14.5.1

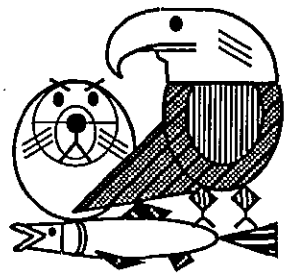
Exxon Valdez Oil Spill
Public Advisory Group

Fact-Finding Trip

into

Prince William Sound

May 24, 1993



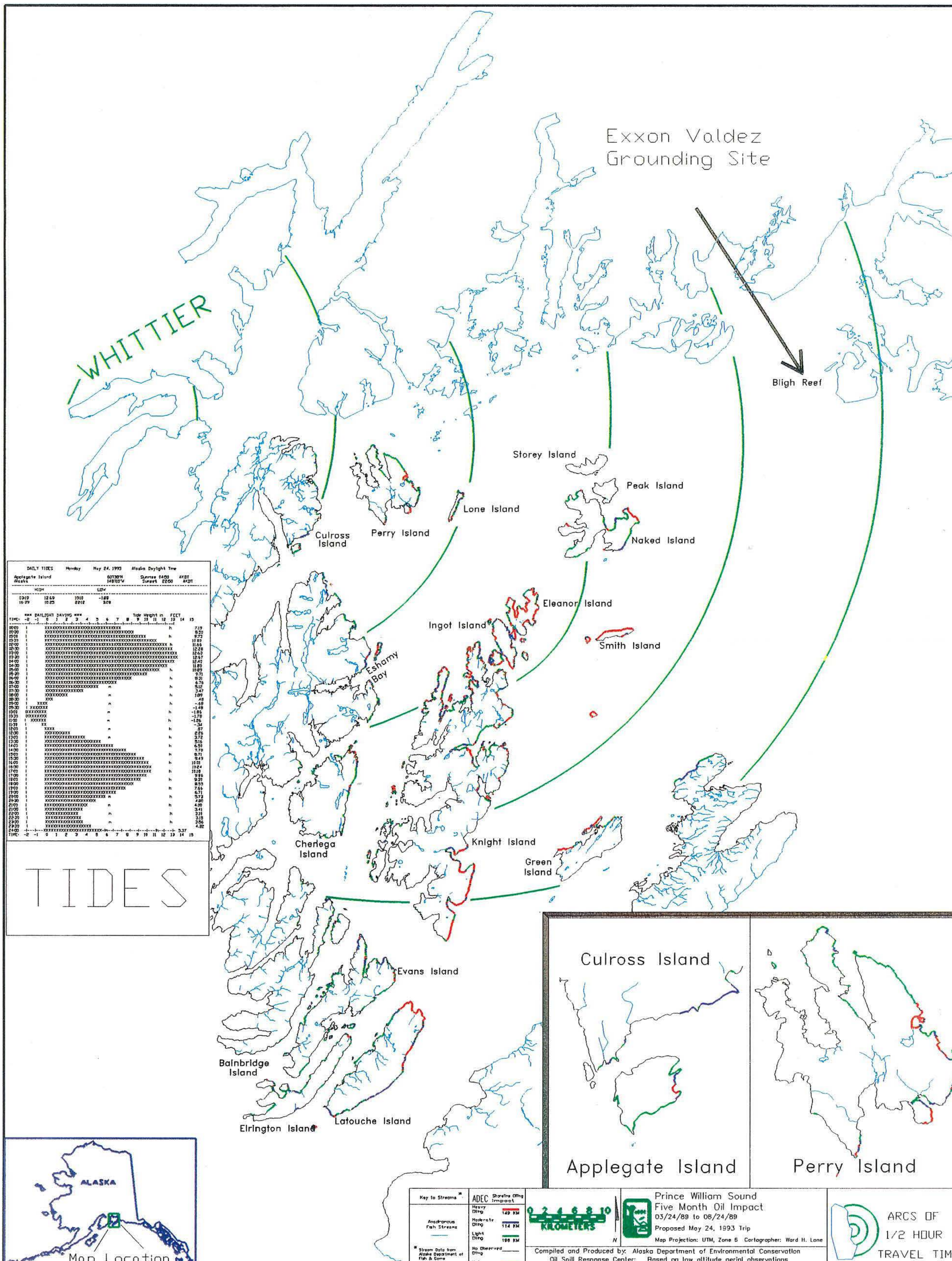
Exxon Valdez Oil Spill Public Advisory Group
Fact-Finding Trip into Prince William Sound
May 24, 1993

Briefing Book Contents

Itinerary
Exxon Valdez Oil Spill Public Advisory Group
Fact-Finding Trip into Prince William Sound
May 24, 1993

(WEATHER PERMITTING, SUBJECT TO CHANGE)

6:00 a.m.	Leave Anchorage via car pool from 1689 C Street parking lot
7:25	Leave Portage via train for Whittier
8:30	Leave Whittier via the *Klondike Express* for Prince William Sound
	--obtain fact-finding trip briefing packet --PAG members briefed about beach visit safety/logistics --view video about oiling of area --commentary and Q&A about oiling of Applegate Island
10:00	Arrive at Applegate Island
	--disembark for beach tour
11:30	Leave Applegate Island for Perry Island
	--commentary and Q&A about oiling of Perry Island
12:00	Arrive at Perry Island
	--disembark for beach tour, if time permits
1:30 p.m.	Leave Perry Island for Eshamy Bay
	--commentary and Q&A about oiling of Eshamy Bay --presentation about potential habitat protection
2:30	Leave Eshamy Bay for northern Chenega Island
	--commentary and Q&A about oiling of Chenega Island
3:00	Leave Chenega Island for Herring Bay (OPTION TO VISIT JACKPOT BAY)
	--commentary and Q&A about oiling of Herring Bay
3:30	Leave Herring Bay (or Jackpot Bay) for Whittier
	--view video about various beach treatment techniques
4:45	Pass by second growth clearcut sites (Esther Passage, Pigot Bay)
5:30	Arrive at Whittier
6:15	Leave Whittier via train to Portage
7:00	Leave Portage via car pool for Anchorage
8:00	Arrive at 1689 C Street parking lot in Anchorage



DAILY TIDES Monday May 24, 1993 Alaska Daylight Time

Applegate Island, Alaska 60°38'N 148°10'W Sunrise 0450 AKDT Sunset 2250 AKDT

HIGH		LOW	
03:19	12.69	10:10	-1.88
16:29	10.25	22:12	3.08

*** DAYLIGHT SAVING *** Tide Height in FEET

TIME	Height
00:00	7.19
00:30	8.50
01:00	9.73
01:30	10.80
02:00	11.66
02:30	12.28
03:00	12.63
03:30	12.67
04:00	12.40
04:30	11.80
05:00	10.89
05:30	9.71
06:00	8.31
06:30	6.76
07:00	5.12
07:30	3.47
08:00	1.89
08:30	.48
09:00	-.68
09:30	-1.48
10:00	-1.86
10:30	-1.78
11:00	-1.26
11:30	-.34
12:00	.87
12:30	2.26
13:00	3.72
13:30	5.16
14:00	6.50
14:30	7.70
15:00	8.71
15:30	9.49
16:00	10.01
16:30	10.24
17:00	10.18
17:30	9.86
18:00	9.30
18:30	8.55
19:00	7.66
19:30	6.71
20:00	5.73
20:30	4.80
21:00	4.00
21:30	3.41
22:00	3.10
22:30	3.15
23:00	3.56
23:30	4.32
24:00	5.37

GLOSSARY OF TERMS

SURFACE OIL CHARACTERS

- **AP** ASPHALT PAVEMENT: heavily oiled beach sediments held cohesively together
- **MS** MOUSSE/POOLED OIL: any oil/water emulsion with a thickness > 1 cm
- **TB** TAR BALLS, PATTIES, & TAR PATTIES: small, distinct oil deposits lying on top of the beach surface; possibly binding debris but typically not sediments
- **SOR** SURFACE OIL RESIDUE: significantly oil coated beach sediments in the top 5cm; sediments do not form a cohesive layer. In 'Notes', describe SOR in terms of Heavy or Light.
- **CV** COVER: oil > 1mm to ≤ 1cm thick
- **CT** COAT: oil > 0.1mm to ≤ 1mm thick, can be easily scratched off with fingernail
- **ST** STAIN: oil ≤ 0.1mm thick, cannot be easily scratched off with fingernail
- **FL** FILM or SHEEN: transparent or translucent film or sheen
- **DB** OILED DEBRIS: any oiled debris or cleanup material stranded on a shore
  - LG signifies oiled logs
  - VG signifies oiled vegetation
  - TR signifies cleanup-related trash and/or oiled trash
- **NO** NO OIL: no oiling observed at the location

SURFACE OIL DISTRIBUTION

- **C** CONTINUOUS: area or ban with 91% to 100% oil coverage
- **B** BROKEN: area or bank with 51% to 90 coverage
- **P** PATCHY: area or band with 11% to 50% coverage
- **S** SPLASH: area or band with 1% to 10% coverage
- **T** TRACE: area of band with < 1% coverage

SUBSURFACE OIL CHARACTERS

- **OP** OIL PORE: pore spaces are completely filled with oil, resulting in oil oozing out of the sediments - water cannot penetrate an OP zone
- **HOR** HEAVY OIL RESIDUE: pore spaces partially filled with oil residue, but not generally flowing out of sediments
- **MOR** MEDIUM OIL RESIDUE: heavily coated sediments; pore spaces are not filled with oil - pore spaces may be filled with water
- **LOR** LIGHT OIL RESIDUE: sediments lightly coated with oil
- **OF** OIL FILM: continuous layer of sheen or film on sediments, water may bead on sediments
- **TR** TRACE: discontinuous film, spots of oil on sediments, an odor or tackiness with no visible evidence of oil
- **NO** NO OIL OBSERVED

April 16, 1991

Culross Island

Applegate Island

Key to Streams	ADEC	0 1 2 KILOMETERS	Prince William Sound Five Month Oil Impact 03/24/89 to 08/24/89 Proposed May 24, 1993 Trip Map Projection: UTM, Zone 6 Cartographer: Ward H. Lane
Anadromous Fish Streams	Heavy Oiling 648 KM Moderate Oiling 816 KM Light Oiling 1561 KM Not Observed	Compiled and Produced by: Alaska Department of Environmental Conservation Oil Spill Response Center; Based on low altitude aerial observations	Map Location
Stream Data from Alaska Department of Fish & Game		File Name: APPGATE Date of GIS Query: 06/15/93 Date of Map Production: 3/20/93	

Applegate Island
AE-005

Applegate Is. is a small island less than one mile across, located at the mouth of Port Nellie Juan in western Prince William Sound. The shoreline segment is generally sheltered by bedrock outcrops at the entrance; the beach itself consists of uplifted shale overlain with cobbles. There are mussel beds located at this beach and an eagle next nearby. This, and neighboring shore segments, are heavily used by recreational boaters. There are numerous campsites in the upland areas, and, until last year, a small sauna nearby. It is about 22 miles southeast of Whittier, within the range of mid-sized pleasure craft, which explains its heavy human use.

The first survey of Applegate segment AE-005 following the Exxon Valdez oil spill took place on May 20, 1989, when observers noted that 85% of the shoreline was oiled to an average depth of 12 centimeters. Oiling noted in September, following treatment described below, was composed of mousse, sticky oil, tar, asphalt and stain. Maximum thickness of oil noted was 2 centimeters, and the maximum subsurface penetration was 25 centimeters at the high tide line. By October of 1989 observers noted oiling had decreased to 65% with an average penetration of 10 centimeters along the line surveyed.

The 1990 and 1991 shoreline surveys documented heavy oiling remaining at this site, and treatments described below were applied. Following treatment, the segment was labeled as moderately oiled. The survey conducted in May of 1992 reported light oiling remaining, composed mostly of asphalt pavement and surface oil residue. Surveyors reported problems in removing asphalt adhering to tilted shale bedrock.

Treatment applied to the shoreline at this site included:

- **1989** - manual removal of oiled seaweed and oiled debris, warm and hot water wash with moderate and high pressure hoses used concurrently with a header hose flood.
- **1990** - manual removal of pooled oil, asphalt pavements, mousse and tarballs, manual raking, mechanical tilling with a small tractor, spot washing, and application of bioremediation agents Inipol and Customblen. Cleanup reports state that 2,585 bags of oily sediment were removed from this beach in 1990.
- **1991** - manual removal of asphalt pavement, mousse, surface oil residue, tarballs and oil-saturated sediments. Sheens were produced on the water from cleanup activities. Cleanup reports state that 103 bags of oily sediment were removed from this beach in 1991.
- **1992** - manual removal of asphalt pavement and surface oil residues, manual raking, and application of Customblen. Cleanup reports state that 9 bags of oily sediment were removed from this beach in 1992.

SEGMENT SUMMARY

AE-5

OCTOBER 31, 1989

Beach segment AE-5 is located on Applegate Island in Prince William Sound. A transect was run on this segment (station #88) by David Hall, Clay Robinson, and John Bauer on May 20, 1989. The average coverage at that site was 85% with an average thickness of .5mm and an average penetration of 12cm.

This segment was SCAT'ed on May 26, 1989. The SCAT report was recommended for approval by the ISCC on June 12. The FOSC approved the treatment plan on June 13, 1989.

Treatment began on August 25, according to the Coast Guard. However, according to Exxon on the Segment Inspection Record, no work was required on this segment. Treatment methods recommended were removal of oiled fucus, debris pick-up, warm/hot water moderate/high pressure wash with a header hose flood. There are no Daily Shoreline Assessment forms on file for this segment.

ADEC Inspector Joe Sautner signed off this segment on August 26, 1989. He wrote that the segment contained 2% heavy oil, 5% medium oil, 20% light oil, 18% very light oil and 55% no oil. He also stated that a reassessment was necessary. USCG Inspector Paul Putkey wrote that the segment contained 2% heavy oil, 5% medium oil, 30% light oil, 10% very light oil and 53% no oil. He approved demobilization but stated that a reassessment was necessary.

A post treatment assessment was conducted on this segment on September 13 by Brian Fitzsimons and Lyle Gresehover. At that time there was heavy, moderate, light and very light oil in the form of mousse, sticky oil, tar, asphalt and stain. The maximum thickness was 22mm with a maximum penetration was 25cm at the high tide line.

Another transect was run on this segment on October 22, 1989 by Clay Robinson, Erich Gundlach and Gene Pavia. The average coverage was 65%, the average thichness was .5mm and the average penetration was 10cm.

This segment contains a 1989 winter study site.

Lea Ann Robinson

1990 TREATMENT SUMMARY - ADEC

Segment: AE005 KodKUnit: Region: PWS
Location: APPLEGATE ISLAND

Number of visits: 16 Treatment start date: 06/06/90

TREATMENT TYPES:

Manual removal: YES	Bags of sediment removed: 2585	
Manual raking: YES	Oil manually removed: PO AP MS TB	
Bioremediation: YES	Header flood: NO	
Mechanical tilling: YES	Mechanical relocation: NO	Spot wash: YES

COMMENTS:

The SSAT survey documented heavy oiling. The treatment performed included manual removal of pooled oil, asphalt pavements, mousse and tarballs; manual raking; mechanical tilling; spot washing; and Inipol and Customblen application. Problems observed during treatment included difficulty in removing oil from the shale sediments, spot washing may have increased the distribution of the oil, Inipol may have been sprayed too close to the waters edge, and Inipol gelled during application. Following treatment, the segment has moderate oiling.

1991 TREATMENT SUMMARY - ADEC

Segment: AE005 KodKUnit: Region: PWS
Location: APPLEGATE ISLAND

Number of visits: 6 Treatment start date: 06/01/91

TREATMENT TYPES:

Manual removal: YES	Bags of sediment removed: 103	
Manual raking: YES	Oil manually removed: AP MS OP OR SOR TB	
Bioremediation: YES	Header flood: NO	
Mechanical tilling: NO	Mechanical relocation: NO	Spot wash: NO

COMMENTS:

The Maysap survey documented heavy oiling. The treatment performed included manual removal of asphalt pavement, mousse, SOR, tarballs and OP and OR sediments; manual raking; and Customblen and Inipol application. Problems observed during treatment included treated areas produced near shore sheens, and difficulty in removing oil from tilted shale bedrock. Following treatment, the segment has moderate oiling.

1992 TREATMENT SUMMARY - ADEC

Segment: AE005 KodKUnit: Region: PWS
Location: APPLEGATE ISLAND

Number of visits: 2 Treatment start date: 05/18/92

TREATMENT TYPES:

Manual removal: YES	Bags of sediment removed: 9	
Manual raking: YES	Oil manually removed: AP SOR	
Bioremediation: YES	Header flood: NO	
Mechanical tilling: NO	Mechanical relocation: NO	Spot wash: NO

COMMENTS:

The Finsap survey documented light oiling. The treatment performed included manual removal of asphalt pavement and SOR; manual raking; and Customblen application. Problems observed during treatment included difficulty in removing asphalt pavement from tilted shale bedrock. Following treatment, the segment has light oiling.

FINSAP EVALUATION

1. Sound 2

D. Reimer BIO T. Schroeder LOCALITY: PWS, APPLEGATE ISL.

LANDMANAGER V. Baker FOR USFS SEGMENT AE005

ADEC/ADNR A. Weiner NOAA S. Lehmann SUBDIVISION A

EXXON M. Barker USCG T. Nance DATE May / 18 /92

ENVIRONMENTAL SENSITIVITIES: **(See page two for details)**

Eagle Nest

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find, and contact Exxon's Cultural Resource Program immediately: 264-4089 (Anchorage).

SHPO Signature: Judith E Bittner Date: 5-1-92

RECOMMENDATIONS:	FIELD TAG	FOSC
Treatment Required (Y or N)	Y	Y
Manual Tilling	X	Y
Manual Pickup	X	Y
Other CUSTOMBLEN	X	Y

COMMENTS:

FIELD TAG: REMOVE OR MANUALLY TILL SURFACE OILING AND APPLY CUSTOMBLEN. NO FURTHER TREATMENT REQUIRED.

FOSC:

FIELD TAG REVIEW COMPLETION DATE: 18 MAY 92 FOSC APPROVAL DATE: 5-28-92

ADEC/ADNR Art Weiner FOSC

EXXON D. Michael

USCG Jon Onorati, LT, USCGR

NOAA

Environmental Sensitivities
1992 Field Activities

Eagle Nest: Access restricted from March 1 to September 1. USFWS authorization required. Maintain 1000-ft. vertical and 1/4-mile horizontal buffer.

FINSAP FIELD SHORELINE COMMENTS

TEAM NO. 2 LOCALITY PWS/APPLEGATE Is.

OG D. REIMER BIO T. SCHROEDER SEGMENT AE005

DATE May 1 18 92 SUBDIVISION A

ADEC/ADNR
NAME ART WEINER SIGNATURE Art Weiner

☐ NO TREATMENT REQUIRED ☒ TREATMENT COMPLETED ☐ FURTHER TREATMENT RECOMMENDED

ALL ACCESSIBLE SURFACE OIL REMOVED OR TREATED IN PLACE.
Ap & SOR IN VERTICAL SHALE BEDS IS VERY DIFFICULT TO REMOVE.

USCG
NAME IVAN NANCE, CT USCG SIGNATURE [signature]

☐ NO TREATMENT REQUIRED ☒ TREATMENT COMPLETED ☐ FURTHER TREATMENT RECOMMENDED

REMOVED OR MANUALLY TILLED SURFACE OILING AND APPLIED CUSTOMBLEN, NO FURTHER TREATMENT REQUIRED,

LANDMANAGER
NAME Victor Baer FOR U.S.F.S. SIGNATURE Victor Baer

☐ NO TREATMENT REQUIRED ☒ TREATMENT COMPLETED ☐ FURTHER TREATMENT RECOMMENDED

Approx. one dozen small well weathered asphalt patches found, mainly along south side of segment that were tilled and custom blend treated. No further treatment necessary.
(High rec. use area)

NOAA
NAME Stephen Lehmann SIGNATURE [signature]

☐ NO TREATMENT REQUIRED ☒ TREATMENT COMPLETED ☐ FURTHER TREATMENT RECOMMENDED

Accessible surface oil has been removed and treated.
No further action is recommended.

