, and worms (nemerteans, polychaetes) increase in abundance.

LIST OF COMMON SPECIES FROM CH014-A

Marine Plants

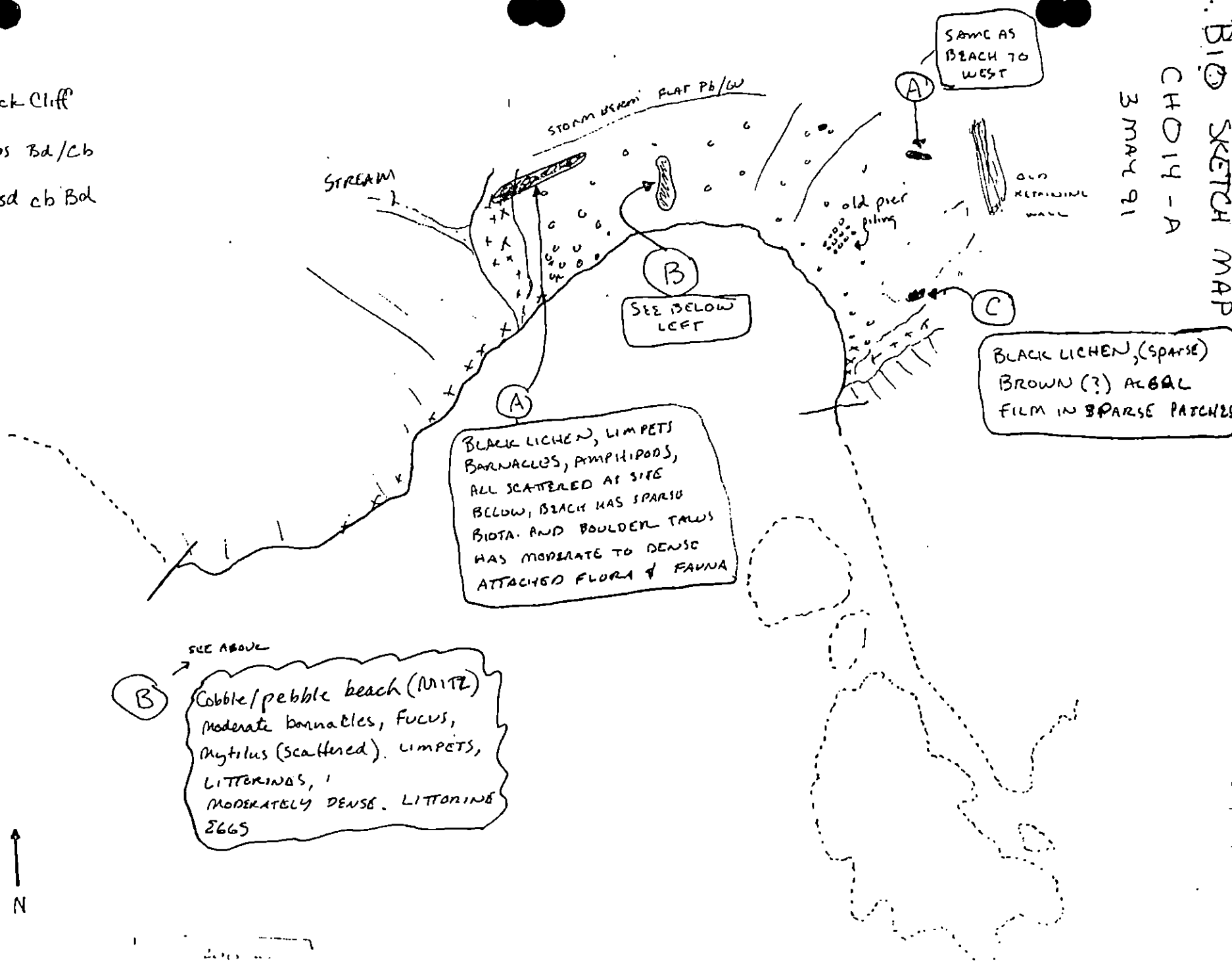
1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., *Ulva* sp., *Urospora* sp.
3. Brown Algae - Phaeophyta
Agarum fimbriatum, *Costaria costata*, *Ectocarpus* spp., *Fucus distichus*, *Hildenbrandia* sp., *Ralfsia* sp., *Syctosiphon lomentaria*
4. Red Algae - Rhodophyta
Corallina sp., *Cryptosiphonia woodii*, *Halosaccion glandiforme*, *Lithothamnion* sp., *Membranoptera dimorpha*, *Odonthalia floccosa*, *Palmaria palmata*, *Petrocelis* sp., *Rhodomela larix*,
5. Higher Plants - *Zostera marina* (eel grass), *Leymus mollis* (beach rye grass),

II. Marine Animals

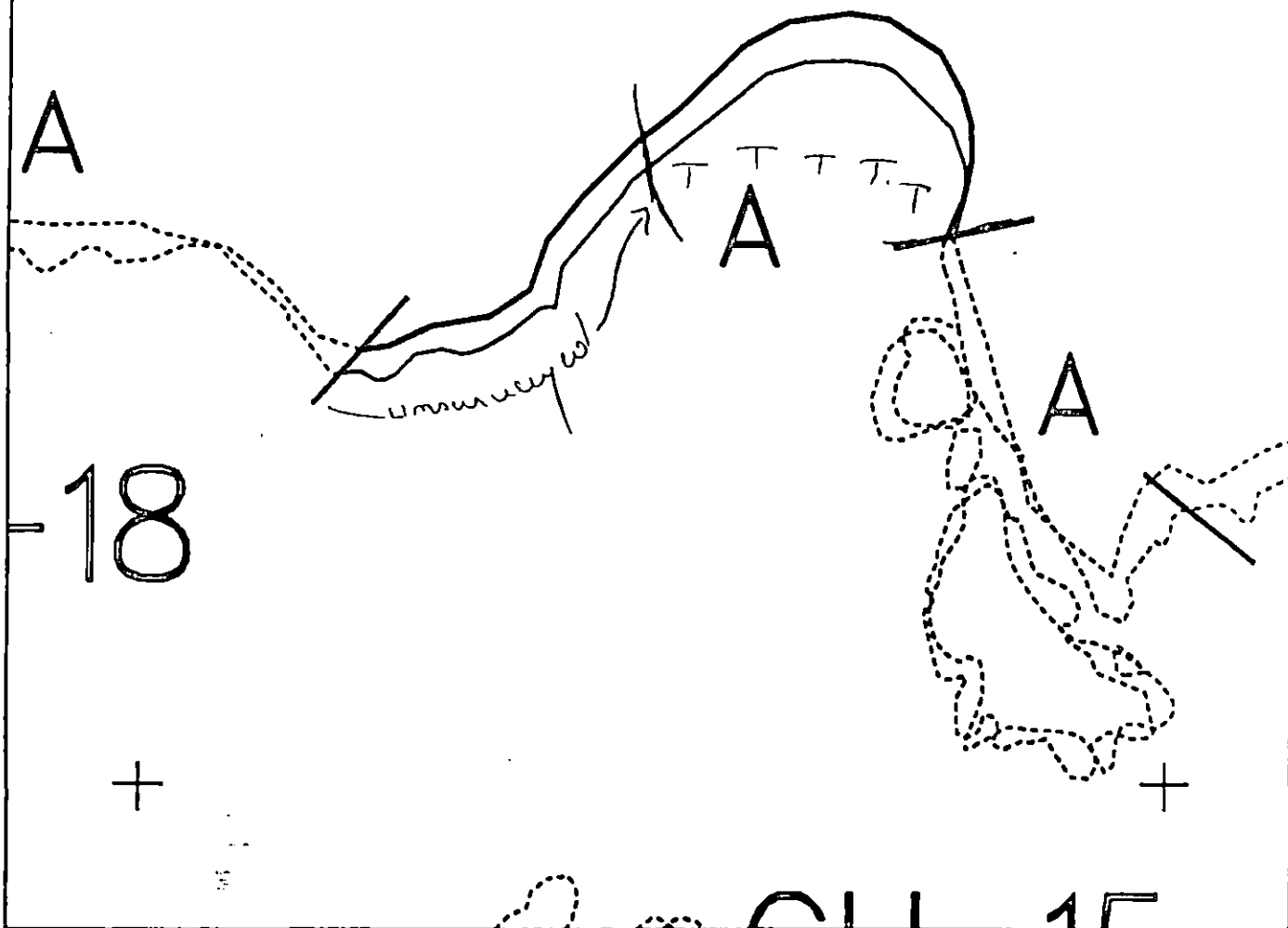
1. Sponges - Porifera - *Halichondria* sp.
2. Anemones - *Anthopleura artemesia*
3. Hydroids - Sertularidae - *Sertularella*?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - *Emplectonema gracile*,
8. Polychaete Worms
Nepthyidae
Nereidae - *Nereis* spp.
Serpulidae - *Serpula* sp., *Crucigera* sp., *Eudistylia polymorpha*
Spirorbidae - *Spirorbis* sp.
10. Crustaceans
 - a. Amphipods - *Orchestia* sp.?
 - b. Barnacles - *Balanus glandula*
 - c. Crabs - *Hemigrapsus oregonensis*, Paguridae (hermit crabs), *Oregonia gracilis*

- 07
11. Mollusca -
 - a. Chitons - *Mopalia mucosa*, *Tonicella lineata*,
 - b. Snails - Gastropods
Littorina sp., *Nucella lamellosa*, *N. lima*,
 - c. Limpets - *Lottia digitalis*, *L. persona*, *Tectura persona*, *T. scutum*
 - d. Nudibranches - *Lamellidoris fusca*
 - e. Mussels/Clams - *Macoma* sp., *Modiolus* sp., *Mytilus edulis*, *Prototheca staminea*
 12. Echinoderms
 - a. Brittle Stars - *Ophiolus* sp., ?
 - b. Sea stars - *Dermasterias imbricata*, *Leptasterias hexactis*, *Pycnopoda helianthoides*
 - d. Urchins - *Strongylocentrotus droebachiensis*
 13. Bryozoans - *Membranipora* sp., *Schizoporella* sp.
 15. Fishes - Cottidae, Stichaeidae (*Xiphister atropurpureus*, *X. mucosus*)

- ▨ Bedrock Cliff
- + TALUS Bd/Cb
- Pb sd cb Bol



CH-14



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

CH014 A
 ADEC Subsegment Length: 1058m
 METERS
 0 200 400
 AK State Plane Zone 4
 pcb014a



Subdivision Field Map
 Map Key: PWSCH014A
 Name: J. Sempes
 Date: May 3 91
 Date Entered:

5/6/91 K6
 REVISIONS: MC 5/7/91

1991 MAYSAP EVALUATION

SEGMENT: CH 014 SUB: A REGION: PWS SURVEY DATE: 5/3/91

ENVIRONMENTAL SENSITIVITIES:

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

Ecological/Constraints (see page two for details) Eagle nest,
Anadromous stream, Subsistence - Invertebrate harvesting,
Subsistence - Finfish harvesting

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: Rachel San Dan Date: 5/14/91

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

N

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: MAY 14 1991

FOSC APPROVAL DATE: 5/20/91

ADEC

FOSC

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

EXXON

USCG

NOAA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

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.

Subsistence, Invertebrate Harvesting: Unlimited treatment except avoid disturbance of clam/mussel beds unless specifically directed by TAG Work Order.

Subsistence, Finfish Harvesting: Unlimited treatment.

TEAM NO. 4 SEGMENT CH14A SUBDIVISION _____ DATE 5/3/91

ADEC

NAME Dianne Manson SIGNATURE Dianne Manson☒ NTR ☐ Treatment Recommended

Scattered tar balls / mats and few coasts.

Most tarballs and mats observed were removed.

EXXON

NAME LARRY D. OLSON SIGNATURE Larry D. Olson☒ NTR I agree with representatives recommendations.

LANDMANAGER

NAME LARRY EVANOFF OF CVE SIGNATURE LE☒ NTR ☐ TREATMENT RECOMMENDEDSCATTERED TAR BALLS / MATS FOUND AND PICKED UP BY
SURVEY AND VECO CREW. STAINING REMAINS. NO
BIOREMEDIATION RECOMMENDED.

USCG/NOAA

NAME JERRY SCHULTZ SIGNATURE Jerry Schultz☒ NTR REMAINING OIL RESIDUE WAS REMOVED AND NO FURTHER INTRUSION
IS NECESSARY

PAGE 2 OF 8

SEGMENT CH015

SUBDIVISION A

DATE 3 / 7 / 91

ENERGY LEVEL: ☐ H ☒ M ☐ LNEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE

After pickup of TB

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

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

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

OG COMMENTS: The core lead part of this subdivision was examined, as previous reports indicate no oil elsewhere. The area consists of platy platy lead between cliffs, and talus section 2 streams from a gummy blackshore pl. lead face. Several anthropogenic artifacts are present in the intertidal zone. Diking consisted of CT, ST, TB. small patches of AP, which except for some CT and ST, were all picked up during the survey.

revised 5/16/91 KCo

revised 5/6/91 KG
REVIEWED: 5/7/91 MC

og sketch map

CH 014-A

JM Samples

3 May 91

0724 - 0815

Legend

-  Bedrock cliff
-  Bluffs or outcrop
-  talus, Bd, ds
-  ps sd ds, Bd

Few scattered TB at WITZ
Picked up.

AP, < 5%
4x20
remnants

P4

AP < 5%
20x30 cm

P4

Very few ct, st
on Bd, bedrock, ds
in WITZ

ct, < 1%
1x56

A1

Stream

Albers, grass

storm beam platy ph/gv

Platy ph/d
storm
beam

old retaining wall.

Few TB in WITZ
Picked up

low outcrop
vertical foliation
Few small
conchoidal particles
remnant AP behind
led, cl. P4.

ct 20x10 cm
on bedrock

P4.

7.25m
0 1 2 3 4 5 6 7 8 9 10

revised 5/16/91 KCG

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 3, 1991	0720 - 0818
SEGMENT #	CHO14	TIDAL HEIGHT (Range)	+6.0 => +3.5	
SUBDIVISION	A	BIOLOGIST	JIM BARRY	
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm, light rain	

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A Oil (TB) located in the upper intertidal zone near the drift line and slightly lower. The substratum along this oiled area grades from talus boulders and cobble to the adjacent cobble and pebble beach. A few limpets (*Collisella* sp.) and amphipods (*Orchestia* sp.) are located under rocks in this area, and scattered spots of black lichen (*Verrucaria* sp.) and algal films (*Petrocelis* sp.?) are present. Below this zone, biota become slightly more abundant, but still sparse. Barnacles (*Balanus*) are present in small patches on larger cobbles in the beach and on small outcrops, along with similar cover of *Fucus*. Littorines, limpets, and hermit crabs are present in moderate densities. Littorine egg masses are common, and six-rayed sea stars (*Leptasterias*) are occasionally found brooding under larger cobble. On the boulders, these species are more abundant, especially *Fucus* and barnacles.

MANUAL PICK-UP PERFORMED DURING SURVEY. Additional cleanup would not adversely affect the intertidal biota at the site.

B Tar balls were found in this area of the middle intertidal zone. This cobble/pebble beach has little attached biota compared to bedrock substrata. *Fucus* is scattered in tufts on the larger cobble. Barnacles (*Balanus glandula*) is in dense, but small patches on some cobble. Littorines (*Littorina* sp.) and limpets (*Lottia* sp.) are moderately abundant amongst the larger cobble in the area. Mussels and mussel spat (<1cm) also are common on the larger cobble. Below the site, these species increase in abundance, with the addition of several species restricted to lower zones, such as sea stars (*Pycnopodia*, *Leptasterias*).

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

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

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

oreline subdivision map showing important biological features attached.

CH014-A Biological Report, continued

- C An oil coat at this site is located on a small bedrock outcrop in the high intertidal zone. Biota on the bedrock are more abundant than on the cobble beaches. Sparse cover of black lichen and algal films are present in the direct vicinity of the oiled site. A cobble beach and bedrock outcrop are located in the lower intertidal zones. The biota on this cobble beach are similar to the beach below location A above, but have somewhat higher densities of the same species. The bedrock outcrop is covered moderately (ca 50%) with *Fucus* in the middle to high zone. Below this, barnacles are moderately abundant. Limpets, littorines, and hermit crabs are moderately to densely abundant in this zone.

MANUAL PICK-UP PERFORMED DURING SURVEY. Additional cleanup would not adversely affect the intertidal biota at the site.

Summary of Subdivision CH014-A

This subdivision has a wide cobble/pebble beach which grades into a boulder talus and bedrock cliff coast. The beach has a small stream. Little attached biota is present on the beach, particularly in the upper zones. Lower in the intertidal, larger cobble, in particular, has patches of barnacles (*Balanus*), *Fucus*, and mussels. Littorines, hermit crabs, limpets, and scattered clams occur amongst the cobble in moderate densities. The boulder sized talus and bedrock substrata have richer communities of attached species, with *Fucus* and barnacles as the most abundant and apparent species. Mussels are present as scattered patches. Limpets, littorines, hermit crabs, are also moderately abundant. In the low intertidal and subtidal, red and brown algae become more abundant and sea stars, small crabs, shrimps, and worms (nemerteans, polychaetes) increase in abundance.

LIST OF COMMON SPECIES FROM CH014-A

I. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., *Ulva* sp., *Urospora* sp.
3. Brown Algae - Phaeophyta
Agarum fimbriatum, *Costaria costata*, *Ectocarpus* spp., *Fucus distichus*, *Hildenbrandia* sp., *Ralfsia* sp., *Syctosiphon lomentaria*
4. Red Algae - Rhodophyta
Corallina sp., *Cryptosiphonia woodii*, *Halosaccion glandiforme*, *Lithothamnion* sp., *Membranoptera dimorpha*, *Odonthalia floccosa*, *Palmaria palmata*, *Petrocelis* sp., *Rhodomela larix*,
5. Higher Plants - *Zosteramarina* (eel grass), *Leymus mollis* (beach rye grass),

II. Marine Animals

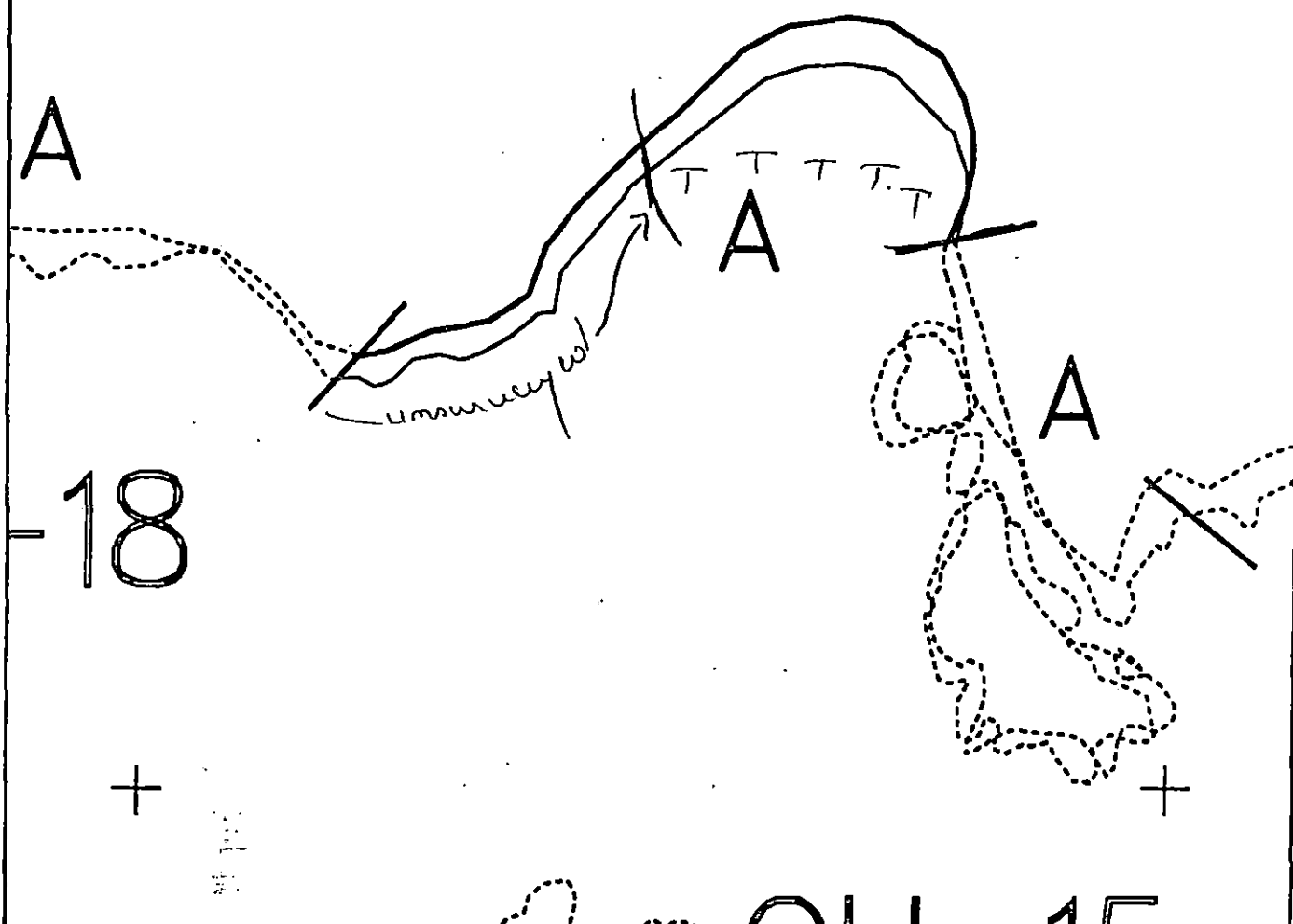
1. Sponges - Porifera - *Halichondria* sp.
2. Anemones - *Anthopleura artemesia*
3. Hydroids - Sertularidae - *Sertularella*?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - *Emplectonema gracile*,
8. Polychaete Worms
Nepthyidae
Nereidae - *Nereis* spp.
Serpulidae - *Serpula* sp., *Crucigera* sp., *Eudistylia polymorpha*
Spirorbidae - *Spirorbis* sp.
10. Crustaceans
 - a. Amphipods - *Orchestia* sp.?
 - b. Barnacles - *Balanus glandula*
 - c. Crabs - *Hemigrapsus oregonensis*, Paguridae (hermit crabs), *Oregonia gracilis*

- CNOIDA 8/1
11. Mollusca -
 - a. Chitons - *Mopalia mucosa*, *Tonicella lineata*.
 - b. Snails - Gastropods
Littorina sp., *Nucella lamellosa*, *N. lima*,
 - c. Limpets - *Lottia digitalis*, *L. persona*, *Tectura persona*, *T. scutum*
 - d. Nudibranches - *Lamellidoris fusca*
 - e. Mussels/Clams - *Macoma* sp., *Modiolus* sp., *Mytilus edulis*, *Prototheca staminea*
 12. Echinoderms
 - a. Brittle Stars - *Ophiolus* sp., ?
 - b. Sea stars - *Dermasterias imbricata*, *Leptasterias hexactis*, *Pycnopoda helianthoides*
 - d. Urchins - *Strongylocentrotus droebachiensis*
 13. Bryozoans - *Membranipora* sp., *Schizoporella* sp.
 15. Fishes - Cottidae, Stichaeidae (*Xiphister atropurpureus*, *X. mucosus*)

-  Bedrock Cliff
-  TALUS Bd/Cb
-  Pb sd cb Bol



CH-14



XXXX	Wide	CHO14 A	Subdivision Field Map
////	Medium	ADEC Subsegment Length: 1058m	Map Key: PWSCH014A
----	Narrow	METERS	Name: <u>John Sengels</u>
TTTT	Very Light	0 200 400	Date: <u>May 3 91</u>
0000	No Oil	AK State Plane Zone 4 psch014a	Date Entered:

5/6/91 KG reviewed
REVIEWED: MC 5/7/91

1991 MAYSAP EVALUATION

SEGMENT: CU 014 SUB: A REGION: PWS SURVEY DATE: 5/14/91

ENVIRONMENTAL SENSITIVITIES:

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

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: _____ Date: _____

RECOMMENDATIONS:

	INITIAL	TAG	FOSC
TREATMENT REQUIRED (Y or N)	<u>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: Remove easily accessible mousse and high SOR at locations F1, F2 and G. Apply Customblen at locations F1, F2, and G.

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.

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

ADEC

NAME JEFF GUYARD SIGNATURE [Signature] Tom Crowe ADF19

☐ NTR ADFT9 (ANADROMOUS STREAM SEGMENT) VERY LITTLE OILING REMAINING AT STREAM SITE 224-20-13036
ALL REMAINING VISIBLE AP/SOR OILING WAS PICKED UP AND REMOVED
AT THE TIME OF THE SURVEY. RECOMMEND NO TREATMENT FOR THIS STREAM. ONLY
TRACE CV/CT DEPOSITS FOUND AT STREAM # 224-20-13034 IN BOULDER BEDROCK AREAS.
TREATMENT HERE IS NOT RECOMMENDED. Tom Crowe

☒ TREATMENT RECOMMENDED AT OG MAP SITES F₁, F₂, & G. MOSS/High SOR LOCATED JUST BELOW
 SURFACE ARMOR. WILL REQUIRE MANUAL WORK, ROCK & ROLL BOULDERS. EASY ACCESS BY SKIFF.
 FULL CREW, ONE DAY. SITE LOOKS LIKE TREATMENT MISSED LAST YEAR, ALTHOUGH CUSTOMER
OBSERVED IN OIL. AT HEAVY IMPACT AREA (F₁) OIL COVERAGE COVERS 50% OF 5'x20' AREA.
AREA IN VICINITY OF FISHING SITS, KAYAKERS (PER KEN MILLER, WHETHER LOCAL RESIDENT)

EXXON

NAME RANDALL E. BOYER SIGNATURE [Signature]

☐ NTR AREA F₁, F₂ & G CONTAINED A BAND OF TREATABLE OILING
IN THE UPPER INTERTIDAL ZONE. IN THE SPARSE SEDIMENTS
AP CONSISTENCY OF 1M² PATCHES WERE PRESENT. THE SURVEY
TEAM DID NOT HAVE THE TIME TO PICK UP ALL THE TREATABLE OIL.
AREAS SURROUNDING THE ANADROMOUS FISH STREAMS LOOKED IN GOOD
SHAPE WITH NO FURTHER TREATMENT RECOMMENDED. IN AREA F₁,
F₂ AND G, I WOULD NOT RECOMMEND REMOVING THE BOULDER ARMOR TO ACCESS

LANDMANAGER

NAME MARSHA HALL OF DNR SIGNATURE [Signature]

☐ NTR ☒ Treatment Stream sites are fine.
MANUAL labor → remove surface cobble boulder
take out lens, leave treated area exposed for tide
come back in to put armor layer back at site
F₁. Manual removal of MS at location F₂ and G.
Attempted to remove oil at F₁ but too much there
for this team to deal with.

USCG/NOAA

NAME SCHULTZ SIGNATURE [Signature]

☐ NTR TREATABLE OILING EXISTED IN F₁, F₂, & G (SEE MAP) AND SHOULD BE ADDRESSED
HOWEVER NO TREATMENT AT ANY OTHER LOCATION

High Angle Bedrock Outcrop Shoreline w/ Isolated Pocket Beaches.
Beaches consist of subangular to sub rounded poorly sorted BCP's - (Mud?) Peat
underlay BCP's in several locations. Two Anad. streams in Subdiv. Oiling observed was
typical remnants - low SOR very degraded, CT & AS in protected spots. A non
continuous layer of sub-surface oil observed in N'ly part site "A".

TEAM NO. 1 PAGE 1 OF 1
 OG G. MACDONALD BIO M. FAWCETT SEGMENT CU-14
 ADEC J. G. NALLAS LANDMANAGER M. HALL for JNR SUBDIVISION A
 EXXON R. BOYER USCG/NOAA SCHULTZ/CHILDS DATE 5 / 14 / 91

TIME 17:15 to 17:45 TIDE LEVEL +6.2 ft. to +2.0 ft. ENERGY LEVEL: ☐ H ☒ M ☐ X
 SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO WEATHER: ☐ SUN ☐ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW
 TOTAL LENGTH SHORELINE SURVEYED: 1090 m NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE
 EST. OIL CATEGORY LENGTH: W 1 m M 30 m N 1 m VL 310 m NO 150 m US 1203 m

L O C	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE VHML	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO			WIDTH m	LENGTH m	S	UI	MI	LI	
A1				T							PC	L	1	100		X			after PU. 10 SOR
A2						T					PC		1	100		X			
B1		S											1/2	1	X				interstitial
B2				S							BCV	L	5	10	X				LSOR
C1							S				RV	M	4 1/2	3	X				on log
C2						T					RB	H	5	10		X			
C3		T									R	H	0.1	0.1	X				
I		S				S	T				BPGR	H	1 1/2	65	X	X			surveyed 8.15.91
D			T			T					RB	H	41	50		X			
E				T		T					CPB	M	8	5	X	X	X		10 SOR
F1		P									CPG	L	5	20		X			
F2		P		P		P					RBC	M	3	10	X	X			hi sol
G		S									CPB	M	1	6					partly treated - PU
H				S		T					RBC	H	6	15	X	X			hi sol

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

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE PHOTO ROLL # MAYSAP- 1 - 22 FRAMES 17 - 2

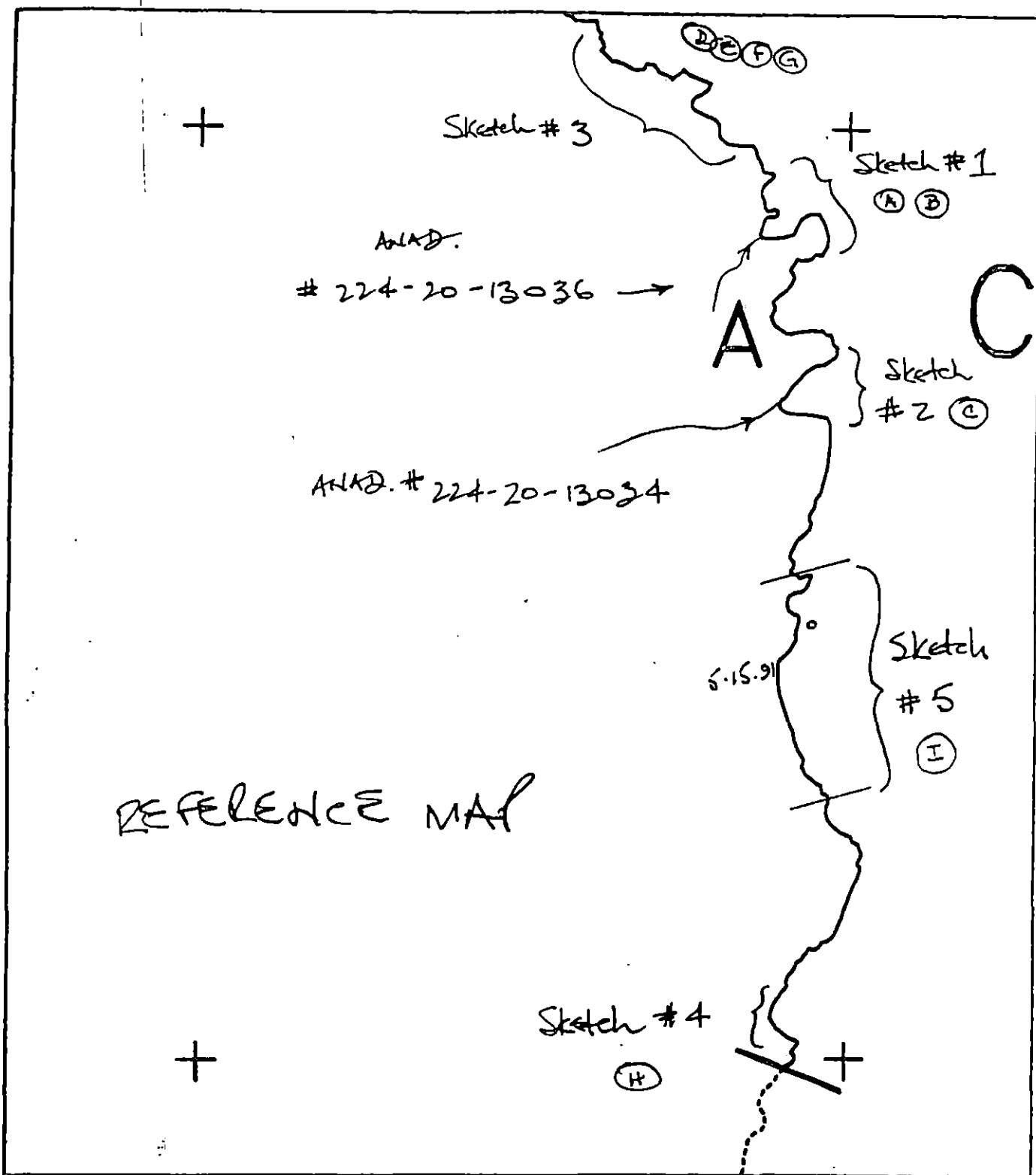
PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
1	15				X				10-12	Y	-			X			CE-GPMV	
2	15						X		10-13	Y	-			X			"	
3	20						X		12-15	Y	-			X			PCB-GPM	
4	15							X	-		-					X	BC-CC	
5	15							X	-		-			X			PC-GP	
6	15						X		8-10	Y	-			X			CP-GPMV	
7	12							X	-		-			X			BC-GCP	
8	10							X	-		-			X			"	
9	15							X	-		-	10	N			X	BC-PGT	

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

OG COMMENTS:

Steep rocky shore w/ some coarse-grained beaches on breacher in the rock wall. Two ANAD. fish streams were surveyed w/ TOM CHOW - ADF's G. Sketches 1 & 2 show remnant low SOR & traces of CT & MS associated w/ past AL. A thin, sporadic layer of subsurface oil

reviewed 5/10/91 by
STANLEY 5/17

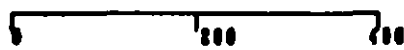


REFERENCE MAP



CU014 A

METERS



AR State Plane Zone 4
NAD83

Subdivision Field Map

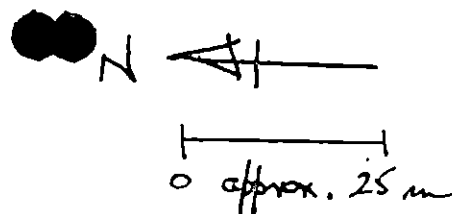
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Name: GM

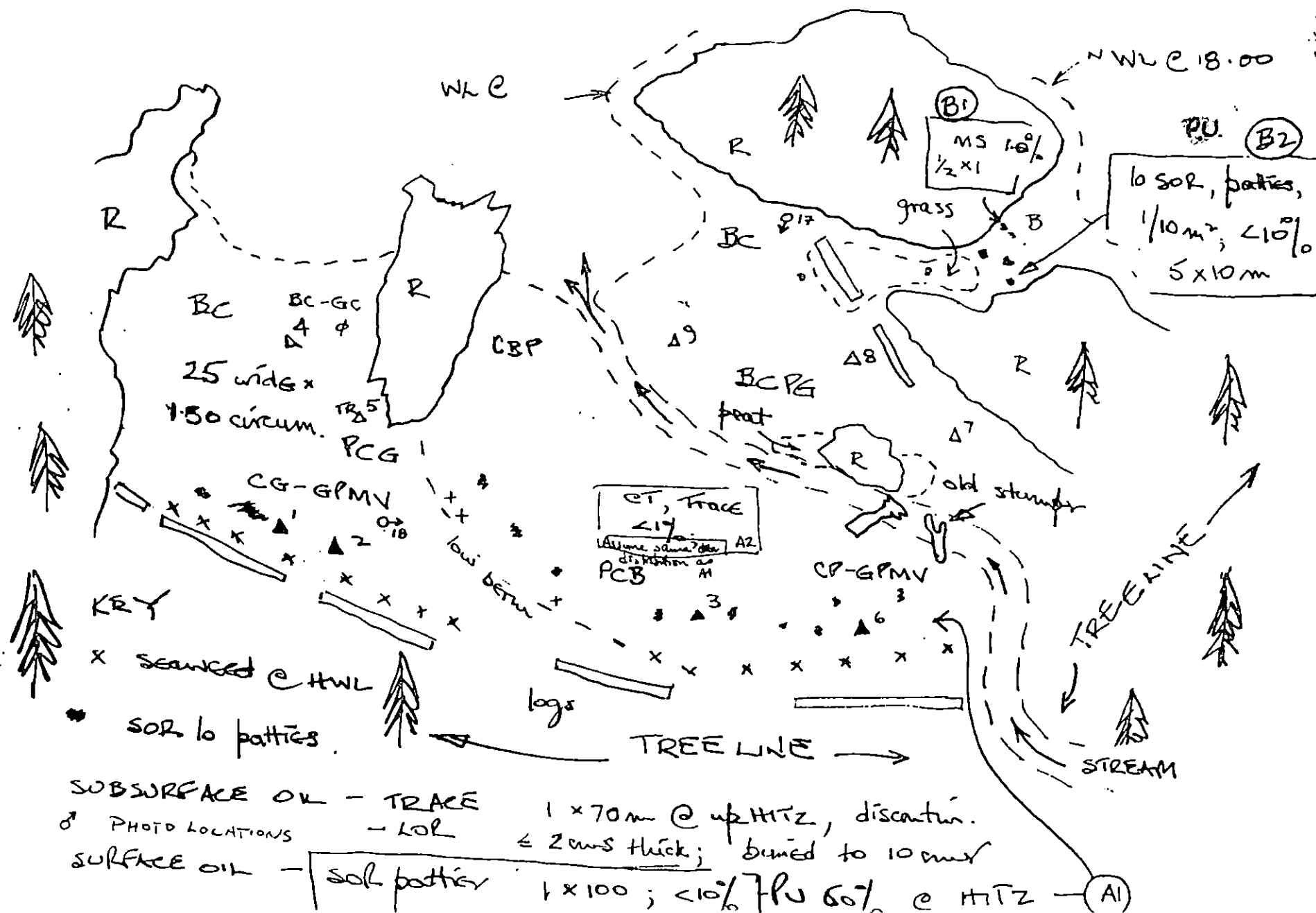
Date: 5.14.91

Reviewed 5/15

CU-014A
G. MACDONALD S. 14.91
ASC # 2242013036



Sketch #1



U-14A

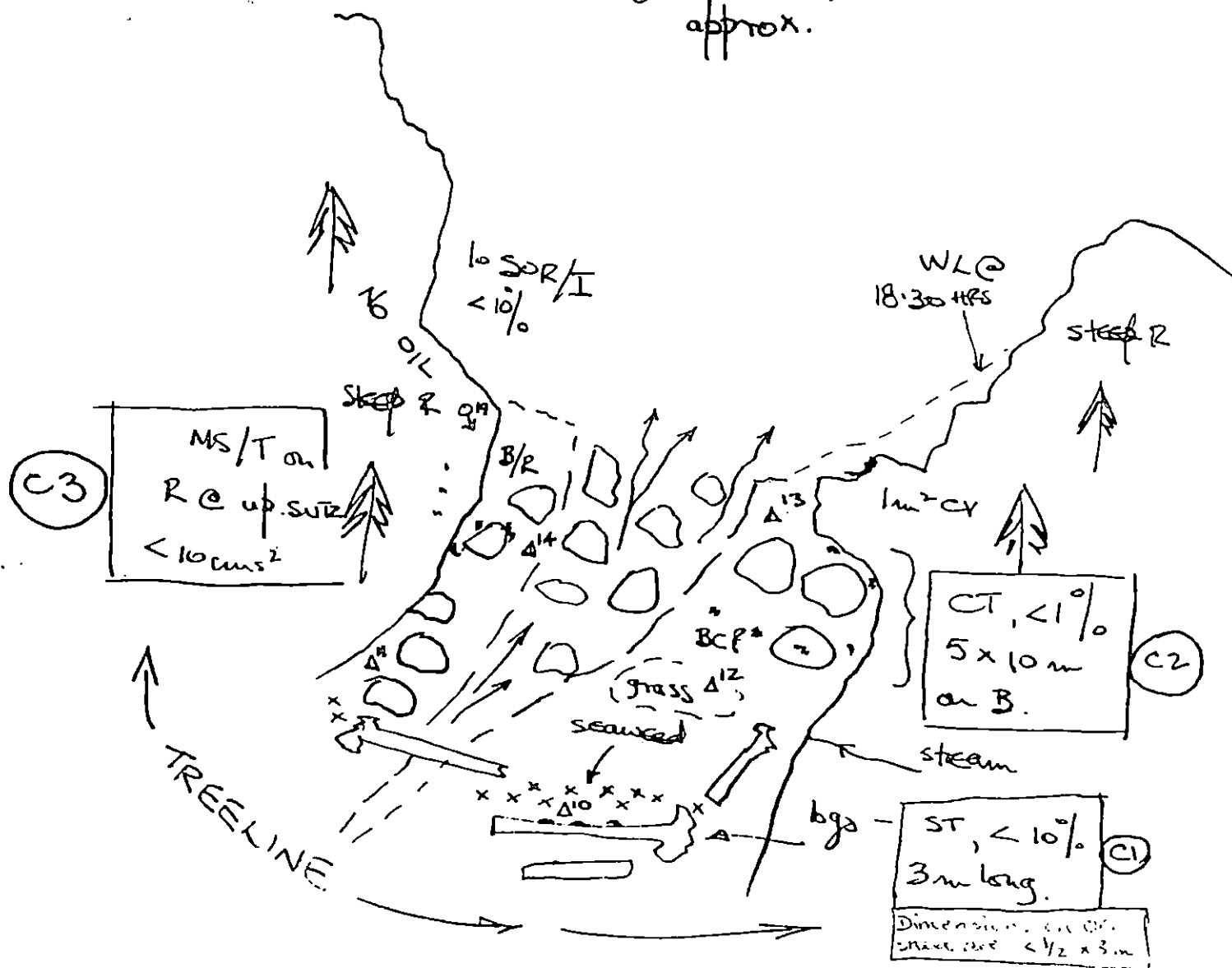
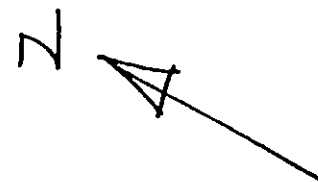
ASC # 2242013034

G. MACDONALD

S. 14.91

Sketch # 2

0 10 m
approx.



revised
5/16/91 LK

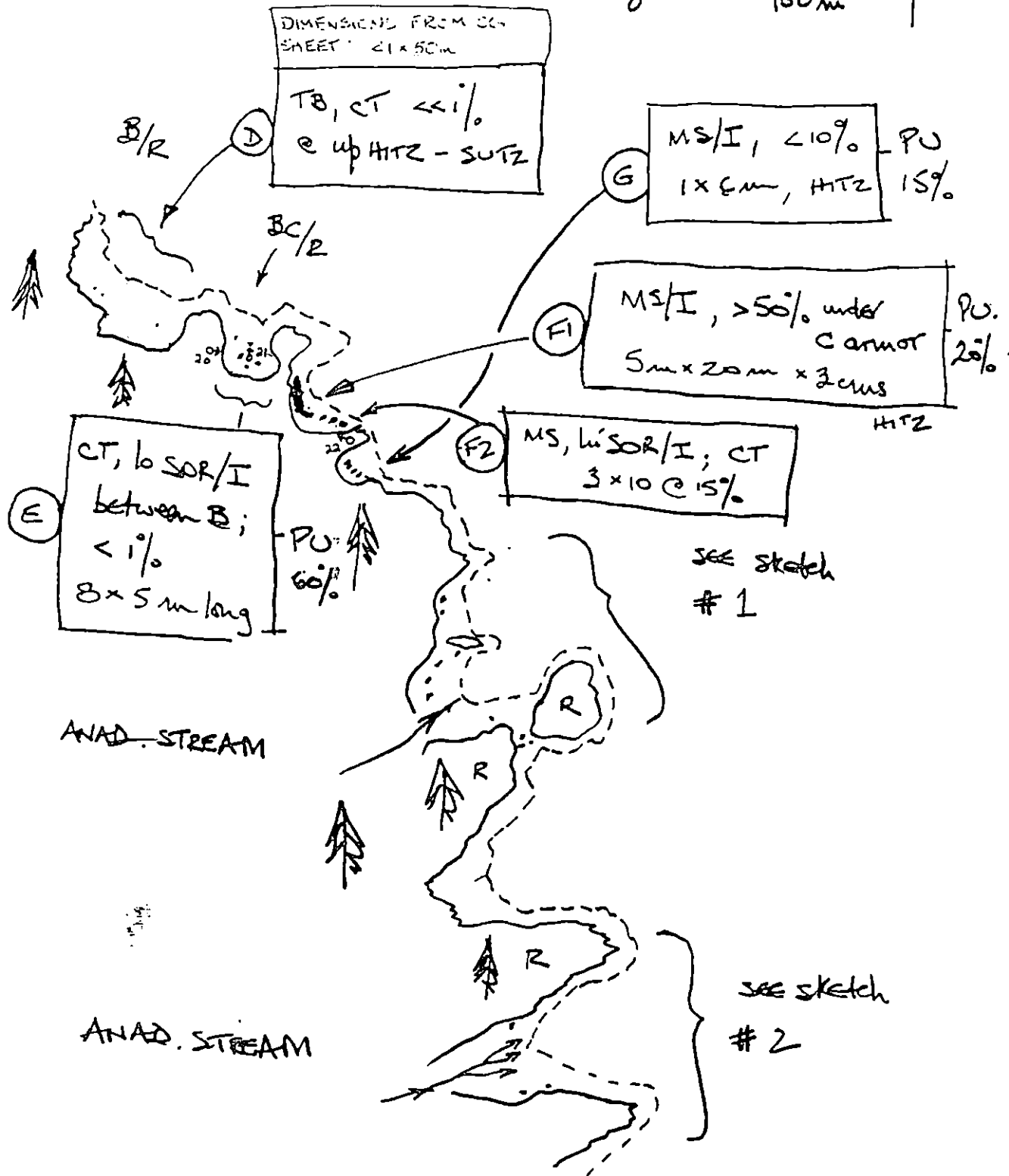
CU-14 A

Sketch #3

G. MACDONALD

5.14.91

approx.
0 100m



revised 5/16/91 KCo
revised 5/17

H-V. R = 1975

(H)

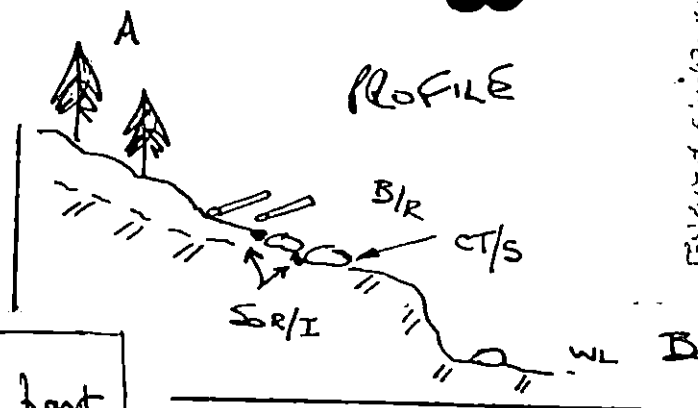
in SOR/I, biodegraded in part
below & between B. < 3 %
CT/T on R, B. < 1 %
6m x 15m

massive B
over R



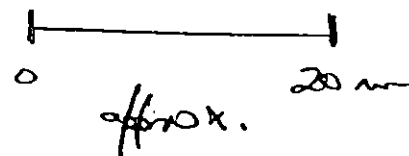
Bedrock bench
w/ massive B.

18 24 & 25
steep
R



CU-14A
G. MACDONALD
S. 14.91

Sketch #4



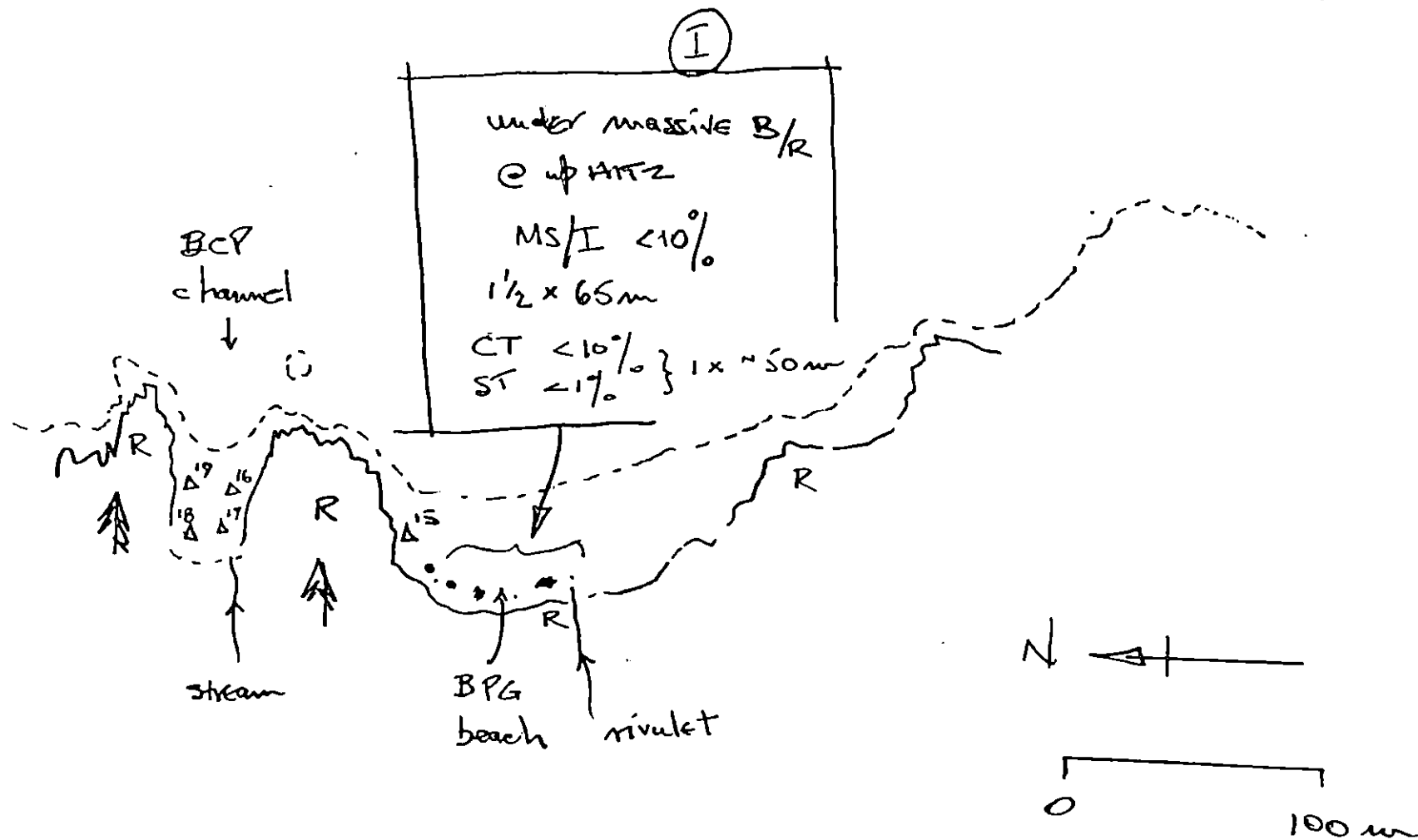
SC reviewed 5/12

CU-14A

G. MACDONALD

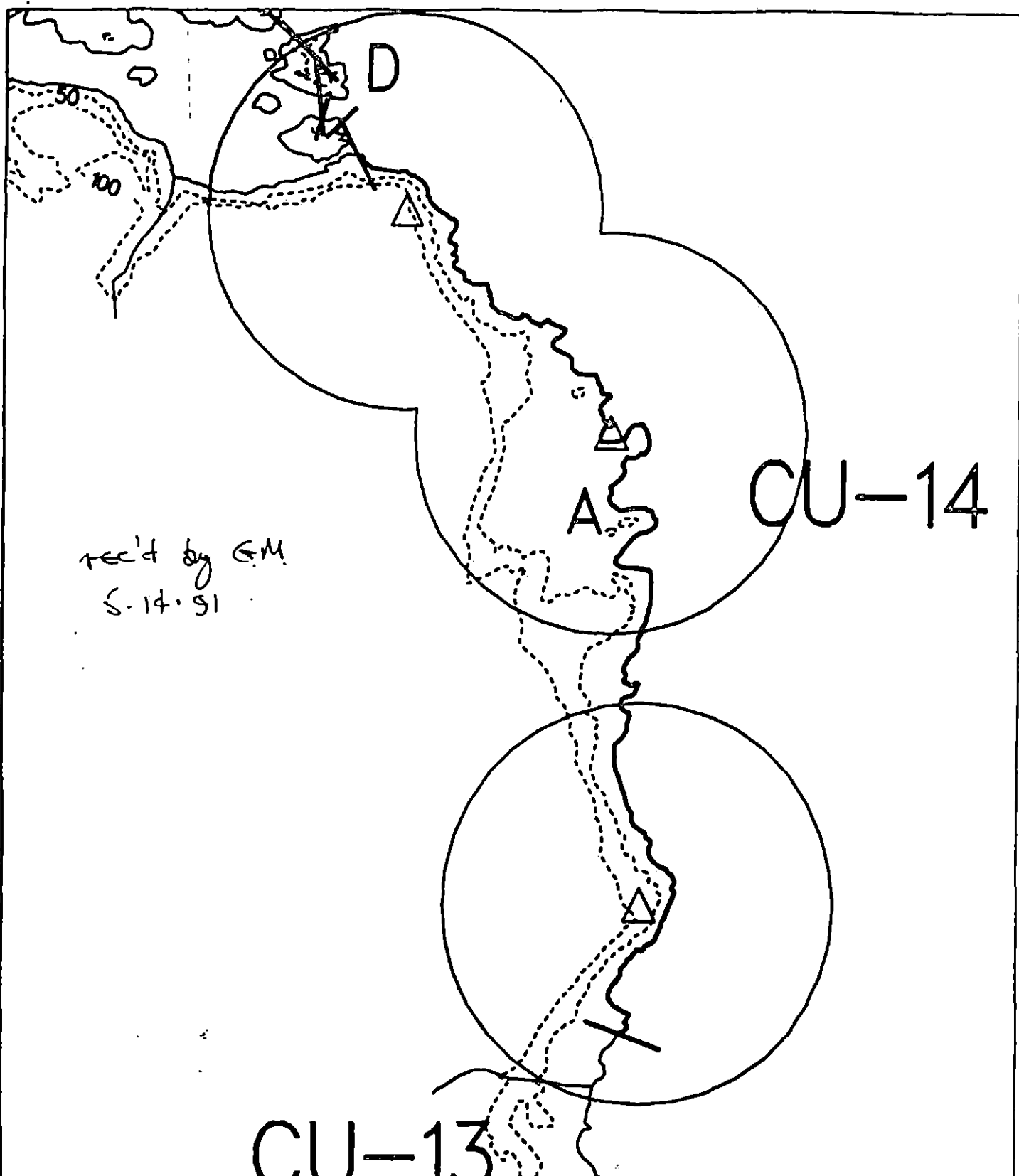
5.15.91

Sketch #5.



11.45 - 12.15 HLG
+ 4.0' - + 5 1/2' tide.

