[Shoreline evaluations, 1991].

Prince William Sound CH-01 to CH-10

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1991 MAYSAP EVALUATION

SEGMENT: CH 001 SUB: A REGION: PWS SURVEY DATE: 5/2/91

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:

TREATMENT REQUIRED (Y or N) N Initial TAG FOSC

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. H SEGMENT A001 SUBDIVISION A DATE 9 MAY 91

ADEC
NAME Dianne Musser
SIGNATURE Dianne Musser

☑ NTR

Very little oiling observed. Entire segment was not surveyed due to previous surveys showing no oiling.

EXXON
NAME Larry D. Gibson
SIGNATURE Larry D. Gibson

☑ NTR

Agree with representative recommendations.

LANDMANAGER
NAME Larry Evans
SIGNATURE DMS

☑ NTR ☐ TREATMENT RECOMMENDED

A small tar mat was found on the northern part of segment. Stain/film remain. No bioaugmentation recommended.

USCG/NOAA
NAME Jerry Schultz
SIGNATURE Jerry Schultz

☑ NTR

I concur with the above representatives recommendations.
MATSAP SHORELINE OILING SUMMARY

DATE 5 May 1991

TIDE LEVEL +5.5 ft. to 3.0 ft.  ENERGY LEVEL:  X H  X M  X L

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

TOTAL LENGTH SHORELINE SURVEYED: 36.2 m  NEAR SHORE SHEEN:  ☑ BR  ☑ RB  ☑ SL  ☑ NONE

EST. OIL CATEGORY LENGTH:

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<td>m</td>
<td>V</td>
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<tr>
<td>360</td>
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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-

<table>
<thead>
<tr>
<th>PIT NO.</th>
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<td>OIL CHARACTER</td>
<td>Subsurface</td>
<td>Clean Below</td>
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<tr>
<td>OP</td>
<td>OR</td>
<td>MOR</td>
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SURFACE-OIL CHARACTER

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<th>M</th>
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</tbody>
</table>

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

OG COMMENTS:

Uniform level, mostly uitz and ph cs uitz, scattered on the middle side of the shoreline and extending to the wooded slopes and cliffs to the north. Will develop shoreline with some rocks in front of a small geyser. One 6 x 3 m area containing less than 10% coverage, we found in it a low uitz on the middle half of the subdivision.
**OG Sketch Map**

**CH 201A**

**In Semiels**

**May 91**

0704-0744

**Legend**

- Red NOT/ton
- PB/CB
- PB/GB

**View 1**

- Few st on underside of CB in northern 3/3 of sediments
- Remnants of old channel now around and especially on the landward side of CB at the junction of the upper and middle intertidal zone.
This site, located near the upper berm along the drift line, potentially has a film of oil on some pebbles and cobble. Little biota exist at this area. Below the site, biota are sparse on the cobble beach, down to the mean tide level (middle zone), or lower, where green algae, sparse Fucus, moderate barnacles and limpets, and sparse mussels occur. Occasional bedrock outcrops have fairly dense cover of Fucus, and similarly higher densities of the other key species.

The oiled site (LSOR) is located near the border of the middle and upper intertidal (ca +8 - +9 ft.). Filamentous green algae (Urospora?) has moderate cover at this site, with scattered barnacles, a few littorines, and limpets. About 2 feet lower in the intertidal, Fucus cover is moderate on the beach cobble, and littorines are abundant. A small nudibranch, Lamellidoris fusca, also is present in the middle zone. Mussels are scattered in small patches amongst the beach cobble.

MANUAL CLEANUP PERFORMED DURING SURVEY. Additional cleanup should have little impact on the biota of this beach. The site has an anadromous stream, but its location is approximately 200m from the oiled location.

SUMMARY OF CH001-A

This is a long, wide beach with cobble near the lower zones and pebbles at the upper berm of the beach. In addition, there is a stream entering from the upland at the southern end of the subdivision. Little biota exists on the middle and upper zones of the intertidal beach, which is exposed to moderate waves. Lower in the intertidal, the intertidal fauna

(WILDLIFE OBSERVATIONS - Completed on all subdivisions)

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<th>FISH OBSERVED SPECIES PRESENT</th>
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<tr>
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<td>Seabirds</td>
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<td>Waterfowl</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Gulls/Kittiwakes</td>
<td>1</td>
<td>5</td>
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<td>Shorebirds</td>
<td></td>
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<tr>
<td>Corvids</td>
<td>1</td>
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<tr>
<td>Other Birds</td>
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Shoreline subdivision map showing important biological features attached.
and flora increase in density or cover with the key species (Fucus, mussels, littorines, barnacles), contributing the majority of the biomass. Nevertheless, the biota on the beach are considerably less abundant than on nearby bedrock headlands, where key species cover is nearer to 100%.

List of Species from CH001-A

A. Marine Plants
1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
   Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
   Agarum fimbriatum, Ectocarpus sp., Fucus distichus, Ralfsia sp., Sycotisiphon lomentaria
4. Red Algae - Rhodophyta
   Membranoptera dimorpha, Odonthalia floccosa
5. Higher Plants - Leymus mollis (beach rye grass)

II. Marine Animals
2. Anemones - Anthopleura artemesia
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaetes
   Nepthyidae
   Nereidae - Nereis spp.
   Serpulidae
   Serpula sp., Crucigera sp., Eudistylia polymorpha
   Spiorbidae - Spiorbis sp.
10. Crustaceans
    a. Amphipods - Orchestia sp.?
    b. Barnacles - Balanus glandula
    c. Crabs - Paguridae
11. Mollusca
    a. Chitons - Mopalia mucosa,
    b. Snails - Gastropods
       Littorina scutulata, L. sitkana, Natica clausa, Nucella lamellosa
    d. Nudibranches - Lamellidoris fusca
    e. Mussels and Clams
       Mytilus edulis, Prototheca staminea
12. Echinoderms
    a. Sea stars
       Dermasterias imbricata, Evasterias leviuscula, Leptasterias hexactis,
       Pycnopodia helicanthoides
    c. Sea Cucumbers - Holothurians
       Eupentacta sp., Leptosynapta sp.
    d. Urchins - Strongylocentrotus droebachienis
15. Fishes
    Cottidae
    Stichaeidae
    Xiphister atropurpureus, X. mucosus
Bio Sketch Map

CHOOS-A
J.P. Barry
2 May 91

Legend
1: Bedrock/talus
0: Pebbles/Cobble
2: Pebbles/Gravel

Little biota at oiled site. Lower: sparse green algae, Fucus, key species.

Filamentous green algae near oiled site. Below - moderate Fucus, abundant littorines, scattered patches of mussels.

Stream
Berm
Backshore

Meter
0 100 200
<table>
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<tr>
<th>XXXX</th>
<th>Wide</th>
<th>ADEC Subsegment Length: 363m</th>
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<td>Medium</td>
<td>Meters</td>
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<td>TTTT</td>
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<tr>
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Subdivision Field Map
Map Key: PWSCH001A
Name: [Signature]
Date: May 29, 1991
Data Entered:

Reviewed 5/14/91 DL
Checked 5/15/91 MC
1991 MAYSAP EVALUATION

SEGMENT: CH 001  SUB: A  REGION: PWS  SURVEY DATE: 5/2/91

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: Charles H. Date: 5/10/91

RECOMMENDATIONS:

<table>
<thead>
<tr>
<th>TREATMENT REQUIRED (Y or N)</th>
<th>INITIAL</th>
<th>TAG</th>
<th>FOSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
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</table>

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

COMMENTS:

INITIAL: ____________________________________________________

TAG: ________________________________________________________

FOSC: _______________________________________________________

TAG APPROVAL DATE:  MAY 10 1991  FOSC APPROVAL DATE: 5/15/91

ADEC  

EXXON  

USCG  

NOAA  

E. E. PAGE, CDR, USCG  

CHIEF OF STAFF, FOSC
ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

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

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. 41 SEGMENT CH 001 SUBDIVISION A DATE 9/1 MAY 81

ADEC
NAME: Dianne Musser SIGNATURE: Dianne Musser

☑ NTR

Very little oiling observed.
Entire segment was not surveyed due to previous surveys showing no oiling.

EXXON
NAME: Larry D. Olsen SIGNATURE: Larry D. Olsen

☑ NTR

Agree with representatives' recommendations.

LANDMANAGER
NAME: Larry Evans, FOF CRE SIGNATURE: GM GW

☑ NTR ☐ TREATMENT RECOMMENDED

A small tar mat was found on the northern part of segment. Stain/film remain. No bioaugmentation recommended.

USCG/NOAA
NAME: Jerry Schultz SIGNATURE: Jerry Schultz

☑ NTR

I concur with the above representatives recommendations.
**MATSAP SHORELINE OILING SUMMARY**

**TEAM NO.**
OG: [illegible]
ADEC: D. Allow
EXXON: L. Olson

**TIME** 05:10 - 07:44

**TIDE LEVEL** +5.5 ft. to -3.0 ft.

**SURVEYED FROM**:
- Foot
- Boat
- Helo

**WEATHER**:
- Sun
- Clouds
- Fog
- Rain
- Snow

**TOTAL LENGTH SHORELINE SURVEYED**: 363 m

**NEAR SHORE SHEEN**:
- BR
- RB
- SL
- X

**EST. OIL CATEGORY LENGTH**:
- W - m
- M - m
- N - m
- V - 3 m
- L - 3 m
- NO - 260 m
- US - m

### SURFACE OIL CHARACTER

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<th>L</th>
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**SURFACE SEDIMENT**:
- Pl, ch, L

**SHORE SLOPE**:
- 2

**WIDTH**:
- 3

**LENGTH**:
- X

**ZONE**:
- Remarks

**NOTES**:
- Pavement, near
- Around 85, 95

**TOTAL SURFACE**:
- NO

**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**:
- [illegible]

**PIT NO.**

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<th>PIT</th>
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<th>CLEAN BELOW</th>
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**SHEEN COLOR**:
- B: Brown
- R: Rainbow
- S: Silver
- N: None

**OG COMMENTS**:
Uniform level p/b oil w/ w/v and pb cl oil
starting on the north side of the stream bend extending to the
budrock talus and cliffs to the west. Will develop stromatolite
with some rocks in front of a breakaway shoreline. One
3 x 3 m area containing less <1% coverage was found with
low w/v on the western half of the subdivision.

**REVIEWED**:
6/4/91 KG
5/7/91 KC
LEGEND
1 Bedrock/rock
2 pb/cb rem. clay
3 pb/gu 1 plathy

Stream

Remnants of old pavement now present and superficial on the landward side of clb. at the junction of the upper and middle stratified zone.

Few et on underside of clb in northern 2/3 of subdivision.

Al
1 Sor 5%
9 x 3 2 cm thick

Reviewed 6/4/91 KG
Reviewed 5/15/91 MC
MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 4  DATE/TIME May 2, 1991  0708 - 0746
SEGMENT # CH001  TIDAL HEIGHT (Range) +5.5 => +3.0
SUBDIVISION A  BIOLOGIST JIM BARRY
SEA STATE Calm  WIND SPEED/DIRECTION Variable, 5 kt., cloudy/rain

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

This site, located near the upper berm along the drift line, potentially has a film of oil on some pebbles and cobble. Little biota exist at this area. Below the site, biota are sparse on the cobble beach, down to the mean tide level (middle zone), or lower, where green algae, sparse Fucus, moderate barnacles and limpets, and sparse mussels occur. Occasional bedrock outcrops have fairly dense cover of Fucus, and similarly higher densities of the other key species.

The oiled site (LSOR) is located near the border of the middle and upper intertidal (ca +8 - +9 ft.). Filamentous green algae (Urospora?) has moderate cover at this site, with scattered barnacles, a few littorines, and limpets. About 2 feet lower in the intertidal, Fucus cover is moderate on the beach cobble, and littorines are abundant. A small nudibranch, Lamellidoris fusca, also is present in the middle zone. Mussels are scattered in small patches amongst the beach cobble.

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SUMMARY OF CH001-A

This is a long, wide beach with cobble near the lower zones and pebbles at the upper berm of the beach. In addition, there is a stream entering from the upland at the southern end of the subdivision. Little biota exists on the middle and upper zones of the intertidal beach, which is exposed to moderate waves. Lower in the intertidal, the intertidal fauna (continued)

WILDLIFE OBSERVATIONS - Completed on all subdivisions

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Shoreline subdivision map showing important biological features attached.
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II. Marine Animals
2. Anemones - Anthopleura artemesia
5. Flatworms - Platyhelminthes - Polyclads
6. Nemertean Worms - Ribbon Worms - Emplectonema gracile
8. Polychaetes
   Nephtyidae
   Nereidae - Nereis spp.
   Serpulidae
   Serpula sp., Crucigerina sp., Eudistylia polymorpha
   Spirorbidae - Spirorbis sp.
10. Crustaceans
   a. Amphipods - Orchestia sp.?
   b. Barnacles - Balanus glandula
   c. Crabs - Paguridae
11. Mollusca
   a. Chitons - Mopalia mucosa.
   b. Snails - Gastropods
      Littorina scutulata, L. sitkana, Natica clausa, Nucella lamellosa
   d. Nudibranches - Lamellidoris fusca
   e. Mussels and Clams
      Mytilus edulis. Prototheca staminea
12. Echinoderms
   a. Sea stars
      Dermasterias imbricata, Evasterias leviuscula, Leptasterias hexactis,
      Pycnopodia helianthoides
   c. Sea Cucumbers - Holothurians
      Eupentacta sp., Leptosynapta sp.
   d. Urchins - Strongylocentrotus droebachiensis
15. Fishes
   Cottidae
   Stichaeidae
   Xiphister atropurpureus, X. mucosus
Bio Sketch Map

CHOOI - A
J.P. BARRY
2 May 91

Legend

Bedrock/talus
Pebbles/Cobble
Pebbles/Gravel

Little biota at oiled site. Lowler's sparse green algae, Fucus, key species.

Filamentous green algae near oiled site. Below - moderate Fucus, abundant litterines, scattered patches of mussels.

Stream
Berm
Grassy
Backshore

Meter
0 100 200
ADDENDUM: SUBDIVISION CONSTRAINTS
SEGMENT CH-1 SUBDIVISION A (1 of 1)

WORK WINDOW

<table>
<thead>
<tr>
<th>Manual Raking</th>
<th>Bioremediation More Than 100m From Stream</th>
<th>OPEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Raking</td>
<td>Bioremediation Less Than 100m From Stream</td>
<td>WORK PRIOR TO 7/10 (ADF&amp;G MONITOR REQ.)</td>
</tr>
</tbody>
</table>

ARCHAEOLOGICAL INSPECTION/CONSULTATION REQUIRED.
>>> PHONE 564-3274 (Anchorage) OR 229-1508 (24 hrs.) <<<

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B Salmon Stream
ADF&G catalogued anadromous stream 226-20-16280 is present in Segment CH-1. Subdivision A is closed to manual raking and bioremediation less than 100m from stream 7/10 to 8/31. Before 7/10, manual raking and bioremediation are permitted less than 100m from stream with on-site ADF&G monitor or ADEC alternate present. No constraint to manual raking and bioremediation more than 100m from stream.

5T Bald Eagle Nest
NO CONSTRAINT. Eagle nest located in adjacent Segment CH-3 is more than 400m from recommended treatment area.

OTHER ECOLOGICAL CONSIDERATIONS

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

SEE ANADROMOUS FISH STREAM EVALUATION ADDENDUM (STREAM NO. 226-20-16280) FOR ADDITIONAL CONSTRAINT INFORMATION

TAG APPROVAL DATE_5/29/90_.
ADEC ART WENNER ART WENNER
EXXON ANGEL TAYLOR FOSCI.
NOAA BILLY R. BROWN
USCG G. W. REITER G. W. REITER
Date_5/29/90_.

MAY 29 1990
SHORELINE EVALUATION

SEGMENT ST/ CH-001 SUBDIVISION A (1 OF 1) DATE 3/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
Stream mouth (catalog #168201) outmigration (1A) - 3/1 to 5/15;
Spawning (1B) - 7/10 to 8/31.

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

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

SHPO SIGNATURE: [Signature] DATE: April 11, 1990

OILING CATEGORIZATION:
- Wide 0 m: Medium 0 m: Narrow 0 m: V. Light 173 m: No Oil 190 m
- Subsurface Oil Observed: Yes X No Maximum Depth 7 cm

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

COMMENTs: Bioremediate as indicated on attached sketch map. All
work to be performed (5/15 to 7/10) based on anadromous stream con-
straints. Bioremediate to within 100 m of stream only.

TAG COMMENTS:

TAG APPROVAL DATE: 4/1/90
- ADEC [Signature] [Signature]
- EXXON [Signature] [Signature]
- NOAA [Signature] [Signature]
- USCG [Signature] [Signature]

FOSC: [Signature] DATE: 5/15/90
Notify one 24 hrs in advance
of work.
SHORELINE EVALUATION

SEGMENT ST/CH-001 SUBDIVISION A (1 OF 1) DATE 3/31/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
Stream mouth (catalog #16820) outmigration (1A) - 3/1 to 5/15;
Spawning (1B) - 7/10 to 8/31.

SUBDIVISION ECOLOGICAL CONSTRAINTS: Avoid disturbance/damage to un-oiled biota and substrate.

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

SHPO SIGNATURE: ______________ DATE: April 11, 1990

OILING CATEGORIZATION:
Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 173 m: No Oil 190 m
Subsurface Oil Observed: Yes X No Maximum Depth 7 cm

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

COMMENTS: Bioremediate as indicated on attached sketch map. All work to be performed 5/15 to 7/10, based on anadromous stream constraints. Bioremediate to within 100m of stream only.

TAG COMMENTS:

TAG APPROVAL DATE: 4/1/90
ADEC _______________ DATE: 5-15-90
EXXON _______________
NOAA _______________
USCG _______________

NOTIFY OUR 24 HRS IN ADVANCE OF WORK
CH-1

XXX Wide
/// Medium
---- Narrow

ADEC Segment Length: 785m

not surveyed

420 m

Map Key: PWS-55
Name: Norma Bigger
Date: 3/31/90
ANADROMOUS FISH STREAM EVALUATION ADDENDUM

CONSTRAINTS FOR STREAM NO. 226-20-16280
SEGMENT CH-1 SUBDIVISION A

WORK WINDOW

Tarmat Removal

OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B Salmon Stream  ADF&G catalogued anadromous stream (226-20-16280) is present in Segment CH-1. No constraint to tarmat removal.

5T Bald Eagle Nest  NO CONSTRAINT. Eagle nest located in adjacent Segment CH-3 is more than 400m from recommended treatment area.

OTHER ECOLOGICAL CONSIDERATIONS

No disturbance to stream bed or bank. Avoid any unnecessary disturbance or damage to unaltered biota and substrate.

SEE SUBDIVISION CONSTRAINT ADDENDUM CH-1A FOR ADDITIONAL CONSTRAINT INFORMATION.

TAG APPROVAL DATE 5/28/90

Prepared By: [Signature]  Date 5/28/90
ANADROMOUS FISH STREAM EVALUATION

SEGMENT ST/ CH-01 STREAM NO: 226-20-16280 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)
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 salmon stream lies within Subdivision U (2 of 2).
NOTE: Subdivision U was unsurveyed due to snow coverage. Stream is just beyond boundary of A and U.

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: 5/10/90
Subsurface Oil Observed: Yes No X Maximum Depth

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

COMMENTS: Recommended treatment includes manual removal of tarmat in area indicated on sketch map. Work should be conducted between 6/15 and 7/15 with approval of ADF&G due to salmon stream constraint.

TAG COMMENTS:

TAG APPROVAL DATE: 5/10/90
ADEC
EXXON
NOAA
USCG

FOSC: DATE: 5/14/90
ANADROMOUS FISH STREAM EVALUATION

SEGMENT ST/CH-01  STREAM NO: 226-20-16280  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)
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 salmon stream lies within Subdivision U (2 of 2).
NOTE: Subdivision U was unsurveyed due to snow coverage. Stream is just beyond boundary of A and U.

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: 5/10/90

Subsurface Oil Observed: Yes____ No X  Maximum Depth__________

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

COMMENTS: Recommended treatment includes manual removal of tarmat in area indicated on sketch map. Work should be conducted between 6/15 and 7/15 with approval of ADF&G due to salmon stream constraint.

TAG COMMENTS: ____________________________________________________________

TAG APPROVAL DATE: 5/10/90

ADEC   EXXON   NOAA   USCG
Art Weiler W. W.  Fosc. W.  D. Rome A. M.  ___

DATE: 5/10/90  DATE: 5/10/90

NOTIFY OIE 24 HRS IN ADVANCE OF WORK.
SEGMENT ST/ CH401

DATE 25/ APR 90

CHECKLIST

- All Auger
- Approx. Scale
- Borehole Length
- % Cover
- Substrate Character
- Est. HNL/AWL
- SSL
- Profile Location(s)
- Porosity(s)
- Pit Location(s)
- Photo Location(s)

LEGEND

1 Δ
- Pit - No Substrate Oil

2 Δ
- Pit - Substrate Oil

CT/C
- Continuous Distribution

CT/B
- Broken Distribution

CT/P
- Patchy Distribution

CT/FS
- Splashed Distribution

PO
- Oiled Vegetation

AP
- Photo location, direction, and number

OV Character L • PM  • PO  • CV  • CT  • ST  • MS  • FR  • TD  • FI  • NO
ECOLOGICAL MAP

1A.16

Salmon Stream
226-26-16280
(P, 2/140)
Located within Subdivision 26f2
CH-01-U

not surveyed - U
Subdivision
(26f2)

420 m

CH-1

Map Key: PWS-35
Name: Norma Biggar
Date: 3/31/90

Wide
/// Medium
---- Narrow

ADEC Segment Length: 705m
ANADROMOUS FISH STREAM EVALUATION

SEGMENT ST/ CH-01  STREAM NO: 226-20-16280  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)
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 salmon stream lies within Subdivision U (2 of 2).
NOTE: Subdivision U was unsurveyed due to snow coverage. Stream is just beyond boundary of A and U.

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: ___________________________

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
_____ Tarmac Removal  _____ Beach Cleaner
_____ Other  (see comments)

COMMENTS: Recommended treatment includes manual removal of tarmac in area indicated on sketch map. Work should be conducted between 6/15 and 7/15 with approval of ADF&G due to salmon stream constraint.

TAG COMMENTS: ______________________________

TAG APPROVAL DATE: ________________

ADEC  ________________  FOSC: ________________  DATE: ________________

EXXON  ________________

NOAA  ________________

USCG  ________________
ANADROMOUS FISH STREAM ASSESSMENT

REGION: PRINCE WILLIAM SOUND
SEGMENT: CH-01
STREAM NO: 226-20-16280
Salmon stream mouth - fry outmigration (3/1 to 5/15)

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

No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream without authorization from ADF&G. No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inpol 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 Inpol 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 for consultation and/or permit application.

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

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

Main Bay Hatchery release (4/20 to 5/15)

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

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

Remote release sites

No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inpol 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 and/or PWS Aquaculture Association for consultation and/or permit application.

AGENCY CONTACT PERSON: PWS Aquaculture Association John McMillan or Bruce Suzumoto 424-7511

Gi1 net area (6/7 to 8/31)

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

Purse seine hook-off (7/20 to 6/30)

Set net sites (6/11 to 7/26)

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 Inpol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and/or permit application.

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

Herring spawning (4/1 to 6/15)

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

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 (6/15 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 Inpol within two weeks of arrival dates. Contact ADF&G and USFWS prior to treatment for confirmation.

AGENCY CONTACT PERSON: ADF&G Don Calkins 267-2403

USFWS Jill Parker 786-3377

Seabird colony (5/1 to 9/1)

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

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

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

Active Bald Eagle nests (6/1 to 9/1)

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

Recreation:

Tent sites (6/1 to 9/15)

Anchorage (6/1 to 9/15)

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

Lodge (6/1 to 9/15)

Special use destination

Subistence area: Salmon harvesting (5/1 to 8/30)

Finfish harvesting

Deer harvesting (8/15 to 2/28)

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 Inpol 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 ST1 04001 SUBDIVISION: 16280 DATE 4/25/90

USCG NAME: ANDY MCMILLON SIGNATURE: [Signature]

☐ NO TREATMENT RECOMMENDED  ☑ TREATMENT SUGGESTED

COMMENTS

1. MANUAL CLEAN-UP: REMOVE TAR MATS LEFT SIDE

ADFS NAME: TOM CROUSE SIGNATURE: [Signature]

☐ NO TREATMENT RECOMMENDED  ☑ TREATMENT SUGGESTED

COMMENTS

MANUAL REMOVAL OF TAR MAT BAND ON RIGHT SIDE OF CREEK AT UPPRE INTERTIDAL.

LAND MANAGER

NAME: ____________________________ SIGNATURE: ____________________________

☐ NO TREATMENT RECOMMENDED  ☐ TREATMENT SUGGESTED

COMMENTS
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.

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.

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.
**SURFACE OIL**

<table>
<thead>
<tr>
<th>CHARACTER</th>
<th>DISTRIBUTION</th>
<th>OIL/FILM COLOR</th>
<th>IMPACTED ZONES</th>
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<tr>
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<td>POODED</td>
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**SURFACE OIL**

<table>
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<tr>
<th>PIT NO.</th>
<th>PIT DEPTH (cm)</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED DEBRIS</th>
<th>OILED INTRAVEL</th>
<th>OILED INTERVAL</th>
<th>OILED IMPACTED AREA</th>
<th>OILED IMPACTED ZONE</th>
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<th>OILED DEBRIS</th>
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</table>

**SUBSURFACE OIL**

**COMMENTS**

Reviewed by: [Signature] Date: 4/27/9
**AGRII MULTI-ASSESSMENT DATA FORM**

1. SURVEY TYPE: 65-35 OS TS AVS SOW HPG PTA

2. METHODS: Aerial Ground Boating

3. DATE: 4/28/90

4. START TIME: 1025

5. STOP TIME: 1113

6. SEGMENT: Ch 001

7. STATION #: 1

8. X-UNIT: 19

9. STAY AREA: 20

10. LAT: 31°

11. LON: 114°

12. SOURCE: Map Loran

13. LOCATION: EAST COAST OF CHENEKA

14. DESCRIPTION: 

---

**EXTENT OF OIL**

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<tr>
<th>SHORELINE</th>
<th>STREAM</th>
</tr>
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<tbody>
<tr>
<td>L</td>
<td>V</td>
</tr>
<tr>
<td>30</td>
<td>1</td>
</tr>
</tbody>
</table>

**SURFACE COVERAGE**

- 30%

**SURFACE THICKNESS**

- 4 cm

**PENETRATION**

- 50%

---

**OIL TYPES**

- Fouled
- House Tape
- Sticky Stain

---

**OILED DEBRIS**

- 0% Y

---

**SHORELINE TYPES**

- Headland
- Lowlying Rocks
- Beach Cove
- Lagoon
- Marsh

---

**WAVE EXPOSURE**

- High

---

**SUBSTRATE TYPES**

- Bedrock
- Boulders
- Cobble
- Gravel
- Sand
- Mud/Silt

---

**COMMENTS**

- SMALL AREA OF TAR MAT IS ONLY SIGN
- THAT THIS BEACH HAS BEEN OILED
ADPEC MULTI-ASSESSMENT DATA FORM

1. SURVEY TYPE: OS/COS TE AVS SCHOOLS PTA
2. REGION: PWS
3. METHOD: Aerial Ground

3. DATE: 4/25/90
4. START TIME: 1025
5. STOP TIME: 1113
6. SECTOR #: CH 001
7. STATION #: 10 TIDE HT AT SURVEY: 4
8. K-UNIT: CH Steam Flood Steam
9. STATION AREA: 20 USCG QUAD: SEW B-3
10. LAT: 11 LONG: 4
11. SOURCE: Map
12. LOCATION: EAST COAST OF CHENEKA
13. DESCRIPITION:

EXTENT OF OIL

36. CATALOGED ANAD. FISH SIGHTED Y N
37. CATALOG #: 026-20-16280
38. STREAM NAME:

39. OIL IN STREAM BEDS Y N
40. OIL ON STREAM BANKS Y N
41. OIL ON BEACH ADJACENT TO HOUSHY Y N (within 50 meters)
42. OIL WITHIN 1 MILE OF STREAM Y N

SHORELINE TYPES

33. SHORELINE TYPES: Headland Lawlyng Rocks Beach
34. WAVE EXPOSURE: High Moderate Low
35. SUBSTRATE TYPES: Bedrock Boulder Cobble
36. GRAVEL X Sand Pebble/Silt

ANOMALOUS FISH PRESENCE Y N

ANOMALOUS FISH OBSERVATION

SPEICES Aereal Ground

COMMENTS: Small area of tar mat is only sign that this beach has been oilled

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

15/54
Stream 226-20-16280  
4/25/90  
Michael Fawcett  

Ecological Summary  

This stream is larger than most in the area, with high shale cobble/pebble banks and crossing a long, mostly barren shale beach. Fucus and barnacles occur in abundance in two depressed areas of MTZ on either side of the stream near the mouth. Mussels are very dense beneath the densest Fucus, and are otherwise scattered and sparse. Littorines are moderately dense throughout MTZ-LTZ. The only oil remaining was a small strip of surface asphalt on the UTZ berm south of the stream. Manual removal suggested. There are no ecological constraints re: intertidal biota.

M H Fawcett
RECOMMEND: MANUAL REMOVAL OF TAR BAND

I agree with recommendation.  I H. Good

4/25/90
226-20-16280
CHO01
TWC
Segment CH001
Stream 226-20-16280
Michael Fawcett
Ecological Summary

This stream is larger than most in the area, with high shale/cobble/pebble banks, and crossing a long, mostly barren shale beach. Fucus and barnacles occur in abundant in two depressed areas of MTZ on either side of the stream near the mouth. Mussels are very dense beneath the densest Fucus, and are otherwise scattered and sparse. Littorines are moderately dense throughout MTZ-LTZ. The only oil remaining was a small strip of surface asphalt on the UTZ berm south of the stream. Manual removal suggested. There are no ecological constraints re: intertidal biota.

M.H. Fawcett
ECOLOGICAL MAP

Subdivision A
(1:1) Subdivision Zof2
CH-04-U

Salmon Stream
226-20-16280
(P, 2197)
Located within Subdivision Zof2

not surveyed = U
Subdivision
(Zof 2)

420 m

Wide
Medium
Narrow

CH-1

Map Key: WOS-35
Name: Norma Bigger

4/30/90
1991 MAYSAP EVALUATION

SEGMENT: CH 002  SUB: B  REGION: FWS  SURVEY DATE: 5/5/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) OPEN 5/1 - 7/10, RESTRICTED 7/10 - 9/15

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

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

SHPO Signature: Leadso Oen  Date: 5/21/91

RECOMMENDATIONS:

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

COMMENTS:  
INITIAL: 

TAG:

FOSC: DUE TO PROXIMITY OF ANADROMOUS STREAM
MANUALLY PICK UP HSOR IN AREA "E"
AND MANUALLY PUMP 2 DEPTH OF OIL IN AREA OR
PITS 3 1/2 LBS

TAG APPROVAL DATE: 6/21/91  FOSC APPROVAL DATE: 6/31/91

ADEC  FOSC  CHIEF OF STAFF, FOSC
EXXON  CHIEF OF STAFF, FOSC
USCG  The state will evaluate the soil for further treatment.
NOAA
ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

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

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

TEAM NO. 6 SEGMENT CH-002 SUBDIVISION B DATE 5/5/91

<table>
<thead>
<tr>
<th>ADEC</th>
<th>NAME</th>
<th>SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Scott A. Nauman</td>
<td>Scott A. Nauman</td>
</tr>
</tbody>
</table>

☐ NTR

No treatment recommended. The surface oil found was very limited in extent and was either picked up (where possible) or broken up by the survey team. Only 2 of 12 pits showed subsurface oil and these were LOR/MOR in isolated patches. Rich intertidal growth.

<table>
<thead>
<tr>
<th>LANDMANAGER</th>
<th>NAME</th>
<th>ADEC OF ADFIG</th>
<th>SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ TREATMENT RECOMMENDED</td>
<td>Tom Crowe</td>
<td>Edward A. Civin</td>
<td></td>
</tr>
</tbody>
</table>

☒ NTR

This stream has cleaned up considerably since last summer. The fact still remains that there is still oil contamination persisting on the banks and beach area. This area (E) (PITS 4, 6, 12) could still use a thorough treatment of manual tilling and removal.

<table>
<thead>
<tr>
<th>USCG/NOAA</th>
<th>NAME</th>
<th>SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ NTR</td>
<td>CWO SPURR / R. HOFF</td>
<td>Rebecca HOFF</td>
</tr>
</tbody>
</table>

Small patches of asphalt were picked up or broken apart. Crude oil is in the upper intertidal zone and not represent a source to biological resources.
FIELD SHORELINE COMMENT SHEET

SEGMENT AS: CH 2  SUBDIVISION: _______ SITE: _______ DATE: 5-5-91

USCG
NAME: _________________________ SIGNATURE: ____________________________

☐ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:

ADEC
NAME: _________________________ SIGNATURE: ____________________________

☐ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:

LAND MANAGER
NAME: CHARLES SELANDOFF SIGNATURE: Charles Selandoff

☐ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991
REASON: Due to the fact that heavy oiling was observed along the side of the stream, this area should be tilled with a lot of manual raking and pick-up.

EXXON
NAME: _________________________ SIGNATURE: ____________________________

☐ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:

REVISION NO. 7/26/90
MAYSAP SHORELINE OILING SUMMARY

TEAM NO. 6

BIO: TOM SCHROETER

LANDMANAGER: CHARLES SELANOFF for CVC

DATE: 05/05/91

TIME: 10:05 to 11:05

TIDE LEVEL: 4/2 ft to 234 ft

ENERGY LEVEL: \[ H \]

SURVEYED FROM: FOOT BOAT HELO

WEATHER: SUN CLOUDS FOG RAIN SNOW

TOTAL LENGTH SHORELINE SURVEYED: 4,400 ft

NEAR SHORE SHEEN: 4,400 ft

EST. OIL CATEGORY LENGTH:

<table>
<thead>
<tr>
<th>L</th>
<th>SURFACE OIL CHARACTER</th>
<th>SURFACE SEDIMENT</th>
<th>SHORE SLOPE</th>
<th>WIDTH</th>
<th>LENGTH</th>
<th>ZONE</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>T</td>
<td>PBC</td>
<td>M</td>
<td>2</td>
<td>20</td>
<td>X</td>
<td>Broken up</td>
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<tr>
<td>B</td>
<td>P</td>
<td>PC</td>
<td>L</td>
<td>0-2</td>
<td>2</td>
<td>X</td>
<td>Broken up</td>
</tr>
<tr>
<td>C</td>
<td>S</td>
<td>PC</td>
<td>M</td>
<td>1</td>
<td>3</td>
<td>X</td>
<td>Heavy SOR in vegetation PC</td>
</tr>
<tr>
<td>D</td>
<td>T</td>
<td>PC</td>
<td>M</td>
<td>0-2</td>
<td>5</td>
<td>X</td>
<td>Heavy SOR, broken up</td>
</tr>
<tr>
<td>E</td>
<td>S</td>
<td>PC</td>
<td>M</td>
<td>0-5</td>
<td>2</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>S</td>
<td>PC</td>
<td>M</td>
<td>0-2</td>
<td>1</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>PIT DEPTH (cm)</th>
<th>OIL CHARACTER</th>
<th>OILED ZONE</th>
<th>CLEAN BELOW</th>
<th>H2O LEVEL</th>
<th>SHEEN COLOR</th>
<th>PIT ZONE</th>
<th>SURFACE SUBSURFACE SEDIMENTS</th>
<th>NOTES</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>26</td>
<td></td>
<td>X</td>
<td>Y</td>
<td>N</td>
<td>X</td>
<td>cp-pg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>35</td>
<td></td>
<td>X</td>
<td>Y</td>
<td>N</td>
<td>X</td>
<td>gp-gp</td>
<td></td>
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<tr>
<td>3</td>
<td>30</td>
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<tr>
<td>4</td>
<td>35</td>
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<td>Y</td>
<td>N</td>
<td>X</td>
<td>pg-g</td>
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<td>35</td>
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<td>X</td>
<td>Y</td>
<td>30</td>
<td>N</td>
<td>gp-sgp</td>
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<td>Y</td>
<td>10</td>
<td>N</td>
<td>p-sgp</td>
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<td>7</td>
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<td>N</td>
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<td>8</td>
<td>20</td>
<td></td>
<td>X</td>
<td>Y</td>
<td>10</td>
<td>N</td>
<td>bc-pq</td>
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</tr>
<tr>
<td>9</td>
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<td>X</td>
<td>Y</td>
<td>10</td>
<td>N</td>
<td>bl-pq</td>
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<td></td>
</tr>
</tbody>
</table>

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

OG COMMENTS:

In contrast to SSAT survey, there was no oil in the WITZ Subsurface (Tidal heights given above are conservative, since boulders were turned and fine sediments disturbed to inspect for possible oil below tide level during the survey).