EXXON
NAME MIKE BARKER SIGNATURE [signature]

☐ NO TREATMENT REQUIRED ☒ TREATMENT COMPLETED ☐ FURTHER TREATMENT RECOMMENDED

MUCH IMPROVED FROM 1991. NO NEED FOR FURTHER ACTION.
LOTS OF WILDLIFE IN THE AREA

12

FINSAP SHORELINE OILING SUMMARY

TEAM NO. 2 LOCALITY Applegate Is

OG Reimer BIO Schroder SEGMENT AES

ADEC Weiner LANDMANAGER Baer for USFS SUBDIVISION A

EXXON Barker USCG Nance DATE 05 / 18 / 92

NOAA Lehmann

TIME 06 : 50 to 07 : 50 TIDE LEVEL 3.27 ft. to 0.05 ft. ENERGY LEVEL: [X] H [ ] M [ ] L

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

TOTAL LENGTH SHORELINE SURVEYED: 304 m NEAR SHORE SHEEN: [ ] BR [ ] RB [ ] SL [X] NONE

EST. OIL CATEGORY LENGTH: W 0 m M 45 m N 0 m VL 37 m NO 222 m US 0 m

LOC	SURFACE OIL CHARACTER										SURFACE SEDIMENT	SHORE SLOPE	AREA WIDTH	AREA LENGTH	ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO	TYPE	V H M L	m	m	S	UI	MI	LI	
A	S			S							PCR	L	3	20		X			
B	S			P							PCR	L	15	15		X	X		
C	S			S							PCR	L	10	30		X	X		
D	S			S							PCR	L	12	10		X			
E	S			S							PCR	M	2	5		X			

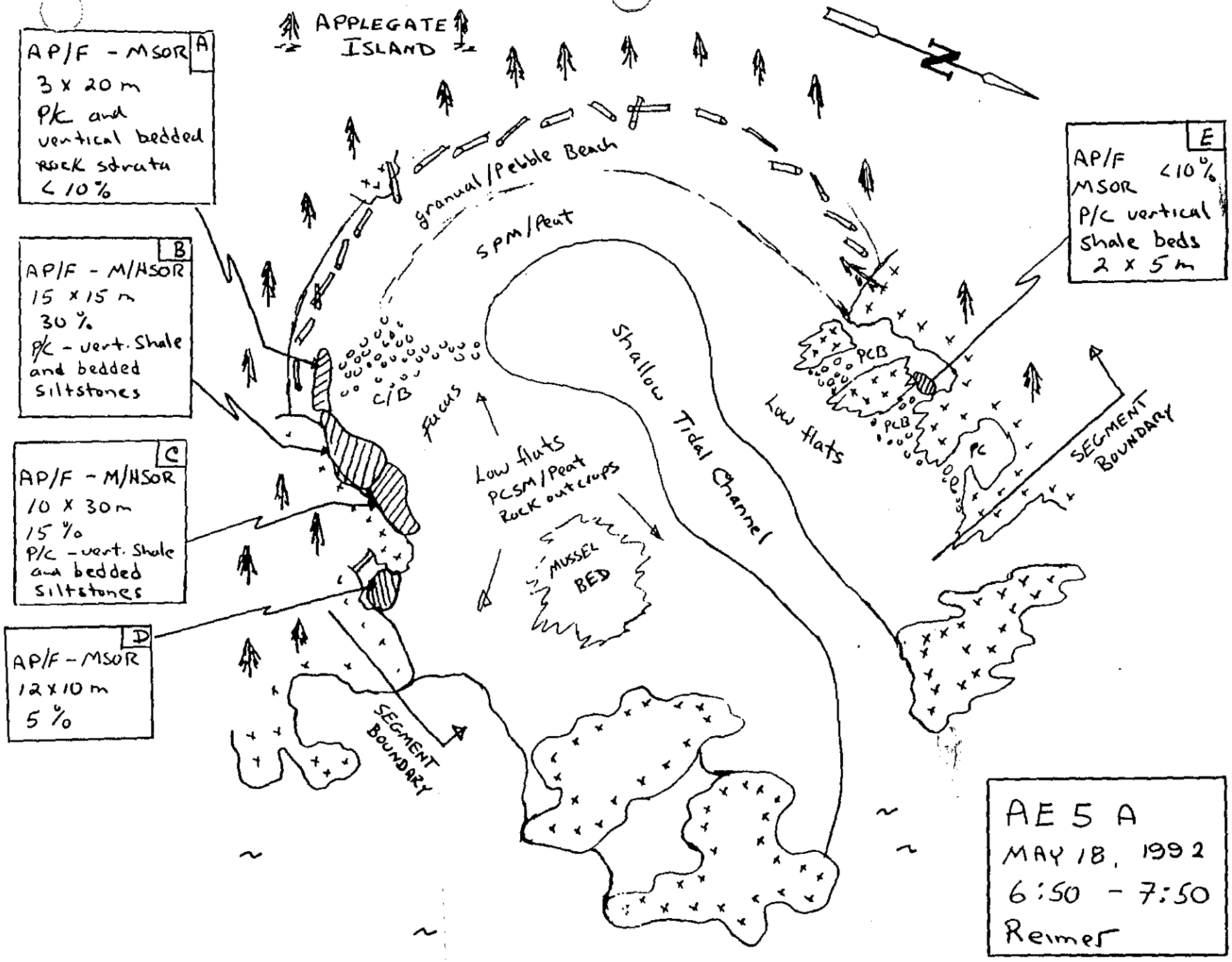
DISTRIBUTION: C = 91-100%, B = 51-90%, P = 11-50%, S = 1-10%, T = <1%

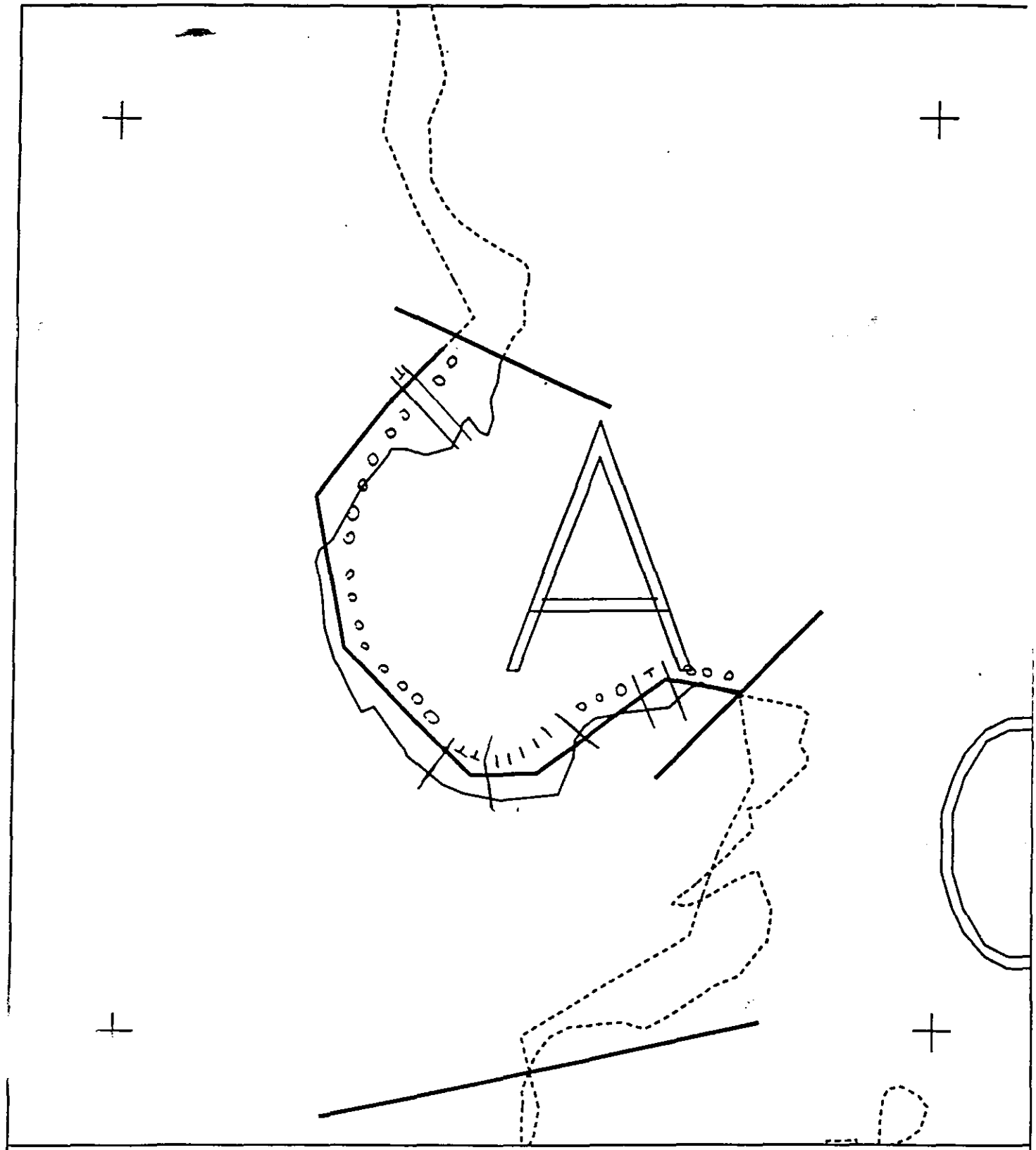
SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE

LOC	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		
										-									
										-									
										-									
										-									
										-									
										-									
										-									
										-									

OG COMMENTS: Oiling at all 5 locations consists of patchy AP and M-HSOR. Much of the oil is caught in vertical bedded shale and fractured siltstones, or between the shingle P/C armour. There is a considerable variation of oil character, from friable AP to fairly soft and gooey HSOR. None of the remaing material would be considered Mousse as it all appears to contain sediments.

OGNEW.WK1 3/92


APPLEGATE ISLAND
A
AP/F - MSOR
3 x 20 m
P/C and vertical bedded rock strata
< 10 %
B
AP/F - M/HSOR
15 x 15 m
30 %
P/C - vert. Shale and bedded siltstones
C
AP/F - M/HSOR
10 x 30m
15 %
P/C - vert. Shale and bedded siltstones
D
AP/F - MSOR
12 x 10 m
5 %
E
AP/F < 10 %
MSOR
P/C vertical Shale beds
2 x 5 m
granual/Pebble Beach
SPM/Peat
C/B
Fucus
Low flats
PCSM/Peat
Rock outcrops
MUSSEL BED
Shallow Tidal Channel
Low flats
PCB
PCB
PC
SEGMENT BOUNDARY
SEGMENT BOUNDARY
N
AE 5 A
MAY 18, 1992
6:50 - 7:50
Reimer



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

AE005 A

ADEC Subsegment Length: 304m

METERS

0 150 300

AK State Plane Zone 4
pae005a

EXXON

Subdivision Field Map

Map Key: PWSAE005A

Name: Reimer

Date: 5/18/92

Date Entered:

FINSAP BIOLOGICAL SUMMARY

TEAM NO. 2 — LOCALITY Applegate Is.
OG Reimers — BIO Schroeder — SEGMENT A-005
LANDMANAGER Baer — FOR USFS — SUBDIVISION A
ADEC Weiser — DATE May 18 /92
EXXON Barker — USCG France — NOAA Lehman
TIDE LEVEL +3.27 FT. TO +0.05 FT. — TIME 06 : 45 TO 07 : 50
SEA STATE calm — WIND SPEED/DIRECTION calm

RECRUITS:	Present U	Present M	Present L	Absent
Barnacle Spat	✓	✓	✓	
Littorine Recruits	✓	✓	✓	
Mussel Spat	✓	✓	✓	
Fucus Sporelings	✓	✓		

LONG-LIVED SP:	Present	#Species
Carniv. Snails	✓	1
Sea Stars	✓	3
Chitons	—	
Anemones	✓	2
Clams	✓	2
Crabs	✓	2
Intertidal Fish	✓	3

OVERALL ABUNDANCE:

	Sparse U	Sparse M	Sparse L	Common U	Common M	Common L	Abundant U	Abundant M	Abundant L
Barnacles				✓				✓	✓
Littorines				✓				✓	✓
Mussels				✓				✓	✓
Fucus	✓				✓				✓
Limpets	✓				✓	✓			

COMMENTS/OBSERVATIONS:
The eastern end of Applegate Island is an absolutely beautiful area. The numerous islets & bedrock outcroppings make the intertidal area an exceptional environment for a lush, thriving and diverse biological community. The use by numerous bird species is especially noteworthy.

WILDLIFE OBSERVATIONS

BIRDS	# SPECIES	TOTAL BIRDS MATURE	TOTAL BIRDS IMMATURE
Eagles			
Seabirds			
Waterfowl	Harlequin, surfscoter & Barrow	19	
Gulls/Kittiwakes	Glaucous winged gull	1	
Shorebirds	yellowlegs, turnstones	9	
Corvids/Other Birds	Robin, Thrush	3	

MARINE MAMMALS	# OBSERVED ADULTS	# OBSERVED PUPS
Sea Otters		
Harbor Seals		
Sea Lions		

Shoreline subdivision map showing important biological features attached.

FINSAP BIOLOGICAL SUMMARY

TEAM NO. 2 Addendum - Page 2 LOCALITY Applegate Island
SEGMENT AE 005
SUBDIVISION A
DATE May 18 /92

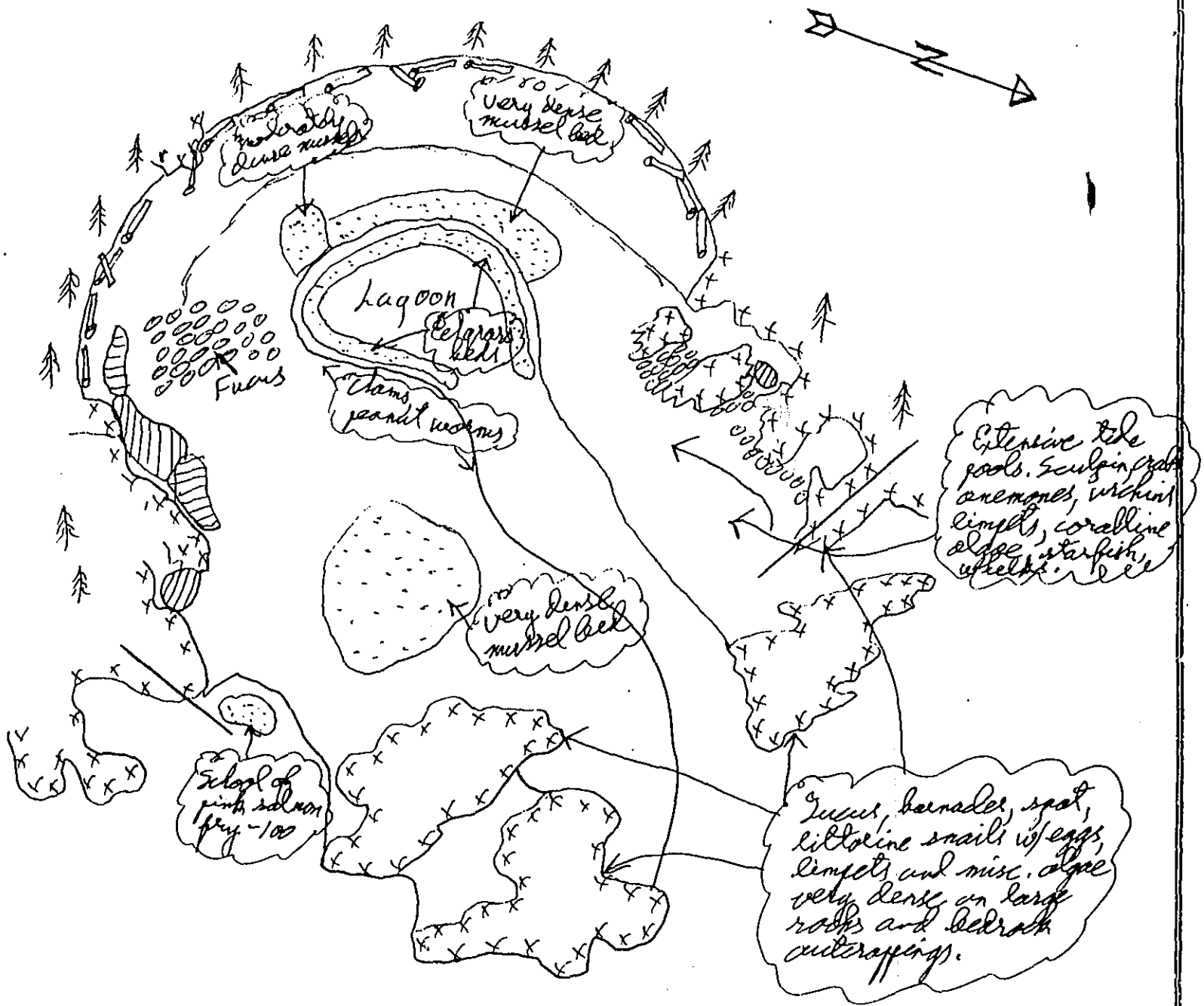
COMMENTS/OBSERVATIONS

Dense mussel beds were present extending from the LITZ well into the MITZ in places. The small lagoon contained dense eelgrass beds providing excellent shelter and food production for the pink salmon fry feeding in the area. All five major species were present and recruitment was good. Fucus growth was good in the LITZ and MITZ with patches extending into the UITZ along bedrock.

Algal cover was similar to Knight Island shorelines in the LITZ. Cover was 90% or more and contained fucus, sugar wrack, FAR, sea lettuce, eel grass, sea cucumbers and numerous species of red and brown algae. Tidal pools were abundant and provided excellent habitat for sculpin, hermit crabs, sea urchins, anemones, amphipods, isopods, sculpin, eel blennies, snails, coralline algae and ochre stars. One large sculpin was guarding a patch of eggs.

Crabs are present along the lagoon. Little neck, butter and another unidentified clam were present along with numerous peanut worms.

AE-005-A
May 18, 1992
0645 - 0750hrs
Schroeder
Bio.



FINSAP SHORELINE OILING SUMMARY

TEAM NO. 2 LOCALITY Applegate Is

OG Reimer BIO Schroder SEGMENT AE 5

ADEC Weiner LANDMANAGER Baer for USFS SUBDIVISION B

EXXON Barker USCG Nance DATE 05 / 18 / 92

NOAA Lehmann

TIME 7 : 50 to 9 : 45 TIDE LEVEL 0.05 ft. to -1.92 ft. ENERGY LEVEL: [X] H [ ] M [ ] L

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

TOTAL LENGTH SHORELINE SURVEYED: 1159 m NEAR SHORE SHEEN: [ ] BR [ ] RB [ ] SL [X] NONE

EST. OIL CATEGORY LENGTH: W 0 m M 12 m N 10 m VL 23 m NO 1114 m US 200 m

LOC	SURFACE OIL CHARACTER										SURFACE SEDIMENT	SHORE SLOPE	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO	TYPE	V H M L	WIDTH m	LENGTH m	S	UI	MI	LI	
A	S			S							PCR	M	2	3		X			
B	P			P							PCB	M	8	12		X			
C						S					R	V	1	30		X			
D																			
E				B							PGO	L	2	3	X	X			
F	S					S					PCR	M	2	5		X			
G						P					R	V	1	5		X			
H						S					R	V	1	20		X			

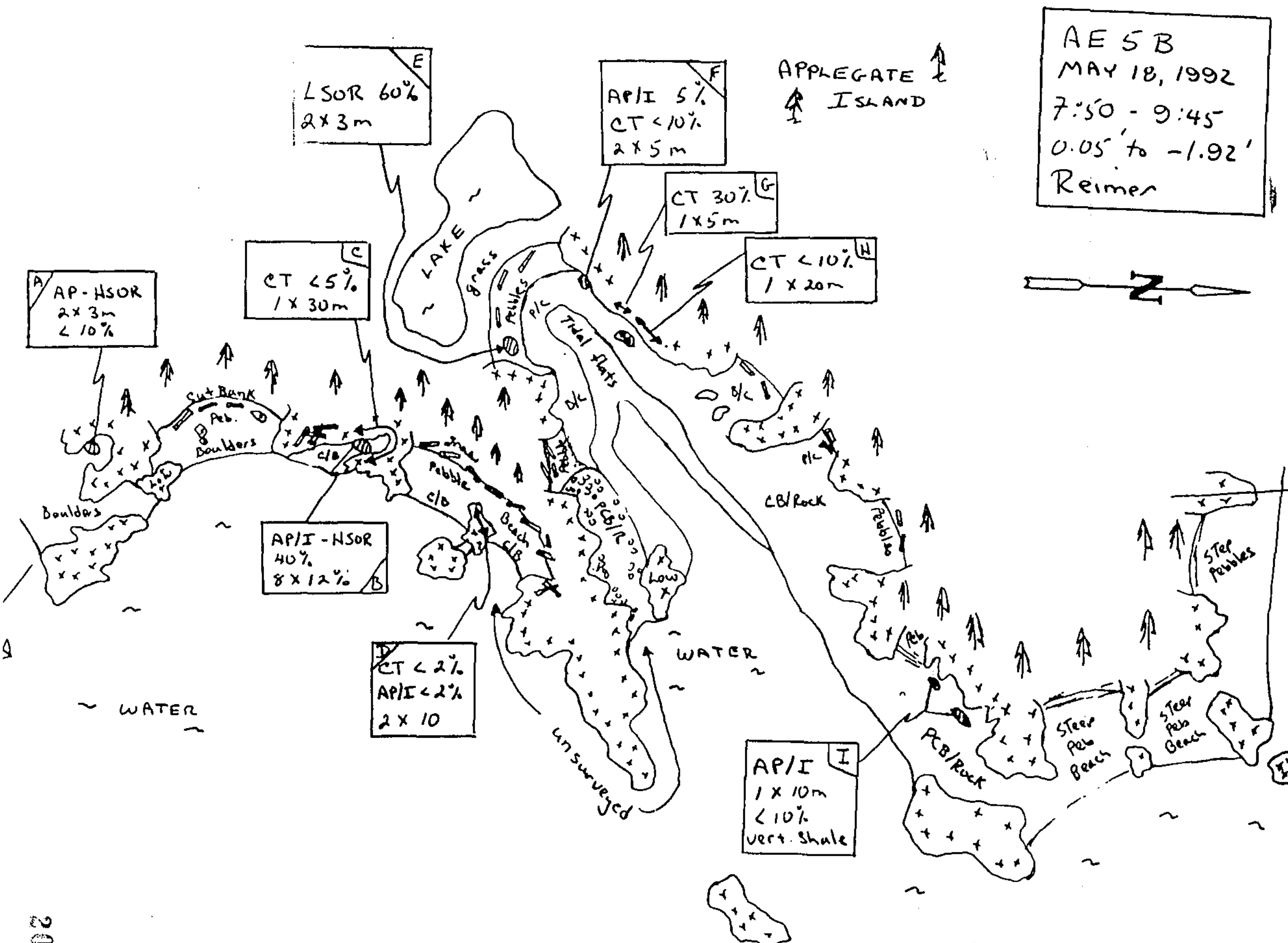
DISTRIBUTION: C = 91-100%, B = 51-90%, P = 11-50%, S = 1-10%, T = <1%