ES reviewed 8/17



CU014

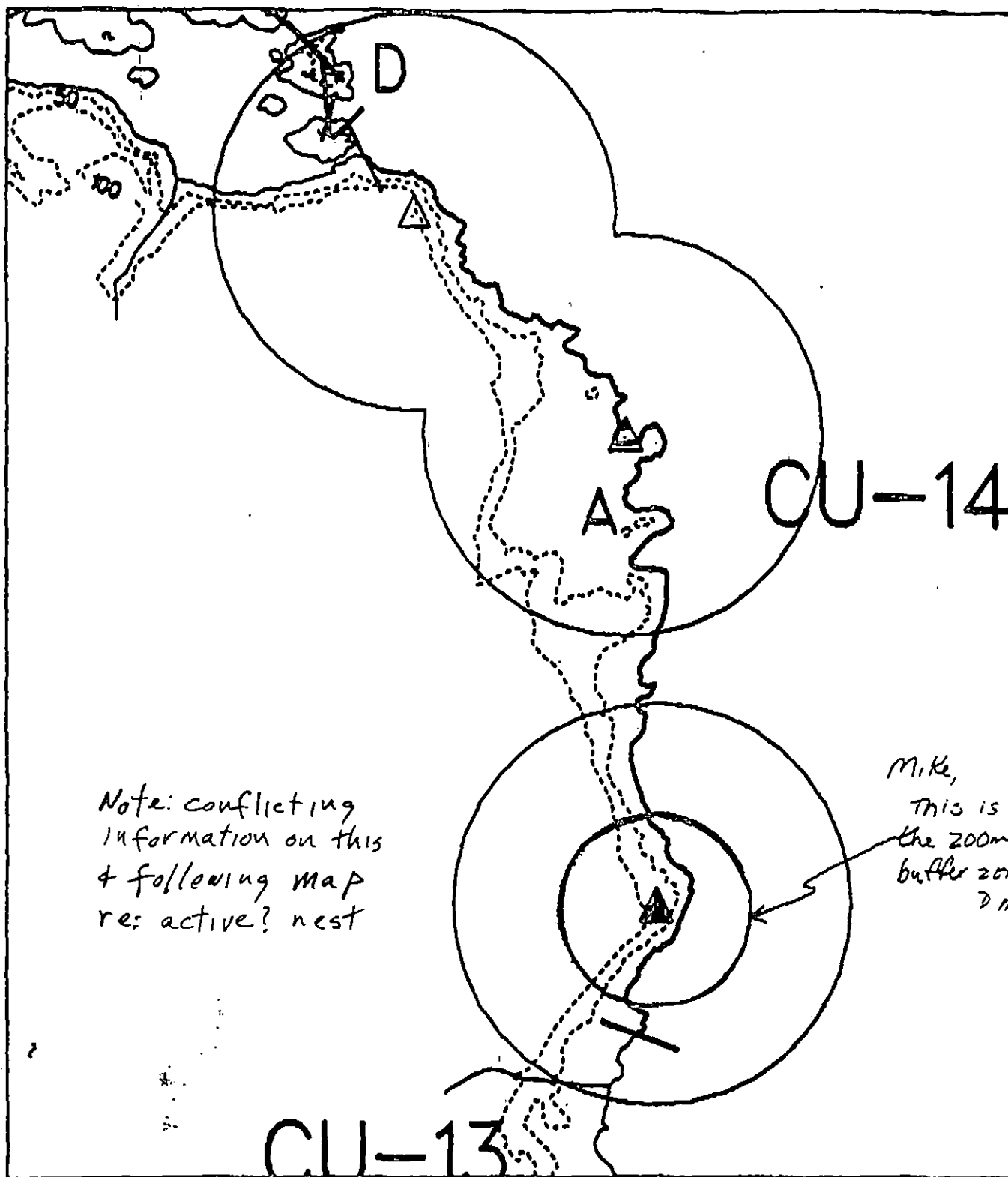
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AK State Plane Zone 4
psu014

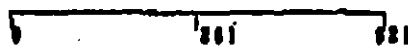


EAGLE NEST



CU014

W87820



AK State Plane Zone 4
950014

Segment Reference Map
Map Key: PUSCU014



EAGLE NEST

Reviewed M.B. 5/17/64
TODAY

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1 DATE 14 & 15 May 91
 SEGMENT # CV 014 TIDAL HEIGHT (Range) 2.0 - +7ft, 3.0 - 4.2 ft
 SUBDIVISION A BIOLOGIST Michael Fawcett
 SEA STATE 1 ft swell WIND SPEED/DIRECTION NE 10-15 knots
 PHOTOGRAPHS: ROLL # _____ FRAME # _____

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

Completed anadromous stream sites and two other sites with Tom Crowe (A&F+G monitor) on May 14; returned May 15 to survey 5th site (Sketch #5), see sketches 1-5 for descriptions of biota near each oiled site. Salmon fry were observed in the intertidal zone near the mouth of the smaller stream (#224-20-13034). SOR & CT Typically found in VTZ-SVTZ areas at +10-12ft MLLW, above most biota except lichen, limpets, Amphipods & oligochaete worms. MTZ areas below oil typically have dense Rockweed and barnacle spat, and variable densities of Littorinids, mussels, limpets, Rhidomela, etc. Whelks (*Nucella emarginata*) are abundant in MTZ-LTZ throughout the subdivision, *N. lamellosa* sparse.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	salmon fry
Seabirds			black prickleback
Waterfowl			
Gulls/kittiwakes	1 (G-W Gull)	3	
Shorebirds			
Corvids			
Other Birds			

LAND MAMMALS

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

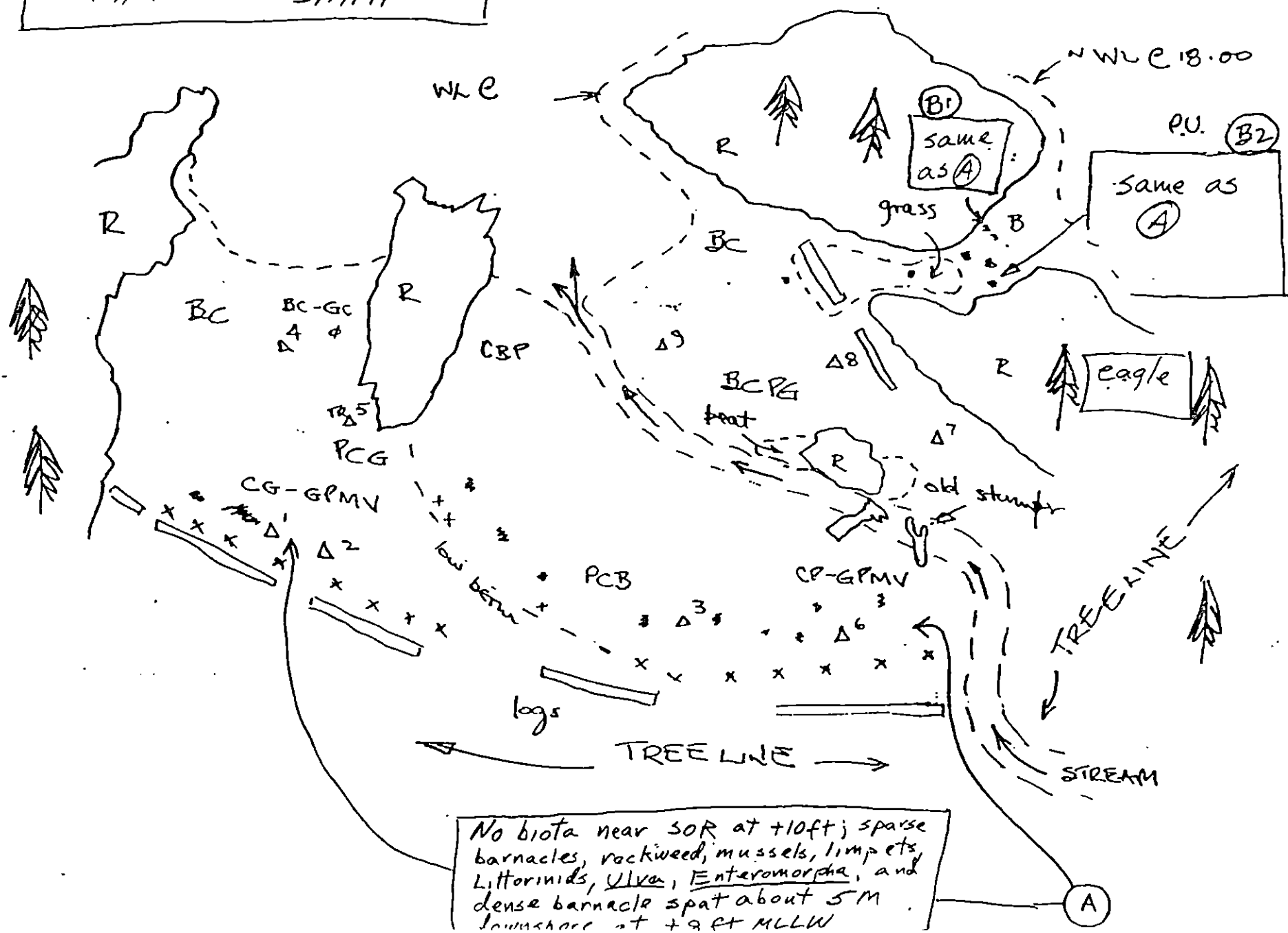
Shoreline subdivision map showing important biological features attached.

Reviewed M.B. ¹³ 5/17/91

M.H. Fawcett 5/14/91

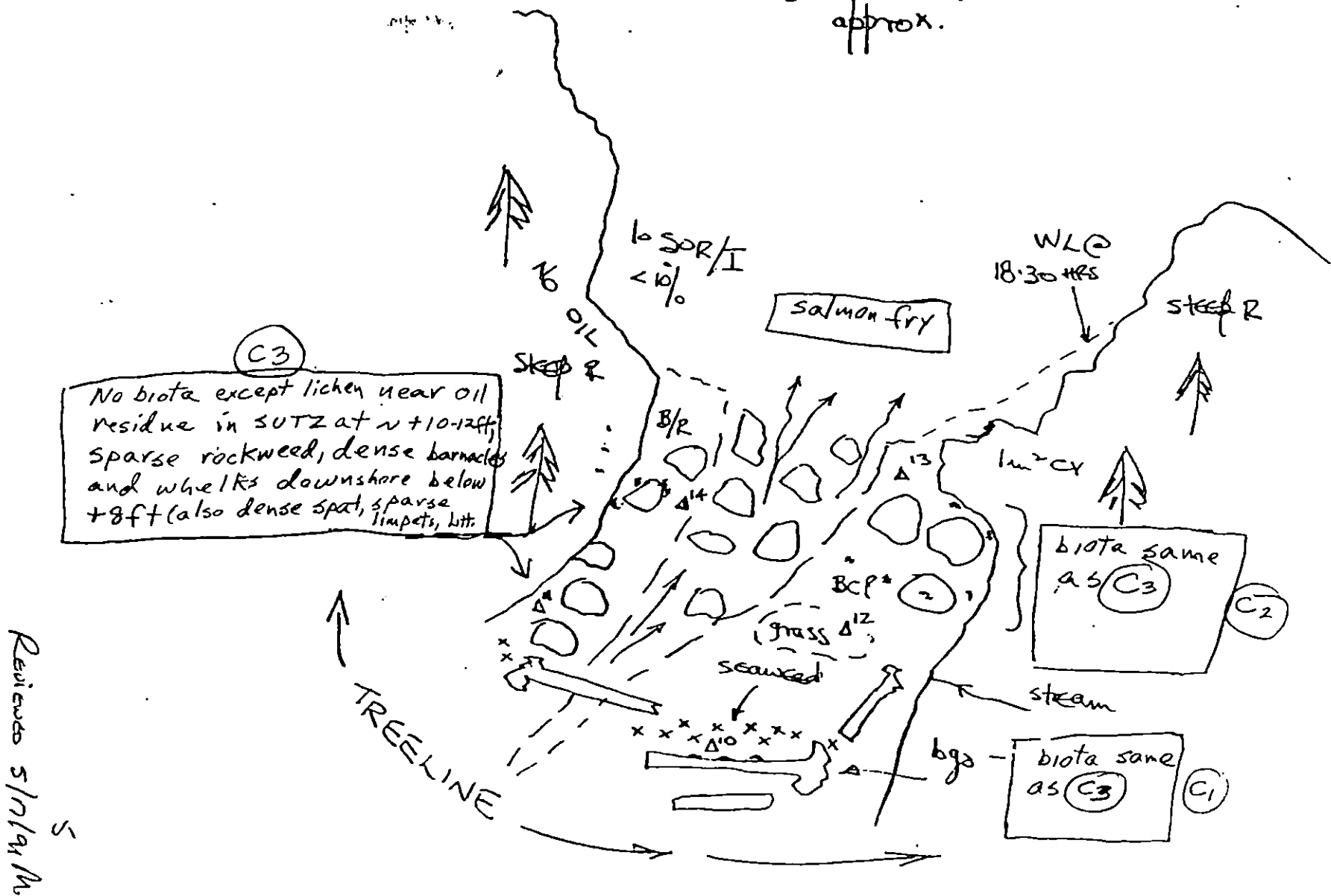
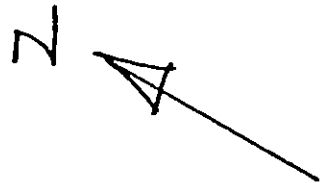
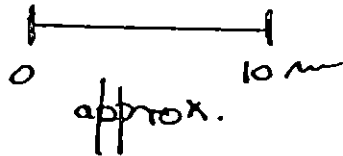


Sketch # 1



Bio Sketch Map M. Fawcett
ASC # 224.2013034
CU 014-A 5/14/91

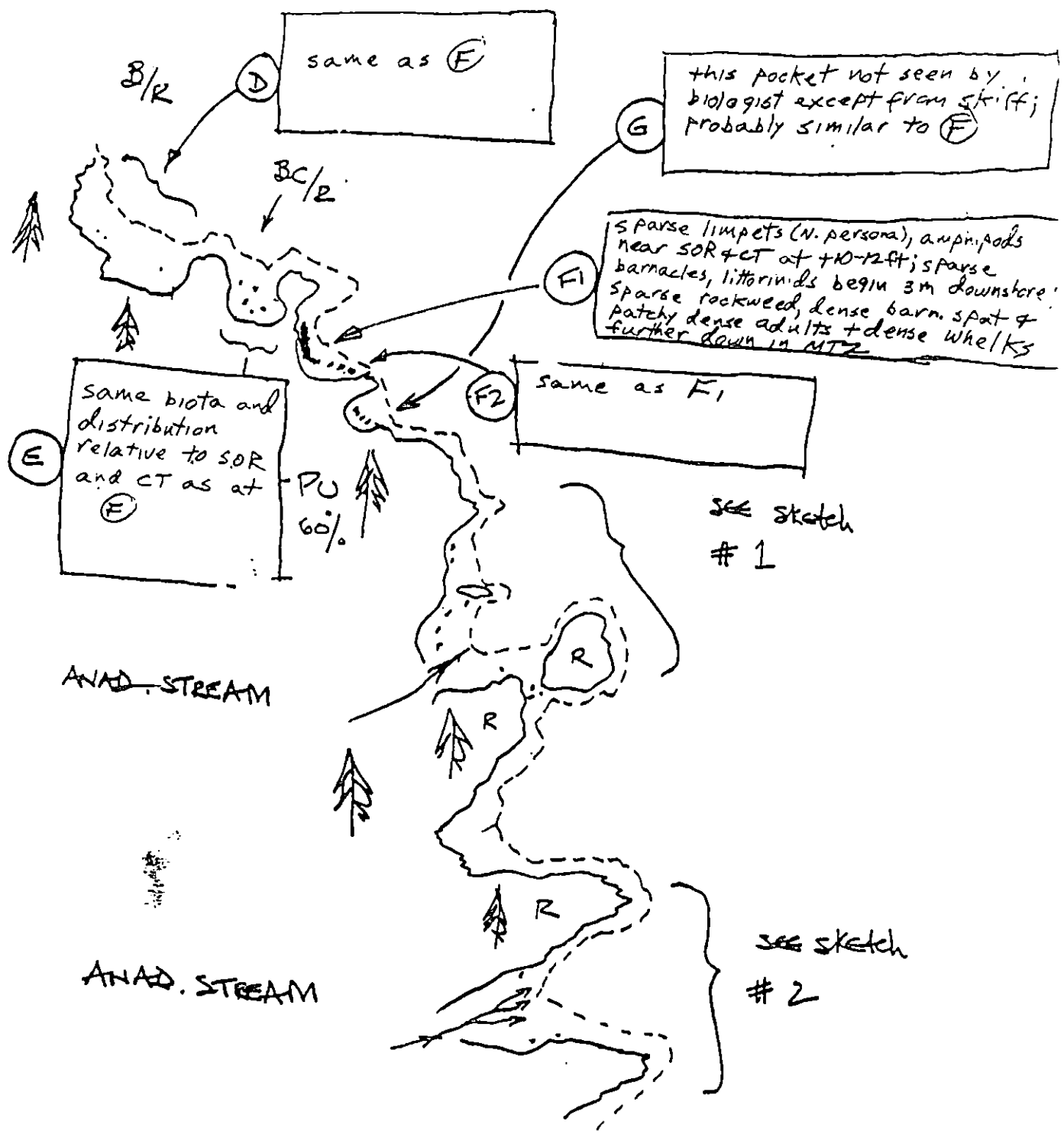
Sketch #2



BIO. sketch Map
 CU-14 A
 14 May 91
 M. Fawcett

Sketch #3

approx.
 0 100m



H-V. R clfts

(H)

No biota except lichen, terrestrial grass near SOR + CT at 10-12ft;
Tidepools 2m downshore with dense littorinids, plus hermit crabs, and coralline algae; rockweed, limpets, littorinids, sparse barnacles around pools on BR; LTZ-MTZ tidepools with typical diverse biota

massive B
over R

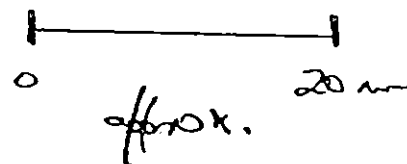
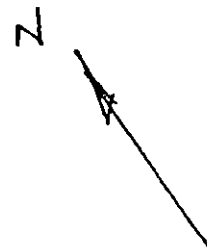
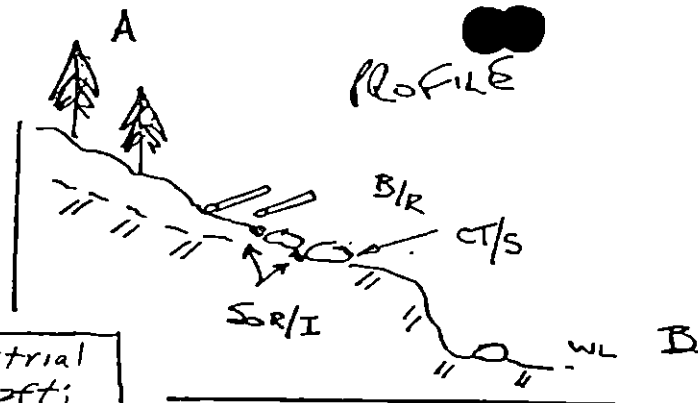
Bedrock bench
w/ massive B.

steep
R

Bio Sketch Map
CU 14A, 14 May 91
M.H. Fawcett

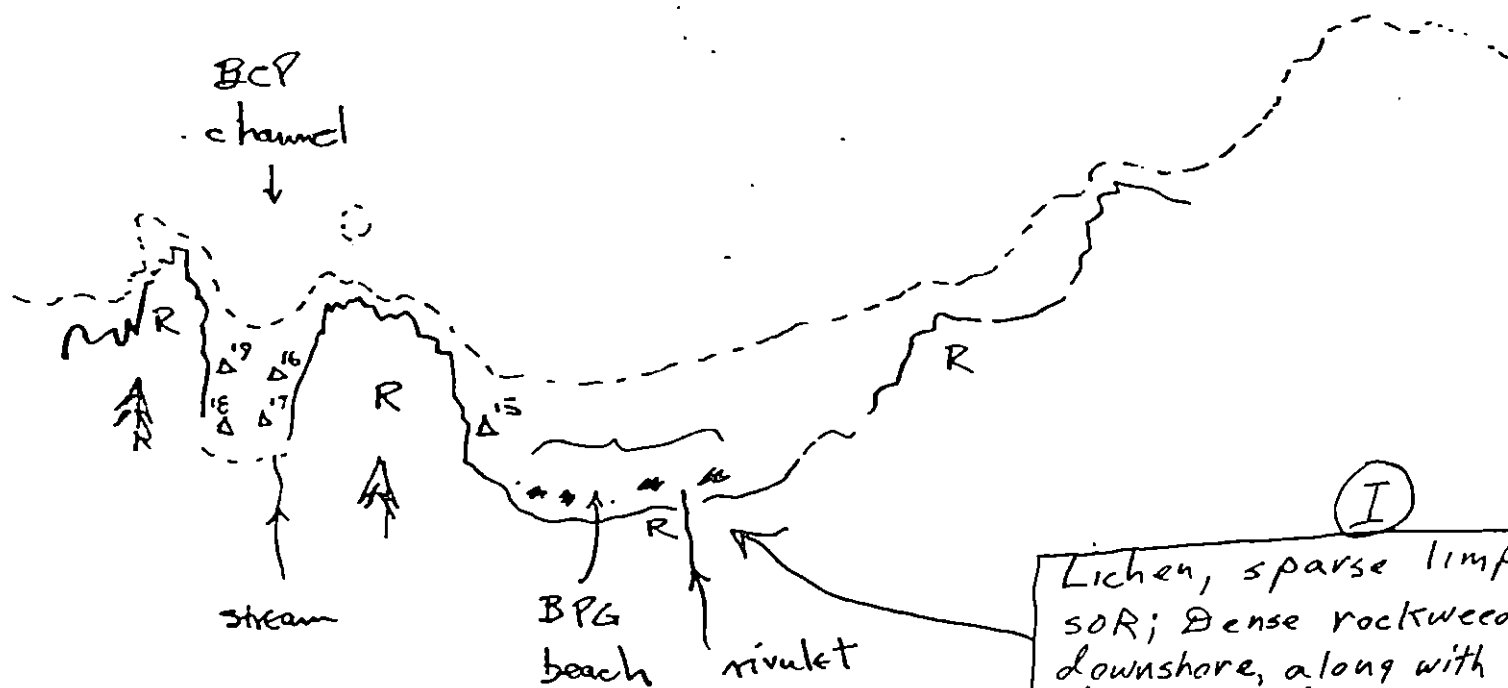
Sketch #4

PROFILE



BIO Sketch Map
CU-14A
15 May 91.
M. Fawcett

Sketch #5.



(I)
Lichen, sparse limpets near
SOR; Dense rockweed 5m
downshore, along with moderately
dense littorinids + limpets, patches
of dense barnacles, sparse patches
of young mussels

CV 14A Arr 1715 Fawcett
5/14/91 wind NE 5-10, rain

Site A / P. in salmon stream
1 eagle flew over
1 gull

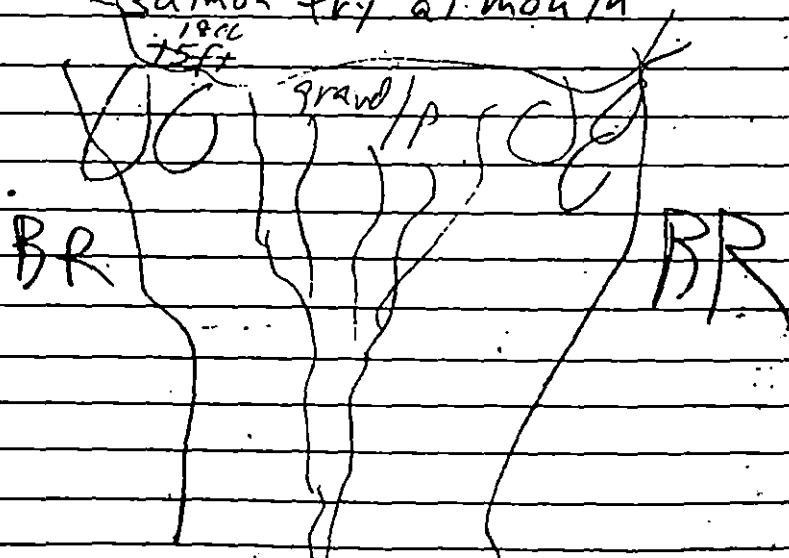
Site B 1800 hrs

smaller than stream (9)
steep shore, BR

sparse vegetation + 4-8 ft on boulders
4 BR - very dense bar, willows
no water in stream

salmon fry at mouth

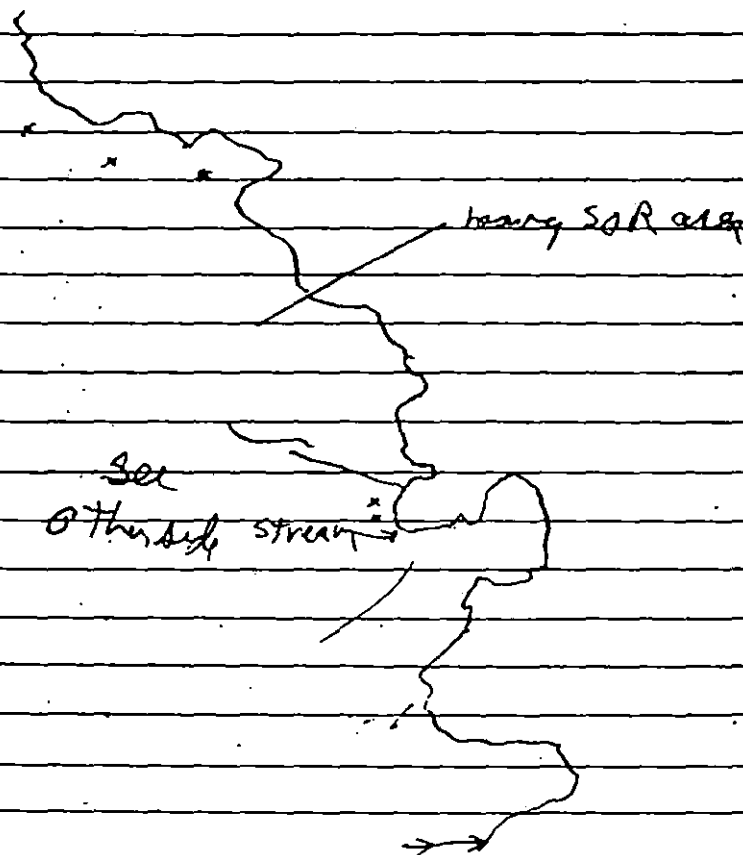
1800
75 ft



depart 1820, went north

CV 14A

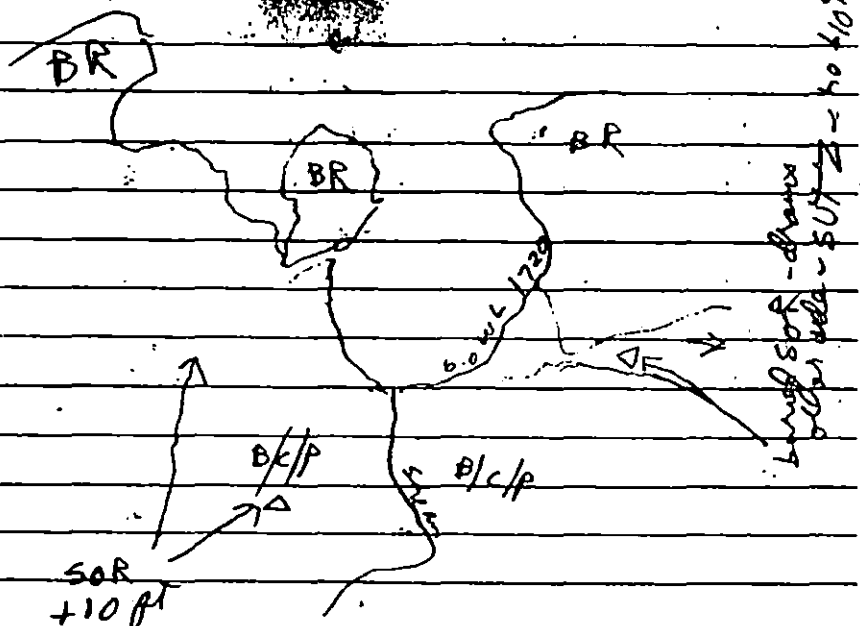
N
↑



over →

C^U 14a (cont) 5/14/91 Faircett

Site (A) 1715



no biota
sparse barn, limp, litt, ulva, Ectocarpus
macro, Fucus downshore - also dense spa +
5m at 18 ft

14 May (cont)

Site C - no SUTZ

slabs SOR + CT UTZ +10-14 ft. in

lee of outcrop - B/c/p - no biota
was upper end in SUTZ, but

3 dense Fucus & limpa near
SOR (picked up) at 10 ft,

dense Fucus barn, fil. reds
whelps, etc downshore, sloping

2m below at +8-9 ft - walked
north to end of subdivision -

same rel. dist. of biota &
traces of CT at 10 ft -

& *N. lamellosa* breeding under
ledge at +3 ft. near end of segment

1900 hrs - nearest SOR side 1 sea
Graham's map - 50% cover 14

UTZ - SUTZ +10-12 ft - only
biota are sparse *N. personä*, amph,
worms

- sparse barnacles, Litt begin 3m
downshore - some

Fucus further down at +4-5 ft
w/ dense barn, spat, polychaetes

adults, dense *N. lamellosa*
a few *N. lamellosa*

CU 14A (Cont) 14 May, Fawcett
125 1930 hrs

last mile, south end of
Segment SOR, CT in VTZ-SUTZ
10-12 ft boulders above biota - 2m

down shore on BR bench are
pools w/ Litho, hermits, Litt,
but sparse algae ^(mostly Littorines) mod-
dense Fucus on BR around pools -
Litt, lump, sparse barn

- pools in LTZ-MTZ w/ rich
biota - very dense N among
all over the subdivision

gulls

Finish 1945

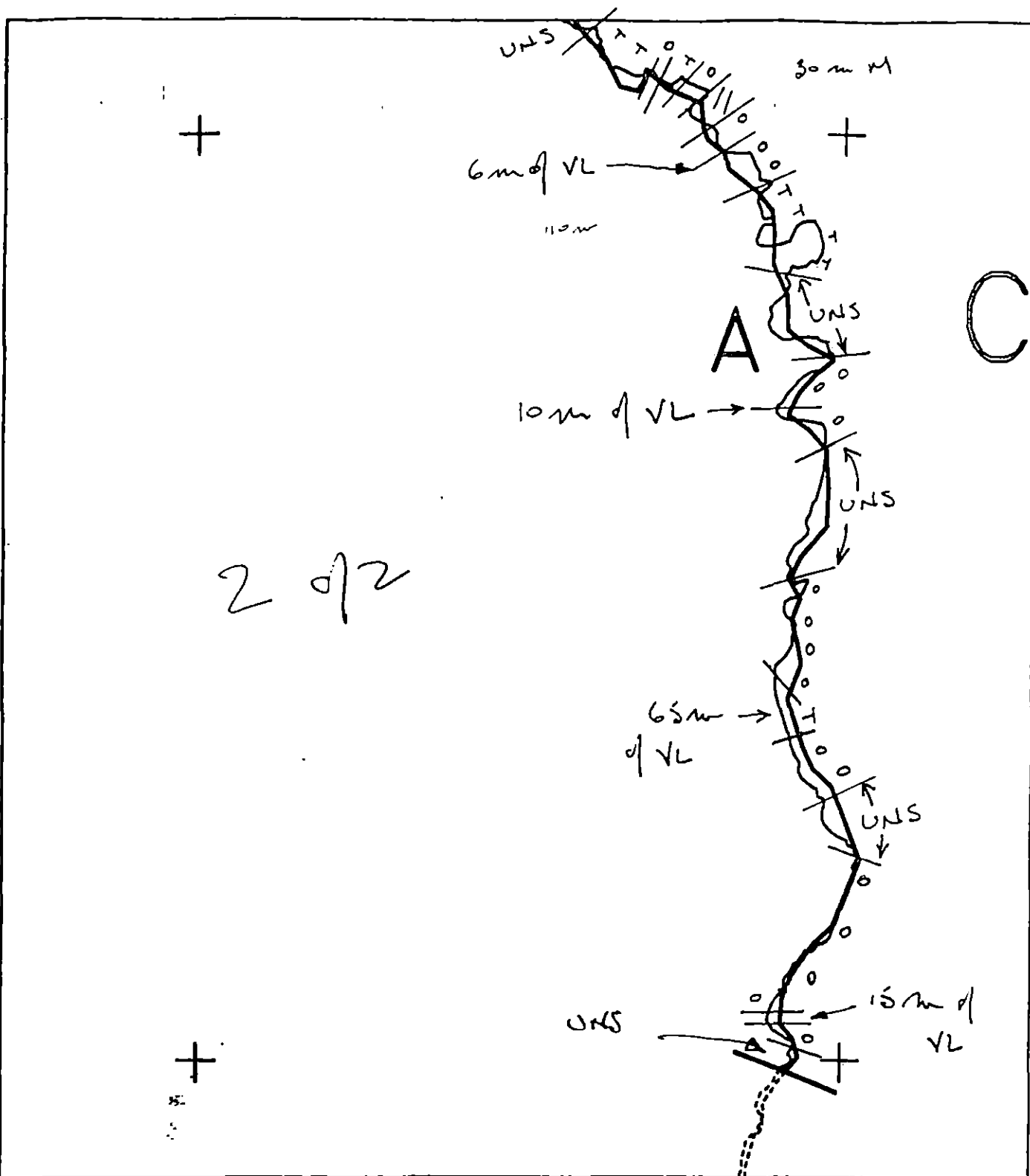
15 May 91 Returned to CU 14A
11:45 hrs - area missed
yesterday -

- shallow B/c core - SOR SUTZ
in crevices of core - no biota except
sparse limpets down to at ~8 ft - dense
Fucus - sparse barn (some dense
patches, mod. Litt, lump,
sparse mussels

sparse Rhodo, Urosalpinx, U/14
LTZ - purple backs, breeding
Litt, dense spat

Band of SOR just at edge of
N perimeter & Litt. - limpets
very dense (10-20 per boulder)
just below and (+8-10 ft

Finish 1215 hrs



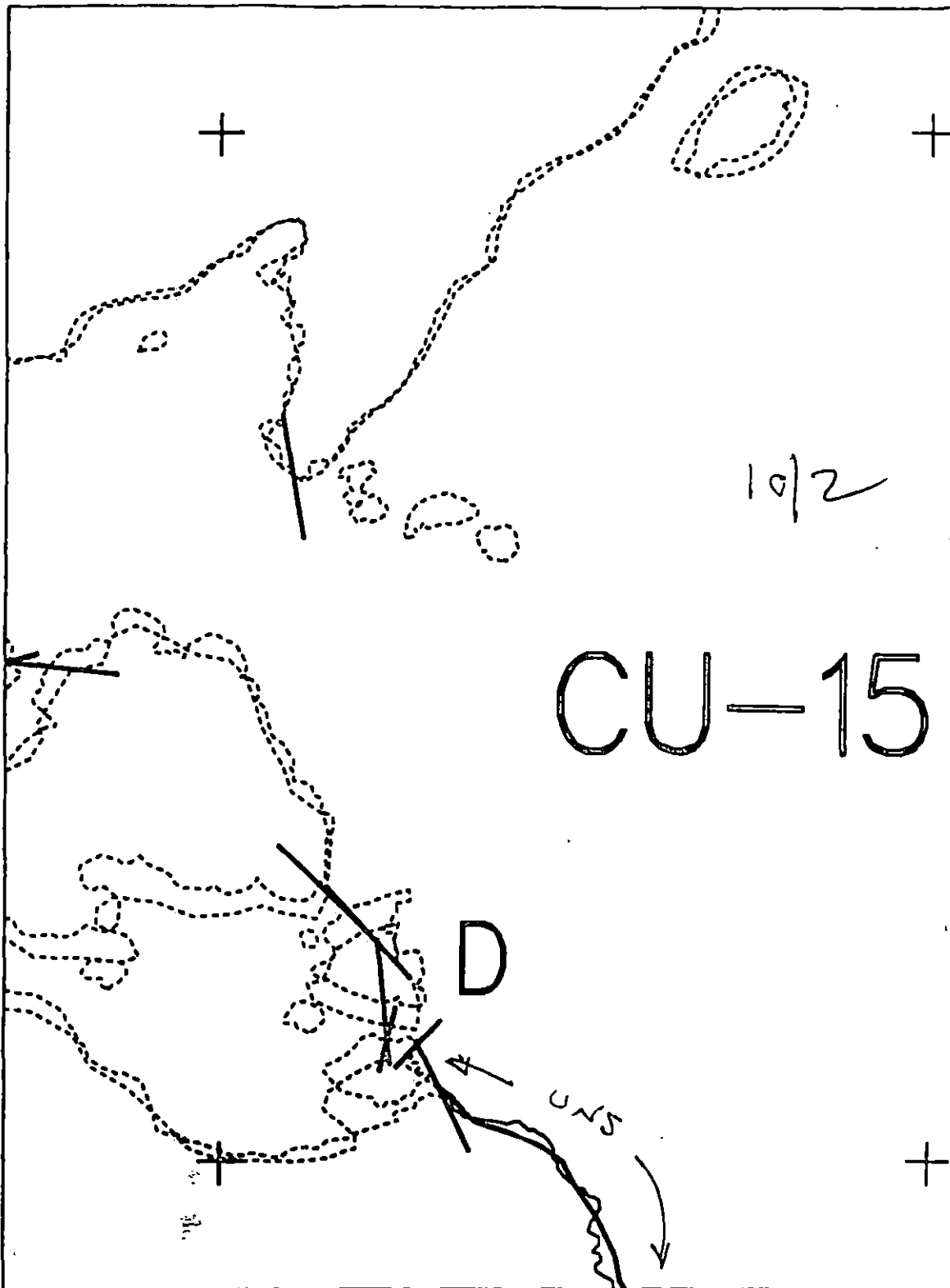
XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

CU014 A
 ADEC Subsegment Length: 2293m
 METERS
 0 200 400
 AK State Plane Zone 4
 pseud1400



Subdivision Field Map
 Map Key: PWSCU014Aa
 Name: G M
 Date: 5-15-91
 Date Entered:

revised 5/16/91 Kio
 10
 ES revised 5/17



CU-15

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

CU014 A
 ADEC Subsegment Length: 2293m
 METERS
 0 200 400
 AK State Plane Zone 4
 p000140b



Subdivision Field Map
 Map Key: PWSCU014Ab
 Name: GM
 Date: 5-15-91
 Date Entered:

revised 9/10/91 K6
 95 revised 5/17

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/CH-14

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ CH-14 SUBDIVISION A (1 OF 1) DATE 4/19/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 226-20-16255

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

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

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

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

6Y Recreation: Special use destination

7HH Subsistence area: Finfish harvesting

7JJ Subsistence area: Invertebrate harvesting

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 23 m: V.Light 867 m: No Oil 166 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

☒ X No Treatment Recommended
☐ Treatment Recommended
☐ Manual Pickup
☐ Bioremediation
☐ Tarmat Removal

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

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

1A
1B

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

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

No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream. 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
3O, 3Q

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

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

Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts.

5R

Seabird colony (5/1 to 9/1)

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

5S

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

Restrict all activity to essential minimum, especially air traffic.

5T

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

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

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

6U

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

6V

Anchorage (6/1 to 9/15)

6W

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

6X

Lodge (6/1 to 9/15)

6Y

Special use destination

7Z

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

7HH

Finfish harvesting

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 / CH 14 SUBDIVISION: A (ENTIRE SEGMENT) DATE 4/19/90

USCG
NAME PS3 SCHULTZ SIGNATURE [Signature]

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ADEC
NAME MIKE EBEL SIGNATURE [Signature]

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

CH-14-A: a very light band, widespread along length of segment ~~was~~ consisted mostly of scattered coats, stains, and covers within the UTZ. Small patties of loose asphalt grading in size down to tar balls were found and broken up; collectively there was perhaps 1 bag by volume. The area had appeared to be well washed through the winter, judging from remnant stains and degrading coats. No further treatment recommended.

LAND MANAGER - CVC

NAME PAT SELANOFF SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

oil is oil. If ~~one~~ one had splashy stains & coats in his front yard you wouldn't just break it up and let nature take its course, ~~one~~ ^{one} would take time to pick it up manually. Manual pick up of asphalt pavement and Bioremediation would be my recommendation.

SHORELINE OILING SUMMARY

REVISION NO. 06/13/89

OG Randy Siegel USCG Jerry Schultz SEGMENT ST/ CH-14
 BIO Louis Sharnen LAND REP Pat Selmon (cde) SUBDIVISION A (1 OF 1)
 EXXON Leonard Herbert ADEC Mike Ebel TIME 13:50 to 15:00
 TEAM NO. 12 TIDE LEVEL 3' to 2.15' DATE 4/19/90
 EST. SUBDIVISION LENGTH: 1019 m ☐ Sun ☐ Clouds ☒ Fog ☒ Rain ☐ Snow 57°
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 25 % B 25 % C 20 % P 15 % G 15 % S 0 % M 0 % V 0 %
 SLOPE: Long 20 % Hang 80 % Vert 0 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 12 m VL 932 m NO 75 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	R	B	C	P	1	2	3	4	5	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				X		X				X			
FILM													
NO OIL										X		X	X

PAVEMENT H F (S) 12 sq. m by 1 cmPATTIES / TARBALLS 1 BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS?

YES ☐ NO ☒

TYPE _____

#BAGS _____

Photographs: NONERoll No. 37-12-7Frames 5

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					BELOW	OIL / FILM COLOR					PIT ZONE				A N A	SHEEN (Y/N)	▽	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		1	2	3	4	5	SU	U	M	L				
1	25					X	0.0	X						X				-	-	G, R
2	15					X	0.0	X						X				-	-	S
3	20					X	0.0	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				N	20	G

COMMENTS

The segment western portion of the segment is hi-angle bedrock with occasional pocket beaches - the eastern end portion of the segment is a gravel beach with low-angle slopes. Very light oiling across much of the segment. Stain-coat on boulders. Towards the eastern end, along the gravel beach a band of small tarballs or tarballs with /S distribution was observed. Occurred as isolated tarballs on gravel. They were broken up by shovels where found.

REVIEWED JW DATE 4-20-90

NO. Bandy-Siegel

SEGMENT ST/

SUBDIVISION A

DATE 4/19/90

CHECKLIST

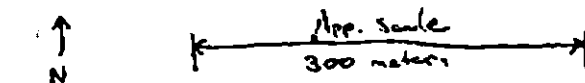
- ✓ M Area
- ✓ Approx. Scale
- ✓ Seg/Sub Entry
- ✓ Oil Det.
- Width
- Length
- % Cover
- ✓ Substrate Character
- ✓ Est. HW/LW
- ✓ SSI
- ✓ Profile Location(s)
- ✓ Profile(s)
- ✓ Pit Location(s)
- ✓ Photo Location(s)

LEGEND

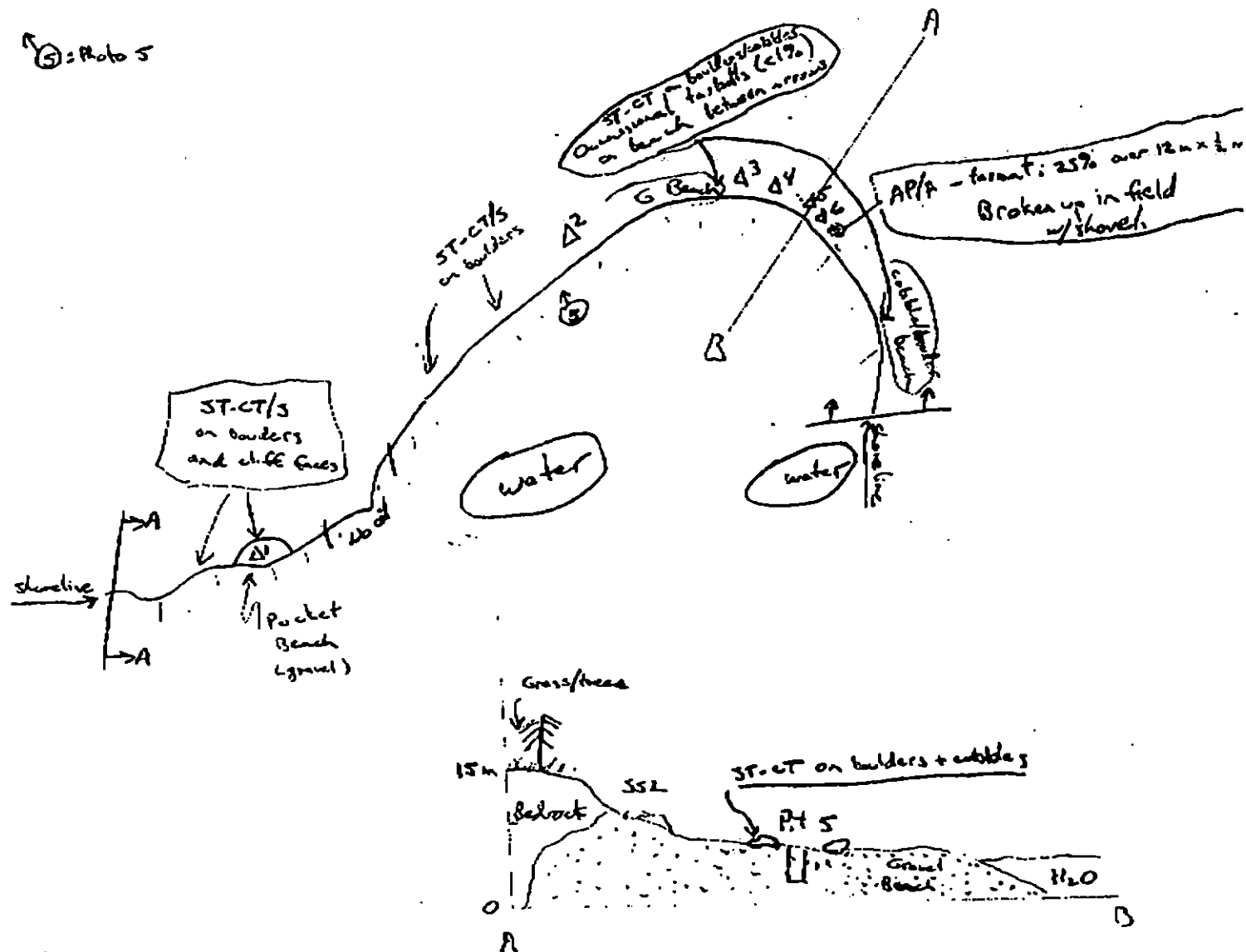
- 1 Δ
- Pit - No Subsurface Oil
- 2 Δ
- Pit - Subsurface Oil
- CT/C
- Continuous Distribution
- CT/B
- Broken Distribution
- CT/P
- Patchy Distribution
- CT/S
- Splashed Distribution
- lll
- Med Vegetation
- 1 ●
- Photo location, direction, and number

4/39

SKETCH MAP



⑤ = Photo 5



Character Length (m): AP 12 PO 0 CV 0 CT 100 ST 100 MS 0 PT 0 TB 10 FL 0 NO 75

REVISION 02/0000

SHORELINE ECOLOGICAL SUMMARY (Page 1 of 2)

REVISION: 00

Segment ST/ CH-14 Subdivision A Date (mo / day / yr) 4/19/90Time (24 hr) 1350-1455 Biologist SHARMAN(A) Substrate type and % of segments: SUBDIV.
(1) Bedrock 25 (2) Boulder 25 (3) Cobble 20 (4) Pebble 15 (5) Sand 15 (6) Silt 0 ^{+ granules}(B) Overall % cover of biota (% of segment): Dense 0 Moderate X Low 0
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. ST-12-7Frames 5

BARNACLES

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	X	X	2	(1U)	(1M)	2
3	3	3	3	3	3	X	X	3	(2)	(2)	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 PRESE

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	(3)	2
3	3	3	3	3	3	3	3	3	3	(3)	3
4	4	4	4	4	4	4	4	4	4	X	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESE

GASTROPODS (ALCELA, LITTORINA, LIMAETS)

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	(3)	(3)	2
3	3	3	3	3	3	3	3	3	3	X	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESE

FUCUS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	X	X	2	(1U)	(1M)	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 PRESE

Wildlife Observations/ General Comments: Did not observe LITZ. Deer tracks common in the supratidal. The first green of the year (terrestrially) has emerged during the past week, and the deer are grazing the early young shoots of the beach myrica (*Salix myrica*) along the supratidal fringe. The segment similar ecologically to CH-14 (see that Ecological Summary). Substantial very abundant barnacle recruitment, reasonable (cont)

Ecological Considerations:

There are 7 resource sensitivities listed for this segment from catalogued data: Salmon fry outmigration (Code 1A); Salmon Spawning (Code 1B) - both for anadromous stream # 226-20-16255; Special Use Destination (Code 6Y); Tent sites (Code 6U); Anchorage (Code 6V); Subistence finfish harvesting (Code 7HH); and Subistence Invertebrate Harvesting (Code 7JJ). The mapped catalogued anadromous stream appears to be a small stream coming out at the old village site. This stream does not look to be anadromous to me, and Pat Schell / then maybe has no clear list of list & ... (5)

Sherman
4/19/90General Comments (cont.):

Mussel recruitment among relatively sparse mussel patches, good Fucus recruitment (again primarily within and at margins of Fucus patches). Fittorina appear to be recruiting very well in the MTE (egg masses beneath boulders in this zone) - the sub-boulder habitat generally is relatively depauperate (spat, a few limpets, a few amphipods). Montellia is fairly important in the MTE (some recruitment as well) - as is Nucella. Natural barnacle mortality is 10-20% in this segment, but ranges 40-60% within the oil coat band across bedrock/boulder faces in the UTE. Outside the oil band, however, a generally healthy and normal intertidal community.

Ecological Considerations (cont.):

that it is not a salmon stream. If it is in fact anadromous it and the immediately adjacent shore/banks should be recognized as particularly sensitive to human disturbance (primarily trampling and other forms of physical sediment disturbance). Apparently, incubating eggs as well as rearing and outmigrating fry are sensitive to minute quantities of oil. I'm unsure the extent to which they are threatened by the current presence nearby of weathered, "very light" oiling. The Code 7 subsistence resources are likely quite sensitive to (or in the case of invertebrates possibly made unusable by) any considerable human disturbance, especially if it involves re-mobilizing any oil.

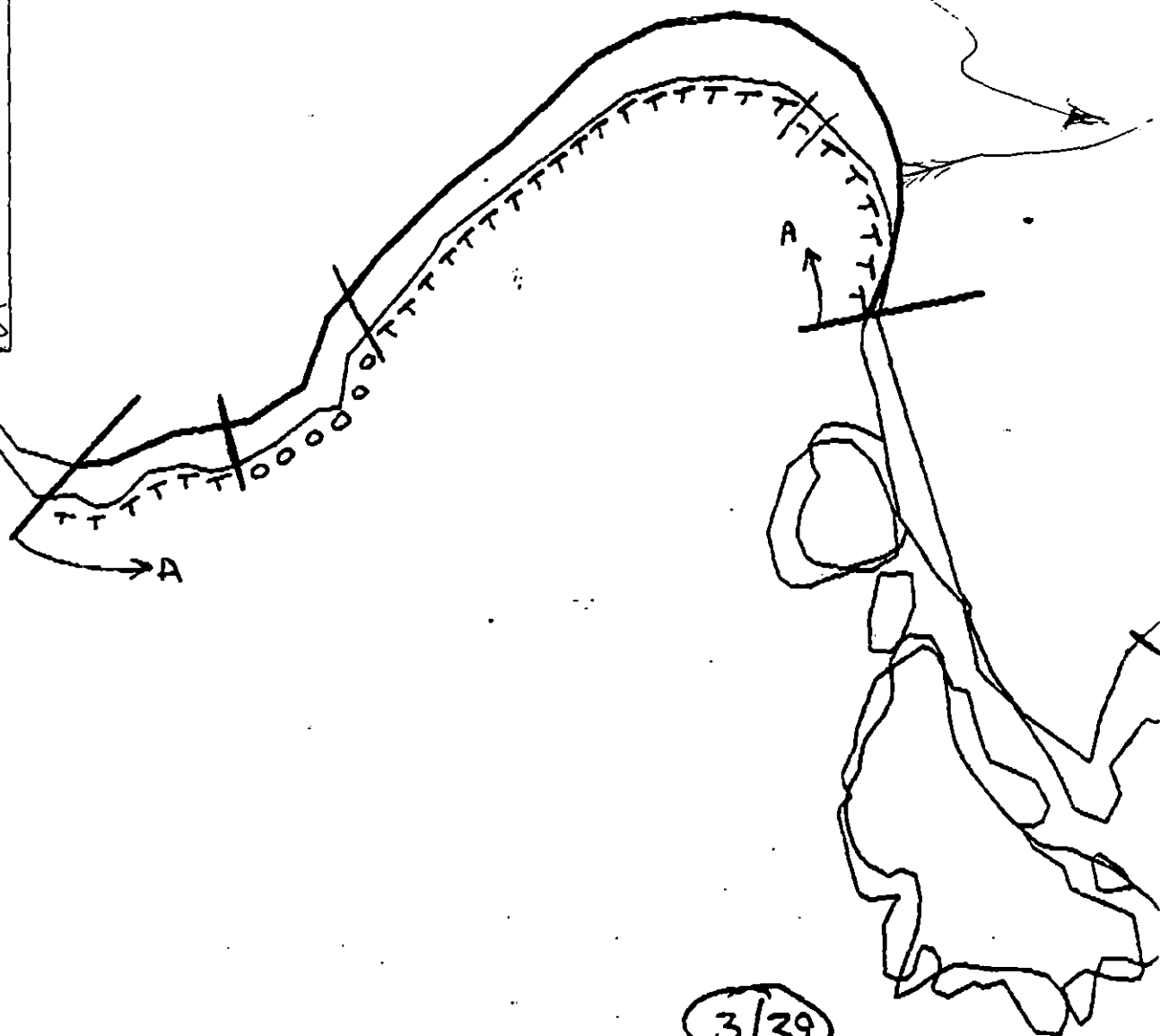
ECOLOGY MAP

CH-14

ANADROMOUS
STREAM

226-20-16255

1A 1B
6.U
6V
6Y
7HH
7JJ



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

CH-14

ADEC Segment Length: 1056m



3/39

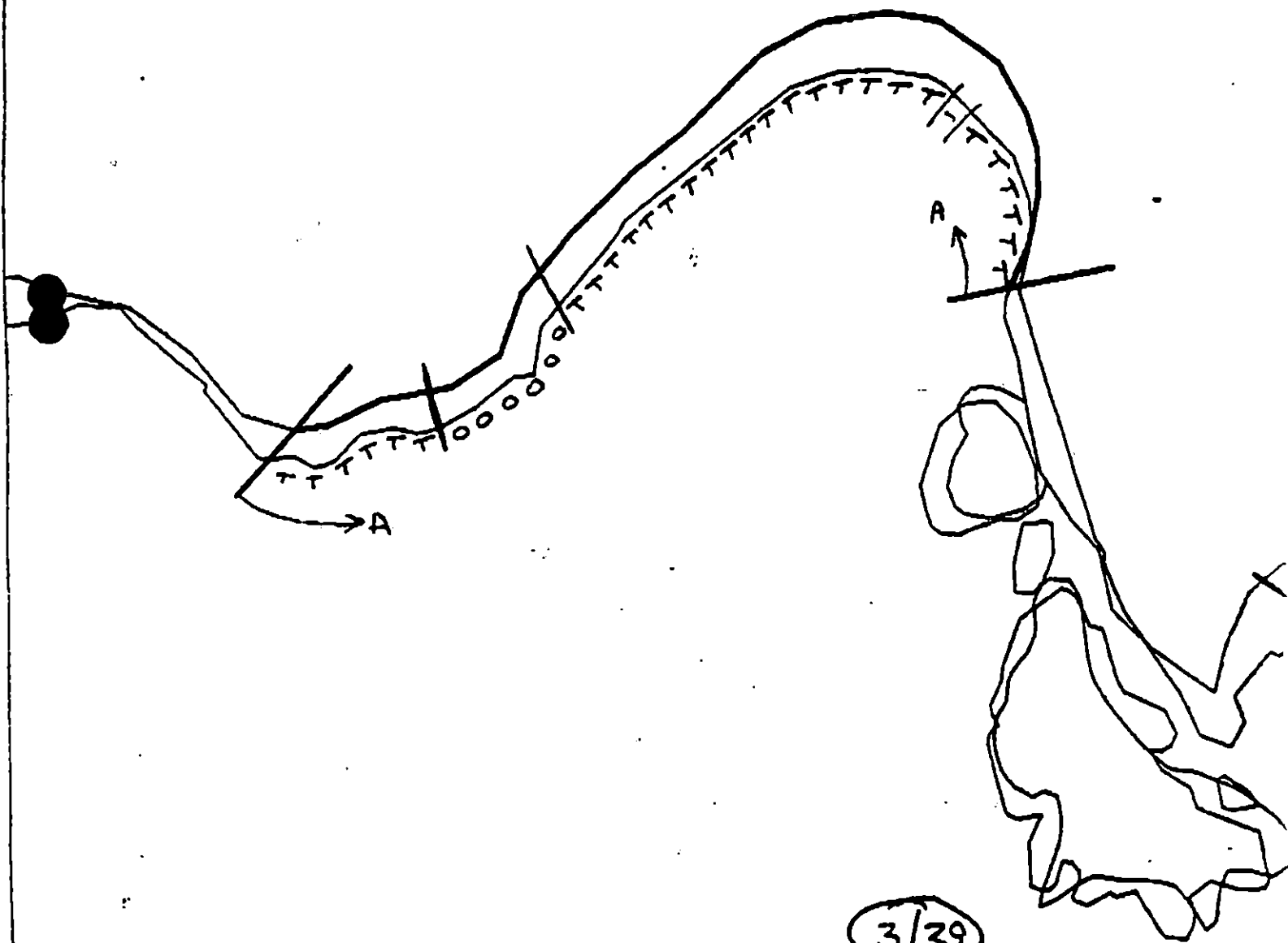
Map Key: PWS-40

Name: Randy Siegel

Date: 4/19/90

Scale: 1:1000

CH-14



XXX Wide

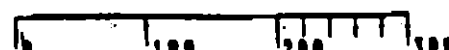
/// Medium

--- Narrow

TTTT Very Light

CH-14

ADEC Segment Length: 1056m



3/39



Map Key: PWS-40

Name: Randy Siegel

Date: 4/19/90

SHORELINE EVALUATION

SEGMENT ST/ CH-14 SUBDIVISION A (1 OF 1) DATE 4/19/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 226-20-16255

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

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

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

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

6Y Recreation: Special use destination

7HH Subsistence area: Finfish harvesting

7JJ Subsistence area: Invertebrate harvesting

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 McManis

DATE: 5/1/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 23 m: V.Light 867 m: No Oil 166 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

X No Treatment Recommended

 Treatment Recommended

 Manual Pickup

 Bioremediation

 Tarmat Removal

 Snare/Absorbent Booms

 Oil Snares (pom poms)

 Absorbents (pads, rolls, etc)

 Spot Washing: Wands

 Beach Cleaner

 Other (see comments)

COMMENTS:

TAG COMMENTS:

MONITORS TO ASSESS SIGNIFICANCE OF AMT.
REMAINING ASPHALT + TARBALLS TO DETERMINE NEED FOR
RETRIEVAL

TAG APPROVAL DATE: 4/30/90.