Oil on the surface was in a few small patches; B was picked up completely and A, C, and E were broken up and raised. The most significant patch was mainly (H) for extending to a depth of 10 cm in about two places. (E location)

Prepared by: A. D. WITZ

Reviewed: 8/10/91 KG

Raired: 8/5/11
<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>PIT DEPTH (cm)</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED ZONE</th>
<th>CLEAN ZONE</th>
<th>H2O COLOR</th>
<th>SHEEN COLOR</th>
<th>PIT ZONE</th>
<th>SURFACE-UBERFACED SEDIMENTS</th>
<th>NOTES</th>
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<tr>
<td>10</td>
<td>2.0</td>
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</tr>
<tr>
<td>12</td>
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<td></td>
<td>5-10</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sheen Color:** B = Brown; R = Rainbow; S = Silver; N = None

**OG Comments:**

Reviewed 5/10/91 KG
Reviewed 5/11
CH-002-B
D.L. Little
DG map 05/05/91
1005-1105

PIT # TO OIL CLEANED H2O SHEEN SEDS ZONE

1 25 NO 4 - N cp t p MITZ
2 35 NO 4 - N s B-3 S P LITZ
3 20 NO 4 - N P B-3 LITZ
4 25 NO 4 - N P B-3 LITZ
5 25 NO 4 - N P B-3 LITZ
6 20 Y P 10 10 N P B-3 LITZ
7 20 NO 4 - N B B-7 LITZ
8 20 NO 4 - N B B-7 LITZ
9 20 NO 4 - N B B-7 LITZ
10 20 NO 4 - N B B-7 LITZ

Note: Location A is in CH-002-A
<table>
<thead>
<tr>
<th>Pit #</th>
<th>TO CH</th>
<th>Clean Shale</th>
<th>H2O Shoven Seds</th>
<th>Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>25</td>
<td>NO</td>
<td>4</td>
<td>N cp - pg</td>
</tr>
<tr>
<td>2</td>
<td>35</td>
<td>NO</td>
<td>4</td>
<td>N df - gp</td>
</tr>
<tr>
<td>3</td>
<td>35</td>
<td>NO</td>
<td>4</td>
<td>N pe - p</td>
</tr>
<tr>
<td>4</td>
<td>35</td>
<td>NO</td>
<td>4</td>
<td>N pg - 3</td>
</tr>
<tr>
<td>5</td>
<td>35</td>
<td>NO</td>
<td>4</td>
<td>N pg - 3</td>
</tr>
<tr>
<td>6</td>
<td>20</td>
<td>YS - 10</td>
<td>4</td>
<td>R p - yp</td>
</tr>
<tr>
<td>7</td>
<td>20</td>
<td>NO</td>
<td>4</td>
<td>N bc - pg</td>
</tr>
<tr>
<td>8</td>
<td>10</td>
<td>NO</td>
<td>4</td>
<td>N bc - yp</td>
</tr>
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<td>9</td>
<td>20</td>
<td>NO</td>
<td>15</td>
<td>N bc - pg</td>
</tr>
<tr>
<td>10</td>
<td>35</td>
<td>NO</td>
<td>25</td>
<td>N cb - pg</td>
</tr>
</tbody>
</table>

- **Map Code:** CH-002-B
- **Date:** 05/05/91
- **Geologist:** D.J. Little
- **Map:** 1005-1105

**Diagram Notes:**
- Broken & raised
- Not surveyed
- chimney
- A: 2 x 20 <1% AP Already worked
- B: 0.2 x 2 CV 15%
- C: 1 x 3 AP 5% 10% Already worked

**Legend:**
- AP: 2% - B/A (A) 5% (H) 10% (S) 15%
MAYSAP BIOLOGICAL SUMMARY FORM

TEAM 6

DATE 5/5/91

SEGMENT C4-002

TIDAL HEIGHT (Range) 4 ft 5 in + 23 ft

SUBDIVISION B

BIOLOGIST T.A. Schroeder

SEA STATE Light Chop

WIND SPEED/DIRECTION Variable 5 mph

PHOTOGRAPHS: ROLL # FRAME #

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

The beach area is very low in food and animal life production. Beach is light state and sand and

vegetation. Primary biological communities are to

the east and west of the area subterranean stream

beach area, where larger rocks are present and

provide a more stable substrate for organisms
to grow.

If any work is to be conducted in this area, the

beach areas to the east and west should be tidal

access should minimize impact on scoria

mudflats on gulls as there are the only

organism species in the area

as a substitute and stabilize the beach area.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS

<table>
<thead>
<tr>
<th>Birds</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
<th>FISH OBSERVED SPECIES PRESENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eagles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seabirds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterfowl</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gulls/Kittiwakes</td>
<td>1 gulls</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Shorebirds</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Crows</td>
<td>1 (101)</td>
<td></td>
<td>8 (501)</td>
</tr>
<tr>
<td>Other Birds</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

FISH OBSERVED SPECIES PRESENT

LAND MAMMALS

<table>
<thead>
<tr>
<th>Marine Mammals</th>
<th># OBSERVED</th>
<th>SPECIES</th>
<th># OBSERVED</th>
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<tbody>
<tr>
<td>Sea Otters</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pinnipeds (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whales (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Shoreline subdivision map showing important biological features attached.
CH-002-B 5/5/91
Bio. Map T. A. Schoeber
1005-1105

East Beach debris of bermudez, sand, shell and termite credit proceed.

1. 0.2 x 1
   CV 15%

2. 0.5 x 2
   5% AP

3. 0.2 x 2 m
   AP 27%
   (h) SOA 5%
   Broken & raked

4. 0.2 x 5
   1% (h) SOA - APR

5. 0.2 x 5
   1% APR

Anadromous Stream
1991 MAYSAP EVALUATION

SEGMENT: CH 002  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,
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:

<table>
<thead>
<tr>
<th>TREATMENT REQUIRED (Y or N)</th>
<th>INITIAL</th>
<th>TAG</th>
<th>FOSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 ____________________________
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.
TEAM NO.: H
SEGMENT: CH09 - A
SUBDIVISION: A
DATE: 7/29/91

ADEC
NAME: Dianne Munson
SIGNATURE: __________________________

☐ NTR  □ Treatment Recommended

- Coats and stains on undersides of cobblestones, small boulders. 
- Tar balls were found and removed.

EXXON
NAME: Larry D. Clason
SIGNATURE: __________________________

☐ NTR  □ Survey team located very little oil. Visco clean-up removed 1 small bag of tar balls. No further work to be done.

ANDMANAGER
NAME: Larry Evandroff
SIGNATURE: __________________________

☐ NTR  □ Treatment Recommended

- Portion of segment not surveyed because previous survey showed no oil. Area surveyed we found tar balls/patties - all were picked up. Stains under rocks remain.

USCG/NOAA
NAME: Jerry Schultz
SIGNATURE: __________________________

☐ NTR

- Removed what was recoverable. No further action needed.
**MAYSAP SHORELINE OILING SUMMARY**

**SEGMENT:** Choo2  
**SUBDIVISION:** A  
**DATE:** 1/17/91

**TIME:** 06:27 to 06:50  
**TIDE LEVEL:** +5.5 ft. to +4.5 ft.  
**ENERGY LEVEL:**  
- [ ] H  
- [ ] M  
- [ ] L

**SURVEYED FROM:**  
- [x] FOOT  
- [ ] BOAT  
- [ ] HELO  
**WEATHER:**  
- [ ] SUN  
- [x] CLOUDS  
- [ ] FOG  
- [ ] RAIN  
- [ ] SNOW

**TOTAL LENGTH SHORELINE SURVEYED:** 236 m  
**NEAR SHORE SHEEN:**  
- [ ] BR  
- [ ] RB  
- [ ] SL  
- [x] NONE

**EST. OIL CATEGORY LENGTH:**  
- W: 0 m  
- M: 0 m  
- N: 0 m  
- V: 131 m  
- L: 0 m

<table>
<thead>
<tr>
<th>L</th>
<th>SURFACE OIL CHARACTER</th>
<th>SURFACE SEDIMENT</th>
<th>SHORE SLOPE</th>
<th>AREA</th>
<th>ZONE</th>
<th>NOTES</th>
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<tbody>
<tr>
<td>O</td>
<td>C</td>
<td>AP</td>
<td>MS</td>
<td>TB</td>
<td>SOR</td>
<td>CV</td>
</tr>
</tbody>
</table>

**DISTRIBUTION:**  
- C: 91-100%  
- B: 51-60%  
- P: 11-60%  
- 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**  
**CLEAN BELOW**  
**H2O LEVEL**  
**SHEEN COLOR**  
**ZONE**  
**PIT ZONE**  
**SURFACE-SUBSURFACE SEDIMENTS**  
**NOTES**

**SHEEN COLOR:**  
- B: BROWN  
- R: RAINBOW  
- S: SILVER  
- N: NONE

**OG COMMENTS:** This subdivision consists of a steep bedrock shoreline with a fringe of large boulder boulders and an inclined face of cobble / pebbles over fliers. The south western part of the intertidal includes a small bedrock stack and buried pebb. Shallow pits showed friable sediments, matrix, or a rough washable. No sign of subsurface oil was found.
Few stains on Ki undaside of cb liv/ed w/in sand.

Legend:
- H: Bedrock
- □: Angular/Oblique Trench
- □: Bed/chrome

D-502-A
1 May 91
6:27-06:50

Two SOR < 25%
1 X 100

Small Stock

Few pebbles H SOR < 20 cm diam
Scattered throughout subdivision

Zodiac

Reviewed: F.W. 5/15/91
DIVISION A BIOLOGIST  JIM BARRY

TEAM 4  DATE/TIME  May 1, 1991  0630 => 0655
SEGMENT CH002  TIDAL HEIGHT (Range)  +5.5 => +4.5
SUBDIVISION A  BIOLOGIST  JIM BARRY
A STATE Cala  WIND SPEED/DIRECTION  Variable, 5 kt., Cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

AI  Oiled Site (LSOR) located on the high zone of a high angle beach with angular cobbles and boulders. This is a medium exposure site. The oiled area is slightly (ca 1 ft) above the upper extent of the Fucus zone. Black lichen, mosses, and filamentous green algae (Urospora?) are present at the oiled site, as well as barnacles (sparse). Littorines also are present in moderate densities. Below the oiled area, Fucus is denser, as are other key species. The lowest zone has fairly high cover of Fucus and other algae, including several species of red and green algae. Recruitment below the oiled area is evident for Fucus, barnacles, littorines, limpets, and red and green algae.

MANUAL PICK-UP PERFORMED DURING SURVEY. Additional cleanup, if recommended, will not adversely impact the intertidal biota in the vicinity of the oiled area.

Summary of Biological Characteristics of CH002-A

This site is located at one side of a small bay with a stream entering from the upland. The substratum grades from exposed headlands with rich attached biota to a cobbly beach near the stream outlet. The headlands have high cover of Fucus, barnacles, limpets, mussels, and associated species in the middle and upper zones. The lower zones have high cover of red, green and brown algae, as well as sea stars, urchins, crabs, etc. Towards the inshore end of the subdivision, the diversity and abundance of species decrease, as the site become less exposed and more influenced by the disturbance of cobbly scour.

WILDLIFE OBSERVATIONS - Completed on all subdivisions

<table>
<thead>
<tr>
<th>BIRDS</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
<th>FISH OBSERVED</th>
<th>SPECIES PRESENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eagles</td>
<td>Eagle Nest on Map Observed During Survey (0 eagles)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seabirds</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterfowl</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gulls/Kittiwakes</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shorebirds</td>
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<td></td>
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</tr>
<tr>
<td>Corvids</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Birds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MARINE MAMMALS</th>
<th># OBSERVED</th>
<th>SPECIES</th>
<th># OBSERVED</th>
</tr>
</thead>
<tbody>
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<td></td>
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</tr>
<tr>
<td>Pinnipeds (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whales (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Shoreline subdivision map showing important biological features attached.
CH002-A Biological Report, continued

List of Species from CH002-A

I. Marine Plants
1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
   Enteromorpha sp., Ulva sp., Urospora sp.
3. Brown Algae - Phaeophyta
   Agarum fimbriatum, Fucus distichus, Hildenbrandia sp., Ralfsia sp.,
   Syctosiphon lomentaria
4. Red Algae - Rhodophyta
   Calliarthron sp., Corallina sp., Cumagloia andersonii, Halosaccion
   glandiforme, Lithothamnion sp., Mastocarpus sp., Membranoptera dimorpha,
   Odonthalia floccosa, Palmaria palmata, Rhodomela larix.

II. Marine Animals
1. Sponges - Porifera
   Halichondria sp.
2. Anemones
   Anthopleura artemesia, Epiactis ritteri, Metridium senile, Urticina
   crassicornis.
3. Hydroids - Sertulariidae - Sertularella?
4. Flatworms - Platyhelminthes - Polyclads
5. Nemertean Worms - Ribbon Worms - Emplectonema gracile
6. Polychaete Worms
   Nereidae - Nereis spp.
   Serpulidae
   Serpula sp., Crucigera sp.,
   Spiorbidae - Spiorbis sp.
9. Peanut worms - Sipunculids - Phascolosoma agassizii
10. Crustaceans
    a. Amphipods - Orchestia sp.?
    b. Barnacles
       Balanus glandula, Chthamalus dalli, Semibalanus cariosus
    c. Crabs
       Hemigrapsus oregonensis, Paguridae (hermit crabs), Oregonia gracilis.
11. Mollusca
    a. Chitons - Mopalia mucosa, Tonicella lineata,
    b. Snails - Gastropods
       Littorina scutulata, L. sitkana, Nucella lamellosa, N. lima
    c. Limpets
       Lottia digitalis, L. persona
    e. Mussels and Clams - Mytilus edulis
12. Echinoderms
    a. Brittle Stars - Ophiolus sp.?
    b. Sea stars
       Dermasterias imbricata, Evasterias truscheli, Leptasterias hexactis,
       Pycnopodia helianthoides
    d. Urchins - Strongylocentrotus droebachiensis
15. Fishes
    Cottidae - unknown species
    Liparidae - Liparis callyodon
    Stichaeidae - Xiphister atropurpureus, X. aucusus
Bio Sketch Map
CH002-A
5-1-91

Black lichen, mossy, filamentous green algae, sparse barnacles, moderate densities of littorinids

Zodiak
Eagle Nest

Cobble boulders
Bedrock
Angular boulders

Meters
0 100 200
I 1991 MAYSAP EVALUATION

SEGMENT: CH 002  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, Anadromous stream, Fish Harvest area

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

SHPO Signature: [Signature]  Date: 5/10/91

RECOMMENDATIONS:

TREATMENT REQUIRED (Y or N) N  INITIAL  TAG  FOSC

Manual Pickup (Check as Req.)  ______  ______  ______
Spot Washing  ______  ______  ______
Bio-Customblen Only  ______  ______  ______
Bio-Inipol/Custmblen  ______  ______  ______
Other  ______  ______  ______
Other  ______  ______  ______

COMMENTS:
INITIAL: ____________________________________________

TAG: ____________________________________________

FOSC: ____________________________________________

TAG APPROVAL DATE: 5/10/91  FOSC APPROVAL DATE: 5/15/91

ADEC  EXXON  USCG  NOAA

E. E. PAGE, CDR, USCG CHIEF OF STAFF, FOSC
ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

Eagle Nest: Access restricted from 3/1 to 9/1. USFWS 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.
**MAYSAP FIELD SHORELINE COMMENT SHEET**

<table>
<thead>
<tr>
<th>TEAM NO.</th>
<th>SEGMENT</th>
<th>SUBDIVISION</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>CH002 - A</td>
<td>A</td>
<td>1/17/91</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADEC NAME</th>
<th>SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dianne Munson</td>
<td></td>
</tr>
</tbody>
</table>

- **NTR** Treatment Recommended
- Coats and stains on undersides of elbows, small boulders.
- Tarballs were found and removed.

<table>
<thead>
<tr>
<th>EXXON NAME</th>
<th>SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Larry D. Clise</td>
<td>Larry D. Clise</td>
</tr>
</tbody>
</table>

- **NTR** Survey team located very little oil. Very few removed.
- 1 small bag of tar balls. No further work to do on this area.

<table>
<thead>
<tr>
<th>LANDMANAGER NAME</th>
<th>SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Larry Evonoff</td>
<td>LMK S 판</td>
</tr>
</tbody>
</table>

- **NTR** Treatment Recommended
- Portion of segment not surveyed because previous survey showed no oil. Area surveyed we found tar balls/patties — all were picked up. Stains under rocks remain.

<table>
<thead>
<tr>
<th>USCG/NOAA NAME</th>
<th>SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jerry Schultz</td>
<td>Jerry Schultz</td>
</tr>
</tbody>
</table>

- **NTR**
- Removed what was recoverable, no further action needed.
**MAYSAP SHORELINE OILING SUMMARY**

**TIME** 06:27 to 06:50

**TIDE LEVEL** +5.5 ft to +4.5 ft

**ENERGY LEVEL**:
- **H**
- **M**
- **L**

**SURVEYED FROM**:
- **FOOT**
- **BOAT**
- **HELO**

**WEATHER**:
- **SUN**
- **CLOUDS**
- **FOG**
- **RAIN**
- **SNOW**

**TOTAL LENGTH SHORELINE SURVEYED**: 236 m

**NEAR SHORE SHEEN**:
- **BR**
- **OR**
- **SL**
- **X** **NONE**

**EST. OIL CATEGORY LENGTH**:
- **W** 0 m
- **M** 0 m
- **N** 0 m
- **V** 136 m
- **O** 31 m
- **US** 0 m

---

### L C AP MS TB SOR CV CT ST FL DB NO
- **OIL CHARACTER**
- **SLOPE**
- **AREA**
- **ZONE**
- **NOTES**

---

### Pit Pit Subsurface Oil Character

### Oiled Zone

### Clean Below

### H2O Level

### Sheen Color

### Pit Zone

### Surface-Subsurface Sediments

---

**SHEEN COLOR**:
- **B** - BROWN
- **R** - RAINBOW
- **S** - SILVER
- **N** - NONE

---

**OG COMMENTS**:

This subdivision consists of a steep bedrock breakage with a fringe of large boulder talus and a streak of cobble/pellets over fines. The north western part of the intertidal includes a small bedrock patch and buried peat. Shallow pits showed poorly sorted fine sediments, peat, or a very water-table. No sign of subsurface oil was found.
<table>
<thead>
<tr>
<th>Observed Features</th>
</tr>
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<tbody>
<tr>
<td>Few stains on underside of ch 1 2d w. thin band.</td>
</tr>
<tr>
<td>2SO4 &lt; 1° Al</td>
</tr>
<tr>
<td>1 x 100</td>
</tr>
</tbody>
</table>

**Legend**

- Bedrock
- Angular Boulders/Collectibles
- Talus
- 2D/3D change

**Map Details**

- CHOOS-A
- LM Samples
- 1 May 91
- 06-27-0650

**Notes**

- Few palettes, HSO4 < 30 cm diam scattered throughout subdivision
- P.W.
- Reviewed 5-4-94
- Review 4: 5-16-94
Oiled Site (LSOR) located on the high zone of a high angle beach with angular cobble and boulders. This is a medium exposure site. The oiled area is slightly (ca 1 ft) above the upper extent of the Fucus zone. Black lichen, mosses, and filamentous green algae (Urospora?) are present at the oiled site, as well as barnacles (sparse). Littorines also are present in moderate densities. Below the oiled area, Fucus is denser, as are other key species. The lowest zone has fairly high cover of Fucus and other algae, including several species of red and green algae. Recruitment below the oiled area is evident for Fucus, barnacles, littorines, limpets, and red and green algae.

MANUAL PICK-UP PERFORMED DURING SURVEY. Additional cleanup, if recommended, will not adversely impact the intertidal biota in the vicinity of the oiled area.

Summary of Biological Characteristics of CH002-A

This site is located at one side of a small bay with a stream entering from the upland. The substratum grades from exposed headlands with rich attached biota to a cobble beach near the stream outlet. The headlands have high cover of Fucus, barnacles, limpets, mussels, and associated species in the middle and upper zones. The lower zones have high cover of red, green and brown algae, as well as sea stars, urchins, crabs, etc. Towards the inshore end of the subdivision, the diversity and abundance of species decrease, as the site become less exposed and more influenced by the disturbance of cobble scour.

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Shoreline subdivision map showing important biological features attached.
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   Enteromorpha sp., Ulva sp., Urospora sp.
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4. Flatworms - Platyhelminthes - Polyclads
5. Nemertean Worms - Ribbon Worms - Empletonema gracile
6. Polychaete Worms
   Nereidae - Nereis spp.
   Serpulidae
   Serpula sp., Crucigera sp., Spiorbidae - Spiorbis sp.
7. Peanut worms - Sipunculids - Phascolosoma agassizii
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   b. Snails - Gastropods
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   c. Limpets
      Lottia digitalis, L. persona
   d. Mussels and Clams - Mytilus edulis
10. Echinoderms
    a. Brittle Stars - Ophiolus sp., ?
    b. Sea stars
       Dermasterias imbricata, Evasterias truscheli, Leptasterias hexactis, Pycnoides helianthoides
    c. Urchins - Strongylocentrotus droebachiensis
12. Fishes
    Cottidae - unknown species
    Liparidae - Liparis callyodon
    Stichaeidae - Xiphister atropurpureus, X. mucosus
BIO SKETCH MAP
CH002-A
5-1-91

BLACK LICHEN, MOSSES,
FILAMENTOUS GREEN ALGAE,
SPARSE BARNACLES, MODERATE
DENSITIES OF LITTORINES

ZODIAC
Eagle Nest

Cobble beach
Bedrock
Angular Boulders
ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT CH-2 SUBDIVISION B (2 of 2)

WORK WINDOW

<table>
<thead>
<tr>
<th>Manual Pickup</th>
<th>OPEN</th>
<th>Tarmat Removal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioremediation More Than 100m From Stream</td>
<td>OPEN</td>
<td></td>
</tr>
<tr>
<td>Bioremediation Less Than 100m From Stream</td>
<td>WORK PRIOR TO 7/10 (ADF&amp;G MONITOR REQ.)</td>
<td></td>
</tr>
</tbody>
</table>

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A, 1B Salmon Stream ADF&G catalogued anadromous stream (226-20-16180) forms the boundary between Subdivisions A and B. 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 Closed to bioremediation after 7/20. No constraint to manual pickup or tarmat removal.

OTHER ECOLOGICAL CONSIDERATIONS

Restrict boat and air traffic to essential minimum after 7/20. No disturbance to stream bed or bank. 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 unilod biota and substrate.

SEE ANADROMOUS FISH STREAM EVALUATION ADDENDUM (STREAM NO. 226-20-16180) FOR ADDITIONAL CONSTRAINT INFORMATION

TAG APPROVAL DATE 5/29/90

ADEC Art Weiner AG Weiner
EXXON
NOAA
USCG

FOSC [Signature] Date MAY 29 1990

Prepared by [Signature] Date 5/20/90
SHORELINE EVALUATION

SEGMENT ST/ CH-02 SUBDIVISION B (2 OF 2) DATE 4/1/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
Stream mouth (no. 16180) - Salmon Fry outmigration (1A) - 3/1 to 5/15 and salmon spawning (1B) - 7/10 to 8/31; Tent sites (60) - 6/1 to 9/15.

SUBDIVISION ECOLOGICAL CONSTRAINTS: No disturbance of stream bed or banks unless authorized by ADF&G. Contact ADF&G Habitat Division prior to treatment for permit. Avoid disturbance/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: April 12, 1990

OILING CATEGORIZATION:
Wide 42 m: Medium 20 m: Narrow 0 m: V.Light 967 m: No Oil 91 m
Subsurface Oil Observed: Yes X No
Maximum Depth 25 cm

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

COMMENTS: Manual pickup of oil spill response debris as shown on sketch map. Breakup and removal of tarmat, and bioremediation of areas of subsurface and surface oiling as shown on map. Do not bioremediate within 100 m of stream. Work between 7/15 and 7/10 based on anadromous stream constraints.

TAG COMMENTS:

TAG APPROVAL DATE:
ADEC
EXXON
NOAA
USCG

DATE: 5-14-90
FOSC: Notify CVE 24 hrs in advance of work

“John Beaul”

date: 5/11/90

“Avvy Ten”
date: 5/11/90

“M. J. Hall”

date: 5/11/90
SHORELINE EVALUATION

SEGMENT ST/ CH-02  SUBDIVISION B (2 OF 2) DATE 4/1/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
Stream mouth (no. 16180) - Salmon Fry outmigration (1A) - 3/1 to 5/15 and salmon spawning (1B) - 7/10 to 8/31; Tent sites (60) - 6/1 to 9/15.

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OILING CATEGORIZATION:
Wide 42 m: Medium 0 m: Narrow 0 m: V. Light 967 m: No Oil 91 m
Subsurface Oil Observed: Yes X No X Maximum Depth 25 cm

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

COMMENTS: Manual pickup of oil spill response debris as shown on sketch map. Breakup and removal of tarmac, and bioremediation of areas of subsurface and surface oiling as shown on map. Do not bioremediate within 100m of stream. Work between 5/15 and 7/10 based on anadromous stream constraints.

TAG COMMENTS:

TAG APPROVAL DATE:
ADEC
EXXON
NOAA
USCG

DATE: 5-16-90

NOTIFY ONE TO TWO HRS IN ADVANCE OF WORK
SEGMENT ST/ DT

DATE 1/4/90

CHECKLIST
- N Arrow
- Approach, Scale
- Seg/Sub, Photo
- Ct, Dial
- Wash
- Length
- Ct Center
- Subsurface Character
- Ext. HNL/ML
- SSL
- Profile Location(s)
- PLI Location(s)
- Photo Location(s)

LEGEND
1. N
- Subsurface QL
2. N
- Subsurface QL

C/T/C
- Continuous Distribution
C/T/B
- Broken Distribution
C/T/P
- Varying Distribution
C/T/S
- Plated Distribution

Red Vegetation

Character Length (m): AP 20 PO 2 CV 90 CT 60 ST - MS - PT - TB - FL 150 NO

Sketch Map

20 cm CT boilub ring

Bedrock:

2 m cv band on rock cliff:

P.o. in Tar:

Boulders/cobble/pebble inamous small patches

P.o. in tar:

Boulder/cobble/pebble

P.o. in tar:

Small granite/pebble

Remove Pavement

Start of subdivision CH-092 B

Sheen

BIO

R&B Area

Where sample found

Boulder/stone/rock

CV soil in crevices

5 m fences

Jacket

Boulder

SST at Tar

Cobble/pebble

Cobble/pebble

Snow

SSL

C/T/6.5%:

1295 m

C/T/15.5%:

1325 m

HNL

AF

CT/C:

1295 m

CT/B:

1305 m

CT/S:

1310 m

PLI:

1315 m

PLI:

1320 m

PLI:

1325 m

PLI:

1330 m

PLI:

1335 m

PLI:

1340 m

PLI:

1345 m

PLI:

1350 m

PLI:

1355 m

PLI:

1360 m

PLI:

1365 m

PLI:

1370 m

PLI:

1375 m

PLI:

1380 m

PLI:

1385 m

PLI:

1390 m

PLI:

1395 m

PLI:

1400 m

PLI:

1405 m

PLI:

1410 m

PLI:

1415 m

PLI:

1420 m

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1425 m

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1430 m

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1435 m

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1440 m

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1445 m

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1450 m

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1455 m

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1460 m

PLI:

1465 m

PLI:

1470 m

PLI:

1475 m

PLI:

1480 m

PLI:

1485 m

PLI:

1490 m

PLI:

1495 m

PLI:

1500 m

PLI:

1505 m

PLI:

1510 m

PLI:

1515 m

PLI:

1520 m

PLI:

1525 m

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1530 m

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1535 m

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1540 m

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1560 m

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1565 m

PLI:

1570 m

PLI:

1575 m

PLI:

1580 m

PLI:

1585 m

PLI:

1590 m

PLI:

1595 m

PLI:

1600 m

PLI:

1605 m

PLI:

1610 m

PLI:

1615 m

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1620 m

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1625 m

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1630 m

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1660 m

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1665 m

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1675 m

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1680 m

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1685 m

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1690 m

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1695 m

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1705 m

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1715 m

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1770 m

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1875 m

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1880 m

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1885 m

PLI:

1890 m

PLI:

1895 m

PLI:

1900 m

PLI:

1905 m

PLI:

1910 m

PLI:

1915 m

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1920 m

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1925 m

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1930 m

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1955 m

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1960 m

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1965 m

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1970 m

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1975 m

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1980 m

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1985 m

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1990 m

PLI:

1995 m

PLI:

2000 m

PLI:

2005 m

PLI:

2010 m

PLI:

2015 m

PLI:

2020 m

PLI:

2025 m

PLI:

2030 m

PLI:

2035 m

PLI:

2040 m

PLI:

2045 m

PLI:

2050 m

PLI:

2055 m

PLI:

2060 m

PLI:

2065 m

PLI:

2070 m

PLI:

2075 m

PLI:

2080 m

PLI:

2085 m

PLI:

2090 m

PLI:

2095 m

PLI:

2100 m

PLI:

2105 m

PLI:

2110 m

PLI:

2115 m
SHORELINE EVALUATION

SEGMENT ST/ CH-02   SUBDIVISION A (1 OF 2) DATE 4/1/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
Stream mouth (no. 16180) - Salmon fry outmigration (1A) - 3/1 to 5/15 and salmon spawning (1B) - 7/10 to 8/31; Tent sites (60) - 6/1 to 9/15.

SUBDIVISION ECOLOGICAL CONSTRAINTS: No disturbance of stream bed or banks unless authorized by ADF&G. Contact ADF&G Habitat Division prior to treatment for permit. Avoid disturbance/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: April 12, 1990

OILING CATEGORIZATION:
Wide 0 m: Medium 0 m: Narrow 20 m: V.Light 144 m: No Oil 71 m Subsurface Oil Observed: Yes X No Maximum Depth 15 cm

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

COMMENTS: Breakup and removal tarmat, manual pickup of pooled mousse, and bioremediation of coated areas to within 100m of anadromous stream only. Work between 5/15 - 7/10 based on salmon spawning constraints.

TAG COMMENTS:

TAG APPROVAL DATE: 4/1/90
ADEC [Signature] DATE: 5-9-90
EXXON [Signature] DATE: __________
NOAA _______ DATE: __________
USCG [Signature] DATE: __________
1991 MAYSAP EVALUATION

SEGMENT: CH 002  SUB: B  REGION: FWS  SURVEY DATE: 5/5/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) OPEN 5/1 - 7/10, RESTRICTED 7/10 - 9/15

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

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

SHPO Signature: __________________________ Date: __________________________

RECOMMENDATIONS:

<table>
<thead>
<tr>
<th>TREATMENT REQUIRED (Y or N)</th>
<th>INITIAL</th>
<th>TAG</th>
<th>FOSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Manual Pickup (Check as Req.)_________    _______    _______    _______
Spot Washing_________    _______    _______    _______
Bio-Customblen Only_________    _______    _______    _______
Bio-Inipol/Customblen_________    _______    _______    _______
Other_______________________    _______    _______    _______
Other_______________________    _______    _______    _______

COMMENTS:

INITIAL: ____________________________________________
The above recommendations are the result of an initial review and should be verified by additional investigation.

TAG: _______________________________________________

FOSC: _______________________________________________

TAG APPROVAL DATE: ________  FOSC APPROVAL DATE: ________

ADEC_______________________    FOSC _______________________

EXXON_______________________

USCG_______________________

NOAA_______________________
ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

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

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

**TEAM NO.** 6  **SEGMENT** CH-002  **SUBDIVISION** B  **DATE** 5/5/91

<table>
<thead>
<tr>
<th>ADEC</th>
<th>NAME</th>
<th>SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>EXXON</th>
<th>NAME: Scott A. Nauman</th>
<th>SIGNATURE: Scott A. Nauman</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NTR**

- No treatment recommended. The surface oil found was very limited in extent and was either picked up (where possible) or broken up by the survey team. Only 2 of 12 pits showed subsurface oil and these were LOR/MAR in isolated patches. Rich intertidal growth.

<table>
<thead>
<tr>
<th>LANDMANAGER</th>
<th>X DEC</th>
<th>NAME: Tom Cross OF ADFG</th>
<th>SIGNATURE: [Signature]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

**NTR**

- This stream has cleaned up considerably since last summer. The fact still remains that there is still oil contamination persisting on the banks and beach area. This area (E) (pits #16, 12) could still use a thorough treatment of manual tilling and removal.

<table>
<thead>
<tr>
<th>USCG/NOAA</th>
<th>NAME: CWO Sperber H. Hoff</th>
<th>SIGNATURE: [Signature]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

**NTR**

- Small patches of asphalt were picked up or broken apart containing oil is in the upper intertidal zone and not represent a source of biological resources.
SEGMENT AS CH 2  SUBDIVISION: _________ SITE: _______ DATE 5-5-91

USCG
NAME ___________________________ SIGNATURE ___________________________

☐ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON: ____________________________

ADEC
NAME ___________________________ SIGNATURE ___________________________

☐ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON: ____________________________

AND MANAGER
NAME CHARLES SELANDOFF SIGNATURE ___________________________

☒ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON: Due to the fact that heavy oiling was observed along the side of the stream, this area should be tilled with a lot of manual raking and pick-up.

EXXON
NAME ___________________________ SIGNATURE ___________________________

☐ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON: ____________________________
**MAYSAF SHORELINE OILING SUMMARY**

**TEAM NO. 6**

**TIME 10:05 to 11:05**

**SURVEYED FROM:**
- FOOT
- BOAT
- HELO

**WEATHER:**
- SUN
- CLOUDS
- FOG
- RAIN
- SNOW

**TIDE LEVEL:**
- 4'2" ft. to 2'3 1/2 ft.

**ENERGY LEVEL:**
- H
- M
- L

**TOTAL LENGTH SHORELINE SURVEYED:** 168 m

**NEAR SHORE SHEEN:**
- BR
- RB
- SL
- NO

**EST. OIL CATEGORY LENGTH:**
- W...
- M...
- N...
- V...
- M...
- N...
- US...

---

**DISTRIBUTION:**
- C = 61-100%
- B = 51-90%
- P = 11-60%
- T = <1%

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

**PHOTO ROLL # MAYSAF-**

**FRAMES**

---

**OG COMMENTS:**

In contrast to SEAT survey, there was no oil in the LITZ subsurface.

(Tidal heights given above are conservative; since boulders were turned and fine sediments disturbed to inspect for possible oil below tide level during the survey.)

Oil on the surface was in a few small patches; B was picked up completely, and A, C, and E were broken up and raised. The most significant patch was mainly thick, extending to a depth of 10 cm in about two places. (E location):

**Reviewed 8/10/91**

**Revised 5/5/91**
<table>
<thead>
<tr>
<th>Pit No.</th>
<th>Pit Depth</th>
<th>Subsurface Oil Character</th>
<th>Oiled Zone</th>
<th>Clean Below</th>
<th>H2O Level</th>
<th>Sheen Color</th>
<th>Pit Zone</th>
<th>Surface-Subsurface Sediments</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>20</td>
<td></td>
<td></td>
<td>Y</td>
<td>15</td>
<td>N</td>
<td>x</td>
<td>bc-pg</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>30</td>
<td></td>
<td></td>
<td>Y</td>
<td>25</td>
<td>N</td>
<td>x</td>
<td>ch-pg</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>20</td>
<td>x x</td>
<td>5-10</td>
<td>Y</td>
<td></td>
<td>s</td>
<td>x</td>
<td>psg-gsp</td>
<td></td>
</tr>
</tbody>
</table>

Sheen Color: B = Brown; R = Rainbow; S = Silver; N = None

OG Comments:
Note: Location A is in CH-002-A
**MAYSAP BIOLOGICAL SUMMARY FORM**

**TEAM #** 6  
**DATE** 5/5/91  
**SEGMENT #** CH-002  
**TIDAL HEIGHT (Range)** $+4^\circ\text{F} + 23^\circ\text{F}$

**SUBDIVISION** B  
**BIOLOGIST** T.A. Schroeder  
**SEA STATE** Light Chop  
**WIND SPEED/DIRECTION** Variable South

**PHOTOGRAPHS**: ROLL #  
**FRAME #**

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

*Entire beach area is very low in sand and gravel. Wet portion beach is light sand and sand and
indurated. Primary biological communities are to
the east and west of the main accumulations from
beach area where larger rocks are present and
provide a more stable substrate for organisms
to grow.*

*…if any work is to be conducted in this area, the
beach area to the east and west should be total
access should minimize impact on seagrass
mussel beds on flats as these are the only
organisms present in the T/C which may
populate and stabilize the beach area.*

**WILDLIFE OBSERVATIONS**

**TO BE COMPLETED IN ALL SUBDIVISIONS**

<table>
<thead>
<tr>
<th>BIRDS</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
<th>FISH OBSERVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eagles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seabirds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterfowl</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gulls/Kittiwakes</td>
<td>1 galala</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Shorebirds</td>
<td>(Revis.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corvids</td>
<td></td>
<td>8 (Finch)</td>
<td></td>
</tr>
<tr>
<td>Other Birds</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MARINE MAMMALS**

<table>
<thead>
<tr>
<th>SPECIES</th>
<th># OBSERVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sea Otters</td>
<td></td>
</tr>
<tr>
<td>Pinnipeds(specific)</td>
<td></td>
</tr>
<tr>
<td>Whales(specific)</td>
<td></td>
</tr>
</tbody>
</table>

**LAND MAMMALS**

<table>
<thead>
<tr>
<th>SPECIES</th>
<th># OBSERVED</th>
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<tr>
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<tr>
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</tr>
<tr>
<td>Whales(specific)</td>
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</tr>
</tbody>
</table>

Shoreline subdivision map showing important biological features attached.
ADDENDUM: SUBDIVISION CONSTRAINTS
SEGMENT CH-2 SUBDIVISION B (2 of 2)

WORK WINDOW

<table>
<thead>
<tr>
<th>Manual Pickup</th>
<th>Tarmat Removal</th>
<th>OPEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioremediation More Than 100m From Stream</td>
<td>WORK PRIOR TO 7/20</td>
<td></td>
</tr>
<tr>
<td>Bioremediation Less Than 100m From Stream</td>
<td>WORK PRIOR TO 7/10</td>
<td>(ADF&amp;G MONITOR REQ.)</td>
</tr>
</tbody>
</table>

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B Salmon Stream

ADF&G catalogued anadromous stream (226-20-16180) forms the boundary between Subdivisions A and B. 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

Closed to bioremediation after 7/20. No constraint to manual pickup or tarmat removal.

OTHER ECOLOGICAL CONSIDERATIONS

Restrict boat and air traffic to essential minimum after 7/20. No disturbance to stream bed or bank. No flushing of pollutants or sediments into stream drainage; do not allow Inipol to enter stream flow. On-site examination and consultation by ADF&G monitor is required prior to bioremediation in order to authorize a setback distance from the stream during chemical application; if ADF&G monitor's presence is impossible, authorization may be given by the ADEC monitor. Avoid any unnecessary disturbance or damage to unrolled biota and substrate.