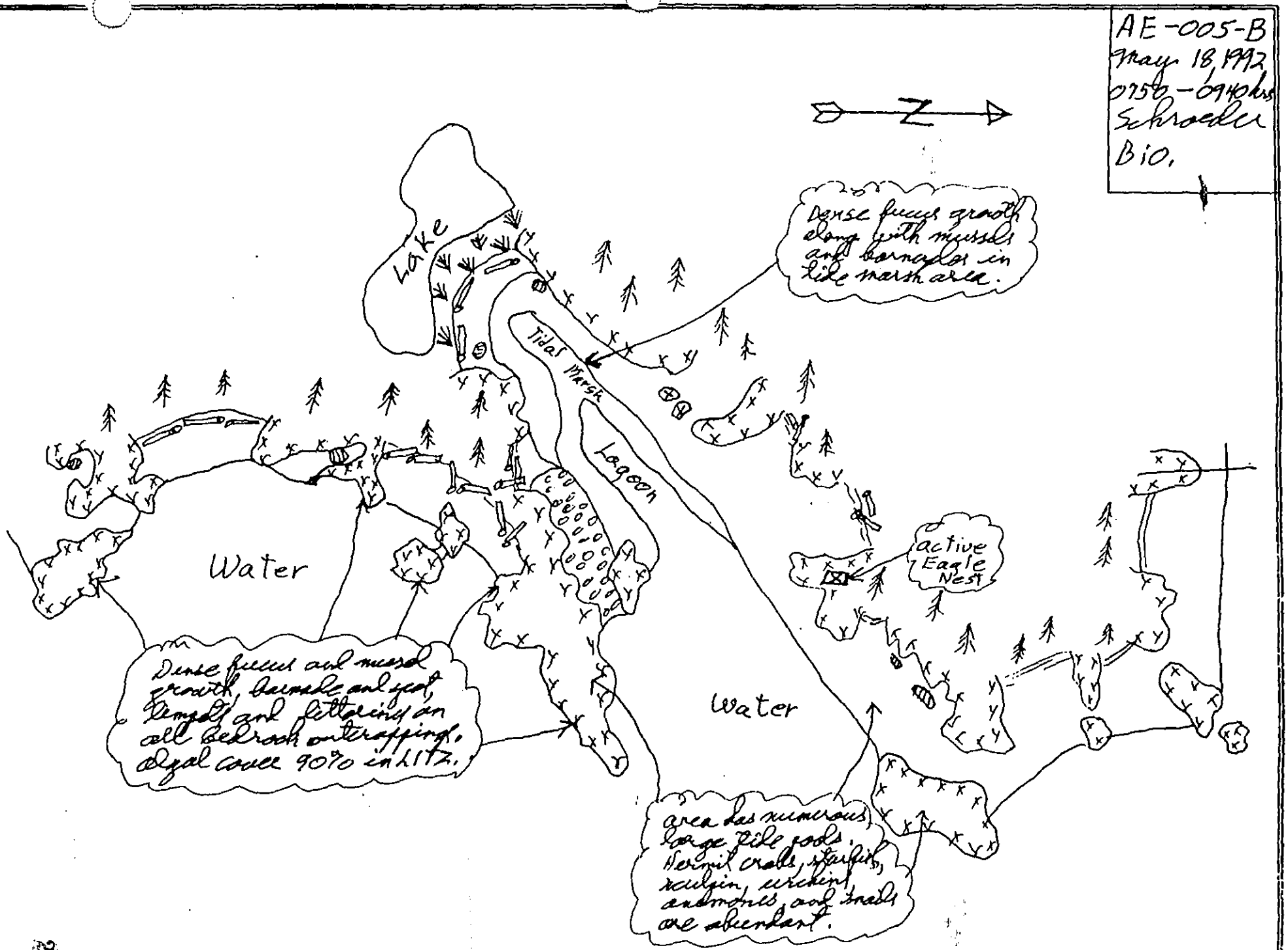
SLOPE: V = VERTICAL, H = HIGH ANGLE, M = MEDIUM ANGLE, L = LOW ANGLE

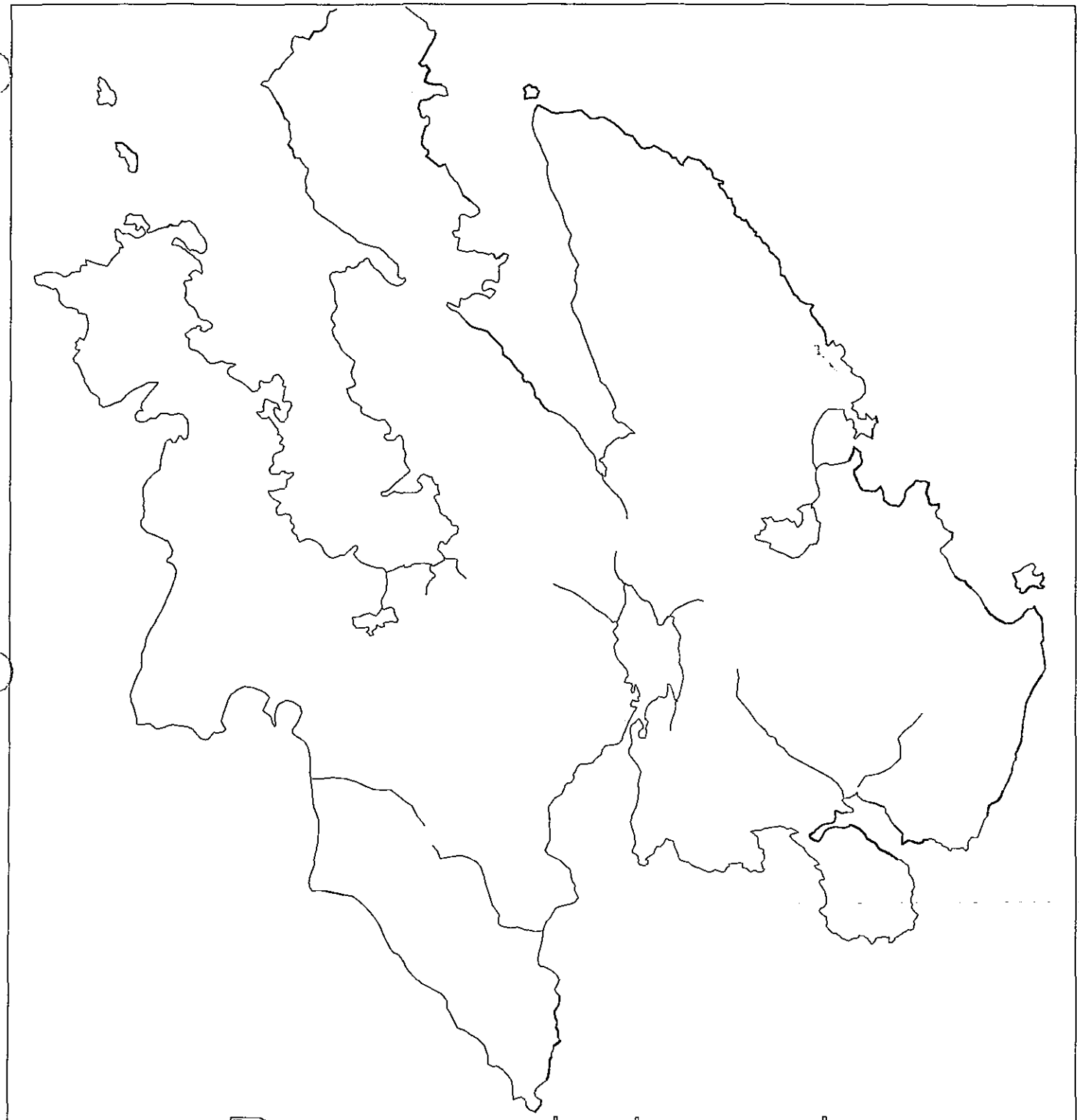
LOC	PIT NO	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE	CLEAN BELOW	H2O LEVEL	SHEEN COLOR	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
			OP	HOR	MOR	LOR	OF	TR	NO	cm-cm	Y/N	(cm)	B R S N	S	UI	MI	LI		
										-									
										-									
										-									
										-									
										-									
										-									
										-									
										-									

OG COMMENTS: sporadic coat on Rock and a few small patches of AP-SOR, predominantly in vertical shale. The only location with any degree of oiling is B where oil is caught in vertical shale beds

OGNEW.WK1 3/92


AE 5 B
MAY 18, 1992
7:50 - 9:45
0.05' to -1.92'
Reimer
APPLEGATE ISLAND
N
A AP-HSOR 2 x 3m < 10%
B AP/I-HSOR 40% 8 x 12%
C CT <5% 1 x 30m
D CT < 2% AP/I < 2% 2 x 10
E LSOR 60% 2 x 3m
F AP/I 5% CT < 10% 2 x 5m
G CT 30% 1 x 5m
H CT < 10% 1 x 20m
I AP/I 1 x 10m < 10% vert. shale
LAKE
grass
Pebbles
Tidal flats
Cut Bank
Peb.
Boulders
Pebble
Beach
CB/Rock
PCB/Rock
Steep Pebbles
Steep Peb Beach
Low
unsurveyed
WATER
20


AE-005-B
May 18, 1992
0750-0940 hrs
Schroeder
Bio.
N
Lake
Tidal Marsh
Lagoon
Water
Water
Dense fucus growth along with mussels and barnacles in tide marsh area.
active Eagle Nest
Dense fucus and mussel growth, barnacle and goose barnacle and littering an all bedrock outcropping. Algal cover 90% in Lit z.
area has numerous large tide pools. Hermit crabs, starfish, sculpin, urchins, anemones, and snails are abundant.



Key to Streams*

Anadromous fish streams

* Stream Data from Alaska Department of Fish & Game

ADEC Shoreline Oiling Impact

Heavy Oiling	149 KM
Moderate Oiling	114 KM
Light Oiling	195 KM
No Observed Oiling	
Not Observed	

0 1 2

KILOMETERS

N

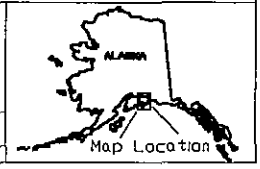
Prince William Sound
Five Month Oil Impact
03/24/89 to 08/24/89
Proposed May 24, 1993 Trip

Map Projection: UTM, Zone 6 Cartographer: Ward H. Lane

Compiled and Produced by: Alaska Department of Environmental Conservation
Oil Spill Response Center; Based on low altitude aerial observations

File Name: Perry

Date of GIS Query: 09/15/90; Date of Map Production: 5/20/93



Perry Island
PR-016

Perry Is. is a large island approximately 6.5 miles across, located outside the entrance to Port Nellie Juan in western Prince William Sound, 24 miles southeast of Whittier. Two beaches at Meares Point, the southernmost tip of Perry Island, were oiled following the spill, but only one of them heavily. This shoreline is used as a recreational camping beach by kayakers. There is an eagle nest nearby and dense mussel beds on the shore. This beach is classified as an exposed, high-energy shoreline, with cobbles and large boulders overlaying coarse sand. Vertical cliffs line the back of the beach.

Observers on May 19, 1989 reported heavy oiling at PR-016, with many pools of oil up to 6 centimeters deep caught between boulders at the north end of the beach. Heavily oiled seaweed and twigs were noted scattered over the boulder field and between rock crevices. Aggressive treatment was carried out on this beach in 1989. In July of 1990 heavy, pooled oil remained and cleanup crews conducted treatment as described below. By May of 1991 observers described this beach as only lightly oiled, and no treatment was recommended at all in 1992.

Treatment applied to the shoreline at this site included:

- **1989** - manual removal of oiled seaweed and debris, header hose flood, cold water high pressure wash, warm and hot water moderate pressure wash, and hot steam water high pressure wash. Omni boom and Maxi barges were used during treatment, and disk and Egmopol skimmers were used in recovering oil washed from the beach. There were problems with boom containment of oil on the water, recovery of oil after it was flushed off the shore . After being treated the beach was oiled again by oil floating in on the tide.
- **1990** - heavy oiling was noted. Treatment included manual removal of pooled oil, mousse, and oil-saturated sediments, manual raking, mechanical tilling with a small tractor, mechanical relocation of oiled sediments so tidal action could remove oil, and application of bioremediation agents Customblen and Inipol. Surveyors noted that even after treatment the beach was still heavily oiled. Cleanup crews removed 602 bags of oiled sediments.
- **1991** - surveyors noted light oiling remaining. Treatment consisted of manual raking and application of Customblen and Inipol. No oiled sediments were removed.
- **1992** - small mount of surface oil residue and asphalt remained in angular boulders. Remaining subsurface oiling was contained under a 5 to 20 centimeter clean layer of beach sediments. Because the subsurface oil was not expected to become mobile, no treatment was recommended.

SEGMENT SUMMARY

PR-16

NOVEMBER 7, 1989

Beach segment PR-16 is located on Perry Island in Prince William Sound. A ground survey (station #64) was run on this segment on May 5, 1989 by Clay Robinson and John Bauer. At that site the average coverage, average penetration, and average thickness were zero.

This segment was SCAT'ed on May 19. The SCAT report was submitted to the ISCC on May 30 and recommended for approval on June 2. The FOSC approved the treatment plan on June 3, 1989.

Treatment began on June 3 according to the Coast Guard. The first ADEC observation of treatment was on June 15. The treatment methods recommended were removal of oiled fucus, debris pick-up, header hose flood, cold water/high pressure wash, warm/hot water/moderate pressure wash and hot/steam water/high pressure. ADEC observers Amy Thompson, Jan Krieger, Laurie Keefer, Pam Keyes, Matt Biery, Steve Blank, Pat Endres and Dennis Harwood reported header hose flood, cold water/high pressure wash, warm/hot water/moderate pressure wash, hot/steam water/high pressure wash, Omni boom and Maxi barges were used during treatment. Disc skimmer and Egmopol skimmers were used in recovering oil washed from the beach. There were problems with containment, recovery and reoiling.

ADEC Inspector Joe Sautner signed off this segment on August 27. He wrote that the segment contained 1% heavy oil, 1% medium oil, 5% light oil, 5% very light oil and 88% no oil. He stated that a reassessment was necessary, and that the SE beaches were heavily impacted. USCG Inspector Paul Gansle wrote that the segment contained 1% heavy oil, 1% medium oil, 2% light oil, 2% very light oil and 94% no oil. He requested a reassessment, and approved demobilization pending removal of oiled debris and replacement of snare boom.

A transect (station #94) was run on August 30 by Clay Robinson and Gene Pavia. At that site the average coverage was 60%, the average thickness was .25mm and the average penetration was 35cm.

A post-treatment assessment was conducted on this segment on September 12 by Erich Gundlach, Meesha Mangiaracina, Clare Pavia and Greg Winter. During the assessment the team found very light, moderate and heavy oil of tarry consistency up to .5mm thick with a 40cm penetration at the high tide line.

This segment contains a 1989 winter study site.

Lea Ann Robinson

1990 TREATMENT SUMMARY - ADEC

Segment: PR016 KodKUnit: Region: PWS
Location: S PERRY ISLAND

Number of visits: 7 Treatment start date: 07/13/90

TREATMENT TYPES:

Manual removal: YES	Bags of sediment removed: 602	
Manual raking: YES	Oil manually removed: PO MS OP OR	
Bioremediation: YES	Header flood: NO	
Mechanical tilling: YES	Mechanical relocation: YES	Spot wash: NO

COMMENTS:

The SSAT survey documented heavy oiling. The treatment performed included manual removal of pooled oil, mousse, and OP and OR sediments; manual raking; mechanical tilling; mechanical relocation; and Customblen and Inipol application. Following treatment, the segment has heavy oiling.

1991 TREATMENT SUMMARY - ADEC

Segment: PR016 KodKUnit: Region: PWS
Location: PERRY ISLAND

Number of visits: 1 Treatment start date: 08/16/91

TREATMENT TYPES:

Manual removal: NO	Bags of sediment removed: 0	
Manual raking: YES	Oil manually removed: NONE	
Bioremediation: YES	Header flood: NO	
Mechanical tilling: NO	Mechanical relocation: NO	Spot wash: NO

COMMENTS:

The Maysap survey documented light oiling. The treatment performed included manual raking; and Customblen and Inipol application. Following treatment, the segment has light oiling.

FINSAP EVALUATION

TEAM NO. 1

OG J.M. SEMPLES BIO S. STOKER LOCALITY: PWS, PERRY ISLAND

LANDMANAGER J. MADDEN (USCG) FOR USFS SEGMENT PR016

ADEC J. BAUER NOAA J. TALBOTT SUBDIVISION A

EXXON J. WILKINSON USCG J. MADDEN DATE 5 / 31 /92

ENVIRONMENTAL SENSITIVITIES: **(See page two for details)**

Eagle Nest, Fish Harvest Area

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find, and contact Exxon's Cultural Resource Program immediately: 264-4089 (Anchorage).

SHPO Signature: Judith E. Bittner Date: 5-1-92

RECOMMENDATIONS:	FIELD TAG	FOSC
Treatment Required (Y or N)	N	
Manual Tilling		
Manual Pickup		
Other		

COMMENTS:

FIELD TAG: Small amount of SOR/AP in angular boulders not a concern. Remaining subsurface oil contained under a 5-20 cm clean layer - not mobile.

FOSC:

FIELD TAG REVIEW COMPLETION DATE: 5/31/92 FOSC APPROVAL DATE:

ADEC

FOSC

EXXON

USCG

NOAA

C:\WP51\JANE\EVALFORM.FIN
April 1, 1992

Environmental Sensitivities
1992 Field Activities

Eagle Nest: Access restricted from March 1 to September 1. USFWS authorization required. Maintain 1000-ft. vertical and 1/4-mile horizontal buffer.

Fish Harvest Area: Unlimited treatment unless otherwise directed by ADFG. Sheen containment and recovery procedures required for mechanical treatment.

FINSAP FIELD SHORELINE COMMENTS

PWS

TEAM NO. 1 LOCALITY Perry Island

OG J M Semple BIO S. Stoker SEGMENT PR 016

DATE 31 / MAY / 92 SUBDIVISION A

ADEC
NAME J. BAUER SIGNATURE J Bauer

☒ NO TREATMENT REQUIRED ☐ TREATMENT COMPLETED ☐ FURTHER TREATMENT RECOMMENDED

Subsurface mousse, classified as HOR, MOR, is buried under 20 cm of clean cobbles and pebbles. No treatment required at this time

USCG
NAME J. MADDEN SIGNATURE J Madden

☒ NO TREATMENT REQUIRED ☐ TREATMENT COMPLETED ☐ FURTHER TREATMENT RECOMMENDED

Extensive pitting was completed due to the effort already expended on the segment. The clean armor and location/type of oiling condition did not warrant any further treatment.

LANDMANAGER
NAME J. MADDEN (USCG) FOR USFS SIGNATURE J Madden

☒ NO TREATMENT REQUIRED ☐ TREATMENT COMPLETED ☐ FURTHER TREATMENT RECOMMENDED

Clean surface of round cobble. Oil was found in the subsurface. Extensive work had already been completed on this segment to rearrangement & tilling. No further treatment was recommended.

NOAA
NAME Joseph Talbott SIGNATURE Joseph C Talbott

☑ NO TREATMENT REQUIRED ☐ TREATMENT COMPLETED ☐ FURTHER TREATMENT RECOMMENDED

The only surface oil on this subdivision consists of remnants of AP in an angular boulder cobble field. The subsurface oil (max thk) was buried beneath a clean surface layer of cobbles/pebbles averaging 15 cm in thickness. No treatment is recommended due to the clean surface sediments & lack of mobility of the oil.

EXXON
NAME J. WILKINSON SIGNATURE J Wilkinson

☒ NO TREATMENT REQUIRED ☐ TREATMENT COMPLETED ☐ FURTHER TREATMENT RECOMMENDED

Remaining low level of AP in angular boulders not a concern. Subsurface oil is buried under 5-20 cm of clean material and is not mobile. Significant fresh water runoff in beach will continue natural improvement of subsurface condition. No treatment recommended.