ADEC ART WEINER

EXXON ANDY TEAL

NOAA GARY PETERSON

USCG KENNETH KEANE

FOSC:

DATE: 5-12-90

Segment ST/CH-11

Subdivision A

Date 4/19/90

Checklist

1. N Arrow

2. Approx. Scale

3. Seg/Sub Bdry

4. Oil Dist.

5. Width

6. Length

7. % Cover

8. Substrate Character

9. Est. HML/LWL

10. SSL

11. Profile Location(s)

12. Profile(s)

13. Pt Location(s)

14. Photo Location(s)

Legend

1. Δ

No Subsurface Oil

2. Δ

Subsurface Oil

CT/C

Continuous Distribution

CT/B

Ben Distribution

CT/P

chy Distribution

CT/S

ashed Distribution

ree

nd Vegetation

→

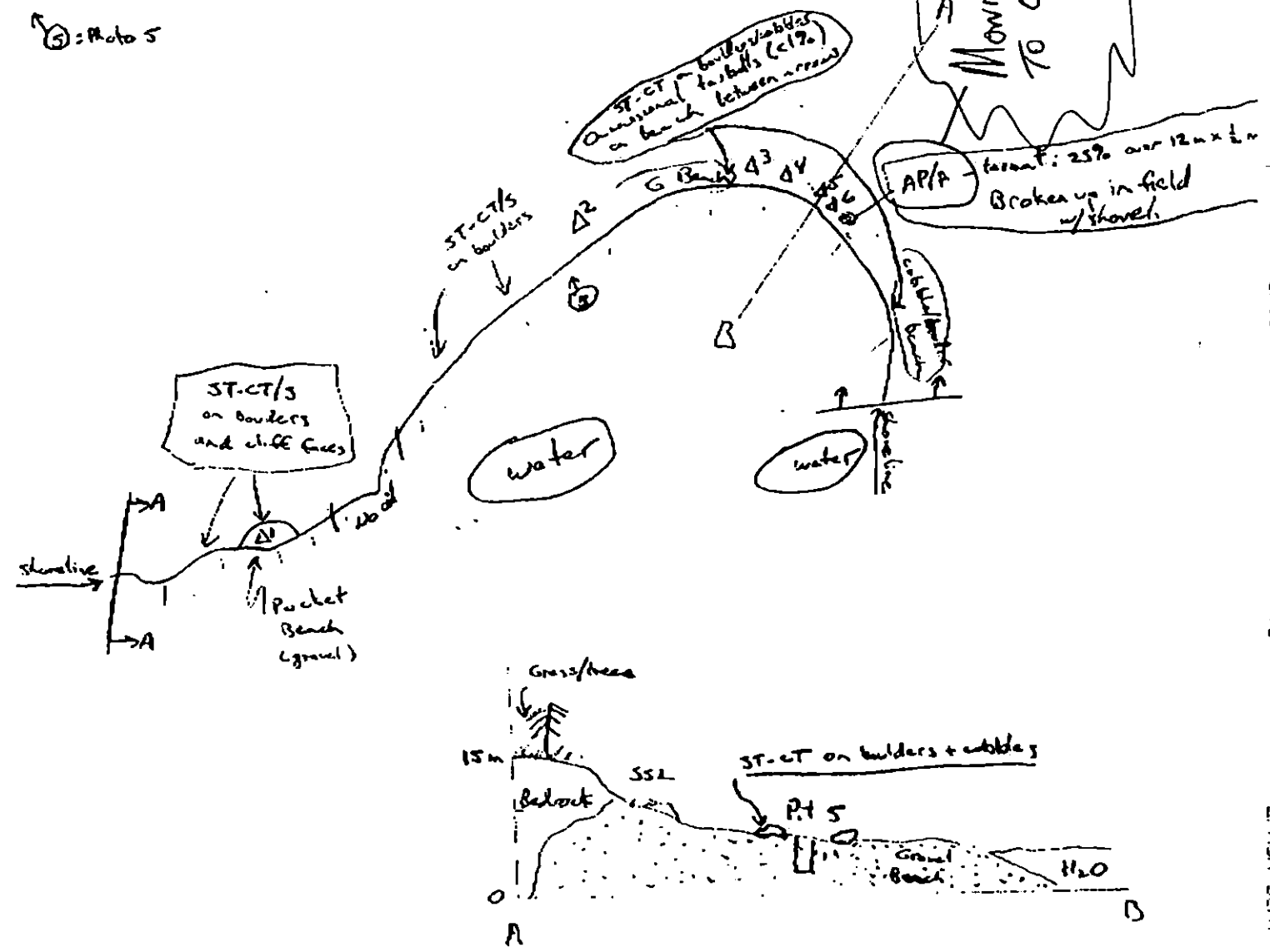
to location, direction, number

SKETCH MAP

N ↑

App. Scale
300 meters

⑤ = Photo 5



4/39

Character Length (m): AP 12 PO 0 CV 0 CT 100 ST 100 MS 0 PT 0 TB 10 FL 0 NO 75

REVISION 12/04/90

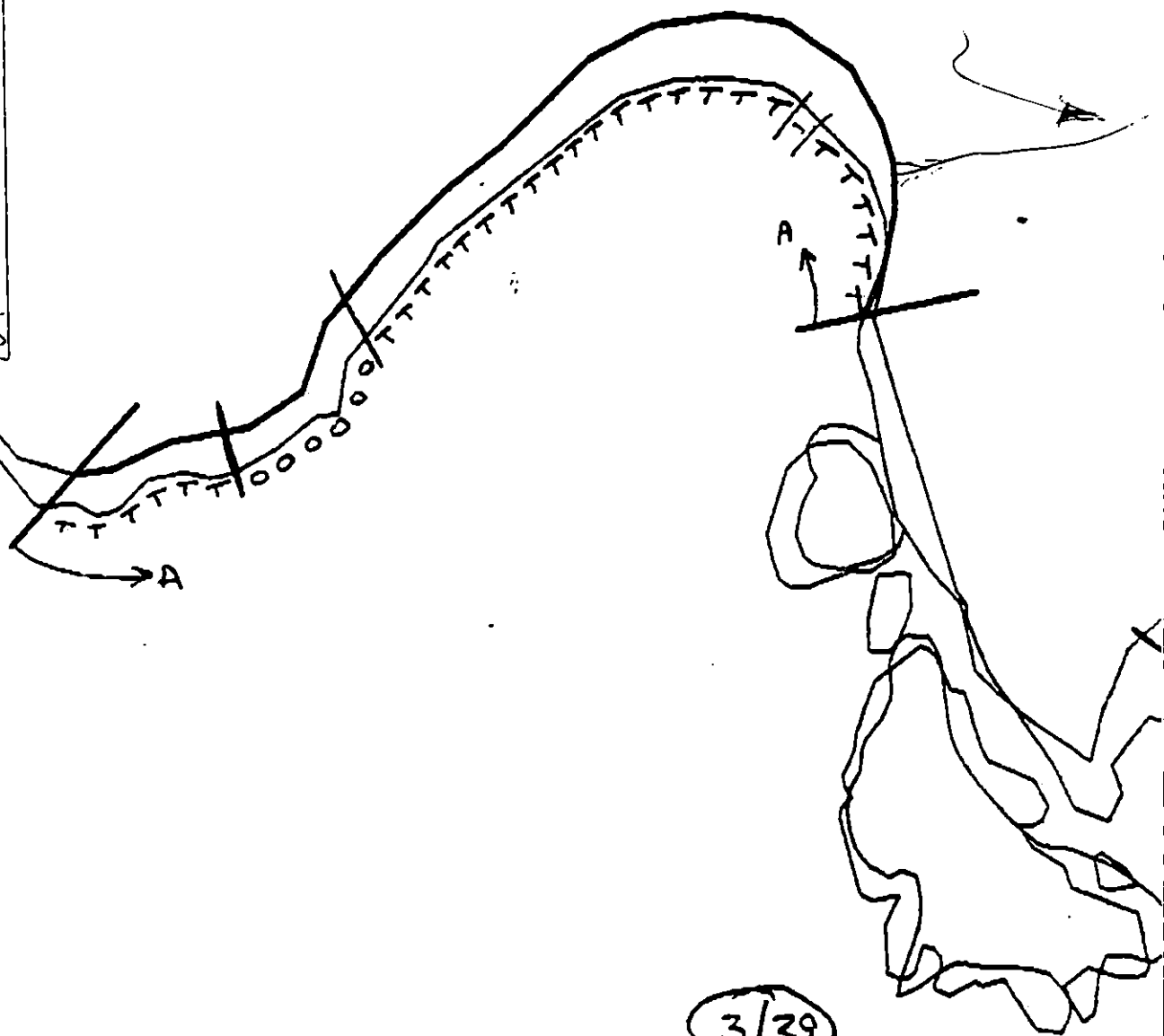
ECOLOGY MAP

CH-14

ANADROMOUS
SILVER M.

2.26-20-16255

1A 1B
6U
6V
6Y
7HH
7JJ



XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

OOOO No Oil

CH-14

ADEC Segment Length: 1056m



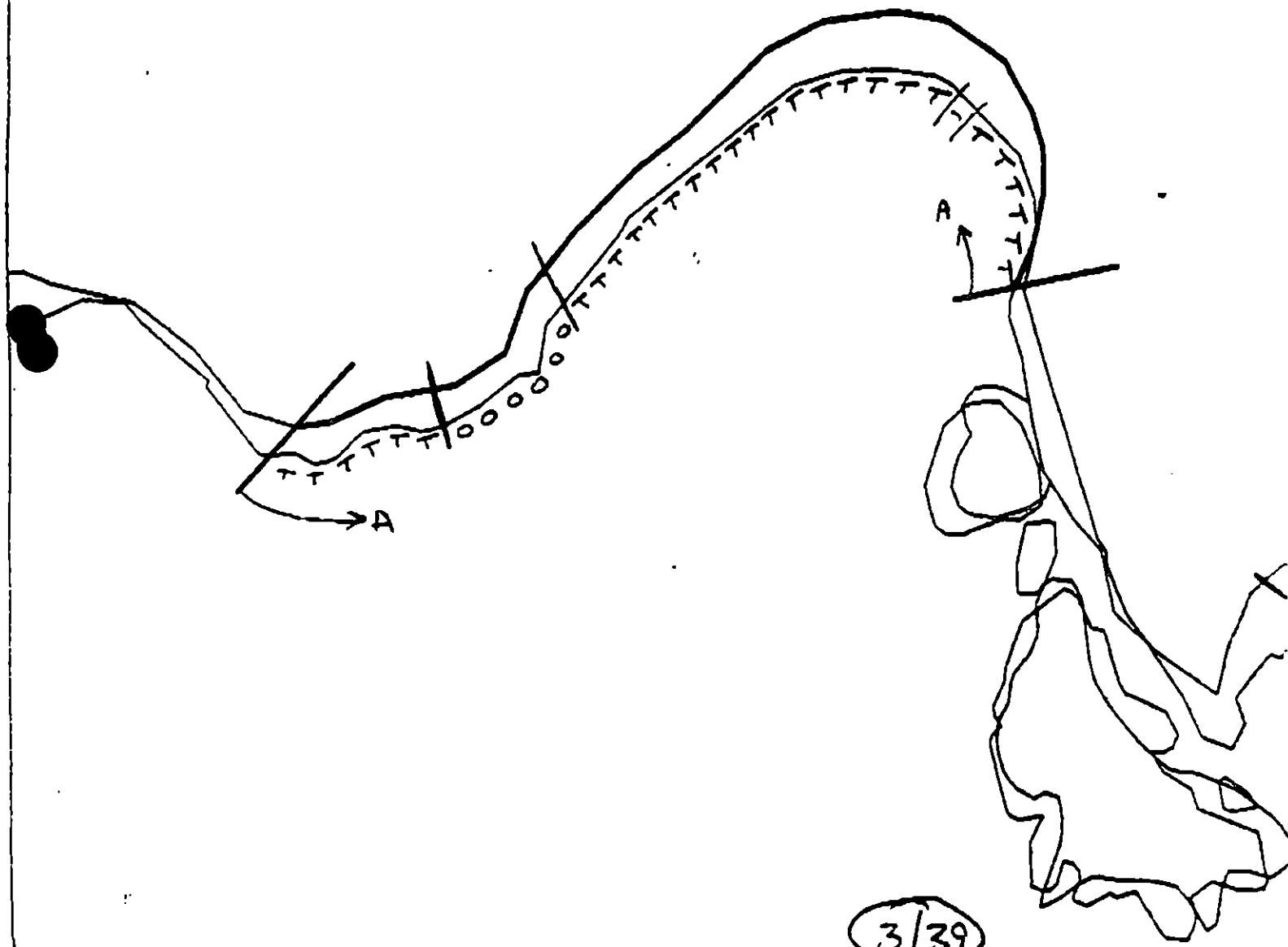
Map Key: PWS-40

Name: Randy Siegel

Date: 4/19/90

Date Entered:

CH-14

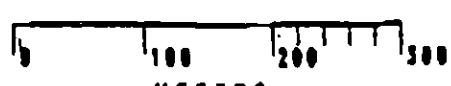


3/39

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

CH-14

ADEC Segment Length: 1036m



Map Key: PWS-40

Name: Ruby Siegel

Date: 4/19/90

Date Entered:

1991 MAYSAP EVALUATION

SEGMENT: CH 015 SUB: A REGION: PWS SURVEY DATE: 5/3/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) Subsistence -
Invertebrate harvesting, Subsistence - Finfish harvesting

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

Subsistence, Invertebrate Harvesting: Unlimited treatment except avoid disturbance of clam/mussel beds unless specifically directed by TAG Work Order.

Subsistence, Finfish Harvesting: Unlimited treatment.

TEAM NO. 4 SEGMENT CH 15 SUBDIVISION A DATE 5/3/91

ADEC

NAME Dianne Munson SIGNATURE Dianne Munson

☒ NTR ☐ Treatment Recommended

Tarballs and covers and stains.

Tarballs removed.

EXXON

NAME LARRY D. OLSON SIGNATURE Larry D. Olson

☒ NTR I agree with Representatives recommendations.

LANDMANAGER

NAME LARRY EVANOFF OF CVC SIGNATURE LM EV

☒ NTR ☐ TREATMENT RECOMMENDED

A BAND OF OIL ~~WAS FOUND~~ AND SCATTERED TAR BALLS
WERE FOUND AND PICKED UP. STAINS REMAIN.
NO BIOREMEDIATION RECOMMENDED.

USCG/NOAA

NAME JERRY SCHULTZ SIGNATURE Jerry Schultz

☒ NTR ANY FURTHER REMOVAL OPERATION WOULD BE MORE ENVIRONMENTALLY
HARMFUL THAN THE OIL TO BE REMOVED

Ek revised 5/6

og sketch Map

CH 015-A

± 7 Samples

3 MAY 91

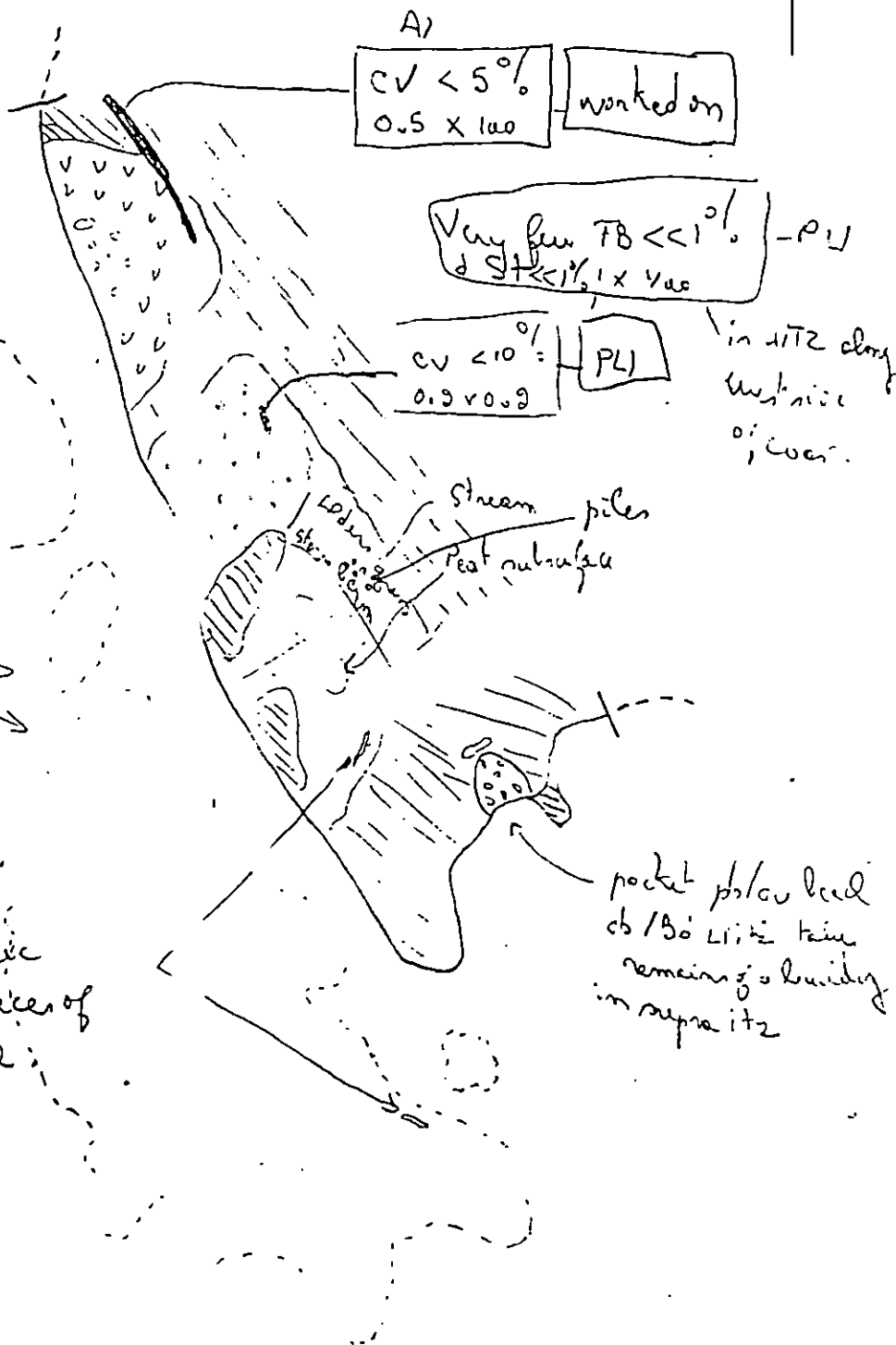
0818-0903

Legend

 Bedrock, Bluffs, ramp

 talus Bd/cb

 platy cb/pb



Islands not surveyed

Anthropogenic remains, pieces of a sawmill

pocket ph/cu bed cb/Bd Lignite thin remaining building in supra itz

200 meters

Reviewed: MC/ST/9
ET returned 5/6

WAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 3, 1991	0818 - 0910
SEGMENT #	CH015	TIDAL HEIGHT (Range)	+3.5 => 2.0	
SUBDIVISION	A	BIOLOGIST	JIM BARRY	
SEA STATE	Calm	WIND SPEED/DIRECTION	Variable, light rain	

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

- A) Spatters of oil were present at the level of the drift line in the upper intertidal zone. This site is a boulder/cobble beach with little biota at the level of the oiled area. Sparse black lichen (*Verrucaria*) and patches of algal films (*Petrocelis*?) the most common organisms. Mosses were on some rocks very near the oiled area. This was the typical condition away from the oiled zone as well. The cobble in the middle to lower intertidal zone below the oiled area has sparse to moderate barnacle (*Balanus*) densities, moderate limpet and littorine densities, and moderate cover of *Fucus*. Amphipods are found under cobble, as are some sea stars (*Leptasterias*, brooding).
- B) Some spatters of oil were found on bedrock outcrops and cobble at the upper intertidal drift line. The oiled site has scattered beach grass, black lichen, and little else, as do habitats away from the oiled site, but at a similar tidal level. Below this area, the intertidal biota increase in abundance, with fairly dense *Fucus* cover on bedrock outcrops and large cobble along the middle to low zones. The other key species also are abundant, though mussels (*Mytilus*) is not nearly as abundant as found on exposed coasts. The subtidal habitat has eel grass and a clam bed in the lowest intertidal. This bed extends along the shore between Chenega Island and the small offshore islands on the subdivision.

Summary of Subdivision CH015-A

This subdivision includes a well protected coast with steep talus slopes and bedrock outcrops, but also has a few cobble beaches that have a shallow channel between Chenega

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	
Seabirds	2	3	
Waterfowl	3	18	
Gulls/Kittiwakes	2	8	
Shorebirds			
Corvids	1	1	
Other Birds			

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

oreline subdivision map showing important biological features attached.

CH015-A Biological Report, continued

Island and the small offshore islands. This channel has brown algae (*Laminariales*), eel grass, and a clam bed. Slightly above the low intertidal clam bed, mussels are fairly abundant amongst the small to medium cobble. The exposed headlands and bedrock outcrops have quite high cover of *Fucus* and other attached biota, as well as high densities of littorines and limpets. The low intertidal and subtidal are variable depending upon location. The shallow channel appears to have an eel grass bed, while the more exposed southern portion has brown algal beds.

List of Common Species in CH015-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., *Ulva* sp., *Urospora* sp.
3. Brown Algae - Phaeophyta
Agarum fimbriatum, *Costaria costata*, *Ectocarpus* spp., *Fucus distichus*, *Hildenbrandia* sp., *Ralfsia* sp., *Syctosiphon lomentaria*
4. Red Algae - Rhodophyta
Calliarthron sp., *Corallina* sp., *Halosaccion glandiforme*, *Lithothamnion* sp., *Membranoptera dimorpha*, *Odonthalia floccosa*, *Palmaria palmata*, *Petrocelis* sp., *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*
3. Hydroids - Sertularidae - *Sertularella*?
5. Flatworms - Platyhelminthes - Polyclads
8. Polychaete worms
Nereidae - *Nereis* spp.
Serpulidae
Serpula sp., *Crucigera* sp., *Eudistylia polymorpha*
Spirorbidae - *Spirorbis* sp.
10. Crustaceans
 - a. Amphipods - *Orchestia* sp.?
 - b. Barnacles - *Balanus glandula*, *Semibalanus cariosus*
 - c. Crabs
Paguridae (hermit crabs), *Oregonia gracilis*,
 - d. Isopods - *Idotea wosnesenskii*
11. Mollusca
 - a. Chitons - *Mopalia mucosa*, *Katharina tunicata*, *Tonicella lineata*,
 - b. ~~Snails~~ - Gastropods
Littorina sp., *Natica clausa*, *Nucella lamellosa*, *N. lima*
 - c. ~~Limpets~~ - *Lottia digitalis*, *L. persona*, *Tectura fenestrata*, *T. persona*, *T. scutum*,
 - d. Nudibranches - *Lamellidoris fusca*
 - e. Mussels and Clams
Clinocardium sp., *C. nuttalli*, *Hiatella arctica*, *Macoma* sp., *Modiolus* sp., *Mya arenaria* (soft-shell clam), *Mytilus edulis*, *Pododesmus cepio*, *Prototheca staminea*
12. Echinoderms
 - b. Sea stars
Dermasterias imbricata, *Leptasterias hexactis*, *Pycnopoda helianthoides*
 - d. Urchins - *Strongylocentrotus droebachiensis*
13. Bryozoans - *Membranipora* sp., *Schizoporella* sp.

15. Fishes

Cottidae - unknown species

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

III. Birds

Marbled Murrelet (2)

Loon (arctic?) (1)

Harlequin Duck (3)

Barrow's Goldeneye (10)

Bufflehead (10)

Black legged? Kittiwake (5)

Glaucous Gull (3)

Northern Crow (1)

Bald Eagle (1)

DO SKETCH MAP

CH015-A

J.P. BARRY

3 MAY 91

0818-0903

BOULDER/COBBLE BEACH - LITTLE BIOTA NEAR OILED SITE - (LITTLE AT THIS LEVEL THROUGHOUT AREA). SPARSE LICHEN, ALGAL FILMS, MOSSES

Bedrock, bluffs, ramp

Talus Bd/ch

Cobble/Pebble

Scattered beach grass, black lichen at oiled site. Dense Fucus cover, as well as barnacles, limpets, Littorines on outcrop below. Clam bed w/ other foraging pits in lowest, subtidal zones

ISLANDS NOT SURVEYED

OTTER FORAGING PITS

ALDERS, BEACH GRASS, BERM

Stream

PEAT SUBSURFACE

N

200 m

CH015-A

A+

+

Unsurveyed

A

Unsurveyed

+

+

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

CH015 A

ADEC Subsegment Length: 1938m

METERS

0 100 200

AK State Plane Zone 4
 pch015a



Subdivision Field Map

Map Key: PWSCH015A

Name: JM Semple

Date: 3 May/91

Date Entered

Reviewed: MC 5/7
 CR revised, 5/1
 WTK Review 5/8

1991 MAYSAP EVALUATION

SEGMENT: CH 015 SUB: A REGION: PWS SURVEY DATE: 5/3/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) OPEN

Ecological/Constraints (see page two for details) Subsistence - Invertebrate harvesting, Subsistence - Finfish harvesting

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: Rebel Dan Dan Date: 5/14/91

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

N

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: MAY 14 1991

FOSC APPROVAL DATE: 5/20/91

ADEC

FOSC

EXXON

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

USCG

NOAA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Subsistence, Invertebrate Harvesting: Unlimited treatment except avoid disturbance of clam/mussel beds unless specifically directed by TAG Work Order.

Subsistence, Finfish Harvesting: Unlimited treatment.

MAYSAP FIELD SHORELINE COMMENT SHEET 1/9

TEAM NO. 4 SEGMENT CH 15 SUBDIVISION A DATE 5/3/91

ADEC

NAME Dianne Munson SIGNATURE Dianne Munson☒ NTR ☐ Treatment Recommended

Tarballs and covers and stains.

Tarballs removed.

EXXON

NAME LARRY D. OLSON SIGNATURE Larry D. Olson☒ NTR I agree with Representatives recommendations.

LANDMANAGER

NAME LARRY EVANOFF OF CVC SIGNATURE LM EV☒ NTR ☐ TREATMENT RECOMMENDED

A BAND OF OIL ~~WAS FOUND~~ AND SCATTERED TAR BALLS
WERE FOUND AND PICKED UP. STAINS REMAIN.
NO BIOREMEDIATION RECOMMENDED.

USCG/NOAA

NAME JERRY SCHULTZ SIGNATURE Jerry Schultz☒ NTR ANY FURTHER REMOVAL OPERATION WOULD BE MORE ENVIRONMENTALLY
HARMFUL THAN THE OIL TO BE REMOVED

Ek revised 5/6

og sketch Map

CH 015-A

+ 17 Samples

3 MAY 91

0818-0903

Legend

 Bedrock, Bluffs, ramp

 talus Bd/cb

 platy cb/pb


Islands not
surveyed



Anthropogenic
remains, pieces of
a sawmill

A1
 $CV < 5\%$
 0.5×100

worked on

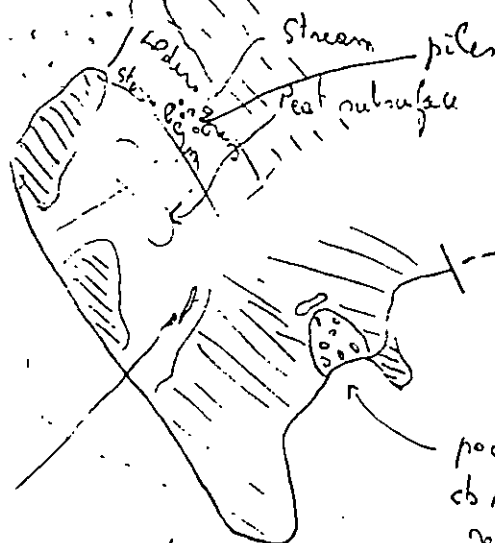
Very few TB $< 1\%$
 $d St < 1\%$ 1×100

-PLU

$CV < 10\%$
 0.9×0.9

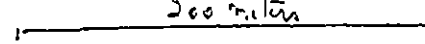
PLU

in ditz along
west side
of cove.



pocket pb/gu bed
 cb/Bd Litz talus
 remains of a building
 in supra itz

200 meters



Reviewed: MC/5/2/91

ET returned 5/6

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 3, 1991	0818 - 0910
SEGMENT #	CH015	TIDAL HEIGHT (Range)	+3.5 => 2.0	
SUBDIVISION	A	BIOLOGIST	JIM BARRY	
SEA STATE	Calm	WIND SPEED/DIRECTION	Variable, light rain	

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

- A) Spatters of oil were present at the level of the drift line in the upper intertidal zone. This site is a boulder/cobble beach with little biota at the level of the oiled area. Sparse black lichen (*Verrucaria*) and patches of algal films (*Petrocelis*?) the most common organisms. Mosses were on some rocks very near the oiled area. This was the typical condition away from the oiled zone as well. The cobble in the middle to lower intertidal zone below the oiled area has sparse to moderate barnacle (*Balanus*) densities, moderate limpet and littorine densities, and moderate cover of *Fucus*. Amphipods are found under cobble, as are some sea stars (*Leptasterias*, brooding).
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Summary of Subdivision CH015-A

This subdivision includes a well protected coast with steep talus slopes and bedrock outcrops, but also has a few cobble beaches that have a shallow channel between Chenega

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	
Seabirds	2	3	
Waterfowl	3	18	
Gulls/Kittiwakes	2	8	
Shorebirds			
Corvids	1	1	
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

CH015-A Biological Report, continued

Island and the small offshore islands. This channel has brown algae (Laminariales), eel grass, and a clam bed. Slightly above the low intertidal clam bed, mussels are fairly abundant amongst the small to medium cobble. The exposed headlands and bedrock outcrops have quite high cover of *Fucus* and other attached biota, as well as high densities of littorines and limpets. The low intertidal and subtidal are variable depending upon location. The shallow channel appears to have an eel grass bed, while the more exposed southern portion has brown algal beds.

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A. Marine Plants

1. Diatoms, Blue Greens
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Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Agarum fimbriatum, Costaria costata, Ectocarpus spp., *Fucus distichus*, Hildenbrandia sp., Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Calliarthron sp., Corallina sp., Halosaccion glandiforme, Lithothamnion sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria palmata, Petrocelis sp., 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
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
8. Polychaete worms
Nereidae - Nereis spp.
Serpulidae
Serpula sp., Crucigera sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles - Balanus glandula, Semibalanus cariosus
 - c. Crabs
Paguridae (hermit crabs), Oregonia gracilis,
 - d. Isopods - Idotea wosnesenskii
11. Mollusca
 - a. Chitons - Mopalia mucosa, Katharina tunicata, Tonicella lineata,
 - b. Snails - Gastropods
Littorina sp., Natica clausa, Nucella lamellosa, N. lima
 - c. Limpets - Lottia digitalis, L. persona, Tectura fenestrata, T. persona, T. scutum,
 - d. Nudibranches - Lamellidoris fusca
 - e. Mussels and Clams
Clinocardium sp., C. nuttalli, Hiatella arctica, Macoma sp., Modiolus sp., Mya arenaria (soft-shell clam), Mytilus edulis, Pododesmus cepio, Prototheca staminea
12. Echinoderms
 - b. Sea stars
Dermasterias imbricata, Leptasterias hexactis, Pycnopoda helianthoides
 - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Schizoporella sp.

15. Fishes

Cottidae - unknown species

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

III. Birds

Marbled Murrelet (2)

Loon (arctic?) (1)

Harlequin Duck (3)

Barrow's Goldeneye (10)

Bufflehead (10)

Black legged? Kittiwake (5)

Glaucous Gull (3)

Northern Crow (1)

Bald Eagle (1)

BIO-SKETCH MAP

CHOIS-A

4E

CHOIS-A

JT BARRY

3 MAY 91

0818 - 0903

BOULDER / COBBLE BEACH - LITTLE BIOTA NEAR OILED SITE - (LITTLE AT THIS LEVEL THROUGHOUT AREA). SPARSE LICHEN, ALGAL FILMS, MOSSES

Bedrock, bluffs, ramp

Talus Bd/ch

Cobble / Pebble

Scattered beach grass, black lichen at oiled site. Dense Fucus cover, as well as barnacles, limpets, Littorines on outcrop below. Clam bed w/ other foraging pits in lowest, subtidal zones

ISLANDS NOT SURVEYED

OTTER FORAGING PITS

ALGAL BEACH
GRASS BEACH

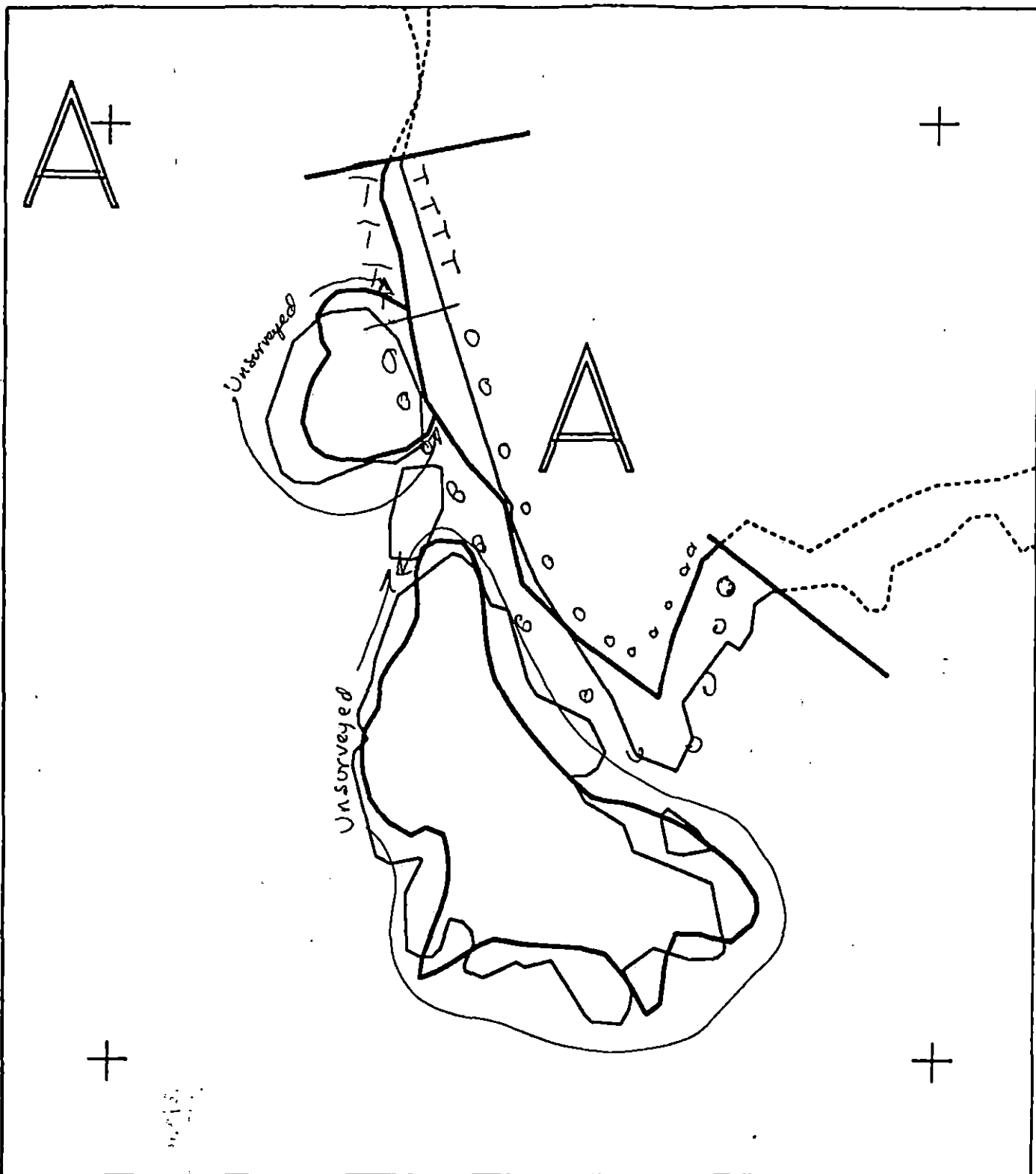
Stream

PEAT SUBSURFACE

N

200 m

CHOIS-A



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

CH015 A
 ADEC Subsegment Length: 1936m
 METERS
 0 100 200
 AK State Plane Zone 4
 pch015a



Subdivision Field Map
 Map Key: PWSCH015A
 Name: JM Samples
 Date: 3 May/91
 Date Entered:

Reviewed: MC 5/7/
 CF revised, 5/6
 WRC Revised 5/8

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/CH-15

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ CH-15 SUBDIVISION A (1 OF 1) DATE 4/19/90

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)
6Y Recreation: Special use destination
7HH Subsistence area: Finfish harvesting
7JJ Subsistence area: Invertebrate harvesting
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 166 m: V.Light 708 m: No Oil 1025 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 (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 (8/11 to 7/25)
 For Codes 1C through 1L contact ADF&G for specific dates, locations and constraints.
- 2M Herring spawning (4/1 to 6/15)
 Restrict boat traffic to essential minimum. Avoid damage to 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 / CH 15 SUBDIVISION: A (ENTIRE SEGMENT) DATE 4/19/90USCGNAME PS3 SCHULTZSIGNATURE *Jersey Schultz*☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTEDADECNAME MIKE EBELSIGNATURE *Michael Ebel*☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

CH-15-A: In general a discontinuous, narrow band of surface splashes and patches were found along the UTZ. The tarballs were weathering down to a condition where small sediments were barely clinging to them in most cases. The asphalt was very loose and crumbly. The Exxon rep broke up the asphalt patches and tar balls/small tar mats as per his directive. The coats and covers were of no biological threat. No further treatment recommended.

LAND MANAGER - CVCNAME PAT SELANOFFSIGNATURE *Pat Selanoff*☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

SHORELINE OILING SUMMARY

REVISION NO 04-137

OG Randy Siegel USCG Terrey Schulte SEGMENT ST/ CH-15
 BIO Lewis Shorman LAND REP Pat Salanoff (cvc) SUBDIVISION A (LOF) 1
 EXXON Leonard Herbst ADEC Mike Ebel TIME 15:10:15:50
 TEAM NO. 12 TIDE LEVEL 2.0' to 2.05' DATE 4/19/90
 EST. SUBDIVISION LENGTH: 2453 m ☒ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 20 % B 20 % C 20 % P 20 % G 20 % S 0 % M 0 % V 0
 SLOPE: Long 50 % Hang 50 % Vert 0 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 180 m VL 880 m NO 1393 m

SURFACE OIL

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

 PAVEMENT H.F. 50 sq. m by 2

 PATTIES / TARBALLS 1 BAG

 NEAR SHORE SHEEN? NO BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS?

 YES ☐ NO ☒

 TYPE —

 #BAGS —

 Photographs: None

 Roll No. ST-12-7

 Frames None

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM)	BELOW		OIL / FILM COLOR					PIT ZONE				A	N	SHEEN (Y/N)	▽	SURFACE SUBSURFA SEDIMENT
		OP	OR	OL	OF	NO		UO	US	W	Y	OR	GR	BLK	SU	U	M	U					
1	22					X	0.0	X							X						—	—	G
2	25					X	0.0	X							X						—	—	G
3	20					X	0.0	X							X						—	—	G

COMMENTS

This ~~sub~~ segment consists of a boulder covered beach and a small island. Staining and coating of bedrock cliffs was observed on the island. Some coating/staining of bedrock cliff faces and boulder faces was observed along the beach/interland beach. Occasional tarballs or soft asphalt tarcoat occurred in a narrow band along the UIZ, with splashy to patchy distribution.

 REVIEWED JW

 DATE 4-20-90

OG Randy S
 SEGMENT ST/ CH-15
 SUBDIVISION A

DATE 4 / 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)
☐ Pit Location(s)
☐ Photo Location(s)

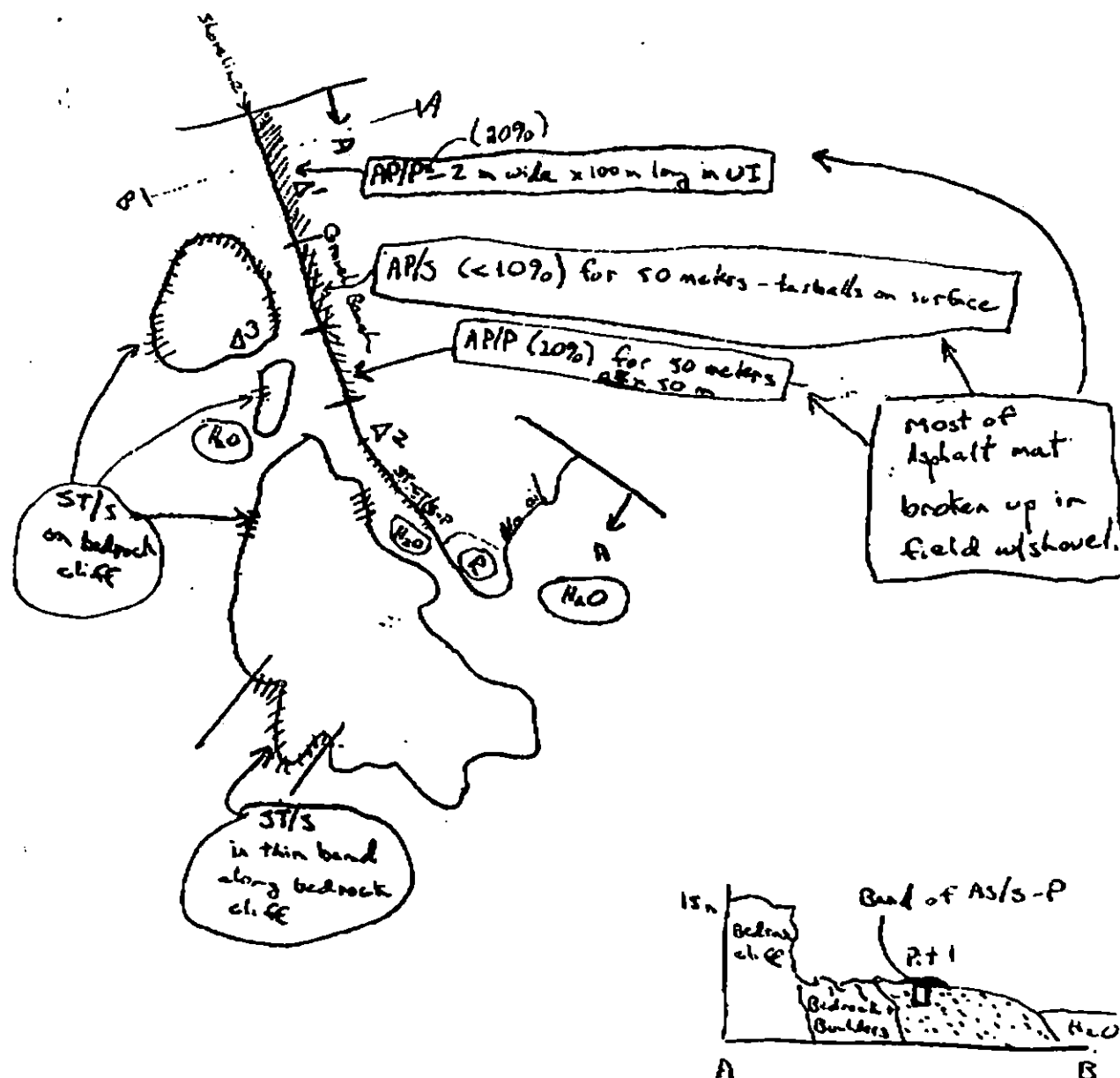
LEGEND

1 Δ
 Pl - No Subsurface Oil
 2 Δ
 Pt - 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

11/39

SKE MAP

Approx Scale
 0 300



Oil Character Length (m): AP 200 PO 0 CV 50 CT 800 ST 300 MS 0 PT 0 TB 50 FL 0 NO 1393

REVISION 08/24/90

SHORELINE ECOLOGICAL SUMMARY (Page 1 of 2)

REVISION: 001

Segment ST/ CH-15 Subdivision A Date (mo/day/yr) 4/19/90Time (24 hr) 1500-1720 Biologist SHARMAN(A) Substrate type and % of segment: SUBDIV
(1) Bedrock 20 (2) Boulder 20 (3) Cobble 20 (4) Pebble 20 (5) Sand 20 (6) Silt 20 ^{+ granules}(B) Overall % cover of biota (% of segment): Dense Moderate X 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	X	X	X	1U	1M	1L
3	3	3	3	3	3	X	X	X	2	2	2
4	4	4	4	4	4	3	3	3	3	3	3
5	5	5	5	5	5	4	4	4	4	4	4
6	6	6	6	6	6	5	5	5	5	5	5
						6	6	6	6	6	6

NOT PRESE

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 PRESE

GASTROPODS (ANCELLA, LITTORIANA, LIMAEETE)

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 PRESE

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 PRESE

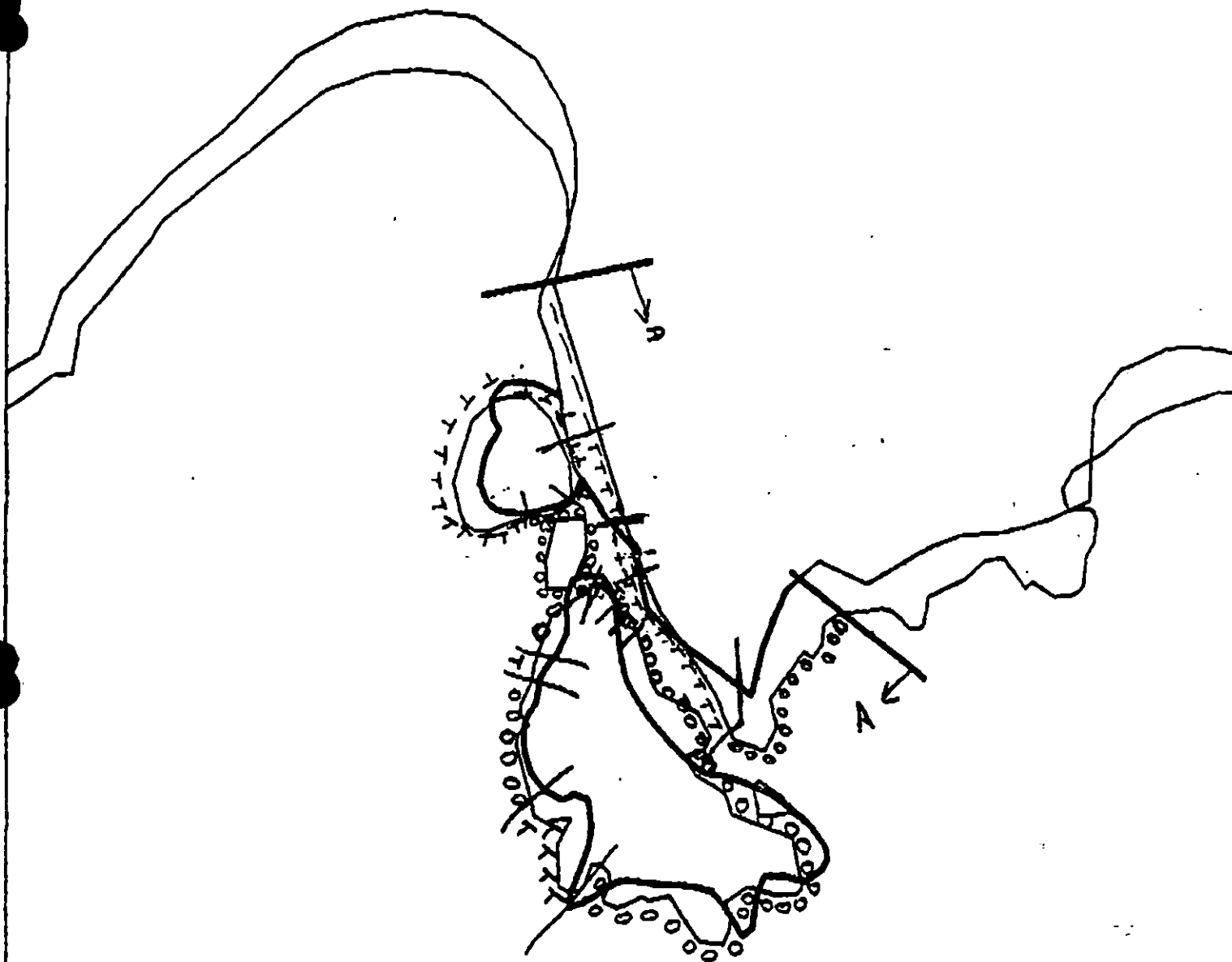
Wildlife Observations/ General Comments: Observed barley down into the LTZ (+2'?).
 1 raven, 2 pairs Barnow's goldeneyes, 1 snipe, Canada goose seen in UTE, deer leg
 bone and jawbone. Beaches are ecologically fairly similar to CH-19 (see that Ecological
 Summary). Note again the profusion of new barnacle spat (cyprids too), extending
 down into the LTZ. Sub-boulder LTZ habitat include littorina eggs, pricklebacks, Littorina,
 Ecological Considerations:

There are 3 resource sensitivities listed for this segment from catalogued data:
 Special Use Destination (Code 6Y); Subsistence Finfish Harvesting (Code 7HH);
 and Subsistence Invertebrate Harvesting (Code 7JJ). The protected zones among
 the island(s) are particularly productive regions for subsistence invertebrate
 harvesting. This resource, along with the subsistence finfish resource, may be
 sensitive to considerable human disturbance, especially if it involves re-
 mobilizing sand and oil.

CH-15

Shoreline Ecological Summary (cont.)
(Page 2 of 2)Sharmen
4/19/90General Comments (cont.):

and hermit crabs (Pagurus). The channel between the islands and mainland is reasonably rich and productive, with muscle on rocky MTE-LTE, and Adonthalia and green filamentous forms (Acrocyphonia?) joining Fucus in the MTE. The LTE fair-dominant channel habitat includes Pycnopodia and the clams Saxidomus, Macoma, Mya, and some Chione. The massive bedrock islands appear quite healthy albeit naturally depauperate, dominated by barnacles and Fucus - muscle are relatively rare. In fact, mussel beds generally are surprisingly rare along the S. shore of Chanega Island. Where they occur, however, mussels appear to be reproducing satisfactorily. General impression for intertidal community: normal and healthy.



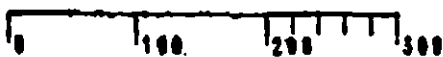
CH-15

10/39

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

CH-15

ADEC Segment Length: 1747m



Map Key: PWS-41

Name: Randy Dreyer

Date: 4/19/90

DATA ENTERED:

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT CH-15 SUBDIVISION A (1 of 1)

WORK WINDOW

Tarmat Removal

OPEN

ARCHAEOLOGICAL INSPECTION/CONSULTATION REQUIRED.

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

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

5T	Bald Eagle Nests	NO CONSTRAINT. USFWS 6/1/90 map indicates no active nest within 400m of Subdivision A. work site.
1A,1B	Salmon Stream	ADF&G catalogued anadromous streams (226-20-16255 and 226-20-16258) are present in Segments CH-14 and CH-16. No constraint to tarmat removal.
7HH	Subsistence: Finfish Harvesting	No constraint to tarmat removal.
7II	Subsistence: Invertebrate Harvesting	NO CONSTRAINT.

OTHER ECOLOGICAL CONSIDERATIONS

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

FOSC

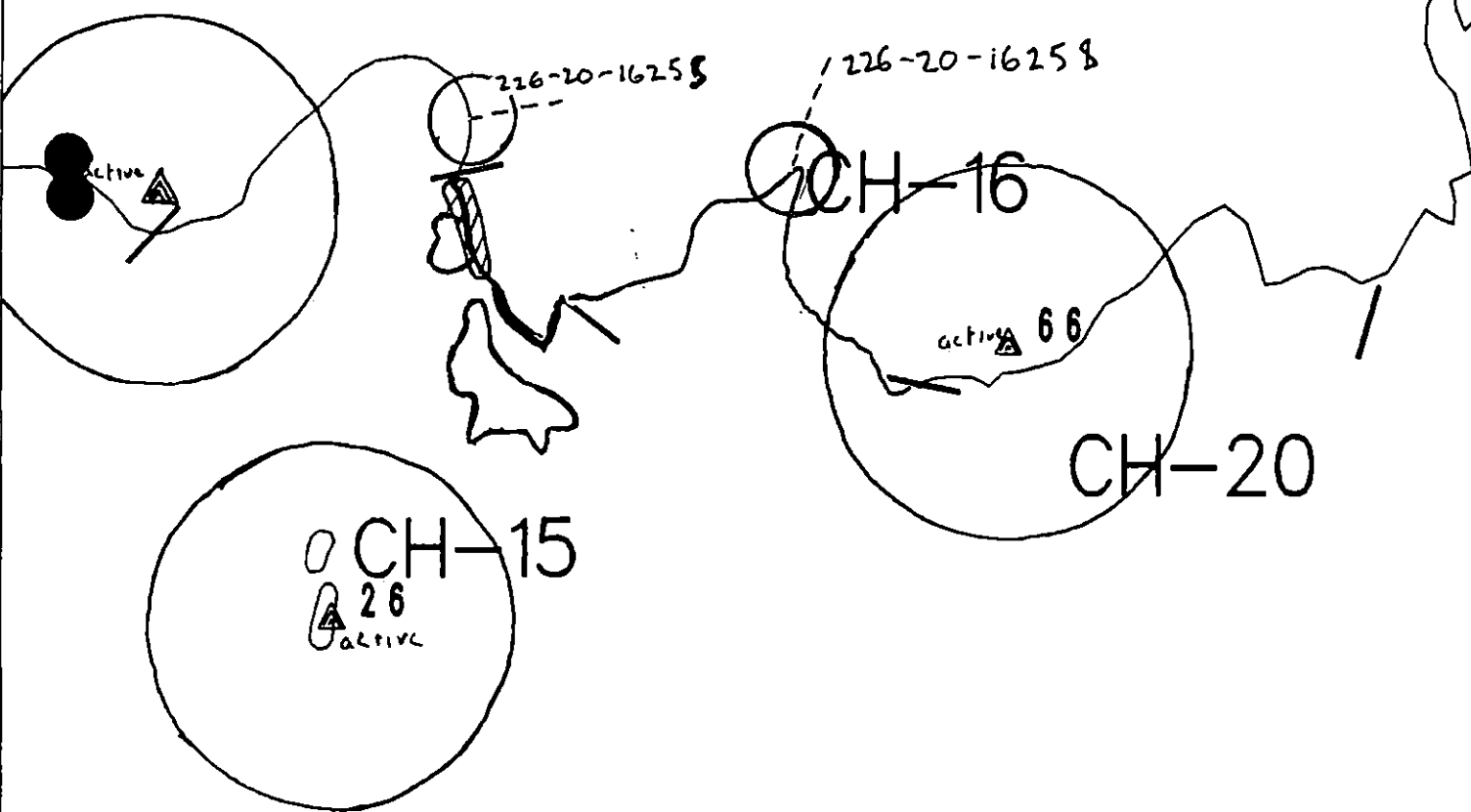
DATE

6-10-90

This incorporates information from
the USFW 6/1/90 Active Bald Eagle Nest Map

CH-14

CH-



Exxon Company, USA
Map Key: PWS-Q-16



ECOLOGY MAP
SEGMENT CH-15
SUBDIVISION A (1 of 1)
METERS

- ★ Seabird Colony
- ▲ Eagle Nest

SHORELINE EVALUATION

SEGMENT ST/ CH-15 SUBDIVISION A (1 OF 1) DATE 4/19/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ST-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6Y Recreation: Special use destination
7HH Subsistence area: Finfish harvesting
7JJ Subsistence area: Invertebrate harvesting

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

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

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

SHPO SIGNATURE: Rachelban Owen DATE: 5/23/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 166 m: V.Light 708 m: No Oil 1025 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: See Constraint Addendum Date 6/9/90 WK

TAG COMMENTS: Monitors to assess the significance of the remaining fragments prior to deploying a cleanup crew to this site. If remaining "fragments" are insignificant NTR appropriate.