SEE ANADROMOUS FISH STREAM EVALUATION ADDENDUM (STREAM NO. 226-20-16180) FOR ADDITIONAL CONSTRAINT INFORMATION

TAG APPROVAL DATE 6/4/90
ADEC  
EXXON  
NOAA  
USCG

PREPARED BY 6/4/90
SEGMENT ST/ CH-02  SUBDIVISION B (2 OF 2)  DATE  4/1/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
Stream mouth (no. 16180) - Salmon Fry outmigration (1A) - 3/1 to 5/15 and salmon spawning (1B) - 7/10 to 8/21; Tent sites (60) - 6/1 to 9/15.

SUBDIVISION ECOLOGICAL CONSTRAINTS: No disturbance of stream bed or banks unless authorized by ADF&G. Contact ADF&G Habitat Division prior to treatment for permit. Avoid disturbance/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:  April 12, 1990

OILING CATEGORIZATION:
Wide 42 m: Medium 0 m: Narrow 0 m: V.Light 967 m: No Oil 91 m
Subsurface Oil Observed: Yes X No ______ Maximum Depth 25 cm

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

COMMENTS: Manual pickup of oil spill response debris as shown on sketch map. Breakup and removal of tarmat and bioremediation of areas of subsurface and surface oiling as shown on map. Do not bioremediate within 100m of stream. Work between 4/15 and 7/10 based on anadromous stream constraints.

TAG COMMENTS:

TAG APPROVAL DATE:  4/12/90
ADEC  John Bybee  John Don
EXXON  Ann Bybee  John Don
NOAA  Buckwitz  Buckwitz
USCG  N.T. Hall  G.A. Hall

Notify ADEQ 24 hrs in advance of work
ADDENDUM: SUBDIVISION CONSTRAINTS
SEGMENT CH-2 SUBDIVISION A (1 of 2)

WORK WINDOW

<table>
<thead>
<tr>
<th>Manual Pickup</th>
<th>OPEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tarmat Removal</td>
<td></td>
</tr>
</tbody>
</table>

| 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 (226-20-16180) forms the boundary between Subdivisions A and B. 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.

OTHER ECOLOGICAL CONSIDERATIONS

No disturbance to stream bed or banks. Restrict boat and air traffic to essential minimum after 7/20. No flushing of pollutants or sediments into stream drainage; do not allow injpol 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 unceded biota and substrate.

SEE ANADROMOUS FISH STREAM EVALUATION ADDENDUM (STREAM NO. 226-20-16180) FOR ADDITIONAL CONSTRAINT INFORMATION

TAG ADDENDUM DATE 5/29/90
ADEC
EXXON
NOAA
USCG

FOSC

DATE MAY 29 1990

Prepared by: Jordan May

Date: 5/29/90
SHORELINE EVALUATION

SEGMENT CT/ CH-02 SUBDIVISION A (1 OF 2) DATE 4/1/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
Stream mouth (no. 16180) - Salmon Fry outmigration (1A) - 3/1 to 5/15 and salmon spawning (1B) - 7/10 to 8/31; Tent sites (60) - 6/1 to 9/15.

SUBDIVISION ECOLOGICAL CONSTRAINTS: No disturbance of stream bed or banks unless authorized by ADF&G. Contact ADF&G Habitat Division prior to treatment for permit. Avoid disturbance/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 (564-3567; 564-3658 or 564-3276).

SHPO SIGNATURE: __________________________ DATE: April 12, 1990

OILING CATEGORIZATION:
- Side 0 m: Medium 0 m: Narrow 20 m: V. Light 144 m: No Oil 71 m
- Subsurface Oil Observed: Yes X No
- Maximum Depth 15 cm

RECOMMENDATIONS:
- No Treatment Recommended
- X Treatment Recommended
- X Manual Pickup
- X Bioremediation
- X Tarmat: Breakup
- X Removal
- Other (see comments)

COMMENTS: Breach and removal tarmat, manual pickup of pooled mousse, and bioremediation of coated areas to within 100m of anadromous stream only. Work between 6/13 - 7/10 based on salmon spawning constraints.

TAG COMMENTS: __________________________

AG APPROVAL DATE: 4/1/90
- DEC
- Exxon
- NOAA
- USCG

FOSC: __________________________ DATE: 5-7-90

A CIVIL REG rep is to be present for cleanup.
ANADROMOUS FISH STREAM ASSESSMENT

REGION: PRINCE WILLIAM SOUND
SEGMENT: CH-002
SUBDIVISION: A
STREAM NO: 226-20-1618
ANADROMOUS FISH STREAM EVALUATION

Subdivisions A & B
SEGMENT ST/ CH-002 STREAM NO: 226-20-1618 DATE 4/26/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A  Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B  Salmon stream mouth - spawning (7/10 to 8/31)
1K  Purse seine hook-off (7/20 to 9/5)
6U  Recreation: Tent sites (6/1 to 9/15)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any damage to unoiled biota and substrate. See above. Eagle nest in adjacent segment CH-009 is approximately 800 m from stream mouth and does not affect work constraints. Since the oiled areas are a considerable distance away from the rich intertidal areas, no special constraints on treatment procedures are required.

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

SHPO SIGNATURE: __________________________ DATE: __________________________

Subsurface Oil Observed: Yes X No Maximum Depth 28 cm

RECOMMENDATIONS:

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

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

COMMENTS: Recommend manual removal of tarmat, tarballs and patties followed by bioremediation as indicated on the attached sketch map. Work should be completed before 7/9.

TAG COMMENTS: __________________________

TAG APPROVAL DATE: __________________________

ADEC
EXXON
NOAA
USCG
PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

1A Salmon stream mouth - fryutmulation (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 9/31)
   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 Inpol 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 267-324

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 Inpol 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 24-3214

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 Salmon fry harvest area
   No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inpol 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: ADF&G 24-3214

11 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 7/28)
   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 Inpol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
   AGENCY CONTACT PERSON: ADF&G 24-3212

2M Healing 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 unfailed intertidal and subtidal algae and seagrass. If plans for treatment include methods such as hot water wash or Inpol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
   AGENCY CONTACT PERSON: ADF&G 24-3235

3N, 3P Harbor seal and sea lion pupping (5/15 to 7/1)
3Q Harbor seal and sea lion molting (8/15 to 9/15)
   Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts. No application of Inpol 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 586-7235

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 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 786-3377

5T All Bald Eagle nests (3/1 to 8/1)
   Active Bald Eagle nests (3/1 to 9/1)
   Restrict air traffic and all disturbance to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
   AGENCY CONTACT PERSON: USFWS 786-3377

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

7A Subsistence area: Salmon harvesting (5/1 to 9/30)
7B Pintail harvesting
7C Deer harvesting (8/15 to 2/28)
7D 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 Inpol 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 267-2359
FIELD SHORELINE COMMENT SHEET

SEGMENT ST1 CH 002 SUBDIVISION: 16/180 DATE 4/26/90

USCG NAME CWO MR MATHON SIGNATURE

☑ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED

COMMENTS

1. MANUAL CLEAN-UP: REMOVE TAR MATS
2. BIOREMEDIATION RIGHT SIDE (LOOKING ONSHORE)

NO TREATMENT RECOMMENDED TREATMENT SUGGESTED

COMMENTS

Bury solid pellets of fertilizer in storm beam 12" deep (see map). No injection recommended. Manually remove tar mats. Excavate tar mat where buried (see map) and remove. Till area #3 with shovels.

LAND MANAGER

NAME ___________________________ SIGNATURE ___________________________

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
Alaska Department of Fish and Game

ANADSCAT Observations and Recommendations
Team 19 - Michael Wiedmer and Tom Crowe

26 April 1990

ASC # 226-20-16180
Segment CH-002

Observations  The intertidal zone surrounding this channel is confined to a low energy, elongated cove. Southeast of the channel, mousse patties are broadly scattered through the intertidal zone. Northwest of the channel, heavy tar occurs throughout the upper- and mid-intertidal zone. A large portion of the tar in this area is buried by a mobile gravel berm. In the supra-tidal zone, a grassy area contains intermittent tar patties.

Treatment Recommendations  Manually remove all tar mats and patties. Uncover the tar mats buried by the gravel berm and manually remove oil. See the ADF&G Multi-Assessment Data Form for additional treatment suggestions.

ASC # 226-20-15040
Segment EB-001

Observations  The only oil observed at the site was a very light stain in a small upper-intertidal area south of the channel.

Treatment Recommendations  No treatment is required.

ASC # 226-20-15044
Segment MA-009

Observations  The intertidal portion of this site is composed of a very unstable, mobile gravel substrate. No oil was observed either surface or subsurface.

Treatment Recommendations  No treatment is recommended.
**SURFACE OIL**

<table>
<thead>
<tr>
<th>CHARACTER</th>
<th>DISTRIBUTION</th>
<th>OIL / FILM COLOR</th>
<th>IMPACTED ZONES</th>
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<td>ASPHALT</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>PAVEMENT</td>
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<td></td>
<td></td>
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</tr>
<tr>
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<tr>
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**SUBSURFACE OIL**

<table>
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<th>PIT NO.</th>
<th>PIT DEPTH (cm)</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED INTERVAL</th>
<th>OILED</th>
<th>OIL / FILM COLOR</th>
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<th>FILM</th>
<th>IMPACTED ZONES</th>
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**COMMENTS**

- Photographs:
  - Roll No.: 154-16-6
  - Frame: 7-13

**SURFACE OILING SUMMARY**

- **DATE:** 6/4/90
- **TEAM NO.:** 15
- **TIDE LEVEL:** -3 ft
- **EST. SUBDIVISION LENGTH:** 3.5 m
- **SURFACE SEDIMENTS:** R, L, C, O, P 3.0

**SURFACE OIL**

- **OIL / FILM COLOR:**
  - W

**PIT OIL**

- **PIT ZONE:**
  - ANA
  - SHEEN

**SURFACE SUBSURFACE SEDIMENT**

- **COMMENT:**

**APPROVED:**

- **DATE:** 5/14/90
## Subsurface Oil (continued)

<table>
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<th>PIT NO.</th>
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<th>OIL / FILM COLOR</th>
<th>PIT ZONE</th>
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<th>OCC</th>
<th>Y</th>
<th>SURFACE SUBSURFACE SEDIMENTS</th>
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<td>8</td>
<td>35</td>
<td>X</td>
<td>0-3</td>
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<td>X</td>
<td>X</td>
<td></td>
<td>N</td>
<td>C/P/C</td>
</tr>
</tbody>
</table>

**Comments**

* Oiled interval < 5 cm in pit nos. 2, 5, 6 and 8 does not constitute subsurface oil.
### ADCIRC Multi-Assessment Data Form

**Survey Type:** ES **CSS** CS TS AVS SCHA HHWS PTA  
2 REGION: **CPS** XP,CI K,AP

**Method:** Aerial **Ground**

**Date:** 4/26/90  
15 High Tide Times: **1526**  
21 Team Recorder: **Mike W. Connor**

**Start Time:** 0905  
16 High Tide Hts: **11.2**  
22 Observers: **Tom Crowe**

**Stop Time:** 0946  
17 Low Tide Times: **0901**  
23 Agency: **ADCIRG (ANAOSCAT)**

**Station #: CH 002**  
18 Low Tide Hts: **-3.6**  
24 Photos Taken: **Y 0**

**Station #:**  
19 Tide Ht at Survey: **-3.6**  
25 Video Taken: **Y 0**

**X-Units:** **Ebb Slack Flood Slack**

**Station #:**  
20 USCG Guad: **Sen A2**

**Start:**  
21 Samples Taken: **Y 0**

**Stop Time:**  
22 Number

**Location:** Cheyena North

**Description:** Northern Tip of Cheyena Island

#### Extent of Oil

<table>
<thead>
<tr>
<th>Shoreline</th>
<th>Stream</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>L</strong></td>
<td><strong>W</strong></td>
</tr>
<tr>
<td><strong>L</strong></td>
<td><strong>W</strong></td>
</tr>
</tbody>
</table>

28 Cataloged Adult Fish Stream **Y N**

29 Stream Name:

30 Oil in Stream Bed **Y N**

31 Oil on Beach Adjacent to Mouth? **N**

32 Oil Type: Pool **Mousse** Tape **Asphalt** Sticky Stain

33 Oiled Debris? **Y N**

34 Oiled Shoreline Type: Headland **Low-Lying Rocks** Beach **Cove**

35 Wave Exposure: High **Moderate** Low

36 Oiled Substrate Type: Bedrock **Boulder** Cobble **X**

37 Catalog #: **226-20-16180**

38 Extent of Oil:

---

**Comments:**

---

25/42
Recommendation: Fertilize burn solid pellets in steam barn R1 at spots indicated on map. No Jenner recommended. Manually remove tar mats. Excavate tar mat where burned (see map) and remove. Tile area #2 with shovels.

I agree with recommendations. Met Forward.

48 OIL DISTRIBUTION DIAGRAM

Dig Furfur 12" and bury line of fertilized solid pellets (biodegradation). No Whip.
segment CH002
Stream 216-20-0180
Ecological Summary

This medium-sized stream has a fairly long intertidal portion and a shale boulder/cobble/pebble/gravel delta. The area around the stream mouth has some intertidal clams, worms, etc., but is mostly barren on the surface except for a recently settled barnacle spot. A biologically rich boulder area exists beginning about 20m either side of the stream mouth. A variety of algae occur here, including Ulva, filamentous green algae, Rhodopelis, Bangia (or Nemalion), Costaria, Fucus, and others. Pycnogonids are abundant, also gunnels, blennies, hermit crabs, littorines, limpets and whelks. A bed of eelgrass begins at about -2.0 ft and goes out into the subtidal zone. One mature eagle and one common loon were sighted. One pink salmon smolt was seen. Remaining oil consists of bedrock stains and surficial and buried tar mats. Manual removal and bioremediation are recommended. Since the oiled areas are a considerable distance away from the rich intertidal areas, no special constraints on cleanup procedures are required.
ANADROMOUS FISH STREAM EVALUATION

Subdivisions A & B
SEGMENT ST/ CH-002 STREAM NO: 226-20-1618- DATE 4/26/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1K Purse seine hook-off (7/20 to 9/5)
6U Recreation: Tent sites (6/1 to 9/15)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any damage to unoiled biota and substrate. See above. Eagle nest in adjacent segment CH-009 is approximately 800 m from stream mouth and does not affect work constraints. Since the oiled areas are a considerable distance away from the rich intertidal areas, no special constraints on treatment procedures are required.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: Rachel Deen Oom DATE: 5/25/90

Subsurface Oil Observed: Yes X No Maximum Depth 28 cm

RECOMMENDATIONS:

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

OTHER (see comments)

COMMENTS: Recommend manual removal of tarmat, tarballs and patties followed by bioremediation as indicated on the attached sketch map. Work should be completed before 7/9.

TAG COMMENTS: MANUAL REMOVAL OF TARMATS TO INCLUDE ACCESSING THE ERODED TARMATS AS REQUIRED.

TAG APPROVAL DATE: 5/23/90
ADEC Art Weiner Art Weiner
EXXON Simon Deen
NOAA Buehler Buehler
USCG
Recommendation: (ENRACED)
Bury solid pellets 12" deep at spots indicated on map. No INEPOC recommended.
Manually remove tar mats. Excavate tar mat where desired (see map) and remove. Till area #2 with shovels.

I agree with recommendations, MBE Signature

48 OIL DISTRIBUTION DIAGRAM

- Scattered mousse tar patch
- Dig furlow 12" and bury line of fertilizer solid pellets (biodegradation)
### Anadromous Fish Stream Evaluation Addendum

**Constraints for Stream No. 226-20-16180**

**Segment CH-2 Subdivision A & B**

#### Work Window

<table>
<thead>
<tr>
<th>Manual Pickup</th>
<th>OPEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tarmat Removal</td>
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</table>

<table>
<thead>
<tr>
<th>Bioremediation Less Than 100m From Stream</th>
<th>WORK PRIOR TO 7/10 (ADF&amp;G Monitor Req.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioremediation More Than 100m From Stream</td>
<td>WORK PRIOR TO 7/20</td>
</tr>
</tbody>
</table>

#### Archaeological Standard Constraint

If cultural resources are uncovered, PHONE 564-3274.

#### Applicable Ecological Time Constraints

**1A, 1B**  **Salmon Stream**

ADF&G catalogued anadromous stream (226-20-16180) forms the boundary between Subdivisions A & B. The work area 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.

#### Other Ecological Considerations

Restrict boat and air traffic to essential minimum after 7/20. No disturbance to stream bed or bank. No flushing of pollutants or sediments into stream drainage; do not allow Inopol 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 unrolled biota and substrate.

**See Subdivision Constraint Addenda CH-2A & CH-2B for additional constraint information.**
ECOLOGY MAP
SEGMENT CH-2
SUBDIVISION A&B (___of___)

EXxon Company, USA

Incorporates information from USFWS Bald Eagle Survey 5/12/90.

- Seabird Colony
- Eagle Nest
ANADROMOUS FISH STREAM EVALUATION

Subdivisions A & B

SEGMENT ST/ CH-002 STREAM NO: 226-20-1618— DATE 4/26/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1K Purse seine hook-off (7/20 to 9/5)
6U Recreation: Tent sites (6/1 to 9/15)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any damage to unoiled biota and substrate. See above. Eagle nest in adjacent segment CH-009 is approximately 800 m from stream mouth and does not affect work constraints. Since the oiled areas are a considerable distance away from the rich intertidal areas, no special constraints on treatment procedures are required.

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

SHPO SIGNATURE: ___________________________ DATE: ______________

Subsurface Oil Observed: Yes X No ____ Maximum Depth 28 cm

RECOMMENDATIONS:

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

OTHER (see comments)

COMMENTs: Recommend manual removal of tarmat, tarballs and patties followed by bioremediation as indicated on the attached sketch map. Work should be completed before 7/9.

SEE CONSTRAINT AWD/009 5/20 92 UTK

TAG COMMENTS:

________________________________________________________

TAG APPROVAL DATE: ________________

ADEC ___________________________ FOSC: ________________ DATE: ________________

EXXON ___________________________ NOAA ___________________________

NOAA ___________________________ USCG ___________________________
REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/CH-03

SUBDIVISIONS: A (1 OF 1)
SHORELINE EVALUATION

SEGMENT ST/ CH-03  SUBDIVISION A (1 OF 1) DATE  4/21/90

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.

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 71 m: Narrow 73 m: V.Light 537 m: No Oil 292 m
Subsurface Oil Observed: Yes X No ___ Maximum Depth 22 cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment is bioremediation of surface and subsurface oil in the area shown on attached sketch map. Work should be conducted after 6/1 with approval of USFWS regarding eagle nest.

TAG COMMENTS:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

TAG APPROVAL DATE: ____________

ADEC ___________________________ FOSC: ___________________ DATE: ____________

NOAA ___________________________ USCG ___________________________
PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream without authorization from ADF&G. No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or lnipol 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 lnipol 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 6/1)
1E Main Bay Hatchery release (4/20 to 6/10)
1F Sawmill Bay Hatchery release (4/15 to 6/1)
1G Cannery Creek Hatchery release (4/21 to 6/1)
Remote release site
No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or lnipol 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: ADF&G Larry Peltz 424-3214

1J Gill net area (6/7 to 8/31)
1K Purse seine area (7/20 to 9/30)
1L Set net sites (8/11 to 7/28)
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 lnipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
AGENCY CONTACT PERSON: AFD&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 uncolt intertidal and subtidal algae and seagrass. If plans for treatment include methods such as hot water wash or lnipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
AGENCY CONTACT PERSON: ADF&G Evelyn Biggs 424-3235

3N Harbor seal and sea lion pupping (5/15 to 7/1)
3O Harbor seal and sea lion molting (6/15 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 lnipol 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 Calivins 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 Rothby 267-2206

5T All Bald Eagle nests (6/1 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)
6W Anchorage (6/1 to 9/15)
6X 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
7HH Deer harvesting (9/15 to 2/28)
7HH 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 lnipol 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
TREATMENT SUGGESTED

COMMENTS

The nature of subsurface oil suggests that some form of bioremediation is called for; however, that residue located in the supratidal may have to wait until a later time period.

TREATMENT SUGGESTED

COMMENTS

Coastal small pebbles and pebbles in the 5 to 2 cm below the surface layer. These clasts had a thin, DBL, sticky film coating their surfaces with <= 35% of the sedos coated in a layer 3-5 cm.

TREATMENT SUGGESTED

COMMENTS

I would suggest checking the beginning of CH 003 in the surf zone for subsurface oil (or, of) because we didn't expect it to be up so far. It wasn't until we got approx. 2/3 of the way down to segment that we did finally check for oil in the UI. 100% remediation for this beach is recommended since it is 100 miles from KESC.

Disregard checking the beginning of CH003.

We did check it and we found no oil.
deep. Thus, the UTZ breach (broken) had a separation area of clean sed.
from the STZ storm debris containing the 3-5 cm layer small 6 m farther up the beach face.
Moving further north we picked up subsurface oil layer (refer to sketch map & note pits #7-17) ranging from the UTZ-STZ, extending ~150 m. The oil texture was on the average somewhere between an oil or gelatinous from shiny black to light brown with a layer varying from ~2-17 cm thick. Because of the subsea biotic communities occupying the first ~25 cm of substrate I would opt for the bio enhancement method of granular fertilizers to be used along this ~150 m section of shoreline. I would like to be made clear on this point: let granular fertilizers stand on its own merits and thus we should consider adding a solvent such as butoxy-ethanol etc. which is a second step of optimizing the fertilizer principal. If a small set of subsurface times is needed to get the granules below the surface this should be tried on comparable segment with a similar oiling condition, exposure, & set type. Other similar segments should be tried without the mixing into the sed. and others should be left without any treatment to gain a knowledge based on experience about what works.

A side note to the bio treatments would be to try real bioremediation where indigenous microbes are collected, reproduced and replaced back to their habitat.
SHORELINE OILING SUMMARY

CG: Randy Siegel  USCG: Jerry Schultz  SEGMENT: Ch 3
BIO: Lewis Sherman  LAND REP: Pat Selanoff  SUBDIVISION: A (OF 1)
EXXON: Leon R. Barth  ADEC: Mike Shel DATE: 4/21/90
TEAM NO.: 15  TIDE LEVEL: -3' to -1.5'  DATE: 4/21/90
EST. SUBDIVISION LENGTH: 979 m  ☑ Sun ☑ Clouds ☑ Fog ☑ Rain ☑ Snow
UPLANDS DESCRIPTION: ☑ Grass ☑ Forest ☑ Rock
SURVEYED FROM: ☑ Foot ☑ Boat ☑ Helo WORKING DIRECTION: S to N
SURFACE SEDIMENTS:

- RS %
- B %
- C %
- P %
- G %
- V %
- M %
- O %
- W %
- S %
- L %
- H %
- V %

SLOPE: Lang %
Hang %
Vert %

WAVE EXPOSURE:

- Low
- Med
- High

OIL CATEGORY

LENGTH: W = m

OIL DISTRIBUTION:

- SURFACE OIL
- SUBSURFACE OIL
- OIL/ FILM COLOR
- PAVEMENT
- OILED DEBRIS
- AMOUNT
- DID YOU COLLECT
- DEBRIS?
- YES - NO
- TYPE
- Bags
- #BAGS
- Picked-up All Trash
- Photographs:
- Roll No.
- Frames

SUBSURFACE OIL

<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>PIT DEPTH (cm)</th>
<th>OIL CHARACTER</th>
<th>OIL INTERVAL</th>
<th>OIL CHARACTER</th>
<th>OIL INTERVAL</th>
<th>OIL CHARACTER</th>
<th>OIL INTERVAL</th>
<th>PIT ZONE</th>
<th>ANEA SHEEN (Y/N)</th>
<th>SURFACE - SUBSURFACE SEDIMENTS</th>
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COMMENTS

This segment consisted of a pebble beach with cobbles and
some boulders. Triangle soil slopes with grass and trees on
slopes. Southern portion had little to no oily zone St-CT.
Further north, individual pebbles and cobbles were coated with
shiny black oil, sometimes concentrated in bands. A number of pits
along a 150 meter transect revealed reviewed. REVIEWED DATE 4-23-90
shiny black oiling (in one case D8 or OR) at depth. No water in pits.
### Subsurface Oil (Continued)

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<th>Pit No.</th>
<th>Pit Depth (cm)</th>
<th>Subsurface Oil Character</th>
<th>Oiled Interval (cm)</th>
<th>Below Oil Film Color</th>
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<th>Ana. Sheen (Y/N)</th>
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**Comments**

After finding oiling in the SO along the northern portion of the segment, we then returned to the southern portion and dug additional pits in the SO. The additional pits #20-25 were all unleached, confirming the estimated extent of subsurface oiling from pits #1-19. The results for pits 21-25 are listed on the next page, even though they will not be entered into the database.

* OILED INTERVAL < 5 cm in pits 7, 10, 11 and 12 does not constitute Subsurface Oil

3/30

 Reviewed: [Signature] Date: 4-23-90
### SHORELINE OILING SUMMARY (PAGE 2)

**SEGMENT ST: CH-3  SUBDIVISION A**  (3 of 3)

#### SUBSURFACE OIL (CONTINUED)

<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>PIT DEPTH (cm)</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED INTERVAL</th>
<th>BELOW</th>
<th>OIL / FILM COLOR</th>
<th>PIT ZONE</th>
<th>AZA</th>
<th>SHEEN (Y/N)</th>
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**COMMENTS**

4/30
SEGMENT ST/ CH-3

DATE 4/21/90

CHECKLIST
- Ancestry
- Approx. Scale
- Soil Type
- Over
- Weather
- V. Cover
- Seismic Character
- SEL
- Potato Location(s)
- Pits Location(s)
- Rock Location(s)

LEGEND

\[ \begin{array}{c|c}
\text{CT/C} & \text{CT/D} \\
\hline
\text{Conventional Distribution} & \text{Custom Distribution} \\
\hline
\text{CT/P} & \text{CT/F} \\
\text{ Parcel Distribution} & \text{Facility Distribution} \\
\hline
\text{CT/S} & \text{Splashed Distribution} \\
\text{Cited Vegetation} & \\
\hline
\text{Note} & \text{Note} \\
\text{Plants Location, direction, and number} & \\
\end{array} \]

Hi-angle slopes covered with saltpeter clay

Bedrock enclosed in up and 300 meters

ST-CT/S-B (150%)

Shiny black coating on cobbles and pebbles

S 5 x 3 m 1 g 1 b

ST-CT/1502 to 5 cm deep

under bedrock

For last 25 meters of segment

Stones in sand

Pebble-cobble beach

with some builders

\[ \begin{align*}
\text{Pebble beach} & \text{ Weeds} \\
\text{Pebble beach} & \text{ Cover} \\
\text{H2O} & \text{H2O} \\
\end{align*} \]

Oil Character Length (m): AP 0, PO 0, CV 50, CT 480, ST 480, MS 0, PT 0, TB 0, FL 0, NO 379
**SHORELINE ECOLOGICAL SUMMARY** (Page 1 of 2)

**Segment:** ST1  CH-3  **Subdivision:** A  **Date (mo/day/yr):** 4/21/90

**Time (24 hr):** 1530-1730  **Biologist:** SHARMAN

(A) **Substrate type and % of segments:**
- Bedrock: 5
- Boulder: 5
- Cobble: 20
- Pebble: 60
- Sand: 10
- Silt: 0

(B) **Overall % cover of biota (% of segment):**
- Dense
- Moderate
- Low

(C) **Density, substrate preference (by number from A, above), & vertical zonation of major taxa:**
- **Barnacles**
- **Mytilus**
- **Gastropods**
- **Fucus**

**Wildlife Observations/ General Comments:**
- Pairs (7) of adult scoters, 1 sea lion, 1 large track & east common in surf zone. Large effusion of finnformable boulders of beach margin. ADMY bodies near boat. 1 day here in surf zone, 2007, brown, some head, young, 1 brown, no. 2. No. 2, no. 3, no. 4, brown, "lake" in surf zone, surf, and sand hill. Intuitively, brown, boulder, cobble, pebble, shingle beach (cont.)

**Ecological Considerations:**
- Resource sensitivity previously listed for this segment include use as a Special Use Zone (code 64) and presence of a cold water wet (code 57) in the central portion of the segment. We failed to locate the wet in this survey. A naturally low diversity/biocomplex beach, probably relatively resistant to treatment impacts (as it appears it was to oiling). However, remember that an anadromous stream is in the adjacent segment to the S. (CH-1).
General Comments (cont.):

is quite depauperate - low diversity & low abundance/coverages. This is to be expected for the beach type, by no means necessarily attributable to tide. Saltmarsh (single) site generally limited to a few P. oceanica and amphiboda. Spat settlement in very good form, as has been observed elsewhere along S. Channel Island over the past several days. Some entomocephals among boulders/cobbles,匮乏 in LTA. For the beach type, an apparently normally depauperate intertidal community, with good recruitment.
ADDENDUM: SUBDIVISION CONSTRAINTS
SEGMENT CH-3 SUBDIVISION A (1 of 1)

WORK WINDOW

| Bioremediation | WORK PRIOR TO 7/20 |

ARCHEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1K Purse Seine Hook-off  Closed to bioremediation after 7/20.

5T Bald Eagle Nest  No constraint to bioremediation. Bald eagle nest present in subdivision is not within 400m of recommended treatment area.

OTHER ECOLOGICAL CONSIDERATIONS

Avoid any unnecessary disturbance or damage to unoiled substrate and biota. Restrict boat and air traffic to essential minimum after 7/20.

TAG ADDENDUM DATE  5/17/90
ADEC  Art Wexler  Art Wexler
EXXON  Gary Peterson  Gary Peterson
NOAA  C. A. Feitler
USCG

Prepared by:  Andrew Meyer  Date:  5/17/90
ECOLOGY MAP
SEGMENT CH-3
SUBDIVISION A

EXXON COMPANY, USA

Seabird Colony

Eagle Nest

400m EAGLE NEST ZONE
SHORELINE EVALUATION

SEGMENT ST.  CH-03  SUBDIVISION A (1 OF 1)  DATE  4/21/90

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
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:  5/1/90

OILING CATEGORIZATION:
Wide 0 m: Medium 71 m: Narrow 73 m: V.Light 537 m: No Oil 292 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 is bioremediation of surface and subsurface oil in the area shown on attached sketch map. Work should be conducted after 6/1 with approval of USFWS regarding eagle nest. See Addendum 5/11/90 for revised dates. Work

TAG COMMENTS:

TAG APPROVAL DATE:  5/1/90

a crn dep will be present for cleanup.
SHORELINE EVALUATION

SEGMENT ST/ CH-03   SUBDIVISION A (1 OF 1) DATE 4/21/90

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.

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: 5/1/90

OILING CATEGORIZATION:
Wide 0 m: Medium 71 m: Narrow 73 m: V.Light 537 m: No Oil 292 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 is bioremediation of surface and subsurface oil in the area shown on attached sketch map. Work should be conducted after 6/1 with approval of USFWS regarding eagle nest.

TAG COMMENTS:

TAG APPROVAL DATE: 5/1/90
ADEC EXXON NOAA USCG
ART WEAVER ANDY ENOS S. BERTHEAU KENNETH KORME
DATE: 5/9-90
REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/CH-04

SUBDIVISIONS: A (1 OF 1)
SHORELINE EVALUATION

SEGMENT ST/ CH-04 SUBDIVISION A (1 OF 1) DATE 4/21/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

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 unoiied 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 189 m: V.Light 1130 m: No Oil 286 m
Subsurface Oil Observed: Yes ___ No X ___ Maximum Depth ______

RECOMMENDATIONS:

X 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 _______________ FOSC: _______________ DATE: __________

NOAA ___________________ USCG ___________________
FIELD SHORELINE COMMENT SHEET

SEGMENT ST/CH 4 SUBDIVISION: A (SEgment) DATE: 4/22/90

USCG NAME: JERRY SCHULTZ SIGNATURE: Jerry Schultz

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

CH-4-A: Widespread tar coats and stains were found along the length of this segment generally confined to a narrow, V-shaped band. Taken as an average, the majority of the segment could be represented by patchy coats and stains intermittent along the segment's length and confined to the VTZ. Because of the small amount of oil actually present and the lack of a method to retrieve the tar from coats on the boulders, I recommend no further impact.

LAND MANAGER NAME: PAT SELANOFF (CNC) SIGNATURE: Pat Selanoff

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

26/36 REV: 5/5/2001
SHORELINE OILING SUMMARY

OG: Randy Siegel  USCG  Jerry Schultz
BIO: Lewis Shurman  LAND REP: Pat Schneier (Cove)
EXXON: Leonard Harbuck  ADEC: Mike Egel

TIME: 17:30  DATE: 4/21/90

TEAM NO. 12

TIDE LEVEL: High Water 175'-175'  DATE: 4/21/90

EST. SUBDIVISION LENGTH: 636 m

UPLANDS DESCRIPTION: Grass  Forest  Rock

SURVEYED FROM: Foot  Boat  Helo

SURFACE SEDIMENTS: R 20%  B 40%  C 5%  P 20%  G 5%  S 0%  M 0%  V O

SLOPE: Lang 75%  Hang 15%  Vert 10%  WAVE EXPOSURE: Low  Med  High

OIL CATEGORY LENGTH: W 0 m  M 0 m  N (65 m)  VL (200 m)  NO

SURFACE OIL

<table>
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<tr>
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<th>DISTRIBUTION</th>
<th>OIL/FILM COLOR</th>
<th>IMPACTED ZONES</th>
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<tr>
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</table>

PAVEMENT H F S φ sq. m by φ

PATTIES/TARBALLS φ BAC

NEAR SHORE SHEEN? NO BR RW SL T:

OILED DEBRIS AMOUNT SM MD LG

DID YOU COLLECT DEBRIS?

Logs
Vegetation
Trash
Debris

Photographs:

Roll No. None
Frames —

SUBSURFACE OIL

| PIT NO. | PIT DEPTH (cm) | SUBSURFACE OIL CHARACTER | OILED INTERVAL | OILED BELOW | OIL/FILM COLOR | PIT ZONE | ANA SHEEN (TAB) | SURFACE SUBSURFA SEDIMENT |
|---------|----------------|--------------------------|----------------|-------------|----------------|----------|-----------------|----------------|---|
| 1       | 20             | X                        | O:0            | X           | X              | -        | -               | -               | G |
| 2       | 7              | X                        | O:0            | X           | X              | -        | -               | -               | G, R |
| 3       | 25             | X                        | O:0            | X           | X              | -        | -               | -               | G |
| 4       | 35             | X                        | O:0            | X           | X              | -        | -               | -               | P |

COMMENTS

Stretch of shoreline with bimangle coastal cliffs above, and boulder hills with occasional cobbles, pebbles and gravel, below. Light oiling across most of the segment, either as a band of patchy or broken stains across cliff faces, 2 cm to 1 meter high, or as a band of cover beneath boulders, 1-2 meters under.

16/36

REVIEWED SW DATE 4/23/90
SEGMENT ST-ATCH

SUBDIVISION A

DATE 4/21/90

CHECKLIST

- N Arrow
- Approx. Scale
- Stream Bedline
- Oil Dist.
- Width
- Length
- % Cover
- Substrate Character
- Est. HMLA/WL
- SSL
- Profile Location(s)
- Profile(s)
- Pit Location(s)
- Plot Location(s)

LEGEND

1 A
- No Subaface Oil

2 A
- Subsurface Oil

CT/C
- Continuous Distribution

CT/B
- Broken Distribution

Peace Distribution

CT/5
- Spotted Distribution

EE
- Older Vegetation

1
- From location, direction, and number

---

Oil Character: Long (m) AP  PO  GV  CT  ST  MS  PT  TB  EL  NO

<oo > stat.1...tt
SEGMENT ST

SUBDIVISION A

DATE 1/21/90

CHECKLIST

_ H Arrows
_ Approx. Scale
_ Seg/Sub Boundary
_ Oil Dis.
_ Well
_ Length
_ % Cemen
_ Substrat Character
_ Ext./Int. WL
_ SSL
_ Profile Location(s)
_ Profile(s)
_ Pit Location(s)
_ Plate Location(s)

LEGEND

1 A
PT - No Subsurface Oil

2 A
PT - Subsurface Oil

CT/C
Continuous Distribution

CT/B
Broken Distribution

CT/P
Patchy Distribution

CT/S
Splashed Distribution

==
Cemented Vegetation

==
Pit Location: direction, and number

Oil Character Length (m): AP 0 PO 0 CV 50 CT 1200 ST 1200 MS 0 PT 0 TB 0 FL 0 NO 0
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 would 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 at least July 1 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 6/1)

1E Main Bay Hatchery release (4/20 to 6/10)

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

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

1H Remote release site

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: ADF&G Larry Peltz 424-3214

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 uncollected 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, or 3C, 3Q

Harbor seal and sea lion pupping (8/15 to 7/1)

Harbor seal and sea lion moulting (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

ADFG 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

ADFG Tom Rothy 267-2206

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

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

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

6V Anchorage (6/1 to 9/15)

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

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

6Y Special use destination

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

7U Firefish harvesting

7V 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 aircraft 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 Fail 267-2359
**SHORELINE ECOLOGICAL SUMMARIES (Page 1 of 2)**

- **Segment**: ST
- **Location**: CH-4
- **Subdivision**: A
- **Date (mo/day/yr)**: 4/21/70
- **Time (24 hr)**: 1730-1830
- **Biolagist**: Sharmann

(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
- 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

### Barnacles

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### Mytilus

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### Gastropods (*Nucella, Littorina, Lymnaea*)

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### Fucus

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**Wildlife Observations/General Comments:**
- 1 gopher, 2 lizards, 1 harp seal, 1 sturgeon in water (1st I see: threespined)
- 1 bird in intestinal zone, 1
- 1 barnacle in U7 (shells for bone, comb, eye lenses, 6; scavenged, no oil)
- 2 longshore manana snail, 3 limpets, 6 chitons, 3 shells, 2 barnacles
- 2 very rich, productive bedrock/boulder, 10 very hard, habitat slowing ongoing (e.g.)