Note - TAG concensus not returned and survey to cover biota in lower intertidal. Survey done at higher tidal levels covered oiling condition, need for further biological data felt not needed as not a factor in treatment decision ✓

FIELDCOM.WK1 2/92

FINSAP SHORELINE OILING SUMMARY

P.W.S.

TEAM NO. 1 LOCALITY Perry Isl

OG J M Simpich BIO S Stoker SEGMENT 03 016

ADEC J. Bauer LANDMANAGER _____ for _____ SUBDIVISION A

EXXON J. Wilkinson USCG J Madden DATE 31 / MAY / 92

NOAA J. Talcott

TIME 11 : 16 to 12 : 07 TIDE LEVEL _____ ft. to _____ ft. ENERGY LEVEL: ☒ H ☐ M ☐ L

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

TOTAL LENGTH SHORELINE SURVEYED: 150 m NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE

EST. OIL CATEGORY LENGTH: W _____ m M _____ m N _____ m VL 10 m NO 140 m US _____ m

LOC	SURFACE OIL CHARACTER										SURFACE SEDIMENT	SHORE SLOPE	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO	TYPE	V H M L	WIDTH m	LENGTH m	S	UI	MI	LI	
A				S		S	S				Bd/cb	L	30	10		X	X		See map for details

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

LOC	PIT NO	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
			OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
	1	30							X	- - -	Y	15	-				X	cb/pb	silt/organic
	2	30							X	- - -	Y	15	-				X	" "	cb/sd below
	3	30							X	- - -	Y	30	-				X	" "	
	4A	32			X					20 - 30	N	28	B				X	"	
	B			X						30 - 32	Y	-	-				X	" "	" "
	5	30				X				10 - 15	Y	-	-				X	" "	
	6	32		X						15 - 20	Y	-	-			X		" "	" "
	7	28		X						20 - 25	Y	22	B				X	" "	" "

OG COMMENTS:

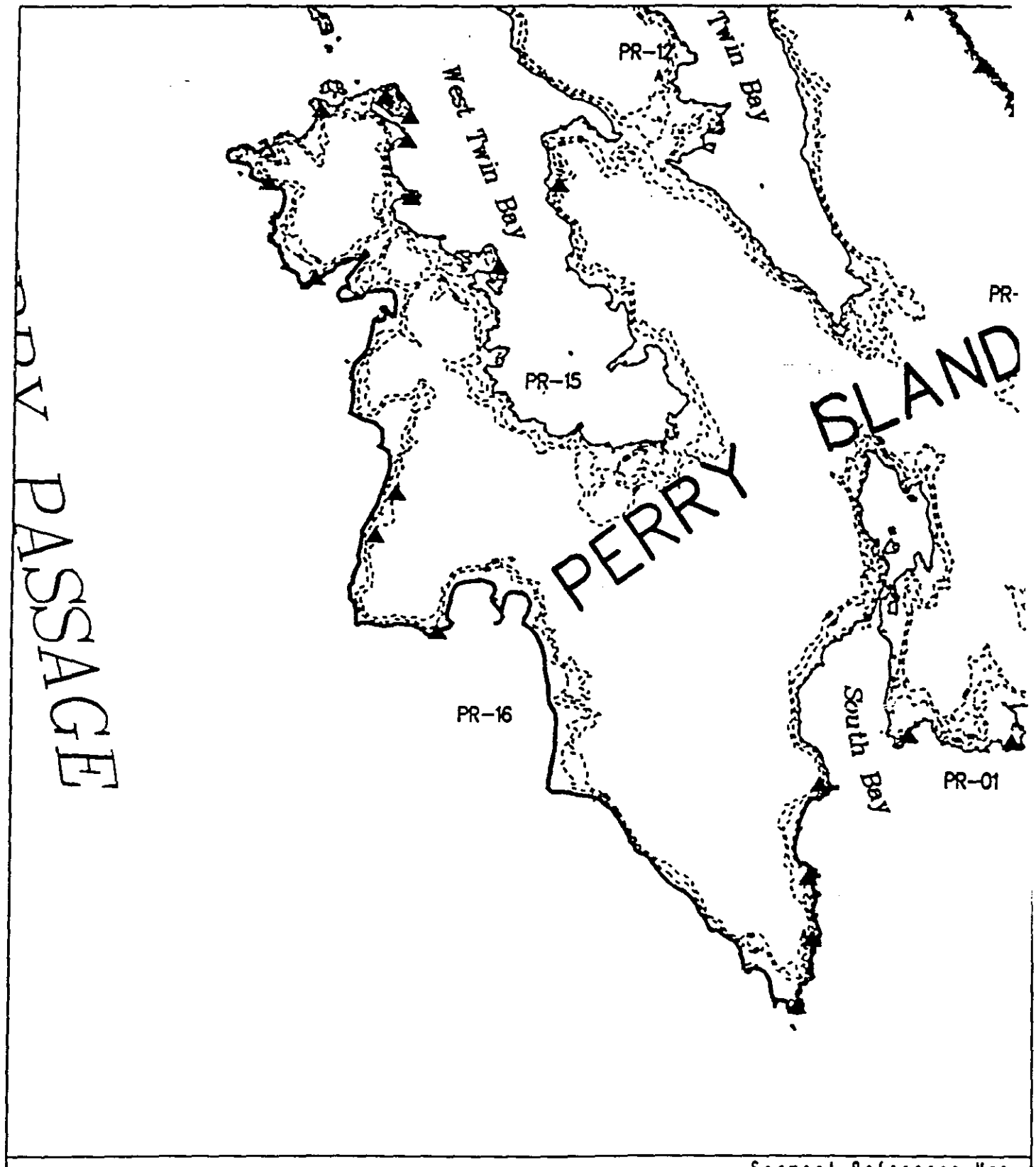
Moderate to high energy rounded cobble / boulder beach. Well developed storm berm. Little surface oil left but subsurface oil remains as indicated on map. Percolation of subsurface oil arrested by presence of silty / sand layer encountered in almost all pits.

OGNEW.WK1 3/92

FINSAP SHORELINE OILING SUMMARY
PIT LOG--CONTINUED

SEGMENT _____
SUBDIVISION _____
DATE ____/____/92

LOC	PIT NO	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
			OP	HOR	MOR	LOR	OF	TR	NO				B R S N	S	UI	MI	LI		
	8	40				x				5 - 40	N	-	-		x			cb	very oily wet bottom w/ some oil
	9	15							x	- - -	y	-	-			x		cb/pb/sand	oily
	10	32					x			10 - 20	y	20	S				x	" "	"
	11	25							x	- - -	y	-	-			x		" "	"
	12	28							x	- - -	y	20	-				x	" "	
	13	32				x				5 - 32	N	-	-		x			cb very dry weath	
	14	25							x	- - -	y	15	-				x	pb / over cb/sand	
	15	32			x					12 - 12	y	18	B			x		pb/g / over cb/sand	
	16	10			x					5 - 7	y	-	-			x		g/pb/sd over silty sch/g	
	17	12			x					6 - 8	y	-	-			x		" "	
	18	20							x	- - -	y	-	-		x			pb/g/sd	



PR016

Segment Reference Map
Exxon Coastline

Map Key: PWSPR016

METERS

0 1130 2259

AK State Plane Zone 4
ppr016

▲ EAGLE NEST

STREAMS

EXXON

FINSAP BIOLOGICAL SUMMARY

TEAM NO. 1 — LOCALITY S. Perry Isla.
OG Semplos — BIO Stoker — SEGMENT PR-16
LANDMANAGER Madden — FOR USFS — SUBDIVISION A
ADEC Bauer — DATE 5 / 31 / 92
EXXON Williamson — USCG Madden — NOAA Talbott
TIDE LEVEL +5.0 FT. TO +8.0 FT. — TIME 11 : 15 TO 12 : 15
SEA STATE 1-2 FT — WIND SPEED/DIRECTION N 10-20

RECRUITS:	Present U	Present M	Present L	Absent
Barnacle Spat	X	X	—	—
Littorine Recruits	X	X	—	—
Mussel Spat	—	X	—	—
Fucus Sporelings	—	—	—	X

LONG-LIVED SP:	Present	#Species
Carniv. Snails	X	1
Sea Stars	X	1
Chitons	—	—
Anemones	—	—
Clams	—	—
Crabs	X	1
Intertidal Fish	X	1

OVERALL ABUNDANCE:	Sparse U	Sparse M	Sparse L	Common U	Common M	Common L	Abundant U	Abundant M	Abundant L
Barnacles	X	—	—	—	X	—	—	—	—
Littorines	—	—	—	X	X	—	—	—	—
Mussels	X	—	—	—	X	—	—	—	—
Fucus	—	—	—	—	X	—	—	—	—
Limpets	X	—	—	—	X	—	—	—	—

COMMENTS/OBSERVATIONS: High energy cove of rounded gebble/cobble/boulder with bedrock exposures and headlands. Biota within the zone surveyed (above +5.0 FT) is sparse to only moderately abundant, of low diversity. Fucus is sparse or absent in the upper intertidal (UIT) and on unstable gebble/cobble in the mid intertidal (MIT), patchily dense on bedrock/boulder in the MIT. (continued on attached sheet)

WILDLIFE OBSERVATIONS

BIRDS	# SPECIES	TOTAL BIRDS
Eagles	1	MATURE 1 IMMATURE 0
Seabirds	1 (Guillemots)	4
Waterfowl	—	—
Gulls/Kittiwakes	1 (Kittiwakes)	10-15
Shorebirds	—	—
Corvids/Other Birds	2 (Crows, Terns-4)	5

MARINE MAMMALS	# OBSERVED
Sea Otters	ADULTS — PUPS —
Harbor Seals	1
Sea Lions	—

Harbor porpoise - 2

Shoreline subdivision map showing important biological features attached.

C:\WP51\JANE\BIOSUM.FIN
3/3/92

Barnacles are sparse in the UTZ on all substrates, sparse on unstable pebble/cobble/boulder in the MTZ, patchily dense on stable boulder/bedrock in the MTZ.

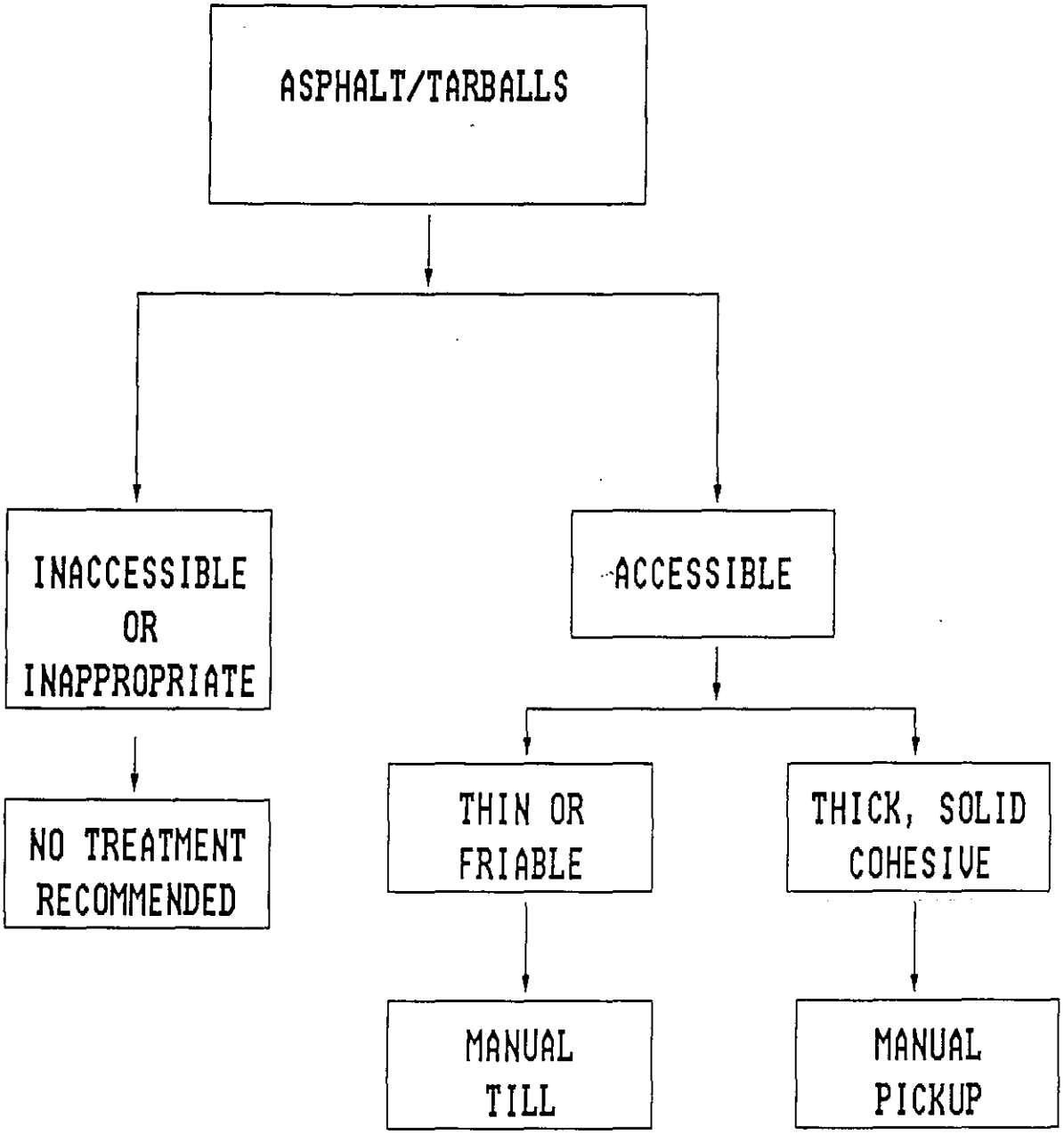
Littorina are sparse to moderately abundant on stable boulder/bedrock in the UTZ, and on all substrates in the MTZ.

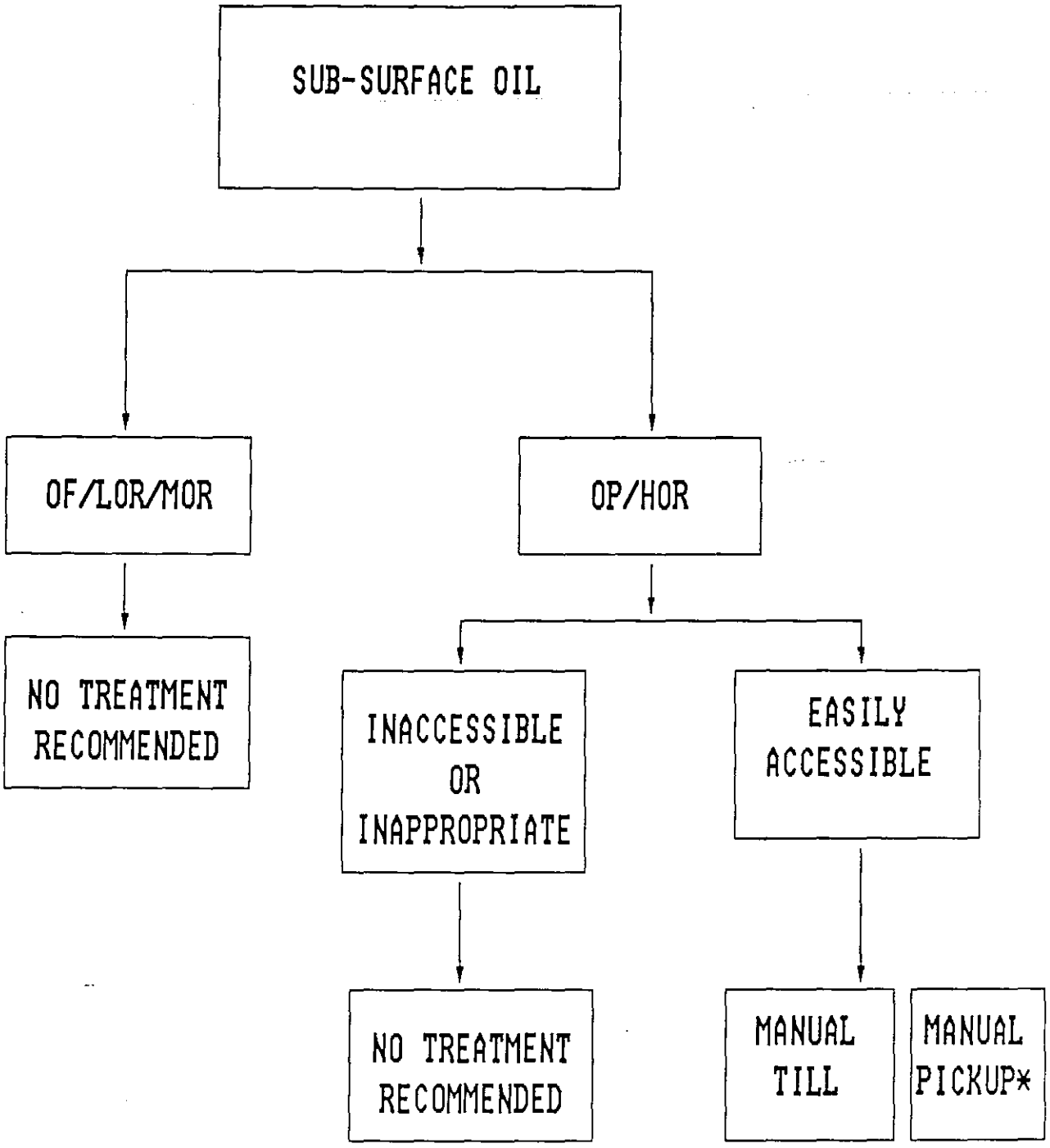
Limpets are sparse on boulder/bedrock and absent on pebble/cobble in the UTZ, sparse on pebble/cobble and moderately abundant to patchily dense on boulder/bedrock in the MTZ

Mussels are sparse or absent on all substrates in the UTZ, and on pebble/cobble in the MTZ, patchily dense on boulder/bedrock in the MTZ.

Other taxa observed include hermit crabs (Pagurus sp), predatory snails (Nucella sp), starfish (Leptasterias hexactis), and sculpins.

The general paucity of biota observed, in terms of both abundance and diversity, is due both to the high wave energy and predominately unstable nature of substrate at this location, and to the relatively high tide level at which it was surveyed.


ASPHALT/TARBALLS
INACCESSIBLE OR INAPPROPRIATE
ACCESSIBLE
NO TREATMENT RECOMMENDED
THIN OR FRIABLE
THICK, SOLID COHESIVE
MANUAL TILL
MANUAL PICKUP



* Depends on significant potential threat to adjacent resources

ADEC DAILY SHORELINE ASSESSMENT

LOCATION_____ SEGMENT_____ SUBDIV____
SITE_____

DATE_____ TIME: Begin_____ End_____

WEATHER: Cloudy Rain Fog Sunny Other_____

MONITORS_____

ENVIRONMENTAL CONSTRAINTS_____
_____

DESCRIPTION OF TREATMENT SITE

SHORE COMPOSITION
Surface sediments: R____% B____% C____% P____% S____% Other_____%

Subsurface Sdmnts: R____% B____% C____% P____% S____% Other_____%

Wave Exposure: Low Moderate High

OIL CHARACTERISTICS Before Treatment
Surface: Mousse Tarball/Patty Asphalt Cover Coat Stain

Subsurface: OP HOR MOR LOR OF Depth:_____ Thickness:_____

Across Tidal Zone: Low Mid Upper Supra

Oiled Logs Present_____

TREATMENT PERFORMED:

Manual Removal Type: MS TB AP SOR OP OR OF

Manual Raking With/Without Tidal Flush

Manual Breakup Customblen_____lbs.