TAG APPROVAL DATE: 4/28/90
ADEC Art Wornick
EXXON Andy Tetz
NOAA Gary Petrac
USCG Kenneth Kane

FOSC: ML DATE: 5-12-90
Pick up Broken Asphalt mats. CVC
Rec to be on scene.

SHORELINE EVALUATION

SEGMENT ST/ CH-15 SUBDIVISION A (1 OF 1) DATE 4/19/90

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)
6Y Recreation: Special use destination
7HH Subsistence area: Finfish harvesting
7JJ Subsistence area: Invertebrate harvesting
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

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

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

SHPO SIGNATURE: Rachel Dan Olsen DATE: 5/23/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 166 m: V.Light 708 m: No Oil 1025 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

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

COMMENTS:

TAG COMMENTS: Monitors to assess the significance of the
remaining tarmats prior to deploying a cleanup
even to this site. If remaining "tarmats" are
insignificant NTR appropriate.

TAG APPROVAL DATE: 4/28/90
ADEC Art Weiner
EXXON Andy Teal
NOAA Gary Petros
USCG Robert Keane

FOSC: ML DATE: 5-12-90
Pick up Broken asphalt mate. cvc
Rep to be on scene.

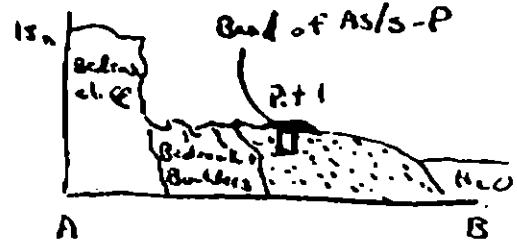
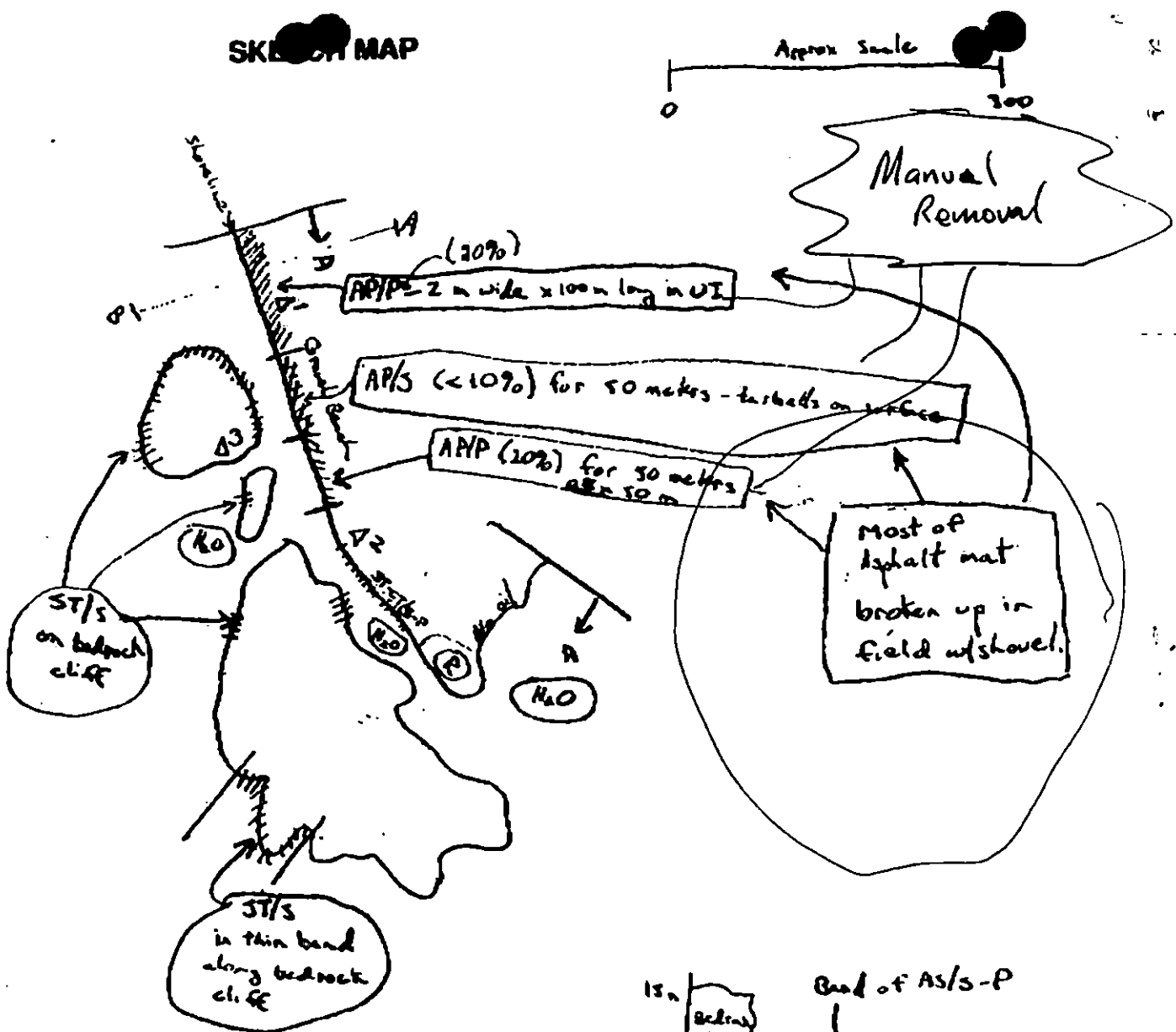
G. Randy S. [redacted]
 SEGMENT ST/ CH-15
 SUBDIVISION A
 DATE 4 / 19 90

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

- LEGEND**
- 1 Δ
 - 1 - No Subsurface Oil
 - 2 Δ
 - 2 - Subsurface Oil
 - CT/C
 - oil Distribution
 - CT/B
 - oil Distribution
 - CT/P
 - oil Distribution
 - CT/S
 - plashed Distribution
 - lll
 - Red Vegetation
 - 1 →
 - Photo location, direction, and number

11/34

SKETCH MAP

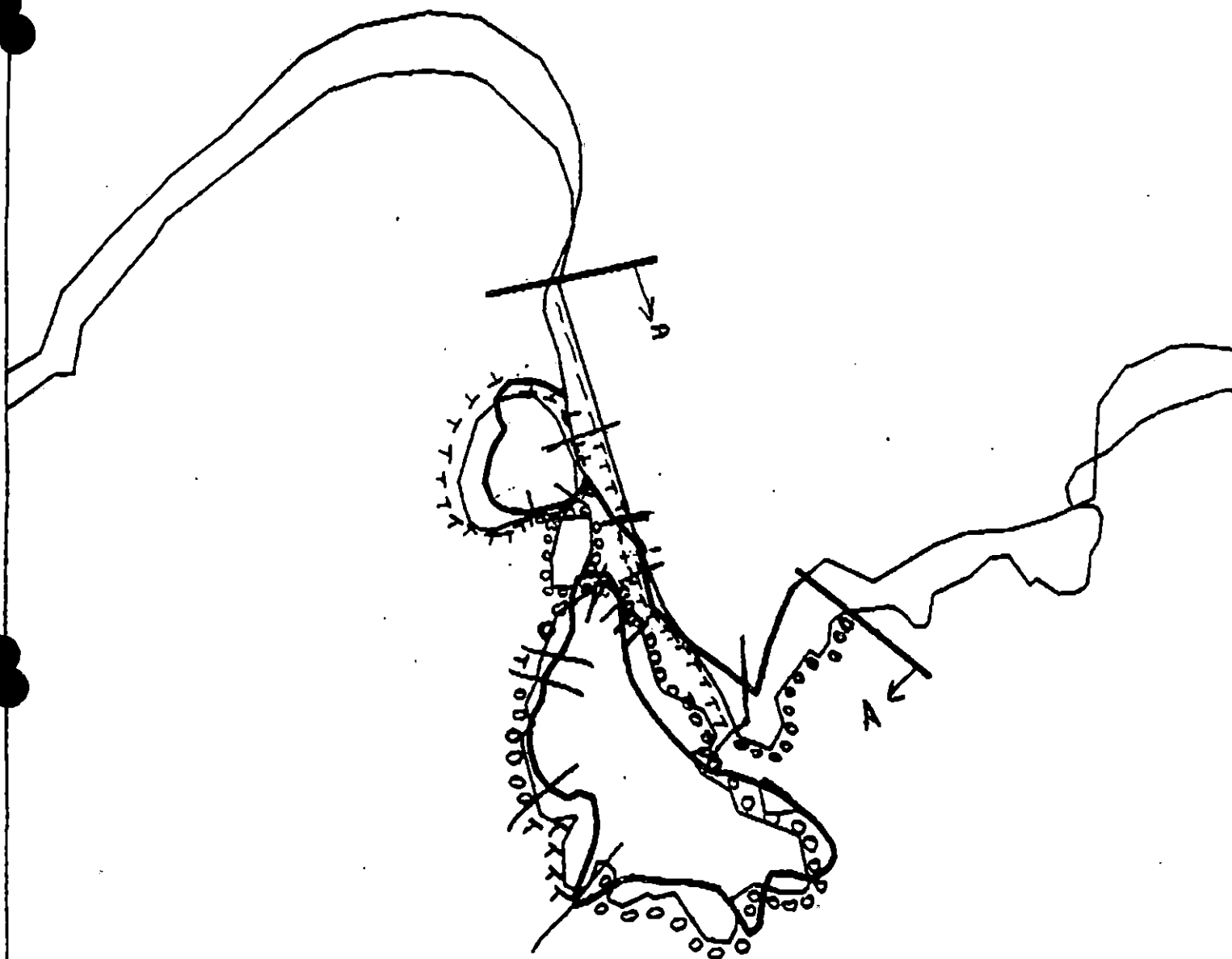


Character Length (m): AP 200 PO 0 CV 50 CT 300 ST 300 MS 0 PT 0 TB 50 FL 0 NO 1313.

CH-15

Shoreline Ecological Summary (cont.)
(Page 2 of 2)Sherman
4/19/90General Comments (cont.):

and hermit crabs (Pagurus). The channel between the islands and mainland is reasonably rich and productive, with Nacella on rocky MTE-LTE, and Adontellia and green filamentous forms (Acrocyphonia?) joining Fucus in the MTE. The LTE finer-sediment channel habitat includes Pycnopodia and the clams Saxidomus, Macoma, Mya, and some Chionea. The massive bedrock islands appear quite healthy albeit naturally depauperate, dominated by barnacles and Fucus - mussels are relatively rare. In fact, mussel beds generally are surprisingly rare along the S. shore of Chanaga Island. Where they occur, however, mussels appear to be reproducing satisfactorily. General impression for intertidal community: normal and healthy.



CH-15

10/39

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

CH-15

ADEC Segment Length: 1747m

Map Key: PWS-41

Name: Randy Dreyer

Date: 4/19/90



ANADROMOUS FISH STREAM EVALUATION

SEGMENT ST/ CH-16 STREAM NO: 226-20-16258 DATE 4/25/90

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)

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

6Y Recreation: Special use destination

9BB Privately Developed Lands

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to uncoiled biota and substrate. Subject stream is located within Subdivision A (1 of 1).

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: J. David McMillan DATE: 5/8/90

Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

X No Treatment Recommended

 Treatment Recommended

 Manual Pickup

 Bioremediation

 Tarmat Removal

 Snare/Absorbent Booms

 Oil Snares (pom poms)

 Absorbents (pads, rolls, etc)

 Spot Washing: Wands

 Beach Cleaner

 Other (see comments)

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 5/7/90

ADEC Art Wagner

EXXON Andy TGA

NOAA Gary Petrac

USCG G.A. Reiter

FOSC: my L DATE: 5-18-90

PER-20-1320 20-00 FROM EXAM AND WORKUP TO SCAT TEAM P.I.I

27/51

OG WILLIAM REID
SEGMENT ST/ C4016
STREAM 226-20-16258

DATE 25/ APR 90

CHECKLIST

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

Film AS-15-6

SKETCH MAP

Bedrock + Fm 20/28

SSA

ST/S

AREA 2

Δ2

2A

Δ1

CT/S

AREA 1

CL/F

LEGEND

- 1 Δ₁
PH - No Subsurface Oil
- 2 Δ₂
PH - Subsurface Oil
- CT/C
Continuous Distribution
- CT/B
Broken Distribution
- CT/P
Patchy Distribution
- CT/S
Splashed Distribution
- eee
Oiled Vegetation
- 1 ●
Photo location, direction, and number

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

ECOLOGICAL MAP

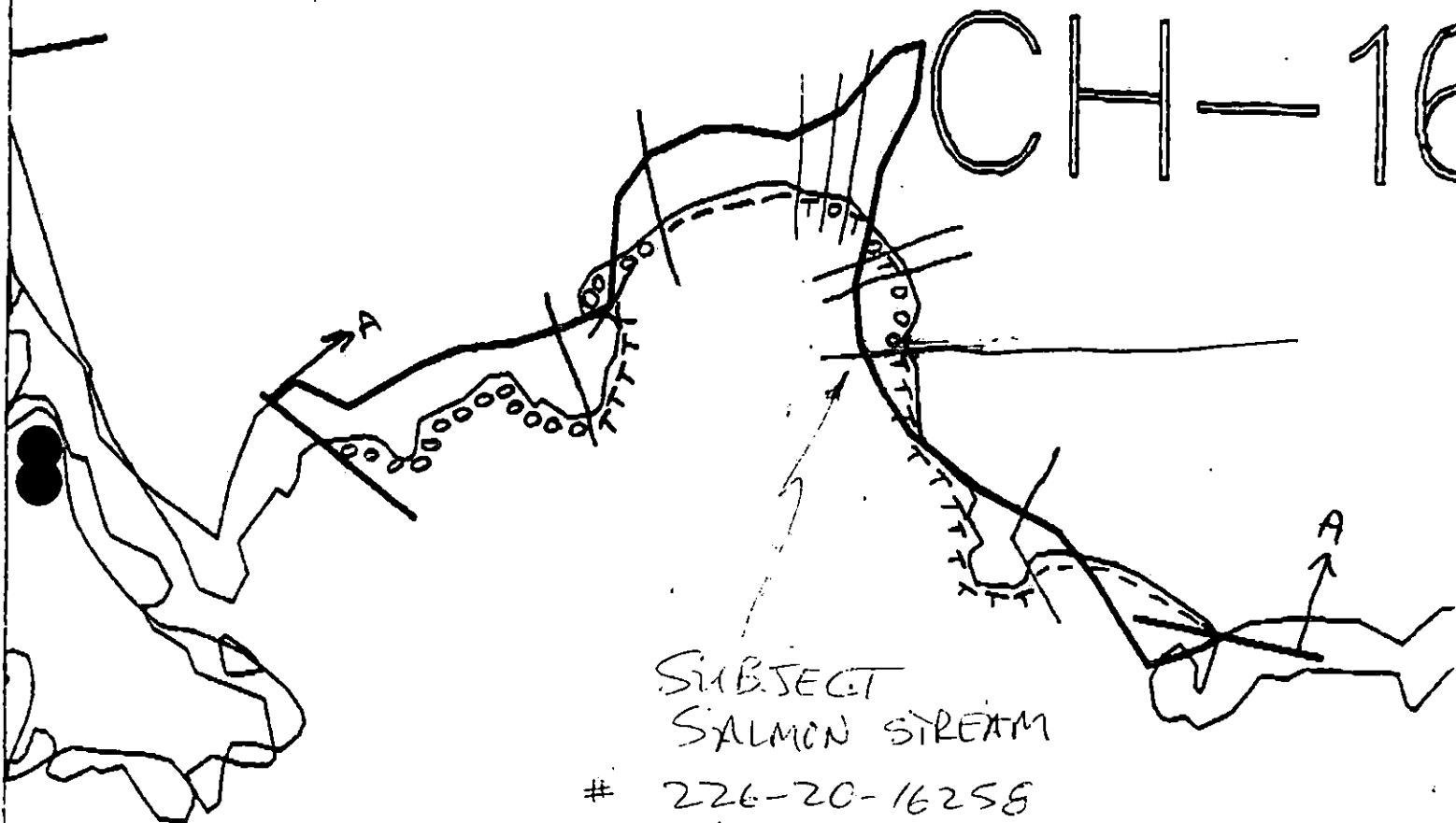
1A, 1B

1K

6Y

9EE

CH-16



SUBJECT
SALMON STREAM

226-20-16258
(PS, 2/90)

CH-16-A (1 of 1)

19/39

XXXX Wide

//// Medium

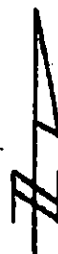
--- Narrow

TTTT Very Light

0000 No Oil

CH-16

ADEC Segment Length: 1376m



Map Key: PWS-42

Name: Randy Siegel

Date: 4/19/90

Date Entered:

ANADROMOUS FISH STREAM ASSESSMENT

REGION: PRINCE WILLIAM SOUND

SEGMENT: CH-16

STREAM NO: 226-20-16258

ANADROMOUS FISH STREAM EVALUATION

SEGMENT ST/ CH-16 STREAM NO: 226-20-16258 DATE 4/25/90

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)

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

6Y Recreation: Special use destination

9BB Privately Developed Lands

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Subject stream is located within Subdivision A (1 of 1).

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

X No Treatment Recommended

_____ Treatment Recommended

_____ Manual Pickup

_____ Bioremediation

_____ Tarmat Removal

_____ Snare/Absorbent Booms

_____ Oil Snares (pom poms)

_____ Absorbents (pads, rolls, etc)

_____ Spot Washing: _____ Wands

_____ Beach Cleaner

_____ Other (see comments)

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

KODIAK ECOLOGICAL CONSTRAINTS

- ✓ 1A Salmon stream mouth - fry outmigration (4/15 to 7/31)
- ✓ 1B Salmon stream mouth - spawning (7/15 to 9/10; PEAK 8/15)
No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream 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, 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 prior to treatment for consultation and/or permit application.
AGENCY CONTACT PERSON: ADF&G Ken Middleton 267-2299
- 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, 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 Kotot Bay Hatchery release
Pink salmon - late May, early June; Chum salmon - June; Sockeye salmon - early July.
- 1H Remote release site
No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, 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 for confirmation and authorization.
AGENCY CONTACT PERSON: ADF&G Larry Peltz 424-3214
- 1I Gill net area
- 1J Purse seine area
Mainland, West side Kodiak, Shuyak & Moser/Olga Bay (6/9 to 10/1)
East side Kodiak, East side Afognak (7/4 to 10/1)
- ✓ 1K Purse seine hook-off
- 1L Set net sites
Contact ADF&G for confirmation - dates and locations may vary. 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 Larry Nicholson 424-4791
- 2M Herring spawning (4/15 to 6/30)
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 Larry Nicholson 486-4791
- 3P Harbor seal and sea lion pupping (5/10 to 7/1)
- 3Q Harbor seal and sea lion molting (8/15 to 9/15)
Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts. No application of Inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31). Contact ADF&G and USFWS prior to treatment for confirmation.
AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 586-7235
ADF&G Don Calkins 267-2403
- 5R Seabird colony (5/1 to 9/1)
Restrict air and boat traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from colony. Contact USFWS prior to treatment.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 5S Shorebird/waterfowl concentration (4/1 to 5/15)
Restrict all activity to essential minimum, especially air traffic. Contact USFWS and ADF&G for confirmation.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
ADF&G Tom Roth 267-2208
- 5T All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
Restrict air traffic and all disturbance to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 6U Recreation: Tent sites (8/1 to 9/15)
- 6V Anchorages (8/1 to 9/15)
- 6W Forest Service cabins (6/1 to 9/15)
- 6X Lodge (8/1 to 9/15)
- ✓ 6Y Special use destination
- 7Z Subistence area: Salmon harvesting (8/1 to 9/30)
- 7H Finfish harvesting
- 7I Deer harvesting (8/1 to 1/7)
- 7J Invertebrate harvesting
- 7KK Bear harvesting (4/1 to 5/15 and 10/25 to 11/30)
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

25/54

SEGMENT ST 1CH 016 SUBDIVISION: 16258 DATE 4/25/90

USCG

NAME CWO MC NATION SIGNATURE [Signature]

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ADFTG

ADEC

NAME Tom Crowe SIGNATURE [Signature]

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

VERY LIGHT STAIN ONLY.

LAND MANAGER

NAME _____ SIGNATURE _____

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ASC # 226-42-16280

Segment CH-001

Observations A tar band covering a gravel substrate extends along the high tide line south of the channel. This band has not appreciably weathered since ADF&G staff visited the site in early December. No other oil, either surface or subsurface, was observed at the site.

Treatment Recommendations Manually remove the tar band.

ASC # 226-20-16258

Segment CH-016

Observations One tar patty was found along the boulder rubble east of the channel. A very light and sporadic stain coated a region of the lower and mid intertidal zone west of the channel. No significant amounts of subsurface oil were observed.

Treatment Recommendations The insignificant quantities observed at the site do not warrant further treatment.

ASC # 226-20-16255

Segment CH-014

Observations Sporadic tar mats and patties coat cobbles along high tide line of this moderately exposed site. Some of the patties lie just beneath the surface (see ADF&G Multi-Assessment Data Form diagram).

Treatment Recommendations Manual removal of tar mats and patties. Care must be taken to ensure that buried tar patties are removed.

SHORELINE OILING SUMMARY (ANAD.)

REVISION NO. 04

OG WILLIAM REID USCG McMAHON SEGMENT ST/ CH016 20/54
 BIO MICHAEL FAWCETT LAND REP STRAN 226-20-K291 OF
 EXXON GUS GARCIA ADFG MIKE WIEDNER TIME 11:25
 TEAM NO. 15 TIDE LEVEL + 6 FT DATE 25 / APR / 90
 EST. SUBDIVISION LENGTH: 55 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo
 SURFACE SEDIMENTS: R 0 % B 0 % C 60 % P 30 % G 0 % S 0 % M 0 % V 0
 SLOPE: Long 90 % Hang 10 % Vert 0 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 35 m NO 20

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR				IMPACTED ZONES			
	N	N	N	N	W	W	W	W	SW	SW	SW	SW
ASPHALT PAVEMENT												
POOLED												
COVER												
COAT				X	X	X	X	X	X	X	X	X
STAIN				X	X	X	X	X	X	X	X	X
MOUSSE												
PATTIES												
TARBALLS												
FILM												
NO OIL									X	X	X	X

PAVEMENT H F S 0 sq. m by 0

PATTIES / TARBALLS 0 B/

NEAR SHORE SHEEN? ☒ NO BR RW SL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

Did you Col
DEBRIS
☐ YES ☒ NO
TYPE 0
#BAGS 0

Photographs:

Roll No. 0

Frames 0

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL	BELOW		OIL / FILM COLOR				PIT ZONE				A N A	SHEEN (Y/N)	V	SURF/ SUBSURF SEDIMENT
		OP	OR	OL	OP	NO		NO	NO	W	W	W	W	SW	SW	SW	SW				
1	35					X	•							X					N		P/C/L
2	30					X	•							X					N		P/C/L
							•														
							•														
							•														
							•														

COMMENTS

REVIEWED JW DATE 4-27-90

3/15/89

OG WILLIAM REID

SEGMENT ST/ CH016

STREAM 226-20-16258

DATE 25 APR 90

SKETCH MAP

Back + 7200028

CHECKLIST

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

Film AS-15-6

LEGEND

1 Δ

PN - No Subsurface Oil

2 Δ

PN - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

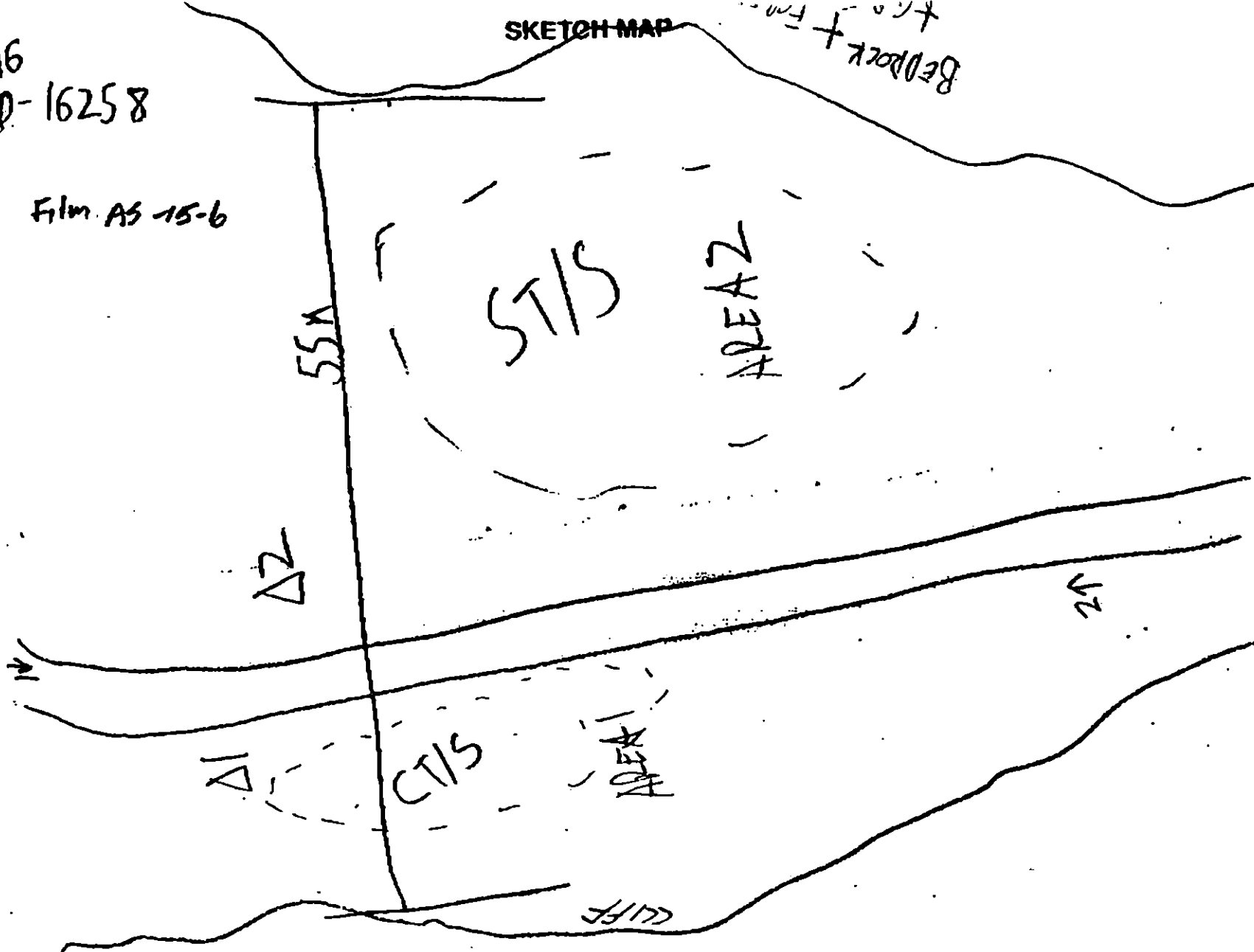
Splashed Distribution

eee

Oiled Vegetation

1 ➡

Photo location, direction, and number



ACFAC MULTI-ASSESSMENT DATA FORM

1 SURVEY TYPE: BS SS TS AVS SCMA MMS PTA2 REGION: PHS KP,CI K,APMETHOD: Aerial Ground Boat3 DATE: 4/25/90 18 HIGH TIDE TIMES: 15004 START TIME: 1125 19 HIGH TIDE HTS: +11 FT5 STOP TIME: 1148 17 LOW TIDE TIMES: 08306 SECTANT #: CH-016 18 LOW TIDE HTS: -4 FT7 STATION #: _____ 19 TIDE HT AT SURVEY: +3 FT

8 K-UNIT: _____ Ebb Slack Flood Slack

9 STAT AREA: _____ 20 USCG QUAD: SEW 8-3

10 LAT: _____ 11 LONG: _____

12 SOURCE: Map Loran

13 LOCATION: SOUTH CHANAGA ISLAND

14 DESCRIPTION: _____

EXTENT OF OIL

	SHORELINE				STREAM			
	L	V	H	S	L	V	H	S
27 SURFACE COVERAGE	100	50						

28 SURFACE THICKNESS	SLIM						
----------------------	------	--	--	--	--	--	--

29 PENETRATION	-0						
----------------	----	--	--	--	--	--	--

30 OVERALL OIL IMPACT: N VL L M H31 OIL TYPE: Pooled Mousse Tar Asphalt Sticky Stain32 OILED DEBRIS: Y Y33 SHORELINE TYPE: Headland Low-lying Rocks Beach Coral
Lagoon Marsh34 WAVE EXPOSURE: High Moderate Low35 SUBSTRATE TYPE: Bedrock _____ Boulder X Cobble X

Gravel _____ Sand _____ Mud/silt _____

21 TEAM RECORDER: Tom Crowe22 OBSERVERS: Mike Wiedmer23 AGENCY: ADF+G24 PHOTOS TAKEN: Y Y

Roll #: _____ Frames: _____

25 VIDEO TAKEN: Y Y TAPES: _____

Start: _____ End: _____

26 SAMPLES TAKEN: Y Y Number

Oil: _____

Sediment: _____

Biological: _____

Water: _____

36 CATALOGED ANAD. FISH BREAST Y N

37 CATALOG #: 226-20-16258

38 STREAM NAME: _____

39 OIL IN STREAM BED? Y N

40 OIL ON STREAM BANKS? Y N41 OIL ON BEACH ADJACENT TO MOUTH? Y N
(within 50 meters)

42 OIL WITHIN 1 MILE OF STREAM? Y N

Where: _____

43 ANADROMOUS FISH PRESENT? Y N

44 ANADROMOUS FISH OBSERVATION
Species Aerial Ground

COMMENTS: NO TREATMENT

24/54

48 PHOTOLOG

NAME(S)

DESCRIPTION

RECOMMEND: NO TREATMENT I agree. MM A. ZAVILA

48 OIL DISTRIBUTION DIAGRAM

226-20-16258

CH 016

4/25/90

TWC

#2
*
NO OIL

① *
↑
Pit
NO OIL

STAIN

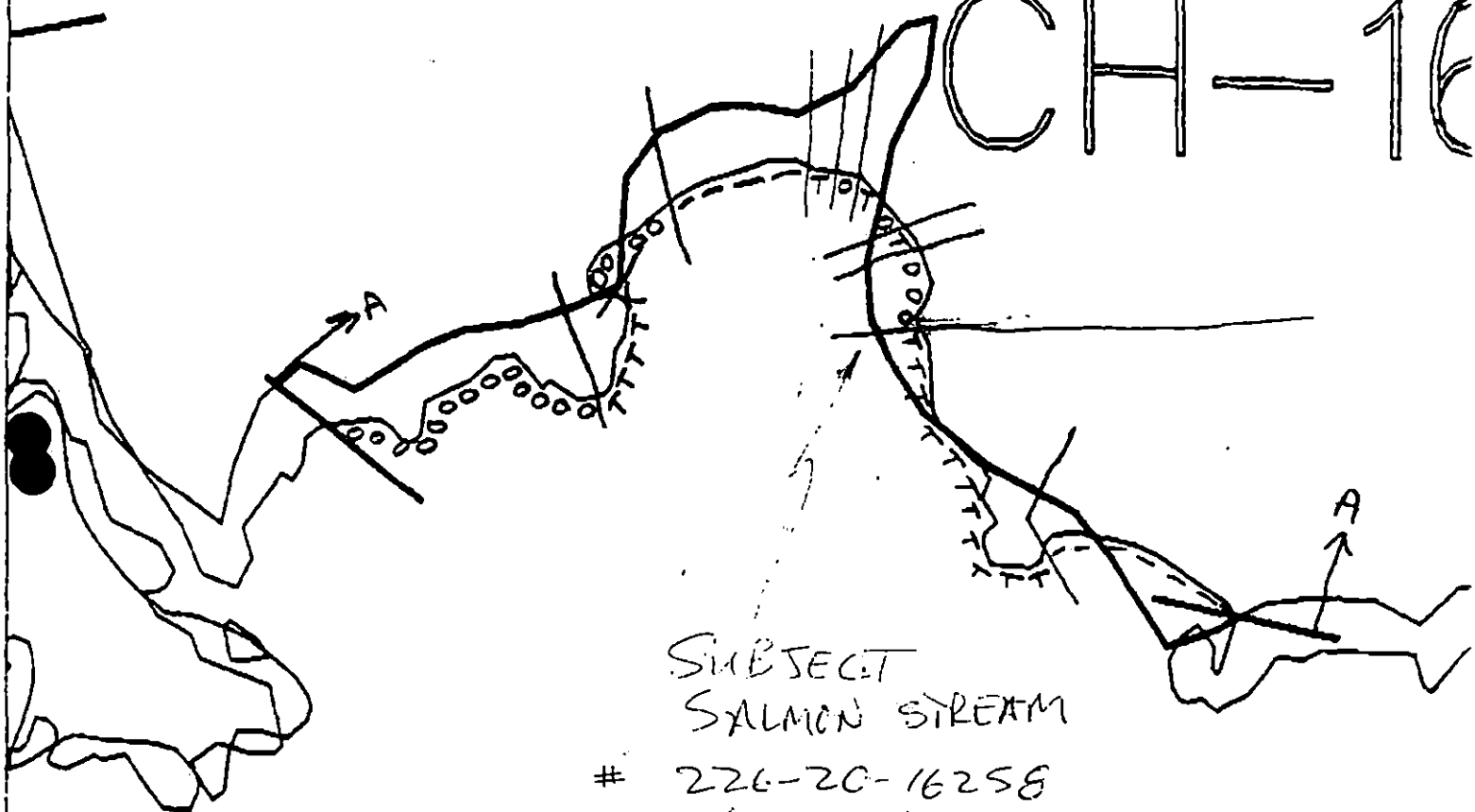
VERY LIGHT
SPORADIC
STAIN/COAT

ONE
A.H.Y

ECOLOGICAL MAP

1A, 1B
1K
6Y
4EE

CH-16



SUBJECT
SALMON STREAM

226-20-16258
(P3, 2/90)

CH-16-A (1 of 1)

19/39

XXXX Wide
//// Medium

--- Narrow

TTTT Very Light

0000 No Oil

CH-16

ADEC Segment Length: 1376m



Map Key: PWS-42

Name: Randy Siegel

Date: 4/19/90

Date Entered:

1991 MAYSAP EVALUATION

SEGMENT: CH 016 SUB: A REGION: PWS SURVEY DATE: 5/3/91

ENVIRONMENTAL SENSITIVITIES:

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

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

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.

TEAM NO. 4 SEGMENT CH 16A SUBDIVISION _____ DATE 5/3 /91

ADEC

NAME Dianne Musson SIGNATURE Dianne Musson☐ NTR ☐ Treatment Recommended

Much of the segment was not surveyed due to previous surveys showing no oiling. Tarmals, Tar balls, coats and covers primarily in band shown on sketch map.

EXXON

NAME LARRY D. OLSON SIGNATURE Larry D. Olson

☒ NTR 5 G.O. Bags of tar Balls were removed from area indicated on sketch map. No recoverable oiling remains.

LANDMANAGER

NAME LARRY EVANOFF OF CVC SIGNATURE LE☐ NTR ☒ TREATMENT RECOMMENDED

PORTION OF THIS SEGMENT NOT SURVEYED BECAUSE PREVIOUS SURVEYS SHOWED NO OIL. AN AREA WEST OF THE STREAM, AMONG BOULDERS HAS A BAND OF OILING. I RECOMMEND MANUAL REMOVAL USING TROWEL/SHOVEL. LARGE BOULDERS SHOULD BE TURNED OVER IF FEASIBLE TO EXPOSE OIL. NO BIOREMEDIATION RECOMMENDED

USCG/NOAA

NAME JERRY SCHULTZ SIGNATURE Jerry Schultz

☒ NTR NOTHING OF SIGNIFICANCE REMAINS. FURTHER INTRUSION IS NOT WARRANTED.

OG COMMENTS: Sections of steep bedrock cliffs with fringing talus of very angular boulders / cobbles, and low bedrock outcrops, with pocket boulders of pb / cb or cb / pb. Oiling occurs on west side of cove, among large and angular boulder talus at the base of bedrock cliffs. as one cent of

JO. Sketch Map

CH 016 A

4 Sempels

5 MAY 91

0910 - 0942

Legend

 Bedrock cliff or outcrops

 talus

 pb / cb

 cb / pb

Worked on

A1

$\rightarrow CV < 10\%$

$CT < 5\%$

2 x 60

A2

Stream

Gravelly lacustrine

Back stream

UNSURVEYED

Meters

0

100

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 3, 1991	0910 - 0942
SEGMENT #	CH016	TIDAL HEIGHT (Range)	+2.0 => +1.0	
SUBDIVISION	A	BIOLOGIST	JIM BARRY	
SECTATE	Calm	WIND SPEED/DIRECTION	Calm, cloudy	

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A A cover and coat of oil is located in the upper zone of this talus boulder beach. Scattered barnacles, limpets, littorines, and Fucus are present at the zone of the oiled area, as are a few mussels. Slightly below the oiled area, the abundance of these organisms increases, as it does at similar tidal levels in nearby, un-oiled areas. Below the oiled site, the cobble talus beach is very rich in vegetation and fauna. Fucus contributes the greatest cover, with high densities of barnacles (Balanus), littorines, and limpets. Mussels also are present in dense occasional patches. The low zone has several common species of invertebrates, such as sea stars (Pycnopodia, Leptasterias, Dermasterias), fishes (pricklebacks), polychaetes, flatworms, hermit crabs, bryozoans, and occasional holothurians and anemones.

There will be no adverse impacts to the biota at this site from localized cleanup activities, such as manual removal.

Summary of Subdivision CH016-A

We visited only a small portion of this subdivision. The visited site is a fairly wide beach with an anadromous stream. The oiled area is located approximately 300 m from this stream. The talus beach near the oiling is discussed above. The remainder of the site includes two other habitat types. Cobble/pebble beaches and bedrock headlands/outcrops all occur on the segment. The cobble pebble beaches are characterized by having less apparent macrofauna than the bedrock substrata, which are heavily vegetated with Fucus and red algae. A sparse clam bed occurs near the mouth of the anadromous stream.

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	
Seabirds	1	4	
Waterfowl	2	17	
Gulls/Kittiwakes	2	5	
Shorebirds			
Corvids			
Other Birds			

(MAP)
 → NEST REPORTED FROM THIS SEGMENT, BUT NOT SEEN
 NEST IN ADJACENT SUBDIVISION (CH-20A) d.m.

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters		River Otter	1
Pinnipeds (specify)			
Harbor Seal	1		
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

CH016-A Biology Report, continued

Common Species of Subdivision CH016-A

A. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Agarum fimbriatum, Costaria costata, Fucus distichus, Hildenbrandia sp., Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Corallina sp., Halosaccion glandiforme, Lithothamnion sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria palmata, Petrocelis 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, Epiactis ritteri, Metridium senile
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaetes
Nepthyidae
Nereidae - Nereis spp.
Serpulidae
Serpula sp., Crucigera sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii,
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles - Balanus glandula
 - c. Crabs - Hemigrapsus oregonensis, Paguridae (hermit crabs), Oregonia gracilis
 - d. Isopods - Idotea wosnesenskii
11. Mollusca
 - a. Chitons - Mopalia mucosa, Katharina tunicata, Tonicella lineata,
 - b. Snails - Gastropods -
Littorina sp., Natica clausa, Nucella lamellosa, N. lima
 - c. Limpets
Lottia digitalis, L. persona, Tectura persona, T. scutum
 - d. Nudibranches - Lamellidoris fusca
 - e. Mussels and Clams
Clinocardium sp., C. nuttalli, Hiatella arctica, Macoma sp., Modiolus sp., Mya arenaria (soft-shell clam), Mytilus edulis, Prototheca staminea, Saxidomus giganteus
12. Echinoderms
 - a. Brittle Stars - Ophiolus sp., ?
 - b. Sea star Dermasterias imbricata, Evasterias truscheli, Leptasterias hexactis, Pycnopoda helianthoides,
 - c. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Schizoporella sp.
15. Fishes
Cottidae - unknown species
Stichaeidae - Xiphister atropurpureus. X. mucosus

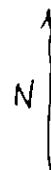
BIO SKETCH MAP

. CHO16-A

J.P. BARRY

910-0942

3 MAY 91

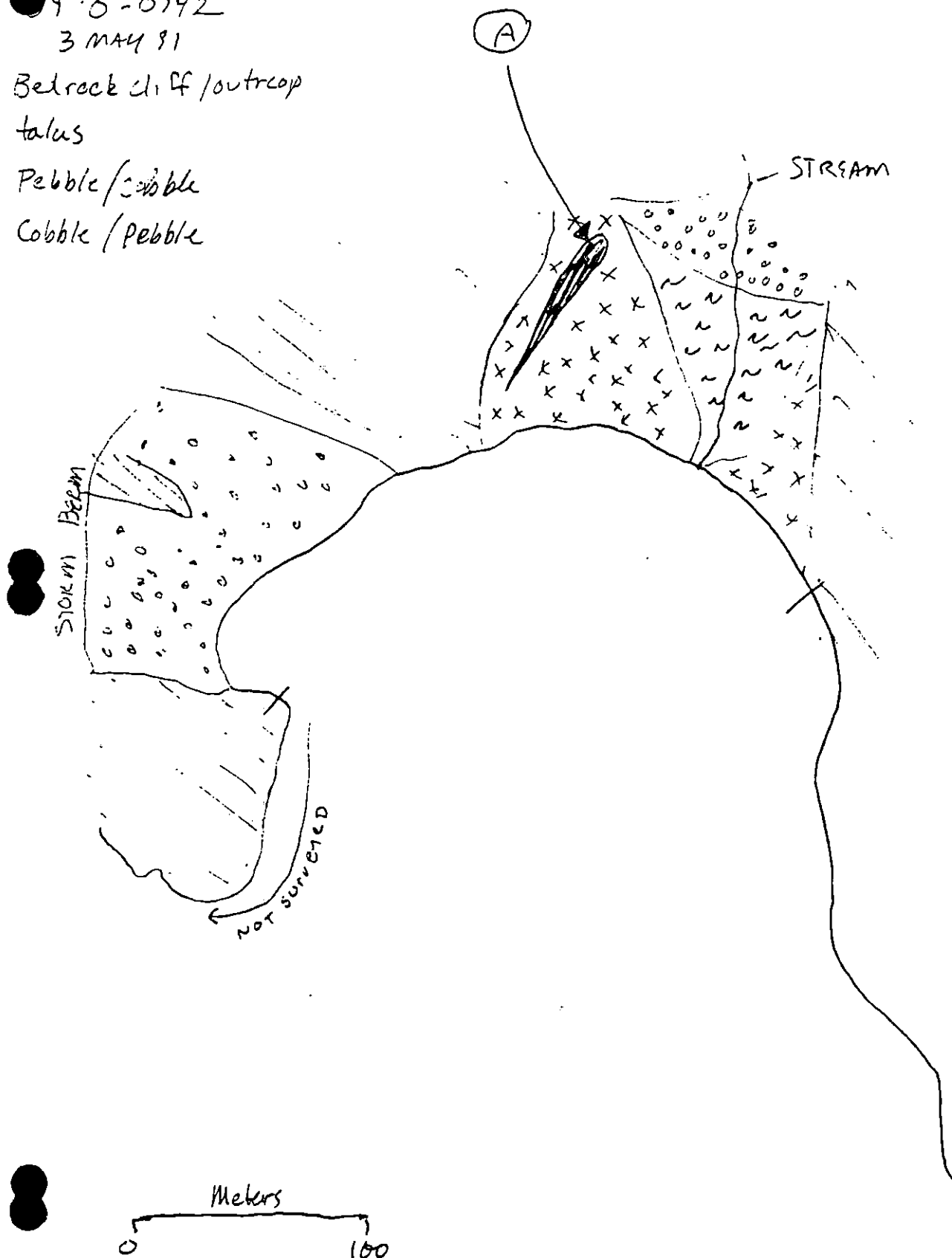


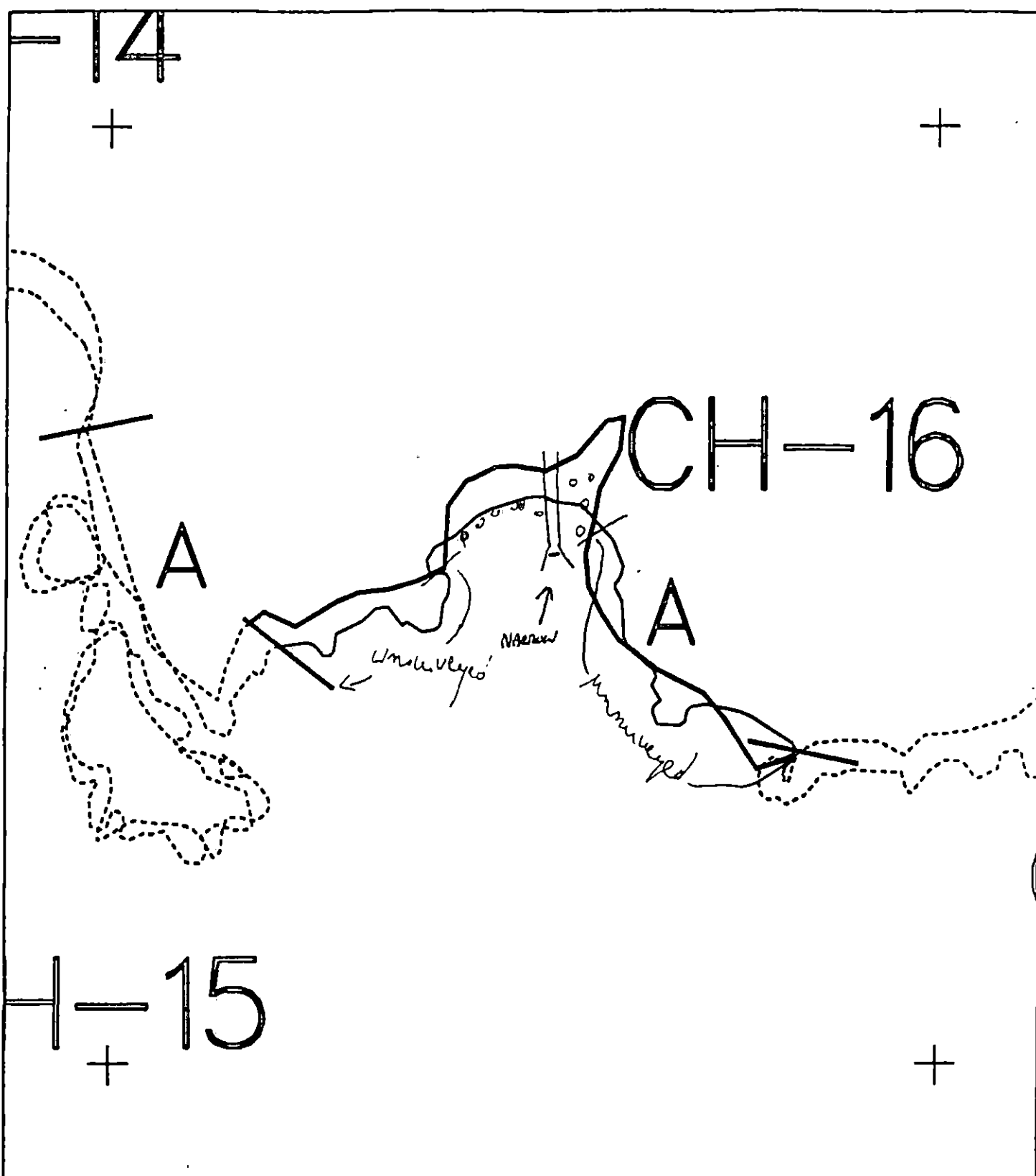
☒ Bedrock cliff/outcrop

☒ talus

☒ Pebble/cobble

☒ Cobble/pebble





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

CH016 A
ADEC Subsegment Length: 1376m
METERS
0 200 400
AK State Plane Zone 4
peh016a



Subdivision Field Map
Map Key: PWSCH016A
Name: In Sample
Date: 3 May 91
Date Entered:

Reviewed: 5/7/91 MC
reviewed 5/6/91 Ki

1991 MAYSAP EVALUATION

SEGMENT: CH 016 SUB: A REGION: PWS SURVEY DATE: 5/3/91

ENVIRONMENTAL SENSITIVITIES:

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

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: Rachel Dan Oue Date: 5/14/91

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 14 1991 FOSC APPROVAL DATE: 5/20/91

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.

TEAM NO. 4 SEGMENT CH 16A SUBDIVISION _____ DATE 5/3/91

ADEC

NAME Dianne MunsonSIGNATURE Dianne Munson☐ NTR ☐ Treatment Recommended

Much of the segment was not surveyed due to previous surveys showing no oiling. Tarmals, Tar balls, coats and covers primarily in band shown on sketch map.

EXXON

NAME LARRY D. OLSONSIGNATURE Larry D. Olson

☒ NTR 5 G.O. Bags of ten Balls were removed from area indicated on sketch map. No recoverable oiling remains.

LANDMANAGER

NAME LARRY EVANOFFOF CVCSIGNATURE LE☐ NTR ☒ TREATMENT RECOMMENDED

PORTION OF THIS SEGMENT NOT SURVEYED BECAUSE PREVIOUS SURVEYS SHOWED NO OIL. AN AREA WEST OF THE STREAM, AMONG BOULDERS HAS A BAND OF OILING. I RECOMMEND MANUAL REMOVAL USING TROWEL/SHOVELS. LARGE BOULDERS SHOULD BE TURNED OVER IF FEASIBLE TO EXPOSE OIL. NO BIOREMEDIATION RECOMMENDED

USCG/NOAA

NAME JERRY SCHULTZSIGNATURE Jerry Schultz

☒ NTR NOTHING OF SIGNIFICANCE REMAINS. FURTHER INTRUSION IN NOT WARRANTED.

REVISED: 5/7/91 MC
revised 5/6/91 KG

ug Sketch Map

CH 016 A

dM Sempels

3 May 91

0910 - 0942

Legend

 Bedrock cliff or outcrops

 talus

 pb / cb

 cb / pb

Worked on

A1

PCV < 10%
CT < 5%
2x60

A2

Stream

Gravelly bedrock

Gravelly bedrock
stream

UNSURVEYED

Meters

0 100

Reviewed 5/7/91 MC

reviewed 5/6/91 KC

L/L

#91047

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 3, 1991 0910 - 0942
SEGMENT #	CH016	TIDAL HEIGHT (Range)	+2.0 => +1.0
SUBDIVISION	A	BIOLOGIST	JIM BARRY
STATE	Calif	WIND SPEED/DIRECTION	Calm, cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A A cover and coat of oil is located in the upper zone of this talus boulder beach. Scattered barnacles, limpets, littorines, and Fucus are present at the zone of the oiled area, as are a few mussels. Slightly below the oiled area, the abundance of these organisms increases, as it does at similar tidal levels in nearby, un-oiled areas. Below the oiled site, the cobble talus beach is very rich in vegetation and fauna. Fucus contributes the greatest cover, with high densities of barnacles (Balanus), littorines, and limpets. Mussels also are present in dense occasional patches. The low zone has several common species of invertebrates, such as sea stars (Pycnopodia, Leptasterias, Dermasterias), fishes (pricklebacks), polychaetes, flatworms, hermit crabs, bryozoans, and occasional holothurians and anemones.

There will be no adverse impacts to the biota at this site from localized cleanup activities, such as manual removal.

Summary of Subdivision CH016-A

We visited only a small portion of this subdivision. The visited site is a fairly wide beach with an anadromous stream. The oiled area is located approximately 300 m from this stream. The talus beach near the oiling is discussed above. The remainder of the site includes two other habitat types. Cobble/pebble beaches and bedrock headlands/outcrops also occur on the segment. The cobble pebble beaches are characterized by having less apparent macrofauna than the bedrock substrata, which are heavily vegetated with Fucus and red algae. A sparse clam bed occurs near the mouth of the anadromous stream.

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	
Seabirds	1	4	
Waterfowl	2	17	
Gulls/Kittiwakes	2	5	
Shorebirds			
Corvids			
Other Birds			

(MAP)
NEST REPORTED FROM THIS SEGMENT, BUT NOT SEEN
NEST IN ADJACENT SUBDIVISION (CH-20A) d.m.