**Ecological Considerations:**
- Resource sensitivity previously listed for this segment include special use designation (code 67) and rise for subsistence (code 721).
- No particular ecological concerns, especially if the area is left alone!
General Comments (cont.):

Good recruitment - very successful barnacle spat settlement.
Good Fucus/Odonthalia recruitment. Normal levels of mortality
(e.g., 5-20% for barnacles). As along the other steep/cliffy
section of the coast, there is a very high abundance of Ascophylla
laminosa growing upon barnacles in the MZ-1. The Boulder/Cliff
MZ-1 is exceedingly rich: Fucus, Odonthalia, Sctyoniphora,
ulvica, Enteromorpha, green filaments (Ascophylla?), foliose
red algae, finely dissected liches (Polyphthora/Trichodendron?),
Porphyra tenera, abundant erect, tenebrosa, Sporobolus, Pyura pedata,
 Dermasteria, Ptilasteria, Anthopleura spp., Pagurus, pritchardia,
 amphipods, Polynemum, etc. etc. Perfectly normal & healthy.
XXX Wide
/// Medium
--- Narrow
TTTT Very Light
0000 No Oil

Map Key: PWS-52b
Name: Bob Joseph
Date: 4/3/90
Date Entered:

ADEC Segment Length: 1605m
SHORELINE EVALUATION

SEGMENT ST/ CH-04 SUBDIVISION A (3 OF 1) DATE 4/21/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

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

SHPO SIGNATURE:     DATE: 5/1/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 189 m: V.Light 1130 m: No Oil 286 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

X 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: 5/1/90
ADEC
EXXON
NOAA
USCG
FOSC:
DATE: 6/19/90
SEGMENT ST CR 4

SUBDIVISION A

DATE 4/21/90

CHECKLIST
- N Artes
- Appraised Value
- Status/Sub Grade
- Oil Blot
- Vein
- Length
- % Cover
- Substrate Character
- Ex. 1942/1952
- SSW
- Profile Location(s)
- Profile(s)
- Pit Location(s)
- Pit Location(s)

LEGEND
1
- Pt - No Subsurface Oil

2
- Pt - Subsurface Oil

CT/C
- Content/Contaminant Distribution

CT/B
- Core/Box Distribution

CT/P
- Peat/Peat Distribution

CT/S
- Splitted Distribution

EE
- Oiled Vegetation

End of A

Dear Cenuss

Rock cliff with boulder/cobble break

H2O

ST-CT/P on cliff faces and under boulders

Oil Character Length (m): AP O PO O CV SQ CT 1200 ST 1200 MS O PT O TB O FL O NO 271
REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/CH-05

SUBDIVISIONS: A (1 OF 1)
SHORELINE EVALUATION

SEGMENT ST/ CH-05 SUBDIVISION A (1 OF 1) DATE 4/22/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
6Y Recreation: Special use destination
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 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 154 m: No Oil 684 m
Subsurface Oil Observed: Yes No X Minimum Depth

RECOMMENDATIONS:
X 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: ________
Salmon stream mouth - fry outmigration (3/1 to 5/15)

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

Restrict boat and air traffic and beach disturbance to essential minimum. No personnel within 400m of stream without authorization from ADF&G. Contact ADF&G 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 lnipol application, prior to at least July 1 unless authorized by ADF&G. Treatment which will not affect nearshore oil or toxicity levels, such as manual 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

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

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

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

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

Remote release site

No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or lnipol 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: ADF&G Larry Peltz 424-3214

PWS Aquaculture Association John McMillan or Bruce Suzomoto 424-7511

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

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

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

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 lnipol application which might affect nearshore oil or toxicity levels, contact ADF&G for confirmation and authorization.

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

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 unveined intertidal and subtidal algae and seagrass. If plans for treatment include methods such as hot water wash or lnipol 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)

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 lnipol 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 Zimmermann 586-7235

ADF&G Don Caikina 267-2403

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

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 Peltz 267-2206

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

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

Recreation:

Tent sites (6/1 to 9/15)

Anchorage (6/1 to 9/15)

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

Lodge (6/1 to 9/15)

Special use destination

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

Finfish harvesting

Deer harvesting (8/15 to 2/28)

Invertebrates 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. It plans for treatment include methods such as hot water wash or application of lnipol 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 S7. CH5 SUBDIVISION: A (SEGMENT)  DATE 4/23/90

USCG NAME JERRY SCHULTZ SIGNATURE  JERRY J. SCHULTZ

☑ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS
CONTINUING NATURAL WASHING APPEARS TO WORK WELL

ADEC NAME MIKE EBEL SIGNATURE  MICHAEL J. EBEL

☑ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS
CH-5-A 3 Very little oil found here. The occasional
spatters and coats were found at different locations along segment
length but recovery by treatment would be ineffective
No subsurface oil, no further impact recommended.

LAND MANAGER NAME PAT SELANOFF (CVC) SIGNATURE  PAT SELANOFF

☑ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS
Hopefully the natural cleaning process will work
SHORELINE OILING SUMMARY

OG: Randy Siegel  USCG  Terry Schultz  SEGMENT  ST: CH-S
BIO: Lewis Sarban  LAND REP: Pat Selma  SUBDIVISION: A
EXXON: Leonard Hittle  ADEC: Mike Ebel  DATE: 4/22/90
TEAM NO. (5)  TIDE LEVEL: +4.4 to +2.3  TIME: 4:45 to 6:20
EST. SUBDIVISION LENGTH: 837 m

SURFACE OIL

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PAVEMENT H F S φ sq. m by φ    PATTIES / TARBALLS φ BAGS
NEAR SHORE SHEEN? No BR RW SL TL

OILED DEBRIS AMOUNT DID YOU COLLECT DEBRIS?
Logs X
Vegetation
Trash
Debris

Photographs:
Roll No. None
Frames __

SUBSURFACE OIL

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COMMENTS

Short stretch of shoreline with birefringent rock cliffs and cobble-pebble beach. Very light oiling across segment. Street oil on splash distribution on sections of rock cliffs and on rocks on beach. Deer carcass not observed.

REVIEWED  J. DATE: 4/25/90
SNOWLINE ECOLOGICAL SUMMARY (Page 1 of 2)

Segment ST/CH-5 Subdivision A Date (mo/day/yr) 4/23/80

Time (24 hr) 1545-1620 Biologist SHARMAN

SUBDIV

1. Bedrock 10 (2) Boulder 20 (3) Cobble 30 (4) Pebble 30 (5) Sand 10 (6) SR

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

(B) 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)

BARNALES

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GASTROPODS (Nucella, Littorina, Lymaetes)

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Wildlife Observations/General Comments: 2 adult egrets, 2 trout in supratidal, dead
deer in supratidal kelp (no shell, few bones, hair, unmarked), low expanse indicative
spreading shingle of thick thalassia, leafy posidonia, long reed grass. Indicates structure
inhabitation with shell), targeted zone appears to be naturally dramatic, great for
dune lizards. There is, demand, a good spot, wet sand without locally

Ecological Considerations:

Resource optimization previously listed for the segment include Special Use
Destination (code 6Y) and agricultural (code 711). There are
no particular ecological concerns for this segment.
General Comments (cont.):

Notes: Several adult Fascio & Mytilus occur. Same for limpet & littorina. Beneath boulders are Carditella, a few neritans, limpets, amphipods, rare littorina egg masses. Sagartiaea, Entomopyle, and rare discontinuous mussels join Fascio in the M7s. Areas of quiet boulders (N. end segment) are extremely diverse (especially LT-2)

- small Naticidae, Evactoria, Katharina, diurne algae
SHORELINE EVALUATION

SEGMENT ST/ CH-05 SUBDIVISION A (1 OF 1) DATE 4/22/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
6Y Recreation: Special use destination
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 treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: Charles T. Holmes DATE: 5/3/90

OILING CATEGORIZATION:
Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 154 m: No Oil 684 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:
X No Treatment Recommended Snare/Absorbent Booms
T Treatment Recommended Oil Snare (pom poms)
M Manual Pickup Absorbents (pads, rolls, etc)
B Bioremediation Spot Washing: Wands
T Tarmat Removal Spot Washing: Wands

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 5/3/00
ADEC Art Werner
EXXON
NOAA
USCG

FOSC: M L DATE: 5-5-30
REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/CH-06

SUBDIVISIONS: A (1 OF 1)
SHORELINE EVALUATION

SEGMENT ST/ CH-06 SUBDIVISION A (1 OF 1) DATE 4/23/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
6U Recreation: Tent sites (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 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 302 m: No Oil 211 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

X 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

COMMENTS:

________________________________________________________________________

________________________________________________________________________

TAG COMMENTS:

________________________________________________________________________

TAG APPROVAL DATE:______________

ADEC EXXON NOAA USCG

FOSC:______________ DATE:__________
Salmon stream mouth - fry outmigration (3/1 to 5/15)

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

No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream without authorization from ADF&G. No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or lnopol 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 for consultation and/or permit application.

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

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

No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or lnopol 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 Evelyn Peltz 424-3214

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

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

Sawmill Bay Hatchery release (4/15 to 5/1)

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

Remote release site

No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or lnopol 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: ADF&G Larry Peltz 424-3214

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

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

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

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 lnopol 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

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 uncured intertidal and subtidal algae and seagrass. If plans for treatment include methods such as hot water wash or lnopol 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 lnopol 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

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

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

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 300 m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

Recreation:

Tent sites (5/1 to 9/15)

Anchorage (6/1 to 9/15)

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

Lodge (6/1 to 9/15)

Special use destination

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

Finfish harvesting

Deer harvesting (3/1 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 lnopol 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/CHG: SEGMENT: A
SUBDIVISION: DATE: 4/23/90

USCG NAME: JERRY SCHULTZ SIGNATURE: JERRY SCHULTZ
NO TREATMENT RECOMMENDED TREATMENT SUGGESTED
COMMENTS

ADEC NAME: MIKE EBEL SIGNATURE: MICHAEL J. EBEL
NO TREATMENT RECOMMENDED TREATMENT SUGGESTED
COMMENTS

CH-6-A: Very little oil along this segment. The splash of
coat and stain were found along the cliff walls and occupying
the undersides and sheltered boulder faces. Because of the
small total "oil" (tar) present no further impact is recommen-
natural washing is eliminating the contamination.

LAND MANAGER NAME: PAT SELAN OFF (COC) SIGNATURE: PAT SELAN
TREATMENT SUGGESTED NO TREATMENT RECOMMENDED
COMMENTS

There was signs of oily here, stain, etc. dist.
I don't think just leaving it is justifiable. I
would think the water wash would be best
for this segment. AT LEAST try one segment
for a month the results would a better from tests
processes.
### SHORELINE OILING SUMMARY

**Date:** 4/22/90

**Team:** 1

**Tide Level:** +2.3 ft

**Date:** 4/22/90

**Footprints:**

**Surface Oil**

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**Subsurface Oil**

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**Comments:**

Short stretch of shoreline with a gentle-to-vertical rock cliffy and boulder/cobble beach. Very light oiling across segment. Stain-coat is sparsely distributed on sections of rock cliff and on rocks on beach.

**Reviewed:** 4/25/90
### SHORELINE ECOLOGICAL SUMMARY

Segment: ST1 CH-6  
Subdivision: A  
Date (mo/day/yr): 4/22/90

- **Time (24 hr):** 1620-1650  
- **Biologist:** SHARMAN

(A) Substrate type and % of segments:  
- (1) Bedrock: 25%  
- (2) Boulder: 50%  
- (3) Cobble: 20%  
- (4) Pebble: 5%  
- (5) Sand: 0%  
- (6) Silt

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

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

#### BARNACLES

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**Wildlife Observations/General Comments:** Rain often/pink sand in supra-tidal (continuing, dark brown). This area is somewhat similar to CH-5, less the intertidal in a bit more due to generally larger particles (larger, more stable bedding). Also there are a few patches of algae, pink that are quite visible (especially LTP). Include things like Fucus, Mytilus, Littorina, (continued)

**Ecological Considerations:**

- Response sensitivity previously listed for this segment include recreational use, logging (code 6 I I) and subsistence fish harvesting (code 7 II). These areas are apparently not good areas for bioremediation - a few occur within the segment.

[Signature: 12/46]
General Comments (cont.):

Seaweed, Scytophora, lots of mussel, sandlance, mussels. Good spat set and good recruitment of Furcrae, mussels, limpets. A generally productive and healthy intertidal community.
XXX Wide
///// Medium
---- Narrow
TTTT Very Light
0000 No Oil

ADEC Segment Length: 513m

Map Key: PWS-54
Name: J. Riggs
Date: 4/23/90
Data Entered:

End of CH-5

CH-6

End of CH-7
SHORELINE EVALUATION

SEGMENT ST/CH-06  SUBDIVISION A (1 OF 1) DATE 4/23/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
6U Recreation: Tent sites (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 treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: ____________________________ DATE: 5/3/90

OILING CATEGORIZATION:
Wide 0 m; Medium 0 m; Narrow 0 m; V.Light 302 m; No Oil 211 m
Subsurface Oil Observed: Yes ___ No X ___ Maximum Depth ______

RECOMMENDATIONS:
X 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: 5/3/90
ADEC Act Water ___  Date: ____________________________
EXXON  Date: ____________________________
NOAA  Date: ____________________________
USCG  Date: ____________________________

FOSC: ____________________________ DATE: 5/9/90
Oil Character Length (m): AP 0 PO 0 CV 0 CT 310 ST 310 MG 0 PT 0 TB 0 FL 0 NO 272
REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/CH-07

SUBDIVISIONS: A (1 OF 1)
SHORELINE EVALUATION

SEGMENT ST/ CH-07 SUBDIVISION A (1 OF 1) DATE 4/22/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T-2 All bald eagle nests (3/1 to 6/1) - Active eagle nests (3/1 to 9/1)
Potential adjacent segment eagle nests (CH-08)
6Y Recreation: Special use destination
6U Recreation: Tent sites (6/1 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 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 146 m: V.Light 175 m: No Oil 53 m
Subsurface Oil Observed: Yes____ No X____ Maximum Depth______

RECOMMENDATIONS:
X 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: __________________________________________________________
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TAG COMMENTS: ______________________________________________________
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TAG APPROVAL DATE: __________
ADEC EXXON NOAA USCG
FOSC: __________ DATE: __________
PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

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

1B
Salmon stream mouth - spawning (7/10 to 6/31)

No disturbance of stream bed or banks unless authorized by ADF&G. No beauch 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 inripol 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 Morton 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 inripol 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
Esthar Hatchery release (4/15 to 6/1)

1E
Main Bay Hatchery release (4/20 to 6/10)

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

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

1H
Release release site

No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or inripol application, prior to at least July 1 unless authorized by ADF&G. Treatment which will not affect nearshore oil or toxicity levels, such as mechanical 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

10 IF 1G PWS Aquaculture Association John McMiliian or Bruce Suzomoto 424-7511

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

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

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

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 inripol 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

Herring spawning (4/1 to 8/15)

Contact ADF&G for confirmation - dates and locations may vary. Restrict boat traffic to essential minimum. Avoid damage to uncifed intertidal and subtidal algae and seagrass. If plans for treatment include methods such as hot water wash or inripol 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 (6/15 to 9/19)

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 inripol within two weeks of arrival dates (work window at these sites is limited to 4/30 to 7/31). Contact ADF&G and USFWS prior to treatment for confirmation.

AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 556-7235

ADF&G Don Calkins 267-2403

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

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 Rotha 267-2205

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

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

Recreation:

Tent sites 6/1 to 9/15

Anchorage (6/1 to 9/15)

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

Lodge (6/1 to 9/15)

Special use destination

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

Finfish harvesting

Dog 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 inripol 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 / CH 7  SUBDIVISION: A (ENTIRE)  DATE 4/23/90

USCG NAME JERRY SCHULTZ  SIGNATURE

☐ NO TREATMENT RECOMMENDED  ☐ TREATMENT SUGGESTED

NAME MIKE EBel  SIGNATURE

☐ NO TREATMENT RECOMMENDED  ☐ TREATMENT SUGGESTED

CH-7-A: This small protected cove was surrounded by bedrock cliffs having coats of algae in a band ranging from 4 to 15 ft at the head of the cove. The gravel/cobble beach was found to be mostly clean (no subsurface oil) but had a small number of tarballs that were broken up in situ.  Starting at the inflections on either side of the sunken beach, small "traps" existed where surface oil either wicked and wetted (east side) or narrowed and pooled in a splashy series of "pools" (west side).  Co.

LAND MANAGER NAME PAT SELANOFF  SIGNATURE

☐ NO TREATMENT RECOMMENDED  ☐ TREATMENT SUGGESTED

South westerly winds would make bioremediation of this segment possible.

23/46
for a distance along about 10 m in L grading into a 2-3 m band of ½ stem with 1½ coats for ≈ 40 m in L. Splashes of stem and coat were found on and under rocks of the small sed beach face — virtually all splashes for the entire segment were found distinctly in the UTZ.

Because of the fragile biotic functions for this protected inlet and the small amount of actual oil here, I recommend no further impact. End

Michael Ebel ADEC
SHORELINE OILING SUMMARY

OG: Randy Siegel
USCG: Jerry Schultz
SEGMENT ST/ CH-7

BIO: Steven Shuman
LAND REP: Pat Solmo
SUBDIVISION: A

EXXON: Howard Herbst
ADEC: Mike Eells
TEAM NO.: 12
TIDE LEVEL: +2.0 ft. DATE: 4/12/90

EST. SUBDIVISION LENGTH: 396 m

UPLANDS DESCRIPTION:
- Grass
- Forest
- Rock

SURVEYED FROM:
- Foot
- Boat
- Helo

WORKING DIRECTION: S to N

SURFACE SEDIMENTS:
- R: 20%
- B: 35%
- C: 25%
- P: 10%
- G: 0%
- S: 0%
- M: 0%
- V: 0%

SLOPE:
- Lang 40%
- Hang 40%
- Ven 0%

WAVE EXPOSURE:
- Low
- Med
- High

OIL CATEGORY LENGTH:
- W: 0 m
- M: 0 m
- N: 266 m
- VL: 80 m
- NO: 50 m

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<td>-</td>
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</table>

COMMENTS:
This segment consisted of a short (396 meters) length of shoreline surrounding a small protected bay. The east and west sides of the bay were low triangle bedrock cliffs - the north end and had a low-angle slope of pebbles/cobbles. Variable oiling along the section. Stain = coat on cliffs, particularly eastern cliff. A few isolated tarballs were observed on the pebble beach to the north, which were broken up in the field.

REVISED DATE: 4/24/90

[Signature]

DATE: 4/16/90
### Subsurface Oil (Continued)

<table>
<thead>
<tr>
<th>Pit No.</th>
<th>Pit Depth (cm)</th>
<th>Subsurface Oil Character</th>
<th>Oiled Interval (cm)</th>
<th>Below Oil / Film Color</th>
<th>Pit Zone</th>
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**Comments**

17/46

Reviewed: [Signature]

Date: 4/24/90
### Shoreline Ecological Summary

**Segment S1** 
**CH-7**  
**Subdivision** A  
**Date (m/d/y)** 4/22/90

**Time (24 hr)** 1700-1800  
**Biologist** SHARMAN

(A) **Substrate type and % of segments:**
- Bedrock 20
- Boulder 20
- Cobble 20
- Pebble 20
- Sand 20
- Silt 0

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

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

#### Barnacles

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<tr>
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#### Mytilus

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#### Gastropods (Angaria, Littorina, Lymnaea)

<table>
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#### Fucus

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<td>1L</td>
<td>5</td>
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</table>

**Wildlife Observations/General Comments:**
- For summer logging in tidal, low samples, saw tracks in U.T.A. & occasional tracks through depressions. Slope bake have been great by sun. Red-tailed hawk, spotted owls, and golden eagles have been seen several times.
- Inlet of inlet is still in use by tidal, and kill site. Inlet, as well as important feeding habitat for several manatees. Tidal (cont.)

**Ecological Considerations:**
- Presence of otter previously listed for this segment.
- Recreational water users (code 6U), and harvest (code 6Y). Special Use
- Designation (code 6Y) and subsistence sea-charters (code 7-TI). As in S1-6, caution should be used when considering harvest or other tidal
- areas in the segment - potential entanglement/poison problems. In addition,
- the protected netting (relatively high) along the S.N. inlet should be considered. Please
- note in above General Comments section the habitat values of ready points/poets
- and the protected N. inlet.
General Comments (cont.):

Communities in this segment are generally very healthy, except within the seaward tidal band at high-energy beaches. Large
boulder surfaces where barnacle mortality is at 40% (ca. 25% on
adjacent uniled surfaces). Siliqu appears to be most extensive on
the E. side of the protected inlet - there is some significant mussel
mortality beneath single boulder boulders at the base of the beach
wall here (but see siliqu, or due to hot water pressure causing
that the breakwater last summer?). Also greater than average
mussel mortality among mussels on boulder wall. S. of the protected
inlet as well as on the open-water side of the inlet (the adjacent E.
rocky shore of the peninsula that creates the inlet) are very diverse
and productive boulder platforms with tidal pools (MTZ 1 especially
LTS) - articulated coralline algae, tidpool epifauna, Bryozoa,
Kelp, etc. Entomopora is very common in the MTZ of
this segment. An observable there is good barnacle spat settlement,
and barnacle/gastropod/fouling recruitment appears to be occurring
when adults are present.
SHORELINE EVALUATION

SEGMENT ST/ CH-07 SUBDIVISION A (1 OF 1) DATE 4/22/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T-2 All bald eagle nests (3/1 to 6/1) - Active eagle nests (3/1 to 9/1)
Potential adjacent segment eagle nests (CH-08)
6Y Recreation: Special use destination
6U Recreation: Tent sites (6/1 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 treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

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

OILING CATEGORIZATION:
Wide 0 m: Medium 0 m: Narrow 146 m: V.Light 175 m: No Oil 53 m
Subsurface Oil Observed: Yes No Maximum Depth

RECOMMENDATIONS:
X 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: 5/2/90
ADEC [Signature] DATE: 6-19-90
EXXON
NOAA
USCG
1991 MAYSAP EVALUATION

SEGMENT: CH 008  SUB: A  REGION: PWS  SURVEY DATE: 5/2/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) OPEN 5/1 - 8/15; RESTRICTED 8/15 - 9/15

Ecological/Constraints (see page two for details)  Fish harvest area, Subsistence - Deer harvesting

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

SHPO Signature: ______________________ Date: __________________

RECOMMENDATIONS:

TREATMENT REQUIRED (Y or N)  N

Manual Pickup (Check as Req.)
Spot Washing
Bio-Customblen Only
Bio-Inipol/Customeblen
Other________________________
Other________________________

COMMENTS:

INITIAL:______________________________________________________

TAG:_________________________________________________________

FOSC:_________________________________________________________

TAG APPROVAL DATE:__________  FOSC APPROVAL DATE:__________

ADEC________________________  FOSC________________________

EXXON______________________

USCG_______________________

NOAA_______________________
ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

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

Subsistence - Deer Harvesting: Unlimited treatment prior to 8/15.
**Weekly Inspections Comment Sheet**

<table>
<thead>
<tr>
<th>TEAM NO.</th>
<th>4</th>
<th>SEGMENT</th>
<th>CH008</th>
<th>SUBDIVISION</th>
<th>A</th>
<th>DATE 5/12/91</th>
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**ADEC**

<table>
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<tr>
<th>NAME</th>
<th>Dianne Munson</th>
<th>SIGNATURE</th>
<th>Dianne Munson</th>
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</thead>
</table>

- [ ] NTR
- Treatment Recommended

Sporadic coats and stains and tar spots (or splashy STS) on bedrock outcroppings and under cobbles. Entire segment was not surveyed due to previous surveys showing no oil.

**EXXON**

<table>
<thead>
<tr>
<th>NAME</th>
<th>Larry D. Olson</th>
<th>SIGNATURE</th>
<th>Larry D. Olson</th>
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</table>

- [ ] NTR

I agree with representatives recommendations.

**LANDMANAGER**

<table>
<thead>
<tr>
<th>NAME</th>
<th>Larry Evanoff of CVC</th>
<th>SIGNATURE</th>
<th>Evanoff</th>
</tr>
</thead>
</table>

- [ ] NTR
- Treatment Recommended

Approx 1/2 of segment not surveyed because previous surveys showed no oil, scattered stains/coats on rock face and under/behind CVC in the UI.

**USCG/NOAA**

<table>
<thead>
<tr>
<th>NAME</th>
<th>Jerry Schultz</th>
<th>SIGNATURE</th>
<th>Jerry Schultz</th>
</tr>
</thead>
</table>

- [ ] NTR
- Further removal operations would cause more environmental harm than the oil to be removed.
**MAYSAP SHORELINE OILING SUMMARY**

**SEGMENT**: CH 08

**SUBDIVISION**: A

**DATE**: 3/1/91

**TIME**: 06:20 to 06:59

**TIDE LEVEL**: -4.5 ft. to +5.5 ft.

**ENERGY LEVEL**: □ H □ M □ L

**SURVEYED FROM**: □ FOOT □ BOAT □ HELO

**WEATHER**: □ SUN □ CLOUDS □ FOG □ RAIN □ SNOW

**TOTAL LENGTH SHORELINE SURVEYED**: 250 m

**NEAR SHORE SHEEN**: □ BR □ RB □ SL □ NONE

**EST. OIL CATEGORY LENGTH**: W 0 m M 0 m N 6 m V 5 m L 40 m US 70 m

---

### Surface Oil Character

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<thead>
<tr>
<th>LOC</th>
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<th>MS</th>
<th>TB</th>
<th>SH</th>
<th>CV</th>
<th>CT</th>
<th>ST</th>
<th>FL</th>
<th>DB</th>
<th>NO</th>
<th>AREA</th>
<th>S</th>
<th>Ui</th>
<th>Mi</th>
<th>Li</th>
<th>Notes</th>
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### Subsurface Oil Character

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<th>Subsurface Oil Character</th>
<th>Oiled Zone cm</th>
<th>Clean Below</th>
<th>H2O Level</th>
<th>Sheen Color</th>
<th>Pit Zone</th>
<th>Subsurface Sediments</th>
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<td>B</td>
<td>R S N</td>
<td>S U M L</td>
<td>S P 8</td>
<td></td>
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</table>

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

---

**OG COMMENTS**: Small cove with fairly flat shel in front of a vegetated old Storm bloom. Bedrock outcropp at the two ends and in middle of bay. Oiling occurs on coast on bedrock walls or intertidal romp, and on the underside of cl, in the uitz.

---

**REVIEWED**: MC 5/1491 reviewed 5/9 -4
THE OILED SITE (CT) IS LOCATED IN THE UPPER ZONE OF A MEDIUM EXPOSURE BEACH OF COBBLE AND PEBBLES. OILED AREA IS ON THE BEDROCK OUTCROPS NEAR THE DRIFT LINE. SPARSE FILAMENTOUS GREEN ALGAE, AND LITTLE ELSE IS PRESENT IMMEDIATELY AROUND THE OILED SITE. ABOUT 1-3 FEET BELOW THIS DRIFT LINE, INTRITIDAL BIOTA ARE MORE COMMON. RELATIVELY LITTLE BIOTA EXISTS ON THE MIDDLE ZONE BEACH COBBLE, BUT BEDROCK SUBSTRATA HAVE DENSE COVER OF FUCUS, WITH SPARSE TO MODERATE NUMBERS OF LITTORINES, BARNACLES AND LIMPETS. TOWARDS THE LOWEST ZONES, THE BIOTA GRADE INTO A DENSER FUCUS COVER, PATCHY MUSSEL ABUNDANCE, WITH HIGHER BARNACLE, LITTORINE, AND LIMPET DENSITIES. REPRODUCTIVE AND ADULT LIFE STAGES ARE PRESENT FOR MOST SPECIES. NO EVIDENCE OF RECENT ADVERSE IMPACTS FROM THE REMAINING OIL WERE OBSERVED.

Cleanup activities, if required, will not adversely affect the biota on this beach.

BIOTA AT SITE ARE BLACK LICHEN AND MOSSES. SLIGHTLY BELOW THE OILED AREA, THE INTRITIDAL BIOTA ARE RICHER, AND SIMILAR TO THE BIOTA DESCRIBED IN A (ABOVE). THE PEBBLE BEACH HAD LITTLE BIOTA WITHIN OR ATTACHED TO THE SEDIMENT, AT LEAST THOSE VISIBLE NEAR THE +6 FT TIDAL LEVEL. BORDERING HEADLAND HABITATS ARE MUCH RICHER, WITH DENSE FUCUS ABUNDANCE, MODERATE, BUT PATCHY MUSSELS, AND ABUNDANT BARNACLES, LIMPETS, AND LITTORINE SNAILS IN THE MIDDLE INTRITIDAL ZONE. LOWER ZONES APPEAR TO HAVE HIGHER COVER OF RED AND PARTICULARLY GREEN ALGAE.

Summary of Biological Features of CH008-A. This subdivision has several habitat types, but the survey team concentrated exclusively on the southern portion along a pebble and cobble beach with a few outcrops. The pebble/cobble beach has sparse biota (see A above) and the bedrock outcrops has much higher cover of Fucs, barnacles, mussels, and associated species.

WILDLIFE OBSERVATIONS - Completed on all subdivisions

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<th>BIRDS</th>
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<tr>
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<td>Other Birds</td>
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<table>
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<th># OBSERVED</th>
<th>SPECIES</th>
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<tr>
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<td>Whales (specify)</td>
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Shoreline subdivision map showing important biological features attached.
CH008-A Biological Report, (continued)

List of Common Species from CH008-A

A. Marine Plants
1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
   Enteromorpha sp., Ulva sp., Urospora sp., filamentous green
3. Brown Algae - Phaeophyta
   Agarum filiariatum, Ectocarpus spp., Fucus distichus, Hildenbrandia sp.,
   Raltsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
   Calliarthron sp., Corallina sp., Cumagloia andersonii, Halosaccion
   glandiformae, 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. Anenomes - Anthopleura artemesia, A. elegantissama
3. Hydroids - Sertulariidae - Sertularella?
4. Flatworms - Platyhelminthes - Polyclads
5. Nemertean Worms - Ribbon Worms - Emplectonema gracile
6. Polychaetes
   Nepthyidae
   Nereidae - Nereis spp.
   Serpulidae
   Serpula sp., Crucigera sp., Eudistylia polymorpha
   Spriorbidae - Spiorbis sp.
7. Peanut worms - Sipunculids - Phascolosoma agassizii
8. Crustaceans
   a. Amphipods - Orchestia sp.?
   b. Barnacles
      Balanus glandula, Chthamalus dalli, Semibalanus cariosus
   c. Crabs
      Haplogaster sp., Hemigrapsus oregonensis, Paguridae (hermit crabs),
9. Mollusca
   a. Chitons
      Mopalia mucosa, Katharina tunicata, Tonicella lineata,
   b. Snails - Gastropods
      Littorina scutulata, L. sitkana, Natica clausa, Nucella lamellosa, N.
      lima, N. emarginata,
   c. Limpets Lottia digitalis, L. persona
   d. Nudibranches - Lamellodoris fusca
   e. Mussels and Clams
      Mytilus edulis, Prototheca staminea, Saxidomus giganteus,
10. Echinoderms
    a. Brittle Stars - Ophiolus sp., ?
    b. Sea stars
       Dermasterias imbricata, Evasterias truscheli, Leptasterias hexactis,
       Pycnopodia helianthoides,
    d. Urchins - Strongylocentrotus droebachiensis
12. Fishes - Cottidae - unknown species
    a. Liparidae - Liparis callyodon
    b. Stichaeidae - Xiphister atropurpureus, X. mucosus
Bio Sketch Map
CHO08A
Jim Barry
May, 1991

Bedrock
Flat pebble/jelly
Logs, drift algae

Black lichen, mosses, occasional
beach grass near oiled site.
Lower: same as A.

Sparse filamentous green
algae, little other flora, except some algae.
Below: little on crested
beach, but dense física on
bedrock substrate

Meters
0 200 400
1991 MAYSAP EVALUATION

SEGMENT: CH 008 SUB: A REGION: PWS SURVEY DATE: 5/2/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s) OPEN 5/1 - 8/15; RESTRICTED 8/15 - 9/15

Ecological/Constraints (see page two for details) Fish harvest area, Subsistence - Deer harvesting

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

SHPO Signature: Date: 5/17/91

RECOMMENDATIONS:

<table>
<thead>
<tr>
<th>TREATMENT REQUIRED (Y or N)</th>
<th>INITIAL</th>
<th>TAG</th>
<th>FOSC</th>
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</thead>
<tbody>
<tr>
<td>N</td>
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</table>

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

COMMENTS:
INITIAL:

TAG:

FOSC:


ADEC
EXXON
USCG
NOAA

E. E. PAGE, CDR, USCG
CHIEF OF STAFF, FOSC
ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

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

Subsistence - Deer Harvesting: Unlimited treatment prior to 8/15.
MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT CH008 SUBDIVISION A DATE 5/2/91

ADEC
NAME Dianne Munson SIGNATURE Dianne Munson

☐ NTR ☐ Treatment Recommended
Sporadic coats and stains and tar spatters (or splashy scori) on bedrock outcroppings and under cobbles. Entire segment was not surveyed due to previous surveys showing no oil.

EXXON
NAME Larry D. Olson SIGNATURE Larry D. Olson

☐ NTR
I agree with representatives recommendations.

LANDMANAGER
NAME Larry Evanoff OF CVC SIGNATURE [Signature]

☐ NTR ☐ TREATMENT RECOMMENDED
APPROX 1/2 OF SEGMENT NOT SURVEYED BECAUSE PREVIOUS SURVEYS SHOWED NO OIL, SCATTERED STAINS/COATS ON ROCK FACE AND UNDERNEATH CB IN THE UI.

USCG/NOAA
NAME Jerry Schultz SIGNATURE Jerry Schultz

☐ NTR
FURTHER REMOVAL OPERATIONS WOULD CAUSE MORE ENVIRONMENTAL HARM THAN THE OIL TO BE REMOVED.
MAYSAP SHORELINE OILING SUMMARY

TEAM NO. 1
OG

S. F. Nghi

ADEC

D. W. Miller

EXXON

J. Miller

TIME 06:20 to 06:59
TIDE LEVEL +6.5 ft. to +5.5 ft.
ENERGY LEVEL: ☒ H ☒ M ☒ L
SURVEYED FROM: ☒ FOOT ☒ BOAT ☒ HELO
WEATHER: ☒ SUN ☒ CLOUDS ☒ FOG ☒ RAIN ☒ SNOW
TOTAL LENGTH SHORELINE SURVEYED: 250 m
NEAR SHORE SHEEN: ☒ BR ☒ RB ☒ SL ☒ NONE
EST. OIL CATEGORY LENGTH: W 0 m M 0 m N 6 m VLI 54 m NO 190 m US 707 m

<table>
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<tr>
<th>LOC</th>
<th>SURFACE OIL CHARACTER</th>
<th>SURFACE SEDIMENT TYPE</th>
<th>SLOPE</th>
<th>WIDTH</th>
<th>LENGTH</th>
<th>ZONE</th>
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</tr>
</tbody>
</table>

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 __________

<table>
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<tr>
<th>PIT NO.</th>
<th>OILED ZONE</th>
<th>CLEAN BELOW</th>
<th>H2O LEVEL</th>
<th>SHEEN COLOR</th>
<th>PIT ZONE</th>
<th>SURFACE-SUBSURFACE SEDIMENTS</th>
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SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS:
Small core with dry/dead brush in front of a vegetated old storm drain. Bedrock outcrops at the two ends and in middle of bay. Oil sheen occurs as coating on bedrock walls or intermittent spots, and on the underside of 60's in the WITZ.
OG SKETCH MAP
CH1008-A
DM Semple
May 3, 1991
0620-0659

Legend

1 Bedrock
2 clay pb/ch
x dogs. algal

In Bedrock fractures
CT 10%
5 x 3

A2
CT 10%
5 x 3

A3
CT 5%
4 x 4

Some CB ston undivided
of CB/Ad 1x50 10%

Smit 10%

0 240 480

Reviewed: MC 5/1/91
The oiled site (CT) is located in the upper zone of a medium exposure beach of cobble and pebbles. Oiled area is on the bedrock outcrops near the drift line. Sparse filamentous green algae, and little else is present immediately around the oiled site. About 1-3 feet below this drift line, intertidal biota are more common. Relatively little biota exists on the middle zone beach cobble, but bedrock substrata have dense cover of Fucus, with sparse to moderate numbers of littorines, barnacles and limpets. Towards the lowest zones, the biota grade into a denser Fucus cover, patchy mussel abundance, with higher barnacle, littorine, and limpet densities. Reproductive and adult life stages are present for most species. No evidence of recent adverse impacts from the remaining oil were observed.

Cleanup activities, if required, will not adversely affect the biota on this beach.

Oil (CT) was found on bedrock outcrop areas along the upper/supratidal boundary. Biota at site are black lichen and mosses. Slightly below the oiled area, the intertidal biota are richer, and similar to the biota described in A (above). The pebble beach had little biota within or attached to the sediment, at least those visible near the +6 ft tidal level. Bordering headland habitats are much richer, with dense Fucus abundance, moderate, but patchy mussels, and abundant barnacles, limpets, and littorine snails in the middle intertidal zone. Lower zones appear to have higher cover of red and particularly green algae.

Summary of Biological Features of CHOO8-A. This subdivision has several habitat types, but the survey team concentrated exclusively on the southern portion along a pebble and cobble beach with a few outcrops. The pebble/cobble beach has sparse biota (see A above) and the bedrock outcrops has much higher cover of Fucus, barnacles, mussels, and associated species.