Other_____

Equipment Used_____

Methods Used To Contain/Collect Oil_____

NUMBER OF BAGS COLLECTED: Oiled Sediment_____ Oiled Debris_____
Unoiled Debris_____

POST TREATMENT OIL CHARACTERISTICS
Surface: Mousse Tarball/Patty Asphalt SOR Cover Coat Stain

Subsurface: OP HOR MOR LOR OF Depth:_____Thickness:_____

Work order completed? Yes No Comments:_____

_____

Recommended For Additional Treatment? Yes No (include map of treatment performed and oil remaining)

WORK CREW

State Vessel Joint Survey Post Survey Crew

Workers On Site: # of ORTs_____ Other_____ State_____

Exxon_____

USCG/NOAA_____

COMMENTS\OBSERVATIONS

_____

_____

_____

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PHOTO/VIDEO DOCUMENTATION

PHOTOGRAPHS: Roll #_____ Frame(s)_____ Reason:_____

_____

VIDEO: Tape #_____ Reason:_____

_____

SIGNATURE_____

SEGMENT_____ MONITOR_____ DATE_____

4's copy

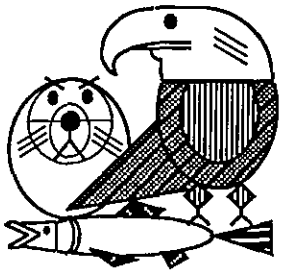
Exxon Valdez Oil Spill
Public Advisory Group

Fact-Finding Trip

into

Prince William Sound

May 24, 1993



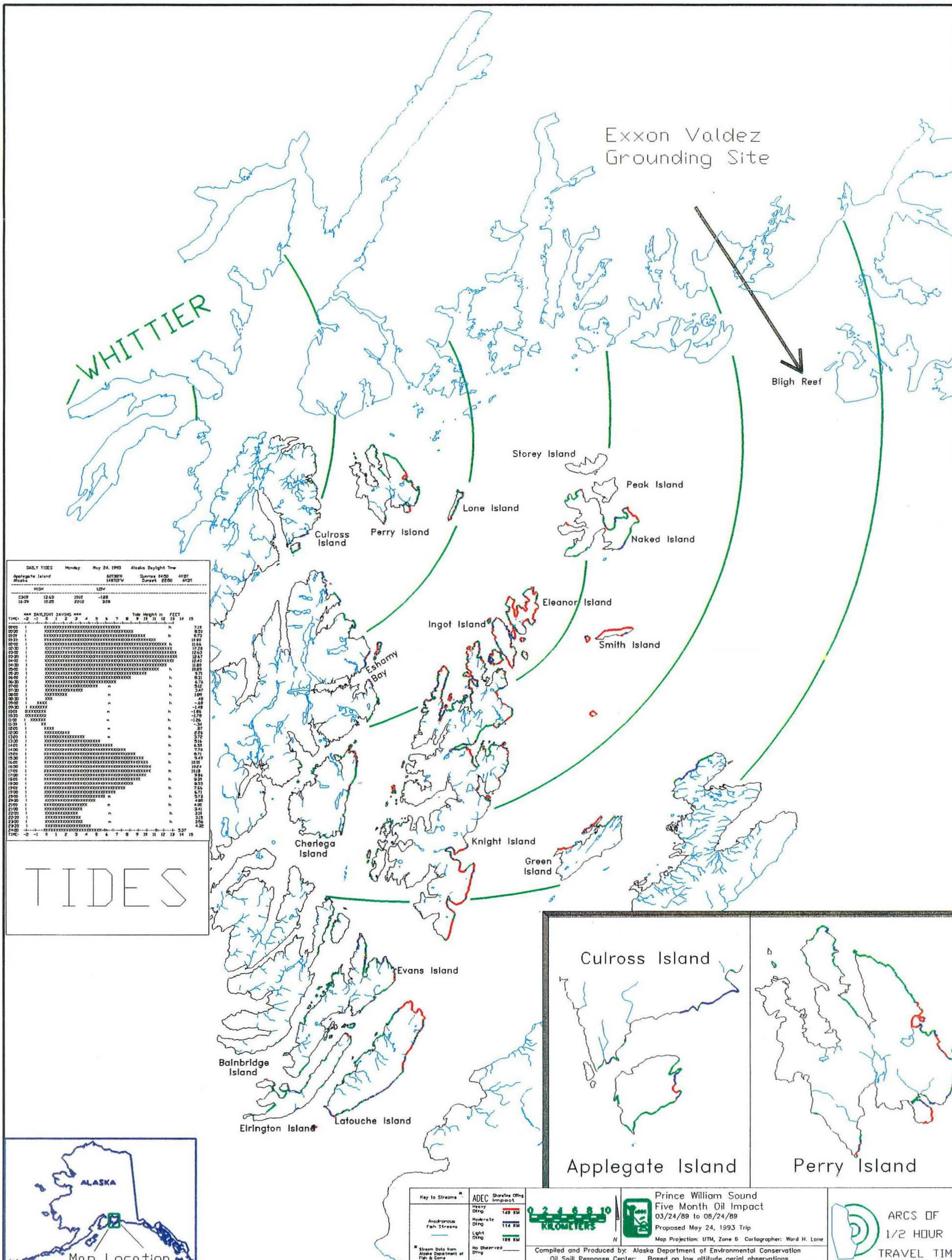
Exxon Valdez Oil Spill Public Advisory Group
Fact-Finding Trip into Prince William Sound
May 24, 1993

Briefing Book Contents

Itinerary
Exxon Valdez Oil Spill Public Advisory Group
Fact-Finding Trip into Prince William Sound
May 24, 1993

(WEATHER PERMITTING, SUBJECT TO CHANGE)

6:00 a.m.	Leave Anchorage via car pool from 1689 C Street parking lot
7:25	Leave Portage via train for Whittier
8:30	Leave Whittier via the *Klondike Express* for Prince William Sound
	--obtain fact-finding trip briefing packet --PAG members briefed about beach visit safety/logistics --view video about oiling of area --commentary and Q&A about oiling of Applegate Island
10:00	Arrive at Applegate Island
	--disembark for beach tour
11:30	Leave Applegate Island for Perry Island
	--commentary and Q&A about oiling of Perry Island
12:00	Arrive at Perry Island
	--disembark for beach tour, if time permits
1:30 p.m.	Leave Perry Island for Eshamy Bay
	--commentary and Q&A about oiling of Eshamy Bay --presentation about potential habitat protection
2:30	Leave Eshamy Bay for northern Chenega Island
	--commentary and Q&A about oiling of Chenega Island
3:00	Leave Chenega Island for Herring Bay (OPTION TO VISIT JACKPOT BAY)
	--commentary and Q&A about oiling of Herring Bay
3:30	Leave Herring Bay (or Jackpot Bay) for Whittier
	--view video about various beach treatment techniques
4:45	Pass by second growth clearcut sites (Esther Passage, Pigot Bay)
5:30	Arrive at Whittier
6:15	Leave Whittier via train to Portage
7:00	Leave Portage via car pool for Anchorage
8:00	Arrive at 1689 C Street parking lot in Anchorage


Exxon Valdez
Grounding Site
WHITTIER
Bligh Reef
Storey Island
Peak Island
Lone Island
Culross Island
Perry Island
Naked Island
Eleanor Island
Ingot Island
Smith Island
Eshamy Bay
Knight Island
Green Island
Chenega Island
Evans Island
Bainbridge Island
Elrington Island
Latouche Island
DAILY TIDES Monday May 24, 1993 Alaska Daylight Time
Applegate Island Alaska 60?38'N 148?10'W Sunrise 04:50 AKDT Sunset 22:50 AKDT
HIGH LOW
03:19 12.69 10:10 -1.88
16:29 10.25 22:12 3.09
*** DAYLIGHT SAVING *** Tide Height in FEET
TIME: -2 -1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
00:00 7.19
00:30 8.50
01:00 9.73
01:30 10.90
02:00 11.66
02:30 12.28
03:00 12.63
03:30 12.67
04:00 12.40
04:30 11.80
05:00 10.89
05:30 9.71
06:00 8.31
06:30 6.76
07:00 5.12
07:30 3.47
08:00 1.89
08:30 .48
09:00 -.68
09:30 -1.48
10:00 -1.86
10:30 -1.78
11:00 -1.26
11:30 -.34
12:00 .87
12:30 2.26
13:00 3.72
13:30 5.16
14:00 6.58
14:30 7.70
15:00 8.71
15:30 9.49
16:00 10.01
16:30 10.24
17:00 10.19
17:30 9.86
18:00 9.28
18:30 8.53
19:00 7.66
19:30 6.71
20:00 5.73
20:30 4.80
21:00 4.00
21:30 3.41
22:00 3.11
22:30 3.15
23:00 3.56
23:30 4.32
24:00 5.37
TIME: -2 -1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
TIDES
Culross Island
Applegate Island
Perry Island
ALASKA
Map Location
Key to Streams *
Anadromous Fish Streams
* Stream Data from Alaska Department of Fish & Game
ADEC Shoreline Oiling Impact
Heavy Oiling 149 KM
Moderate Oiling 114 KM
Light Oiling 196 KM
No Observed Oiling
Not Observed
0 2 4 6 8 10
KILOMETERS
N
Prince William Sound
Five Month Oil Impact
03/24/89 to 08/24/89
Proposed May 24, 1993 Trip
Map Projection: UTM, Zone 6 Cartographer: Ward H. Lane
Compiled and Produced by: Alaska Department of Environmental Conservation
Oil Spill Response Center; Based on low altitude aerial observations
File Name: PWSTRIP
Date of GIS Query: 09/15/90; Date of Map Production: 5/20/93
ARCS OF
1/2 HOUR
TRAVEL TIME

GLOSSARY OF TERMS

SURFACE OIL CHARACTERS

- **AP** ASPHALT PAVEMENT: heavily oiled beach sediments held cohesively together
- **MS** MOUSSE/POOLED OIL: any oil/water emulsion with a thickness > 1 cm
- **TB** TAR BALLS, PATTIES, & TAR PATTIES: small, distinct oil deposits lying on top of the beach surface; possibly binding debris but typically not sediments
- **SOR** SURFACE OIL RESIDUE: significantly oil coated beach sediments in the top 5cm; sediments do not form a cohesive layer. In 'Notes', describe SOR in terms of Heavy or Light.
- **CV** COVER: oil > 1mm to ≤ 1cm thick
- **CT** COAT: oil > 0.1mm to ≤ 1mm thick, can be easily scratched off with fingernail
- **ST** STAIN: oil ≤ 0.1mm thick, cannot be easily scratched off with fingernail
- **FL** FILM or SHEEN: transparent or translucent film or sheen
- **DB** OILED DEBRIS: any oiled debris or cleanup material stranded on a shore
  - LG signifies oiled logs
  - VG signifies oiled vegetation
  - TR signifies cleanup-related trash and/or oiled trash
- **NO** NO OIL: no oiling observed at the location

SURFACE OIL DISTRIBUTION

- **C** CONTINUOUS: area or ban with 91% to 100% oil coverage
- **B** BROKEN: area or bank with 51% to 90 coverage
- **P** PATCHY: area or band with 11% to 50% coverage
- **S** SPLASH: area or band with 1% to 10% coverage
- **T** TRACE: area of band with < 1% coverage

SUBSURFACE OIL CHARACTERS

- **OP** OIL PORE: pore spaces are completely filled with oil, resulting in oil oozing out of the sediments - water cannot penetrate an OP zone
- **HOR** HEAVY OIL RESIDUE: pore spaces partially filled with oil residue, but not generally flowing out of sediments
- **MOR** MEDIUM OIL RESIDUE: heavily coated sediments; pore spaces are not filled with oil - pore spaces may be filled with water
- **LOR** LIGHT OIL RESIDUE: sediments lightly coated with oil
- **OF** OIL FILM: continuous layer of sheen or film on sediments, water may bead on sediments
- **TR** TRACE: discontinuous film, spots of oil on sediments, an odor or tackiness with no visible evidence of oil
- **NO** NO OIL OBSERVED

April 16, 1991

Culross Island

Applegate Island

Key to Streams	ADEC Shoreline Oiling Assessment	0 1 2 KILOMETERS	Prince William Sound Five Month Oil Impact 03/24/89 to 08/24/89 Proposed May 24, 1993 Trip Map Projection: UTM, Zone 6 Cartographer: Ward H. Lane
Anadromous Fish Streams	Heavy 148 KM Moderate to Light 115 KM Spot 166 KM No Observed Oiling Not Observed	Compiled and Produced by: Alaska Department of Environmental Conservation Oil Spill Response Center. Based on low altitude aerial observations	Map Location
* Stream Data from Alaska Department of Fish & Game		File Name: APPGATE Date of OS Survey: 09/15/90 Date of Map Production: 5/20/93	

Applegate Island
AE-005

Applegate Is. is a small island less than one mile across, located at the mouth of Port Nellie Juan in western Prince William Sound. The shoreline segment is generally sheltered by bedrock outcrops at the entrance; the beach itself consists of uplifted shale overlain with cobbles. There are mussel beds located at this beach and an eagle next nearby. This, and neighboring shore segments, are heavily used by recreational boaters. There are numerous campsites in the upland areas, and, until last year, a small sauna nearby. It is about 22 miles southeast of Whittier, within the range of mid-sized pleasure craft, which explains its heavy human use.

The first survey of Applegate segment AE-005 following the Exxon Valdez oil spill took place on May 20, 1989, when observers noted that 85% of the shoreline was oiled to an average depth of 12 centimeters. Oiling noted in September, following treatment described below, was composed of mousse, sticky oil, tar, asphalt and stain. Maximum thickness of oil noted was 2 centimeters, and the maximum subsurface penetration was 25 centimeters at the high tide line. By October of 1989 observers noted oiling had decreased to 65% with an average penetration of 10 centimeters along the line surveyed.

The 1990 and 1991 shoreline surveys documented heavy oiling remaining at this site, and treatments described below were applied. Following treatment, the segment was labeled as moderately oiled. The survey conducted in May of 1992 reported light oiling remaining, composed mostly of asphalt pavement and surface oil residue. Surveyors reported problems in removing asphalt adhering to tilted shale bedrock.

Treatment applied to the shoreline at this site included:

- **1989** - manual removal of oiled seaweed and oiled debris, warm and hot water wash with moderate and high pressure hoses used concurrently with a header hose flood.
- **1990** - manual removal of pooled oil, asphalt pavements, mousse and tarballs, manual raking, mechanical tilling with a small tractor, spot washing, and application of bioremediation agents Inipol and Customblen. Cleanup reports state that 2,585 bags of oily sediment were removed from this beach in 1990.
- **1991** - manual removal of asphalt pavement, mousse, surface oil residue, tarballs and oil-saturated sediments. Sheens were produced on the water from cleanup activities. Cleanup reports state that 103 bags of oily sediment were removed from this beach in 1991.
- **1992** - manual removal of asphalt pavement and surface oil residues, manual raking, and application of Customblen. Cleanup reports state that 9 bags of oily sediment were removed from this beach in 1992.

SEGMENT SUMMARY

AE-5

OCTOBER 31, 1989

Beach segment AE-5 is located on Applegate Island in Prince William Sound. A transect was run on this segment (station #88) by David Hall, Clay Robinson, and John Bauer on May 20, 1989. The average coverage at that site was 85% with an average thickness of .5mm and an average penetration of 12cm.

This segment was SCAT'ed on May 26, 1989. The SCAT report was recommended for approval by the ISCC on June 12. The FOSC approved the treatment plan on June 13, 1989.

Treatment began on August 25, according to the Coast Guard. However, according to Exxon on the Segment Inspection Record, no work was required on this segment. Treatment methods recommended were removal of oiled fucus, debris pick-up, warm/hot water moderate/high pressure wash with a header hose flood. There are no Daily Shoreline Assessment forms on file for this segment.

ADEC Inspector Joe Sautner signed off this segment on August 26, 1989. He wrote that the segment contained 2% heavy oil, 5% medium oil, 20% light oil, 18% very light oil and 55% no oil. He also stated that a reassessment was necessary. USCG Inspector Paul Putkey wrote that the segment contained 2% heavy oil, 5% medium oil, 30% light oil, 10% very light oil and 53% no oil. He approved demobilization but stated that a reassessment was necessary.

A post treatment assessment was conducted on this segment on September 13 by Brian Fitzsimons and Lyle Gresehover. At that time there was heavy, moderate, light and very light oil in the form of mousse, sticky oil, tar, asphalt and stain. The maximum thickness was 22mm with a maximum penetration was 25cm at the high tide line.

Another transect was run on this segment on October 22, 1989 by Clay Robinson, Erich Gundlach and Gene Pavia. The average coverage was 65%, the average thichness was .5mm and the average penetration was 10cm.

This segment contains a 1989 winter study site.

Lea Ann Robinson

1990 TREATMENT SUMMARY - ADEC

Segment: AE005 KodKUnit: Region: PWS
Location: APPLEGATE ISLAND

Number of visits: 16 Treatment start date: 06/06/90

TREATMENT TYPES:

Manual removal: YES	Bags of sediment removed: 2585	
Manual raking: YES	Oil manually removed: PO AP MS TB	
Bioremediation: YES	Header flood: NO	
Mechanical tilling: YES	Mechanical relocation: NO	Spot wash: YES

COMMENTS:

The SSAT survey documented heavy oiling. The treatment performed included manual removal of pooled oil, asphalt pavements, mousse and tarballs; manual raking; mechanical tilling; spot washing; and Inipol and Customblen application. Problems observed during treatment included difficulty in removing oil from the shale sediments, spot washing may have increased the distribution of the oil, Inipol may have been sprayed too close to the waters edge, and Inipol gelled during application. Following treatment, the segment has moderate oiling.

1991 TREATMENT SUMMARY - ADEC

Segment: AE005 KodKUnit: Region: PWS
Location: APPLEGATE ISLAND

Number of visits: 6 Treatment start date: 06/01/91

TREATMENT TYPES:

Manual removal: YES	Bags of sediment removed: 103	
Manual raking: YES	Oil manually removed: AP MS OP OR SOR TB	
Bioremediation: YES	Header flood: NO	
Mechanical tilling: NO	Mechanical relocation: NO	Spot wash: NO

COMMENTS:

The Maysap survey documented heavy oiling. The treatment performed included manual removal of asphalt pavement, mousse, SOR, tarballs and OP and OR sediments; manual raking; and Customblen and Inipol application. Problems observed during treatment included treated areas produced near shore sheens, and difficulty in removing oil from tilted shale bedrock. Following treatment, the segment has moderate oiling.

1992 TREATMENT SUMMARY - ADEC

Segment: AE005 KodKUnit: Region: PWS
Location: APPLEGATE ISLAND

Number of visits: 2 Treatment start date: 05/18/92

TREATMENT TYPES:

Manual removal: YES	Bags of sediment removed: 9	
Manual raking: YES	Oil manually removed: AP SOR	
Bioremediation: YES	Header flood: NO	
Mechanical tilling: NO	Mechanical relocation: NO	Spot wash: NO

COMMENTS:

The Finsap survey documented light oiling. The treatment performed included manual removal of asphalt pavement and SOR; manual raking; and Customblen application. Problems observed during treatment included difficulty in removing asphalt pavement from tilted shale bedrock. Following treatment, the segment has light oiling.

FINSAP EVALUATION

D. SOUND 2

D. REIMER BIO T. SCHROEDER LOCALITY: PWS, APPLEGATE ISL.

LANDMANAGER V. BAER FOR USFS SEGMENT AE005

ADEC/ADNR A. LOEINGER NOAA S. LEHMANN SUBDIVISION A

EXXON M. BARKER USCG T. NANCE DATE MAY / 18 /92

ENVIRONMENTAL SENSITIVITIES: **(See page two for details)**

Eagle Nest

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find, and **contact Exxon's Cultural Resource Program immediately: 264-4089 (Anchorage).**

SHPO Signature: Judith E Bittner Date: 5-1-92

RECOMMENDATIONS:

	FIELD TAG	FOSC
Treatment Required (Y or N)	Y	Y
Manual Tilling	X	Y
Manual Pickup	X	Y
Other CUSTOMBLEN	X	Y

COMMENTS:

FIELD TAG: REMOVE OR MANUALLY TILL SURFACE OILING AND APPLY CUSTOMBLEN. NO FURTHER TREATMENT REQUIRED.

FOSC:

FIELD TAG REVIEW COMPLETION DATE: 18 MAY 92 FOSC APPROVAL DATE: 5-28-92

ADEC/ADNR Kit Weimer FOSC

EXXON D. Michael R

USCG Jon Grant, LT, USCGR

NOAA

Environmental Sensitivities
1992 Field Activities

Eagle Nest: Access restricted from March 1 to September 1. USFWS authorization required. Maintain 1000-ft. vertical and 1/4-mile horizontal buffer.

FINSAP FIELD SHORELINE COMMENTS

TEAM NO. 2 LOCALITY PWS/Applegate Is.

OG D. Reimer BIO T. Schroeder SEGMENT AE005

DATE May 18 1992 SUBDIVISION A

ADEC/ADNR
NAME Art Weiner SIGNATURE Art Weiner

☐ NO TREATMENT REQUIRED ☒ TREATMENT COMPLETED ☐ FURTHER TREATMENT RECOMMENDED

ALL ACCESSIBLE SURFACE OIL REMOVED OR TREATED IN PLACE.
Ap + SOR IN VERTICAL SHALE BEDS IS VERY DIFFICULT TO REMOVE.

USCG
NAME IVAN NANCE, CT USCG SIGNATURE [signature]

☐ NO TREATMENT REQUIRED ☒ TREATMENT COMPLETED ☐ FURTHER TREATMENT RECOMMENDED

REMOVED OR MANUALLY TILLED SURFACE OILING AND APPLIED CUSTOMBLEN, NO FURTHER TREATMENT REQUIRED,

LANDMANAGER
NAME Victor Baer FOR U.S.F.S. SIGNATURE Victor Baer

☐ NO TREATMENT REQUIRED ☒ TREATMENT COMPLETED ☐ FURTHER TREATMENT RECOMMENDED

Approx. one dozen small well weathered asphalt patches found, mainly along south side of segment that were tilled and custom blend treated. No further treatment necessary.
(High rec. use area)

NOAA
NAME Stephen Lehmann SIGNATURE [signature]

☐ NO TREATMENT REQUIRED ☒ TREATMENT COMPLETED ☐ FURTHER TREATMENT RECOMMENDED

Accessible surface oil has been removed and treated.
No further action is recommended.