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters		River Otter	1
Pinnipeds (specify)			
Harbor Seal	1		
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

Common Species of Subdivision CH016-A

I. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Agarum fimbriatum, Costaria costata, Fucus distichus, Hildenbrandia sp., Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Corallina sp., Halosaccion glandiforme, Lithothamnion sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria palmata, Petrocelis 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, Epiactis ritteri, Metridium senile
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaetes
Nepthyidae
Nereidae - Nereis spp.
Serpulidae
Serpula sp., Crucigera sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii,
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles - Balanus glandula
 - c. Crabs - Hemigrapsus oregonensis, Paguridae (hermit crabs), Oregonia gracilis
 - d. Isopods - Idotea wosnesenskii
11. Mollusca
 - a. Chitons - Mopalia mucosa, Katharina tunicata, Tonicella lineata,
 - b. Snails - Gastropods -
Littorina sp., Natica clausa, Nucella lamellosa, N. lima
 - c. Limpets
Lottia digitalis, L. persona, Tectura persona, T. scutum
 - d. Nudibranches - Lamellidoris fusca
 - e. Mussels and Clams
Clinocardium sp., C. nuttalli, Hiatella arctica, Macoma sp., Modiolus sp., Mya arenaria (soft-shell clam), Mytilus edulis, Prototheca staminea, Saxidomus giganteus
12. Echinoderms
 - a. Brittle Stars - Ophiolus sp., ?
 - b. Sea star Dermasterias imbricata, Evasterias truscheli, Leptasterias hexactis, Pycnopoda helianthoides,
 - c. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Schizoporella sp.
15. Fishes
Cottidae - unknown species
Stichaeidae - Xiphister atropurpureus, X. mucosus

BIO SKETCH MAP

CHO16-A 6/-

CHO16-A

J.P. BARRY

0910-0942

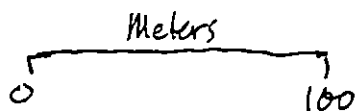
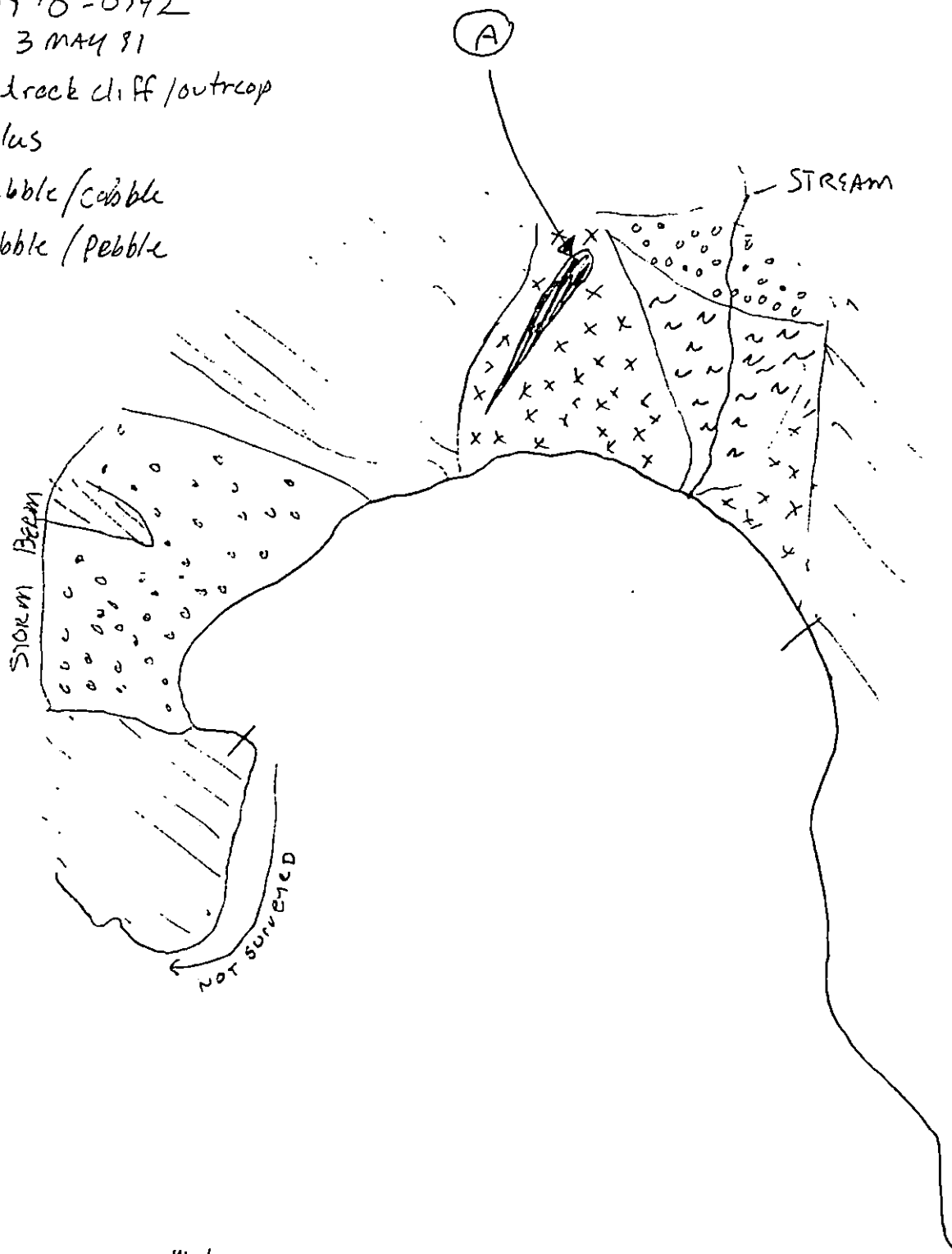
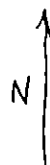
3 MAY 91

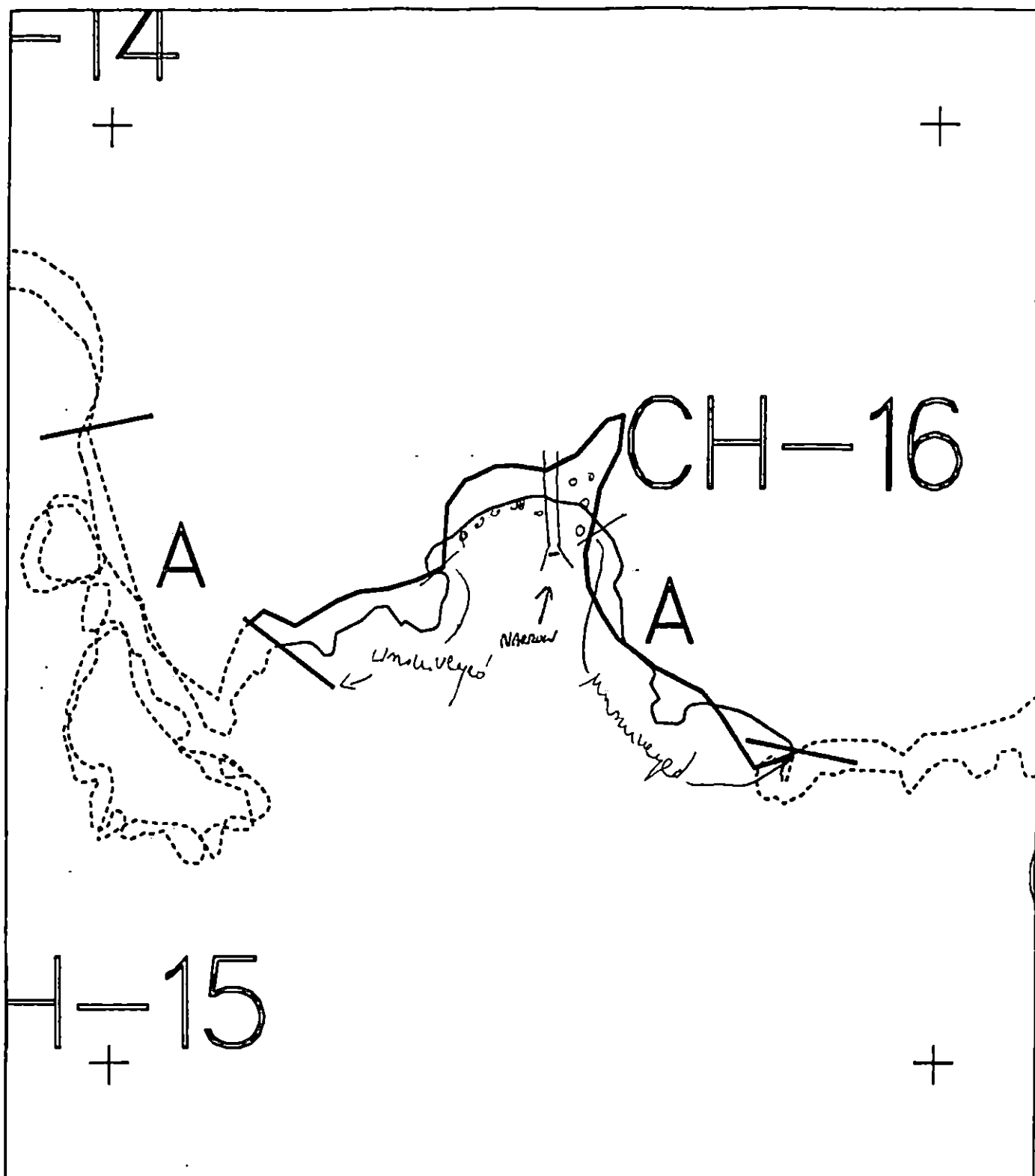
☒ Bedrock cliff/outcrop

☐ talus

⊞ Pebble/cobble

⊞ Cobble/pebble





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

CH016 A
 ADEC Subsegment Length: 1376m
 METERS
 0 200 400
 AK State Plane Zone 4
 pch016a



Subdivision Field Map
 Map Key: PWSCH016A
 Name: In Sample
 Date: 3 May 91
 Date Entered:

Reviewed: 5/7/91 MC
 reviewed 5/6/91 KG

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/CH-16

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ CH-16 SUBDIVISION A (1 OF 1) DATE 4/19/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 226-20-16258

- 1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
- 1B Salmon stream mouth - spawning (7/10 to 8/31)
- 1K Purse seine hook-off (7/20 to 9/30)
- 5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
- 6Y Recreation: Special use destination
- 9BB Privately developed lands

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 363 m: V.Light 507 m: No Oil 505 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: Recommend bioremediation of surface cover/coat areas as shown on attached sketch map. Work should be conducted between 6/1 and 7/10 based on salmon and eagle nest constraints and/or approval by ADF&G and USEWS respectively.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

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

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ CH 16 SUBDIVISION: A (ENTIRE SEGMENT) DATE 4/19/90

USCG

NAME PS3 SCHULTZSIGNATURE Jerry Schultz

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ADEC

NAME MIKE EBELSIGNATURE Michael Ebel

☒ NO TREATMENT RECOMMENDED

☐ TREATMENT SUGGESTED

COMMENTS

where oil was found in. Note: sketch map indicates lone AP patch found by anadromous stream.
CH-16-A: This segment was primarily composed of bedrock cliffs weathering into boulder/cobble debris slopes ~~that~~ incised with several pocket beach. Tar-like oiling was found under the boulders widespread across length of seg. but confined to the UTZ. Interstitial tar had collected detritus forming small "pools" or patches — much of which we called AP, but were more on the order of tar spots & patches on a very loose AP. All pits indicated no subsurface oiling. Due to the texture of oil remaining (low grade) and the difficulty working under a large brown cover, I would recommend no treatment.

LAND MANAGER - CVC

NAME PAT SELANOFFSIGNATURE Pat Selanoff

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

I would suggest using granules (bioremediation) in this segment

24/39

SHORELINE OILING SUMMARY

REVISION NO 04.13.90

OG Randy Siegel USCG Jerry Schultze SEGMENT ST/ CH-16
 BIO Lewis Sharnan LAND REP Pat Salanoff (Cove) SUBDIVISION A (1 OF 1)
 EXXON Leonard Herbst ADEC Mike Ebel TIME 12:30 19:00
 TEAM NO. 12 TIDE LEVEL 3.15' to 5.15' DATE 4/19/90
 EST. SUBDIVISION LENGTH: 1270 m ☐ Sun ☒ Clouds ☐ Fog ☒ Rain ☐ Snow 57°F
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 25 % B 35 % C 25 % P 10 % G 5 % S 0 % M 0 % V 0 %
 SLOPE: Long 70 % Hang 30 % Vert 0 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 300 m VL 440 m NO 530 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR						IMPACTED ZONES			
	C	S	P	S	BR	OR	OL	OP	NO	OTHER	SU	UI	M	U
ASPHALT PAVEMENT		X	✓		X						X	✓		
POOLED		X			X						X			
COVER														
COAT		X	✓		X						X	✓		
STAIN		X	✓		X						X	✓		
MOUSSE														
PATTIES														
TARBALLS														
FILM														
NO OIL											X		X	X

PAVEMENT H F 5 20 sq. m by 2 cmPATTIES / TARBALLS 10 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 sortest pad#BAGS 1Photographs: NoneRoll No. 57-12-7Frames 6

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OIL INTERVAL (cm)	BELOW		OIL / FILM COLOR						PIT ZONE				A	N	A	SHEEN (Y/N)	≡	SURFACE-SUBSURFACE SEDIMENTS
		OP	OR	OL	OP	NO		UO	UC	BR	OR	OL	OP	NO	OTHER	SU	UI	M	U						
1	38					X	0-0		X							X							-	-	P
2	30					X	0-0		X							X						-	-	-	P, G
3	30					X	0-0		X				X			X						Y	20	-	G
4	30					X	0-0		X							X						-	-	-	G
5	25					X	0-0		X							X						-	-	-	P, R
6	30					X	0-0		X							X						-	-	-	B, P

COMMENTS

This segment consists of a cobble-boulder beach flanked by bedrock cliff faces to each side. Low-angle slope above beach.

A band of oiling occurred across much of the eastern portion of the beach, in the UI. Sometimes a ST-CT on/under boulders, sometimes as a foam with splash; patchy, a broken distribution. Large boulders + cobbles on the beach made observation difficult.

REVIEWED _____ DATE _____

10/1/90

SHORELINE OILING SUMMARY (PAGE 2)

REVISION 06-13-90

SEGMENT ST/ CH-16 SUBDIVISION A (1 OF 1)

SUBSURFACE OIL (CONTINUED)

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CH)	BELOW		OIL / FILM COLOR								PIT ZONE				A	N	A	SHEEN (Y/N)	▼	SURFACE SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UD	UC	SK	BP	DR	RM	GY	BL	BR	LR	SU	U	M	L						
7	30					X	0-0		X									X							-	-	G
8	20					X	0-0		X									X							-	-	G, R
9	25					X	0-0		X					X				X							Y	12	G
10	50					X	0-0		X									X							-	-	G
11	25					X	0-0		X									X							N	12	G, R
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							.																				

COMMENTS

17/39

REVIEWED

DATE

UG Kandy Siegel

SEGMENT S 6

SUBDIVISION A

DATE 4 / 19 90

CHECKLIST

- N Arrow
- Approx. Scale
- Seg/Sub Body
- Oil Dist.
- Width
- Length
- % Cover
- Substrate Character
- Est. INVA/LVL
- 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
Patched Distribution

CT/S
Splashed Distribution

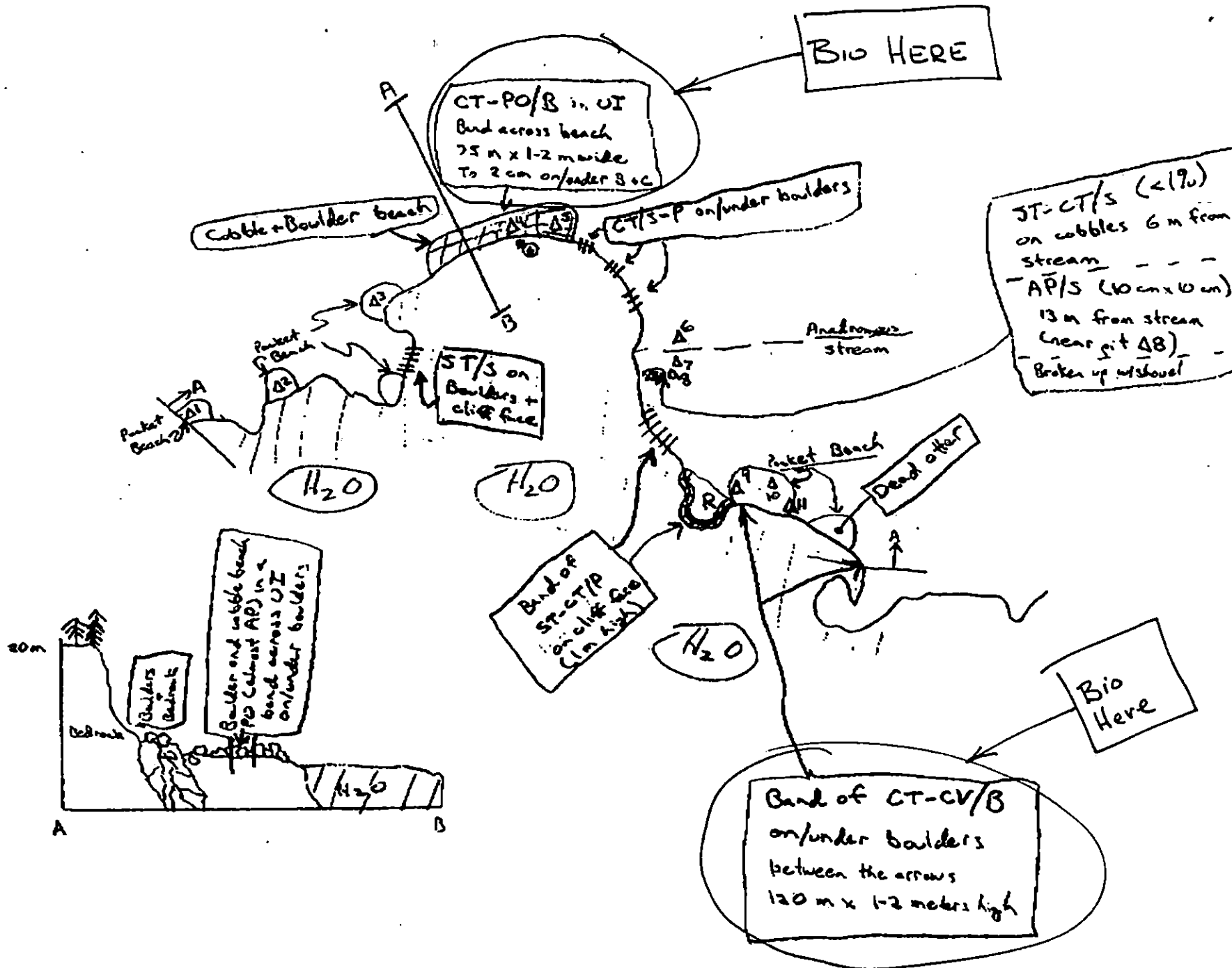
lll
Oiled Vegetation

1 →
Photo location, direction, and number

② = Photo 6

SKETCH MAP

Approx. Scale
300 meters



Oil Character Length (m): AP 2 PO 100 CV 150 CT 700 ST 700 MS 0 PT 0 TB 0 FL 0 NO 530

REVISION: 03/24/00

SHORELINE ECOLOGICAL SUMMARY (Page 1 of 2)

REVISION: 02/22/91

Segment ST / CH - 16 Subdivision A Date (mo / day / yr) 4 / 19 / 90Time (24 hr) 1725-1900 Biologist SHARMAN(A) Substrate type and % of segments: SHARMAN
(1) Bedrock 25 (2) Boulder 35 (3) Cobble 25 (4) Pebble 10 (5) Sand 5 (6) Silt 0 ^{granules}(B) Overall % cover of biota (% of segment): Dense SHARMAN 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-12-7Frames 6

BARNACLES

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

NOT PRESENT

GASTROPODS (ANCELLA, LITTORINA, LIMPAETE)

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

NOT PRESENT

FUCUS

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

NOT PRESENT

Wildlife Observations/ General Comments: Did not observe LITZ. 3 pairs Barrow's goldeneyes at mouth of stream, also geese roost on banks. Deer roost in supratidal, 2 other pelvis bare. 1 dead adult sea otter in UTR, bones & some hide, no oil, cause of death unknown. See sketch map for location. Ecologically, this segment is somewhat similar to CH-19 (see Ecological Summary for that segment). Note very good barnacle

Ecological Considerations:

There are 6 resource sensitivities listed for this segment from catalogued data: Salmon Fry Destigmation (Code 1A); Salmon Spawning (Code 1B) - for anadromous stream # 226-20-16258; Eagle Nest (Code 5T) - actually 400m E. of E. boundary & within segment CH-20; Purse Seine Hookoff (Code 1K); Special Use Destination (Code 6Y); and Privately Developed Lands (Code 9BB). We did not observe the eagle nest, but check CH-20, it might be there. The anadromous stream is probably the most important resource consideration - see sketch map for exact location. (cont.)

CH-16

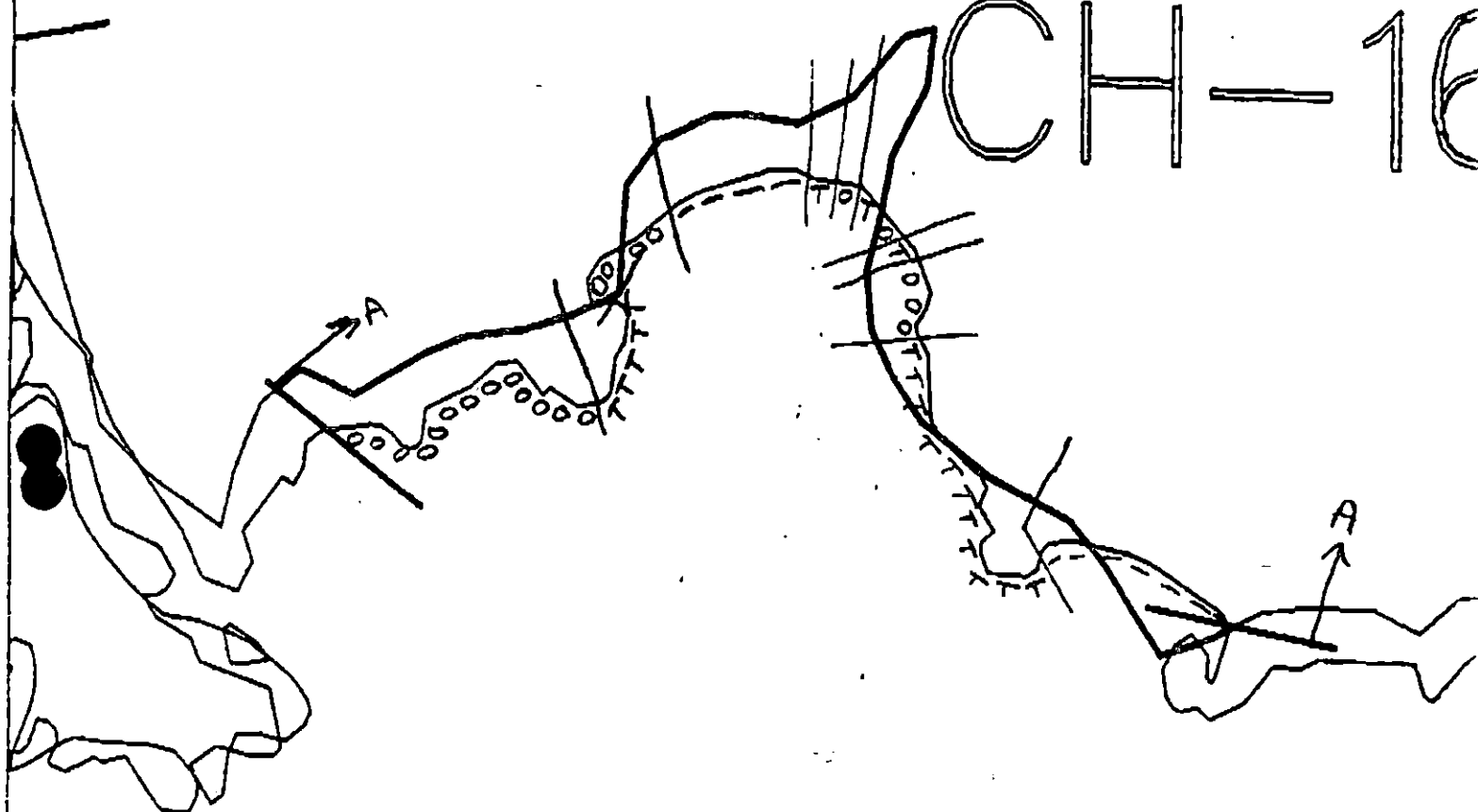
Shoreline Ecological Summary (cont.)
(Page 2 of 2)Sherman
4/19/90General Comments (cont.):mostly E. portion
of segment

spot settlement, good Fucus recruitment. In the UTZ there is a broad (1-2m vertical) oil coat band on vertical bedrock/boulder faces; within this band I observed post spill spot settlement and Fucus recruitment only on spots bare of oil - none directly on weathered oil. Good recruitment of both species on either side (above and below) of the band. Adult barnacle mortality 50-70% within the band, 5-20% outside the band. In the MTZ, mussel beds are rare but are normally recruiting within established populations. Pebble/granule pocket beaches are generally depauperate except on scattered bedrock outcrop + boulder surfaces. Fittorinae are laying eggs beneath boulders. Fucus is joined, on bedrock surfaces, by Scytosiphon, Odonthallia, and green filamentous forams. MTZ tidepools on bedrock platforms include Ptilothamnium, erect articulated coralline, Spirorbis, Anthopleura artemesia, Margarita, etc. General impression: normal + healthy intertidal community, recruiting successfully. Exception is mortality + lack of recruitment within oiled UTZ band.

Ecological Considerations (cont.):

While the channel and banks appear unoiled, there is very light to narrow oiling on adjacent beaches - within 50m on the N. side, within 5-10m on the S. side (see OG form). Ecological Summary for CH-14 notes potential concerns for anadromous streams.

CH-16



19/39

XXXX Wide
/// Medium
--- Narrow ADEC Segment Length: 1376m
TTTT Very Light
0000 No Oil

0 100 200 300
METERS



Map Key: PWS-42
Name: Randy Siegel
Date: 4/19/90
Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ CH-16 SUBDIVISION A (1 OF 1) DATE 4/19/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 226-20-16258

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

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

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

5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)

6Y Recreation: Special use destination

9BB Privately developed lands

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: *J. Daniel M. McMahon*

DATE: 5/1/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 363 m: V.Light 507 m: No Oil 505 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

 No Treatment Recommended

X Treatment Recommended

X Manual Pickup

X Bioremediation

X Tarmat Removal

 Snare/Absorbent Booms

 Oil Snares (pom poms)

 Absorbents (pads, rolls, etc)

 Spot Washing: Wands

 Beach Cleaner

 Other (see comments)

COMMENTS: Recommend bioremediation of surface cover/coat areas as shown on attached sketch map. Work should be conducted between 6/1 and 7/10 based on salmon and eagle nest constraints and/or approval by ADF&G and USFWS respectively.

TAG COMMENTS: MANUAL PICK UP OF ASPHALT/POOLED OIL PRIOR TO BIO.

TAG APPROVAL DATE: 4/28/90

ADEC *Art Weiner*

EXXON *Andy Tenz*

NOAA *Gary Petro*

USCG *Kenneth Keane*

FOSC: *my L*

DATE: 5-9-90

cvc Rep to be present -

UG Kandy Segel

SEGMENT 16

SUBDIVISION A

DATE 4 / 19 90

CHECKLIST

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

LEGEND

1 Δ
PR - No Subsurface Oil

2 Δ
PR - Subsurface Oil

CT/C
Continuous Distribution

CT/B
Broken Distribution

CT/P
Patchy Distribution

CT/S
Splashed Distribution

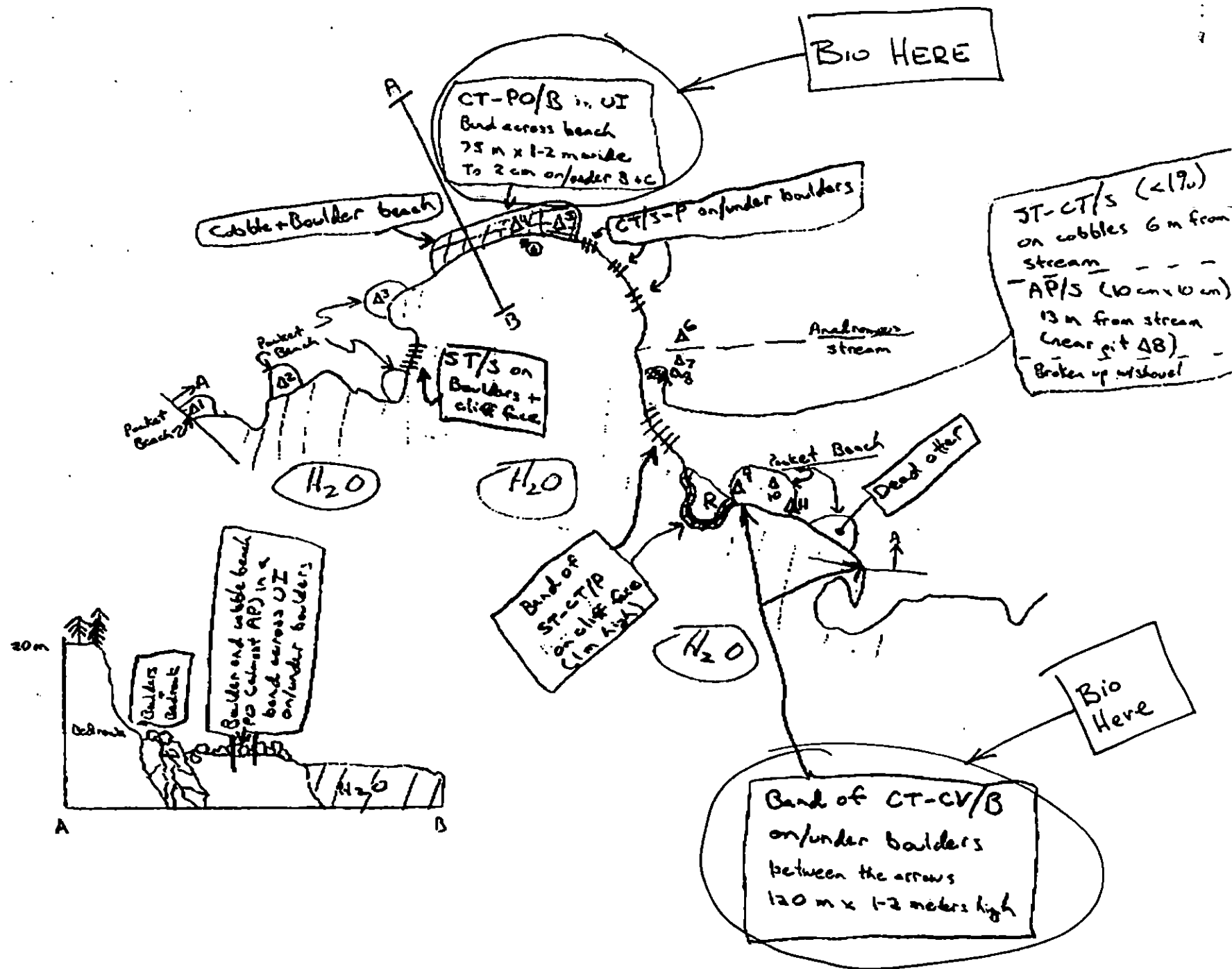
Oil Vegetation

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

Photo 6

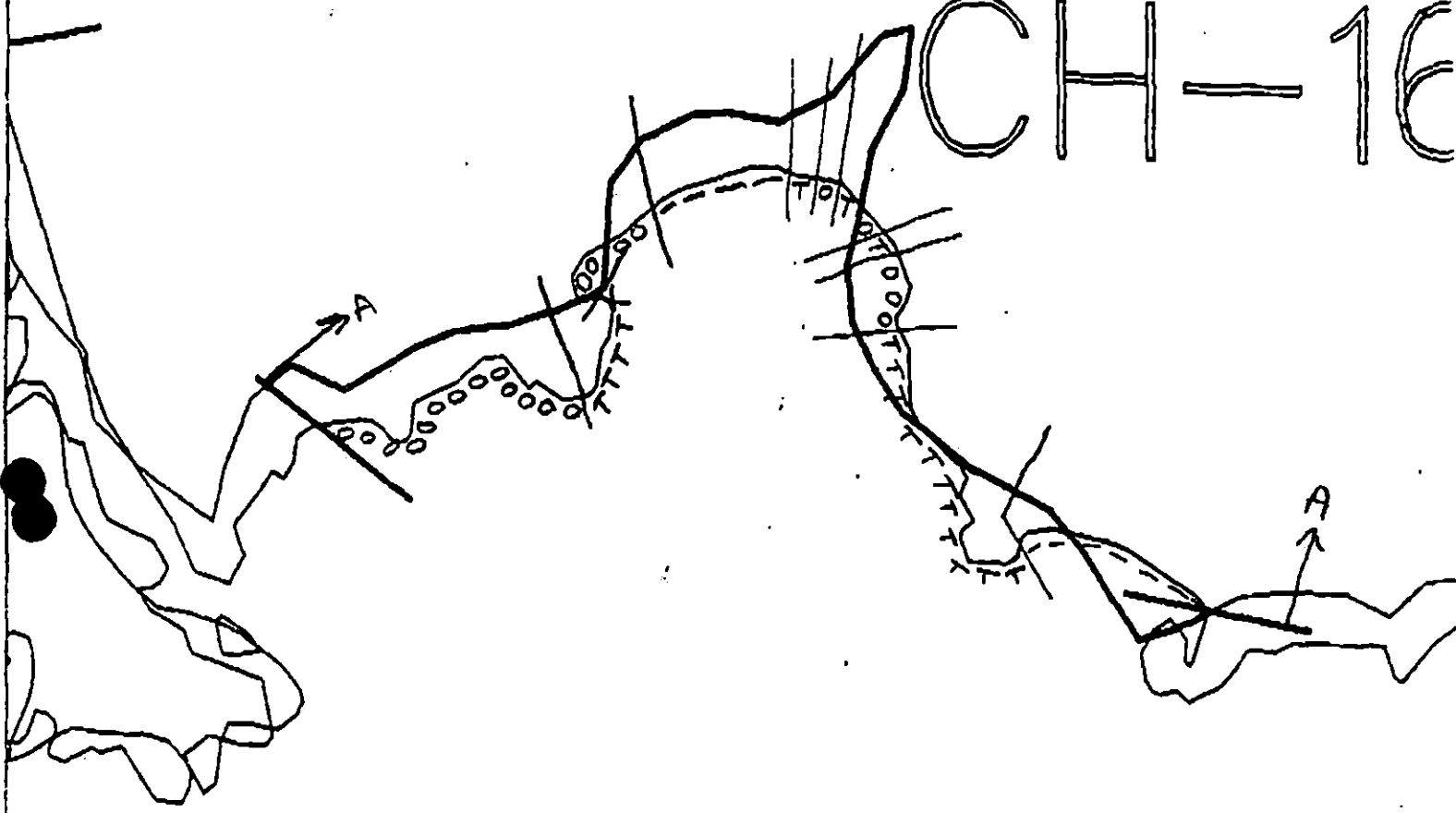
ATCH MAP

Approx. Scale
300 meters



Oil Character Length (m): AP 2 PO 100 CV 150 CT 700 ST 700 MS 0 PT 0 TB 0 FL 0 NO 530

CH-16



19/39

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

CH-16

ADEC Segment Length: 1376m

0 100 200 300
METERS



Map Key: PWS-42
Name: Randy Siegel
Date: 4/19/90
Data Entered:

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT CH-16 SUBDIVISION A (1 of 1)

WORK WINDOW

Manual Pickup and Tarmat Removal
More Than 400m From Active Nest

OPEN

Manual Pickup and Tarmat Removal
Less Than 100m From Active Nest

CLOSED

Bioremediation More Than 100m From Stream and
More Than 400m From Active Nest

Work Prior To 7/20
~~6/20~~ WPK

Bioremediation Less Than 400m From Active Nest

CLOSED

Bioremediation Less Than 100m From Stream
(Only If Eagle Constraint Is Removed)

WORK PRIOR TO 7/10
ADF&G MONITOR REQ.

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

- | | | |
|-------|-------------------------|--|
| 1A,1B | Salmon Stream | This subdivision is closed to bioremediation less than 100m from stream 7/10 to 8/31. Before 7/10, bioremediation is permitted less than 100m from stream with on-site ADF&G monitor or ADEC alternate present. No constraint to bioremediation more than 100m from stream. No constraint to manual pickup and tarmat removal. |
| 1K | Purse Seine
Hook-off | No constraint to manual pickup and tarmat removal; closed to bioremediation after 7/20. |
| 5T | Bald Eagle Nest | USFWS 6/1/90 map indicates an active nest in Subdivision A. Closed to manual pickup, tarmat removal and bioremediation less than 400m from active eagle nest. No constraint to manual pickup, tarmat removal and bioremediation more than 400m from active eagle nest. |

OTHER ECOLOGICAL CONSIDERATIONS

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

FOSC

W. L.

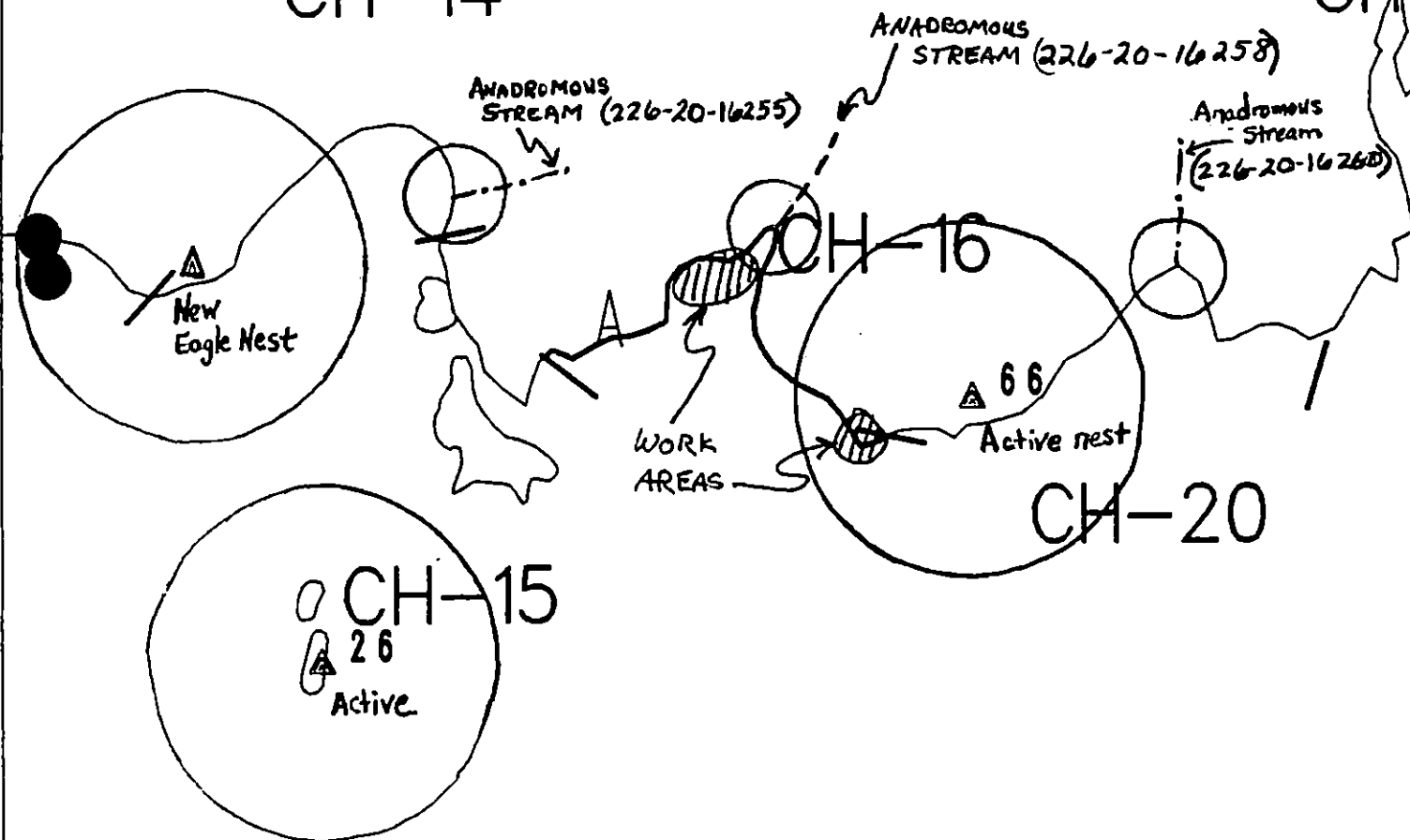
DATE

6-10-90

Incorporates data
from USFWS survey
of bald eagle nests
(6/1/90 map).

CH-14

CH-17



Exxon Company, USA
Map Key: PWS-QT-16



ECOLOGY MAP
SEGMENT CH-16
SUBDIVISION A (1 of 2)
METERS

- ★ Seabird Colony
- △ Eagle Nest

SHORELINE EVALUATION

SEGMENT ST/ CH-16 SUBDIVISION A (1 OF 1) DATE 4/19/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 226-20-16258

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

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

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

5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)

6Y Recreation: Special use destination

9BB Privately developed lands

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: J. David M. Marham

DATE: 5/1/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 363 m: V.Light 507 m: No Oil 505 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

 No Treatment Recommended

X Treatment Recommended

X Manual Pickup

X Bioremediation

X Tarmat Removal

 Snare/Absorbent Booms

 Oil Snares (pom poms)

 Absorbents (pads, rolls, etc)

 Spot Washing: Wands

 Beach Cleaner

 Other (see comments)

COMMENTS: Recommend bioremediation of surface cover/coat areas as shown on attached sketch map. Work should be conducted between 6/1 and 7/10 based on salmon and eagle nest constraints and/or approval by ADF&G and USFWS respectively.

TAG COMMENTS: MANUAL PICK UP OF ASPHALT/POOLED OIL PRIOR TO BIO.

TAG APPROVAL DATE: 4/28/90

ADEC Art Weiner N. Weiner

EXXON Andy Tate Paul

NOAA Gary Petros Jay Petros

USCG KENNETH KEANE Robert

FOSC:

DATE: 5-9-90

CVC Rep to be present -

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/CH-17

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ CH-17 SUBDIVISION A (1 OF 1) DATE 4/20/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 226-20-16270 and additional uncatalogued anadromous stream.

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

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

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

6Y Recreation: Special use destination

9BB Privately developed lands

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

If 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 286 m: No Oil 2551 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 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. 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 unopened intertidal and subtidal algae and seagrass. Contact ADF&G for specific dates and locations.

3N, 3P
3O, 3Q

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

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

Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts.

5R

Seabird colony (5/1 to 9/1)

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

5S

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

Restrict all activity to essential minimum, especially air traffic.

5T

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

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

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

6U

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

6V

Anchorage (6/1 to 9/15)

6W

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

6X

Lodge (6/1 to 9/15)

✓ 6Y

Special use destination

7Z

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

7HH

Finfish harvesting

7II

Deer harvesting (8/15 to 2/28)

7JJ

Invertebrate harvesting

For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.

PRIVATELY DEVELOPED LANDS

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / CH-17 SUBDIVISION: A (ENTIRE SEGMENT) DATE 4/20/90

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

Recommend Future Monitoring Site for Salmon
CH-17-A: Very occasional, very light splashes of stain and coat were found mostly on the bedrock. Two tarball patches were found within 30m of the anadromous stream (east fork). No other oiling found on surface or subsurface because of the very little oil found in this segment NO treatment is required. However, the streams should be monitored for contaminated salmon to determine if any nearby oiling from other segments will affect the estuary used by such and any antecedent frye in the surrounding area.
ie. future salmon + this year's

LAND MANAGER

NAME PAT SELANOFF (CVC)

SIGNATURE

Pat Selanoff

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

STARTING From CH 17 to the End of segment II appeared to be free of oil. However since there are small pockets of oil that are sporadically found seem to be coming from small amounts of sheen through out this part of the Island, not particularly in this segment, but before and after this segment. I would suggest some testing the salmon fry once they have left the salmon stream for hydrocarbons.

SHORELINE OILING SUMMARY

REVISION NO. 08.17

OG Randy Siegel USCG Jerry Schultz SEGMENT ST/ CH-17
 BIO Lewis Sherman LAND REP Pat Salasoff (CUC) SUBDIVISION A (1 OF 1)
 EXXON Leonard Harbst ADEC Mike Ebel TIME 16:00 17:25
 TEAM NO. 12 TIDE LEVEL 1.8' to 2.18' DATE 4/20/90
 EST. SUBDIVISION LENGTH: 2074 m ☒ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow 45'
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☐ Foot ☐ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 25 % B 25 % C 20 % P 20 % G 5 % S 5 % M 0 % V 0
 SLOPE: Long 25 % Hang 25 % Vert 0 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 175 m NO 189.9

SURFACE OIL

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

PAVEMENT H F S 0 sq. m by 0PATTIES / TARBALLS 0 BAGNEAR SHORE SHEEN? NO BR RW SL T

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DID YOU COLLECT DEBRIS?

YES ☒ NO ☐TYPE Debris#BAGS 1

Photographs:

Roll No. NoneFrames —

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-OR)	BELOW		OIL / FILM COLOR					PIT ZONE				A N A	SHEEN (Y/N)	V	SURFACE SUBSURFACE SEDIMENT
		OP	OR	OL	OF	NO		VO	VC	1	2	3	4	5	SU	U	M	V				
1	30					X	0-0		X						X					—	—	P.G
2	35					X	0-0		X						X					—	—	P.G
3	40					X	0-0		X						X					—	—	G
4	25					X	0-0		X						X					—	—	G
5	30					X	0-0		X						X					—	—	G
6	20					X	0-0		X						X					N	8	G

COMMENTS

This segment consists of an extended gravel-pebble beach with 2 forks of an ~~anadromous~~ anadromous stream flowing through. The beach is flanked to the east and west by high angle bed rock cliffs. Very light oiling in segment. Two tarballs were found 30 m from one fork of the anadromous stream. All pits were clean.

REVIEWED 7WDATE 4/22/90

(2/47)

REVISION 04-13-92

SUBSURFACE OIL (CONTINUED)

[illegible]

COMMENTS

REVIEWED

DATE 4/23/90

SEGMENT 11-17

SUBDIVISION A

DATE 4/20/90

CHECKLIST

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

LEGEND

1 Δ

PH - No Subsurface Oil

2 Δ

PH - Subsurface Oil

CT/C

Continuous Distribution

CT/D

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

Oiled Vegetation

1 →

Photo location, direction, and number



SKETCH MAP

Approx. Scale
300 meters

CT/S on
cliff
10 m x 0.3 m

shoreline
→ A

Low-angle slope
Gravel & pebble bench
with some bedrock outcrops
and boulders

H₂O

CT/CT/S
on di. ss + boulders

ST/S
on cliff
15 x 0.3 m

High-angle cliffs w/ forest

The two anadromous
streams were
probably forks
from a common
stream mouth.

shoreline
A

Oil Character Length (m): AP 0 PO 0 CV 0 CT 175 ST 175 MS 0 PT 0 TB 1 FL 0 NO 1899

REVISIONS

SHORELINE ECOLOGICAL SUMMARY (Page 1 of 2)

REVISION: BY

Segment ST / CH-17 Subdivision A Date (mo / day / yr) 4/20/90Time (24 hr) 1600-1720 Biologist SHARMAN(A) Substrate type and % of segments: SUBDIV.
(1) Bedrock 25 (2) Boulder 25 (3) Cobble 20 (4) Pebble 20 (5) Sand 10 (6) Silt 0 + gravel(B) Overall % cover of biota (% of segment): Dense 0 Moderate X Low 0
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 PRESE

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 PRESE

GASTROPODS (ANCELA, 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 PRESE

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 PRESE

Wildlife Observations/ General Comments: 8 pelagic cormorants, 2 Canada geese (probably a pair), 1 horned grebe, 2 pairs Barnard's yellowlegs, 2 pairs buffleheads, 1 pair muller's, 5 glaucous-winged gulls, 3 crows, 1 fox sparrow in intertidal zone, 1 adult eagle. Deer tracks, goose + river otter scats around stream mouth. Generally important area for terrestrial mammals, shorebirds, seabirds. 2 streams are possibly of some significance.

Ecological Considerations:

Resource sensitivities from catalogued data for this segment include a purple seine hookoff (Code 1K), a nearly eagle nest in adjacent segment CH-21 (code 5T, special use destination (Code 6Y), subsistence salmon harvesting (Code 7Z), an salmon fry outmigration (Code 1A) and salmon spawning (Code 1B) associated with anadromous stream # 226-20-16270 (see sketch map for location). This is an extremely rich and productive area (see above Wildlife Obs./Gen. Comments), both terrestrially and marine-wise. According to team member Pat Selanoff (CUC) this is the most productive salmon stream on Chenequa Island.

CH-17

Shoreline Ecological Summary (cont.)
(Page 2 of 2)Sharman
4/29/90General Comments (cont.):

E. stream is largest and drains lake (but apparently, pinkie + some chum, no sockeye run). Very rich + productive nearshore marine system, great diversity of intertidal habitats (bedrock cliffs, sand flats, boulders, etc.). Gently sloping sandy LTZ harbors moderate bivalve populations. Inner portions of embayment slope down to eelgrass subtidal, and rocky LTZ includes wide algal diversity. Segment is mostly oil-free except rock/boulder cliffs on E. side - stream mouths are unsoiled (exception - one small tar patch 50m E. of E. stream mouth). Abundant mussel egg cases in sandy LTZ around E. stream mouth (*Polynicia* or *Natica*?). Perfectly normal intertidal communities.

Ecological Considerations (cont.):

The area is clearly of substantial importance to birds, and almost certainly to terrestrial mammals. The protected shallow-water eelgrass habitat is of considerable value to marine fish and invertebrate spawning + particularly rearing. The general area is likely quite sensitive to disturbance directly from human presence, and the beaches and uplands potentially very easily disturbed physically by human trampling and other activities. This area is probably the most diverse, productive, and sensitive of all of S. Cherega.

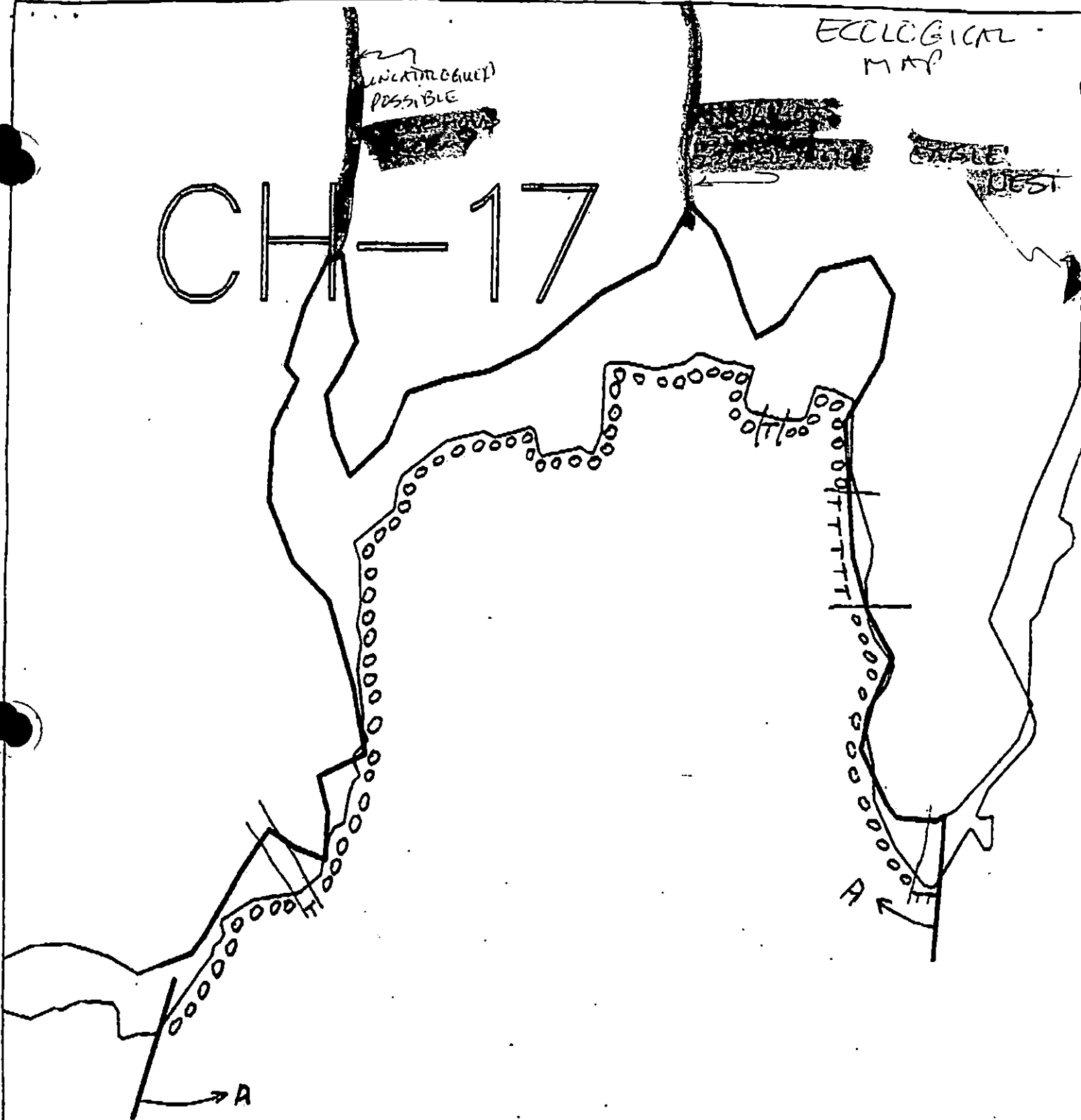
(9/47)

ECCOLOGICAL
MAP

UNLAWFUL
POSSIBLE

CH-17

WATER
TEST



5/47

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

0000 No Oil

CH-17

ADEC Segment Length: 2837m



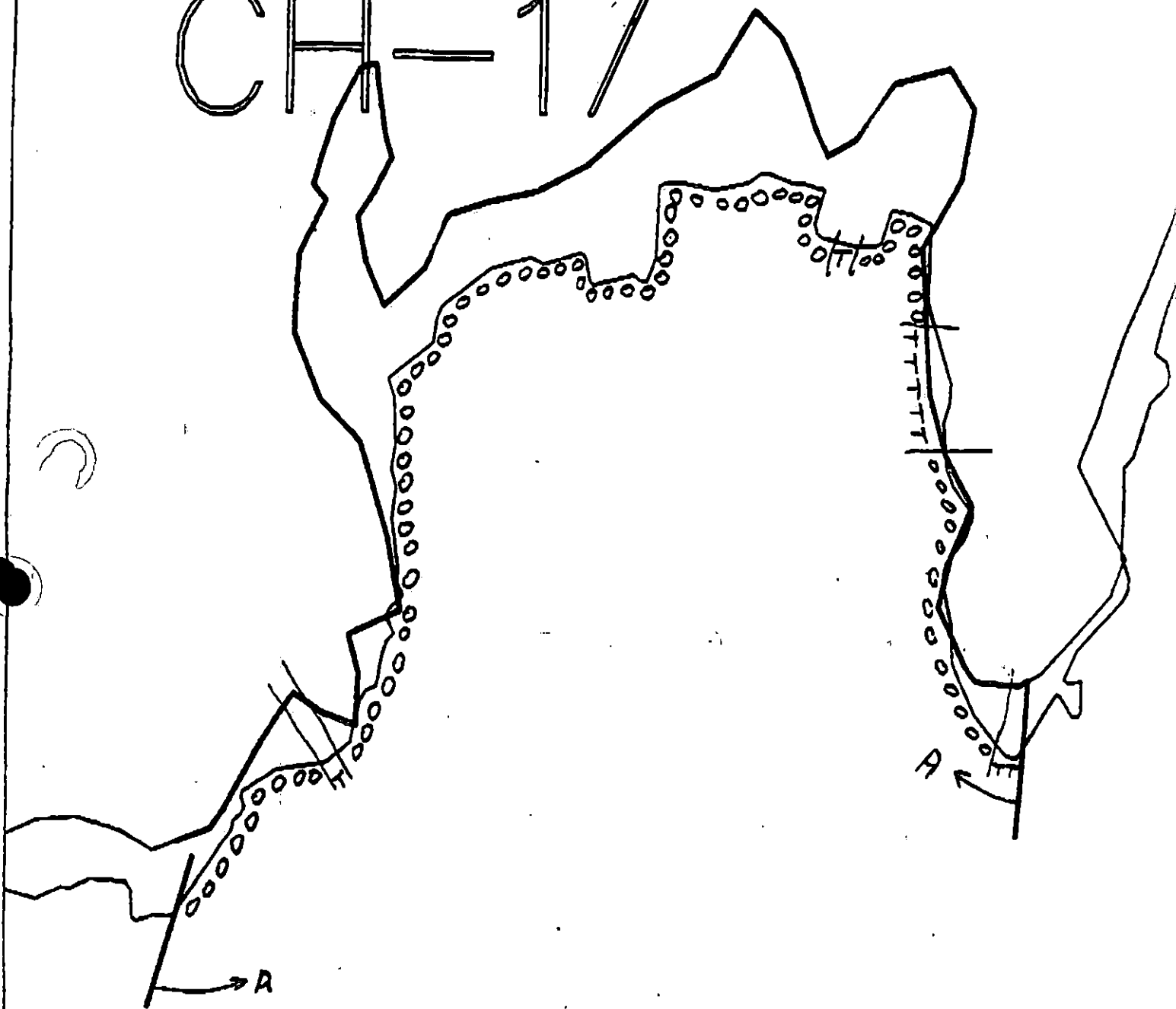
Map Key: PWS-43

Name: Randy Taylor

Date: 4/20/90

Date Entered:

CH-17



5/47

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

CH-17

ADEC Segment Length: 2837m



Map Key: PWS-43

Name: Barry Hays

Date: 4/20/90

Date Entered:

SHORELINE EVALUATION

SEGMENT ST/ CH-17 SUBDIVISION A (1 OF 1) DATE 4/20/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 226-20-16270 and additional uncatalogued anadromous stream.