**WILDLIFE OBSERVATIONS -** Completed on all subdivisions

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<td>Other Birds</td>
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<tr>
<td>Whales (specify)</td>
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</tbody>
</table>

Shoreline subdivision map showing important biological features attached.
List of Common Species from CHOO8-A

Marine Plants
1. Diatoms, Blue Greens
2. Green Algae - Chlorophyta
   Enteromorpha sp., Ulva sp., Urospora sp., filamentous green
3. Brown Algae - Phaeophyta
   Agarum fimbriatum, Ectocarpus spp., Fucus distichus, Hildenbrandia sp.,
   Ralfsia sp., Syctosiphon lomentaria
4. Red Algae - Rhodophyta
   Calliarthron sp., Corallina sp., Cunagloia andersonii, Halosaccion
glandiforme, Lithothamnion sp., Membranoptera dimorpha, Odonthalia floccosa,
   Palmaria palmata, Petrocelis sp., Ptilota filicina, Rhodomela larix,
5. Higher Plants
   Leymus mollis (beach rye grass)

Marine Animals
1. Sponges - Porifera - Halichondria sp.
2. Anemones - Anthopleura artemesia, A. elegantissama
3. Hydroids - Sertulariidae - Sertularella?
4. Flatworms - Platyhelminthes - Polyclads
5. Nemertean Worms - Ribbon Worms - Emplectonema gracile
6. Polychaetes - Nephtyidae
   Nereidaceae - Nereis spp.
   Serpulidae - Serpula sp., Crucigera sp., Eudistylia polymorpha
   Spiorbidae - Spiorbis 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),
11. Mollusca
   a. Chitons
      Mopalia mucosa, Katharina tunicata, Tonicella lineata,
   b. Snails - Gastropods
      Littorina scutulata, L. sitkana, Natica clausa, Nucella lamellosa, N.
      lima, N. emarginata,
   c. Limpets Lottia digitalis, L. persona
   d. Nudibranches - Lamellidoris fusca
   e. Mussels and Clams
      Mytilus edulis, Prototheca staminea, Saxidomus giganteus,
12. Echinoderms
   a. Brittle Stars - Ophiolus sp., ?
   b. Sea stars
      Dermasterias imbricata, Evasterias truscheli, Leptasterias hexactis,
      Pycnopodia helianthoides,
   d. Urchins - Strongylocentrotus droebachiensis
   Echinodermata - Membranipora sp., Schizoporella sp.
Bryozoa - Cottidae - unknown species
   Lipariidae - Liparis callyodon
   Stichaeidae - Xiphister atropurpureus, X. mucosus
Bio Sketch Map

CHOOSA

Jim Barry

3 May, 1991

- Bedrock
- Flat pebble/cobble
- Toys, Drift Algae

Black lichen, mosses, occasional beach grass near oiled site. Lower: same as A.

Sparse filamentous green algae, little other biota except some algae, below: little on cobbles.

Beach, but dense rocks on bedrock substrate.

METERS

0 200 400
REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/CH-08

SUBDIVISIONS: A (1 OF 1)
SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T-2 All bald eagle nests (3/1 to 6/1) - Active eagle nests (3/1 to 9/1)
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
6Y Recreation: Special use destination
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 0 m: V.Light 863 m: No Oil 94 m
Subsurface Oil Observed: Yes X No____ Maximum Depth 43 cm

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

COMMENTS: Recommend bioremediation in area of subsurface oil shown on sketch map. Work should be conducted after 6/1 with USFWS approval based on eagle nest constraints.

TAG COMMENTS: ______________________________________________________
____________________________________________________
____________________________________________________
____________________________________________________

TAG APPROVAL DATE: __________
ADEC EXXON NOAA USCG
FOSC: __________________ DATE: __________________
PWS, SEWERD 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 6/1)
1E Main Bay Hatchery release (4/20 to 6/10)
1F Sawmill Bay Hatchery release (4/15 to 6/1)
1G Cannery Creek Hatchery release (4/21 to 6/1)
1H Remote release site
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: ADF&G Larry Peltz 424-3214

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 (6/7 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: AOF&G Larry Peltz 424-3214

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 unolioed intertidal and subtidal algae and seagrass. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
AGENCY CONTACT PERSON: ADF&G Evelyn Biggs 424-3235

3P Harbor seal and sea lion pupping (6/15 to 7/1)
3Q Harbor seal and sea lion molting (8/15 to 9/15)
Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts. No application of Inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31). Contact ADF&G and USFWS prior to treatment for confirmation.
AGENCY CONTACT PERSON: ADF&G Larry Peltz 424-3214

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

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

6A Recreation - Tent sites (6/1 to 9/15)
6B Anchorage (6/1 to 9/15)
6C Forest Service cabins (6/1 to 9/15)
6D Lodge (6/1 to 9/15)
6E Special use destination

7Z Subsistence area: Salmon harvesting (5/1 to 9/30)
Finfish harvesting
doe harvesting (8/15 to 2/29)
Invertebrates 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

PWS-C002 AM 4/24/90
FIELD SHORELINE COMMENT SHEET

SEGMENT ST / CH8  SUBDIVISION: A  (ENTIRE)  DATE 4/23/90

USCG
NAME  JERRY SCHULTZ  SIGNATURE  JERRY SCHULTZ

☐ NO TREATMENT RECOMMENDED  ☒ TREATMENT SUGGESTED

COMMENTS
Bio-erosion is recommended for a small area of this segment, however the close proximity to the tidal pool should be noted.
Further recommend manual pickup of any remaining debris.

ADEC
NAME  MIKE EBEL  SIGNATURE

☐ NO TREATMENT RECOMMENDED  ☒ TREATMENT SUGGESTED

COMMENTS
CH-8-A: Spletes of sewer were observed, very occasionally, along
sewer coats and stars widening out in areas and achieving up to
18 distribution. On these areas no treatment could equal the impact to
the earth in using up resources to accomplish such an endeavor.
The SW corner of beach had 2 bags of assorted debris and pottery that could
be manually removed. The SE end of segment (refer sketch map) had an oil
line from 5-16 cm high and from 10 to 23 cm below the surface (apparently
forming a small pool). The

LAND MANAGER
NAME  PAT SELANOFF (CVC)  SIGNATURE

☐ NO TREATMENT RECOMMENDED  ☒ TREATMENT SUGGESTED

COMMENTS
Manual pickup of debris in, it banned
is improbable, I would suggest a hot water wash
down method. It is possible to get a rig of
low tide.
This area should be bioenhanced with granular fertilizers only. From the present literature provided, my tentative conclusion is that Inipol is two steps removed from proof of claims, and that custom-blended or garden variety fertilizers is still one step removed from proof. Therefore, I am for trying the fertilize principle one step at a time—starting with granules. In this segment, maintain distances from intertidal pools during application. End

Michael J. Ebel ADEC
SHORELINE OILING SUMMARY

OG: Randy Swegle  USCG  Terr Schulte  SEGMENT ST/ CH-8
BIO: James Sherman  LAND REP  Pat Selanoff (CSE)  SUBDIVISION  A
EXXON: Leonard Barlow  ADEC  Mike Gal
TEAM NO. 12  TIDE LEVEL  +0.8 to +2.7  DATE  4/22/90
EST. SUBDIVISION LENGTH: 1154 m  ❑ Sun  ❑ Clouds  ❑ Fog  ❑ Rain  ❑ Snow
UPLANDS DESCRIPTION: ❑ Grass  ❑ Forest  ❑ Rock
SURVEYED FROM: ❑ Foot  ❑ Boat  ❑ Helo  WORKING DIRECTION: S to N
SURFACE SEDIMENTS: R 30% B 15% C 25% P 20% G 20% S 10% M 0% V. O
SLOPE: Lang 35% Hang 65% Ven 0%
OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 0 m NO 120 m

SURFACE OIL

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PAVEMENT H F S □ sq. m by □ - □ BAGS
PATTIES / TARBALLS □ □ BAGS
NEAR SHORE SHEEN? □ BR RW SL TL

OILED DEBRIS AMOUNT DID YOU COLLECT DEBRIS?

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TYPE: Plastic debris
#BAGS: 1

Photographs:

Roll No.: None
Frames: ___

SUBSURFACE OIL

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COMMENTS

This segment consists predominantly of cobble-pebble beaches, sometimes under high angle cliffs, sometimes under low angle grassy slopes. A lot of staining-coating observed along cliff faces, in various distributions. Along largest beach, a buried layer was observed in a number of pits. Messy exhibits not well delineated but appears to be largely confined to southeast corner. A few tarballs and patties were present in southwest corner of beach.
### SHORELINE OILING SUMMARY (PAGE 2)

**SEGMENT ST/CH-B SUBDIVISION A**  (2 OF 3)

**SUBSURFACE OIL (CONTINUED)**

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<th>OIL / FILM COLOR</th>
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**COMMENTS**

* OF in Pit 8 from 15-28 cm above OR keep.

**REVISED 06-15-90**

**REVIEWED JN DATE 4-24-90**
## SHORELINE OILING SUMMARY (PAGE 2)

SEGMENT ST: CH-8, SUBDIVISION A (3 OF 3)

### SUBSURFACE OIL (CONTINUED)

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### COMMENTS

[Handwritten note: 27/46]

[Handwritten note: Reviewed by [Signature] Date 4-24-90]
### SHORELINE ECOLOGICAL SUMMARY (Page 1 of 2)

**Segment ST** / **CH-8**  
**Subdivision** / **A**  
**Date (mo/day/yr)** / **4/22/90**

**Time (24 hr)** / **1800-2400**  
**Biologist** / **SHARMAN**

(A) **Substrate type and % of segment:**

1. Bedrock  
2. Boulder  
3. Cobble  
4. Pebble  
5. Sand  
6. Silt

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

(C) **Density, substrate preference (by number from A, above), & vertical zonation of major taxa:**

**Photographs:**

Roll No.  
Frames

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### Wildlife Observations/ General Comments:

- Dens, rock, or debris in essential forage 1st order
- Canavese (see attached map) adult, juveniles, males, no females detected
- Barnacle: 2nd order
- Not present in special use zone, nor in special use zone
- Sand, not present in special use zone
- Fucus: 3rd order
- Not present in special use zone

### Ecological Considerations:

- Resource disruptions previously identified for the segment include recreational use (code 61), anchorages (code 6V), Special Use Permit (code 6Y), and special use designation (code 7H). Note 2 points: 1st order 2nd order and special use designation (code 7H). Note 2 points: 1st order and special use designation (code 7H). Note
- Barnacles are potentially sensitive to changes in water quality and temperature. In particular, the development of leaded gasoline and the use of DDT are likely to affect barnacles in the future.
General Comments (cont.):

Coelot is among the richest and most diverse such areas I have observed in all of PWS impacted by the spill. A

sampling of species include: Anthopleura xanthogrammica, A. utricularis,  
Oreodiscus, Katharina, Eunicella, Metridium, Alcyonaria, Stylaster, 

Aurelia aurita, Anthopleura elegansia, Pedata, Phellia, 

Pectinatula magnifica, Anthopleura,  

Medusoa, a great diversity of algae, etc., etc. Very good recruitment apparent among all major groups; 

Cerianthi, nudibranchs, gastropods, 

Ecological Considerations (cont.):

Coelot is extremely diverse - as I mentioned above, among the richest and most diverse I have observed in all of the portion of PWS impacted by the spill. Certain is surged in the consideration of conspicuousness of the rich portion of adjacent Procedure Band (see attached map).
XXX Wide
/// Medium
---- Narrow
TTTT Very Light
0000 No Oil

ADEC Segment Length: 357m

Map Key: PWS-56
Name: Dick Siegel
Date: 4/22/90
Data Entered: [Signature]
ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT CH-8 SUBDIVISION A (1 of 1)

WORK WINDOW

<table>
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ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1K Purse Seine Hook-off

Closed to bioremediation and manual raking after 7/20.

5T Bald Eagle Nest

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

7II Subsistence: Deer Harvesting

Closed to bioremediation and manual raking after 8/15.

OTHER ECOLOGICAL CONSIDERATIONS

Restrict boat and air traffic to essential minimum after 7/20. Restrict boat and air traffic and beach disturbance to essential minimum after 8/15. Avoid any unnecessary disturbance or damage to unaltered biota and substrate.

FOSC DATE 6-10-90

Prepared By: W. Keller

Date 6/9/90
SHORELINE EVALUATION

SEGMENT ST/ CH-08  SUBDIVISION A (1 OF 1) DATE 4/22/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ST-2  All bald eagle nests (3/1 to 6/1) - Active eagle nests (3/1 to 9/1)
SU  Recreation: Tent sites (6/1 to 9/15)
SV  Recreation: Anchorages (6/1 to 9/15)
SY  Recreation: Special use destination
SII  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: 5/3/90

OILING CATEGORIZATION:
Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 863 m: No Oil 94 m
Subsurface Oil Observed: Yes X No Maximum Depth 43 cm

RECOMMENDATIONS:

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

COMMENTS: Recommend bioremediation in area of subsurface oil shown on sketch map. Work should be conducted after 61 with USFWS approval based on eagle nest constraints.  

TAG COMMENTS: MAINTAIN ANCH PITS 6 1/2 AMOR TO BIO MEMOR

TAG APPROVAL DATE: 5/3/90

DEC: [Signature]  DATE: 5/9/90
EXXON: [Signature]  DATE: 5/9/90
NOAA: [Signature]  DATE: 5/9/90
USCG: [Signature]
SHORELINE EVALUATION

SEGMENT ST/ CH-08 SUBDIVISION A (1 OF 1) DATE 4/22/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
5T-2 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
6Y Recreation: Special use destination
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).

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Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 863 m: No Oil 94 m
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RECOMMENDATIONS:
____ No Treatment Recommended
X 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: Recommend bioremediation in area of subsurface oil shown on sketch map. Work should be conducted after 6/1 with USFWS approval based on eagle nest constraints.

TAG COMMENTS: Manually Rake Pits 6 ft. Awesome To Bio, Manual Pickup of Tarmat & Patties

TAG APPROVAL DATE: 5/3/90
ADEC Art Werner
EXXON And Tony Pomin
NOAA Gary Peterson
USCG Ron Viggiano
FOSC: Wm. L DATE: 5-9-80
a CVC Rep will be present during cleanup
XXX Wide
//// Medium
---- Narrow
TTTT Very Light
0000 No Oil

CH-8

ADEC Segment Length: 957m

Map Key: PWS-56
Name: Rob Brandt
Date: 9/22/90
Date Entered:
1991 MAYSAP EVALUATION

SEGMENT: CH 009  SUB: B  REGION: FWS  SURVEY DATE: 5/5/91

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

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

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

SHPO Signature: ___________________________ Date: ___________________________

RECOMMENDATIONS:

TREATMENT REQUIRED (Y or N)  N
Manual Pickup (Check as Req.)
Spot Washing
Bio-Customblen Only
Bio-Inipol/Customblen
Other__________________________
Other__________________________

COMMENTS:
INITIAL:

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TAG:

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FOSC:

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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.

**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 - Deer Harvesting:** Unlimited treatment prior to 8/15.
MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 6  SEGMENT CH 009  SUBDIVISION B  DATE 5/5/91

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<td>Maysap Aeld Shoreline Comment Sheet</td>
<td>Aimee Weseman</td>
</tr>
</tbody>
</table>

☐ NTR  Resource Uses - Commercial Tourism, Commercial Fishing & Recreation
☐ Treatment Recommended.

To complete treatment to anadromous fish and aquatic life, manually till MSOR sediments in areas 042 on west side of stream.

The small cove area to the east of stream (CH 009-A?) contains quantities of subsurface oil beneath clean gravels which could use treatment. The oiled sediments reside between 4 among low bedrock ridges that could be difficult to access. Further assessment may determine a suitable treatment.

<table>
<thead>
<tr>
<th>EXXON</th>
<th>NAME</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Scott A. Nauman</td>
<td>Scott A. Nauman</td>
</tr>
</tbody>
</table>

☐ NTR

The majority of the subdivision showed no surface oil. The long patch of SOE was broken up and raked. This should be all the treatment needed for this oiling condition. Other areas of SOE should weather naturally. Subsurface oil is concentrated in pocket beach (CH-9A) and is well buried. Eagles were observed on this subdivision, and the intertidal zone is very healthy. I see no need for further treatment.

<table>
<thead>
<tr>
<th>LANDMANAGER</th>
<th>NAME</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

☐ NTR

USCG/NOAA | NAME | Signature |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CWO J. Spurr</td>
<td>R. Hoff</td>
<td>R. Hoff</td>
</tr>
</tbody>
</table>

☐ NTR

This segment has a very rich lower intertidal community with extensive mussel beds and other biota. Surface oil residue remaining in the upper intertidal was broken up and raked. One area with some sub-surface oil was found around the point at the eastern end of the segment. I recommend that this be left to weather naturally since the area is inaccessible and should not pose a threat to other communities. The subsurface oil was also far form the redunuous...
FIELD SHORELINE COMMENT SHEET

SEGMENT AS CH 9  SUBDIVISION:  ______ SITE:  ______  DATE 5-5-91

USCG
NAME __________________________ SIGNATURE __________________________

[ ] YES   [ ] NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:

ADEC
NAME __________________________ SIGNATURE __________________________

[ ] YES   [ ] NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:

LAND MANAGER
NAME  CHARLES SELANOFF  SIGNATURE  Charles Selanoff

[ ] YES   [ ] NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:
A considerable amount of oil at the mouth of the stream with patches along the storm sewer. This area can be manually worked with some mechanical tilling done. The Cheneq team should be considered for this clean-up (manual pick-up). This area is primarily a subsistance use area

EXXON
NAME __________________________ SIGNATURE __________________________

[ ] YES   [ ] NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:
## MAYSAP SHORELINE OILING SUMMARY

**Team No.** 6

**OG** D.L. Little

**BIO** T. Schroeder

**ADEC** A. Weiseman, T. Crowe

**LandManager** C. Selanoff for CVC

**Exxon** Scott Nau"man

**USCG/NOAA** C.W. Spruill, R. Hoff

**Time** 11:15 to 12:45

**Tide Level** 2.3' t. to 11/2 ft.

**Energy Level**
- H
- M
- L

**Surveyed From:**
- Foot
- Boat
- Helo

**Weather:**
- Sun
- Clouds
- Fog
- Rain
- Snow

**Total Length Shoreline Surveyed:** 630 m

**Near Shore Sheen:**
- BR
- RB
- SL
- None

**Est. Oil Category Length:**
- W
- M
- N
- VL
- 85 m
- US
- 545 m
- US

### Surface Oil Character

<table>
<thead>
<tr>
<th>LOC</th>
<th>Surface Oil Character</th>
<th>Surface Sediment</th>
<th>Shore Slope</th>
<th>Width</th>
<th>Length</th>
<th>Zone</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>L</td>
<td>P</td>
<td>L</td>
<td>5</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>B</td>
<td>S</td>
<td>P</td>
<td>L</td>
<td>5</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>C</td>
<td>P</td>
<td>Rock</td>
<td>V</td>
<td>10</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>S</td>
<td>P</td>
<td>M/L</td>
<td>10</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>S</td>
<td>P</td>
<td>M</td>
<td>0.5</td>
<td>1</td>
<td>X</td>
</tr>
</tbody>
</table>

**Notes:**
- In slate talus
- Rock wall of gulley
- Broken and raked/ragged light SOR.

### Distribution:
- C = 91-100%
- B = 81-90%
- P = 71-80%
- S = 1-10%
- T = <1%

### Slope:
- V = Vertical
- H = High Angle
- M = Medium Angle
- L = Low Angle

**Photo Roll # MAYSAP -**

### Frames

**Pit No.**

<table>
<thead>
<tr>
<th>Pit No.</th>
<th>Pit Depth (cm)</th>
<th>Subsurface Oil Character</th>
<th>Oiled Zone</th>
<th>Clean Below</th>
<th>Hydro Level</th>
<th>Sheen Color</th>
<th>Pit Zone</th>
<th>Subsurface-Sediment</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>30</td>
<td>X</td>
<td>10-20</td>
<td>20</td>
<td>Y</td>
<td>N</td>
<td>X</td>
<td>p-g</td>
<td></td>
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<tr>
<td>2</td>
<td>25</td>
<td>X</td>
<td>15-25</td>
<td>20-30</td>
<td>Y</td>
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<td>X</td>
<td>p-g</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>30</td>
<td>X</td>
<td>10-20</td>
<td>20</td>
<td>Y</td>
<td>20</td>
<td>X</td>
<td>p-g</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>25</td>
<td>X</td>
<td>5-10</td>
<td>20</td>
<td>Y</td>
<td>20</td>
<td>X</td>
<td>p-g</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>40</td>
<td>X</td>
<td>5-10</td>
<td>30</td>
<td>N</td>
<td>25</td>
<td>X</td>
<td>p-g</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>25</td>
<td>X</td>
<td>10-25</td>
<td>30</td>
<td>N</td>
<td>25</td>
<td>X</td>
<td>p-g</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>25</td>
<td>X</td>
<td>10-25</td>
<td>30</td>
<td>N</td>
<td>25</td>
<td>X</td>
<td>p-g</td>
<td>p-g</td>
</tr>
<tr>
<td>8</td>
<td>45</td>
<td>X</td>
<td>10-25</td>
<td>30</td>
<td>N</td>
<td>25</td>
<td>X</td>
<td>p-g</td>
<td></td>
</tr>
</tbody>
</table>

**Sheen Color:**
- B = Brown
- R = Rainbow
- S = Silver
- N = None

### OG Comments:

Surface oil was limited to slate 'talus' debits to the extreme NW of the subdivision (CH009). Inside the lagoon oil was found as a thin long (CH12) band which was previously AP, now HSOR at only 2% cover, though sporadically distributed. At genny 5 pit both CV and UH20 were still apparent, what is likely CH-9-A in the gulley of eastern portion of map. Subsurface oil was restricted to the same area, although tucked behind some bedrock edging, as an area of OF, MOR and a small patch of HOR (2 x 3 m).
<table>
<thead>
<tr>
<th>PIT NO</th>
<th>DEPTH (cm)</th>
<th>OIL CHARACTER</th>
<th>OILED ZONE</th>
<th>OILED BELOW</th>
<th>H2O LEVEL</th>
<th>SHEEN COLOR</th>
<th>PIT ZONE</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>45</td>
<td>X</td>
<td>Y</td>
<td>N</td>
<td>X</td>
<td>P</td>
<td>p-9</td>
<td>CU-009-A</td>
</tr>
<tr>
<td>11</td>
<td>40</td>
<td>X</td>
<td>Y</td>
<td>N</td>
<td>X</td>
<td>P</td>
<td>p-9</td>
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</tr>
<tr>
<td>12</td>
<td>20</td>
<td>X</td>
<td>S-10</td>
<td>R</td>
<td>X</td>
<td>P</td>
<td>GC</td>
<td>beneath water</td>
</tr>
</tbody>
</table>

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

OG COMMENTS:
### Observed Features

- **Broken E Panel:**
  - **Dimensions:** 1 x 5 m (LSOR 2%)
  - **Location:** Near the lagoon with sea grasses.

- **Atadromous Stream:**
  - **Dimensions:** 0.5 x 1 m (LSOR 2%)
  - **Location:** Near the stream.

### Site Logs

<table>
<thead>
<tr>
<th>Pit#</th>
<th>TD (m)</th>
<th>OD</th>
<th>Depth Below Stream (m)</th>
<th>H2O Sed.</th>
<th>Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>P-GF UITZ</td>
</tr>
<tr>
<td>2</td>
<td>35</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>1-9m LITZ</td>
</tr>
<tr>
<td>3</td>
<td>40</td>
<td>Y</td>
<td>Hor</td>
<td>N</td>
<td>20-30 RB 25 P-GM MITZ</td>
</tr>
<tr>
<td>4</td>
<td>40</td>
<td>Y</td>
<td>Hor</td>
<td>N</td>
<td>25 P-9 UITZ</td>
</tr>
<tr>
<td>5</td>
<td>40</td>
<td>N</td>
<td>Y</td>
<td>B</td>
<td>20 P-9 LITZ</td>
</tr>
<tr>
<td>6</td>
<td>25</td>
<td>N</td>
<td>Y</td>
<td>Hor</td>
<td>25-30 UITZ</td>
</tr>
<tr>
<td>7</td>
<td>25</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>25 P-9 UITZ</td>
</tr>
<tr>
<td>8</td>
<td>35</td>
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<td>N</td>
<td>Hor</td>
<td>25-30 UITZ</td>
</tr>
<tr>
<td>9</td>
<td>45</td>
<td>N</td>
<td>Y</td>
<td>B/R</td>
<td>30 P-9 SUIZ</td>
</tr>
<tr>
<td>10</td>
<td>45</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>P-M M-2</td>
</tr>
</tbody>
</table>
MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 6  DATE  5/5/91
SEGMENT # CH 009  TIDAL HEIGHT (Range) +2 3/4 ft + 1 1/2 ft
SUBDIVISION B  BIOLOGIST T.R. Schroeder
SEA STATE Light Chop  WIND SPEED/DIRECTION variable 5-10
PHOTOGRAPHS: ROLL # FRAME #

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

ABBREVIATION: Tidal part of beach reef (e.g., reef/2, reef/3, reef/4, reef/5)

1. Tidal beach segments with clean and clear water, productive environment, and marine life are of great importance to the remaining salmon. The stream is an insignificant trickle of water as far as salmon production goes. However, the location and reef are valuable in supporting passages salmon from other more productive streams.

2. The subtidal reef on the beach near this location is 20 ft long (across). The proximity to this productive reef is great. The beach is more exposed to wave action, and the reef should provide cover for fish. The adverse effects of the reef could be seen on this thread tremendous biological community.

WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

<table>
<thead>
<tr>
<th>BIRDS</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
<th>FISH OBSERVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eagles</td>
<td>1</td>
<td>3 (total) / jr.</td>
<td>17 Rockefellers</td>
</tr>
<tr>
<td>Seabirds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterfowl</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gulls/kittiwakes</td>
<td>1 gulls</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Shorebirds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corvids</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Birds</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LAND MAMMALS</th>
<th># OBSERVED</th>
<th>SPECIES</th>
<th># OBSERVED</th>
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<tbody>
<tr>
<td>Sea Otters</td>
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<td></td>
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<tr>
<td>Pinnipeds (specify)</td>
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<td></td>
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</tr>
<tr>
<td>Seals (specify)</td>
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</table>

Shoreline subdivision map showing important biological features attached.
1991 MAYSAP EVALUATION

SEGMENT: CH 009 SUB: B REGION: PWS SURVEY DATE: 5/5/91

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

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

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

SHPO Signature: Date: 5/21/91

RECOMMENDATIONS:

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: MAY 21 1991 FOSC APPROVAL DATE: 6/11/91

ADEC 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.

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

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

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

Resource Uses - Commercial Tourism, Commercial Fishing & Recreation

To complete treatment to head portion of subsegment - manually till MSOR sediments in areas 042 on west side of stream. The small cove area to the east of stream (CH 009-A2) contains quantities of subsurface oil beneath clean gravels which could use treatment. The oiled sediments reside between 4 among low bedrock ridges & could be difficult to access. Further assessment may determine a suitable treatment.

The majority of the subdivision showed no surface oil. The long patch of SOR was broken up and raked. This should be all the treatment needed for this oiling condition. Other areas of SOR should weather naturally. Subsurface oil is concentrated in pocket beach (CH-9A) and is well buried. Eagles were observed on this subdivision, and the intertidal zone is very healthy. I see no need for further treatment.

This segment has a very rich lower intertidal community with extensive mussel beds & other biota. Surface oil residue remaining in the upper intertidal was broken up & raked. One area with remaining subsurface oil was found around the point at the eastern end of the segment. I recommend that this be left to weather naturally since the area is inaccessible and should not pose a threat to biologic communities. The subsurface oil was also far from the advanced zone. This...
FIELD SHORELINE COMMENT SHEET

SEGMENT AS 1 CH 9  SUBDIVISION:  ______ SITE:  ______ DATE 5-5-91

USCG
NAME  __________________ SIGNATURE  

☐ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:

ADEC
NAME  __________________ SIGNATURE  

☐ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:

LAND MANAGER
NAME  CHARLES SELANOFF  SIGNATURE  Charles Selanoff

☒ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:
A considerable amount of oil at the mouth of the sties with patches along the storm rim. This area can be manually worked with some mechanical tilling done. The cleanup team should be considered for this clean-up (manual pick-up). This area is primarily a subsistence use area.

EXXON
NAME  __________________ SIGNATURE  

☐ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:
**MATSAP SHORELINE OILING SUMMARY**

**TEAM NO.** 6  
**OG D. L. LITTLE**  
**BIO T. SCHROEDER**  
**ADEC A. WABELEH / T. CROWE**  
**LANDMANAGER C. SELANOFF** for CVC  
**EXXON SCOTT NAUMAN**  
**USCG/NOAA J. WO SPARKS ** R. HOFF**

**TIME** 11:15 to 12:45  
**TIDE LEVEL** 2 3/4 ft. to 1 1/2 ft.  
**ENERGY LEVEL:**  

**FOOT** □ **BOAT** □ **HELO** □

**WEATHER:**  

**SURVEYED FROM:**

**TOTAL LENGTH SHORELINE SURVEYED:** 630 m  
**NEAR SHORE SHEEN:** □ BR □ RB □ SL □ NONE  
**EST. OIL CATEGORY LENGTH:**  

<table>
<thead>
<tr>
<th>L</th>
<th>O</th>
<th>C</th>
<th>AP</th>
<th>MS</th>
<th>HOP</th>
<th>CV</th>
<th>CT</th>
<th>ST</th>
<th>FL</th>
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<th>SURFACE SEDIMENT</th>
<th>SHORE SLOPE</th>
<th>AREA LENGTH</th>
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<td>1</td>
<td>T</td>
<td>5</td>
<td>G</td>
<td>P</td>
<td>L</td>
<td>1</td>
<td>S</td>
<td>X</td>
<td>X</td>
<td>In slot talle</td>
<td>rock wall of gully</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>2</td>
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<td>P</td>
<td>L</td>
<td>1</td>
<td>S</td>
<td>X</td>
<td>rock wall of gully</td>
<td>broken and rodded hear high soil.</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>3</td>
<td>30</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>rock</td>
<td>V</td>
<td>1</td>
<td>10</td>
<td>X</td>
<td>X</td>
<td>rock wall of gully</td>
<td>broken and rodded hear high soil.</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>4</td>
<td>25</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>P</td>
<td>M/L</td>
<td>10</td>
<td>1/5</td>
<td>X</td>
<td>X</td>
<td>rock wall of gully</td>
<td>broken and rodded hear high soil.</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>5</td>
<td>0</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>P</td>
<td>M/L</td>
<td>0.5</td>
<td>1</td>
<td>X</td>
<td>X</td>
<td>rock wall of gully</td>
<td>broken and rodded hear high soil.</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

**NOTES**

**IN SLOPE TALUS**

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

**PHOTO ROLL** # MAYSAP-

**FRAMES**

**SEGMENT** CH-009

**DATE** 05-05-91

**SUBDIVISION** B

**SEGMENT NO.** CH-009-A

**SHORE SHEEN:**

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

**OG COMMENTS:**

Surface oil was limited on slope talus debris to the extreme NW of the subdivision (CH-009). Inside the lagoon oil was found on a 75 m long (W-to-2) band which was previously AP, now HSOR at only 2% cover, although sporadically distributed. Also near shore CV and it was still apparent in water which is likely CH-9-A on the gully of eastern part of map. Subsurface oil was restricted to the same area, although stained in behind some bedrock ridge, as on area of OF, MOR and a small patch of HOR (2x3 m).

**REVIEWED 5/10/91 KG**
<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>DEPTH (cm)</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED ZONE cm-cm</th>
<th>CLEAN BELOW (cm)</th>
<th>H2O LEVEL</th>
<th>SHEEN COLOR</th>
<th>PIT ZONE</th>
<th>SURFACE-SUBSURFACE SEDIMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>45</td>
<td>X</td>
<td>Y</td>
<td>N</td>
<td>X</td>
<td>X</td>
<td></td>
<td>p-g</td>
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<td>11</td>
<td>40</td>
<td>X</td>
<td>Y</td>
<td>N</td>
<td>X</td>
<td></td>
<td></td>
<td>p-g</td>
</tr>
<tr>
<td>12</td>
<td>20</td>
<td>X</td>
<td>5-10</td>
<td>Y</td>
<td>R</td>
<td>X</td>
<td></td>
<td>pgc beneath fave</td>
</tr>
</tbody>
</table>

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

OG COMMENTS: reviewed 5/10/90 KG
MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 6 DATE 5/15/91
SEGMENT # CH-009 TIDAL HEIGHT (Range) +2' 3/4 ft. + 1 1/2 ft.
SUBDIVISION B BIOLOGIST T.R. Schroeder
SEA STATE Light chop WIND SPEED/DIRECTION variable 5-6
PHOTOGRAPHS: ROLL # FRAME #

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

This beach segment, with its lagoon and protective barrier rocks, is an extremely lush and productive environment. Tidal flats, salt marshes, salt grass beds, and many other organisms are thriving, and in close proximity to remaining wetlands, a stream is an insignificant trickle of water. As far as salmon production goes, however, this lagoon and reef area could be entirely impaired in supporting passing salmonids from the more productive streams.

(C) = The surf zone oil on the beach near this location is low 3.5 to 6.5 (see CG map) is in close proximity to this productive reef/reef area. The beach is more exposed to N.W. storms and the oil should visibly discolor again as adverse effects of the oil could be seen on this beach. Potentially, productive biological community.

The intrusive cleanup method should be used in this area. Reefs, logs, sand and muck beds should be well protected.

WILDLIFE OBSERVATIONS TO BE COMPLETED IN ALL SUBDIVISIONS

<table>
<thead>
<tr>
<th>BIRDS</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
<th>FISH OBSERVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eagles</td>
<td>1</td>
<td>3 (adult)</td>
<td>12 Rockfishes</td>
</tr>
<tr>
<td>Seabirds</td>
<td></td>
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<td></td>
</tr>
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<td>Waterfowl</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gulls/kittiwakes</td>
<td>1 gulls</td>
<td>2</td>
<td></td>
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<td>Shorebirds</td>
<td>2</td>
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<td>Corvids</td>
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<td>Other Birds</td>
<td></td>
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<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>LAND MAMMALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species</td>
</tr>
<tr>
<td>Sea Otters</td>
</tr>
<tr>
<td>Pinnipeds</td>
</tr>
<tr>
<td>Whales(specify)</td>
</tr>
</tbody>
</table>

Shoreline subdivision map showing important biological features attached.
1991 MAYSAP EVALUATION

SEGMENT: CH 009   SUB: A   REGION: PWS   SURVEY DATE: 5/5/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s)  RESTRICTED 3/1 - 9/1

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

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

SHPO Signature:  Date: 5/5/91

RECOMMENDATIONS:

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

COMMENTS:
INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: 6/21/91  FOSC APPROVAL DATE: 5/31/91

ADEC  EXXON  USCG  NOAA

FOSC  E.L. PAGE, CDR, USCG
CHIEF OF STAFF, FOSC
ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

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

TEAM NO. 6 SEGMENT CH 009 SUBDIVISION B/A DATE 5/5/91

(This is Comment Sheet for CH 009 B, included here for ease in CH 009 B.)

ADEC ADF&G NAME Aimee Weseman SIGNATURE Aimee Weseman

☐ NTR ☐ Treatment Recommended.

Resource Use - Commercial Tourism, Commercial Fishing & Recreation

To complete treatment to anad portion of subsegment - manually till MSOR sediments in areas 012 on west side of stream.

The small cove area to the east of stream (CH 009-A?) contains quantities of subsurface oil beneath clean gravels which could use treatment. The oiled sediments reside between among low bedrock ridges & could be difficult to access. Further assessment may determine a suitable treatment.

EXXON NAME Scott A. Nauman SIGNATURE Scott A. Nauman

☐ NTR

The majority of the subdivision showed no surface oil. The long patch of SOR was broken up and raked. This should be all the treatment needed for this oiling condition. Other areas of SOR should weather naturally. Subsurface oil is concentrated in pocket beach (CH-9A) and is well buried. Eagles were observed on this subdivision, and the intertidal zone is very healthy. I see no need for further treatment.

LANDMANAGER NAME OF SIGNATURE

☐ NTR

USCG/NOAA NAME CWO SPURR/F. HOFF SIGNATURE CWO/F. HOFF

☐ NTR This segment has a very rich lower intertidal community with intensive mussel beds & other benthic. Surface oil residue remaining in the upper intertidal was broken up & raked. One area with remains of subsurface oil was found around the point at the eastern end of the segment. I recommend that this be left to weather naturally since the area is inaccessible and should not pose a threat to the communities. The subsurface oil was also far from the anadromous...
FIELD SHORELINE COMMENT SHEET

SEGMENT AS Ch 9  SUBDIVISION: ___________  SITE: ___________  DATE 5-5-91

USCG
NAME____________________________________ SIGNATURE____________________________________

☐ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:  

ADEC
NAME____________________________________ SIGNATURE____________________________________

☐ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:  

LAND MANAGER
NAME CHARLES SELAHOFF SIGNATURE ____________ 

☐ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:  A considerable amount of soil at the mouth of the site
with patches along the storm sewer. This area can be
manually worked with some modest mechanical tilling
done. The Chenna team should be considered for this clean-up
(martial pick-ups). This area is primarily a subsidence area and

EXXON
NAME____________________________________ SIGNATURE____________________________________

☐ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:  

REVISION NO. 7/26/90
MAYSAP SHORELINE OILING SUMMARY

TEAM NO. 6
OG D.I. LITTLE
ADEC- WEISEMAN/T. CROWE
EXXON SCOTT NAUMAN

BIO T. SCHROEDER
LANDMANAGER C. SELANGOFF for CVC
USCG/NOAA TWO SPURS/R. HOFF

TIME 11:15 to 12:45
TIDE LEVEL 2 3/4 ft. to 1 1/2 ft.
ENERGY LEVEL: \ H \ M

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

TOTAL LENGTH SHORELINE SURVEYED: 10 m
NEAR SHORE SHEEN: \ BR \ RB \ SL \ NONE

EST. OIL CATEGORY LENGTH:

<table>
<thead>
<tr>
<th>L</th>
<th>O</th>
<th>SURFACE OIL CHARACTER</th>
<th>SURFACE SEDIMENT</th>
<th>SLOPE</th>
<th>AREA</th>
<th>ZONE</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>AP</td>
<td>MS</td>
<td>TB</td>
<td>SOR</td>
<td>CV</td>
<td>CT</td>
</tr>
</tbody>
</table>

DISTRIBUTION: C = 91-100%; B = 51-60%; P = 11-50%; S = 1-10%; T = <1%
SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE

PHOTO ROLL # MAYSAP - FRAMES

OG COMMENTS:
Surface oil was limited in extent 'towards' density to the extreme NW of the subdivision (CH-9). Inside the lagoon oil was found on a 75 m long (CH-9) strand which was previously AP, now H50R or only 2% cover, although periodically distributed. Pits near "CH-9" showed oil in the gulley at eastern part of map. Subsurface oil was restricted to the same area, although tucked in behind some bedrock ridges, as an area of OF, MOR and a small patch of HOR (2x3m).