EXXON
NAME Mike Barker SIGNATURE [signature]

☐ NO TREATMENT REQUIRED ☒ TREATMENT COMPLETED ☐ FURTHER TREATMENT RECOMMENDED

MUCH IMPROVED FROM 1991. NO NEED FOR FURTHER ACTION.
LOTS OF WILDLIFE IN THE AREA

12

FINSAP SHORELINE OILING SUMMARY

TEAM NO. 2 | LOCALITY Applegate Is

OG Reimer | BIO Schroder | SEGMENT AES

ADEC Weiner | LANDMANAGER Baer for USFS | SUBDIVISION A

EXXON Barker | USCG Nance | DATE 05 / 18 / 92

NOAA Lehmann

TIME 06 : 50 to 07 : 50 | TIDE LEVEL 3.27 ft. to 0.05 ft. | ENERGY LEVEL: [X] H [ ] M [ ] L

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

TOTAL LENGTH SHORELINE SURVEYED: 304 m | NEAR SHORE SHEEN: [ ] BR [ ] RB [ ] SL [X] NONE

EST. OIL CATEGORY LENGTH: W 0 m M 45 m N 0 m VL 37 m NO 222 m US 0 m

LOC	SURFACE OIL CHARACTER										SURFACE SEDIMENT	SHORE SLOPE	AREA WIDTH	AREA LENGTH	ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO	TYPE	V H M L	m	m	S	UI	MI	LI	
A	S			S							PCR	L	3	20		X			
R	S			P							PCR	L	15	15		X	X		
C	S			S							PCR	L	10	30		X	X		
D	S			S							PCR	L	12	10		X			
E	S			S							PCR	M	2	5		X			

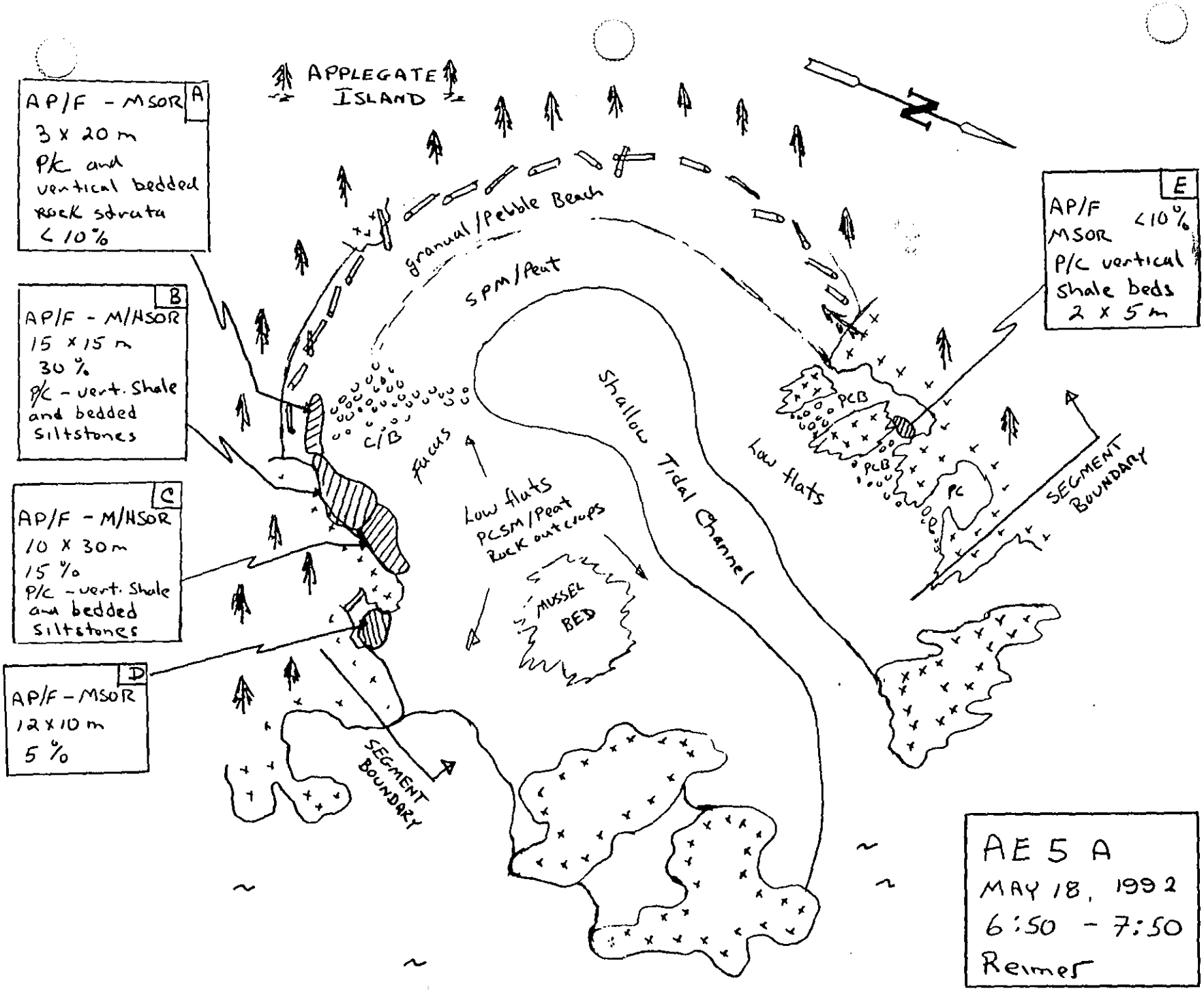
DISTRIBUTION: C = 91-100%, B = 51-90%, P = 11-50%, S = 1-10%, T = <1%

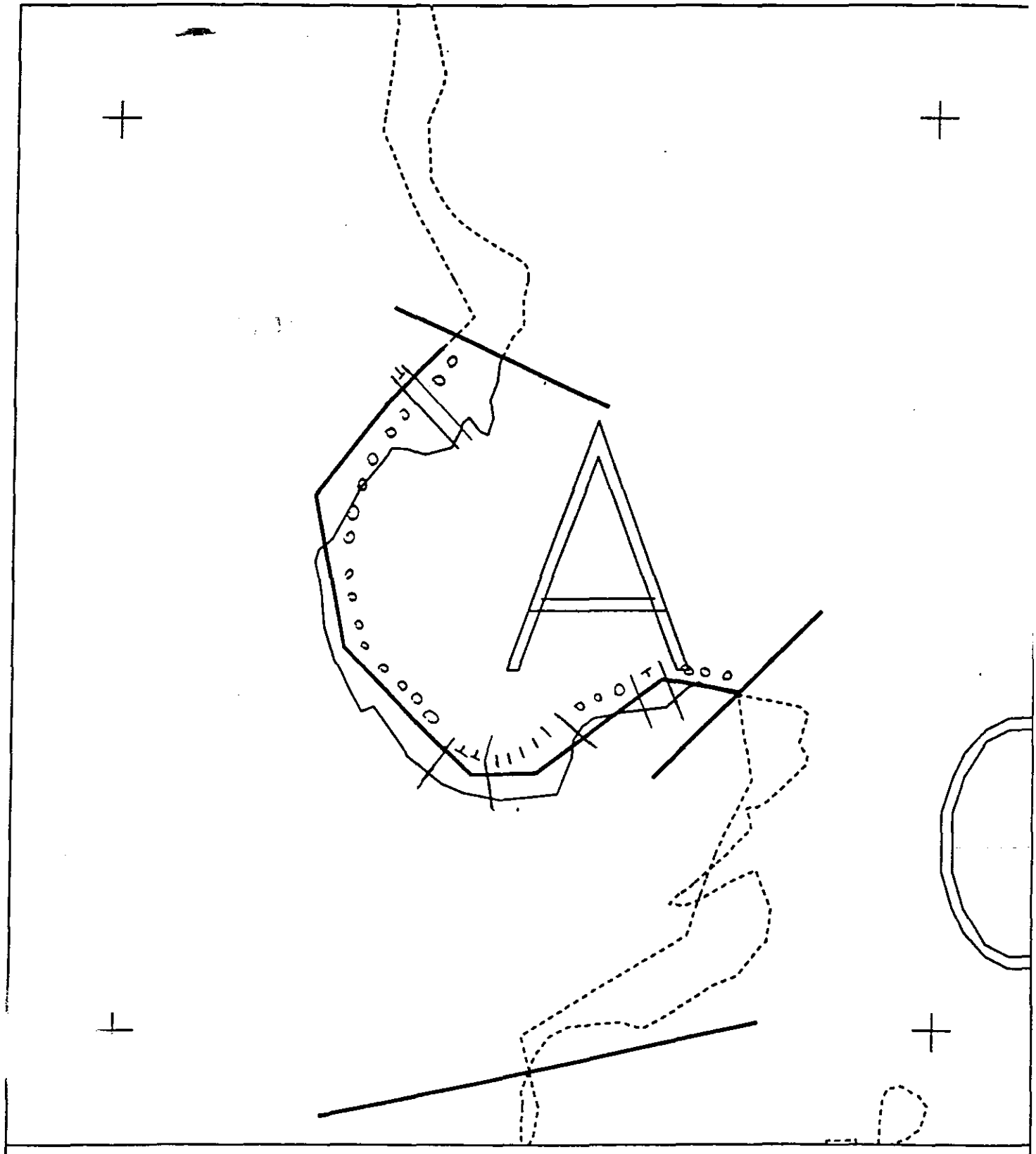
SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE

LOC	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		
										-									
										-									
										-									
										-									
										-									
										-									
										-									
										-									

OG COMMENTS: Oiling at all 5 locations consists of patchy AP and M-HSOR. Much of the oil is caught in vertical bedded shale and fractured siltstones, or between the shingle P/C armour. There is a considerable variation of oil character, from friable AP to fairly soft and gooey HSOR. None of the remaing material would be considered Mousse as it all appears to contain sediment.

OGNEW.WK1 3/92


APPLEGATE ISLAND
A
AP/F - MSOR
3 x 20 m
P/C and vertical bedded rock strata
< 10 %
B
AP/F - M/HSOR
15 x 15 m
30 %
P/C - vert. Shale and bedded siltstones
C
AP/F - M/HSOR
10 x 30 m
15 %
P/C - vert. Shale and bedded siltstones
D
AP/F - MSOR
12 x 10 m
5 %
E
AP/F
MSOR
< 10 %
P/C vertical Shale beds
2 x 5 m
granual/Pebble Beach
SPM/Peat
C/B
Fucus
Low flats
PCSM/Peat
Rock outcrops
MUSSEL BED
Shallow Tidal Channel
Low flats
PCB
PCB
PC
SEGMENT BOUNDARY
SEGMENT BOUNDARY
N
AE 5 A
MAY 18, 1992
6:50 - 7:50
Reimer



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

AE005 A

ADEC Subsegment Length: 304m

METERS

0 50 100

AK State Plane Zone 4
pwe005a

EXXON

Subdivision Field Map

Map Key: PWSAE005A

Name: Remor

Date: 5/18/92

Data Entered:

FINSAP BIOLOGICAL SUMMARY

TEAM NO. 2 LOCALITY Aplegate Is.
OG Reimer BIO Schroeder SEGMENT AE-005
LANDMANAGER Baer FOR USFS SUBDIVISION A
ADEC Weiser DATE May 18 /92
EXXON Barker USCG Prance NOAA Lehman
TIDE LEVEL +3.27 FT. TO +0.05 FT. TIME 06 : 45 TO 07 : 50
SEA STATE calm WIND SPEED/DIRECTION calm

RECRUITS:	Present U	M	L	Absent
Barnacle Spat	✓	✓	✓	
Littorine Recruits	✓	✓	✓	
Mussel Spat	✓	✓	✓	
Fucus Sporelings	✓	✓		

LONG-LIVED SP:	Present	#Species
Carniv. Snails	✓	1
Sea Stars	✓	3
Chitons	—	
Anemones	✓	2
Clams	✓	2
Crabs	✓	2
Intertidal Fish	✓	3

OVERALL ABUNDANCE:	Sparse U	M	L	Common U	M	L	Abundant U	M	L
Barnacles				✓				✓	✓
Littorines				✓				✓	✓
Mussels				✓				✓	✓
Fucus	✓				✓				✓
Limpets	✓				✓	✓			

COMMENTS/OBSERVATIONS:
The eastern end of Aplegate Island is an absolutely beautiful area. The numerous islets & bedrock outcroppings make the intertidal area an exceptional environment for a lush, thriving and diverse biological community. The use by numerous bird species is especially noteworthy.

WILDLIFE OBSERVATIONS

BIRDS	# SPECIES	TOTAL BIRDS MATURE	IMMATURE
Eagles			
Seabirds			
Waterfowl	Harlequin, merganser & Oldsquaw	19	
Gulls/Kittiwakes	Glaucous	1	
Shorebirds	Yellowlegs, Turnstone, Sandpiper	8	
Corvids/Other Birds	Robin, Thrush	3	

MARINE MAMMALS	# OBSERVED ADULTS	PUPS
Sea Otters		
Harbor Seals		
Sea Lions		

Shoreline subdivision map showing important biological features attached.

FINSAP BIOLOGICAL SUMMARY

TEAM NO. 2 Addendum - Page 2 LOCALITY Eyak Lagoon

SEGMENT AE-005

SUBDIVISION A

DATE May / 18 / 92

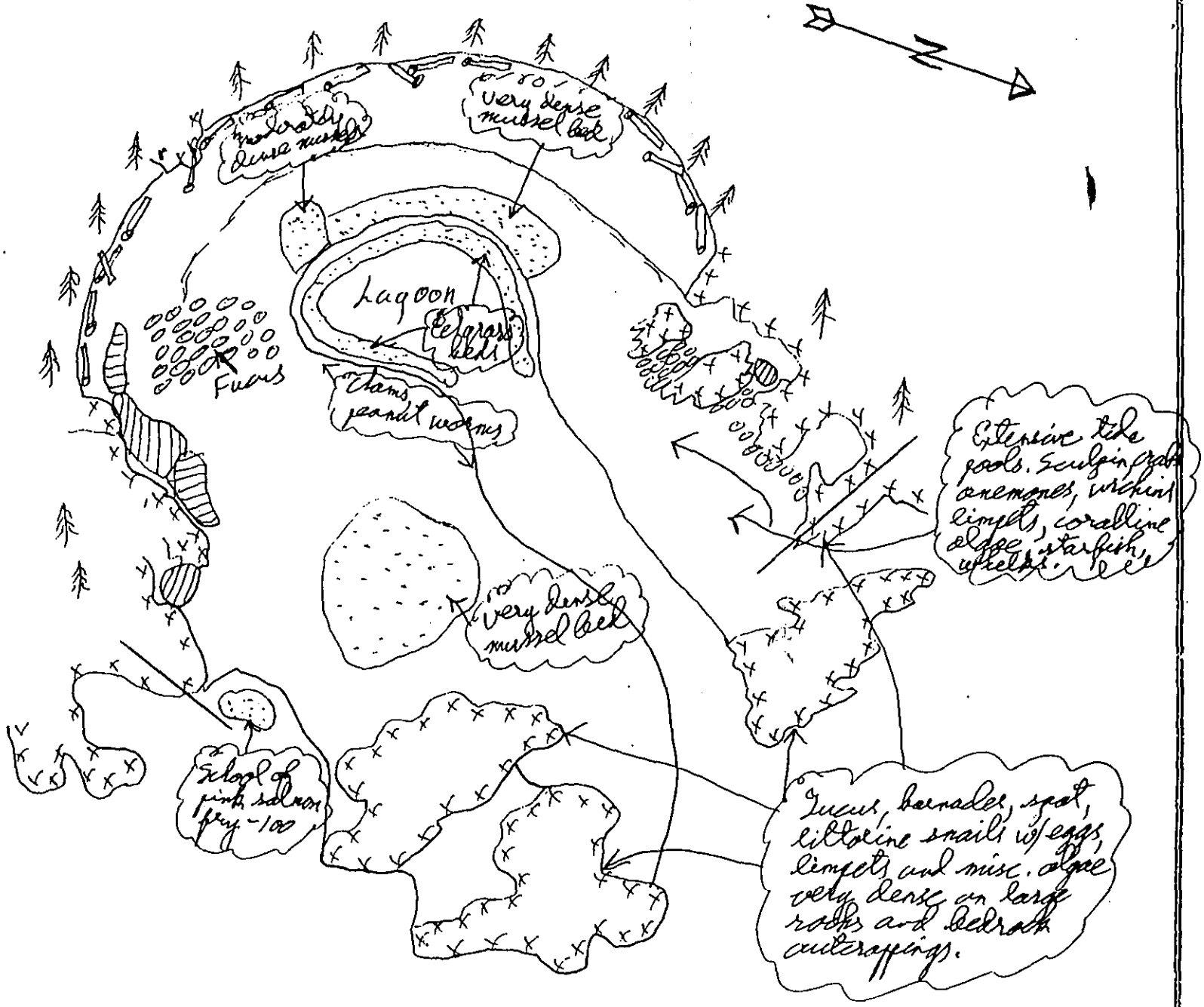
COMMENTS/OBSERVATIONS

Dense mussel beds were present extending from the LITZ well into the MITZ in places. The small lagoon contained dense eelgrass beds providing excellent shelter and food production for the pink salmon fry feeding in the area. All five major species were present and recruitment was good. Juvenile growth was good in the LITZ and MITZ with fishes extending into the UITZ along eelgrass.

Algal cover was similar to Knight Island shorelines in the LITZ. Cover was 90% or more and contained fucus, sugar wrack, Ectocarpus, eel grass, sea lettuce, and numerous species of red and brown algae. Tidal pools were abundant and provided excellent habitat for stickleback, hermit crabs, sea urchins, anemones, amphipods, isopods, sculpin, eel blennies, snails, cordline algae and chitons. One large sculpin was guarding a patch of eggs.

Clams are present along the lagoon. Little neck, butter and another unidentified clam were present along with mussels and peanut worms.

AE-005-A
May 18, 1992
0645-0750hrs
Schrader
Bio.



FINSAP SHORELINE OILING SUMMARY

TEAM NO. 2 LOCALITY Applegate Is

OG Reimer BIO Schroder SEGMENT AES

ADEC Weiner LANDMANAGER Baer for USFS SUBDIVISION B

EXXON Barker USCG Nance DATE 05 / 18 / 92

NOAA Lehmann

TIME 7 : 50 to 9 : 45 TIDE LEVEL 0.05 ft. to -1.92 ft. ENERGY LEVEL: [X] H [ ] M [ ] L

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

TOTAL LENGTH SHORELINE SURVEYED: 1159 m NEAR SHORE SHEEN: [ ] BR [ ] RB [ ] SL [X] NONE

EST. OIL CATEGORY LENGTH: W 0 m M 12 m N 10 m VL 23 m NO 1114 m US 200 m

LOC	SURFACE OIL CHARACTER										SURFACE SEDIMENT	SHORE SLOPE	AREA WIDTH	AREA LENGTH	ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO	TYPE	V H M L	m	m	S	UI	MI	LI	
A	S			S							PCR	M	2	3		X			
B	P			P							PCB	M	8	12		X			
C						S					R	V	1	30		X			
D																			
E				B							PGQ	L	2	3	X	X			
F	S					S					PCR	M	2	5		X			
G						P					R	V	1	5		X			
H						S					R	V	1	20		X			

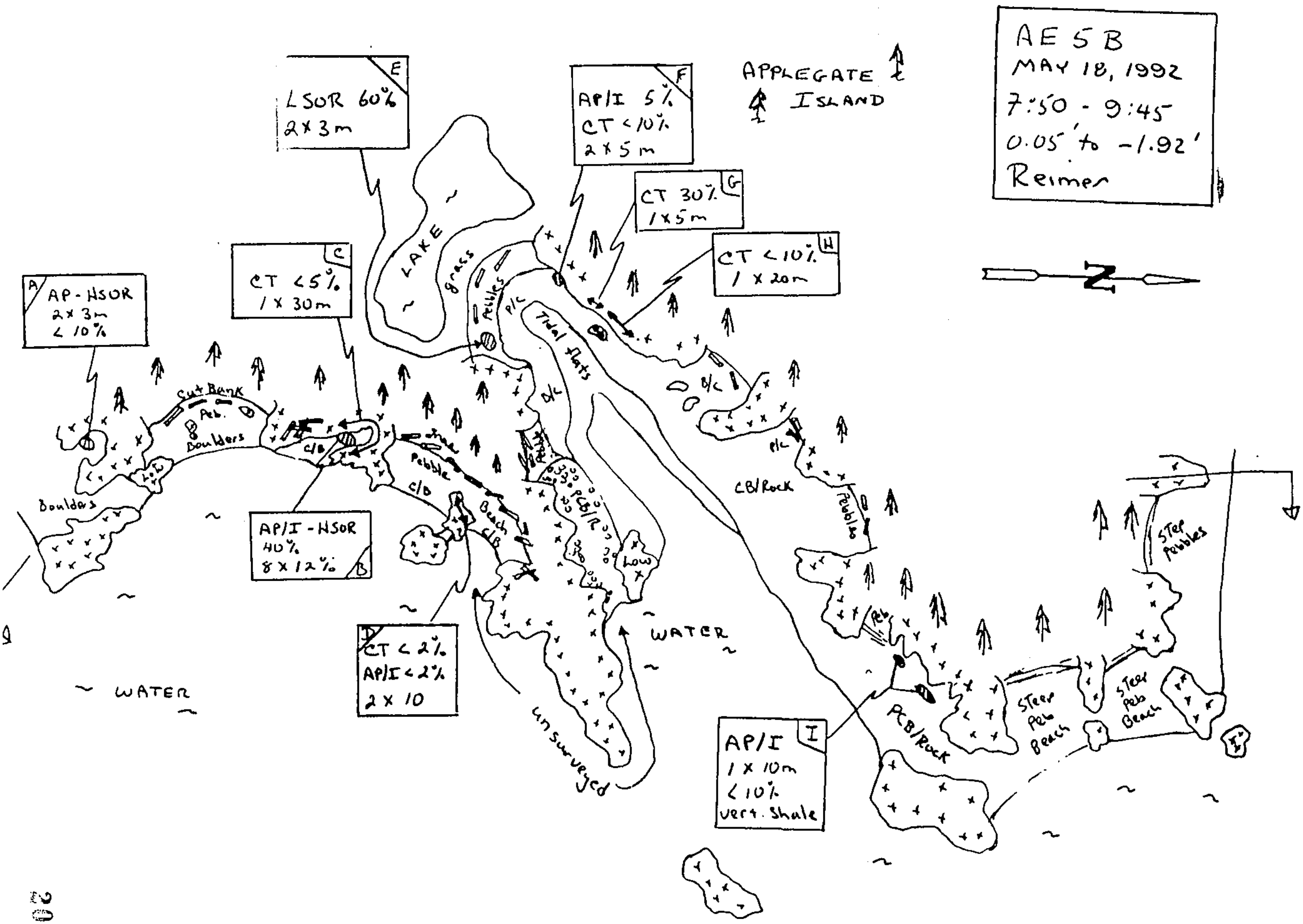
DISTRIBUTION: C = 91-100%, B = 51-90%, P = 11-50%, S = 1-10%, T = <1%