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

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

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

6Y Recreation: Special use destination

9BB Privately developed lands

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: Charles J. [Signature] DATE: 5/5/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 286 m: No Oil 2551 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

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

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 5/4/90

ADEC ART WEINER [Signature]

EXXON ANDY GAZ [Signature]

NOAA GARY PETREE [Signature]

USCG GARY REITER G.A. Reiter

FOSC: [Signature] DATE: 6-17-90

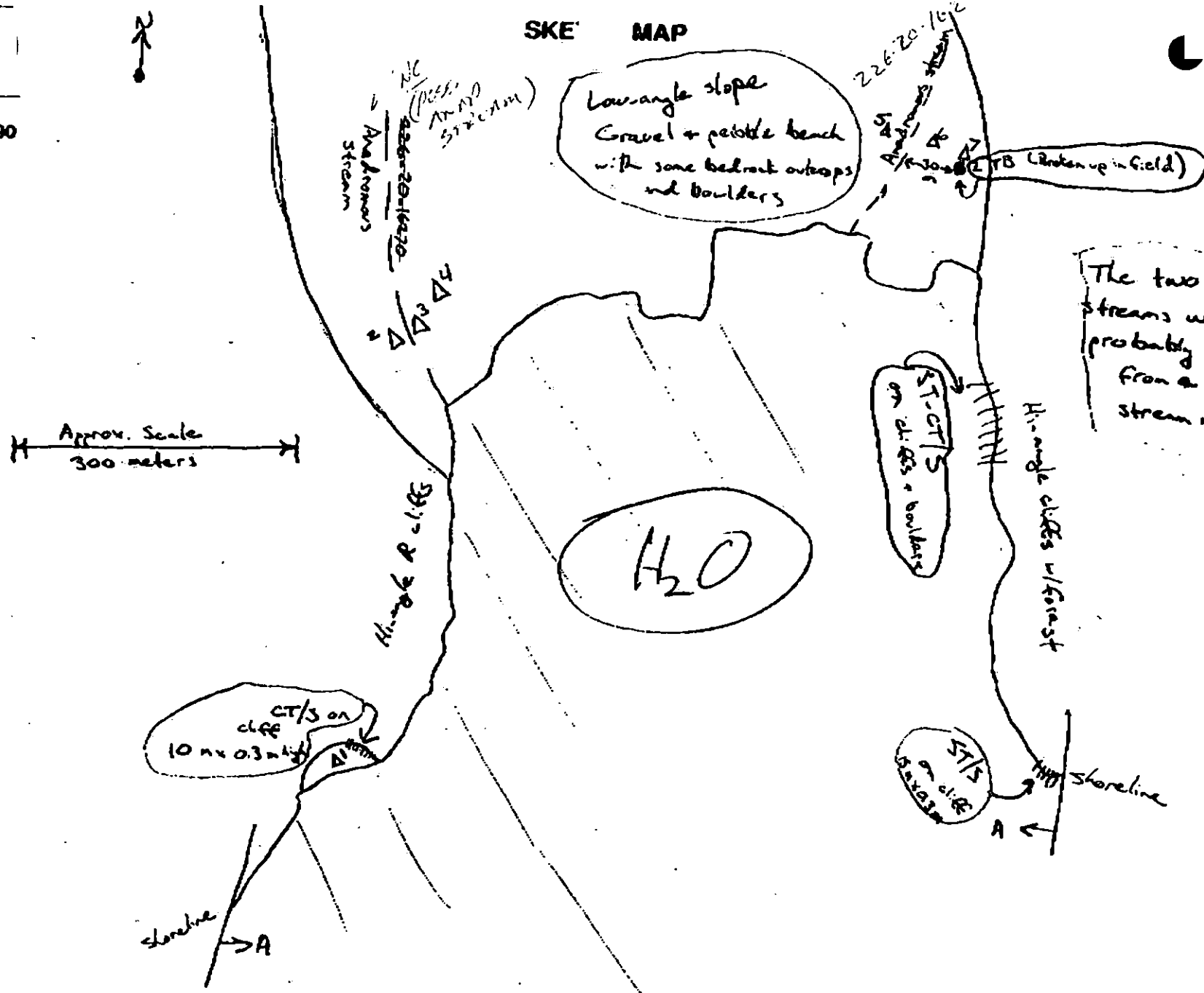
SEGMENT ST/ C
 DIVISION A
 SITE 4 120 90

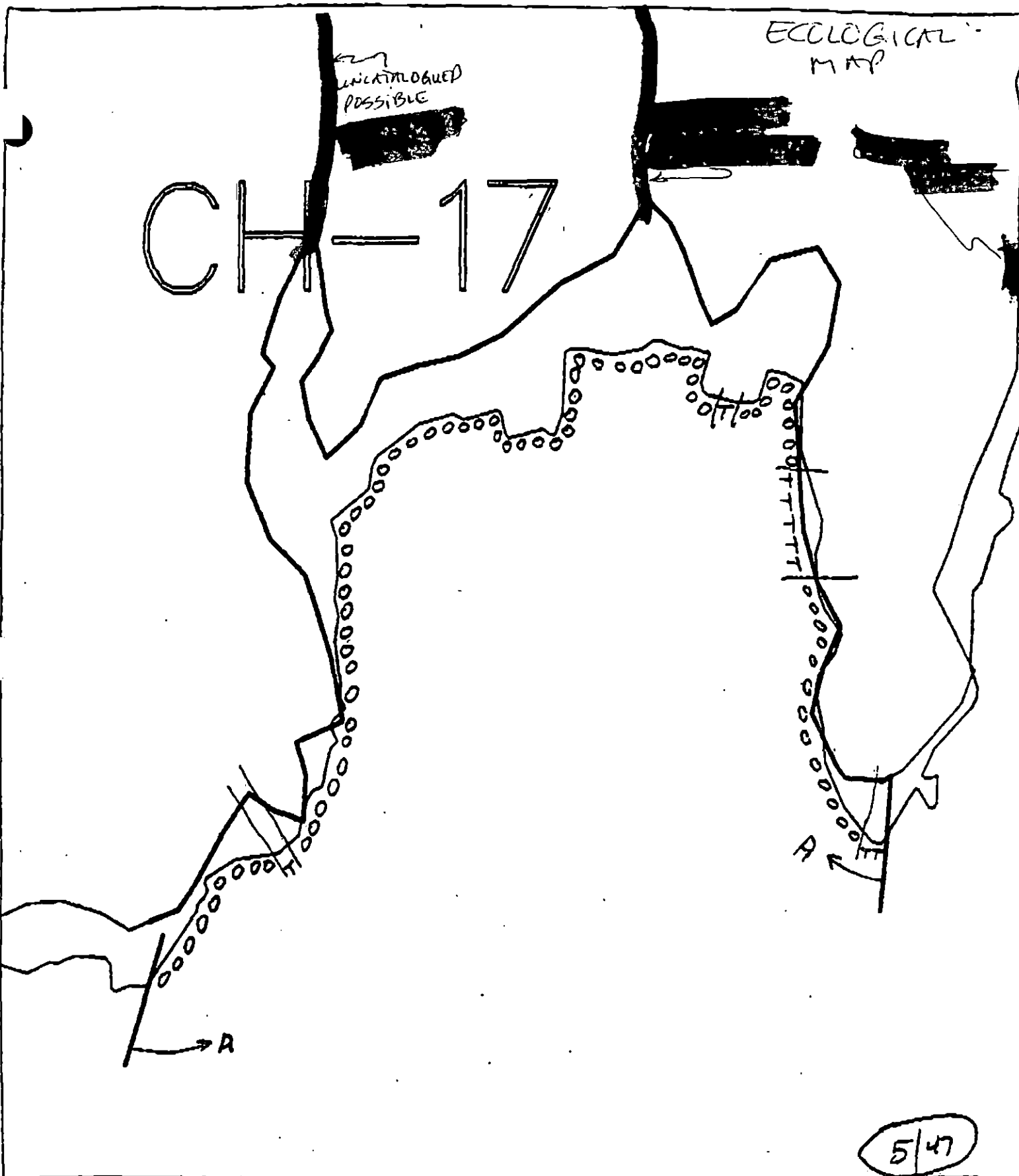
- CHECKLIST**
- ☐ Arrow
 - ☐ Approx. Scale
 - ☐ Seg/Sub Entry
 - ☐ Oil Dist.
 - ☐ Width
 - ☐ Length
 - ☐ % Cover
 - ☐ Substrate Character
 - ☐ Est. HSN/LA/WL
 - ☐ SSL
 - ☐ Profile Location(s)
 - ☐ Profile(s)
 - ☐ Pk Location(s)
 - ☐ Photo Location(s)

- LEGEND**
- 1 Δ No Subsurface Oil
 - 2 Δ Subsurface Oil
 - CT/C Inshore Distribution
 - CT/B In Distribution
 - CT/P y Distribution
 - CT/S Not Distribution
 - RR Vegetation
 - location, direction, meter

LR/r

Tracer Length (m): AP 0 PO 0 CV 0 CT 175 ST 175 MS 0 PT 0 TB 1 FL 0 NO 1899





XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

OOOO " "

CH-17

ADEC Segment Length: 2837m

0 100 200 300

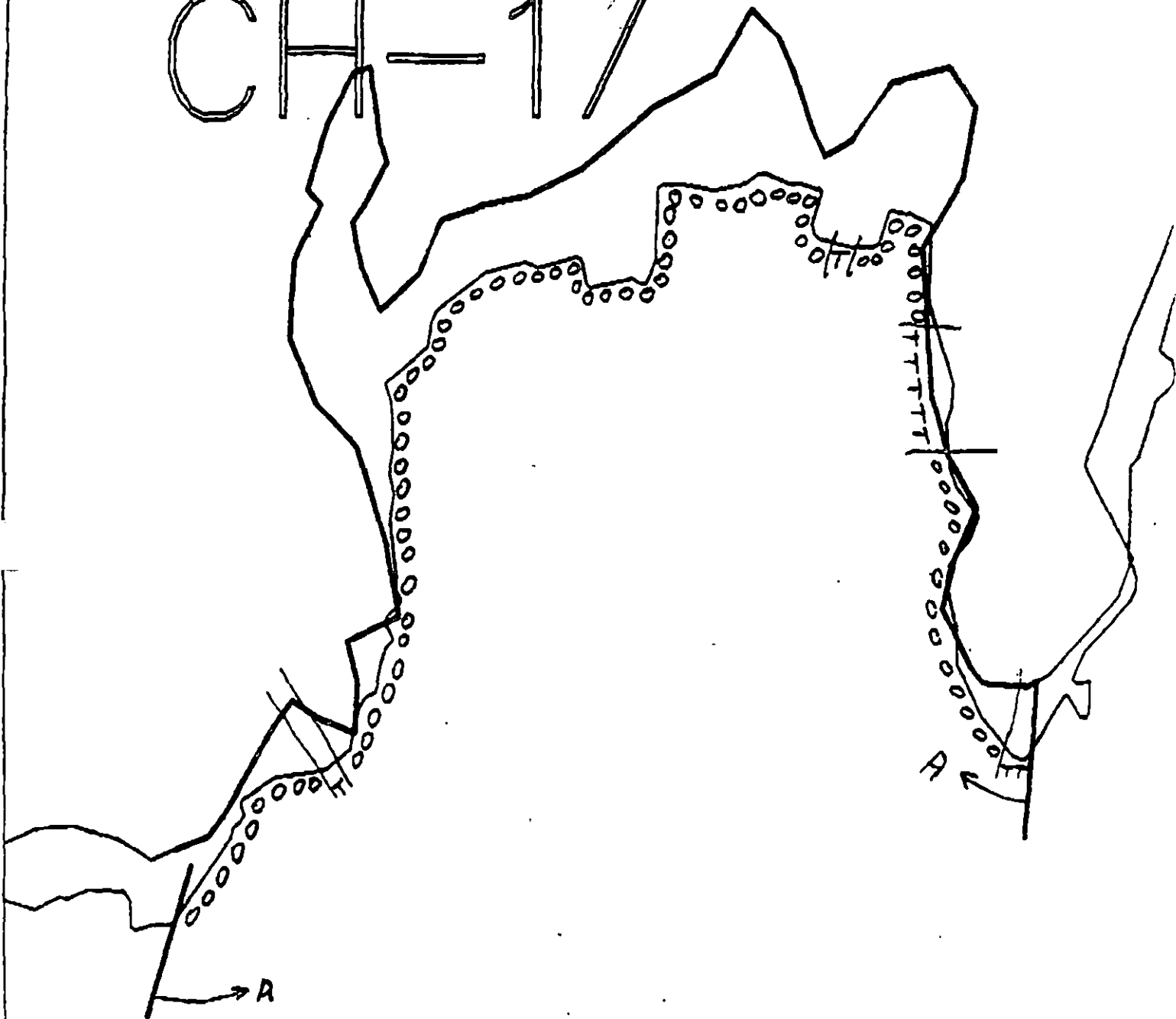


Map Key: PWS-43

Name: Long TrailDate: 4/20/90

5/47

CH-17



5/47

XXXX Wide

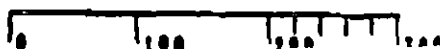
//// Medium

--- Narrow

TTTT Very Light

CH-17

ADEC Segment Length: 2837m



Map Key: PWS-43

Name: Randy Day

Date: 4/20/90

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/CH-18

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ CH-18 SUBDIVISION A (1 OF 1) DATE 4/19/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

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

6Y Recreation: Special use destination

7HH Subsistence area: Finfish harvesting

7JJ Subsistence area: Invertebrate harvesting

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 426 m: No Oil 629 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

X No Treatment Recommended

_____ Treatment Recommended

_____ Manual Pickup

_____ Bioremediation

_____ Tarmat Removal

_____ Snare/Absorbent Booms

_____ Oil Snares (pom poms)

_____ Absorbents (pads, rolls, etc)

_____ Spot Washing: _____ Wands

_____ Beach Cleaner

_____ Other (see comments)

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

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

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / CH 18 SUBDIVISION: A (ENTIRE SEGMENT) DATE 4/19/90

USCG NAME PS3 SCHULTZ SIGNATURE Jerry Schultz

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ADEC NAME MIKE EBEL SIGNATURE Michael G. Ebel

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

CH-18-A: Occasional splashes of stain and coat were found mostly on cliff faces, with some under boulders within the debris slopes. All areas were very light and scattered collectively making up a very small volume of total oil present. No treatment recommended.

LAND MANAGER - CVC NAME PAT SELANOFF SIGNATURE Pat Selanoff

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

31/39

SHORELINE OILING SUMMARY

REVISION NO 04-12-90

OG Randy Siegel USCG Terry Schults SEGMENT ST/ CH-18
 BIO Louis Sherman LAND REP Pat Selanoff (CVC) SUBDIVISION A (1 OF 1)
 EXXON Leonard Herbst ADEC Mike Abel TIME 13:00 to 13:45
 TEAM NO. 12 TIDE LEVEL 4.15' to 2.35' DATE 4/19/90
 EST. SUBDIVISION LENGTH: 1198 m ☐ Sun ☒ Clouds ☒ Fog ☒ Rain ☐ Snow 57°F
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 85 % B 5 % C 5 % P 3 % G 2 % S 0 % M 0 % V 0 %
 SLOPE: Long 10 % Hang 25 % Vert 15 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH W 0 m M 0 m N 0 m VL 420 m NC 778 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	C	E	P	S	1	2	3	4	5	6	7	8	SU	U	ME	U
ASPHALT PAVEMENT																
POOLED																
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 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 Plastic Bottle#BAGS 1

Photographs:

Roll No. ST-12-7Frames None

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM)	BELOW		OIL / FILM COLOR								PIT ZONE				A	N	SHEEN (Y/N)	! =	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UD	UC	1	2	3	4	5	6	7	8	SU	U	ME	U					
1	40					X	0-0		X									X						N	8	P, G
2	50					X	0-0		X									X						N	40	P, G
3	30					X	0-0		X									X						-	-	P, G
4	30					X	0-0		X									X						-	-	P

COMMENTS

Hi-angle bedrock shoreline with occasional pebble pocket beaches
 No oiling at all along most of it. Some staining-coating of boulders
 along a narrow band towards the eastern portion of the segment.

REVIEWED FWDATE 4-20-9075/29

00 Randu Siegel

SEGMENTS H-18

SUBDIVISION A

DATE 4 / 19 / 80

CHECKLIST

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

LEGEND

1 Δ

PH - No Subsurface Oil

2 Δ

PH - Subsurface Oil

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

eee

Oiled Vegetation

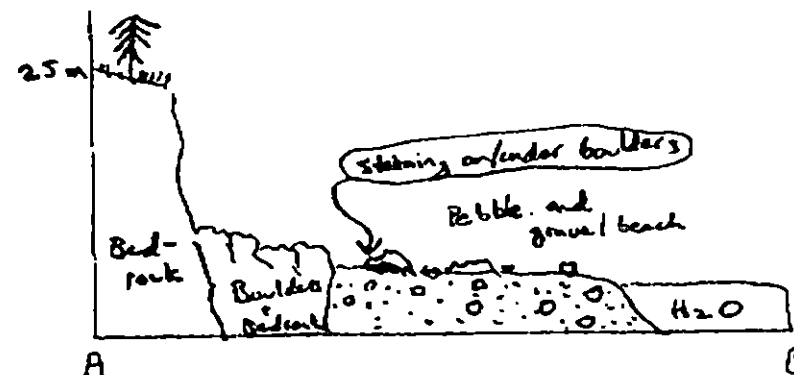
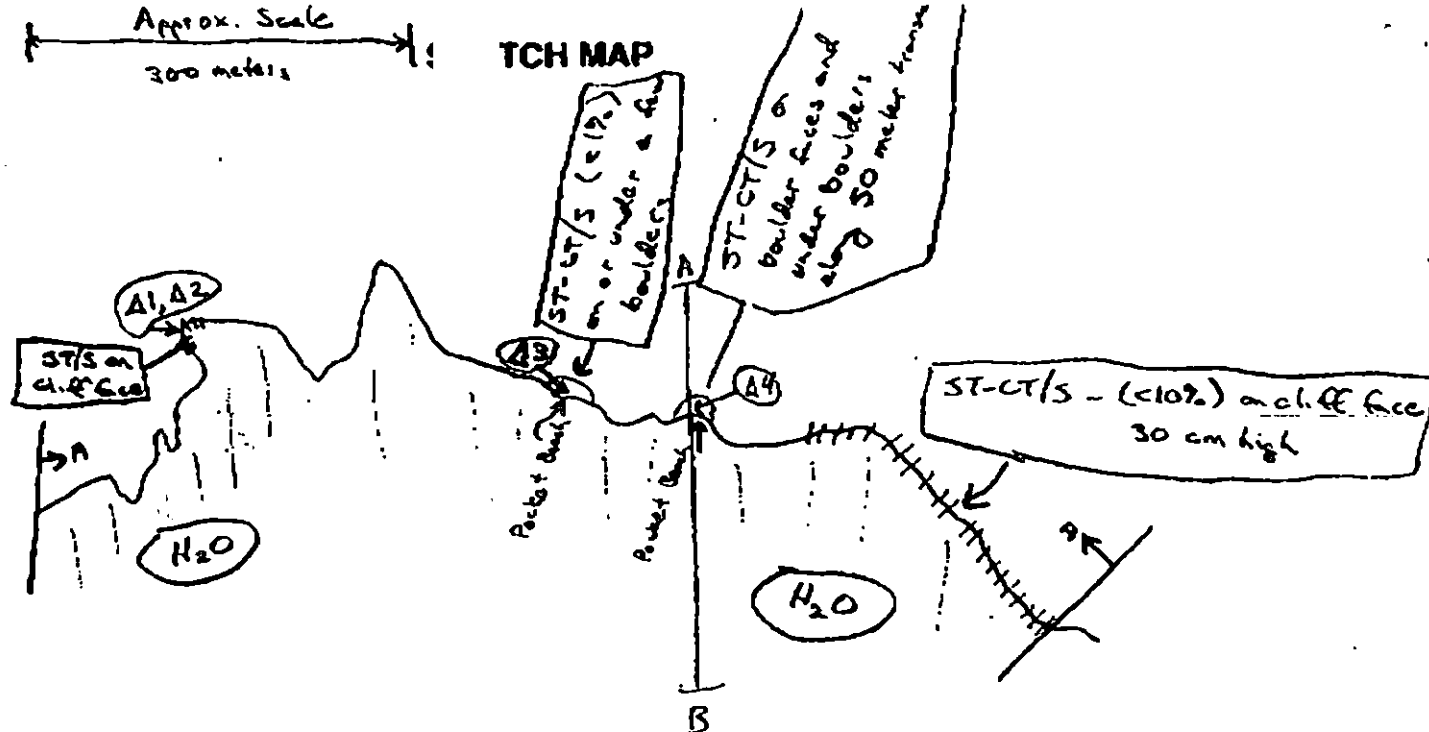
1 $\Rightarrow$

Photo location, direction, and number

26/39

N
Approx. Scale
300 meters

TCH MAP



Oil Character Length (m): AP 0 PO 0 CV 0 CT 420 ST 420 MS 0 PT 0 TB 0 FL 0 NO 778

REV 2011.03.04.00

SHORELINE ECOLOGICAL SUMMARY (Page 2 of 2)

REVISION: 03-22-81

Segment ST / CH-18 Subdivision A Date (mo / day / yr) 4/17/90Time (24 hr) 1300-1345 Biologist SHARMAN(A) Substrate type and % of segments: SHADIV
(1) Bedrock 85 (2) Boulder 5 (3) Cobble 5 (4) Pebble 3 (5) Sand 2 (6) Silt ^{+ granules}(B) Overall % cover of biota (% of segment): Dense Moderate X Low
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, LIMPAETS)

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: Did not observe LITZ. 2 adult eagles, 4 black-legged Kittiwakes, deer tracks common in supratidal, abundance of unsorted drift material in HTZ pocket beach wrack line. This segment essentially identical to (a continuation of) adjacent segment CH-19. Please see Ecological Summary for (cont.)

Ecological Considerations:

There are 4 resource sensitivities listed for this segment from Catalogued Data: Pure oiled rockoff (Code 1K); Special Use Destination (Code 6Y); Subsistence finfish harvesting (Code 7HH); and Subsistence Invertebrate Harvesting (Code 7JJ). Both subsistence resources are likely quite sensitive to (or in the case of invertebrates possibly made unusable by) any considerable human disturbance, especially if it involves re-mobilizing any oil.

28/39

General Comments (cont.):

that segment. Again, note the apparently very successful spring barnacle spat set and the continuing good Fucus recruitment. Tidepools $\approx$ 100m from the W. end of the segment on a bedrock platform appear normally healthy and diverse, supporting Enteromorpha, Chonathallis (presently recruiting), ulvaea, a few tidepool sculpins (Aligocottus?), and a dense profusion of Littorina within the Fucus.

SHORELINE EVALUATION

SEGMENT ST/ CH-18 SUBDIVISION A (1 OF 1) DATE 4/19/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1K Purse seine hook-off (7/20 to 9/30)
6Y Recreation: Special use destination
7HH Subsistence area: Finfish harvesting
7JJ Subsistence area: Invertebrate harvesting
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: D. David M. Mahan DATE: 5/1/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 426 m: No Oil 629 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: 9/28/90.

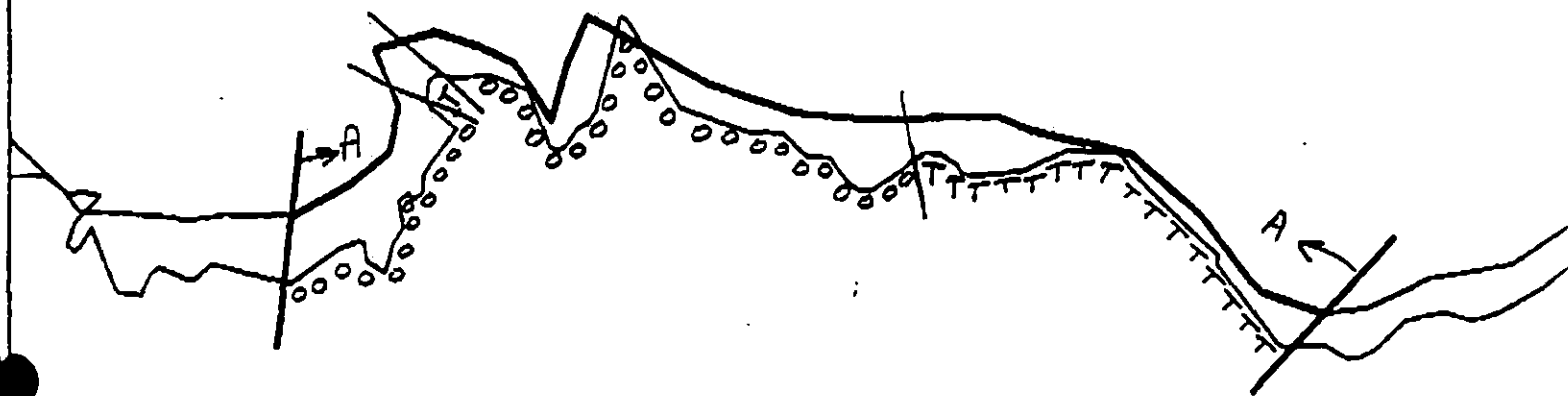
ADEC Art Weirte Defilement

EXXON *Army Tech Read*

NOAA Gen. Peter Lee Peter

USCG *KENNETH KERNIE*

FOSC:  DATE: 5-9-90



CH-18

27/39

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

CH-18

ADEC Segment Length: 1198m



Map Key: PWS-81

Name: Randy Siegel

Date: 4/19/90

Date Entered:

SHORELINE EVALUATION

SEGMENT ST/ CH-19 SUBDIVISION A (1 OF 1) DATE 4/19/90

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)
6Y Recreation: Special use destination
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Eagle nest observed by biologist, apparently active. Not on sensitivity list.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: J. Daniel McMan DATE: 5/1/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 16 m: No Oil 1029 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: 4/28/90

ADEC ART WENGER Dut Greiner

EXXON ANDY TEAL Beal

NOAA Gary Petrus Gary Petrus

USCG KENNETH KEANE Annidy/Beane

FOSC: h L DATE: 5-9-90

DATE 4 / 19 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)
 ___ PR 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

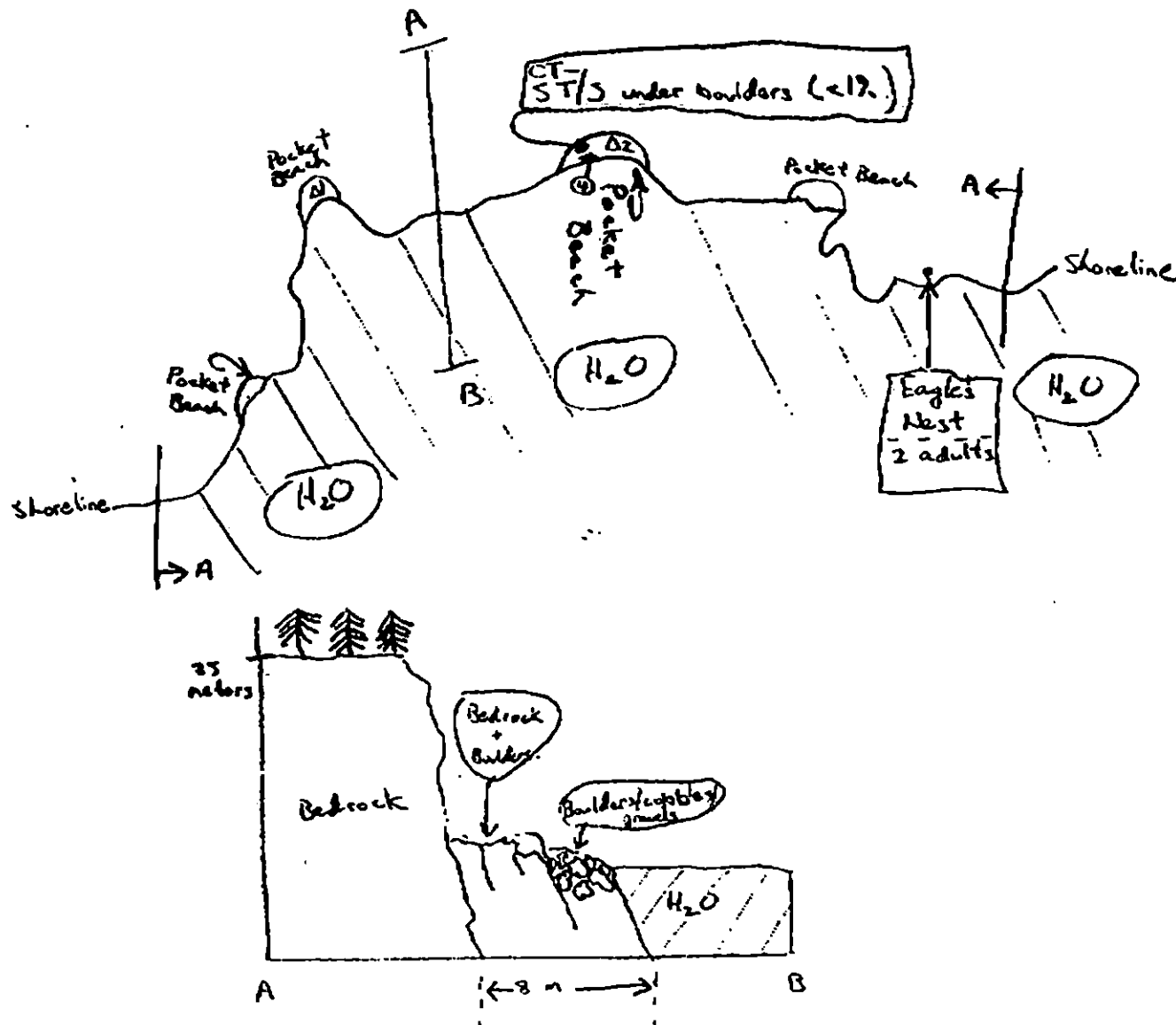
CT/S
Spliced Distribution

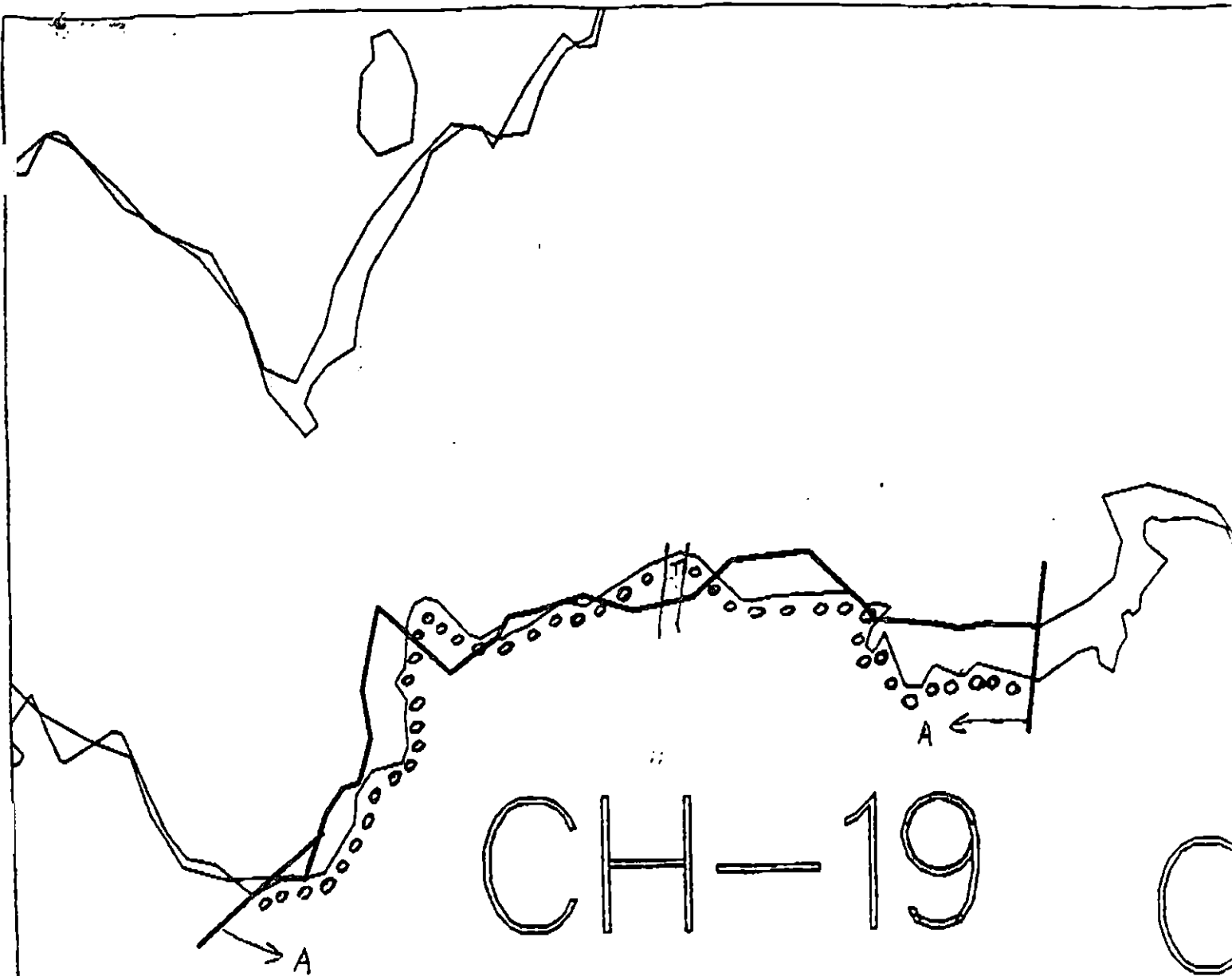
Old Vegetation

1 ➡
Photo location, direction,
and number

08 Character Length (m): AP 0 PO 0 CV 0 CT 10 ST 10 MS 0 PT 0 TB 0 FL 0 NO 1170

REVISION 02/24/98





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

CH-19

ADEC Segment Length: 1045m



Map Key: PWS-45
 Name: Ruby Siegel
 Date: 4/19/90
 Data Entered:

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/CH-19

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ CH-19 SUBDIVISION A (1 OF 1) DATE 4/19/90

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)

6Y Recreation: Special use destination

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to uncoiled biota and substrate. Eagle nest observed by biologist, apparently active. Not on sensitivity list.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 16 m: No Oil 1029 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 3O, 3Q	Harbor seal and sea lion pupping (5/15 to 7/1) Harbor seal and sea lion molting (8/15 to 9/15) Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts.
5R	Seabird colony (5/1 to 9/1) Restrict air traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance. Contact ADF&G and USFWS prior to treatment.
5S	Shorebird/waterfowl concentration (4/1 to 5/15) Restrict all activity to essential minimum, especially air traffic.
5T	All Bald Eagle nests (3/1 to 6/1) Active Bald Eagle nests (3/1 to 9/1) Restrict air traffic to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
6U	Recreation: Tent sites (6/1 to 9/15)
6V	Anchorage (6/1 to 9/15)
6W	Forest Service cabins (6/1 to 9/15)
6X	Lodge (6/1 to 9/15)
6Y	Special use destination
7Z	Subsistence area: Salmon harvesting (5/1 to 9/30)
7HH	Finfish harvesting
7H	Deer harvesting (8/15 to 2/28)
7JJ	Invertebrate harvesting For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / CH 19 SUBDIVISION: A (ENTIRE SEGMENT) DATE 4/19/90USCG
NAME PS3 SCHULTZ SIGNATURE Jerry Schultz☒ NO TREATMENT RECOMMENDED
COMMENTS☒ TREATMENT SUGGESTEDADEC
NAME MIKE EBEL SIGNATURE Michael Ebel☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

CH-19-A: One pocket beach had splashes of coast and stain within
about a 10m stretch of shoreline; very small amount.
No treatment recommended.

LAND MANAGER - CVC

NAME PAT SELANOFF SIGNATURE Pat Selanoff☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

(38/39)

SHORELINE OILING SUMMARY

REVISION NO. 34-137

OG Randy Siegel USCG Jerry Shulte SEGMENT ST/ CH-19
 BIO Kevin Shuman LAND REP Pato Selanoff (Cov) SUBDIVISION A (1 OF 1)
 EXXON Leonard Hackett ADEC Mike Ebel TIME 12:00 to 12:50
 TEAM NO. 12 TIDE LEVEL 5.85' to 4.2' DATE 4/19/90
 EST. SUBDIVISION LENGTH: 1180 m ☐ Sun ☒ Clouds ☐ Fog ☒ Rain ☐ Snow 57'
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 85 % B 5 % C 5 % P 3 % G 2 % S 0 % M 0 % V 0
 SLOPE: Long 10 % Hang 75 % Vert 15 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 10 m NO 1170 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	AC	IG	FP	IS	1	2	3	4	5	6	7	8	SU	U	M	U
ASPHALT PAVEMENT																
POOLED																
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 cPATTIES / 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 Styrofoam#BAGS 1Photographs: NoneRoll No. ST-12-7Frames 4

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 SEDIMENT
		OP	OR	OL	OF	NO		UG	UC	1	2	3	4	5	6	7	8					
1	30					X	0.0		X									X			-	P
2	30					X	0.0		X									X			-	P

COMMENTS

Hi-angle bedrock shoreline with occasional pebble pocket beaches. No oiling at all along most of it. One small area on beach where staining (<1%) was observed beneath boulders. Cliffs surveyed from boat/pebble beaches by foot.

REVIEWED JWDATE 4-20-90

32/39

DATE 4 / 19 90

CHECKLIST

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

LEGEND

Plt - No Subsurface Oil

2 ▲
Plt - Subsurface Oil

CT/C
Continued Distribution

CT/B
Brehan Distribution

CT/P
Patchy Distribution

CT/S
Spliced Distribution

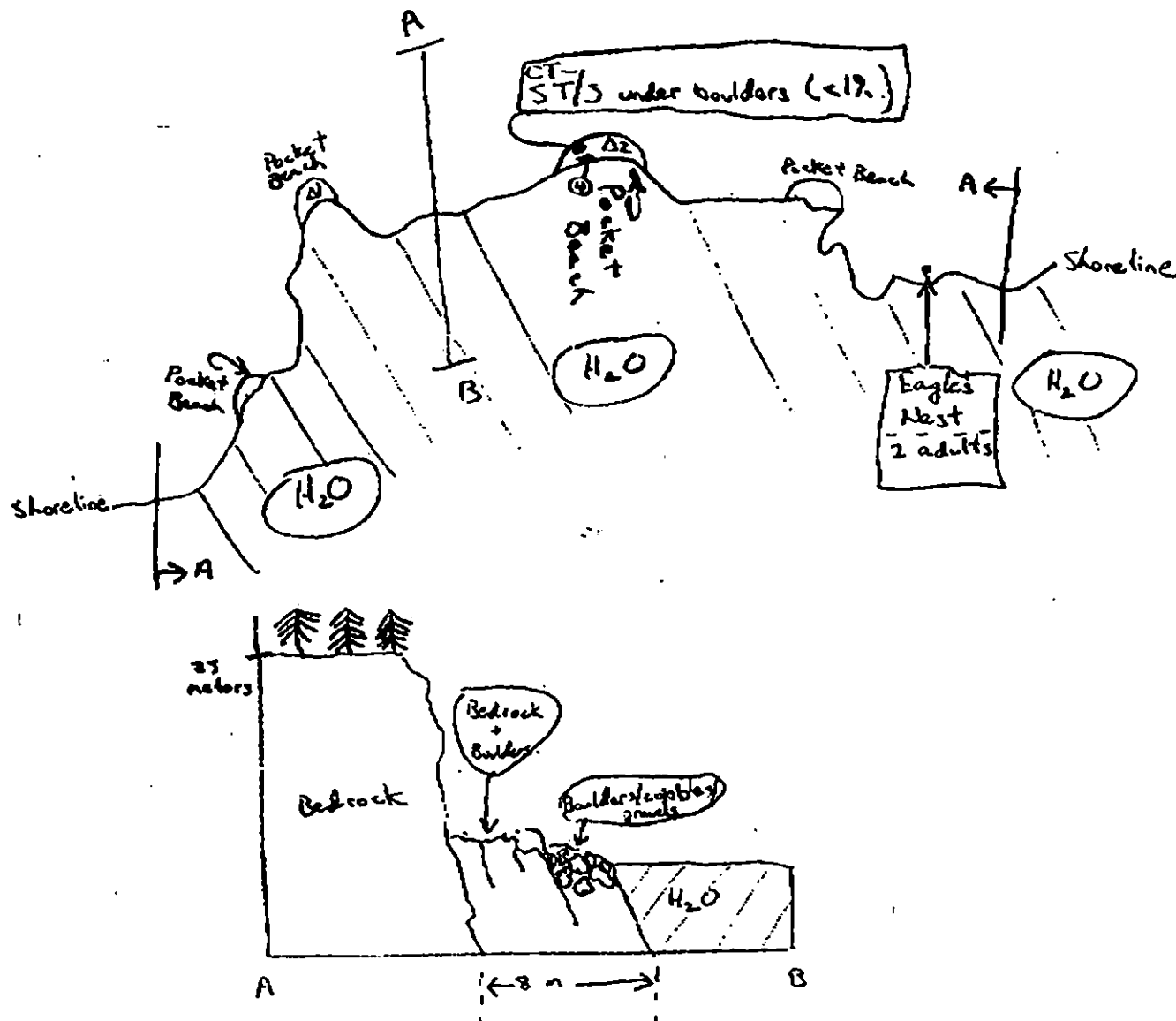
Old Vegetation

Photo location, direction,
and number

④ = Photo 4

SK: CH MAP

A horizontal line with arrows at both ends, labeled "Approx scale" above it and "300 meters" below it.



Oil Character Length (m): AP 0 PO 0 CV 0 CT 10 ST 10 MS 0 PT 0 TB 0 FL 0 NO 1170

REVISION 01/24/00

SHORELINE ECOLOGICAL SUMMARY (Page 1 of 2)

REVISION: 027

Segment ST / CH-19 Subdivision A Date (mo / day / yr) 4/19/90

Time (24 hr) 1200-1250 Biologist SHARMAN

(A) Substrate type and % of segments: SUBDIV.
 (1) Bedrock 85 (2) Boulder 5 (3) Cobble 5 (4) Pebble 3 (5) Sand 2 (6) Silt 2 ^{+ granules}

(B) Overall % cover of biota (% of segment): Dense Moderate X 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. ST-12-7

Frames 4

BARNACLES

Dense			Moderate			Sparse			Rare			NOT PRESEN
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 PRESEN
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 (ANCELLA, LITTORINA, LIMPAETE)

Dense			Moderate			Sparse			Rare			NOT PRESEN
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 PRESEN
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	

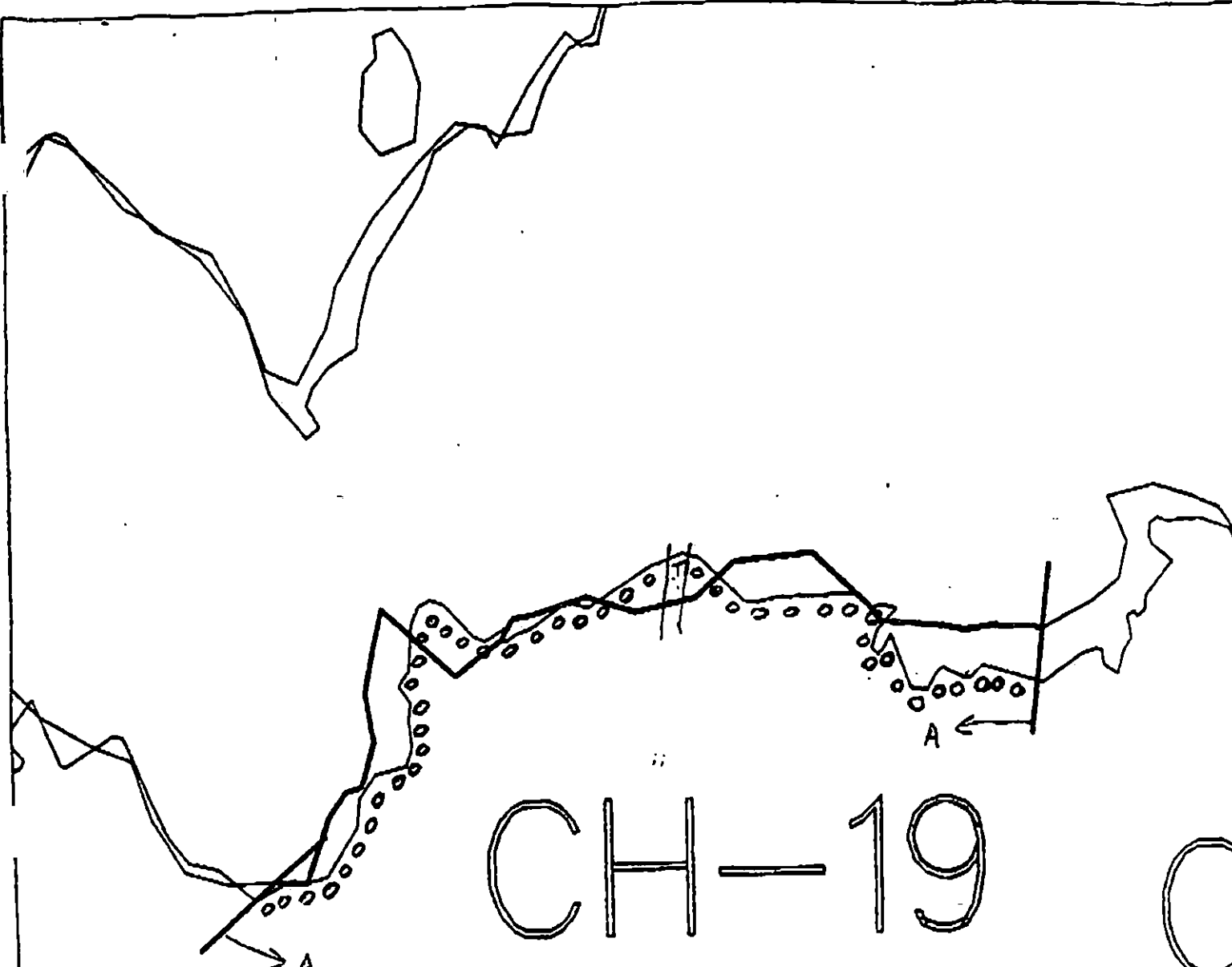
Wildlife Observations/ General Comments: Did not observe LITE. 1 cormorant, 1 pair white-winged scoters, 1 black-legged Kittiwake, deer tracks and scat common in the supratidal zone, river otter scat on shore in supratidal zone, 2 adult eagles appear attached to eagle nest 100m W. of E. segment boundary (aka computer map). Wildlife healthy and productive, the intertidal community in this segment is generally relatively (cont.)

Ecological Considerations:

Resource Sensitivity (ecological sensitivity) from catalogued data include only the presence of one eagle nest (code 57). There is an additional resource sensitivity for the segment as a Special Use Destination (Code 64). The eagle nest (see previous section) appears active, is low and very near the water on an exposed point, and is probably very sensitive to any human disturbance - more so than most such nests, due to its relative location.

Shorman
4/19/90General Comments (cont.):

depauperate species-wise. Barnacles and Fucus clearly dominate the extensive bedrock cliffs - this year's recruitment is very good for Fucus and excellent for barnacles. The major spring spat set for 1990 has occurred in this area over the past week or so, and settlement has been quite dense, particularly in the MTZ. Spat have settled primarily in the past few days, and newly settled unmetamorphosed cyprid larvae are common. Adult barnacles and Fucus are locally dense on bedrock substrates, but pebble/small cobble pocket beaches are very unstable (reasonably high-energy) and relatively devoid of macroscopic biota. Mid-intertidal barnacle/Fucus communities also include Sargassum, a brown ("red"?) filamentous form, a green filamentous form (Acrospira?), and Nucella lamellosa. The abundant wrack line on pocket beaches contains no oil. Mussels are relatively rare, but include post-spill juveniles where they occur. Littorines and limpets are widespread in normally sparse densities and include some recruits. This segment strongly dominated by bedrock, so I did not observe any littorine eggs in the normally sub-boulder habitat. Barnacle mortality appears to be in the "normal" range, 5-20%.



XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

OOOO No Oil

CH-19

ADEC Segment Length: 1045m



Map Key: PWS-45

Name: Randy Siegel

Date: 4/19/90

Data Entered: 22/20

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/CH-20

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ CH-20 SUBDIVISION A (1 OF 1) DATE 4/20/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 226-20-16260, Rev. 2/90

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

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

5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)

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 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 229 m: Narrow 43 m: V.Light 648 m: No Oil 380 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 Removal	☐ Beach Cleaner
	☐ Other (see comments)

COMMENTS: Recommended treatment includes manual pickup of mousse tarballs and bioremediation of areas shown on sketch map. Work should be conducted between 6/1 and 7/10 and/or with approval from ADF&G concerning salmon constraints and USFWS regarding eagle nest. Bioremediation should not be conducted within 100M of stream without ADF&G approval.

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. 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 unrolled 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

Anchorage (6/1 to 9/15)

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

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

6Y Special use destination

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

7HH Finfish harvesting

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

7JJ Invertebrate harvesting

For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / CH 20 SUBDIVISION: A (ENTIRE SEGMENT) DATE 4/20/90

USCG

NAME JERRY SCHULTZ

SIGNATURE Jerry Schultz

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED.

COMMENTS

I RECOMMEND THAT BECAUSE OF THE RESIDUAL OIL BEING IN CLOSE PROXIMITY TO A ANADROMOUS STREAM THAT MANUAL PICK-UP BE UTILIZED IN THE SENSITIVE AREAS (SEE MAPS) AND THAT BIOREMEDIATION BE EMPLOYED WITHIN THE DISTANCE CONSTRAINTS OF THE STREAM.

ADEC

NAME Mike Ebel

SIGNATURE Michael J. Ebel

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

CH-20-A: Because of villagers use of the salmon from this anadromous stream & would recommend manual removal of the pooled oil found near it in this segment (refer to sketch maps). Starting from ~ 40 m east of stream and continuing along a 20 m arced stretch of the UFG shoreline. I don't recommend bioremediation at this part of segment. The second area of manual removal can be seen (on sketch map #1) east of the stream area formerly mentioned. Granular bioremediation could follow on this part of segment and also ~~be~~ be used under the boulder slopes that were found to have pools within the surface rock interstices.

LAND MANAGER

NAME Patrick SchausFF

SIGNATURE Patrick SchausFF

☐ NO TREATMENT RECOMMENDED

☒ TREATMENT SUGGESTED

COMMENTS

I would strongly suggest that this segment be treated since it is so close to a salmon stream.

24/47

SHORELINE OILING SUMMARY

REVISION NO. 04-12-90

OG Randy Siegel USCG Jerry Schultz SEGMENT ST/ CH-20
 BIO Lewis Shorman LAND REP Pat Selanoff SUBDIVISION A (1 OF 1)
 EXXON Leonard Herbst ADEC Mike Ebel TIME 13:25 to 13:45
 TEAM NO. 12 TIDE LEVEL _____ DATE 4/20/90
 EST. SUBDIVISION LENGTH: 1650 m ☒ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: W to E
 SURFACE SEDIMENTS: R 15 % B 25 % C 25 % P 25 % G 10 % S 0 % M 0 % V 0 %
 SLOPE: Long 25 % Hang 75 % Vert 0 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 194 m N 84 m VL 886 m NO 486 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR				IMPACTED ZONES			
	C	R	P	B	1	2	3	4	SU	U	M	V
ASPHALT PAVEMENT												
POOLED		X	✓	0						X		
COVER			X							X		
COAT		X	✓	0						X		
STAIN		X	✓	0						X		
MOUSSE												
PATTIES				X				X		X		
TARBALLS												
FILM				X				X		X		
NO OIL									X		X	X

PAVEMENT H F S 0 sq. m by 0 cmPATTIES / TARBALLS 1 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 ☐

Plastic bottle, de

TYPE Pom-Pom#BAGS 3

Photographs:

Roll No. ST-12-7Frames 7, 8, 9

SUBSURFACE OIL * Oiled interval < 5 cm in pits #2, #3 & #9 does not constitute 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	UG	1	2	3	4	SU	U	M	V				
1	20					X	0-0		X					X					N	5	G
2	16					X	0-5		X					X					-	-	P.G
3	30					X	0-0		X					X					-	-	P.G
4	30					X	0-0		X					X					-	-	P.G
5	15		X				0-8		X			X		X					Y	10	P.G
6	25					X	0-0		X			X		X					Y	12	G

COMMENTS

Segment consisted of stretch of ~~stone~~ rocky/bedrock cliff shoreline with a few small pocket beaches and a larger boulder beach with pebbles/gravel between. A lot of staining-coating of boulders and cliffs along segment. From the large beach to the end of the segment, a band of oiling was present discontinuously across the U.E. Pooling under boulders in several areas, on ST-CT-CU. 4/22/90
 EXXON/land owner/ADEC recommended manual pickup of pooled oil

REVIEWED

W

DATE 4/22/90

SHORELINE OILING SUMMARY (PAGE 2)

REVISION 06/13/90

SEGMENT ST/ CH-20 SUBDIVISION A (2 OF 2)

SUBSURFACE OIL (CONTINUED)

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-FT)	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	SHEEN (Y/N)	▼	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	SP	BP	GT	ST	LT	MT	SU	U	M	U				
7	15					X	0-0		X			X						X			Y	10	G
8	8					X	0-0		X								X				-	-	G, R
* 9	8		X				0-3		X								X				-	-	P, R
10	30					X	0-0		X								X				-	-	P
11	30					X	0-0		X								X				-	-	P, G
12	35					X	0-0		X			X					X				Y	20	G, P
13	35					X	0-0		X								X				N	25	G
14	30					X	0-0		X			X					X				Y	25	G
15	30					X	0-0		X			X					X				Y	23	G.
							.																
							.																
							.																
							.																
							.																

COMMENTS

REVIEWED

Yw

DATE

4/22/90

(13/47)

SHORELINE ECOLOGICAL SUMMARY (Page 1 of 2)

REVISION: 02/22/90

Segment ST/ CH-20 Subdivision A Date (mo / day / yr) 4/20/90Time (24 hr) 1325-1540 Biologist SHARMAN(A) Substrate type and % of segment: SUBDU
(1) Bedrock 15 (2) Boulder 25 (3) Cobble 25 (4) Pebble 25 (5) Sand 10 (6) Silt granular(B) Overall % cover of biota (% of segment): Dense SUBDU 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-12-7Frames 7, 8, 9

BARNACLES

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

NOT PRESENT

MYTILUS

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

NOT PRESENT

GASTROPODS (ALICELLA, LITTORALIA, LIMAEYS)

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	2	2	2	2	2
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: Did not observe LT2. 1 adult eagle, 1 raven, 1 crow, 4 glaucous-winged gulls, 4 pairs white-winged scoters, bear tracks in supratidal and grazing of newly emerging beach ridges (*Elymus mollis*) along, active eagle nest with adult sitting on nest (see Ecological Considerations), 1 harbor seal at stream mouth, river otter denning area on bedrock point at (cont.) ^{at stream mouth}

Ecological Considerations:

Resource sensitivities from catalogued data for this segment include a bald eagle nest (Code 5T), anchorage (Code 4V), and salmon fry outmigration (Code 1A) and salmon spawning (Code 1B) associated with anadromous stream # 226-20-1620. See sketch map for nest + stream locations. The combination of characteristics and activities observed (see above Wildl. Obs./Gen.) identifies this segment as a fairly "happening place." Eagle nest appears active and should not be disturbed. Stream channel + immediate banks are uncoiled, but there is an area 50m to the E. where treatment is recommended (see DG + Comment 4.1.1). Care must be taken to avoid mobilizing silt into stream.

General Comments (cont.):

E. boundary of segment where steel cable hangs off rock cliff - 50+ acate containing crabs (mostly Tideaceae, some Topopangus), fish, and small scallops. 1 adult black bass on beach fringe foraging along supratidal, dragging down alder branches to eat buds (100m E. of stream). Barnacle mortality within the discontinuous and patchy MTZ oil coat band on high angle bedrock/boulder surfaces is 50-70%; adjacent uncoiled populations show $\approx 10\%$ mortality. Barnacle spat set is presently excellent, as elsewhere, and spat are settling right up to the margins of the oil band as well as within the band on uncoiled surfaces (where oil has weathered off). Cyprids are very common as well, and while some have initially settled directly on oiled surfaces, I have yet to observe a spat (or a Fucus sporling) directly on oil. Fucus is recruiting well outside oiled bands. Sub-t. boulder habitats have occasional amphipods, spat, and littorines with egg masses. Rich MTZ tidepools on bedrock platforms (platforms have dense Fucus, abundant Oronothalia with some recruitment, very abundant littorines amongst Fucus) - tidepools harbor Margarita, sculpin, Pagrus, Entomorphus, and some Filothamnium, Scytosiphon, and green filamentous forms (Acrospira?). Mussels are generally sparse - rare in this segment but appear to be recruiting successfully where they do occur - little mortality. Some Anthopleura artemesia in MTZ bedrock tidepools. The intertidal community generally appears normal and healthy (outside of oiled band).