REVISED 5/13/91 KG
<table>
<thead>
<tr>
<th>SEGMENT</th>
<th>DATE</th>
<th>TEAM NO.</th>
<th>CH-09</th>
<th>PIT/PIT</th>
<th>SUBSURFACE OILED CLEAN H2O SHEEN</th>
<th>OILED CLEAN H2O SHEEN</th>
<th>SUBSURFACE OILED CLEAN H2O SHEEN</th>
</tr>
</thead>
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<tr>
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<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

OG COMMENTS:

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

NOTES:

SUBDIVISION: B - CH-09

DATE: 05/05/91

PAGE 8 OF 8
HAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 6          DATE 5/5/91
SEGMENT # CH-0009          TIDAL HEIGHT (Range): +2 3/4 ft -+ 1 3/4 ft
SUBDIVISION B A 400          BIOLOGIST T.R. Schroeder
SEA STATE light chop          WIND SPEED/DIRECTION variable SW
PHOTOGRAPHS: ROLL #          FRAME #

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

This beach segment with its lagoon and protective barrier is in an extremely lush and productive environment. Marsh, estuaries, mudflats, and many other organisms are thriving here. The stream is an insignificant trickle of water and as far as salmon production goes, however, this lagoon and reed area could be extremely important in supporting passing salmonids. From other more productive streams.

The intrusive shoreline activities should be curtail in this area. Keel, lobsters, and mussel beds should be well protected.

WILDLIFE OBSERVATIONS
TO BE COMPLETED IN ALL SUBDIVISIONS

<table>
<thead>
<tr>
<th>BIRDS</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
<th>FISH OBSERVED SPECIES PRESENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eagles</td>
<td>1</td>
<td>3 (adults)</td>
<td>12 Rockfish</td>
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<td>Seabirds</td>
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<td>Waterfowl</td>
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</tr>
<tr>
<td>Gulls/Kittiwakes</td>
<td>1 gulls</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Shorebirds</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Corvids</td>
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</tr>
<tr>
<td>Other Birds</td>
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<td></td>
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MARINE MAMMALS

<table>
<thead>
<tr>
<th>SPECIES</th>
<th># OBSERVED</th>
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<tbody>
<tr>
<td>Sea Otters</td>
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</tr>
<tr>
<td>Pinnipeds (specify)</td>
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</tr>
<tr>
<td>Whales (specify)</td>
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</tr>
</tbody>
</table>

LAND MAMMALS

Shoreline subdivision map showing important biological features attached.

5/5/91

Signature: T.R. Schroeder
ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1K Purse Seine Hook-off
Closed to bioremediation, spot washing, other approved treatment, and manual raking after 7/20. No constraint to manual pickup and tarmat removal.

1A,1B Salmon Stream
ADF&G catalogued anadromous stream (226-10-16180) is in this subdivision. No constraint to manual pickup and tarmat removal. This subdivision is closed to bioremediation, spot washing, other approved treatment, and manual raking less than 100m from stream 7/1 to 8/31. Before 7/1, bioremediation, spot washing, other approved treatment and manual raking is permitted less than 100m from stream with on-site ADF&G monitor or ADEC alternate present. No constraint to bioremediation, spot washing, other approved treatment, and manual raking more than 100m from stream.

5T Bald Eagle Nest
Closed to manual pickup, tarmat removal, bioremediation, spot washing, other approved treatment, and manual raking. USFWS bald eagle impact assessment completed on 5/12/90 by Mike Lockhart indicates an active nest within 400m of the work area.

3N,P Harbor Seal and 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.

7II Subsistence: Deer Harvesting
Closed to bioremediation, spot washing, other approved treatment, and manual raking 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.

SEE ANADROMOUS FISH STREAM EVALUATION ADDENDUM (STREAM NO. 226-10-16180) FOR ADDITIONAL CONSTRAINT INFORMATION

FOSC [Signature] Date 6-10-90
Incorporates information from USFWS Bald Eagle Survey 5/2/90

ECOLOGY MAP 5/25
SEGMENT CH-9
SUBDIVISION B (2 of 2)

EXxon Company, USA
Map Key: PMS-CH-9

1000' = 100' METERS

★ Seabird Colony
△ Eagle Nest
SHORELINE EVALUATION

SEGMENT ST/ CH-009 SUBDIVISION B (2 OF 2) DATE 4/2/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
Salmon stream mouth (no.16180) Salmon fry outmigration (1A) - 3/1 to 5/15 and spawning (1B) - 7/10 to 8/31; Harbor seal and sea lion pupping (3N, 3P) - 5/15 to 7/1 and molting (30, 3O) - 8/15 to 9/15; Bald eagle nest (5T) - 3/1 to 6/1; Deer harvest (7II) - 8/15 to 2/28. Contact ADF&G Habitat Division prior to treatment re: salmon stream, seals, sea lions. Contact USFWS re: eagle nests. Complete treatment prior to 5/15 or between 7/1 and 8/15 unless authorized by ADF&G.

SUBDIVISION ECOLOGICAL CONSTRAINTS: Restrict boat and air traffic to minimum essential. Air approach and takeoff from and to seaward only. Avoid unnecessary disturbance of unoiled substrate and biota. Do not disturb stream bed and banks unless authorized by ADF&G.

ARCH
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.

SHPO SIGNATURE: DATE: April 14, 1990

OILING CATEGORIZATION:
Wide 15' m: Medium 59 m: Narrow 0 m: V.Light 190 m: No Oil 47 m
Subsurface Oil Observed: Yes X No Maximum Depth 35+ cm

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

COMMENT: Manual pickup of pooled mousse and pom-pom. Breakup and removal of tarmats and bioremediations of areas shown on map.

TAG COMMENTS:

TAG APPROVAL DATE: 4/13/90
ADEC JOHN BAUER
EXXON ANNY TEEF
NOAA RICHARD KELLY
USCG G.K. LIEBER

NOTIFICATION: 24 hrs prior to work.
**SHORELINE EVALUATION**

**SEGMENT ST/ CH-009 SUBDIVISION A (1 OF 2) DATE 4/1/90**

**SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:**

Salmon stream mouth (no. 16180) Salmon fry outmigration (1A) - 3/1 to 5/15 and spawning (1B) - 7/10 to 8/31; Harbor seal and sea lion pupping (3N, 3P) - 5/15 to 7/1 and molting (30, 30) - 8/15 to 9/15; Bald eagle nest (5T) - 3/1 to 6/1; Deer harvest (7II) - 8/15 to 2/28. Contact ADF&G Habitat Division prior to treatment re: salmon stream, seals, sea lions. Contact USFWS re: eagle nests. Complete treatment prior to 5/15 or between 7/1 and 8/15 unless authorized by ADF&G.

**SUBDIVISION ECOLOGICAL CONSTRAINTS:** Restrict boat and air traffic to minimum essential. Air approach and takeoff from and to seaward only. Avoid unnecessary disturbance of unoiiled substrate and biota. Do not disturb stream bed and banks unless authorized by ADF&G.

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

**SHPO SIGNATURE:**

**OILING CATEGORIZATION:**

Wide 0 m; Medium 0 m; Narrow 58 m; V.Light 158 m; No Oil 100 m

Subsurface Oil Observed: Yes X No ___ Maximum Depth ___ cm

**RECOMMENDATIONS:**

No Treatment Recommended Snare/Absorbent Booms

X Treatment Recommended Oil Snakes (pom poms)

X Manual Pickup Absorbents (pads, rolls, etc)

X Bioremediation Spot Washing: Wands

X Tarmat: Breakup Beach Cleaner

X Removal Other (see comments)

**COMMENTS:** Manual pickup of pooled oil (tar patties) and tarmat removal as shown on sketch map. Work 7/10 to 8/15 based on constraints.

**TAG COMMENTS:**

**TAG APPROVAL DATE:**

ADEC 4/13/90

EXXON 4/13/90

NOAA 4/13/90

USCG 4/13/90
END

1A Subsurface Oil

3A Subsurface Oil

T/C Use Distribution

T/B Distribution

CTP 3 Bed Distribution

Vegetation

character Length (m): AP 1.5 CV 5 CT 25 ST MS PT TB FL NO 150

3 bands combined 1.5 m CV + CT 18 x 30 m

- pocket/gravel pocket beach
- surface clean

3 in boulder/pebble talus

1 m² x 15 cm penetration
CH-10

CH-9

CH-2

Surveyed 4/2/90 - Chart B

Surveyed by helicopter 4/2/90

Visited briefly on foot 4/1/90
SHORELINE EVALUATION

SEGMENT ST/ CH-009 SUBDIVISION B (2 OF 2) DATE 4/2/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Salmon stream mouth (no.16180): Salmon fry outmigration (1A) - 3/1 to 5/15 and spawning (1B) - 7/10 to 8/31; Harbor seal and sea lion pupping (3N, 3P) - 5/15 to 7/1 and molting (30, 3O) - 8/15 to 9/15; Bald eagle nest (5T) - 3/1 to 6/1; Deer harvest (7II) - 8/15 to 2/28. Contact ADF&G Habitat Division prior to treatment re: salmon stream, seals, sea lions. Contact USFWS re: eagle nests. Complete treatment prior to 5/15 or between 7/1 and 8/15 unless authorized by ADF&G.

SUBDIVISION ECOLOGICAL CONSTRAINTS: Restrict boat and air traffic to minimum essential. Air approach and takeoff from and to seaward only. Avoid unnecessary disturbance of unoiled substrate and biota. Do not disturb stream bed and banks unless authorized by ADF&G.

ARCH.

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 (561-3657; 561-3858 or 561-3276).

SHPO SIGNATURE: DATE: April 14, 1990

OILING CATEGORIZATION:
Wide 15' m: Medium 59 m: Narrow 0 m: V.Light 190 m: No Oil 147 m
Subsurface Oil Observed: Yes X No Maximum Depth 35+ cm

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

COMMENTS: Manual pickup of pooled mousse and pom-pom. Breakup and removal of tarmats and bioremediations of areas shown on map. Work 7/1 to 8/15.

TAG COMMENTS:

TAG APPROVAL DATE: 4/13/90

ADEC
EXXON
NOAA
USCG

FOSC: DATE: 5-15-90
NOTE: AVE 24 HRS PRIOR TO WORK.
CH-10

CH-9-B

end of subdivision CH-009-B

not surveyed

start of subdivision CH-009-B

CH-2

XXXX Wide

///// Medium

----- Narrow

ADEC Segment Length: 945m
1991 MAYSAP EVALUATION

SEGMENT: CH 009  SUB: A  REGION: PWS  SURVEY DATE: 5/5/91

ENVIRONMENTAL SENSITIVITIES:
Work Window(s)  RESTRICTED 3/1 - 9/1

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

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

SHPO Signature: _________________________  Date: ___________________

RECOMMENDATIONS:

<table>
<thead>
<tr>
<th>TREATMENT REQUIRED (Y or N)</th>
<th>INITIAL</th>
<th>TAG</th>
<th>FOSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

TEAM NO. 6 SEGMENT CH 009 SUBDIVISION B A DATE 5/5/91

(This is Comment Sheet for CH 009 B, included here for ease in CH 009 A)

ADEC NAME Aimee Weseman SIGNATURE Aimee Weseman

☐ NTR Treatment Recommended.

Resource Uses - Commercial Tourism, Commercial Fishing & Recreation

☐ NTR To complete treatment to dead portion of subsegment - manually till MSOR sediments in areas 04G on west side of stream.

The small cove area to the east of stream (CH 009-A?) contains quantities of subsurface oil beneath clean gravels which could use treatment. The oiled sediments reside between low bedrock ridges & could be difficult to access further assessment may determine a suitable treatment.

EXXON NAME Scott A. Nauman SIGNATURE Scott A. Nauman

☐ NTR The majority of the subdivision showed no surface oil. The long patch of SOR was broken up and raked. This should be all the treatment needed for this oiling condition. Other areas of SOR should weather naturally. Subsurface oil is concentrated in pocket beach (CH 98) and is well buried. Eagles were observed on this subdivision, and the intertidal zone is very healthy. I see no need for further treatment.

LANDMANAGER NAME __________________________ SIGNATURE __________________________

☐ NTR

USCG/NOAA NAME CWO SPURR / R. HOFF SIGNATURE __________________________

☐ NTR This segment has a very rich lower intertidal community with extensive mussel beds & other biota. Surface oil residue remaining in upper intertidal was broken up & raked. One area with remaining subsurface oil was found around the point at the eastern end of the segment. I recommend that this be left to weather naturally since the area is inaccessible and would not pose a threat to communities. The subsurface oil was also far from the shorelines...
FIELD SHORELINE COMMENT SHEET

SEGMENT AS CH 9  SUBDIVISION:  A  SITE:  DATE 5-5-91

USCG
NAME ___________________________ SIGNATURE ___________________________

☐ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:

ADEC
NAME ___________________________ SIGNATURE ___________________________

☐ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:

LAND MANAGER
NAME CHARLES SELANOFF SIGNATURE Charles Selanoff

☒ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991
REASON: A considerable amount of oil at the mouth of the stream with patches along the storm basin. This area can be manually worked with some modest mechanical tilling done. The Chenega team should be considered for this clean-up (manual pick-up). This area is primarily a subsistence use area.

EXXON
NAME ___________________________ SIGNATURE ___________________________

☐ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:
**MAYSAP SHORELINE OILING SUMMARY**

**TEAM NO.**
OG D.L. LITTLE
ADEC T. WEISSMAN/T. CROWE
EXXON SCOTT NAUMAN

**BIO**
T. SCHROEDER

**LANDMANAGER**
C. SELANOFF for CVC

**USCG/NOAA**
CH2 MUIR/R. HOPF

**TIME**
11:15 to 12:45

**TIDE LEVEL**
2 3/4 ft. to 1 1/2 ft.

**ENERGY LEVEL:**

**SURVEYED FROM:**

FOOT ☑ BOAT ☑ HELO ☐

**WEATHER:**

SUN ☐ CLOUDS ☑ FOG ☐ RAIN ☐ SNOW

**TOTAL LENGTH SHORELINE SURVEYED:**

10 m

**NEAR SHORE SHEEN:**

BR ☐ RB ☐ SL ☑ NONE

**EST. OIL CATEGORY LENGTH:**

W. m M. m N. m V. m 10 m NO. m US. m

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<th>SLOPE</th>
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**DISTRIBUTION:**

G = 81-100%; B = 81-60%; P = 11-60%; S = 1-10%; T = <1%

**SLOPE:**

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

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**SHEEN COLOR:**

B = BROWN; R = RAINBOW; S = SILVER; N = NONE

**OG COMMENTS:**

Surface oil was limited on east 'talus' debris to the extreme N of the subdivision (CH-90E). Inside the lagoon oil was found on a 75 m long (150 ft) band which was previously AP, now H580 at only 2% cover; though sporadically distributed at H580. Since CV and it was still apparent in what is likely CH-9-A, in the gulley at eastern part of map. Subsurface oil was restricted to the same area, although tucked behind some debris ridge, on an area of OF, MOR and a small patch of H30 (2-3 m).
BIRDS

- Eagles 1 3 (adult) 12 Hooded Merganser
- Seabirds
- Waterfowl
- Gulls/Kittiwakes 1 gulls 2
- Shorebirds 2 14
- Corvids
- Other Birds

TOTAL BIRDS

FISH OBSERVED

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

Shoreline subdivision map showing important biological features attached.
unoccupied eagle nest

heavy mudflat, rocky head clump, filtering snails, rock glaciers, and barnacles

Kessel Tombolo

lagoon

eel grass and laminaria kelp beds.

Stream goes subsurface

anadromous stream

pond

Bion Map TiR Schooner
11/15-12/45

A 1x5
CU+H/soil
Takes 5%

B 1x5m
(1) SCA in slate 7.5

C 1x10m
ET/CW 60%

D 10x75m
(1) Sco 7.5
Broken and raked

lignite, coralline algae, fusulinid and ormegids very abundant along entire deepwater front.
REGION: PRINCE WILLIAM SOUND

SEGMENT: CH-009

SUBDIVISIONS: A (1 OF 2)
SHORELINE EVALUATION

SEGMENT ST/ CH-009 SUBDIVISION A (1 OF 2) DATE 4/1/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
Salmon stream mouth (no.16180) Salmon fry outmigration (1A) - 3/1 to 5/15 and spawning (1B) - 7/10 to 8/31; Harbor seal and sea lion pupping (3N, 3P) - 5/15 to 7/1 and molting (3O, 3Q) - 8/15 to 9/15; Bald eagle nest (5T) - 3/1 to 6/1; Deer harvest (7II) - 8/15 to 2/28. Contact ADF&G Habitat Division prior to treatment re: salmon stream, seals, sea lions. Contact USFWS re: eagle nests. Complete treatment prior to 5/15 or between 7/1 and 8/15 unless authorized by ADF&G.

SUBDIVISION ECOLOGICAL CONSTRAINTS: Restrict boat and air traffic to minimum essential. Air approach and takeoff from and to seaward only. Avoid unnecessary disturbance of unoiled substrate and biota. Do not disturb stream bed and banks unless authorized by ADF&G.

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

SHPO SIGNATURE: ______________________ DATE: ______________________

OILING CATEGORIZATION:
Wide 0 m; Medium 0 m; Narrow 58 m; V.Light 158 m; No Oil 100 m
Subsurface Oil Observed: Yes X No Maximum Depth 6 cm

RECOMMENDATIONS:
X Treatment Recommended
X Manual Pickup
X Tarmat: Breakup
X Removal
X Snare/Absorbent Booms
Oil Snares (pom poms)
Absorbents (pads, rolls, etc)
Spot Washing: Wands
Spot Washing: Wands
Beach Cleaner
Other (see comments)

COMMENTS: Manual pickup of pooled oil (tar patties) and tarmat removal as shown on sketch map. Work 7/10 to 8/15 based on constraints.

TAG COMMENTS: __________________________________________________________

TAG APPROVAL DATE: ______________
ADEC
EXXON
NOAA
USCG
FIELD SHORELINE COMMENT SHEET

SEGMENT ST / CH-009 SUBDIVISION: A DATE 4/4/90

USCG NAME Kerwin H. Dreher SIGNATURE CWO2 R. L. Dreher

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED

COMMENTS

Needs small amount of manual pick up of small amount of asphalt and spotty pooled oil.

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED

COMMENTS

Minimal oiling present. Small amounts of asphalting should be removed by trowel or shovel.

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

Previous LAND MANAGER's Rep being replaced

LAND MANAGER CHENEGA

NAME ___________________________ SIGNATURE ___________________________

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

Previous LAND MANAGER's Rep being replaced
SHORELINE OILING SUMMARY

OG: D. LITTLE  
BIO: K. COATES  
EXXON: G. STILES

USCG K. OGERER
ADEC R. ENGERS

SEGMENT ST: CH-009
SUBDIVISION: A (1 of 2)

TEAM NO.: 17
TIDE LEVEL: 4:04 to 6:14
DATE: 1/1/90

EST. SUBDIVISION LENGTH: 3.88 m

Sun ☐  Clouds ☐ Fog ☐ Rain ☐ Snow

UPLANDS DESCRIPTION: ☐ Grass ☐ Forest ☐ Rock

SURVEYED FROM: ☐ Boat ☐ Helo

WORKING DIRECTION: N to S

SURFACE SEDIMENTS: R: 45% B: 15% C: 10% P: 20% G / B: 10% S: 0% M: 10% V: 0% W: 0%

SLOPE: Long 55% Hang 10% Vert. 5% WAVE EXPOSURE: ☐ Low ☐ Med ☐ High

OIL CATEGORY LENGTH: W: D m M: 0 m N: 0 m VL: 263 m NO: 65 m

SURFACE OIL

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PAVEMENT: H F ☐ L sq m by cm

PATTIES / TARBALLS ☐ BAGS

NEAR SHORE SHEEN? ☐ BR RW SL TL

OILED DEBRIS AMOUNT

| Logs | SM MD LG |
| Vegetation | |
| Trash | |
| Debris | |

Debris Collected ☐ YES ☐ NO

Photographs:

Roll No. 51-14-1
Frames 21

SUBSURFACE OIL

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COMMENTS

This subdivision was a small pocket beach - northeast facing and exposed to northeasterly, A small mid-tide bench developed on pebbles were recent. No debris could be seen and only one small patch of surface oil which was soft. Rocks to Northwest were banded and one small patch of barnacle growth were detected among boulder/cobble substrates.
### SHORELINE ECOLOGICAL SUMMARY

Segment ST chill - Subdivision - A: ______________________ Date (mo/day/yr) 4/01/90

Time (24 hr), 1530-1615  Biologist  K.A. Costes

(A) Substrate type and % of segments:
   (1) Bedrock 45 (2) Boulder 35 (3) Cobble 10 (4) Pebble 30 (5) Sand 10 (6) Silt

(B) Overall % cover of biota (% of segments): Dense 30  Moderate 30  Low 40

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

#### Photographs:
- Roll No. St-14-1
- Framed 21

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<th>Barnacles</th>
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Wildlife Observations/ General Comments:

- **sensitivities:** eagle, rest, seals, sea lions, anadromous stream - not in
- Ecological Considerations: this subdivision.
- High energy bedrock areas diverse into highest midtidal.
- Dense settlement mussels and barnacles. Pebble-cobble
  beach relatively desolate, and not as sensitive
Ecol. Summary

Notes:

1. Exposed bedrock areas with large specimens of Balanus cariosus, Lithothamnion cover in crevices and cracks into upper mid-intertidal.
   B. (?Semibalanus) glandulosa: new settlement dense into splash/spray zone.


3. New settlement of Littorina satana and limpets abundant in upper intertidal on bedrock.

4. Oil residues on upper intertidal barnacles but not on rock surfaces.

5. Other animals noted at mid-tide—underwater: Katharina tuberculata, anemones (?Tealia/Epachta) also in pools.
REGION: PRINCE WILLIAM SOUND

SEGMENT: CH-009

SUBDIVISIONS: B (2 OF 2)
SHORELINE EVALUATION

SEGMENT ST/ CH-009 SUBDIVISION B (2 OF 2) DATE 4/2/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
Salmon stream mouth (no. 16180) Salmon fry outmigration (1A) - 3/1 to 5/15 and spawning (1B) - 7/10 to 8/31; Harbor seal and sea lion pupping (3N, 3P) - 5/15 to 7/1 and molting (3Q, 3O) - 8/15 to 9/15; Bald eagle nest (5T) - 3/1 to 6/1; Deer harvest (7II) - 8/15 to 2/28. Contact ADF&G Habitat Division prior to treatment re: salmon stream, seals, sea lions. Contact USFWS re: eagle nests. Complete treatment prior to 5/15 or between 7/1 and 8/15 unless authorized by ADF&G.

SUBDIVISION ECOLOGICAL CONSTRAINTS: Restrict boat and air traffic to minimum essential. Air approach and takeoff from and to seaward only. Avoid unnecessary disturbance of unoiled substrate and biota. Do not disturb stream bed and banks unless authorized by ADF&G.

ARCHAEOLOGICAL CONSTRAINTS: Cultural resource survey in progress. Shoreline treatment cannot proceed until field data have been assessed and a formal archaeological constraint entered on the shoreline evaluation form.

SHPO SIGNATURE: ______________________ DATE: ______________________

OILING CATEGORIZATION:
Wide 15' m: Medium 59' m: Narrow 0' m: V.Light 190' m: No Oil 147' m
Subsurface Oil Observed: Yes X No Maximum Depth 35+ 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 ____ Removal
____ Beach Cleaner
____ Other (see comments)

COMMENTS: Manual pickup of pooled mousse and pom-pom. Breakup and removal of tarmats and bioremediations of areas shown on map. Work 7/1 to 8/15.

TAG COMMENTS:

TAG APPROVAL DATE: __________
ADEC
EXXON
NOAA
USCG

FOSC: __________ DATE: __________
FIELD SHORELINE COMMENT SHEET

SEGMENT ST/CHO9 - _____ SUBDIVISION: _____ B DATE 4-2-90

USCG NAME Keeson L. Dugan SIGNATURE 3wo2 K. L. Dugan

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED

COMMENTS

Match of the asphalted areas can be manually removed with shovels or scoops. Posed oil is much the consistency of mousse and can be adequately removed at travel. The two areas behind the breakwater rock formations should be considered for mechanical removal. As the air temperature warms up and direct sun light access these two areas I think the oil will remobilize and move out to sea as a sheen or film. At present the ecosystem seems very viable and active but, what will happen in Jul, Aug with temps. warm.

DEC NAME PATRICK J. ENDRES SIGNATURE Patrick J. Endres

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED

COMMENTS

I feel the team did a very comprehensive survey of this segment subdivision. Oiling varied in degree from stain to asphalt pavement on surface and heavy subsurface saturation. I recommend both manual & mechanical treatment. Areas located by pits # 1, 4, 5 on sketch map by Dave Little are problem areas. Type of cleanup is questionable. The team has asked for further review on this specific portion.

LAND MANAGER CHENEGA

NAME ___________________________ SIGNATURE ___________________________

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

PREVIOUS LAND MANAGER'S REP. BEING REPLACED
SHORELINE OILING SUMMARY

SURFACE OIL

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PAVEMENT: H. F 57.5 sq. m by 5 cm

PATTIES / TARBALLS: 1 BAGS

NEAR SHORE SHEEN? NO BR R W SL TL

OILED DEBRIS | AMOUNT | YES/NO
Logs          |        | ✓
Vegetation    |        | ✓
Trash         | X       | ✓
Debris        |        | ✓

DEBRIS COLLECTED

Photographs:
Roll No. ST-14-1 + ST-14-2
Frames 23-36 1-3

SUBSURFACE OIL

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<th>OIL / FILM COLOR</th>
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COMMENTS

The complex topography and diversity of habitat in this subdivision make the occurrence of oiling types and quantities extremely patchy. The most extensive area of asphalt pavement is on the western side of the inlet, staining in the marsh grass and extending north to the region of the T/L camera. Perhaps the most unstable source reservoir of free oil is behind (and s west of) the gravel term in the first and second small pocket beach/gulley in the east of the subdivision.
### SHORELINE OILING SUMMARY (PAGE 2 of 2)

**SEGMENT ST/ CH-009 SUBDIVISION B**

#### SUBSURFACE OIL (CONTINUED)

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**COMMENTS**

- CG:
- PF:
- CS:
- MF:
- FT:
- SC:
- CM:
- CM:
- PC:
- CB:
- BS:
- SM:
- PC:
- PC shell gravel:
- PG:
**SHORELINE ECOLOGICAL SUMMARY**

- **Segment ST**: CH009
- **Subdivision**: B
- **Date (mo/day/yr)**: 4/02/90

**Time (24 hr)**: 1010-1340

**Biolgists**: K. A. Coates

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

(B) **Overall % cover of biota (% of segment):**
- Dense 30%
- Moderate 30%
- Low 40%

(C) **Density, substrate preference (by number from A, above), & vertical zonation of major taxa:**
- Upper-U, Mid-M, Low tidal-L
- Juveniles/adults (1), new settlement (3)

### BARNACLES

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**Wildlife Observations/General Comments:**
- Sea otter just offshore
- Pigeon guillemots
- Oyster catchers on rocks (5)
- Golden eye pair
- Harlequin duck pair
- Eagle nest off west end of subdivision
- Loons offshore
- Eelgrass in bay

**Known sensitivities:**
- Nesting eagles
- Anadromous stream
- Seals
- Sea lions

**Zoological Considerations:**
- Pupping, molting, deer harvesting - tracks at stream head marsh observed 2 April
- Dense mussel and clam beds in northwest, inside barrier islands, as well as along west side small bay/estuary
- Eastern cobble beach with heavy oiling in sediments
Segment: ST CH09  Subdivision: B  Date: 4.12.90
Time: 1010-1340  Biologist: [Redacted]

Notes:

1. Littorinus abundant on boulders on east side of stream, feeding on Endocladia.

2. Bivalve shells abundant near bay head, at stream fan, Protothaca, Saxidomus, one Modiolus. Mussel and clam beds to west of mouth of bay — shells of Mya arenaria, Protothaca staminea and Saxidomus giganteus , live & staminea dug up, there are rich mussel beds.

3. Limpets moderate under cobble on both east and west sides of stream. Eelgrass in basin (?) scoured by stream) in mouth of bay.

4. Small barrier island off northwest part of segment with dense growth on bedrock of Balanus, Fucus, Myriophyllum and Littorinidae — up to intertidal. Red, green and brown algea high up into mid-interatial: Lithothamnium, Acrosiphonia, Ulva, Halosaccion, Laminaria, Corallina Verrucaria, Caloplaca and white circular lichen abundant in spray zone. Pycnopodia, Leptasterias hexactis (numerous); larger gastropods (Nucella ) + , Tonicella lineata all found in this area.

Other abundant animals of sheltered clam-mussel beds (as 2 above): paguridae, Hemigrapsus, limpets — N. scutum & N. persona. — most 0.5—1cm littorinids. Egg cases of moon snails also found. — Lunatica
ADDENDUM: SUBDIVISION CONSTRAINTS
SEGMENT CH-9 SUBDIVISION A (1 of 2)

WORK WINDOW

Manual Pickup
Tarnat Removal

ARCHAEOLOGICAL STANDARD CONSTRAINT
If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B Salmon Stream
No constraint to manual pickup and tarnat removal. ADF&G catalogued stream 226-20-16180 is in adjacent Segment CH-2, and 226-20-16182 is located in adjacent Subdivision B; both are more than 100m from recommended treatment area.

1K Purse Seine Hook-off
No constraint to manual pickup and tarnat removal.

3N,O,P,Q Harbor Seal & Sea Lion
Pupping and Molting
No constraint to manual pickup and tarnat removal.

5T Bald Eagle Nests
Closed to manual pickup and tarnat removal. USFWS bald eagle impact assessment completed on 5/12/90 by Mike Lockhart indicates an active nest within 400m of the work area.

7II Subsistence: Deer Harvesting
No constraint to manual pickup and tarnat removal.

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

TAG APPROVAL DATE 6/14/90
ADEC
EXXON
NOAA
USCG
FOSC

Prepared by Andrew Meyer Date 6/3/90
ECOLOGY MAP
SEGMENT CH-9

SUBDIVISION A (1 of 2)

METERS

0 354 708

1 inch = 1152 feet

Exxon Company, USA
Map Key: PM-S-CH-9
May 11, 1990

- Seabird Colony
- Eagle Nest
SEGMENT ST/ CH-009  SUBDIVISION A (1 OF 2)  DATE  4/1/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
Salmon stream mouth (no. 16180) Salmon fry outmigration (1A) - 3/1 to 5/15 and spawning (1B) - 7/10 to 8/31; Harbor seal and sea lion pupping (3N, 3P) - 5/15 to 7/1 and molting (3O, 3Q) - 8/15 to 9/15; Bald eagle nest (5T) - 3/1 to 6/1; Deer harvest (7II) - 8/15 to 2/28. Contact ADF&G Habitat Division prior to treatment re: salmon stream, seals, sea lions. Contact USFWS re: eagle nests. Complete treatment prior to 5/15 or between 7/1 and 8/15 unless authorized by ADF&G.

SUBDIVISION ECOLOGICAL CONSTRAINTS: Restrict boat and air traffic to minimum essential. Air approach and takeoff from and to seaward only. Avoid unnecessary disturbance of uncoiled substrate and biota. Do not disturb stream bed and banks unless authorized by ADF&G.

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

SHPO SIGNATURE: [Signature]  DATE: April 14, 1990

OILING CATEGORIZATION:
Wide 0 m: Medium 0 m: Narrow 58 m: V.Light 158 m: No Oil 100 m
Subsurface Oil Observed: Yes X No____ Maximum Depth 6 cm

RECOMMENDATIONS:
X Treatment Recommended
X Manual Pickup
X Bioremediation
X Tarmat: Breakup
X Removal
Snare/Absorbent Booms
Oil Snares (pom poms)
Absorben ts (pads, rolls, etc)
Spot Washing: Wands
Beach Cleaner
Other (see comments)

COMMENTS: Manual pickup of pooled oil (tar-patties) and tarmat removal as shown on sketch map. Work 7/10 to 8/15 based on constraints.

TAG APPROVAL DATE: 4/1/90
ADEC  JOHN BAXT  [Signature]  DATE: 5/4/90
EXXON  [Signature]  DATE: 5/4-90
NOAA  [Signature]  DATE: 5/4-90
USCG  [Signature]  DATE: 5/4-90
ANADROMOUS FISH STREAM ASSESSMENT

REGION: PRINCE WILLIAM SOUND
SEGMENT: CH-09
STREAM NO: 226-20-16182
ANADROMOUS FISH STREAM EVALUATION

SEGMENT ST/CH-09 STREAM NO: 226-20-16182 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)
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-1 All bald eagle nests (3/1 to 6/1) - Active eagle nests (3/1 to 9/1)
7II Subsistence area: Deer harvesting (8/15 to 2/28)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOCLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to un-oiled biota and substrate. Subject stream is located within Subdivision B (2 of 2)

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: __________________

Subsurface Oil Observed: Yes X No ___ Maximum Depth 30+ cm

RECOMMENDATIONS:
___ No Treatment Recommended ___ Snare/Absorbent Booms
X Treatment Recommended ___ Oil Snare Pom Poms
X Manual Pickup ___ Absorbents (pads, rolls, etc)
X Bioremediation ___ Spot Washing: Wands
X Tarmat Removal ___ Beach Cleaner
___ Other (see comments)

COMMENTS: Recommended treatment includes 1) manual pickup and removal of tar patties and tarmats in areas indicated on sketch map, and 2) bioremediation of areas "A" and "C" indicated on sketch map. Work should be conducted between 7/1 and 8/1 based on pinniped constraints with approval of ADF&G due to salmon stream constraint and USFWS regarding eagle nest.

TAG COMMENTS: ____________________________________________
_________________________________________________________
_________________________________________________________

TAG APPROVAL DATE: __________________
ADEC _____________________ FOSC: __________ DATE: __________
EXXON ____________________
NOAA _____________________
USCG ____________________
PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)

No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No biofouled and/or mechanical removal of subtidal algae and seagrass. Contact ADF&G or USFWS for consultation and/or authorization. Treatment which will not affect nearshore oil or toxicity levels, such as hot water wash or lnipol 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 Merison 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 lnipol 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 sites

No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or lnipol 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: ADF&G Larry Peltz 424-3214

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)

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 boat operations to essential minimum as authorized by ADF&G. If plans for treatment include methods such as hot water wash or lnipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.

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

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 unooled intertidal and subtidal algae and seagrass. Contact ADF&G and USFWS prior to treatment. Treatment which will not 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 lnipol 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.

AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 566-7235

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 766-3377

5S Shorebird/avifaunal 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 766-3377

ADF&G Tom Roth 267-2206

5T Bald Eagle nests (5/1 to 8/1)

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

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

AGENCY CONTACT PERSON: USFWS Jill Parker 766-3377

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

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 lnipol 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 84+009 SUBDIVISION: 16182 DATE 4/25/90

USCG NAME: CWO MCMAHON SIGNATURE: [Signature]

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED

COMMENTS

1. MANUAL CLEAN-UP: REMOVE TAR MATS RIGHT SIDE (looking onshore)

2. [CAUTION: AREA WAS BIOMODELED '89 TIDES FLUSHED AGENT OUT TO STREAM AGAIN]

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED

COMMENTS

1. MANUAL REMOVAL OF TAR MATS #1 #2 #3

2. LIGHT TILLING OF AREA (A) AND/OR RECOMMENDED (SEE MAPS) RECOMMENDATION OF SAME AREA. (NO IHPOL TREATMENT)

3. RECOMMENDED RECOMMENDATION OF AREA C (SEE MAPS) OR NO TREATMENT.

LAND MANAGER

NAME: ________ SIGNATURE: [Signature]

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS
Alaska Department of Fish and Game

ANADSCAT Observations and Recommendations
Team 15 - Michael Wiedmer and Tom Crowe

25 April 1990

ASC # 226-20-16152
Segment CH-009

Observations

The intertidal zone surrounding this channel is confined to a low energy, elongated cove bordered by bedrock walls. The substrate is composed predominantly of shale cobble and gravel. A very rich biota occurs throughout the lower intertidal zones below the oiled areas.

A wide range of oiling types and degrees exist at this site (see ADF&G Multi-Assessment Form for specific descriptions). While this site still contains significant amounts of subsurface oil, treatment of this site will be difficult. Moderate concentrations of oil have penetrated deeply into a poorly sorted shale boulder, cobble, gravel, sand matrix along the upper-intertidal zone west of the channel.

Other than complete removal of the substrate, elimination of oil will be difficult. Additionally, the very rich intertidal flora and fauna adjacent to the oiled zone will be at risk during and after extensive treatment operations.

Treatment Recommendations

All surface tar mats and patties should be manually removed. See the ADF&G Multi-Assessment Data Form for additional treatment suggestions.

ASC # 226-20-16200
Segment CH-900

Observations

Large shale cobbles and boulders compose the substrate of this low-exposure cove. A band of sporadic tar patties rings the high tide line on either side of the channel. No significant subsurface oil was identified.