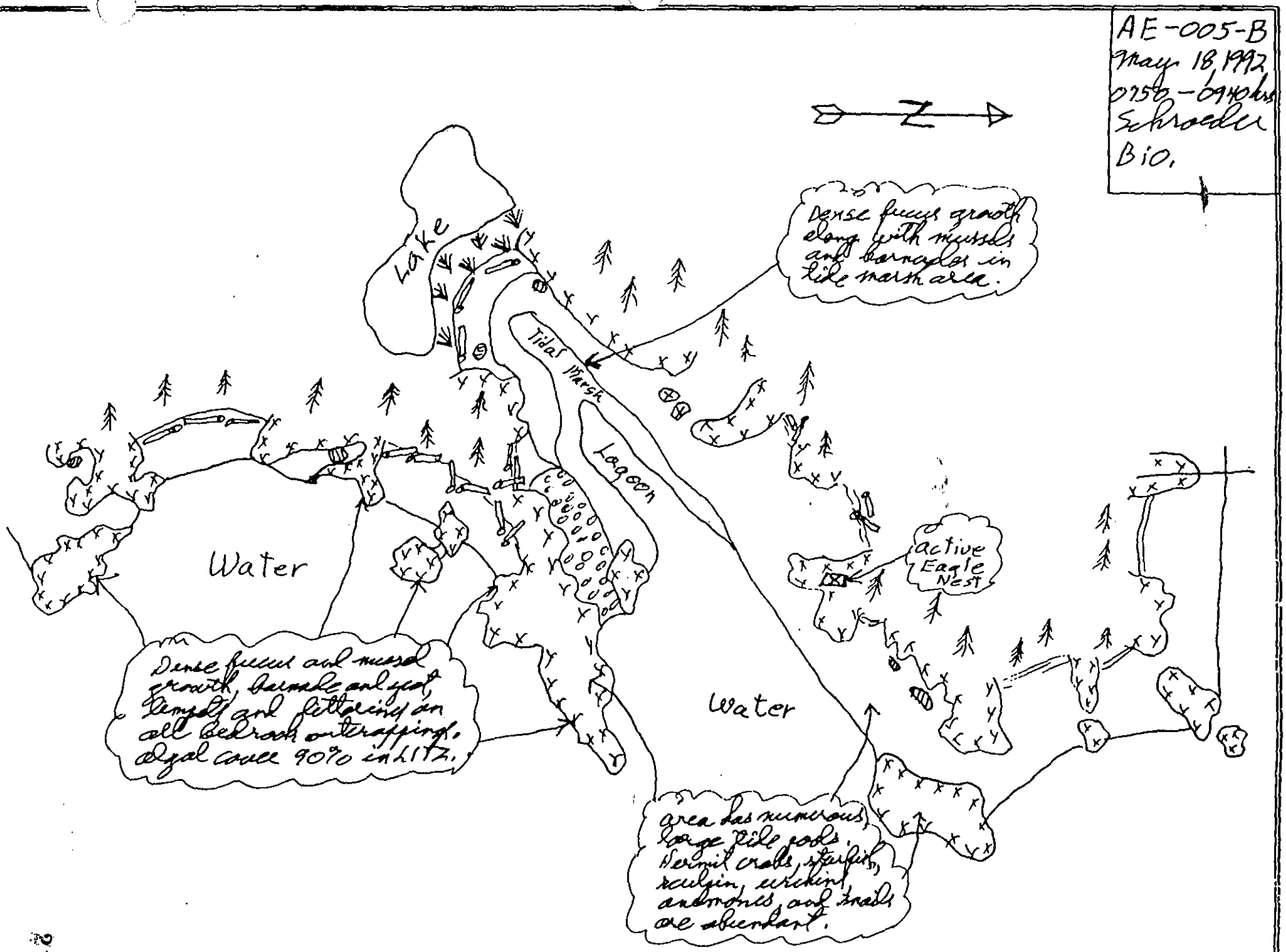
SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE

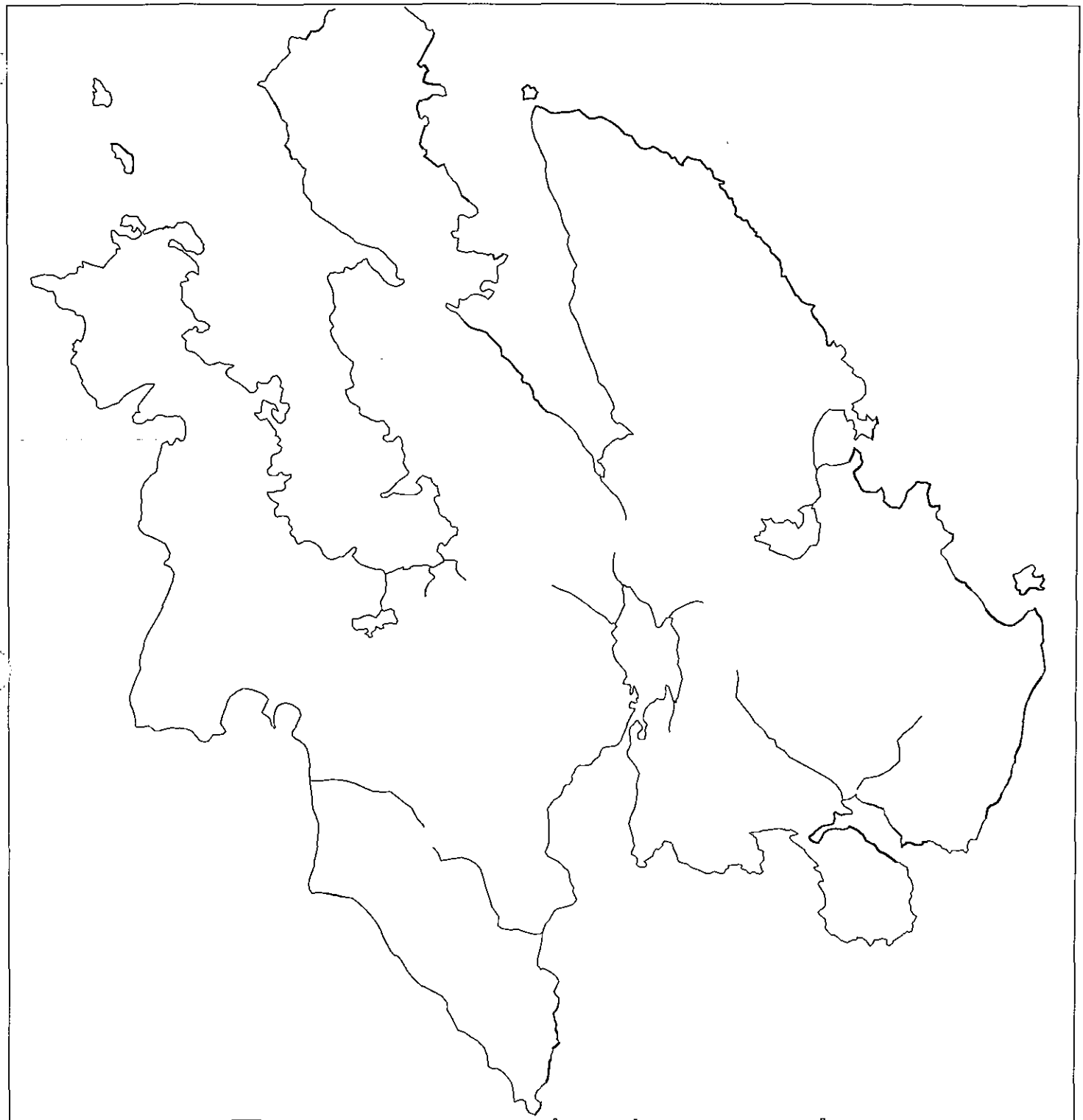
LOC	PIT NO	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE	CLEAN BELOW	H2O LEVEL	SHEEN COLOR	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
			OP	HOR	MOR	LOR	OF	TR	NO	cm-cm	Y/N	(cm)	B R S N	S	UI	MI	LI		
										-									
										-									
										-									
										-									
										-									
										-									
										-									
										-									

OG COMMENTS: sporadic coat on Rock and a few small patches of AP-SOR, predominantly in vertical shale. The only location with any degree of oiling is B where oil is caught in vertical shale beds

OGNEW.WK1 3/92


AE 5B
MAY 18, 1992
7:50 - 9:45
0.05' to -1.92'
Reimer
APPLEGATE ISLAND
N
A AP-HSOR 2x3m < 10%
B AP/I-HSOR 40% 8 x 12%
C CT <5% 1 x 30m
D CT < 2% AP/I < 2% 2 x 10
E LSOR 60% 2x3m
F AP/I 5% CT <10% 2x5m
G CT 30% 1x5m
H CT <10% 1 x 20m
I AP/I 1 x 10m <10% vert. Shale
LAKE
grass
Pebbles
Cut Bank
Peb.
Boulders
Boulders
C/B
Pebble
Beach
C/B
Tidal flats
P/C
B/C
PCB/R
Low
CB/Rock
Pebble
PCB/Rock
Steep Peb Beach
Steep Peb Beach
Steep Pebbles
WATER
WATER
unsurveyed


AE-005-B
May 18, 1992
0756-0940hrs
Schroeder
Bio.
N
Lake
Tidal Marsh
Lagoon
Water
Water
Dense fucus growth along with mussels and barnacles in this marsh area.
Active Eagle Nest
Dense fucus and mixed growth, female and young kelp and settling on all bedrock outcropping. Algal cover 90% in this area.
area has numerous large kelp, Hermit crabs, starfish, sculpin, urchins, anemones, and snails are abundant.



Key to Streams [*]	ADEC Shoreline Oiling Impact	0 1 2 KILOMETERS N	Prince William Sound Five Month Oil Impact 03/24/89 to 08/24/89 Proposed May 24, 1993 Trip Map Projection: UTM, Zone 6 Cartographer: Ward H. Lane	Map Location
Anadromous Fish Streams	Heavy Oiling 149 Km			
	Moderate Oiling 114 Km			
	Light Oiling 198 Km			
[*] Stream Data from Alaska Department of Fish & Game	No Observed Oiling			
	Not Observed			

Compiled and Produced by: Alaska Department of Environmental Conservation
Oil Spill Response Center; Based on low altitude aerial observations

File Name: Perry | Date of GIS Query: 09/15/93; Date of Map Production: 5/20/93

Perry Island
PR-016

Perry Is. is a large island approximately 6.5 miles across, located outside the entrance to Port Nellie Juan in western Prince William Sound, 24 miles southeast of Whittier. Two beaches at Meares Point, the southernmost tip of Perry Island, were oiled following the spill, but only one of them heavily. This shoreline is used as a recreational camping beach by kayakers. There is an eagle nest nearby and dense mussel beds on the shore. This beach is classified as an exposed, high-energy shoreline, with cobbles and large boulders overlaying coarse sand. Vertical cliffs line the back of the beach.

Observers on May 19, 1989 reported heavy oiling at PR-016, with many pools of oil up to 6 centimeters deep caught between boulders at the north end of the beach. Heavily oiled seaweed and twigs were noted scattered over the boulder field and between rock crevices. Aggressive treatment was carried out on this beach in 1989. In July of 1990 heavy, pooled oil remained and cleanup crews conducted treatment as described below. By May of 1991 observers described this beach as only lightly oiled, and no treatment was recommended at all in 1992.

Treatment applied to the shoreline at this site included:

- **1989** - manual removal of oiled seaweed and debris, header hose flood, cold water high pressure wash, warm and hot water moderate pressure wash, and hot steam water high pressure wash. Omni boom and Maxi barges were used during treatment, and disk and Egmopol skimmers were used in recovering oil washed from the beach. There were problems with boom containment of oil on the water, recovery of oil after it was flushed off the shore . After being treated the beach was oiled again by oil floating in on the tide.
- **1990** - heavy oiling was noted. Treatment included manual removal of pooled oil, mousse, and oil-saturated sediments, manual raking, mechanical tilling with a small tractor, mechanical relocation of oiled sediments so tidal action could remove oil, and application of bioremediation agents Customblen and Inipol. Surveyors noted that even after treatment the beach was still heavily oiled. Cleanup crews removed 602 bags of oiled sediments.
- **1991** - surveyors noted light oiling remaining. Treatment consisted of manual raking and application of Customblen and Inipol. No oiled sediments were removed.
- **1992** - small mount of surface oil residue and asphalt remained in angular boulders. Remaining subsurface oiling was contained under a 5 to 20 centimeter clean layer of beach sediments. Because the subsurface oil was not expected to become mobile, no treatment was recommended.

SEGMENT SUMMARY

PR-16

NOVEMBER 7, 1989

Beach segment PR-16 is located on Perry Island in Prince William Sound. A ground survey (station #64) was run on this segment on May 5, 1989 by Clay Robinson and John Bauer. At that site the average coverage, average penetration, and average thickness were zero.

This segment was SCAT'ed on May 19. The SCAT report was submitted to the ISCC on May 30 and recommended for approval on June 2. The FOSC approved the treatment plan on June 3, 1989.

Treatment began on June 3 according to the Coast Guard. The first ADEC observation of treatment was on June 15. The treatment methods recommended were removal of oiled fucus, debris pick-up, header hose flood, cold water/high pressure wash, warm/hot water/moderate pressure wash and hot/steam water/high pressure. ADEC observers Amy Thompson, Jan Krieger, Laurie Keefer, Pam Keyes, Matt Biery, Steve Blank, Pat Endres and Dennis Harwood reported header hose flood, cold water/high pressure wash, warm/hot water/moderate pressure wash, hot/steam water/high pressure wash, Omni boom and Maxi barges were used during treatment. Disc skimmer and Egmopol skimmers were used in recovering oil washed from the beach. There were problems with containment, recovery and reoiling.

ADEC Inspector Joe Sautner signed off this segment on August 27. He wrote that the segment contained 1% heavy oil, 1% medium oil, 5% light oil, 5% very light oil and 88% no oil. He stated that a reassessment was necessary, and that the SE beaches were heavily impacted. USCG Inspector Paul Gansle wrote that the segment contained 1% heavy oil, 1% medium oil, 2% light oil, 2% very light oil and 94% no oil. He requested a reassessment, and approved demobilization pending removal of oiled debris and replacement of snare boom.

A transect (station #94) was run on August 30 by Clay Robinson and Gene Pavia. At that site the average coverage was 60%, the average thickness was .25mm and the average penetration was 35cm.

A post-treatment assessment was conducted on this segment on September 12 by Erich Gundlach, Meesha Mangiaracina, Clare Pavia and Greg Winter. During the assessment the team found very light, moderate and heavy oil of tarry consistency up to .5mm thick with a 40cm penetration at the high tide line.

This segment contains a 1989 winter study site.

Lea Ann Robinson

1990 TREATMENT SUMMARY - ADEC

Segment: PR016 KodKUnit: Region: PWS
Location: S PERRY ISLAND

Number of visits: 7 Treatment start date: 07/13/90

TREATMENT TYPES:

Manual removal: YES	Bags of sediment removed: 602	
Manual raking: YES	Oil manually removed: PO MS OP OR	
Bioremediation: YES	Header flood: NO	
Mechanical tilling: YES	Mechanical relocation: YES	Spot wash: NO

COMMENTS:

The SSAT survey documented heavy oiling. The treatment performed included manual removal of pooled oil, mousse, and OP and OR sediments; manual raking; mechanical tilling; mechanical relocation; and Customblen and Inipol application. Following treatment, the segment has heavy oiling.

1991 TREATMENT SUMMARY - ADEC

Segment: PR016 KodKUnit: Region: PWS
Location: PERRY ISLAND

Number of visits: 1 Treatment start date: 08/16/91

TREATMENT TYPES:

Manual removal: NO	Bags of sediment removed: 0	
Manual raking: YES	Oil manually removed: NONE	
Bioremediation: YES	Header flood: NO	
Mechanical tilling: NO	Mechanical relocation: NO	Spot wash: NO

COMMENTS:

The Maysap survey documented light oiling. The treatment performed included manual raking; and Customblen and Inipol application. Following treatment, the segment has light oiling.

H:\DSA:91SUMRY Print Date: 04/23/93

FINSAP EVALUATION

TEAM NO. 1

OG J.M. SEMPLES BIO S. STOKER LOCALITY: PWS, PERRY ISLAND

LANDMANAGER J. MADDEN (USCG) FOR USFS SEGMENT PR016

ADEC J. BAUER NOAA J. TALBOTT SUBDIVISION A

EXXON J. WILKINSON USCG J. MADDEN DATE 5 / 31 /92

ENVIRONMENTAL SENSITIVITIES: **(See page two for details)**

Eagle Nest, Fish Harvest Area

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find, and contact Exxon's Cultural Resource Program immediately: 264-4089 (Anchorage).

SHPO Signature: Judith E. Bittner Date: 5-1-92

RECOMMENDATIONS:	FIELD TAG	FOSC
Treatment Required (Y or N)	N	
Manual Tilling		
Manual Pickup		
Other		

COMMENTS:

FIELD TAG: Small amount of SOR/AP in angular boulders not a concern. Remaining subsurface oil contained under a 5-20 cm clean layer - not mobile.

FOSC:

FIELD TAG REVIEW COMPLETION DATE: 5/31/92 FOSC APPROVAL DATE:

ADEC R. Bauer FOSC

EXXON

USCG

NOAA

C:\WP51\JANE\EVALFORM.FIN
April 1, 1992

Environmental Sensitivities
1992 Field Activities

Eagle Nest: Access restricted from March 1 to September 1. USFWS authorization required. Maintain 1000-ft. vertical and 1/4-mile horizontal buffer.

Fish Harvest Area: Unlimited treatment unless otherwise directed by ADFG. Sheen containment and recovery procedures required for mechanical treatment.

FINSAP FIELD SHORELINE COMMENTS

PWS

TEAM NO. 1 LOCALITY Perry Island

OG JM Sempsrock BIO S. Stoker SEGMENT PI 016

DATE 31 MAY 92 SUBDIVISION A

ADEC
NAME J. BAUER SIGNATURE [signature]

☒ NO TREATMENT REQUIRED ☐ TREATMENT COMPLETED ☐ FURTHER TREATMENT RECOMMENDED

Subsurface mousse, classified as HOR, MOR, is buried under 20 cm of clean cobbles and pebbles. No treatment required at this time

USCG
NAME J. MADDEN SIGNATURE [signature]

☒ NO TREATMENT REQUIRED ☐ TREATMENT COMPLETED ☐ FURTHER TREATMENT RECOMMENDED

Extensive pitting was completed due to the effort already expended on the segment. The clean armor and location/type of oiling condition did not warrant any further treatment.

LANDMANAGER
NAME J. MADDEN (USCG) FOR USFS SIGNATURE [signature]

☒ NO TREATMENT REQUIRED ☐ TREATMENT COMPLETED ☐ FURTHER TREATMENT RECOMMENDED

Clean surface of round cobble. Oil was found in the subsurface. Extensive work had already been completed on this segment to turn relocation & tilling. No further treatment was recommended.

NOAA
NAME Joseph Talbott SIGNATURE [signature]

☑ NO TREATMENT REQUIRED ☐ TREATMENT COMPLETED ☐ FURTHER TREATMENT RECOMMENDED

The only surface oil on this subdivision consists of remnants of AP in an angular boulder cobble field. The subsurface oil (max thk) was buried beneath a clean surface layer of cobbles/pebbles averaging 15 cm in thickness. No treatment is recommended due to the clean surface sediments & lack of mobility of the oil.