SEGMENT ST/ 20

SUBDIVISION A

DATE 4/1/2090

CHECKLIST

M Arrow
 Approx. Scale
 Seg/Sub Entry
 Oil Dist.
 Width
 Length
 % Cover
 Substrate Character
 Est. HWA/LWA
 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

Patched Distribution

CT/S

Splashed Distribution

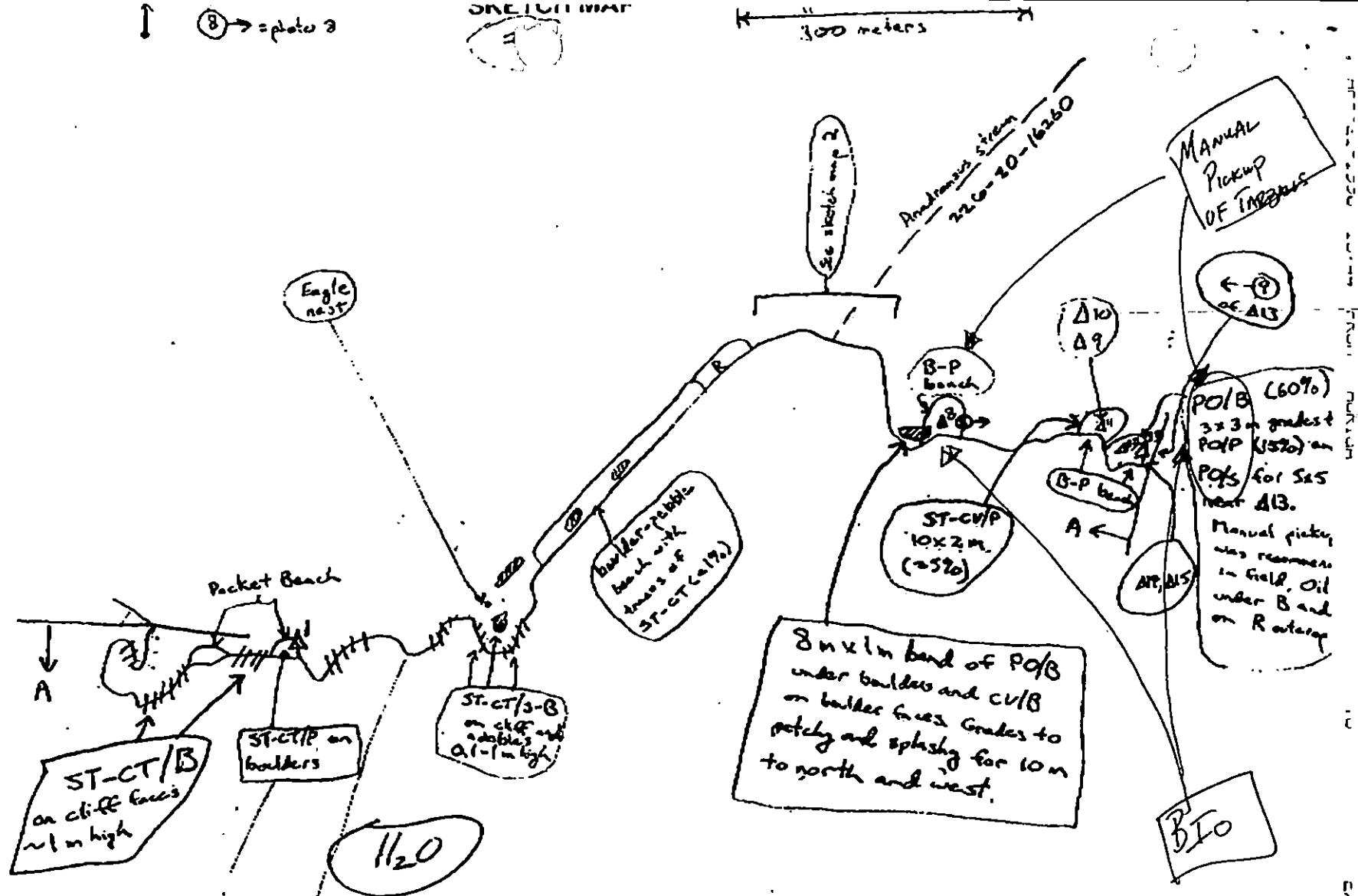
Oil
 Oiled Vegetation

1 →

Photo location, direction,
 and number

15/47

Oil Character Length (m): AP 0 PO 60 CV 50 CT 900 ST 900 MS 0 PT 5 TB 0 FL 10 NO 486



REVISION: 08/24/90

SEGMENT S H20

SUBDIVISION A

DATE 4/20/90

CHECKLIST

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

LEGEND

1 Δ
P1 - No Subsurface Oil

2 Δ
P1 - Subsurface Oil

CT/C
Continuous Distribution

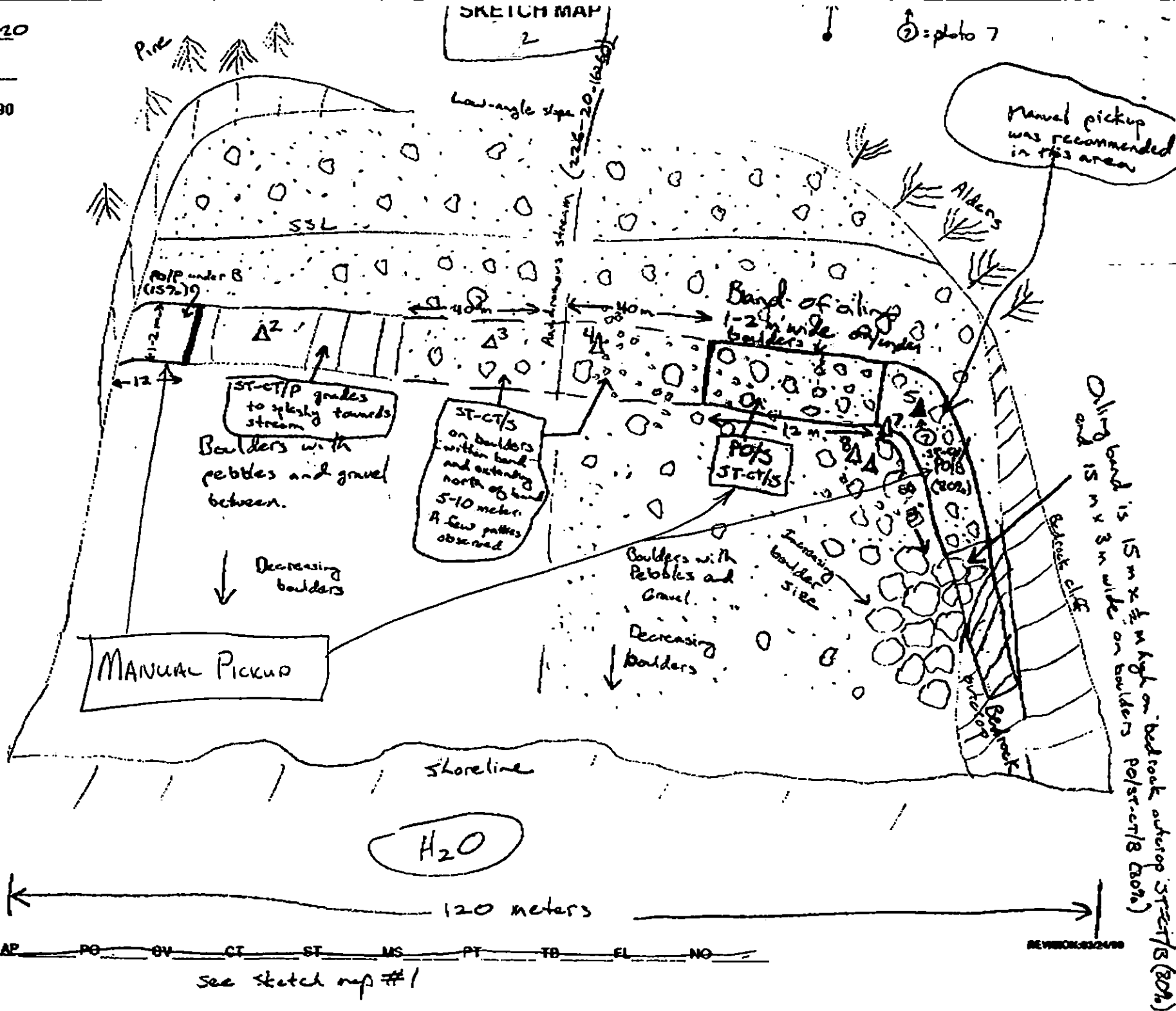
CT/D
Broken Distribution

CT/P
Patchy Distribution

CT/S
Splashed Distribution

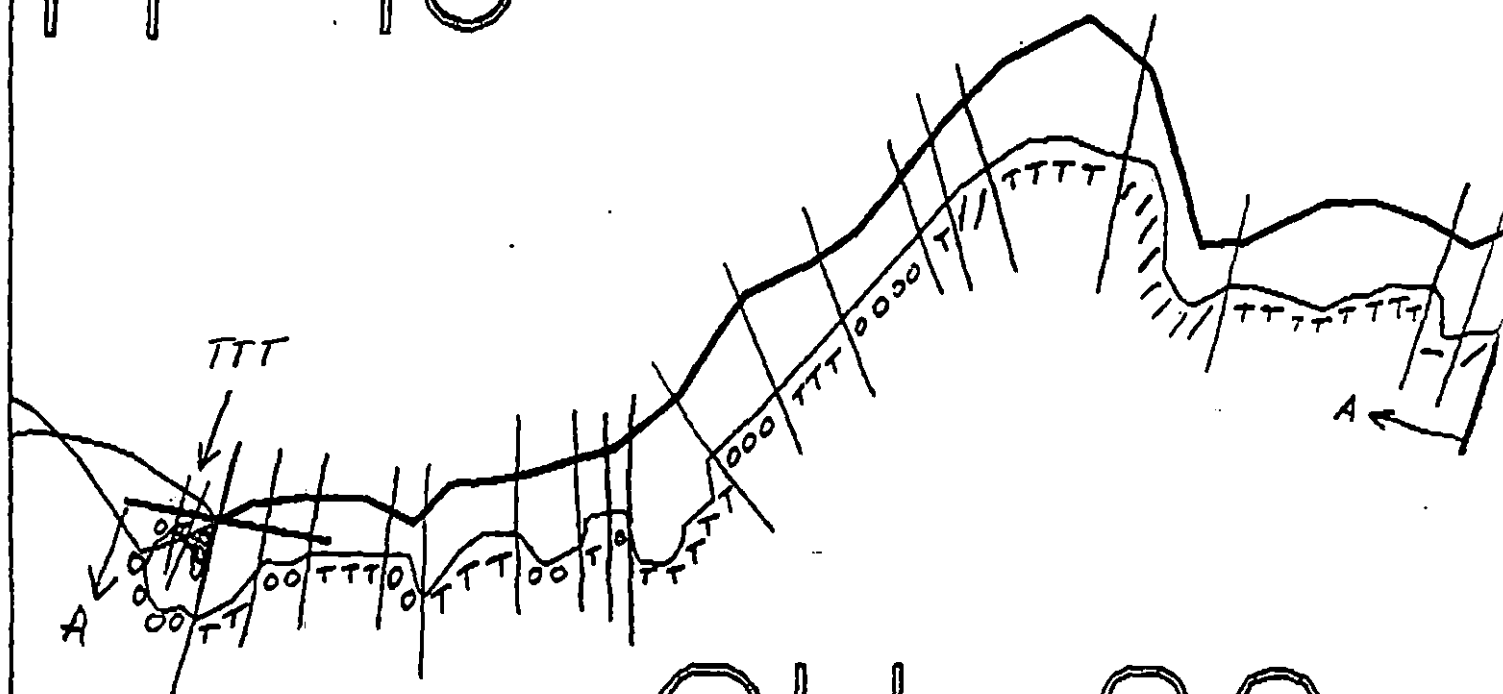
eee
Oiled Vegetation

$\rightarrow$
Photo location, direction, and number



Oil Character Length (m): AP PG OV CT ST MS PT TB FL NO

H-16



CH-20

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

CH-20

ADEC Segment Length: 1299m



Map Key: PWS-47a

Name: Rdy Siegel

Date: 4/20/90

Data Entered:

14/47

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT CH-20 SUBDIVISION A (1 of 1)

WORK WINDOW	
Manual Pickup	OPEN
Bioremediation More Than 100m From Stream	OPEN
Bioremediation Less Than 100m From Stream	WORK PRIOR TO 7/10 (ADF&G MONITOR REQ.)

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B Salmon Stream

ADF&G catalogued anadromous stream (226-20-16260) is in Subdivision A. This subdivision is closed to bioremediation less than 100m from stream 7/10 to 8/31. Before 7/10, bioremediation is permitted less than 100m from stream with on-site ADF&G monitor or ADEC alternate present. No constraint to bioremediation more than 100m from stream. No constraint to manual pickup.

5T Bald Eagle Nest

NO CONSTRAINT. USFWS 6/1/90 map indicates an active nest in Subdivision A that is more than 400m from the work area.

OTHER ECOLOGICAL CONSIDERATIONS

No personnel or boats less than 400m from active nest. Restrict air traffic and all disturbance to essential minimum. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from active nests. No disturbance to stream bed or banks. No flushing of pollutants or sediments into stream drainage; do not allow Inpol to enter stream flow. On-site examination and consultation by ADF&G monitor is required prior to bioremediation in order to authorize a setback distance from the stream during chemical application; if ADF&G monitor's presence is impossible, authorization may be given by the ADEC monitor. Avoid any unnecessary disturbance or damage to uncoiled blots and substrate.

TAG APPROVAL DATE 6/04/90
ADEC Ray Mays
EXXON Andy
NOAA John
USCG G.A. Deiter

FOSC

Date

6/9/90

Prepared by

Andin Mays

Date

6/2/90

*Incorporates information from
USFWS 6/1/90 Map of active
eagle nests.*

CH-14

CH-17

CH-16

Active  66

CH-20

27

Active

Anadromous Stream
226-20-16260

WORK
AREAS

CH-15

26

Active



Exxon Company, USA

Map Keys PMS-QH-20

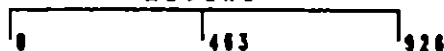
May 11, 1990



ECOLOGY MAP $\frac{1}{2}$ SEGMENT CH-20

SUBDIVISION A (1 of 1)

METERS



Seabird Colony



Eagle Nest

1 inch = 1518 feet

SHORELINE EVALUATION

SEGMENT ST/ CH-20 SUBDIVISION A (1 OF 1) DATE 4/20/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 226-20-16260, Rev. 2/90

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

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

5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)

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

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: J. David McManis

DATE: 5/1/90

OILING CATEGORIZATION:

Wide 0 m: Medium 229 m: Narrow 43 m: V.Light 648 m: No Oil 380 m
Subsurface Oil Observed: Yes X No Maximum Depth 8 cm

RECOMMENDATIONS:

 No Treatment Recommended

X Treatment Recommended

X Manual Pickup

X Bioremediation

 Tarmat Removal

 Snare/Absorbent Booms

 Oil Snares (pom poms)

 Absorbents (pads, rolls, etc)

 Spot Washing: Wands

 Beach Cleaner

 Other (see comments)

COMMENTS: Recommended treatment includes manual pickup of mousse
tarballs and bioremediation of areas shown on sketch map. Work should
be conducted between 6/1 and 7/10 and/or with approval from ADF&G con-
cerning salmon constraints and USFWS regarding eagle nest. Bioremedia-
tion should not be conducted within 100M of stream without ADF&G
approval.

TAG COMMENTS: See Addendum dated 6/2/90

TAG APPROVAL DATE: 5/1/90.

ADEC Art Weiner Art Weiner

EXXON Andy Galt Andy Galt

NOAA Gary Petree Gary Petree

USCG Kenneth Kerner Kenneth Kerner

FOSC: My L DATE: 5-18-90

NOTIFY CUE 24 HRS PRIOR TO WORK.

SHORELINE EVALUATION

SEGMENT ST/ CH-20 SUBDIVISION A (1 OF 1) DATE 4/20/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 226-20-16260, Rev. 2/90

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

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5T All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)

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See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

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ARCHAEOLOGICAL CONSTRAINTS:

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SHPO SIGNATURE: J. David McMahon

DATE: 5/1/90

OILING CATEGORIZATION:

Wide 0 m: Medium 229 m: Narrow 43 m: V.Light 648 m: No Oil 380 m

Subsurface Oil Observed: Yes X No Maximum Depth 8 cm

RECOMMENDATIONS:

 No Treatment Recommended

X Treatment Recommended

X Manual Pickup

X Bioremediation

 Tarmat Removal

 Snare/Absorbent Booms

 Oil Snares (pom poms)

 Absorbents (pads, rolls, etc)

 Spot Washing: Wands

 Beach Cleaner

 Other (see comments)

COMMENTS: Recommended treatment includes manual pickup of mousse tarballs and bioremediation of areas shown on sketch map. Work should be conducted between 6/1 and 7/10 and/or with approval from ADF&G concerning salmon constraints and USFWS regarding eagle nest. Bioremediation should not be conducted within 100M of stream without ADF&G approval.

TAG COMMENTS:

TAG APPROVAL DATE: 5/1/90.

ADEC Art Weiner

EXXON Andy Gier

NOAA Gary Petree

USCG Kenneth Kern

FOSC: My L

DATE: 5-18-90

NOTIFY CDR 24 HRS PRIOR TO WORK.

DATE 4 / 20 90

CHECKLIST

H Arrow
 Approx. Scale
 Seg/Sub Body
 Oil Dist
 Width
 Length
 % Cover
 Substrate Character
 Est. HML/LWL
 SSL
 Profile Location(s)
 Profile(s)
 Ph Location(s)
 Photo Location(s)

LEGEND

1 Δ
Plt - No Surface Oil

2 A
Fit - Subsurface On

CT/C
Continuous Distribution

CT/D

Broken Distribution

CT/P

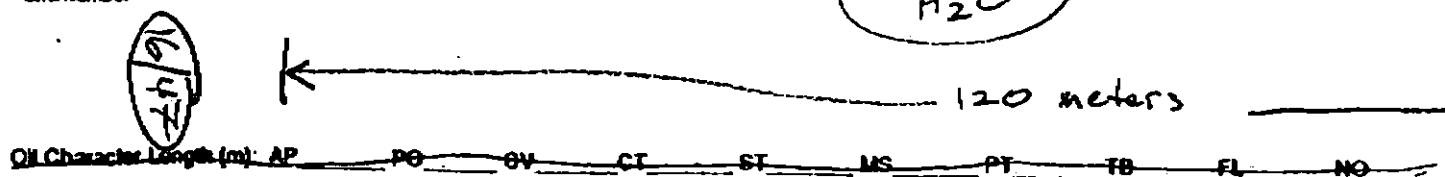
Patchy Distribution

[C7/S]
Selected Distribution

eee.
Oiled Vegetation

1 

Photo location, direction,
and number



see sketch map #1

SKETCH MAP

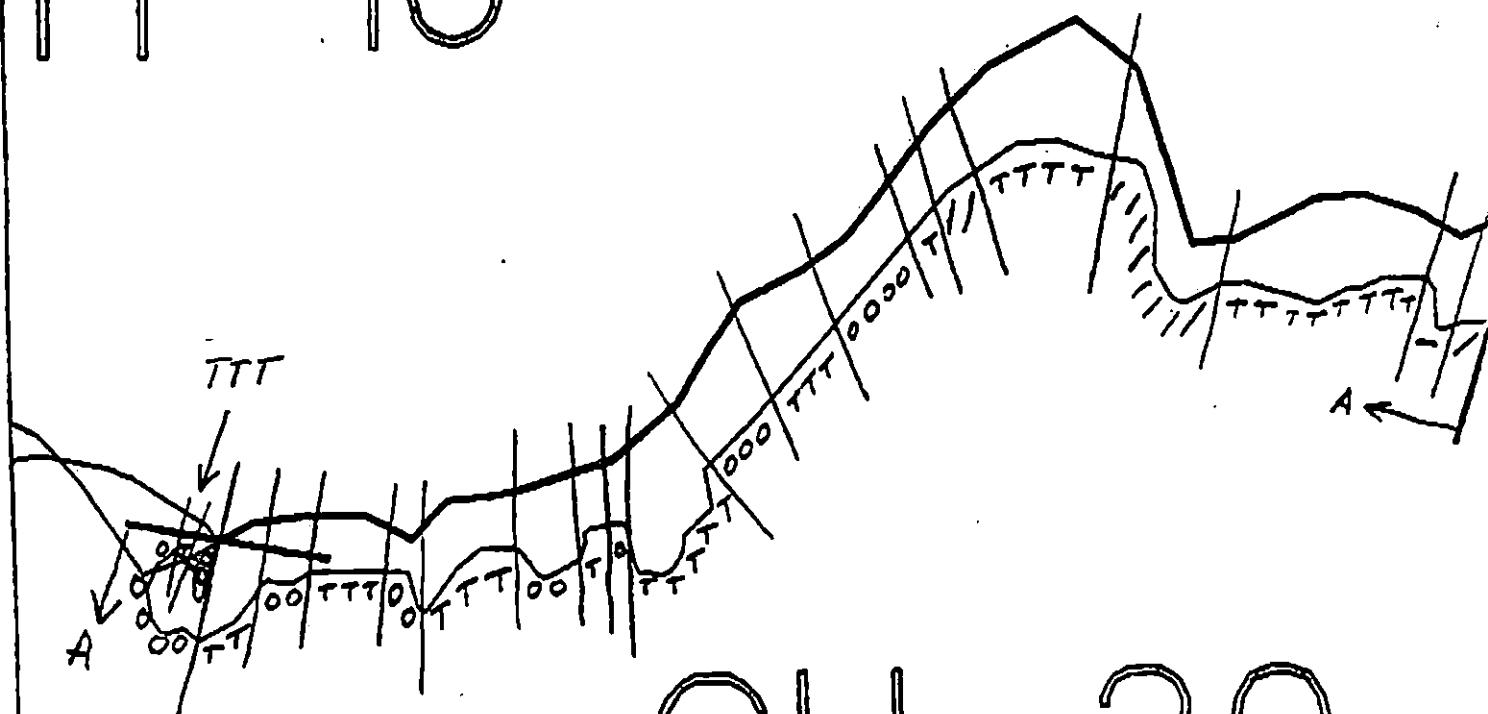
⑦ = 7

Manual pickup
was recommended
in this area

Oiling band is 15 m x $\frac{1}{2}$ m high on bedrock outcrop ST-CT/B (80%) and is 3 m wide on boulders PO/ST/B (80%)

1992年12月21日

H-16



CH-20

X X X X W i d e

//// Medium

----- Narrow

TTTT Very Light

0000 No 011

CH-20

ADEC Segment Length: 1299m



Map Key: PWS-47a

Name: R. L. Sneyd

Date: 4/20/90

Data Entered:

14/47

1991 MAYSAP EVALUATION

SEGMENT: CH 020 **SUB:** A **REGION:** PWS **SURVEY DATE:** 5/3/91

ENVIRONMENTAL SENSITIVITIES:

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

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: _____ **Date:** _____

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

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

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

ADEC _____ **FOSC** _____

EXXON _____

USCG _____

NOAA _____

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

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

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

TEAM NO. 4 SEGMENT CH20A SUBDIVISION _____ DATE 5/3/91

ADEC

NAME Dianne Munsen

SIGNATURE Dianne Munsen

☐ NTR ☐ Treatment Recommended

Majority of segment not surveyed due to previous surveys showing no oiling. There is one area with tar mat and SOR and ct and cover on and under angular boulders and cobbles.

EXXON

NAME LARRY D. OLSON

SIGNATURE Larry D. Olson

☒ NTR Vico and survey crew removed 7 G.O. bags of old tar mat from the area indicated on sketch map. No recoverable oil remains in this area.

LANDMANAGER

NAME LARRY EVANOFF OF CVC

SIGNATURE [Signature]

☐ NTR ☒ TREATMENT RECOMMENDED

MAJORITY OF SEGMENT NOT SURVEYED BECAUSE PREVIOUS SURVEYS SHOWN NO OIL. THIS AREA WAS WORKED BEFORE BUT OILING STILL EXIST. I RECOMMEND MORE MANUAL PICK UP. BOULDERS WILL HAVE TO BE OVERTURNED, IF FEASIBLE, TO EXPOSE COAT UNDERNEATH AND SCRAPPED. REMOVE OILED DEBRIS FROM UNDERNEATH ROCKS. NO BIOREMEDIATION RECOMMENDED.

USCG/NOAA

NAME JERRY SCHULTZ

SIGNATURE Jerry Schultz

☒ NTR NOTHING OF SIGNIFICANCE REMAINS. NO FURTHER INTRUSION IS WARRANTED.

reviewed 5/6/91 -
REVIEWED CD 11 MAY

CH030-A

Og sketch map

CH030A

14 Samples

3 MAY 91

0950-1013

Legend

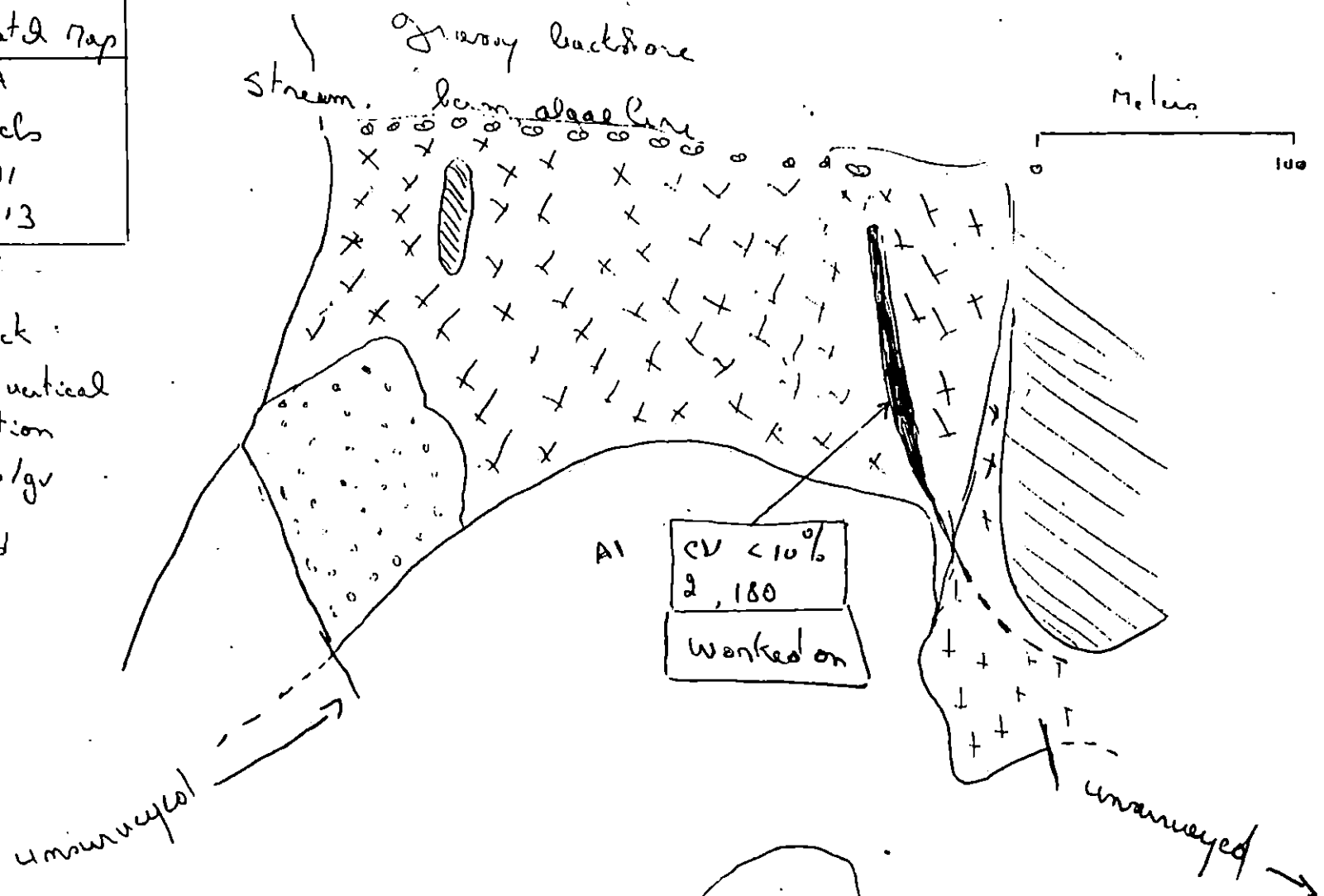
 Bedrock

 Ramp-vertical
foliation

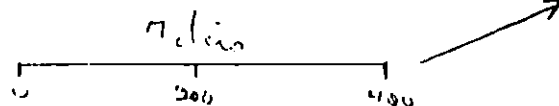
 Pb/cb/gv

 Sd

 cb/Bd



REVIEWED 4 MAY



Reviewed 5/10/91 K6

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 3, 1991 0945 - 1020
SEGMENT #	CH020	TIDAL HEIGHT (Range)	+1.0 => 0.0
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm, cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A Oiled site located in the upper zone along a beach grading from sandy/gravel with cobbles to boulders and vertically foliated bedrock. Sparse densities of limpets, barnacles, and littorine snails are found in the immediate vicinity of the oil. Similar densities of these species are found in the upper intertidal elsewhere. Below the oiled location, the abundance of organisms increases. Densities of littorines and limpets are fairly dense in the middle zone. Mussels increase in density towards the middle and lower zones, with scattered patches partially consolidating the beach sediments. Occasional outcrops along the beach or on the bedrock to the southern end of the oiled area, the cover of Fucus is moderate to dense.

A stream which may be used for salmon spawning is located approximately 150 m to the west of the oiled site. A sparse clam bed is present at the outlet of the stream, with moderate abundances of mussels.

MANUAL CLEAN-UP PERFORMED DURING SURVEY. Additional cleanup, if recommended, will not adversely affect the biota of the oiled region.

We surveyed only the beach at which oiling was reported. The remainder of the segment has several habitat types which will not be discussed here.

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	
Seabirds			
Waterfowl	2	12	
Gulls/Kittiwakes			
Shorebirds			
Corvids			
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)			
Harbor Seal	1		
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

REVIEWED CB 11 MAY
Revised 5/17/91

Common Biota of CHO20-A

I. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Agarum fimbriatum, Costaria costata, Fucus distichus, Hildenbrandia sp.,
Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Corallina sp., Halosaccion glandiforme, Lithothamnion sp., Membranoptera
dimorpha, Odonthalia floccosa, Palmaria palmata, Petrocelis 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, Epiactis ritteri, Metridium senile
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaetes
Nepthyidae
Nereidae - Nereis spp.
Serpulidae
Serpula sp., Crucigera sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii,
10. Crustaceans
a. Amphipods - Orchestia sp.?
b. Barnacles - Balanus glandula
c. Crabs - Hemigrapsus oregonensis, Paguridae (hermit crabs), Oregonia
gracilis
d. Isopods - Idotea wosnesenskii
11. Mollusca
a. Chitons - Mopalia mucosa, Katharina tunicata, Tonicella lineata,
b. Snails - Gastropods -
Littorina sp., Natica clausa, Nucella lamellosa, N. lima
c. Limpets
Lottia digitalis, L. persona, Tectura persona, T. scutum
d. ~~Nautilus~~ Branches - Lamellidoris fusca
e. ~~Mussels~~ and Clams
Ctenocardium sp., C. nuttalli, Hiatella arctica, Macoma sp., Modiolus
sp., Mya arenaria (soft-shell clam), Mytilus edulis, Prototheca
staminea, Saxidomus giganteus
12. Echinoderms
a. Brittle Stars - Ophiolus sp., ?
b. Sea star Dermasterias imbricata, Evasterias truscheli, Leptasterias
hexactis, Pycnopoda helianthoides,
c. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Schizoporella sp.
15. Fishes
Cottidae - unknown species
Stichaeidae - Xiphister atropurpureus, X. mucosus

DID SKETCH MAP

CHOZO-A

JP Barry

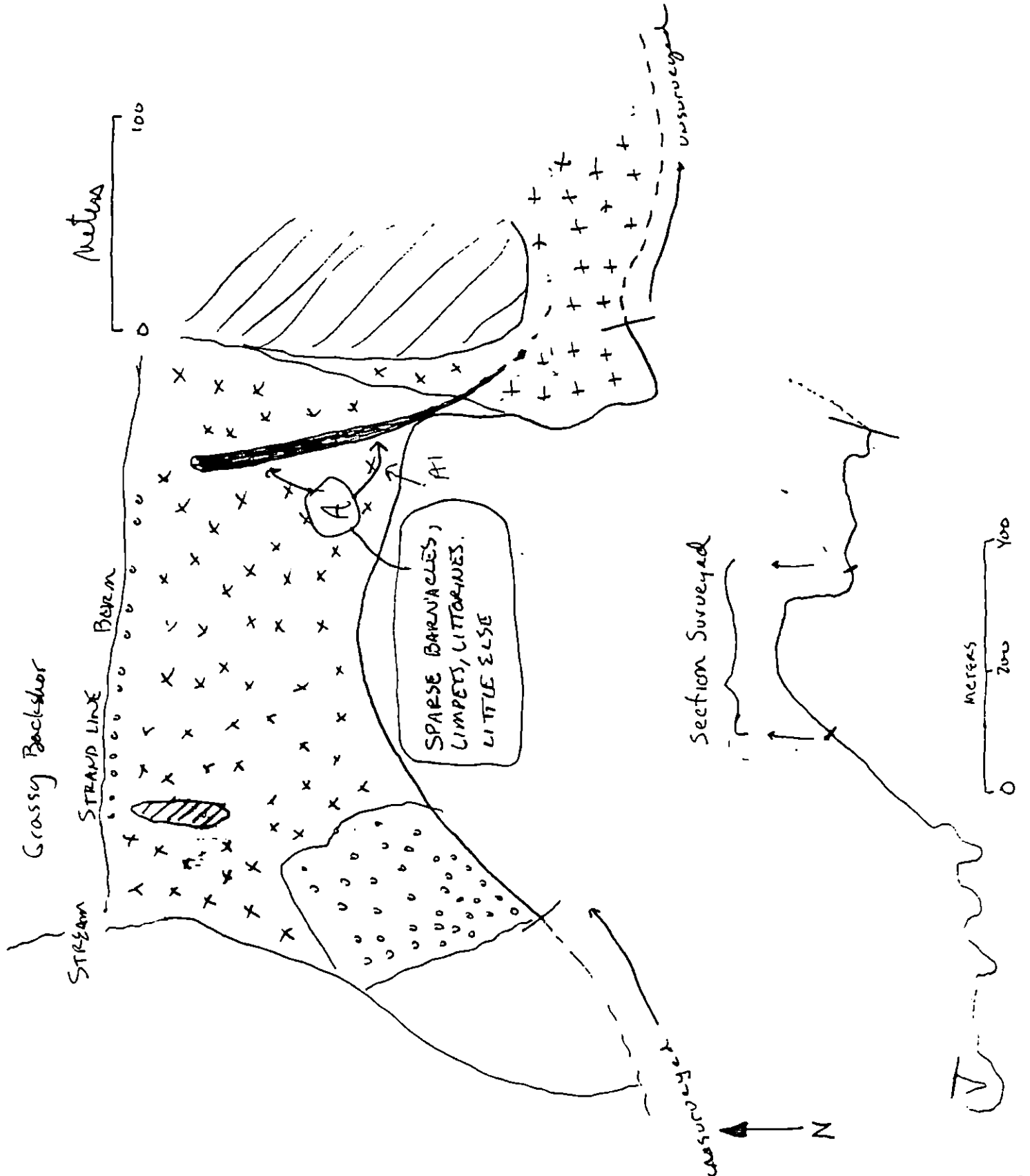
3 MAY 91

 Bedrock

 Ramp - vertical foliation

 Pebble/Cobble/gravel

 Sand/Cobble/Boulder



CH-16

A

A

CH-20

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

CH020 A

ADEC Subsegment Length: 1299m

METERS

0 200 400

AK State Plane Zone 4
psb020a



Subdivision Field Map

Map Key: PWSCH020A

Name: JM Semple

Date: 3 May 91

Date Entered:

reviewed 5/16/91 LK

REVIEWED CD 11 MAY

SEGMENT: CH 020 SUB: A REGION: PWS SURVEY DATE: 5/3/91

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

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

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

SHPO Signature: Rachel Dan Darr Date: 5/21/21

FOSQ

2

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: MAY 21 1991

FOSC APPROVAL DATE: 6/28/91

ADEC

FOSC

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.

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT CH 20A SUBDIVISION _____ DATE 5/3/91

ADEC

NAME Dianne Munson

SIGNATURE Dianne Munson

☐ NTR ☐ Treatment Recommended

Majority of segment not surveyed due to previous surveys showing no oiling. There is one area with tar mat and SOR and ct and cover on and under angular boulders and cobbles.

EXXON

NAME LARRY D. OLSON

SIGNATURE Larry D. Olson

☒ NTR Vico and survey crew removed 7 G.O. bags of old tar mat from the area indicated on sketch map. No recoverable oil remains in this area.

LANDMANAGER

NAME LARRY EVANOFF OF CVC

SIGNATURE [Signature]

☐ NTR ☒ TREATMENT RECOMMENDED
MAJORITY OF SEGMENT NOT SURVEYED BECAUSE PREVIOUS SURVEYS SHOWN NO OIL. THIS AREA WAS WORKED BEFORE BUT OILING STILL EXIST. I RECOMMEND MORE MANUAL PICK UP. BOULDERS WILL HAVE TO BE OVERTURNED, IF FEASIBLE, TO EXPOSE COAT UNDERNEATH AND SCRAPED. REMOVE ~~THE~~ OILED DEBRIS FROM UNDERNEATH ROCKS. NO BIOREMEDIATION RECOMMENDED.

USCG/NOAA

NAME JERRY SCHULTZ

SIGNATURE Jerry Schultz

☒ NTR NOTHING OF SIGNIFICANCE REMAINS. NO FURTHER INTRUSION IS WARRANTED.

Og. Sketd Map

CH020A

47 Samples

3 MAY 91

0950-1013

Legend

-  Bedrock
-  Ramp-vertical foliation
-  Pb/cb/gv
-  sd
-  cb/Bd

Grassy backshore
Stream. hum algae line

Meters

100

A1

CU < 10%
2, 180

Worked on

unmineralized →

unmineralized →

Segment location map

Meters

200

400

REVIEWED 25 MAY

reviewed slides K6.

HAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 3, 1991 0945 - 1020
SEGMENT #	CHO20	TIDAL HEIGHT (Range)	+1.0 => 0.0
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Calm, cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A Oiled site located in the upper zone along a beach grading from sandy/gravel with cobbles to boulders and vertically foliated bedrock. Sparse densities of limpets, barnacles, and littorine snails are found in the immediate vicinity of the oil. Similar densities of these species are found in the upper intertidal elsewhere. Below the oiled location, the abundance of organisms increases. Densities of littorines and limpets are fairly dense in the middle zone. Mussels increase in density towards the middle and lower zones, with scattered patches partially consolidating the beach sediments. Occasional outcrops along the beach or on the bedrock to the southern end of the oiled area, the cover of Fucus is moderate to dense.

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Waterfowl	2	12	
Gulls/Kittiwakes			
Shorebirds			
Corvids			
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)			
Harbor Seal	1		
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

REVIEWED CD 11 MAY
0 1 1991

CH020-A Biology Report, continued

Common Biota of CH020-A

Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Agarum fimbriatum, Costaria costata, Fucus distichus, Hildenbrandia sp.,
Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Corallina sp., Halosaccion glandiforme, Lithothamnion sp., Membranoptera
dimorpha, Odonthalia floccosa, Palmaria palmata, Petrocelis sp., Ptilota
filicina, Rhodomela larix
5. Higher Plants
Zostera marina (eel grass), Leymus mollis (beach rye grass)

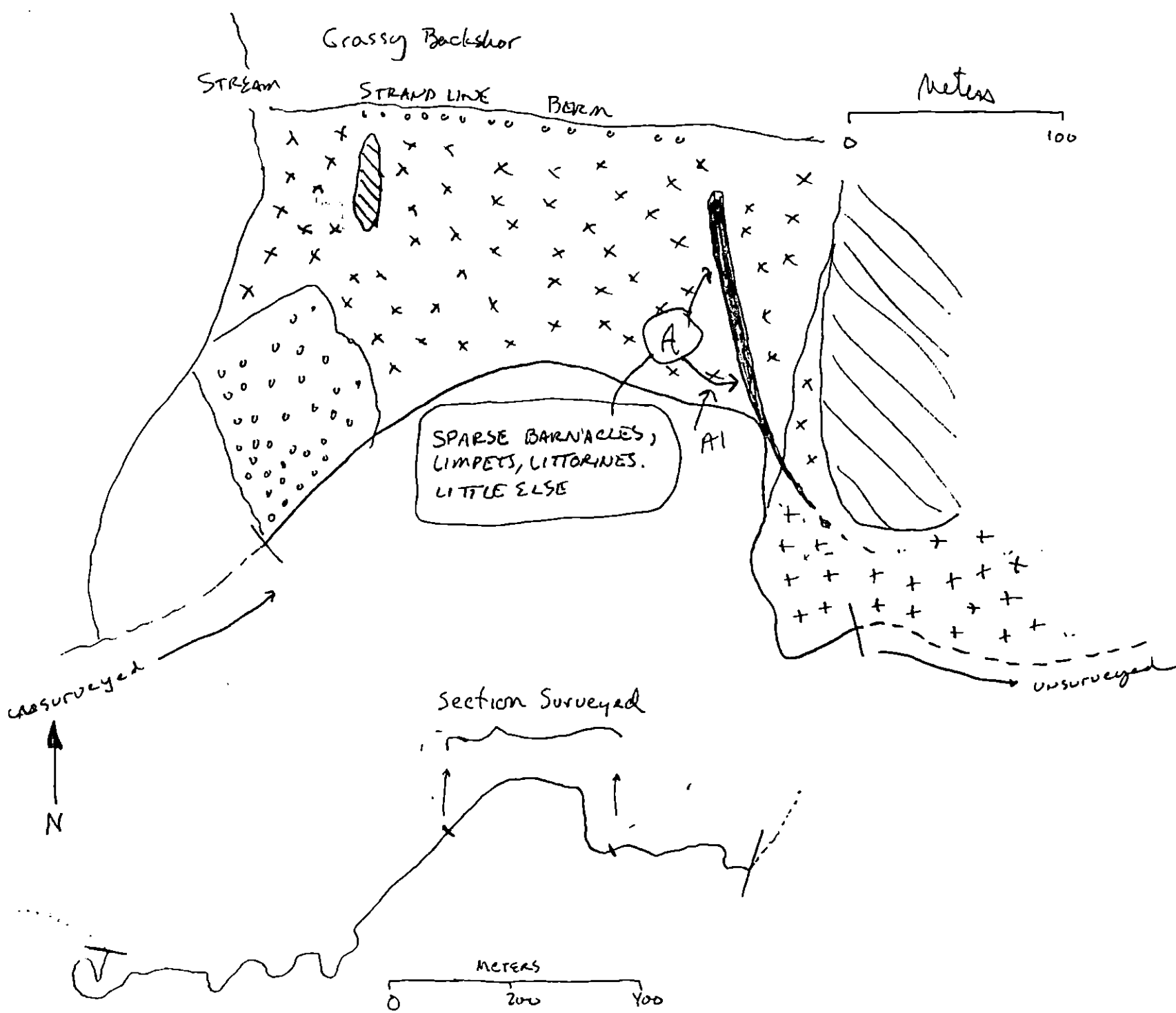
II. Marine Animals

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2. Anemones - Anthopleura artemesia, Epiactis ritteri, Metridium senile
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaetes
Nepthyidae
Nereidae - Nereis spp.
Serpulidae
Serpula sp., Crucigera sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii,
10. Crustaceans
a. Amphipods - Orchestia sp.?
b. Barnacles - Balanus glandula
c. Crabs - Hemigrapsus oregonensis, Paguridae (hermit crabs), Oregonia
gracilis
d. Isopods - Idotea wosnesenskii
11. Mollusca
a. Chitons - Mopalia mucosa, Katharina tunicata, Tonicella lineata,
b. Snails - Gastropods -
Littorina sp., Natica clausa, Nucella lamellosa, N. lima
c. Limpets
Lottia digitalis, L. persona, Tectura persona, T. scutum
d. Nudiobranches - Lamellidoris fusca
e. Mussels and Clams
Clinocardium sp., C. nuttalli, Hiatella arctica, Macoma sp., Modiolus
sp., Mya arenaria (soft-shell clam), Mytilus edulis, Prototheca
staminea, Saxidomus giganteus
12. Echinoderms
a. Brittle Stars - Ophiolus sp., ?
b. Sea star Dermasterias imbricata, Evasterias truscheli, Leptasterias
hexactis, Pycnopoda helianthoides,
c. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Schizoporella sp.
15. Fishes
Cottidae - unknown species
Stichaeidae - Xiphister atropurpureus, X. mucosus

BIO SKETCH MAP

CH020-A
JP BARRY
3 MAY 91

-  Bedrock
-  Ramp - vertical foliation
-  Pebble/Cobble/gravel
-  Sand/Cobble/Boulder



CH020-A 6/9

CH-16



CH-20

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

CH020 A
 ADEC Subsegment Length: 1290m
 METERS
 0 200 400
 AK State Plane Zone 4
 pch020a



Subdivision Field Map
 Map Key: PWSCH020A
 Name: JM Semple
 Date: 3 May 91
 Date Entered:

reviewed 5/16/91 KG
 REVIEWED CB 11 MAY

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/CH-21

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ CH-21 SUBDIVISION A (1 OF 1) DATE 4/20/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1J Purse seine area (6/20 to 9/30)
1L Set net sites (6/11 to 7/25)
5T-3 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6Y Recreation: Special use destination
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 598 m: No Oil 2156 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 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 (8/7 to 8/31)
 1J Purse seine area (8/20 to 9/30)
 1K Purse seine hook-off (7/20 to 9/30)
 1L Set net sites (8/11 to 7/25)
 For Codes 1C through 1L contact ADF&G for specific dates, locations and constraints.
- 2M Herring spawning (4/1 to 6/15)
 Restrict boat traffic to essential minimum. Avoid damage to unholed intertidal and subtidal algae and seagrass. Contact ADF&G for specific dates and locations.
- 3N, 3P 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 (8/1 to 9/15)
 6X Lodge (8/1 to 9/15)
 6Y Special use destination
- 7Z Subsistence area: Salmon harvesting (5/1 to 9/30)
 7HH Finfish harvesting
 7H Deer harvesting (8/15 to 2/28)
 7JJ Invertebrate harvesting
 For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / CH 21 SUBDIVISION: A (ENTIRE SEGMENT) DATE 4/20/90

USCG NAME JERRY SCHULTZ SIGNATURE Jerry Schultz

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

DUE TO THE TYPE OF AND LIMITED QUANTITY OF REMNANT OIL LEFT, AND THE ROCK SURFACE THAT COULD BE TREATED I WOULD RECOMMEND NO FURTHER HUMAN INTERUSION.

ADEC NAME MIKE EBEL SIGNATURE Michael J. Ebel

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

CH-21-A: One location was found to have pooled oil (refer to sketch #2). It was manually removed as well as shovels permitted. The bulk of this segment had drips and splashes of very light coat and ~~stain~~ stain. One area had rainbow sheen observed in intertidal pool from unknown source (pits reveal no subsurface oil). No further treatment recommended.

LAND MANAGER

NAME PAT SELANDOFF (CVC) SIGNATURE Pat Selandoff

☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

However, keep in mind we are getting steel off of this portion of our survey and it will be getting heavier with wave weather. Our natural stockings very low, four to five mil. the story, if indeed this oil, which is considered very light, ~~is~~ affecting our salmon return.

SHORELINE OILING SUMMARY

REVISION NO. 04-11

OG Randy Siegel USCG Terry Schultz SEGMENT ST/ CH-21
 BIO Lewis Sherman LAND REP Pat Selenoff SUBDIVISION A (1 OF 1)
 EXXON Edward Herbst ADEC Mike Abel TIME 18:00 10/19/90
 TEAM NO. 12 TIDE LEVEL 2-35' to 5.0' DATE 4/20/90
 EST. SUBDIVISION LENGTH: 2931 m ☒ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow 45°
 UPLANDS DESCRIPTION: ☒ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: S 10 N
 SURFACE SEDIMENTS: R 80 % B 10 % C 5 % P 3 % G 2 % S 0 % M 0 % V 0
 SLOPE: Long 10 % Hang 90 % Vert 10 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 750 m NO 281

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	C	R	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					X			
MOUSSE													
PATTIES													
TARBALLS													
FILM													
NO OIL										X		X	X

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

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

DID YOU COLLECT DEBRIS?

YES ☒ NO ☐TYPE Rope/Anchor
plastic debris#BAGS 3

Photographs:

Roll No. NoneFrames —

* * * ALL KNOWN
 BEACH TRASH
 COLLECTED.

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 SEDIMENT
		OF	OR	OL	OF	NO		UO	UC	1	2	3	4	5	SU	U	M	L				
1	25					X	0-0	X							X					N	10	P
* 2	20					X	0-0	X		X					X					Y	8	B, G
3	37					X	0-0	X							X					—	—	G, P, S

COMMENTS

* Rainbow sheen on pooled water in pocket beach.

Segment consists of a long stretch of shoreline with hilly rock cliffs, occasionally boulder talus or pebble beaches below. Much of the section surveyed by boat. Light oiling - discontinuous staining - coating on cliff faces. One area with pooled oil beneath boulders along beach. 8 meter lengths to 5 cm deep. Cleaned up as possible with shovels and taken to be Dead deer & other carcasses.

REVIEWED TWDATE 4/22/90

(25/47)

OG Randy 11
SEGMENT ST/CH-2/
SUBDIVISION A

DATE 4/20/90

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Bdry
- ☐ Oil Out.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HML/LVL
- ☐ 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 ●
Photo location, direction,
and number

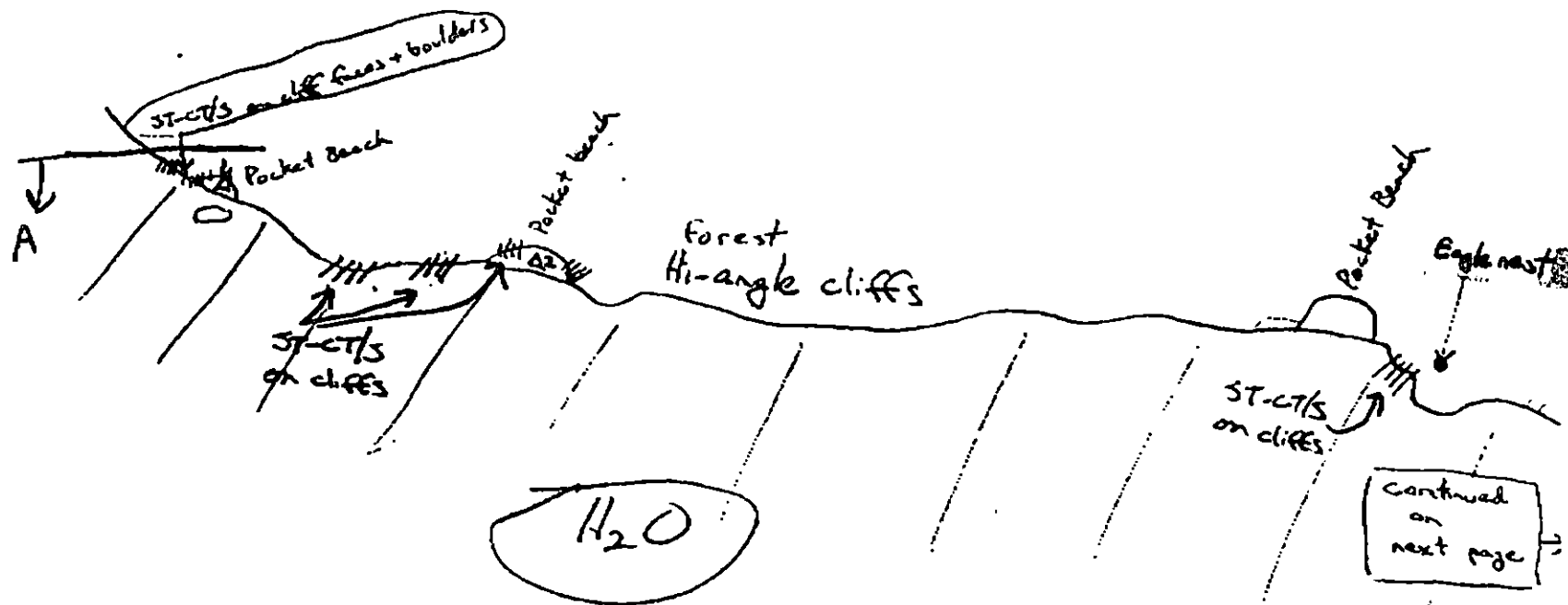
23/52
CH

SKI H MAP

page 1 of 2
(continued on 2nd page)

→ N

Approx. Scale
300 meters



See page 2 for segment character lengths

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

REVISION 4/3/90

THE WORKS OF

SHORELINE ECOLOGICAL SUMMARY (Page 1 of 2)

REVISION: 02/22/91

Segment ST / CH-21 Subdivision A Date (mo / day / yr) 4/20/90Time (24 hr) 1800-1930 Biologist SHARMAN(A) Substrate type and % of segments: SUBDIV.
(1) Bedrock 80 (2) Boulder 10 (3) Cobble 5 (4) Pebble 3 (5) Sand 2 (6) Silt franklin(B) Overall % cover of biota (% of segment): Dense SUBDIV. 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. ---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 (ANCELLA, LITTORINA, LIMAEYS)

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	2	2	2	2	2
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: Fox sparrow foraging in intertidal, 1 harbor seal, deer carcass in UTE (bone & some hide, 67 skull, scavenged, uncoiled, cause of death unknown but long bones poorly preserved implicate starvation/malnutrition. 20 other carcasses (see map for exact location) - bones & some hide, uncoiled, teeth worn indicates older animal, cause of death unknown. Eagle nest at N. boundary is active - (co

Ecological Considerations:
Resource sensitivities from catalogued data for this segment include 3 bald eagle nests (Code 5T) - see sketch map for locations; special use destination (Code 6Y), gill net area (Code 1I), and purse seine area (Code 1J). The active eagle nest on the N. segment boundary is at this time probably the most sensitive ecological resource to human activity/disturbance. The mid and lower intertidal zones are unusually diverse and productive along the predominantly cliffy beach shoreline, and would not benefit from

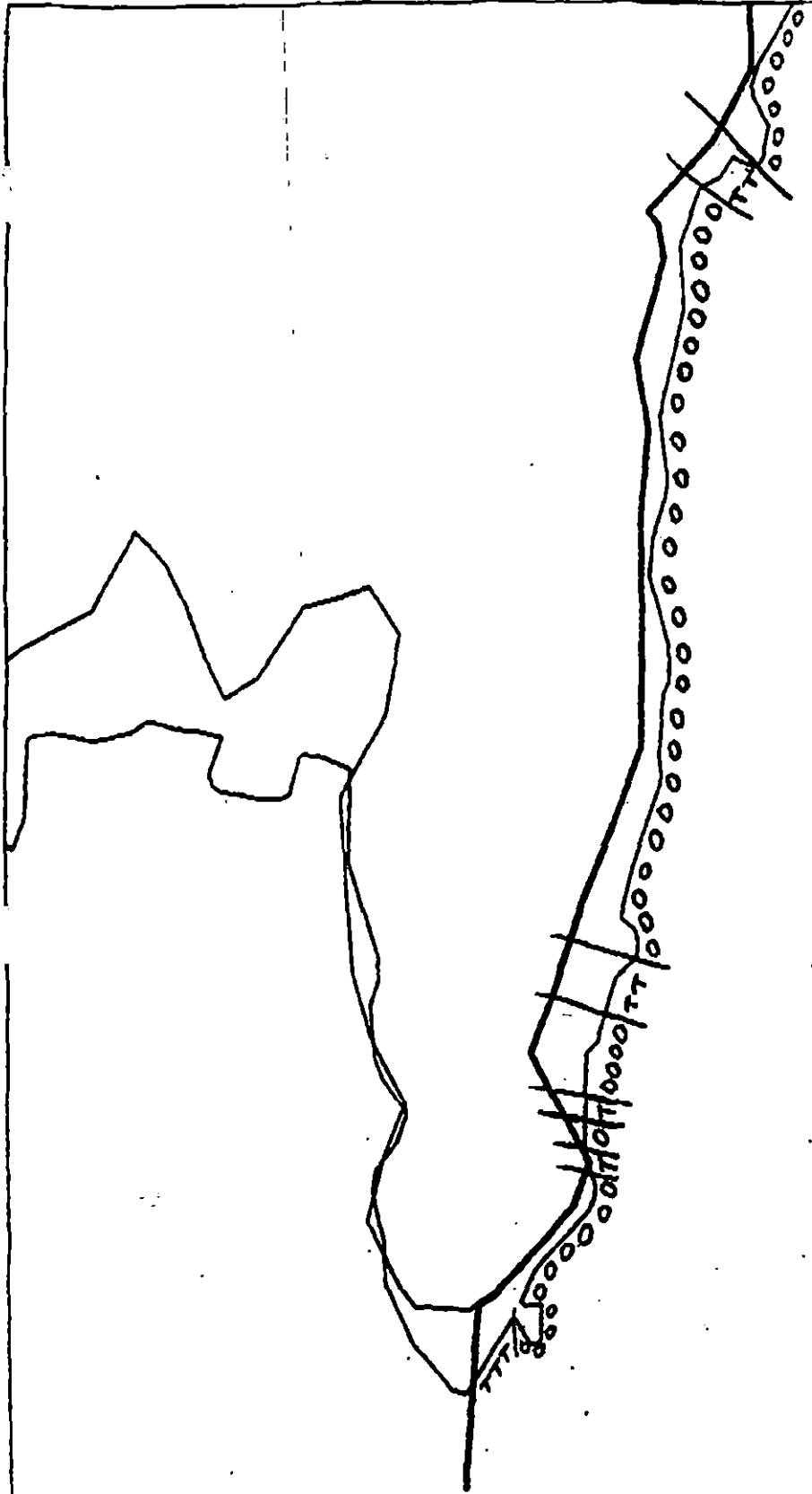
CH-21

Shoreline Ecological Summary (cont.) Slarman
(Page 2 of 2) 4/20/90

General Comments (cont.):

2 proprietary adults (one on nest). See OG map for locations of 2 additional nests located within 350m of each other in middle portion of segment - both apparently inactive. These 2 nest locations differ from those on data map based on previous work. We feel confident in accuracy of our locations - previous locations could be in error or else we could have missed one or both of the previously-surveyed nests. Very rich & productive bedrock/boulder LTZ: small Pycnopodia, Anthopleura artemesia, Katharina, Dermasterias, small Pisaster, bryozoans, serpulids, sponges (Halysidonia?), Sargassum, Henricia, Lithothamnium, ulvalae, Halosaccus, & other algal spp. extending down from the MTZ. MTZ is very productive with locally dense Fucus beds accompanied by Odontoballia (both recruiting well), moderate to dense barnacles with excellent spat set. Intertidal Community is very healthy. 1 harbor seal.