Treatment Recommendations

Manually remove tar patties. Trowels may be required to remove oil from interstitial spaces.
### SHORELINE OILING SUMMARY (ANAL.)

**OG: WILLIAM LEID, USCG M. MAHON**
**BIO: MICHAEL FAYET**
**EXXON: GUS GARCIA, ADPG: MIKE WEIDNER**
**TEAM NO. 15**

**EST. SUBDIVISION LENGTH:** 60 m
**TIDE LEVEL:** 5 ft
**DATE:** 2-5/Apr/90

**UPLANDS DESCRIPTION:**
- Forest
- Rock

**SURFACE SEDIMENTS:**
- %A: 2
- %B: 45
- %C: 53
- %D: 8
- %E: M
- %F: V

**SLOPE:**
- 70% Lang
- 30% Hang

**OIL CATEGORY LENGTH:**
- W: 15 m
- M: 4 m
- N: 1 m

### SURFACE OIL

<table>
<thead>
<tr>
<th>CHARACTER</th>
<th>DISTRIBUTION</th>
<th>OIL / FILM COLOR</th>
<th>IMPACTED ZONES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASPHALT</td>
<td>X (X)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>POOLED</td>
<td>X (X)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>COVER</td>
<td>X (X)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>COAT</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>STAIN</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>MOUSSE</td>
<td>X (X)</td>
<td>X</td>
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</tr>
<tr>
<td>PATTIES</td>
<td>X (X)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>TARBALLS</td>
<td>X (X)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>FILM</td>
<td>X (X)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>NO OIL</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PAVEMENT**
- 5.0 sq. m

**NEAR SHORE SHEEN?**
- Yes
- No

**PATTIES/TARBALLS**
- 1

**OILED DEBRIS**
- Amount

**Did You Col?**
- Yes

**PHOTOGRAPHS**
- Roll No.
- Frames

### SUBSURFACE OIL

<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>PIT DEPTH (cm)</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED INTERVAL (cm)</th>
<th>OIL / FILM COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
<td>X</td>
<td>0-1</td>
<td>X</td>
</tr>
<tr>
<td>2</td>
<td>35</td>
<td>X</td>
<td>0-6</td>
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</tr>
<tr>
<td>3</td>
<td>30</td>
<td>X</td>
<td>0-10</td>
<td>Y</td>
</tr>
<tr>
<td>4</td>
<td>40</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>20</td>
<td></td>
<td>0-3</td>
<td>X</td>
</tr>
<tr>
<td>6</td>
<td>25</td>
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</tr>
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</table>

**COMMENTS**
- OILED INTERVAL < 5 cm in Pits 1, 2, 3, 5 and 7 does not constitute subsurface oil.
<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>PIT DEPTH (cm)</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED INTERVAL</th>
<th>OIL / FILM COLOR</th>
<th>PIT ZONE</th>
<th>ANA SHEEN (VAR)</th>
<th>SURFACE - SUBSURFACE SEDIMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 30</td>
<td>X</td>
<td>X</td>
<td>0:30</td>
<td>X</td>
<td>X</td>
<td>Y</td>
<td>25 D/C/C</td>
</tr>
</tbody>
</table>

COMMENTS

REVIEWED  DATE 4-27-90
Plan for Bioremediation

Dig random pits and bury small amounts of slow release into oiled area. Pits should be 8 to 10 inches deep.
Suggested Plan For Bioremediation Area A

- Dig 12 inch deep furrows and bury a layer of solid fertilizer pellets at storm basin above tar mats in Area A.
Area C is an area adjacent to stream bank where oil is deeply buried. This area is at the 412 ft tide line. Biodegradation in form of solid pellets — buried six to eight inches in intermittent pits within the oiled area. Small...
RECOMMENDATION: REMOVE TAR MATS IN AREA 1, 2, 3. APPLY INTEGON® AREA A. NO INEPT to be Used in this area. Treatment of area A should include light tilling of surface of the Rak'k, Nkool, and also bioremediation in the form of solid biostimulants on top of gator at supratidal. Should be considered for area A.

I agree with recommendations. [Signature]

NOTE: ACTIVE RAGEL NEST AT ENTRANCE TO THIS LAGOON
Segment CH 009
Stream 226.20 - 161.82

4/25/90
Michael Fawcett

Ecological Summary

This stream has a long intertidal portion, first passing through some grassy flats, then entering a sizeable lagoon which remains filled at low tide, draining slowly over a cobbled/boulder sill at the seaward end. Large bedrock outcrops provide protection from waves. Beach sediments are stabilized by boulders, cobbles, pebbles, and gravel. The MTZ and LTZ seaward of the lagoon has a very rich biota including several species of starfish, intertidal fishes (gunnels, sculpins), limpets, littorines, chitons,urchins, whelks, hermit crabs, shore crabs (Hemigrapsus oregonensis), and a variety of algae. Infaunal clams, echinoids, moon snails, etc. are abundant. Egg cases deposited by moon snails were scattered throughout the LTZ. One area southwest of seaward of the lagoon has a mussel bed of 100+ mussel cover approximately 50 x 25m in size. The lagoon contains eelgrass, several species of red algae, the kelp Costaria costata, and a lot of diatom scum. One mature bald eagle and a pair of oyster catchers were seen.
segment CH009
Stream 226-20-16182
Ecological Summary

Surface tar in DTZ. Manual removal is suggested, and possibly bio-remediation using pellets rather than the liquid compound so as to avoid concentration of the fertilizer in the lagoon during falling tides. Clean-up crews and equipment should be kept away from the lower intertidal area, including the big mussel bed and all of the area below the lagoon mouth.

M.F. [Signature]
ECOLOGICAL MAP

CH-10

1A, 1B
3NP, 3Q
TII
ST-1

Surveyed 4/2/90 - CH004-B

CH-9

Surveyed by helicopter 4/2/90

visited briefly on foot 4/1/90

Bald Eagle Nest

Anadromous Stream

2/26-20-6/1892
(P5, CH5, 2/90)

Located in CH-09-B (20f2)

CH-2

XXXX Wide
/// Medium
--- Narrow

ADEC Segment Length: 945m

Map Key: PWS-57
Name: D. LITTLE
4/1/90
ASAP TAG REVIEW SHEET

Segment: Ch9  Subd: B  Site: 1  Date: PRE-Review 11 Aug

Priority For Addressing In 1990

X HIGH   ___ MEDIUM   ___ LOW   ___ NTR

Treatment Recommended: manual pickup + BID

WAS BID THIS YEAR

SOR - BID

Priority Site For Reassessment In 1991

YES / NO   YES / NO   YES / NO   YES / NO

TAG 13 Aug

Manual Removal Ternate - Lake & BID

* Anad Stream Constraint
ASAP TAG REVIEW SHEET

Segment: CH 9  Subd: B  Site: 2  Date  
PRE-Review 11 Aug

Priority For Addressing In 1990

[ ] HIGH  [ ] MEDIUM  [ ] LOW  [ ] NTR

Treatment Recommended: 

MANUAL REMOVE THE MAT

TARMAT ON BOTH SITE 1 & 2

Priority Site For Reassessment In 1991

[ ] YES  [ ] NO  [ ] YES  [ ] NO  [ ] YES  [ ] NO  [ ] YES  [ ] NO

CG  ADEC  EXXON  LAND MGR

TAG: 13 AVE

Manual Removal Tarmat - 
Lake & BIO

* Anad Stream Constraint
ASAP FOLLOWUP RECOMMENDATIONS

Conditions Observed: SURFACE OIL IN CATEGORIES THAT COULD BE MANUALLY RECOVERABLE STILL EXIST. IT WAS EVIDENT THAT MORE MANUAL RECOVERY COULD OCCUR ON THIS SUBDIVISION. ASAP MANUAL (MCP) CREW REMOVED ONE SURFACE OIL AND TILTED ABOUT 150' OF BEACH

Followup Recommendations: THIS BEACH COULD USE SOME MANUAL PICK UP OF RESIDUAL TARGETS OR HEAVY BID AND SOME MOLDED NETTING. SOME TIME SHOULD BE MANUALLY TIED IN AREAS OF HIGH % OF SPILLAGE. CLEANUP THIS SHOULD BE FOLLOWED WITH BIOREMEDIATION AND LONG MONITORING.

Completed by Pickup Crew: [ ] YES [X] NO

Priority for Addressing in 1990: [X] High [ ] Mod. [ ] Low

DEC 1990

Exxon

NOAA 1990

Land Rep: [ ] Agree with Recommendation

Comments:

Comments:

Comments:

Comments:
SEGMENT AS/ CH-9  SUBDIVISION: B  SITE: 1  DATE 8-4-90

CG/NOAA
NAME: David C. NOAA  SIGNATURE: David C. NOAA

☑ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:
Large areas of oiling have been treated, but removal or remediation efforts have not been fully effective. Would recommend additional treatment in 1990 and reassessment in 1991.

ADEC
NAME: ___________________________ SIGNATURE: ___________________________

☑ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991.
REASON:

LAND MANAGER
NAME: Steve Ward  CVC  SIGNATURE: ___________________________

☑ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:
Heavy oil still on site - more manual in 90, with bio in 90. Reassessment in 91 with concentration on sub-surface oil.

EXXON
NAME: ___________________________ SIGNATURE: ___________________________

☑ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:
Manual treatment in 1990 was not as effective on this subdivision as it was on others with comparative oiling. Bioremediation was relied on heavily to treat this subdivision. A work follow up for 1990 has been submitted. Check this one in 1991 for bio effectiveness.
**SURFACE OIL**

<table>
<thead>
<tr>
<th>Site 1</th>
<th>Site 2</th>
<th>Site 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Character</strong></td>
<td><strong>DISTRIBUTION</strong></td>
<td><strong>OILED ZONES</strong></td>
</tr>
<tr>
<td><strong>Asphalt</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S.O.R</td>
<td>I I X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Pooled</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cover</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Coat</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stain</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mousse</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Patties/T.B.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Film</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>No Oil</strong></td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td><strong>EST. SITE LENGTH</strong></td>
<td></td>
<td>400</td>
</tr>
</tbody>
</table>

**SUBSURFACE OIL**

| Site No. | Pit No. | Pit Depth (cm) | **PIT CHARACTER** | **OILED INTERVAL** | Clean Below (Y/N) | Pit Zone | **PIT ZONE** | **SUBSURFACE-** |
|----------|---------|----------------|-------------------|-------------------|------------------|----------|--------------|**SEDIMENT** |
| 1 | 1 | 15 | X | 0-10 | Y | X | P/C |

**Remarks**

- Western Side of the Site consisted of crust in the area for center, and bottom remains.
- These areas had been previously forests - 2 80. Galloons & pentene were recovered.
- The shoreline is composed of basaltic glass, rock & mud.

**Photographs:**

- Roll No.: 06
- Frames: 06

**Reviewed:**

8/4/90 J.G.
SEGMENT AS 1 CH-9  SUBDIVISION: 226-20-14 SITE: 2  DATE 8/4/90

CCG
NAME  David N. Nee  SIGNATURE  David N. Nee

☐ YES   ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:
Wide area of oiling in vicinity of stream warrants both 1990 treatment and 1991 reassessment.

ADEC
NAME  Bob McCarter  SIGNATURE  Robert S. McCarty

☐ YES   ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:
North end of segment received very little preperation work by DEC crew prior to bio application. Substantial AP and subsurface oil and oil remains still requires further treatment. South portion of segment adjacent to stream is a little lighter in oil. Mechanical removal of debris and dead fish and debris is recommended to expose AP and subsurface oil. Further work in 90 is recommended.

LAND MANAGER
NAME  C. L. E.  SIGNATURE  [Signature]

☐ YES   ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:
Lots of oil - Requires lots more manual on mechanical.
Lots of sub-surface highest priority in 90 and 91

EXXON
NAME  Randolph Borge  SIGNATURE  [Signature]

☐ YES   ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:
Surface oiling in the SOR category should be considered when assembling the Priority 1991 Assessment List. The Anadromous Fish Stream Segment has some oiling that was biodegraded. The effects of biodegradaion should be assessed. The Non Oil Spill Squad is set to perform...
<table>
<thead>
<tr>
<th>SURFACE OIL</th>
<th>SITE 1</th>
<th>SITE 2</th>
<th>SITE 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHARACTER</td>
<td>DENSITY</td>
<td>OILED ZONES</td>
<td>DENSITY</td>
</tr>
<tr>
<td>ASPHALT</td>
<td>/C</td>
<td>S U M</td>
<td>/C</td>
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<tr>
<td>S.O.R</td>
<td>/B</td>
<td>U M</td>
<td>/B</td>
</tr>
<tr>
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<td>/P</td>
<td>I</td>
<td>/P</td>
</tr>
<tr>
<td>COVER</td>
<td>/S</td>
<td>M</td>
<td>/S</td>
</tr>
<tr>
<td>COAT</td>
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</tr>
<tr>
<td>MOUSE</td>
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<td></td>
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</tr>
<tr>
<td>PATTIES/T.B.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FILM</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>EST. SITE LENGTH</td>
<td>100 m</td>
<td>100 m</td>
<td>100 m</td>
</tr>
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**SUBSURFACE OIL**

<table>
<thead>
<tr>
<th>SITE NO</th>
<th>PIT NO.</th>
<th>PIT DEPTH (cm)</th>
<th>OIL CHARACTER</th>
<th>OILED INTERVAL</th>
<th>CLEAN BELOW (Y/N)</th>
<th>PIT ZONE</th>
<th>SURFACE - SUBSURFACE SEDIMENTS</th>
</tr>
</thead>
</table>

**COMMENTS**

- SOR AND ST WERE LOCATED ON THE WEST SIDE OF THE STREAM.
- THE SOR AREA WAS PREVIOUSLY TREATED AND APPEARED AS A MARRED DISTRIBUTION OF MEDIUM OILING.
- THE ST WAS SUCCESSFULLY TREATED AT TIME OF FIELD WORK.

**Photographs:**

Roll No. 6
Frames 6

Reviewed 8/6/90 JW
ANADROMOUS FISH STREAM EVALUATION

SEGMENT ST/CH-09 STREAM NO: 226-20-16182 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)
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-1 All bald eagle nests (3/1 to 6/1) - Active eagle nests (3/1 to 9/1)
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. Subject stream is located within Subdivision B (2 of 2)

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: 5/10/90
Subsurface Oil Observed: Yes X No ____ Maximum Depth 30+ cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) manual pickup and removal of tar patties and tarmats in areas indicated on sketch map, and 2) bioremediation of areas "A" and "C" indicated on sketch map. Work should be conducted between 7/1 and 8/1 based on pinniped constraints with approval of ADF&G due to salmon stream constraint and USFWS regarding eagle nest.

TAG COMMENTS: 

Tag Approval Date: 5/9/90

Notify ADEC 24 HRS in advance of work

TAG APPROVAL DATE: 5/9/90.

ADEC  Art Wergin  Art Wergin
EXXON  Art Wergin  Art Wergin
NOAA  Paul Wergin  Paul Wergin
USCG  D. D. Rome  D. D. Rome

FOSC: X DATE: 5-11-90

Notify ADEC 24 HRS in advance of work
Plan for Bioremediation

Dig random pits and bury small amounts of solid fertilizer pellets for slow release into oiled area. Pits should be 8 to 10 inches deep.
Suggested Plan For Bioremediation AREA A

Dig 12 inch deep furrow and bury a layer of solid fertilizer pellets at storm bench above the mats in AREA A.
RECOMMENDATION: REMOVE TAR MATS IN AREA 1, 2, 3 UNDER INTEROVAL AREA A. NO INTERVAL TO BE USED IN THIS AREA. TREATMENT OF AREA A SHOULD INCLUDE LIGHT DILLING OR SURFACE OF THE RAGSTON CORELS ALSO BIOREMEDIATION IN THE FORM OF SOIL BIALISER BURIAL
IN FAPAN AT SUPERFICIAL SHOULD BE CONSIDERED ETC.

AREA A.

I agree with recommendations.

TWC

NOTE:

ACTIVE RAGSTON NEST AT ENTRANCE TO THIS LAGOON
ANADROMOUS FISH STREAM EVALUATION ADDENDUM

CONSTRAINTS FOR STREAM NO. 226-20-16182

SEGMENT CH-9 SUBDIVISION A

WORK WINDOW

<table>
<thead>
<tr>
<th>Manual Pickup</th>
<th>Tarmat Removal</th>
<th>CLOSED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioremediation</td>
<td></td>
<td>CLOSED</td>
</tr>
</tbody>
</table>

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B Salmon Stream

ADF&G catalogued stream (226-20-16182) is in Subdivision B. Bioremediation less than 100m from stream after 7/10. Prior to 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.

3N,P Harbor Seal & 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

Closed to manual pickup, tarmat removal and bioremediation. USFWS 6/1/90 map indicates an active nest less than 400m from treatment area.

7II Subsistence: Deer Harvesting

No constraint to manual pickup and tarmat removal. Closed to bioremediation after 8/15.

OTHER ECOLOGICAL CONSIDERATIONS

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

SEE SUBDIVISION CONSTRAINT ADDENDUM CU-9A FOR ADDITIONAL CONSTRAINT INFORMATION.

Date 6-10-90
ANADROMOUS FISH STREAM EVALUATION

SEGMENT ST/CH-09 STREAM NO: 226-20-16182 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)
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-1 All bald eagle nests (3/1 to 6/1) - Active eagle nests (3/1 to 9/1)
7TI 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 unooled biota and substrate. Subject stream is located within Subdivision B (2 of 2)

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).

MANO SIGNATURE: DATE: 5/10/90

Subsurface Oil Observed: Yes X No Maximum Depth 30+ cm

RECOMMENDATIONS:

___ 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: Recommended treatment includes 1) manual pickup and removal of tar patties and tarmats in areas indicated on sketch map, and 2) bioremediation of areas "A" and "C" indicated on sketch map. Work should be conducted between (7/4 and 8/1) based on pinniped constraints with approval of ADF&G due to salmon stream constraint and USFWS re-regarding eagle nest.

TAG COMMENTS: Hunters to pay particular attention to protection of Right Litz and Tidal pool - NO Bioremediation in these area.

TAG APPROVAL DATE: 5/9/90
ADEC DATE: FOSC: DATE:
EXXON
NOAA
USCG D.D. Rome
ASAP FOLLOWUP RECOMMENDATIONS - TEAM 3

Site: 1   Date: 8-4-90

Conditions Observed: DEEP COVE AT THE SOUTH END OF THE SEGMENT HAD A PROBLEM OF OILING WHICH IS CHARACTERIZED AS PATCHES OF SOR AND SOME SUBSURFACE OIL TO A 5 CM DEPTH.

Followup Recommendations: THE ORIGINAL WORK RECOMMENDATIONS DID NOT INCLUDE BIOREMEDIATION AND ASAP TEAM 3 IS RECOMMENDING AN ASSESSMENT FOR BIOREMEDIATION POSSIBILITIES.

Completed by Pickup Crew: ☒ YES ☐ NO
Priority for Addressing in 1990: ☒ High ☐ Mod. ☐ Low

DEC  Bob McLeod
(name)  Robert B. McLeod
(signature)

Comments: PRIOR TO BIOREMEDIATION, MANUAL TILLING IS RECOMMENDED

Exxon

(name)  Randall K. Boyce
(signature)

Comments: MANUAL TILLING AS REQUIRED PRIOR TO BIOREMEDIATION.

USCG

(name)  Don Oomens
(signature)

Comments: RECOMMEND MANUAL TILLING OF OIL SPILLS PRIOR TO APPLICATION OF ANY BIOREMEDIATION.

Land Rep.

(name)  Steve Lavoie
(signature)

Comments: ABOVE COMMENT WILL BE MET.
SEGMENT AS 1 CH-10  SUBDIVISION: C SITE: 1  DATE 8-4-90

SCG

NAME  David Planer  NOAA SIGNATURE  David Planer

☑ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

Area of olling is relatively small. Would give low priority to 1990 bioremediation (as per Randy Boyer) - to 1991 reassessment.

ADEC

NAME  Forrester McCanny  SIGNATURE  Robert G. McCanny

☑ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

A Work Order Mod. Rec. was submitted calling for bioremed of this section following tidying. An area of OK (heavy) which surfaced periodically along a band approx 30-35m. Subsequent OK area is of patchy distribution. About area in in core at South end of CH-10a. This is a priority reassessment site for 91 but no further work is required in 90.

LAND MANAGER

NAME  Jace Vargo  CVC SIGNATURE  Jace Vargo

☑ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

Shallow have more manual and 26157. Small olling that should be dealt with.

EXXON

NAME  Randall K. Boyer  SIGNATURE  Randall K. Boyer

☑ YES  ☐ NO  PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

THE SUBDIVISION HAS NOT BEEN RECOMMENDED FOR BIOREMEDIATION AND A WORK ORDER MODIFICATION HAS BEEN SUBMITTED FOR WORK IN 1990. THIS AREA SHOULD BE REASSESSED IN 1991 FOR BIO EFFECTIVENESS.

REVISION NO. 7/26/90
TOTAL EST LENGTH OF SHORELINE SURVEYED: m
(SURVEYED FROM: Foot Boat Helo WEATHER: Sun Clouds Fog Rain Snow)
CATEGORY LENGTH: W-m M-m N-m V-m U-m US-m

**SURFACE OIL**

<table>
<thead>
<tr>
<th>Site</th>
<th>Character</th>
<th>Distribution</th>
<th>Oiled Zones</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ASPHALT</td>
<td>C/B/P/S</td>
<td>SU UI MI LI</td>
</tr>
<tr>
<td></td>
<td>S.O.R.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>POOLED</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>COVER</td>
<td>I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>STAIN</td>
<td>I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MOUSSE</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PATTEIS/T.B.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FILM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NO OIL</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EST. SITE LENGTH</td>
<td>1577</td>
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</table>

**SUBSURFACE OIL**

<table>
<thead>
<tr>
<th>Site</th>
<th>Pit No.</th>
<th>Pit Depth (cm)</th>
<th>Subsurface Oil Character</th>
<th>Oiled Internal</th>
<th>Clean Below (Y/N)</th>
<th>Pit Zone</th>
<th>Surface-Subsurface Sediments</th>
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<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>30</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>P/K</td>
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<tr>
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<td>2</td>
<td>20</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>P/K</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>18</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>P/K/K</td>
</tr>
</tbody>
</table>

*ST/KT + SOR were found at the north end of small pocket beaches.*

*The ST/KT were intersitial in a 1.5m band near the center of the segment.*
GENERAL DATA

SEG ID: CH-10 SBDY: 0 SITE: 1 TEAM: 3 DATE: 8-4-90
SITE LGTH: 1593 OIL CATEGORIES: W - M - N - VL 60 NO: 15A U -

SURFACE DATA

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

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

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

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

CHAR #: 5 OIL CHAR: NO OIL DIST: CONT - BRKN - PTCH - SPLH -
TIDAL ZONE: SU X UI - MI X LI X

CHAR #: 6 OIL CHAR: --- OIL DIST: CONT - BRKN - PTCH - SPLH -
TIDAL ZONE: SU UI MI LI -

CHAR #: 7 OIL CHAR: --- OIL DIST: CONT - BRKN - PTCH - SPLH -
TIDAL ZONE: 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 -

CHAR #: 11 OIL CHAR: --- OIL DIST: CONT - BRKN - PTCH - SPLH -
TIDAL ZONE: SU UI MI LI -
ASAP DATA ENTRY FORM

SUBSURFACE DATA

SEGMENT ID: C4H-10 SUBDIV: C SITE: 1

PIT # 1 PIT DEPTH 20 OIL CHARACTER: NO OIL INTERVAL: FROM ___ TO ___
CLEAN BELOW: ---- PIT ZONE: SU - UI X MI - LI -
SUBSURF SEDIMENT: BRK - BLD - COB - PEB X GRN X SAM - MUD - VEG -

PIT # 2 PIT DEPTH 20 OIL CHARACTER: NO OIL INTERVAL: FROM ___ TO ___
CLEAN BELOW: ---- PIT ZONE: SU - UI X MI - LI -
SUBSURF SEDIMENT: BRK - BLD - COB - PEB X GRN X SAM - MUD - VEG -

PIT # 3 PIT DEPTH 18 OIL CHARACTER: NO OIL INTERVAL: FROM ___ TO ___
CLEAN BELOW: ---- PIT ZONE: SU - UI X MI - LI -
SUBSURF SEDIMENT: BRK - BLD - COB - PEB X GRN X SAM - MUD - VEG -

PIT # 4 PIT DEPTH ___ OIL CHARACTER: ___ OIL INTERVAL: FROM ___ TO ___
CLEAN BELOW: _____ PIT ZONE: SU - UI X MI - LI -
SUBSURF SEDIMENT: BRK - BLD - COB - PEB X GRN X SAM - MUD - VEG -

PIT # 5 PIT DEPTH ___ OIL CHARACTER: ___ OIL INTERVAL: FROM ___ TO ___
CLEAN BELOW: _____ PIT ZONE: SU - UI X MI - LI -
SUBSURF SEDIMENT: BRK - BLD - COB - PEB X GRN X SAM - MUD - VEG -

PIT # 6 PIT DEPTH ___ OIL CHARACTER: ___ OIL INTERVAL: FROM ___ TO ___
CLEAN BELOW: _____ PIT ZONE: SU - UI X MI - LI -
SUBSURF SEDIMENT: BRK - BLD - COB - PEB X GRN X SAM - MUD - VEG -

PIT # 7 PIT DEPTH ___ OIL CHARACTER: ___ OIL INTERVAL: FROM ___ TO ___
CLEAN BELOW: _____ PIT ZONE: SU - UI X MI - LI -
SUBSURF SEDIMENT: BRK - BLD - COB - PEB X GRN X SAM - MUD - VEG -

PIT # 8 PIT DEPTH ___ OIL CHARACTER: ___ OIL INTERVAL: FROM ___ TO ___
CLEAN BELOW: _____ PIT ZONE: SU - UI X MI - LI -
SUBSURF SEDIMENT: BRK - BLD - COB - PEB X GRN X SAM - MUD - VEG -
1991 MAYSAF EVALUATION

SEGMENT: CH 010   SUB: B   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. Fish harvest area, Subsistence - Deer harvesting

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

SHPO Signature: [Signature] Date: 5/21/91

RECOMMENDATIONS:

<table>
<thead>
<tr>
<th>TREATMENT REQUIRED (Y or N)</th>
<th>INITIAL</th>
<th>TAG</th>
<th>FOSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Pickup (Check as Req.)</td>
<td>N</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Spot Washing</td>
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<td></td>
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</tr>
<tr>
<td>Bio-Customblen Only</td>
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</tr>
<tr>
<td>Bio-Inipol/Customblen</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

COMMENTS:
INITIAL: ____________________________________________________

TAG: ---------------------------------------------------

FOSC: ____________________________________________________

TAG APPROVAL DATE: MAY 21/91  FOSC APPROVAL DATE: 6/1/91

ADEC E. E. PAGE, CDR, USCG
EXXON CHIEF OF STAFF, FOSC
USCG
NOAA

[Signatures]
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.

Subsistence - Deer Harvesting: Unlimited treatment prior to 8/15.
TEAM NO. 4  SEGMENT CHO10−B  SUBDIVISION B  DATE 1/18/91

ADEC
NAME: Dianne Munson  SIGNATURE: Dianne Munson

☐ NTR  ☑ Treatment Recommended

Areas of tarmats to 5 cm, also nsoR, msoR and HsoR. Although area with HsoR was worked on it was not completed due to time constraints. Recommend manual removal of tarmats and soR categories on sketch map. soR areas are often tarmats.

EXXON
NAME: Larry D. Olson  SIGNATURE: Larry D. Olson

☑ NTR  an area of HsoR was located during survey. Use crew removed 16 bags of this but did not complete. If completed carefully not to do further damage to muscles already growing in this area, crew clean up crew could remove remainder of HsoR sediments.

LANDMANAGER
NAME: Larry Evanoff  CHECKED: CIV

☐ NTR  ☑ Treatment Recommended

An area with HsoR was found. This area was worked on by use crew but I do not know if it was completed. Other TB/paties moving cobble/boulders that could be picked up. coats on rock are and underneath rocks could be scraped with trowels.

USCG/NOAA
NAME: Jerry Schultz  SIGNATURE: Jerry Schultz

☑ NTR  to remove remaining residual would require removing the arm of cobble + pebble and would disturb the existing mussel beds.
<table>
<thead>
<tr>
<th>L</th>
<th>SURFACE OIL CHARACTER</th>
<th>SURFACE SEDIMENT</th>
<th>SHORE</th>
<th>AREA</th>
<th>ZONE</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT</td>
<td>S</td>
<td>M 0.5 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A1</td>
<td>S</td>
<td>M 0.5 2</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>P</td>
<td>M 0.5 6</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

SURFACE OIL CHARACTER: S (Sheen), P (Pebbles), C (Cliffs), T (Tide), DB (Drift Beads), NO (No Oil)

SURFACE SEDIMENT: VHM (Very High Mobility), M (Medium Mobility), L (Low Mobility)

SHORE AREA: S (Slope), U (Upland), M (Middle), L (Lowland)

ZONE: S (Shore), U (Upland), M (Middle), L (Lowland)

NOTES: (Additional information)

---

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-____ FAMES

---

SHEEN COLOR: B = Brown; R = Rainbow; S = Silver; N = None

---

OG COMMENTS:

1 pocket & cals of angular clb/clb, in some areas over sand/mud/clb/clb; between low headlands of bedrock with vertical foliation. Oiling includes 150R, some area of HSOR and a few cl on the underside of clb.
TEAM N 4  DATE/TIME  May 1, 1991  0900 - 1015
SEGMENT N  CH010  TIDAL HEIGHT (Range)  -1.0 => -1.0
SUBDIVISION  B  BIOLOGIST  JIM BARRY
SEA STATE  Calm  WIND SPEED/DIRECTION  Calm, Cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A=A4 Medium to high exposure headland with bedrock outcrops and angular cobble/boulder pocket beach. Oiled site (MSOR) located at the upper edge of the upper intertidal along the drift line at the base of a bedrock outcrop. Biota at location of oil are very sparse (black lichen, sparse beach grass). Little or very sparse biota towards beach for 30 m.

MANUAL PICK-UP PERFORMED DURING SURVEY. Addition treatment, if required, will have no negative impacts on the intertidal biota.

B=AI3 This oiled site (HSOR) occurs in the middle of the upper intertidal zone. This location is a medium slope and low exposure beach composed of medium cobble and scattered boulders and bedrock outcrops. The biota surrounding and amongst the oiled area are moderately dense mussels (adults, juveniles), sparse clams, dense to moderate littorines (adults, egg masses), moderate barnacles (Balanus, adults, spat), and sparse to rare Fucus. Below the site, the intertidal biota are somewhat denser, with higher cover of Fucus, moderate mussel densities and cover, especially on scattered bedrock outcrops, sea stars (Leptasterias, brooding). Above the area, mussels are also moderately abundant and to a slight extent, form a sparse mussel bed in the cobble beach sediments. The extreme low intertidal and subtidal appear to have a denser infaunal clam community and sparse eel grass bed.

MANUAL CLEAN-UP PERFORMED DURING SURVEY. Additional cleanup operations on this location should be restricted to manual cleaning only with no heavy equipment allowed on the beach. The impacts to the beach fauna will be minor from such operations.

WILDLIFE OBSERVATIONS - Completed on all subdivisions

<table>
<thead>
<tr>
<th>BIRDS</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
<th>FISH OBSERVED SPECIES PRESENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eagles</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Seabirds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterfowl</td>
<td>2</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Gulls/Kittiwakes</td>
<td>2</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Shorebirds</td>
<td>1</td>
<td>2</td>
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</tr>
<tr>
<td>Corvids</td>
<td>1</td>
<td>5</td>
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<tr>
<td>Other Birds</td>
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</table>

<table>
<thead>
<tr>
<th>MARINE MAMMALS</th>
<th># OBSERVED</th>
<th>SPECIES</th>
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<tbody>
<tr>
<td>Sea Otters</td>
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<td>River Otter</td>
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<tr>
<td>Pinnipeds (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whales (specify)</td>
<td></td>
<td></td>
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</tbody>
</table>

Shoreline subdivision map showing important biological features attached.
This oiled site (LSOR) shows some sheen in the middle to upper zone of the intertidal cobble beach. The beach has a shallow to medium slope and low exposure to swell. The biota at the oiled site are typical of the middle to high zone and include moderate cover of Fucus, high cover of filamentous algae (green and red?), scattered clams and barnacles, and moderate densities of mussels. This mussel bed partially consolidates the cobble and pebble sediments. Adults and juveniles are present. Barnacles, littorines, limpets and associated fauna are moderately abundant. The lower zones below the oiled site grade into an eel grass and clam bed in the subtidal zone. Cleanup activities, if recommended at this site, should be highly restricted. Manual removal crews should not be allowed to till the beach due to the potential impact to the mussel bed. Heavy equipment should be prohibited from the beach. Removal of residual surface oil from locations within the mussel bed community should proceed with caution to prevent disturbance to this community. Area M on the Bio-map indicates the general location of a well consolidated mussel bed in the upper intertidal near the oiled site. Foot travel over this bed should be avoided to minimize disturbance.

This oiled area is located along the drift line in the upper intertidal on the 'shoulder' of the cobble beach. This site has sparse barnacles, black lichen, occasional Fucus and moderate littorines and limpets. Directly below the site, the middle intertidal cobble beach has a moderately dense mussel bed which grades into a clam bed and eel grass bed in the low and subtidal zones.

MANUAL CLEAN-UP ACTIVITIES PERFORMED DURING SURVEY. Additional clean up should be restricted to manual cleanup, with no access to the beach by heavy equipment.

Summary of Biological Characteristics of CH010-B

This subdivision has very diverse habitat types, ranging from exposed bedrock headlands to highly protected coves and cobble beaches. The headlands are very diverse, with nearly 100% cover by macroalgae, barnacles, and mussels. The key species (Fucus, mussels, barnacles, littorines) dominate most space. Minor species are also abundant in these locations. In the protected coves and middle to upper intertidal zones behind the bedrock headlands, mussels and clams are abundant. In some locations mussel beds are dense and consolidate the beach sediments. In lower zones on these cobble beaches, the infaunal community is very rich, with clams, mussels, infaunal worms, crabs, peanut worms, and eel grass beds. Mussel beds, eel grass, and clam beds are sensitive to human disturbance and care should be taken to prevent disturbance to these resources during potential cleanup operations.

One bald eagle and two river otters were observed on this subdivision.

List of Common Species from CH010-B

A. Marine Plants
   1. Diatoms, Blue Greens
   2. Green Algae - Chlorophyta
      Enteromorpha sp., Ulva sp., Urospora sp., filamentous green
   3. Brown Algae - Phaeophyta
      Agarum fimbriatum, Ectocarpus spp., Fucus distichus, Hildenbrandia sp., Ralfsia sp., Sycosiphon lomentaria
   4. Red Algae - Rhodophyta
      Calliarthron sp., Corallina sp., Cryptophysicia woodii, Cumagloia andersonii, Halosaccion glandiforme, Iridaeae sp., Lithothamnion sp., Mastocarpus sp., Membranoptera dimorpha, Odonthalia floccosa, Palmaria palmata, Rhodomela larix, filamentous red algae
Higher Plants - Zostera marina (eel grass), Leymus mollis (beach rye grass)

II. Marine Animals

1. Sponges - Porifera
   Halichondria sp.

2. Anemones
   Anthopleura artemesia, A. elegantissama, Epiactis ritteri, Metridium senile, Urticina crassicornis.

3. Hydroids - Sertularidae - Sertularella?

4. Flatworms - Platyhelminthes - Polyclads

5. Nemertean Worms - Ribbon Worms - Emplectonema gracile, Tubulanus polymorphus

6. Polychaetes
   Glyceridae
   Nepthyidae
   Nereidae - Nereis spp.
   Serpulidae
   Serpula sp., Crucigera sp., Eudistylia polymorpha
   Spiorbidae - Spiorbis sp.

7. Peanut worms - Sipunculids - Phascolosoma agassizii

8. Crustaceans
   a. Amphipods - Orchestia sp.?
   b. Barnacles
      Balanus glandula, Chthamalus dalli, Semibalanus cariosus
   c. Crabs
      Haplogaster sp., Hemigrapsus oregonensis, Paguridae (hermit crabs), Oregonia gracilis,

9. Mollusca
   a. Chitons
      Mopalia mucosa, Tonicella lineata,
   b. Snails - Gastropods
      Littorina scutulata, L. sitkana, Margarites sp., Natica clausa, Nucella lamellosa, N. lima,
   c. Limpets
      Acmaea mitra, Lottia digitalis, L. persona, Tectura fenestrata
   d. Mussels and Clams
      Clinocardium sp., C. nuttalli, Macoma balthica, Macoma nasuta, Modiolus sp., Mya arenaria (soft-shell clam), Mytilus californianus, M. cepio, Prototheca staminea, Saxidomus giganteus,

10. Echinoderms
    a. Brittle Stars - Ophiolus sp., ?
    b. Sea stars
       Dermasterias imbricata, Evasterias truschelii, Leptasterias hexactis, Pycnopodia helianthoides, Solaster sp.
    c. Sea Cucumbers - Holothurians - Leptosynapta sp.
    d. Urchins - Strongylocentrotus droebachiensis


12. Fishes
    Cottidae - several unknown species
    Liparidae
    Liparis callyodon
    Stichaeidae - Xiphister atropurpureus, X. mucosus
**Bio Sketch Map**

**CHO10-B**

1 May 91

- Bedrock
- Cobble/Pebble Beach

**BLACK LICHEN**
Sparse Barnacles
Occasional Fucus
Moderate Littorina/Unio

**Bedrock**
Angular cobble over sand/mud

**M**
Mussel bed

**INHABITANTS**
Moderate Fucoids, High
Cover of Filamentous algae
Scattered clams, barnacles,
Moderate mussel densities
Mussel bed consolidates
Beach sediments. Adults
Juveniles and/or eggs of
Most species are common.
Zel grass/clam bed
In low/subtidal zones

**BLACK LICHEN**
Sparse Bacinell Grass
Angular cobble beach
Little biota
1991 MAYSAP EVALUATION

SEGMENT: CH 010 SUB: C 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, Subsistence - Invertebrate harvesting, Subsistence - Finfish harvesting

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

SHPO Signature: [Signature] Date: 5/1/91

RECOMMENDATIONS:

TREATMENT REQUIRED (Y or N) INITIAL TAG FOSC
N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Custoimblen

Other

Other

COMMENTS:
INITIAL:

TAG:

FOSC:


ADEC

EXXON

USCG

NOAA

The staff will evaluate the need for further treatment.