EXXON
NAME J. WILKINSON SIGNATURE [signature]

☒ NO TREATMENT REQUIRED ☐ TREATMENT COMPLETED ☐ FURTHER TREATMENT RECOMMENDED

Remaining low level of AP in angular boulders not a concern. Subsurface oil is buried under 5-20 cm of clean material and is not mobile. Significant freshwater runoff in beach will continue natural improvement of subsurface condition. No treatment recommended.

Note - TAG consensus not reached and survey to cover biota in lower intertidal. Survey done at higher tidal levels covered oiling condition, need for further biological data felt not needed as not a factor in treatment decision ✓

FIELDCOM.WK1 2/92

FINSAP SHORELINE OILING SUMMARY

P.W.S.

TEAM NO. 1 LOCALITY Perry Isle

OG J. M Semple BIO S Stoker SEGMENT 22 016

ADEC J. Bauer LANDMANAGER _____ for _____ SUBDIVISION A

EXXON J. Wilkinson USCG J. Madden DATE 31 / MAY / 92

NOAA J. Talbott

TIME 11 : 16 to 12 : 07 TIDE LEVEL _____ ft. to _____ ft. ENERGY LEVEL: ☒ H ☐ M ☐ L

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

TOTAL LENGTH SHORELINE SURVEYED: 150 m NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE

EST. OIL CATEGORY LENGTH: W _____ m M _____ m N _____ m VL 10 m NO 140 m US _____ m

LOC	SURFACE OIL CHARACTER										SURFACE SEDIMENT	SHORE SLOPE	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO	TYPE	V H M L	WIDTH m	LENGTH m	S	UI	MI	LI	
A				S		S	S				Bd/cb	L	20	10		X	X		See map for details

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

LOC	PIT NO	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
			OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
	1	30							X	- - -	Y	15	-				X	cb/pb	s.pt/organic/
	2	30							X	- - -	Y	15	-				X	" "	pb/sd
	3	20							X	- - -	Y	20	-				X	" "	below
	4A	32			X					20 - 30	N	28	B				X	" "	
	B			X						30 - 32	Y	-	-				X	" "	" "
	5	20				X				10 - 15	Y	-	-				X	" "	
	6	32		X						15 - 20	Y	-	-			X		" "	" "
	7	28		X						20 - 25	Y	22	B				X	" "	" "

OG COMMENTS:

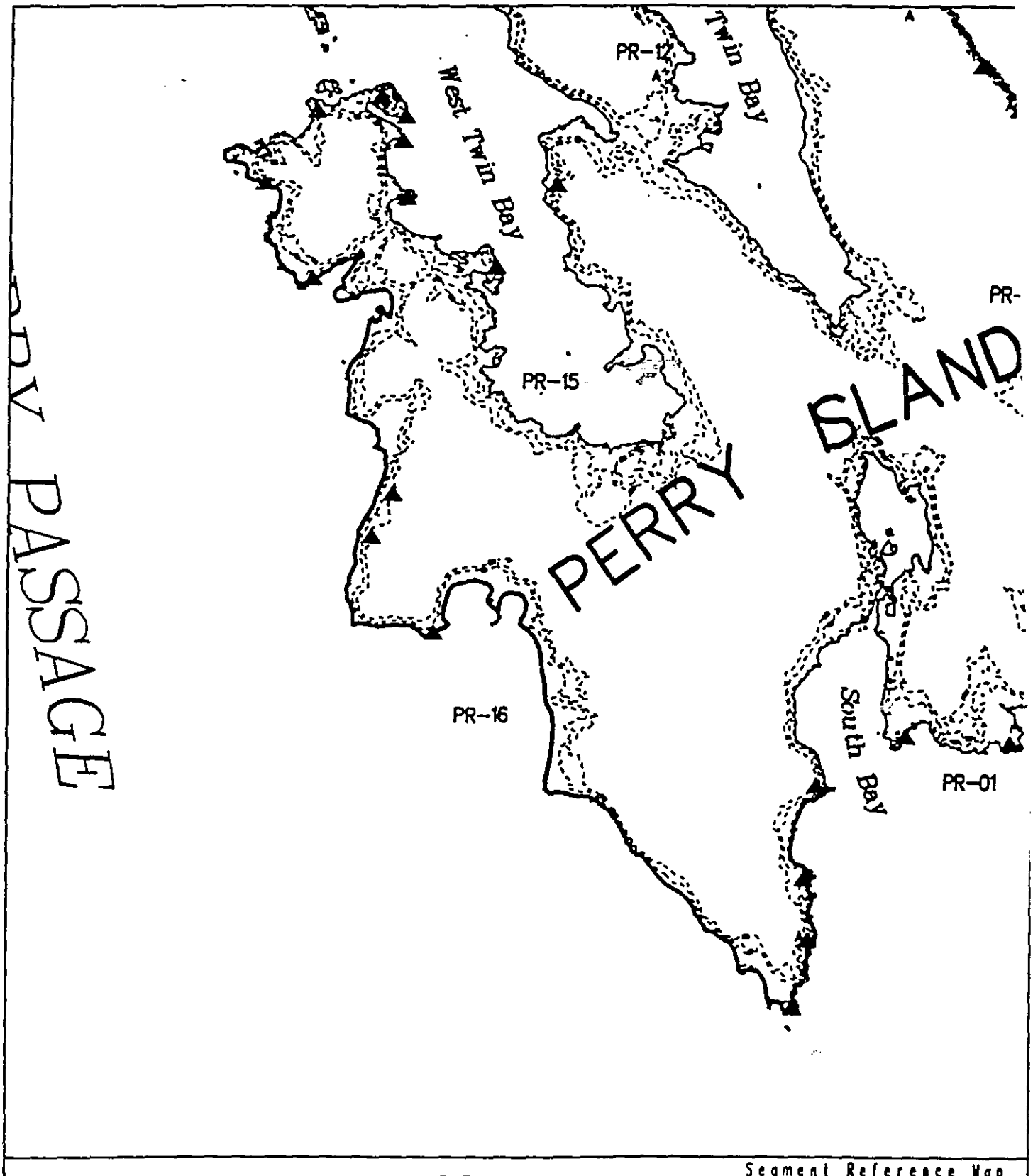
Moderate to high energy rounded cobble / boulder beach. Well developed storm berm. Little surface oil left but subsurface oil remains as indicated on map. Percolation of subsurface oil arrested by presence of silty / sand layer encountered in almost all pits.

OGNEW.WK1 3/92

FINSAP SHORELINE OILING SUMMARY
PIT LOG--CONTINUED

SEGMENT _____
SUBDIVISION _____
DATE _____ / _____ / 92

LOC	PIT NO	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE	CLEAN BELOW	H2O LEVEL	SHEEN COLOR	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
			OP	HOR	MOR	LOR	OF	TR	NO	cm-cm	Y/N	(cm)	B R S N	S	UI	MI	LI		
	3	40				x				5 - 40	N	-	-		x			cb	very oil w/ heavy
	9	15							x	- - -	y	-	-			x		cb/pb/ss down	
	10	22					x			10 - 20	y	20	S				x	" "	"
	11	25							x	- - -	y	-	-			x		" "	"
	12	23							x	- - -	y	20	-				x	"	
	13	32				x				5 - 30	N	-	-		x			cb very	oily w/
	14	25							x	- - -	y	15	-				x	pb / ove	silt/sand
	15	22			x					12 - 17	y	18	B			x		pb/g / ove	silt/sand
	16	10			x					5 - 7	y	-	-			x		g/pb/ss down silty sand/g	
	17	10			x					6 - 8	y	-	-			x		" "	
	18	20							x	- - -	y	-	-		x			pb/g/sd	



PR016

Segment Reference Map
Exxon Coastline

Map Key: PWSPR016

METERS

0 1130 2259

AK State Plane Zone 4
pr016

▲ EAGLE NEST

STREAMS

EXXON

FINSAP BIOLOGICAL SUMMARY

TEAM NO. 1 — LOCALITY S. Perry Isla.
OG Semplos — BIO Stoker — SEGMENT PR-16
LANDMANAGER Madden FOR USFS — SUBDIVISION A
ADEC Bauer — DATE 5 / 31 /92
EXXON Wilkinson — USCG Madden — NOAA Talbott
TIDE LEVEL +5.0 FT. TO +8.0 FT. — TIME 11 : 15 TO 12 : 45
SEA STATE 1-2 FT — WIND SPEED/DIRECTION N 10-20

RECRUITS:	Present U	Present M	Present L	Absent
Barnacle Spat	X	X		
Littorine Recruits	X	X		
Mussel Spat		X		
Fucus Sporelings				X

LONG-LIVED SP:	Present	#Species
Carniv. Snails	X	1
Sea Stars	X	1
Chitons	—	—
Anemones	—	—
Clams	—	—
Crabs	X	1
Intertidal Fish	X	1

OVERALL ABUNDANCE:	Sparse U	Sparse M	Sparse L	Common U	Common M	Common L	Abundant U	Abundant M	Abundant L
Barnacles	X				X				
Littorines				X	X				
Mussels	X				X				
Fucus					X				
Limpets	X				X				

COMMENTS/OBSERVATIONS: High energy cove of rounded pebble/cobble/boulder with bedrock exposures and headlands. Biota within the zone surveyed (above +5.0 FT) is sparse to only moderately abundant, of low diversity. Fucus is sparse or absent in the upper intertidal (UIT) and on unstable pebble/cobble in the mid intertidal (MIT), patchily dense on bedrock/boulder in the MIT. (continued on attached sheet)

WILDLIFE OBSERVATIONS

BIRDS	# SPECIES	TOTAL BIRDS
Eagles	1	MATURE 1 IMMATURE 0
Seabirds	1 (Guillemots)	4
Waterfowl	—	—
Gulls/Kittiwakes	1 (Kittiwakes)	10-15
Shorebirds	—	—
Corvids/Other Birds	2 (crow-1, Terns-4)	5

MARINE MAMMALS	# OBSERVED
Sea Otters	ADULTS — PUPS —
Harbor Seals	1
Sea Lions	—

Harbor porpoise - 2

Shoreline subdivision map showing important biological features attached.

C:\WP51\JANE\BIOSUM.FIN
3/3/92

Barnacles are sparse in the UTZ on all substrates, sparse on unstable pebble/cobble/boulder in the MTZ, patchily dense on stable boulder/bedrock in the MTZ.

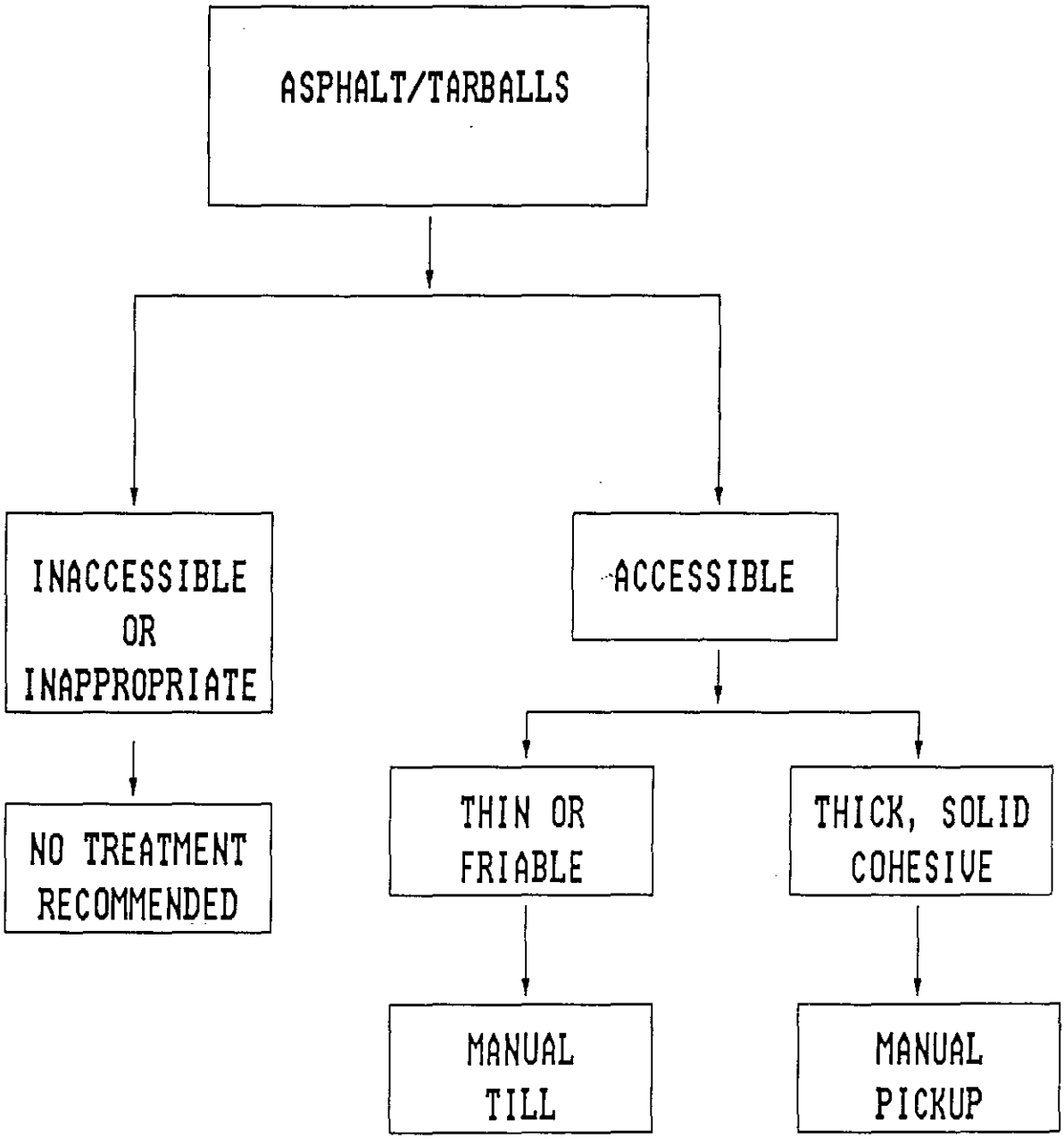
Littorina are sparse to moderately abundant on stable boulder/bedrock in the UTZ, and on all substrates in the MTZ.

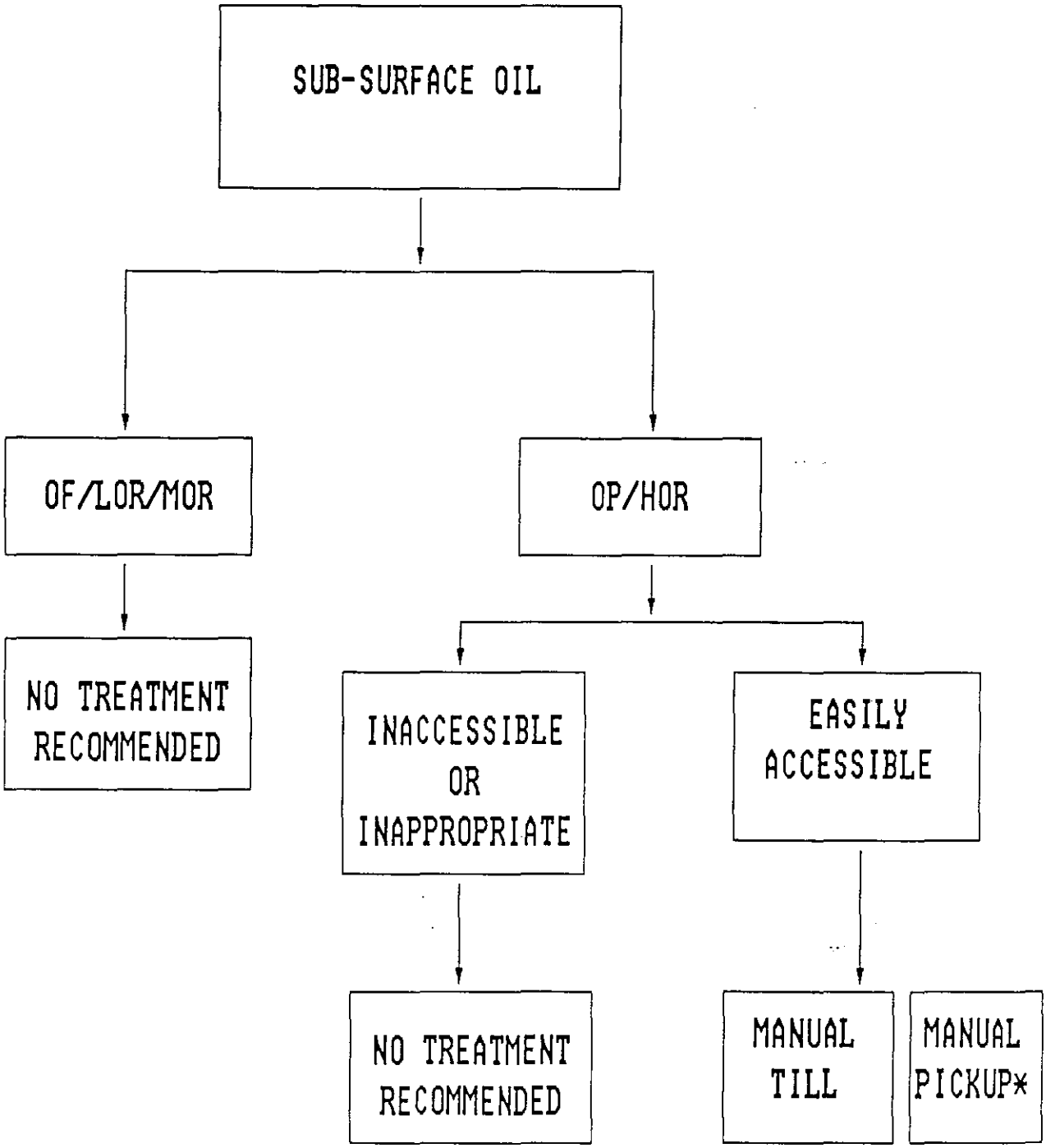
Limpets are sparse on boulder/bedrock and absent on pebble/cobble in the UTZ, sparse on pebble/cobble and moderately abundant to patchily dense on boulder/bedrock in the MTZ

Mussels are sparse or absent on all substrates in the UTZ, and on pebble/cobble in the MTZ, patchily dense on boulder/bedrock in the MTZ.

Other taxa observed include hermit crabs (Pagurus sp), predatory snails (Nucella sp), starfish (Leptasterias hexactis), and sculpins.

The general paucity of biota observed, in terms of both abundance and diversity, is due both to the high wave energy and predominately unstable nature of substrate at this location, and to the relatively high tide level at which it was surveyed.


ASPHALT/TARBALLS
INACCESSIBLE OR INAPPROPRIATE
ACCESSIBLE
NO TREATMENT RECOMMENDED
THIN OR FRIABLE
THICK, SOLID COHESIVE
MANUAL TILL
MANUAL PICKUP



* Depends on significant potential threat to adjacent resources

ADEC DAILY SHORELINE ASSESSMENT

LOCATION_____ SEGMENT_____ SUBDIV____
SITE_____

DATE_____ TIME: Begin_____ End_____

WEATHER: Cloudy Rain Fog Sunny Other_____

MONITORS_____

ENVIRONMENTAL CONSTRAINTS_____
_____

DESCRIPTION OF TREATMENT SITE

SHORE COMPOSITION
Surface sediments: R____% B____% C____% P____% S____% Other_____%

Subsurface Sdmnts: R____% B____% C____% P____% S____% Other_____%

Wave Exposure: Low Moderate High

OIL CHARACTERISTICS Before Treatment
Surface: Mousse Tarball/Patty Asphalt Cover Coat Stain

Subsurface: OP HOR MOR LOR OF Depth:_____ Thickness:_____

Across Tidal Zone: Low Mid Upper Supra

Oiled Logs Present_____

TREATMENT PERFORMED:

Manual Removal Type: MS TB AP SOR OP OR OF

Manual Raking With/Without Tidal Flush

Manual Breakup Customblen_____lbs.

Other_____

Equipment Used_____

Methods Used To Contain/Collect Oil_____

NUMBER OF BAGS COLLECTED: Oiled Sediment_____ Oiled Debris_____
Unoiled Debris_____

POST TREATMENT OIL CHARACTERISTICS
Surface: Mousse Tarball/Patty Asphalt SOR Cover Coat Stain

Subsurface: OP HOR MOR LOR OF Depth:_____Thickness:_____

Work order completed? Yes No Comments:_____

_____

Recommended For Additional Treatment? Yes No (include map of treatment performed and oil remaining)

WORK CREW

State Vessel Joint Survey Post Survey Crew

Workers On Site: # of ORTs_____ Other_____ State_____

Exxon_____

USCG/NOAA_____

COMMENTS\OBSERVATIONS

_____

_____

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PHOTO/VIDEO DOCUMENTATION

PHOTOGRAPHS: Roll #_____ Frame(s)_____ Reason:_____

_____

VIDEO: Tape #_____ Reason:_____

_____

SIGNATURE_____

SEGMENT_____ MONITOR_____ DATE_____