↑
PWS
488



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

CH-21

ADEC Segment Length: 2754m



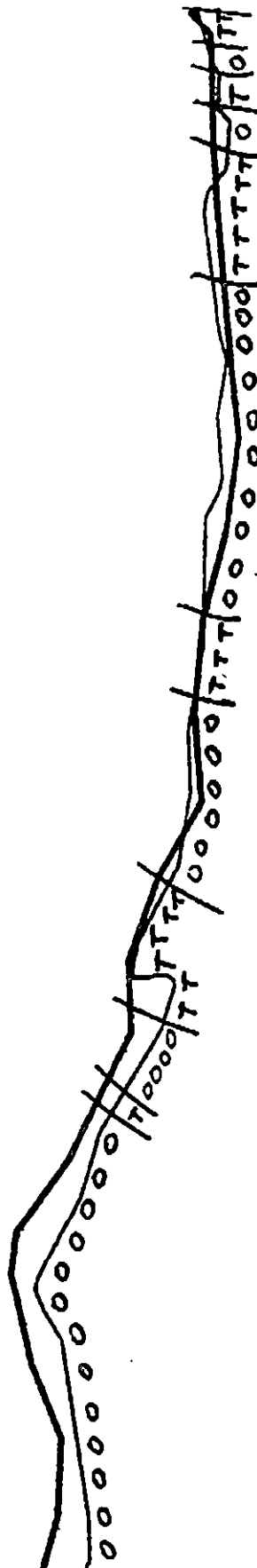
Map Key: PWS-48a

Name: Red Seal

Date: 4/20/90

Date Entered: 7/2/90

↑ PWS 48C



↓ PWS 48A

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

OOOO No Oil

CH-21

ADEC Segment Length: 2754m



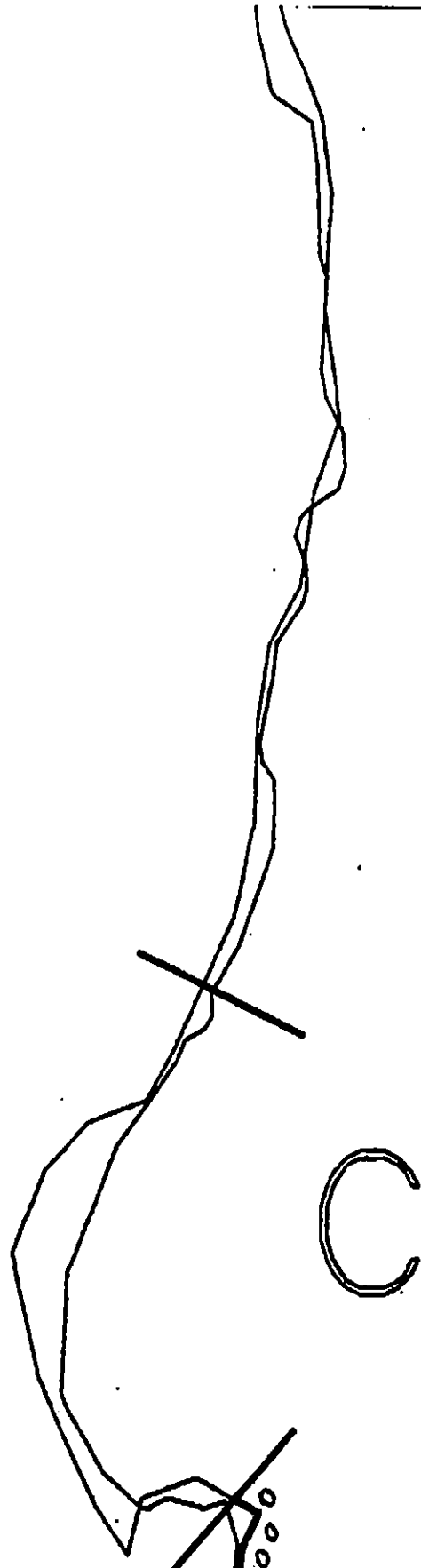
METERS.

Map Key: PWS-48b

Name: R. J. Siegel

Date: 4/20/90

Date Entered: 5/3/90



↓ PWS 488

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

CH-21

ADEC Segment Length: 2754m



Map Key: PWS-48c

Name: City High

Date: 4/20/90

Data Entered: SEA/47

SHORELINE EVALUATION

SEGMENT ST/ CH-21 SUBDIVISION A (1 OF 1) DATE 4/20/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1J Purse seine area (6/20 to 9/30)
1L Set net sites (6/11 to 7/25)
5T-3 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6Y Recreation: Special use destination
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: A. David M. Mahan DATE: 5/1/90

OILING CATEGORIZATION:

Wide_0_m: Medium_0_m: Narrow_0_m: V.Light_598_m: No Oil_2156_m
Subsurface Oil Observed: Yes_____No X_____Maximum Depth_____

RECOMMENDATIONS:

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

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: 5/1/00
 ADEC ART WEINER Dick Weiner
 EXXON ANDY TEAR Andy
 NOAA Gary Petrus Gary Petrus
 USCG KENNETH KEANE Kenneth Keane

FOSC: DATE: 5-18-20
~~NOTIFY CVC 24 HRS in advance of work~~

OG Randy il
SEGMENT ST/CH-2/
SUBDIVISION A
DATE 4/20/90

SKI H MAP

page 1 of 2
(continued on 2nd page)



Approx. Scale
300 meters

CHECKLIST

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

LEGEND

1 Δ
Pit - No Subsurface Oil

2 Δ
Pit - Subsurface Oil

CT/C
Continuous Distribution

CT/B
Broken Distribution

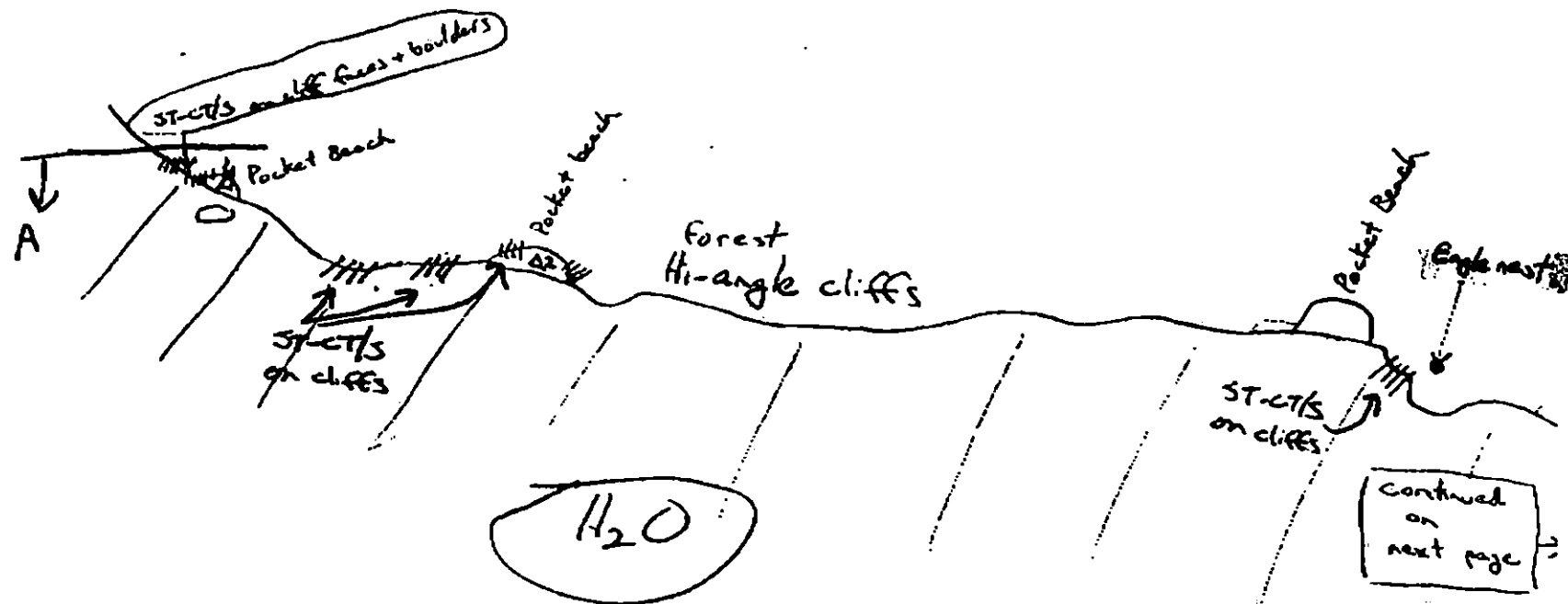
CT/P
Patchy Distribution

CT/S
Splashed Distribution

lll
Oiled Vegetation

1 ●
Photo location, direction,
and number

47/52



See page 2 for segment character lengths

REVISION 02/24/88

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

DATE 4 / 20 90

SKE i MAP

Page 2 of 2

→ N

Approx. Scale
300 meters

CHECKLIST

- ☐ H Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Bintry
- ☐ OS Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HMLA/YML
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ PH Location(s)
- ☐ Photo Location(s)

LEGEND

1 A

PH - No Subsurface Oil

2▲

PM - Subsurface Oil

CT/C

Continuous Distributions

CT/8

Broken Distribution

CT/P

Patchy Distribution

CT/5

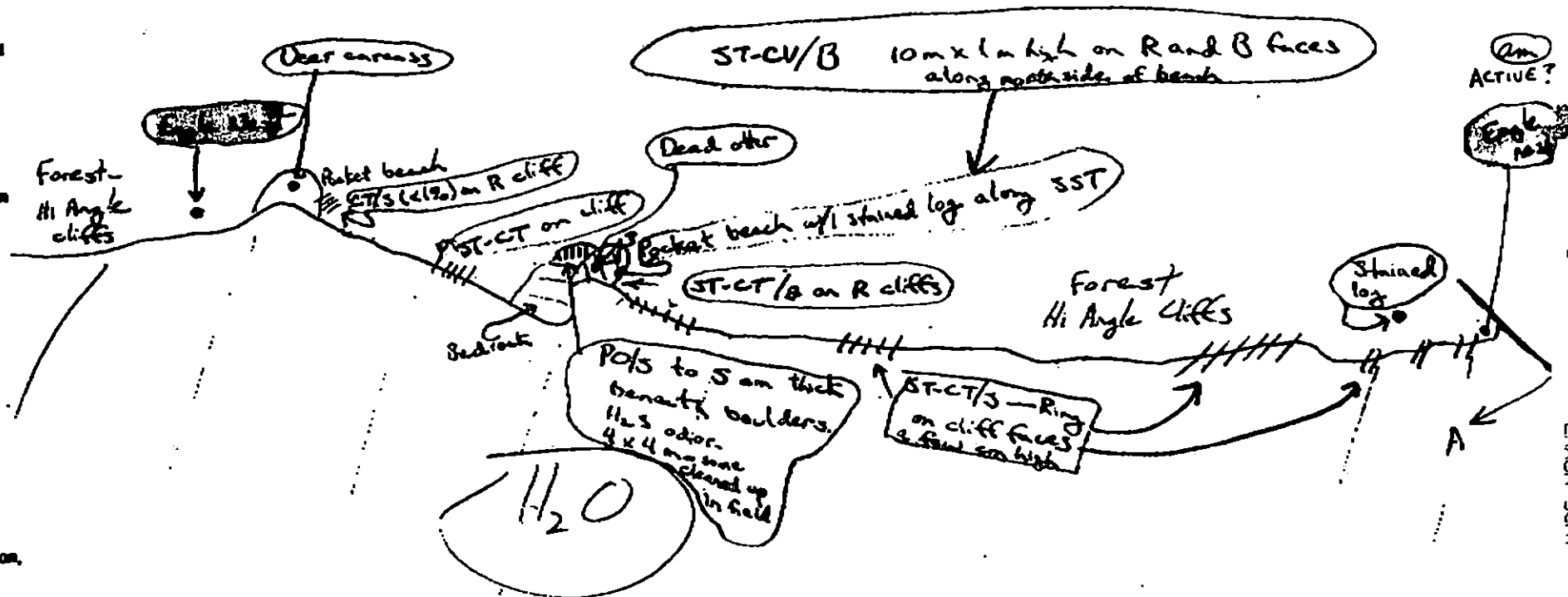
Splashed Distribution

Cold Vegetation

10

**Photo location, direction,
and number**

20/47



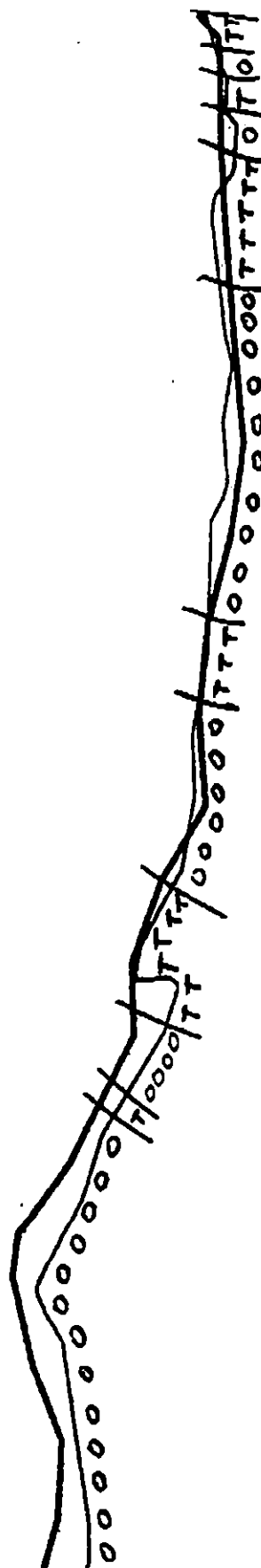
התאריך: 12.12.2011

THE WORKS OF

Oil Character Length (m): AP 0 PO 5 CV 0 CT 750 ST 750 MS 0 PT 0 TB 0 FL 0 NO 2(8)

Date Entered:

↑
PWS
48C



↓ PWS 48A

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

CH-21

ADEC Segment Length: 2754m

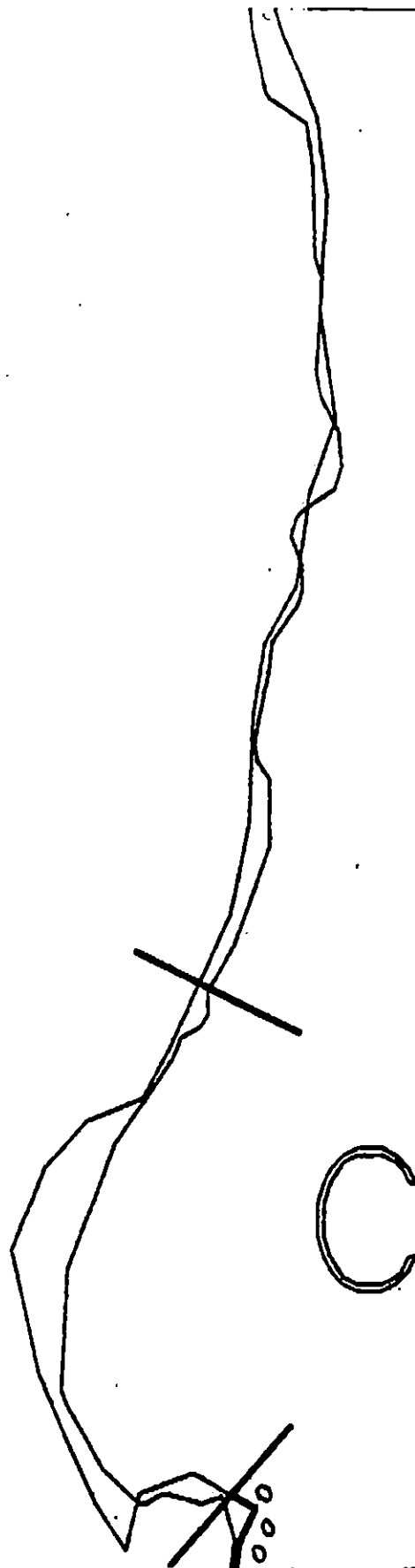


Map Key: PWS-48b

Name: R. J. Siegel

Date: 4/20/90

Date Entered: 4/20/90



↓ PWS
488

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

0000 No Oil

CH-21

ADEC Segment Length: 2754m



Map Key: PWS-48c

Name: Early Stage

Date: 4/20/90

Data Entered:

1991 MAYSAP EVALUATION

SEGMENT: CH 21 SUB: A REGION: PWS SURVEY DATE: 5/2/91

ENVIRONMENTAL SENSITIVITIES:

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

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

TEAM NO. 4 SEGMENT C1021 SUBDIVISION A DATE 2 / MAY / 91

ADEC

NAME Dianne Munson SIGNATURE Dianne Munson

☒ NTR ☐ Treatment Recommended

majority of segment not surveyed due to previous surveys showing no oiling. Small area of coat on bedrock.

EXXON

NAME LARRY D. OLSON SIGNATURE Larry D. Olson

☒ NTR Agree with Representatives Recommendations.

LANDMANAGER

NAME LARRY EVANOFF OF CVC SIGNATURE Ch EV

☒ NTR ☐ TREATMENT RECOMMENDED

MAJORITY OF SEGMENT NOT SURVEYED BECAUSE PREVIOUS SURVEYS SHOWED NO OIL. SMALL PATCH OF OIL COAT WAS FOUND. NO BIOREMEDIATION RECOMMENDED

USCG/NOAA

NAME JERRY SCHULTZ SIGNATURE Jerry Schultz

☒ NTR

CONCUR WITH OTHER REPRESENTATIVES

SEGMENT C14021
SUBDIVISION A
DATE MAY 12 1991

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 1 m NO 949 m US 2504 m

[illegible]

DISTRIBUTION: C = 91-100%; B = 81-90%; P = 11-50%; S = 1-10%; T = <1%

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

[illegible]

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

OG COMMENTS: Segment consists of long stretch of bedrock cliffs, sometimes with talus at its base. Area A1 includes a very small pebble beach among large boulders talus in front of bedrock cliffs. Oiling consists of 1 patch of oil $0.5 \times 1 \text{ m} \pm 5\%$ coverage over bedrock in the U.T.Z. The second area to the south is a pocket beach of pl/gv/cl connecting a marshy outcrop to the bedrock cliff and talus. No oil was found at this location.

ES reviewed May 6
Review no. 5/6/41

Og Sketch Map.

CH 02, A.

-7 Samples

MAY 2, 91

0837-0902

Legend

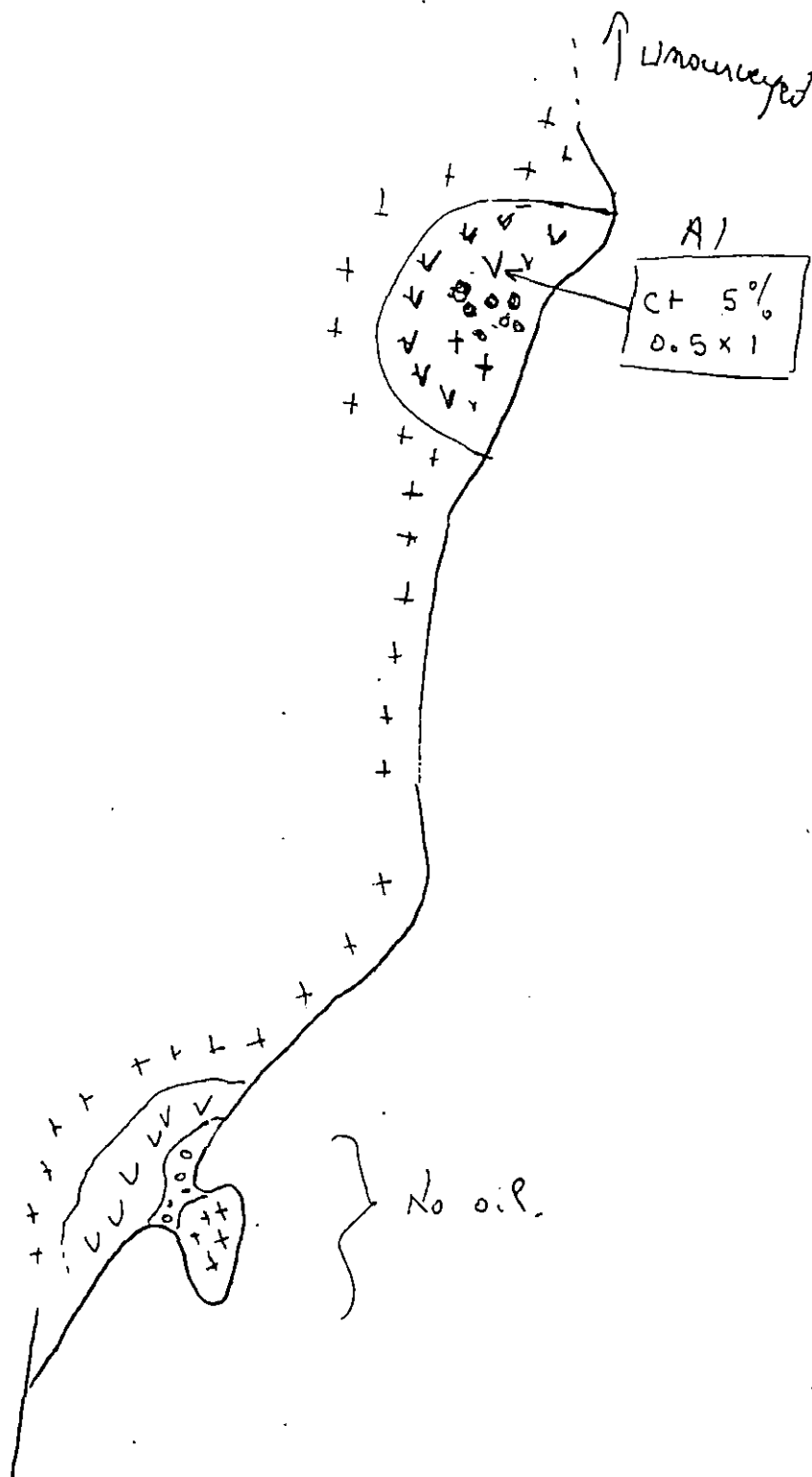
[+] Bedrock

[V] Boulder talus

[O] PL/gv/ds

Meters

50



REVIEWED: 5/6/91

ET reviewed, May 6

NAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 2, 1991	0830 - 0909
SEGMENT #	CH021	TIDAL HEIGHT (Range)	+0.5 => +0.2	
SUBDIVISION	A	BIOLOGIST	JIM BARRY	
SEA STATE	Calm	WIND SPEED/DIRECTION	Variable, 5 kt., cloudy	

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A) Oiled site (CT) is located in a pocket beach in the upper zone of a pebble/cobble/boulder pocket beach with medium exposure. The biota present directly at the oiled site are sparse barnacles (*Balanus*), scattered *Littorina* and filamentous algae. Below the oiled site there is a much richer flora and fauna, as described below.

Potential cleanup operations will not impact the intertidal biota at the site.

Summary of CH021-A

This is a very long segment of moderately exposed coast with few habitat types except bedrock cliffs and high angle boulder and bedrock beaches. A few pocket beaches were reported to have oiled areas and these were the only sites visited during the survey. The flora and fauna of these sites were similar to one another. *Fucus* and barnacles were very high in abundance, with patchy, and occasionally dense cover of mussels. A fairly diverse assemblage of algae and invertebrates were common. Several species of red algae was abundant in the low intertidal as were many species of invertebrates that were not observed in more protected habitats on the island. Many of these are listed below. Subtidal habitats appeared to be dominated by large brown algae.

Recruitment is evident for many species, including a heavy recent settlement for barnacles, mussels, and *Fucus*.

(continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	2	
Seabirds	2	8	
Waterfowl	4	11	
Gulls/Kittiwakes	2	13	
Shorebirds	1	2	
Corvids	1	2	
Other Birds			

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

Shoreline subdivision map showing important biological features attached.

CH021-A Biology Report, continued

Partial List of Common Species from CH021-A

I. Marine Plants

1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
Agarum fimbriatum, Ectocarpus spp., Fucus distichus, Hildenbrandia sp.,
Laminaria saccharina, Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
Calliarthron sp., Corallina sp., Cumagloia andersonii, Halosaccion
glandiforme, Iridaea sp., Lithothamnion sp., Membranoptera dimorpha,
Odonthalia floccosa, Palmaria palmata, Petrocelis sp., Ptilota filicina,
Rhodomela larix,
5. Higher Plants - Leymus mollis (beach rye grass)

II. Marine Animals

1. Sponges - Porifera - Halichondria sp.
2. Anemones - Anthopleura artemesia, A. elegantissima, Epiactis ritteri,
Metridium senile, Urticina crassicornis,
3. Hydroids - Sertularidae - Sertularella?
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaete worms
Nepthyidae
Nereidae - Nereis spp.
Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
Spirorbidae - Spirorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii
10. Crustaceans
 - a. Amphipods - Orchestia sp.?
 - b. Barnacles - Balanus glandula, Chthamalus dalli, Semibalanus cariosus
 - c. Crabs - Haplogaster sp., Hemigrapsus oregonensis, Paguridae (hermit crabs), Oregonia gracilis,
11. Mollusca
 - a. Chitons
Mopalia mucosa, Katharina tunicata, Tonicella lineata,
 - b. Snails - Gastropods
Littorina scutulata, L. sitkana, Nucella lamellosa, N. lima, Searlesia
sp., Margarites sp.,
 - c. Limpets - Acaea mitra, Lottia digitalis, L. persona, Tectura
fenestrata, T. persona, T. scutum,
 - d. Nudibranches - Lamellidoris fusca
 - e. Mussels and Clams
Modiolus sp., Mytilus edulis, Pododesmus cepio, Prototheca staminea
12. Echinoderms
 - b. Sea stars - Dermasterias imbricata, Evasterias truscheli, Henricia
leviuscula, Leptasterias hexactis, Orthasterias keohleri, Pisaster
ochraceus, Pycnopoda helianthoides, Solaster sp.
 - c. Sea Cucumbers - Holothurians - Eupentacta sp.,
 - d. Urchins - Strongylocentrotus droebachiensis
13. Bryozoans - Membranipora sp., Schizoporella sp.
15. Fishes
Cottidae - several species
Liparidae - Liparis callyodon
Stichaeidae - Xiphister atropurpureus, X. mucosus

BIO SKETCH MAP

CAOZ-A

77

CH021-A

J BATTY

2 May '91

0837-0902

[+] Bedrock

[v] Boulder talus

[o] Pebbles/gravel/Cobble

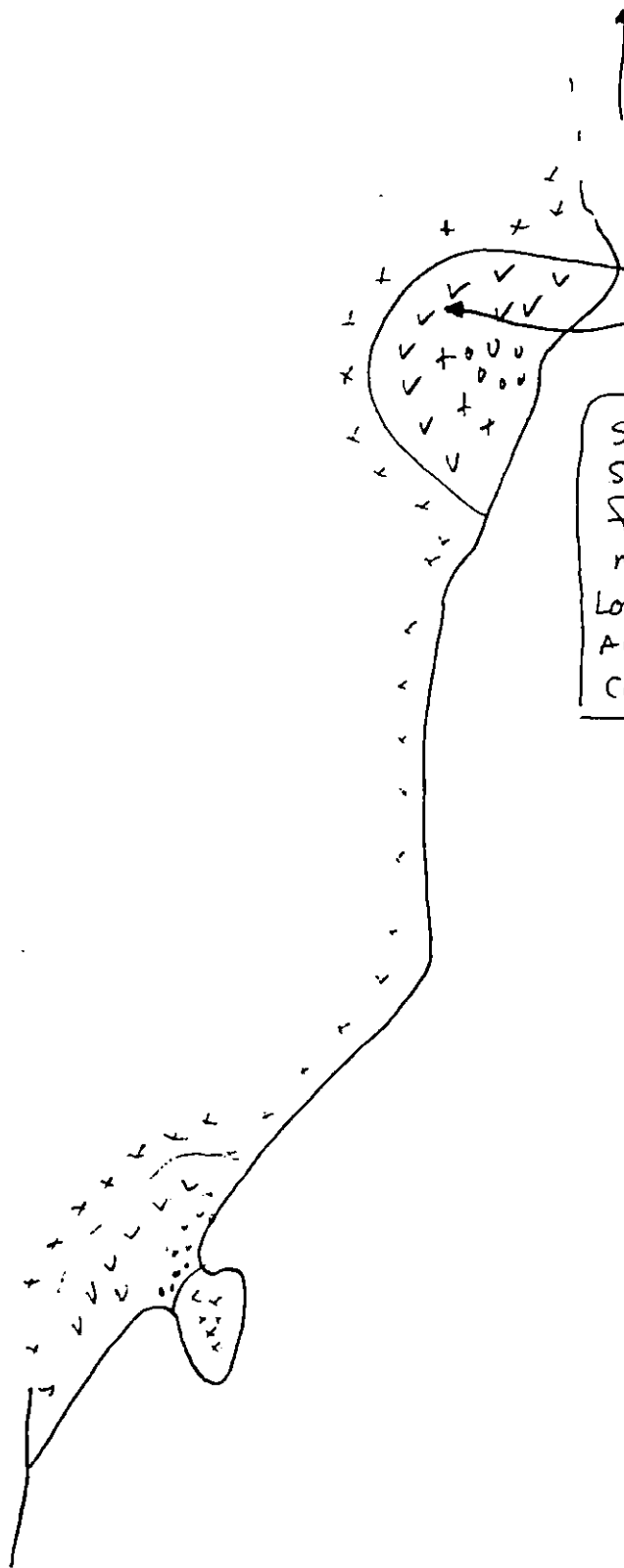
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meters

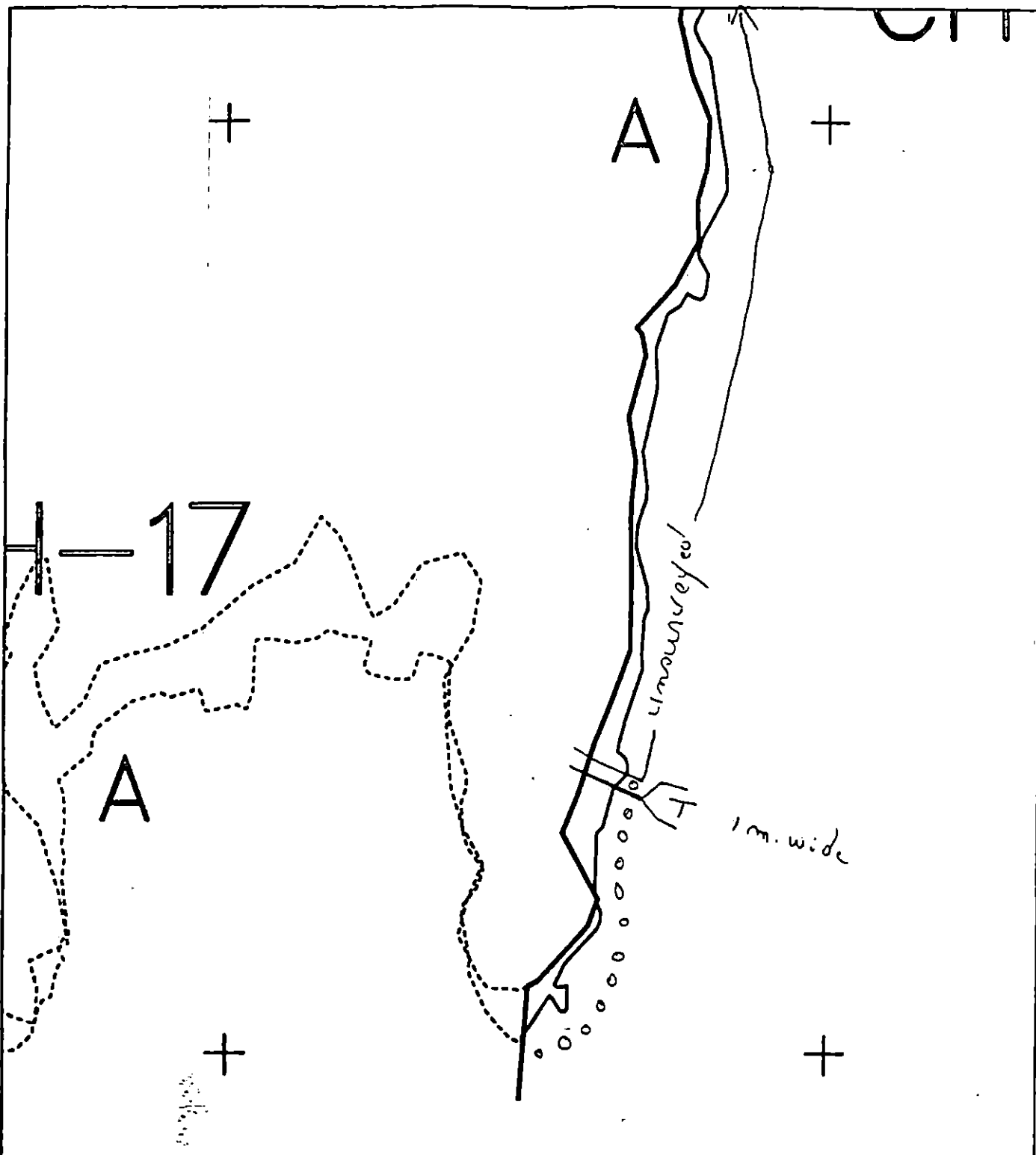
unsurveyed

AI

SPARSE BARNACLES,
Scattered Littorines
Filamentous algae
near oil.

Lower zones: Rich
ALGAL, INVERTEBRATE
Community





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

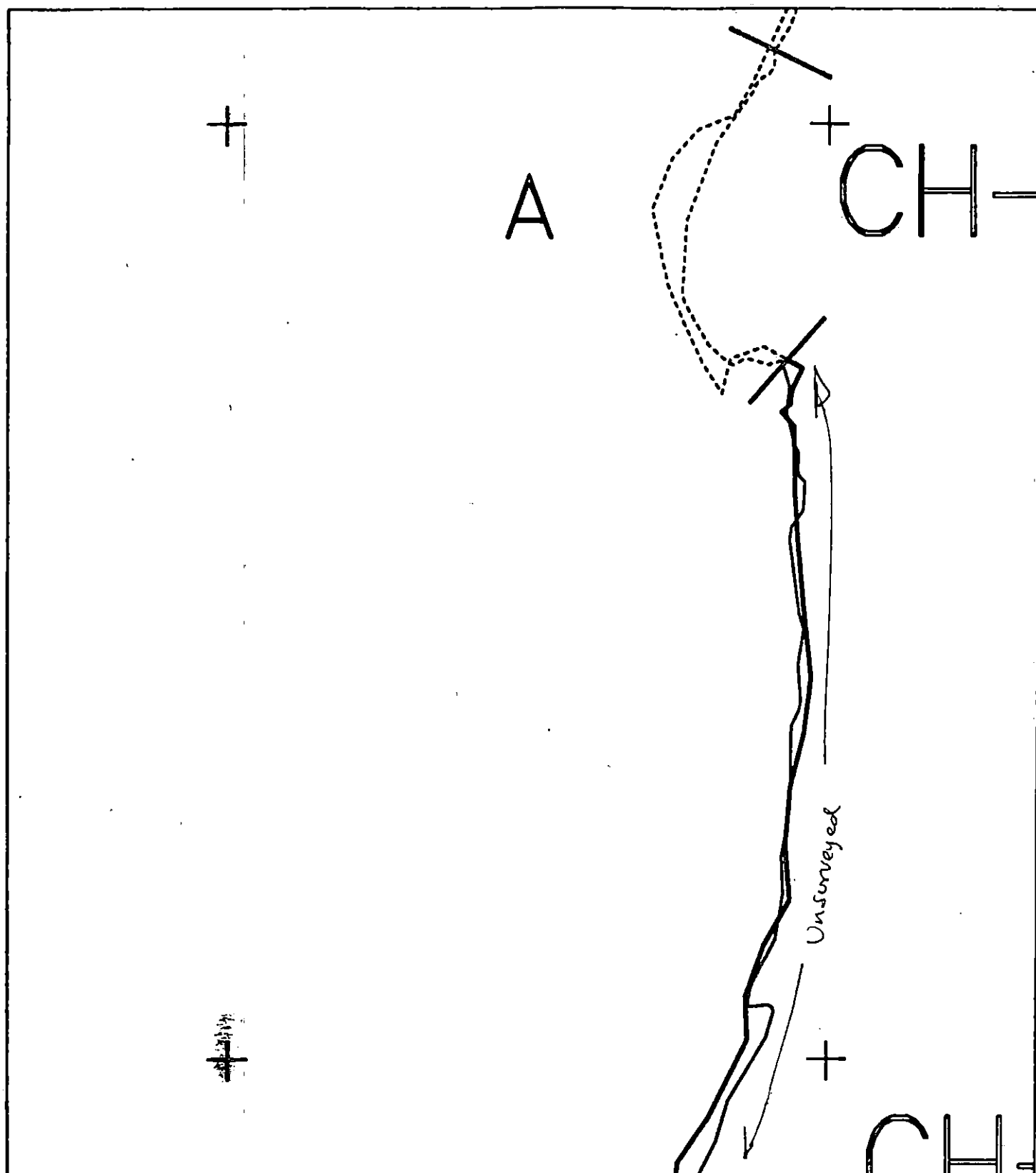
CH021 A
 ADEC Subsegment Length: 2754m
 METERS
 0 200 400
 AK State Plane Zone 4
 pch021a0

Subdivision Field Map
 Map Key: PWSCH021Aa
 Name: JM Sample
 Date: May 9/91
 Date Entered:



REVIEWED: 5/6/91

ES reviewed, May 6



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

CH021 A

ADEC Subsegment Length: 2754m

METERS

0 200 400

AK State Plane Zone 4
 pub021ab



Subdivision Field Map

Map Key: PWSCH021Ab

Name: J. M. Seaples

Date: May 2, 91

Date Entered:

Reviewed: MC 5/6/91

ES (revised) 11/91

1991 MAYSAP EVALUATION

SEGMENT: CH 21 SUB: A REGION: PWS SURVEY DATE: 5/2/91

ENVIRONMENTAL SENSITIVITIES:

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

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

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO Signature: Rachel Dan Dahn Date: 5/14/91

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

N

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: MAY 14 1991

FOSC APPROVAL DATE: 5/20/91

ADEC

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

CH021-A

TEAM NO. 4 SEGMENT CH021 SUBDIVISION A DATE 2 / MAY / 91

ADEC

NAME

Dianne Munson

SIGNATURE

Dianne Munson☒ NTR ☐ Treatment Recommended

majority of segment not surveyed due to previous surveys showing no oiling. Small area of coat on bedrock.

EXXON

NAME

LARRY D. OLSON

SIGNATURE

Larry D. Olson☒ NTR Agree with Representatives Recommendations.

LANDMANAGER

NAME

LARRY EVANOFF OF CVC

SIGNATURE

Chu EV☒ NTR☐ TREATMENT RECOMMENDED

MAJORITY OF SEGMENT NOT SURVEYED BECAUSE PREVIOUS SURVEYS SHOWED NO OIL. SMALL PATCH OF OIL COAT WAS FOUND. NO BIOREMEDIATION RECOMMENDED

USCG/NOAA

NAME

JERRY SCHULTZ

SIGNATURE

Jerry Schultz☒ NTR

CONCUR WITH OTHER REPRESENTATIVES

DATE MAY / 2 / 91

ES reviewed May 6
REVIEW NO. 5/6/91

Og Sketch Map.

CH 021 A :

ET Samples

MAY 2, 91

0837-0902

Legend

[+] Bedrock

[V] Boulder talus

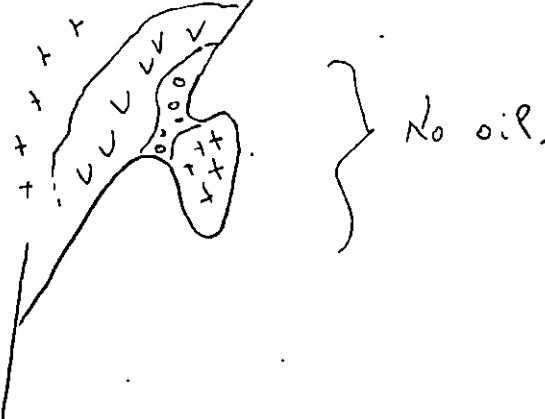
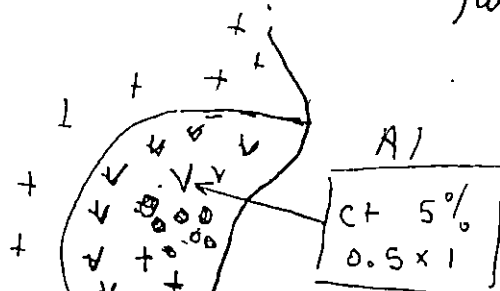
[O] PL / gv / ds

Meters

50



↑ Unsurveyed



Reviewed: 5/6/91

ET reviewed, May 6

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #	4	DATE/TIME	May 2, 1991 0830 - 0909
SEGMENT #	CH021	TIDAL HEIGHT (Range)	+0.5 => +0.2
SUBDIVISION	A	BIOLOGIST	JIM BARRY
SEA STATE	Calm	WIND SPEED/DIRECTION	Variable, 5 kt., cloudy

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BIO SKETCH MAP

CH021-A

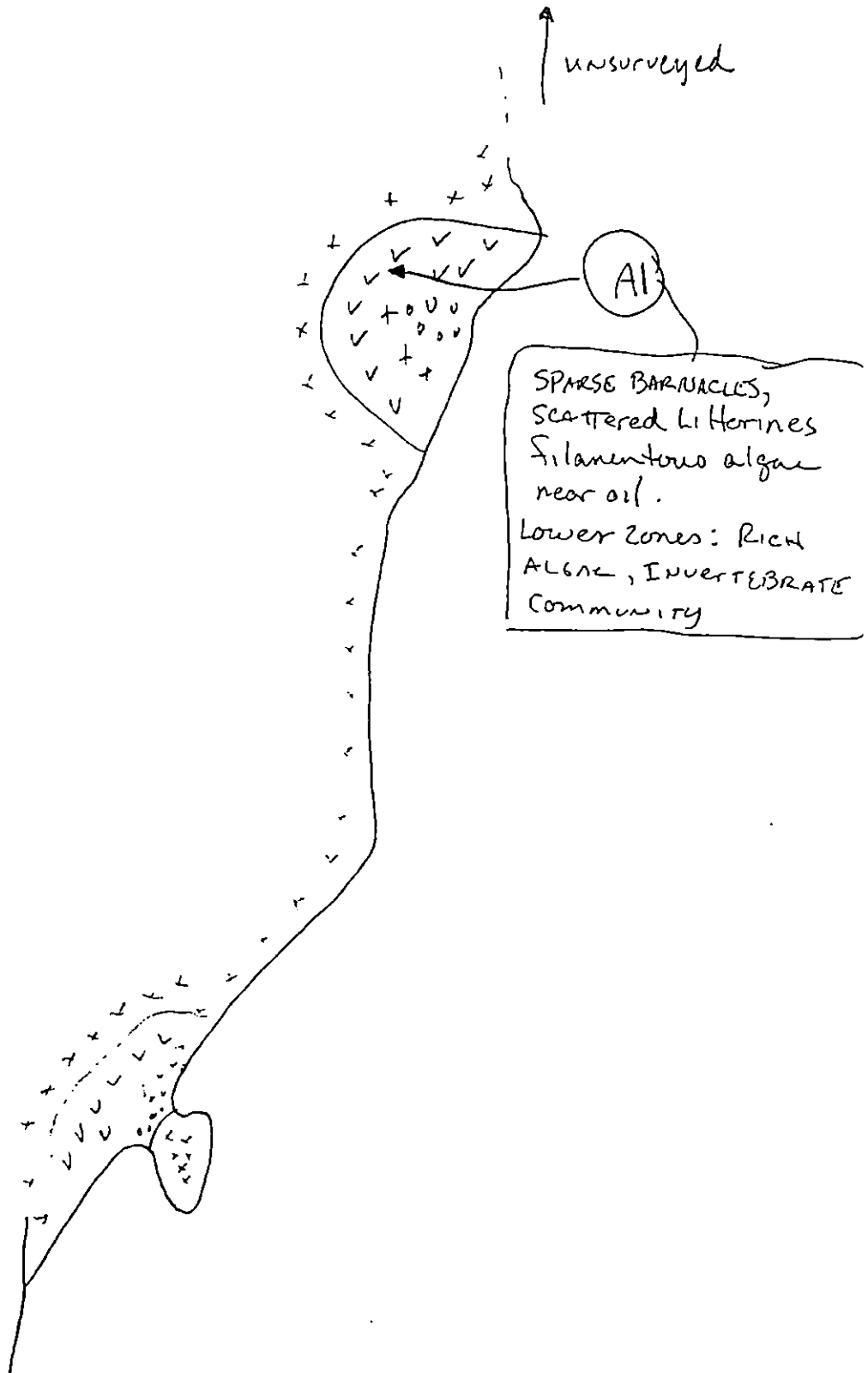
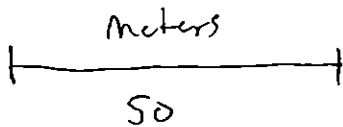
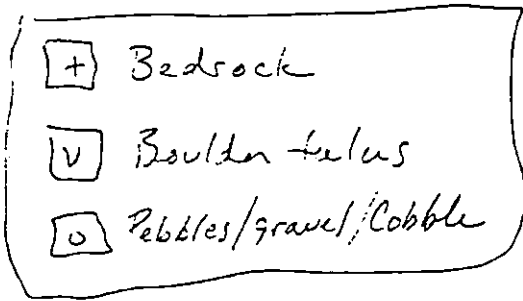
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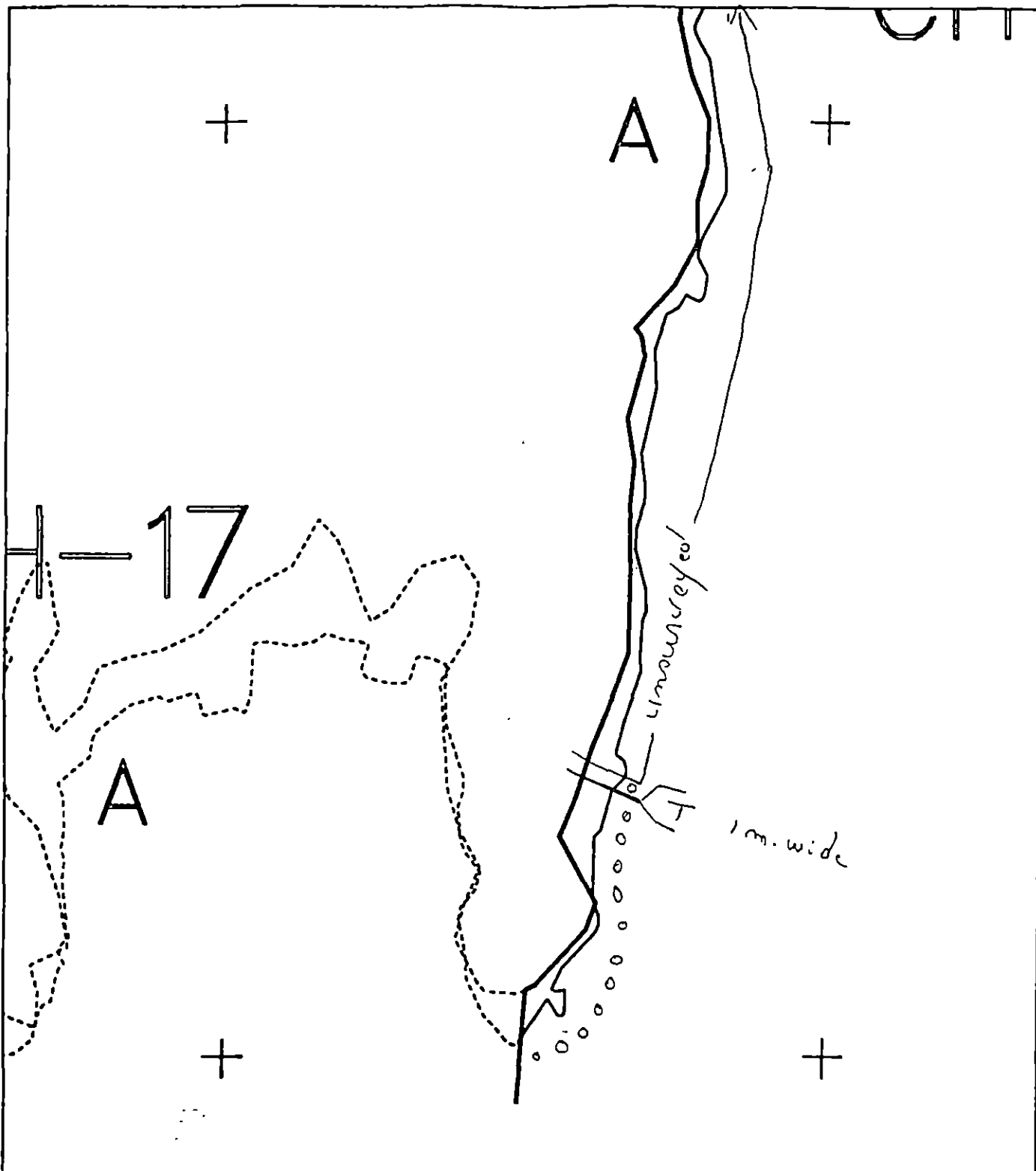
CH021-A

J BARRY

2 MAY '91

0837-0902





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

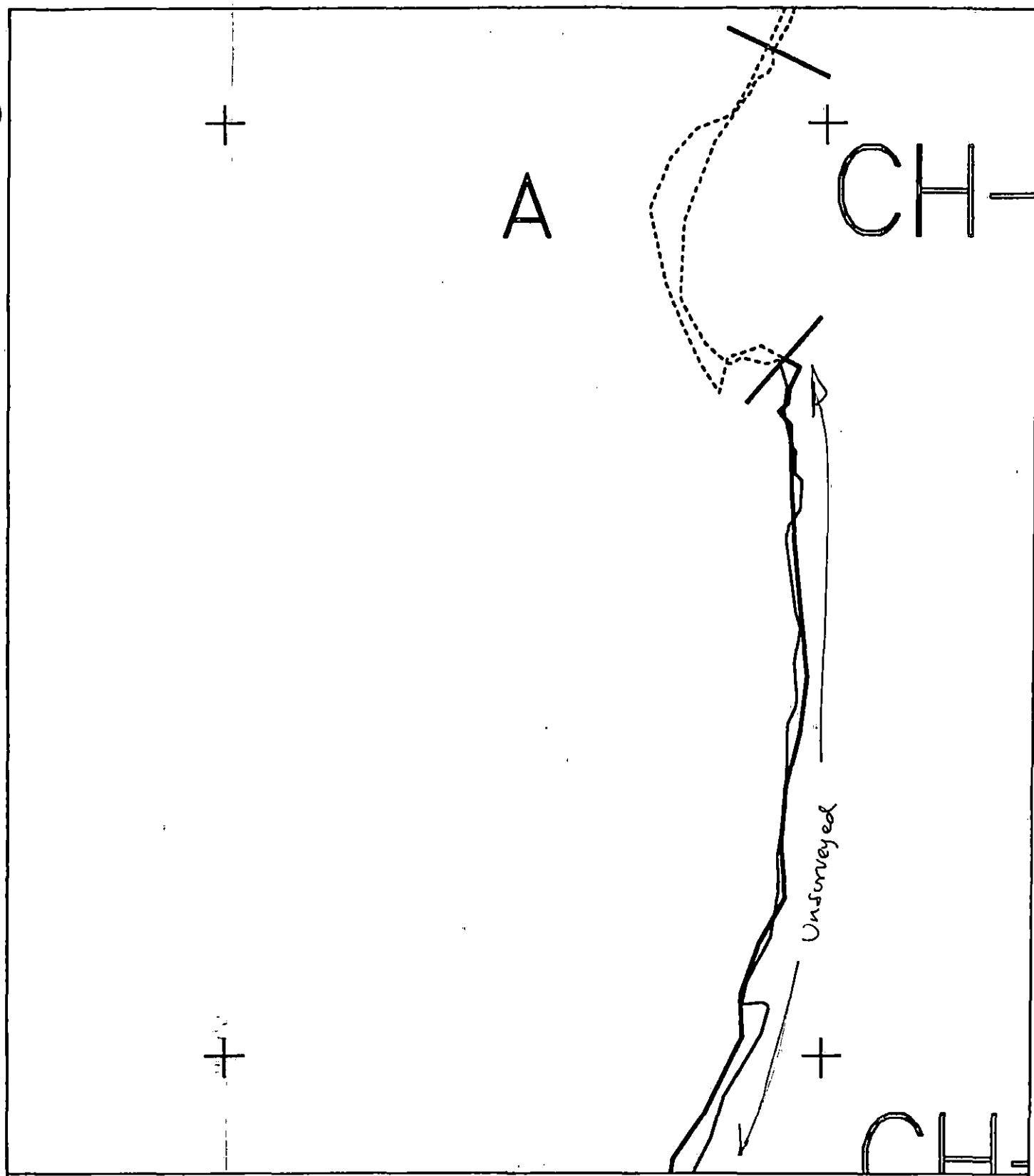
CH021 A
 ADEC Subsegment Length: 2754m
 METERS
 0 200 400
 AK State Plane Zone 4
 pcb021aa

Subdivision Field Map
 Map Key: PWSCH021Aa
 Name: J. M. Sample
 Date: May 2/91
 Date Entered:



REVIEWED: 5/6/91

ES reviewed, May 6



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

CH021 A
 ADEC Subsegment Length: 2754m
 METERS
 0 200 400
 AK State Plane Zone 4
 pub021ab

Subdivision Field Map
 Map Key: PWSCH021Ab
 Name: JM Seupke
 Date: May 2, 91
 Date Entered:
 EXON

Reviewed: MC 5/6/91
 ES revised, May 6

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