E. E. PAGE, CDR, USCG

CHIEF OF STAFF, FOSC
ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

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

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

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

TEAM NO. 4  SEGMENT CH 010  SUBDIVISION C  DATE 1/7/91

ADEC
NAME: Dianne Munson  SIGNATURE: Dianne Munson
□ NTR  □ Treatment Recommended
Tar balls, patties remain, also see under coarse veneer.
Possibly recommend manual removal.

EXXON
NAME: LARRY D. OLSON  SIGNATURE: Larry D. Olsen
□ NTR
Lumber oil debris and old marine boom worked on areas as found. Beach appeared rich with biological growth.

LANDMANAGER
NAME: Larry Evans of CVC  SIGNATURE: Larry Evans
□ NTR  □ Treatment Recommended
TB/Patties found and worked on. I think further work can be done to remove oiled sand/gravels from underneath rocks. Scrape oil from rock face. No bioremediation recommended.

USCG/NOAA
NAME: Jerry Schultz  SIGNATURE: Jerry Schultz
□ NTR
Further removal operations would cause more environmental harm than good.
**MAYSAP SHORELINE OILING SUMMARY**

**TEAM NO. 4**

**OG** M. Semple

**BIO** Dr. Band

**ADEC** L. Muir

**LANDMANAGER** L. Benn

**EXXON** L. Smith

**USCG/NOAA** C. Schulz

**DATE** 1 MAY 1991

**TIME** 07:45 to 08:35

**TIDE LEVEL** +1.0 ft. to -1.0 ft.

**ENERGY LEVEL**: □ H □ M □ L

**SURVEYED FROM**: □ FOOT □ BOAT □ HELO

**WEATHER**: □ SUN □ CLOUDS □ FOG □ RAIN □ SNOW

**TOTAL LENGTH SHORELINE SURVEYED**: 800 m

**NEAR SHORE SHEEN**: □ BR □ RB □ SL □ NONE

**EST. OIL CATEGORY LENGTH**:

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<th>M</th>
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**SURFACE OIL CHARACTER**

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<th>CV</th>
<th>CT</th>
<th>ST</th>
<th>FL</th>
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<tr>
<td>A3</td>
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<td>3</td>
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**DISTRICT**: C = 91-100%; B = 51-60%; P = 11-50%; S = 1-10%; T = <1%

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

**PHOTO ROLL**: MAYSAP

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

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

**PHOTO ROLL**: MAYSAP

**FRAMES**: 1 - 10

**PIT NO.**

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<th>Clean Zone</th>
<th>H2O Below Level</th>
<th>Sheen Color</th>
<th>Pit Zone</th>
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</tbody>
</table>

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

**OG COMMENTS**: Section of small pocket beaches of pink, flat, well-rounded pebbles alternating with bedrock headlands, lots of seaweed and intertidal bedrock below waterline. Oiling in water consists of tar balls, small patches of ASD, a band of ASD, and coating on bedrock surfaces. No subsurface oil was found throughout oil division.

**R E V I S E D**: 5/6/1991 KG
MAYSAP BIOLOGICAL SUMMARY FORM

TEAM N 4 DATE/TIME May 1, 1991 0745 => 0900
SEGMENT N CHO10 TIDAL HEIGHT (Range) +1.0 => -1.0
SUBDIVISION C BIOLOGIST JIM BARRY
STATE Calm WIND SPEED/DIRECTION Variable, 5 kt., Cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A1-A2 Oiled site (LSOR) located at the upper intertidal drift line. Biota include black
lichen, mosses, beach drift. Nearby the beach cobble has little attached biota.
The lower zone is approximately 30 m down the beach slope, where the densities of
Fucus, barnacles, littorines, and associated species increase.

MANUAL PICKUP PERFORMED DURING SURVEY. Additional cleanup, if recommended, will not
adversely impact the biota on this beach.

B1-A3 Oiled site (CT) located on outcrops and the upper zone/ supratidal cobble beach near
the drift line. Biota include black lichen, mosses, beach drift algae, moderate to
sparse barnacles, scattered littorines. Barnacle spat present on weathered oil.
Littorines present on weathered oil. Juvenile mussels present within the oiled
area.

MANUAL PICKUP PERFORMED DURING SURVEY. Additional cleanup will not adversely impact
the biota on this beach.

C1-A5 Oiled Site (LSOR) located in the upper/supratidal drift line on a cobble/shingle
beach with scattered bedrock outcrops. Biota at oiled site: Black lichen, sparse
beach grass, mosses, scattered barnacles. Below oiled site: sparse Fucus, dense
littorines (adults, eggs), barnacle spat, moderate limpets.

Clean-up activities, if recommended, will not negatively impact the biota at the
site.

WILDLIFE OBSERVATIONS - Completed on all subdivisions

<table>
<thead>
<tr>
<th>BIRDS</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
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<td>Waterfowl</td>
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<td>Gulls/Kittiwakes</td>
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<tr>
<td>Other Birds</td>
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<table>
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<tr>
<th>MARINE MAMMALS</th>
<th># OBSERVED</th>
<th>LAND MAMMALS</th>
<th>SPECIES</th>
<th># OBSERVED</th>
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<tr>
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<tr>
<td>Whales (specify)</td>
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</table>

Shoreline subdivision map showing important biological features attached.
This oiled area (CT) is located at the upper extent of a cobble beach, with a bedrock cliff above and boulders and cobble below. Biota of the oiled site are sparse black lichen, scattered barnacles and littorines, and Fucus drift algae. The cobble beach below has little biota, although dense barnacle spat are present on larger cobble, with littorine eggs and adults under cobble.

MANUAL PICK-UP PERFORMED DURING SURVEY. Further treatment would not have adverse effects on the intertidal biota at the site.

Summary of Biological Characteristics of CH010-C

This subdivision includes several types of habitats, ranging from exposed headlands to protected coves. The headlands have nearly total cover of algae, dominated by Fucus, as well as several species of red algae (Odonthalia floccosa, Rhodomela larix, and others) and invertebrates. Mussels are dense in patches, with high cover of barnacles (Semibalanus cariosus). Limpets, littorines, sea stars, and urchins are common. In contrast, the cobble beaches have little attached biota. Sparse Fucus, moderate barnacles, and fairly high densities of littorines, limpets, and amphipods are present under beach cobble.

Most species are present as adult and reproductive life phases, especially on bedrock habitats.

Nearly all of the oiled substrata are located at the highest high tide line on cobble beaches. Clean-up operations will have little negative impact on the biota of these areas.
**Bio Sketch Map - CH010 - C**

May 1, 1991

- **A**: Bedrock
- **B**: Pebble/Cobble
- **C**: Bedrock
- **D**: Pebble

**Black Lichen, Scattered Barnacles (Littorines), Drift Algae, Little Biota on Beach Below**

**Sparse Beach Grass, Black Lichen, Mosses, Scattered Barnacles**

**Black Lichen, Mosses, Sparse Barnacles, Barren Glauc, Littorines, Scattered Juvenile Mussel**

**Black Lichen, Mosses, Small Amount of Debris, Beach Drift. Little Biota on Cobble Beach Below Site.**

**Meters**

0 200 400
1991 MAYSAP EVALUATION

SEGMENT: CH 010 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, Fish Harvest area, Subsistence - Deer harvesting

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

SHPO Signature: Charles Z. Holmes Date: 5/1/91

RECOMMENDATIONS:

<table>
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<tr>
<th>TREATMENT REQUIRED (Y or N)</th>
<th>INITIAL</th>
<th>TAG</th>
<th>FOSC</th>
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</thead>
<tbody>
<tr>
<td>N</td>
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<td>N</td>
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</tbody>
</table>

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

COMMENTS:

INITIAL: ____________________________________________________________

TAG=-------------------------------------------------------------

FOSC: __________________________________________________________

TAG APPROVAL DATE: 5/10/91 FOSC APPROVAL DATE: 5/15/91

ADEC  E E. PA

EXXON

USCG

NOAA E E. PAGE, CDR, USCG

CHIEF OF STAFF, FOSC
ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES

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

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

Subsistence - Deer Harvesting: Unlimited treatment prior to 8/15.
MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 4 SEGMENT CHO10 SUBDIVISION A DATE 1 MAY 1991

ADEC
NAME  Dianne Murdock  SIGNATURE  Dianne Murdock

☐ NTR □ Treatment Recommended
Tar balls and tar patches observed were removed. Coats, stains and soot remain.

EXXON
NAME  Larry D. Olson  SIGNATURE  Larry D. Olson

☐ NTR □ Removed what was found in the debris. No further clean up as area appeared healthy and clean.

LANDMANAGER
NAME  Larry Evans  OF  CVC  SIGNATURE  Larry Evans

☐ NTR □ TREATMENT RECOMMENDED
Tar balls/patches were found and were picked up. Stains remain on rock face and underneath rocks.

USCG/NOAA
NAME  Jerry Schultz  SIGNATURE  Jerry Schultz

☐ NTR
Removed what was recoverable. No further intrusion necessary.
## MAYSAP SHORELINE OILING SUMMARY

**Segment:** Ch010-A  
**Subdivision:** A  
**Date:** 6/7/91

**Surveyed from:** 
- Foot  
- Boat  
- Helo

**Surface Oil Character:**

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<th>OIL CHARACTER</th>
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<th>WIDTH</th>
<th>LENGTH</th>
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<td>V</td>
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<td>oo Oil/rock face</td>
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</table>

**Subsurface Oil Character:**

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<th>PIT NO</th>
<th>DEPTH (cm)</th>
<th>OIL CHARACTER</th>
<th>OILED ZONE</th>
<th>CLEAN BELOW</th>
<th>H2O LEVEL</th>
<th>SHEEN COLOR</th>
<th>PIT ZONE</th>
<th>SUBSURFACE SEDIMENTS</th>
<th>NOTES</th>
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</tbody>
</table>

**Sheen Color:**
- B = Brown  
- R = Rainbow  
- S = Silver  
- N = None

**OG Comments:** Subdivision consists of alternating patches of
black sand between bedrock. No subsurface oil was found and most of the surface oil encountered
was removed as they consisted of small patches of ascorb and
one ton ball. No attempt was made to remove the stain on the
bedrock face at the western extremity of the segment.
Oiled site (HSOR) located at high zone drift line. This is a bedrock ramp and cobble beach site. Biota are black lichen, and little else. Below the site, there is dense Fucus, dense littorines, high barnacles densities (Balanus adults spat), and sparse mussels cover (adults and juveniles).

**MANUAL PICKUP PERFORMED DURING SURVEY.** Additional cleaning will not impact nearby biota, provided care is taken to prevent impacts to exposed headland in lower zone.

Oil (HSOR patties) located in high intertidal on the border of a cobble beach with adjacent bedrock outcrops. The oiled site biota are sparse to moderate barnacles, sparse Fucus and turf-like red algae, littorines, and limpets. The adjacent boulders have moderate cover of Fucus. The cobble beach has little biota attached. Lower on the beach barnacle densities are greater on cobble.

**MANUAL PICKUP PERFORMED DURING SURVEY.** Additional cleanup will have few, if any, negative impacts to intertidal biota.

Oiled site (SOR/ST) is a bedrock face in the upper intertidal with black lichen, Fucus drift algae, and little else. The headland below has a richer Fucus-dominated community.

**MANUAL PICKUP PERFORMED DURING SURVEY.** Additional cleanup, if necessary, can consist of manual pickup of oil patches with no impact to the site.

**WILDLIFE OBSERVATIONS** - Completed on all subdivisions

<table>
<thead>
<tr>
<th>BIRDS</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
<th>FISH OBSERVED SPECIES PRESENT</th>
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<td>Waterfowl</td>
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<td>9</td>
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<td>Gulls/Kittiwakes</td>
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<td>Shorebirds</td>
<td>1</td>
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<td>Corvids</td>
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<tr>
<td>Other Birds</td>
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</tbody>
</table>

**MARINE MAMMALS**

<table>
<thead>
<tr>
<th>SPECIES</th>
<th># OBSERVED</th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Sea Otters</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Pinnipeds (specify)</td>
<td></td>
<td></td>
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<tr>
<td>Whales (specify)</td>
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</table>

**LAND MAMMALS**

<table>
<thead>
<tr>
<th>SPECIES</th>
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</tr>
</thead>
<tbody>
<tr>
<td>River Otter</td>
<td>1</td>
</tr>
</tbody>
</table>

preline subdivision map showing important biological features attached.
Bio Sketch Map CHO10-A
1 May 91

A) Picked up

Black Lichen
Fucus Drift

B) Picked up

Sparse - Moderate Barnacles,
Sparse Fucus, Turf-like Red
Algae, Littorines, Limpets

Bedrock/Talus
Well Sorted Pebbles
Pebbles/Cobble
Pebbles/Sand

Reviewed MB 5/4/91
1991 MAYSAP EVALUATION

SEGMENT: CH 010  SUB: C  REGION: FWS  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, 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:

<table>
<thead>
<tr>
<th>TREATMENT REQUIRED (Y or N)</th>
<th>INITIAL</th>
<th>TAG</th>
<th>FOSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td></td>
<td></td>
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</tbody>
</table>

Manual Pickup (Check as Req.)
Spot Washing
Bio-Customblen Only
Bio-Inipol/Custmblen
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.

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

<table>
<thead>
<tr>
<th><strong>ADEC</strong></th>
<th>NAME: Dianne Manson</th>
<th>SIGNATURE: Dianne Manson</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□ NTR ■ Treatment Recommended</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tar balls, patties remain, also sora under coarse veneer. Possibly recommend manual removal.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>EXXON</strong></th>
<th>NAME: Larry D. Olson</th>
<th>SIGNATURE: Larry H. Olson</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□ NTR ■ Treatment Recommended</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Found oiled debris and old marine boom. Worked in areas as found. Beach appeared rich with biological growth.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>LANDMANAGER</strong></th>
<th>NAME: Larry Evriff of EVC</th>
<th>SIGNATURE: Evriff</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>■ Treatment Recommended</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TB/Patties found and worked on. I think further work can be done to remove oiled sand/gravel from underneath rocks. Scrape away oil from rock face. No bio爱尔兰ion recommended.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>USCG/NOAA</strong></th>
<th>NAME: Jerry Schultz</th>
<th>SIGNATURE: Jerry Schultz</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>■ NTR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Further removal operations would cause more environmental harm than good</td>
<td></td>
</tr>
</tbody>
</table>
**WATERSHORE OILING SUMMARY**

**TEAM NO.**

EEC  

**BIO.**  

L. Bennett

**LANDMANAGER.**  

L. Evenson

**USCG/NOAA.**  

R. Schubert

**DATE.**  

1 MAY 1991

**TIME.**  

07:15 to 08:35

**TIDE LEVEL.**  

+1.0 ft. to -1.0 ft.

**ENERGY LEVEL.**  

☐ H ☑ M ☑ L

**SURVEYED FROM.**

☐ FOOT ☐ BOAT ☑ HELO

**WEATHER.**

☐ SUN ☑ CLOUDS ☐ FOG ☐ RAIN ☑ SNOW

**TOTAL LENGTH SHORELINE SURVEYED.**  

22 ft.

**NEAR SHORE SHEEN.**

☐ BR ☐ RB ☐ SL ☑ NONE

**EST. OIL CATEGORY LENGTH.**

W __ m M __ m N __ m 22 m V L __ m US __ m 779 m US __ m 777 m

<table>
<thead>
<tr>
<th>LOC</th>
<th>AP</th>
<th>MS</th>
<th>TB</th>
<th>SOR</th>
<th>CV</th>
<th>CT</th>
<th>ST</th>
<th>FL</th>
<th>DB</th>
<th>NO</th>
<th>SURFACE OIL Character</th>
<th>SURFACE OIL Type</th>
<th>SHORE SLOPE</th>
<th>WIDTH (m)</th>
<th>LENGTH (m)</th>
<th>ZONE</th>
<th>NOTES</th>
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<tr>
<td>1</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Bed H</td>
<td>1</td>
<td>3</td>
<td>X</td>
<td></td>
<td></td>
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<td></td>
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<td>Bed H</td>
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<td>P</td>
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<td>P</td>
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<td></td>
<td></td>
<td></td>
<td>Bed H</td>
<td>1</td>
<td>5</td>
<td>X</td>
<td></td>
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<tr>
<td>5</td>
<td>P</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Bed H</td>
<td>1</td>
<td>3</td>
<td>X</td>
<td></td>
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</tbody>
</table>

**DISTRIBUTION:**

C = 91-100%; B = 81-90%; P = 11-60%; S = 1-10%; T = <1%

**SLOPE:**

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

**PHOTO ROLL/MAP:**

FRAMES

**PIT NO. DEPTH (cm).**

<table>
<thead>
<tr>
<th>PIT</th>
<th>OILED ZONE</th>
<th>CLEAN BELOW</th>
<th>OILED LEVEL</th>
<th>SHEEN COLOR</th>
<th>PIT</th>
<th>SURFACE-SUBSURFACE SEEDMENTS</th>
<th>NOTES</th>
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<tbody>
<tr>
<td>2</td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SHEEN COLOR:**

B = BROWN; R = RAINBOW; S = SILVER; N = NONE

**OG COMMENTS:**

Section of small pocket beaches of pelvis, BS, and well rooted BS alternating with bedrock headlands. 20% of shoreline and intertidal bedrock late afternoon. Oil in water consists of tar balls, small patches of BS, a band of BS and coatings on bedrock surfaces. No subaerial oil was found throughout subdivision.

**REVISED:**

MC 5/1991

**REVISED:**

5/1991 RC
MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 4
SEGMENT # CH010
SUBDIVISION C
SEA STATE Calm
DATE/TIME May 1, 1991 0745 to 0900
TIDAL HEIGHT (Range) +1.0 to -1.0
BIOLeST JIM BARRY
WIND SPEED/DIRECTION Variable, 5 kt., Cloudy

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

A: CLS Oiled site (LSOR) located at the upper intertidal drift line. Biota include black lichen, mosses, beach drift. Nearby the beach cobble has little attached biota. The lower zone is approximately 30 m down the beach slope, where the densities of Fucus, barnacles, littorines, and associated species increase.

MANUAL PICKUP PERFORMED DURING SURVEY. Additional cleanup, if recommended, will not adversely impact the biota on this beach.

B: A3 Oiled site (CT) located on outcrops and the upper zone/supratidal cobble beach near the drift line. Biota include black lichen, mosses, beach drift algae, moderate to sparse barnacles, scattered littorines. Barnacle spat present on weathered oil. Littorines present on weathered oil. Juvenile mussels present within the oiled area.

MANUAL PICKUP PERFORMED DURING SURVEY. Additional cleanup will not adversely impact the biota on this beach.

C: A5 Oiled Site (LSOR) located in the upper/supratidal drift line on a cobble/shingle beach with scattered bedrock outcrops. Biota at oiled site: Black lichen, sparse beach grass, mosses, scattered barnacles. Below oiled site: sparse Fucus, dense littorines (adults, eggs), barnacle spat, moderate limpets.

Clean-up activities, if recommended, will not negatively impact the biota at the site.

WILDLIFE OBSERVATIONS - Completed on all subdivisions

<table>
<thead>
<tr>
<th>BIRDS</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
<th>FISH OBSERVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eagles</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Seabirds</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Waterfowl</td>
<td>2</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Gulls/Kittiwakes</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Shorebirds</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Other Birds</td>
<td></td>
<td></td>
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</tr>
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<table>
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<tr>
<th>MARINE MAMMALS</th>
<th># OBSERVED</th>
<th>LAND MAMMALS</th>
<th># OBSERVED</th>
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</thead>
<tbody>
<tr>
<td>Sea Otters</td>
<td></td>
<td>River Otter</td>
<td>1</td>
</tr>
<tr>
<td>Pinnipeds (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whales (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Boreline subdivision map showing important biological features attached.
This oiled area (CT) is located at the upper extent of a cobble beach, with a bedrock cliff above and boulders and cobble below. Biota of the oiled site are sparse black lichen, scattered barnacles and littorines, and Fucus drift algae. The cobble beach below has little biota, although dense barnacle spat are present on larger cobble, with littorine eggs and adults under cobble.

MANUAL PICK-UP PERFORMED DURING SURVEY. Further treatment would not have adverse effects on the intertidal biota at the site.

Summary of Biological Characteristics of CH010-C

This subdivision includes several types of habitats, ranging from exposed headlands to protected coves. The headlands have nearly total cover of algae, dominated by Fucus, as well as several species of red algae (Odonthalia floccosa, Rhodomela larix, and others) and invertebrates. Mussels are dense in patches, with high cover of barnacles (Semibalanus cariosus). Limpets, littorines, sea stars, and urchins are common. In contrast, the cobble beaches have little attached biota. Sparse Fucus, moderate barnacles, and fairly high densities of littorines, limpets, and amphipods are present under beach cobble.

Most species are present as adult and reproductive life phases, especially on bedrock habitats.

Nearly all of the oiled substrata are located at the highest high tide line on cobble beaches. Clean-up operations will have little negative impact on the biota of these areas.
Bio Sketch Map - CHO10-C
May 1, 1991

- Bedrock
- Pebble/Cobble
- Bedrock
- Pebble

A: Black lichen, mosses, sparse barnacles, barnacle spat, littorinines, scattered juvenile mussels
B: Sparse beach grass, black lichen, mosses, scattered barnacles
C: Black lichen, scattered barnacles (littorinines), drift algae, white biota on beach below

Meters
0 200 300 400
1991 MAYSAP EVALUATION

SEGMENT: CH 010  SUB:  B  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, Fish harvest area, Subsistence - Deer harvesting

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

SHPO Signature: __________________________  Date:____________________

RECOMMENDATIONS:

<table>
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<tr>
<th>TREATMENT REQUIRED (Y or N)</th>
<th>INITIAL</th>
<th>TAG</th>
<th>FOSC</th>
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</thead>
<tbody>
<tr>
<td>N</td>
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</table>

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__________________________________________

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.

Subsistence - Deer Harvesting: Unlimited treatment prior to 8/15.
TEAM NO. 4  SEGMENT CH 010-B  SUBDIVISION B  DATE 1/1/91

ADEC  NAME  Diane Munson  SIGNATURE  Diane Munson

☐ NTR  Treatment Recommended

Areas of tarmats to 5 cm, also HSC, MSOR and HSOR. Although area with HSOR was worked on it was not completed due to time constraints. Recommend manual removal of tarmats and sor categories on sketch map. Sor areas are often tarmats.

EXXON  NAME  LARRY D. Olson  SIGNATURE  Larry D. Olson

☐ NTR  An area of HSOR was located during survey, used crew removed 16 bags of this but did not complete. If completed carefully not to do further damage to muscles already growing in this area, use clean up crew could remove remainder of HSOR sediments.

LANDMANAGER  NAME  Larry Evitoff  OF  CVC  SIGNATURE  L.R. Evitoff

☐ NTR  Treatment Recommended

An area with HSOR was found, this area was worked on by CVC crew but is do not know if it was completed. Other TB/patties among cobble/boulders that could be picked up. Coarse rock free and underneath rocks could be scraped with trowels.

USCG/NOAA  NAME  Jerry Schultz  SIGNATURE  Jerry L. Schultz

☐ NTR

To remove remaining residual would require removing the armor of cobble & pebble and would disturb the existing mussel beds.
MAYSAP SHORELINE OILING SUMMARY

TEAM NO. 4
OG: J. Sempe
ADEC: J. Muma
EXXON: D. Olson

BIO: J. Barry
LANDMANAGER: L. Evamp
USCG/NOAA: G. Schley

SEGMENT: CH010
SUBDIVISION: B
DATE: 1 MAY 1991
TIME: 9:00 to 10:30
TIDE LEVEL: 0 ft. to -1 ft.
ENERGY LEVEL: □ H □ M □ L

SURVEYED FROM: □ FOOT □ BOAT □ HELO
WEATHER: □ SUN □ CLOUDS □ FOG □ RAIN □ SNOW
TOTAL LENGTH SHORELINE SURVEYED: 423 m
NEAR SHORE SHEEN: □ BR □ RB □ SL □ NONE
EST. OIL CATEGORY LENGTH: W___m M___m N___m VL___m NO___m US___m

<table>
<thead>
<tr>
<th>LOC</th>
<th>SURFACE OIL CHARACTER</th>
<th>SURFACE SEDIMENT</th>
<th>SHORE SLOPE</th>
<th>AREA</th>
<th>NOTES</th>
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<td>S</td>
<td>Spon</td>
<td>L</td>
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<td>2</td>
</tr>
<tr>
<td>A2</td>
<td>S</td>
<td>Spon</td>
<td>3</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>A3</td>
<td>S</td>
<td>Spon</td>
<td>6</td>
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<td></td>
</tr>
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<td>A4</td>
<td>P</td>
<td>Spon</td>
<td>M</td>
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<td>6</td>
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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

<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>DEPTH (cm)</th>
<th>OILED ZONE</th>
<th>CLEAN H2O ZONE</th>
<th>OILED COLOR</th>
<th>WATER COLOR</th>
<th>OILED PIT ZONE</th>
<th>SURFACE OILED SEDIMENTS</th>
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<td>0</td>
<td>0, 6, 5</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>25</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0, 6, 5</td>
<td></td>
</tr>
</tbody>
</table>

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

OG COMMENTS: A pocket beader of angular cb/pb, in some areas over sand/mud/pb/cb; between low headlands of bedrock with vertical foliation. Oiling includes L5OR, one area of HSOR and a few cp on the under side of cb.
(Diagram of a sketch map with various symbols and annotations. The map includes legend markers and labeled areas marked A1, A2, and A3 with specific details such as soil types, vegetation, and other environmental features. The map is oriented with a compass direction showing North.)
MAYSAP BIOLOGICAL SUMMARY FORM

TEAM #: 4
SEGMENT #: CH010
SUBDIVISION #: E
STATE: Calm

DATE/TIME: May 1, 1991 0900 - 1015
TIDAL HEIGHT (Range): -1.0 => -1.0
WIND SPEED/DIRECTION: Calm, Cloudy

BIOLIGIST: JIM BARRY

COMMENTS / OBSERVATIONS - OILED SUBDIVISIONS

Medium to high exposure headland with bedrock outcrops and angular cobble/boulder pocket beach. Oiled site (MSOR) located at the upper edge of the upper intertidal along the drift line at the base of a bedrock outcrop. Biota at location of oil are very sparse (black lichen, sparse beach grass). Little or very sparse biota towards beach for 30 m.

MANUAL PICK-UP PERFORMED DURING SURVEY. Addition treatment, if required, will have no negative impacts on the intertidal biota.

This oiled site (MSOR) occurs in the middle of the upper intertidal zone. This location is a medium slope and low exposure beach composed of medium cobble and scattered boulders and bedrock outcrops. The biota surrounding and amongst the oiled area are moderately dense mussels (adults, juveniles), sparse clams, dense to moderate littorines (adults, egg masses), moderate barnacles (Balanus, adults, spat), and sparse to rare Fucus. Below the site, the intertidal biota are somewhat denser, with higher cover of Fucus, moderate mussel densities and cover, especially on scattered bedrock outcrops, sea stars (Leptasterias, brooding). Above the area, mussels are also moderately abundant and to a slight extent, form a sparse mussel bed in the cobble beach sediments. The extreme low intertidal and subtidal appear to have a denser infaunal clam community and sparse eel grass bed.

MANUAL CLEAN-UP PERFORMED DURING SURVEY. Additional cleanup operations on this location should be restricted to manual cleaning only with no heavy equipment allowed on the beach. The impacts to the beach fauna will be minor from such operations.

WILDLIFE OBSERVATIONS - Completed on all subdivisions

<table>
<thead>
<tr>
<th>BIRDS</th>
<th># OF SPECIES</th>
<th>TOTAL BIRDS</th>
<th>FISH OBSERVED SPECIES PRESENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eagles</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Seabirds</td>
<td>2</td>
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<tr>
<td>Waterfowl</td>
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<td>9</td>
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</tr>
<tr>
<td>Gulls/Kittiwakes</td>
<td>1</td>
<td>2</td>
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<td>Corvids</td>
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<tr>
<td>Other Birds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<tr>
<td>MARINE MAMMALS</td>
<td># OBSERVED</td>
<td>SPECIES</td>
<td># OBSERVED</td>
</tr>
<tr>
<td>Sea Otters</td>
<td></td>
<td>River Otter</td>
<td>2</td>
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<tr>
<td>Pinnipeds (specify)</td>
<td></td>
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</tr>
<tr>
<td>Whales (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Shoreline subdivision map showing important biological features attached.
CHO10-B Biological Report - Continued

This oiled site (LSOR) shows some sheen in the middle to upper zone of the intertidal cobble beach. The beach has a shallow to medium slope and low exposure to swell. The biota at the oiled site is typical of the middle to high zone and include moderate cover of Fucus, high cover of filamentous algae (green and red?), scattered clams and barnacles, and moderate densities of mussels. This mussel bed partially consolidates the cobble and pebble sediments. Adults and juveniles are present. Barnacles, littorines, limpets and associated fauna are moderately abundant. The lower zones below the oiled site grade into an eel grass and clam bed in the subtidal zone.

Cleanup activities, if recommended at this site, should be highly restricted. Manual removal crews should not be allowed to till the beach due to the potential impact to the mussel bed. Heavy equipment should be prohibited from the beach. Removal of residual surface oil from locations within the mussel bed community should proceed with caution to prevent disturbance to this community. Area M on the Bio-map indicates the general location of a well consolidated mussel bed in the upper intertidal near the oiled site. Foot travel over this bed should be avoided to minimize disturbance.

This oiled area is located along the drift line in the upper intertidal on the 'shoulder' of the cobble beach. This site has sparse barnacles, black lichen, occasional Fucus and moderate littorines and limpets. Directly below the site, the middle intertidal cobble beach has a moderately dense mussel bed which grades into a clam bed and eel grass bed in the low and subtidal zones.

**Manual Clean-up Activities Performed During Survey.** Additional clean up should be restricted to manual cleanup, with no access to the beach by heavy equipment.

Summary of Biological Characteristics of CHO10-B

This subdivision has very diverse habitat types, ranging from exposed bedrock headlands to highly protected coves and cobble beaches. The headlands are very diverse, with nearly 100% cover by macroalgae, barnacles, and mussels. The key species (Fucus, mussels, barnacles, littorines) dominate most space. Minor species are also abundant in these locations. In the protected coves and middle to upper intertidal zones behind the bedrock headlands, mussels and clams are abundant. In some locations mussel beds are dense and consolidate the beach sediments. In lower zones on these cobble beaches, the infaunal community is very rich, with clams, mussels, infaunal worms, crabs, peanut worms, and eel grass beds. Mussel beds, eel grass, and clam beds are sensitive to human disturbance and care should be taken to prevent disturbance to these resources during potential clean-up operations.

One bald eagle and two river otters were observed on this subdivision.

**List of Common Species from CHO10-B**

A.  **Marine Plants**

1. **Diatoms. Blue Greens**
2. **Green Algae - Chlorophyta**
   - Enteromorpha sp., Ulva sp., Urospora sp., filamentous green
3. **Brown Algae - Phaeophyta**
   - Agarum fimbriatum, Ectocarpus spp., Fucus distichus, Hildenbrandia sp.,
   - Ralfsia sp., Sycotosiphon lomentaria
4. **Red Algae - Rhodophyta**
   - Calliarthron sp., Corallina sp., Cryptosiphonia woodii, Cumaqloia andersonii,
   - Halosaccion glandiforme, Iridaea sp., Lithothamnion sp., Mastocarpus sp.,
   - Membranoptera dinophora, Odonthalia floccosa, Palmaria palmata, Rhodomela
   - larix, filamentous red algae
II. Marine Animals

1. Sponges - Porifera
   Halichondria sp.

2. Anemones
   Anthopleura artemesia, A. elegantissama, Epiactis ritteri, Metridium senile, Urticina crassicornis.

3. Hydroids - Sertulariidae - Sertulariella?

4. Flatworms - Platyhelminthes - Polyclads

5. Nemertean Worms - Ribbon Worms -
   Emplectonema gracile, Tubulanus polymorphus

6. Polychaetes
   Glyceridae
   Nepthyidae
   Nereidae - Nereis spp.
   Serpulidae
   Serpula sp., Crucigera sp., Eudistylia polymorpha
   Spiorbidae - Spirorbis sp.

7. Peanut worms - Sipunculids - Phascolosoma agassizii

8. Crustaceans
   a. Amphipods - Orchestia sp.?
   b. Barnacles
   Balanus glandula, Chthamalus dalli, Semibalanus cariosus
   c. Crabs
   Haplogaster sp., Hemigrapsus oregonensis, Paquiridae (hermit crabs), Oregonia gracilis

9. Mollusca
   a. Chitons
   Mopalia mucosa, Tonicella lineata,
   b. Snails - Gastropods
   Littorina scutulata, L. sitkana, Margarites sp., Natica clausa, Nucella lamellosa, N. lima,
   c. Limpets
   Acmaea mitra, Lottia digitalis, L. persona, Tectura fenestrata
   e. Mussels and Clams
   Clinocardium sp., C. nuttalli, Macoma balthica, Macoma nasuta, Modiolus sp., Mya arenaria (soft-shell clam), Mytilus californianus, M. cepio, Prototheca staminea, Saxidomus giganteus

10. Echinoderms
    a. Brittle Stars - Ophiolus sp.?
    b. Sea stars
    Derasterias imbricata, Evasterias truschelii, Leptasterias hexactis, Pycnopodia helianthoides, Solaster sp.
    c. Sea Cucumbers - Holothurians - Leptosynapta sp.
    d. Urchins - Strongylocentrotus droebachiensis


12. Fishes
    Cottidae - several unknown species
    Liparidae
    Liparis callyodon
    Stichaeidae - Xiphister atropurpureus, X. mucosus

III. Higher Plants - Zostera marina (eel grass), Leymus mollis (beach rye grass)
**Bio Sketch Map**

**CHOLO - B**

1 MAY 91

- Bedrock
- Cobble/Pebble Beach

**Black Lichen**
- Sparse Barnacles
- Occasional Fucus
- Moderate Lithines/Corallina

**Moderate Fucus, High**
- Cover on Filamentous Algae
- Scattered Clamshells, Barncacle
- Moderate Mussel Remains
- Mussel Bed Consolidates
- Beach Sediments
- Adults
- Juvelines and/or Eggs of
- Most Species and/or Common
- Eel Grass (Clam Bed)
- In low/supraline
- Zones

**Black Lichen, Sparse Black Grass, Angular Cobble Beach, Little Biota**
1991 MAYSAP EVALUATION

SEGMENT: CH 010 SUB: A REGION: PWS SURVEY DATE: 5/1/91

ENVIRONMENTAL SENSITIVITIES:
Region: PWS Survey Date: 5/1/91

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

Ecological/Constraints (see page two for details) Eagle nest, Fish Harvest area, 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: ______________________

________________________

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.

Subsistence – Deer Harvesting: Unlimited treatment prior to 8/15.
<table>
<thead>
<tr>
<th>TEAM NO.</th>
<th>SEGMENT</th>
<th>SUBDIVISION</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>CH 010</td>
<td>A</td>
<td>MAY 91</td>
</tr>
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**ADEC**

**NAME**: Dianne Muscara  
**SIGNATURE**: Dianne Muscara  
**NTR**: Treatment Recommended  
Tar balls and tar patties observed were removed. Coats, stains and soot remain.

---

**EXXON**

**NAME**: Larry D. Olson  
**SIGNATURE**: Larry D. Olson  
**NTR**: Removed what was found on the beach. No further clean up on area appeared healthy and clean.

---

**LANDMANAGER**

**NAME**: Larry Evans  
**SIGNATURE**: Larry Evans  
**NTR**: Treatment Recommended  
Tar balls/patties were found and were picked up. Stains remain on rock face and underneath rocks.

---

**USCG/NOAA**

**NAME**: Jerry Schultz  
**SIGNATURE**: Jerry Schultz  
**NTR**: Removed what was recoverable. No further intrusion necessary.
MAYSAP SHORELINE OILING SUMMARY

TEAM NO.  

SEGMENT CH10-A

SUBDIVISION A

DATE 6/1 MAY/91

TIME 37:00 to 12:00

TIDE LEVEL +4.5 ft. to +1.0 ft.

ENERGY LEVEL: H M L

SURVEYED FROM: FOOT BOAT HELO

WEATHER: SUN CLOUDS FOG RAIN SNOW

TOTAL LENGTH SHORELINE SURVEYED: 545 m

NEAR SHORE SHEEN: BR RB SL NONE

EST. OIL CATEGORY LENGTH: W m M m N m VL m NO. 544 m US m

<table>
<thead>
<tr>
<th>LOC</th>
<th>SURFACE OIL CHARACTER</th>
<th>SURFACE SEDIMENT</th>
<th>SHORE SLOPE</th>
<th>AREA</th>
<th>ZONE</th>
<th>NOTES</th>
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</tbody>
</table>

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

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

PHOTO ROLL # MAYSAP-

FRAMES

<table>
<thead>
<tr>
<th>PIT NO.</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED ZONE</th>
<th>CLEAN ZONE</th>
<th>H2O LEVEL</th>
<th>SHEEN COlOR</th>
<th>PIT ZONE</th>
<th>SURFACE-SUBSURFACE SEDIMENTS</th>
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<td>8</td>
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<td>S</td>
<td>C P</td>
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</table>

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

OG COMMENTS: Subdivision consists of alternating pocket beaches of pb/ls or pb/psd between bedrock headland. No subsurface oil was found and most of the surface oil encountered was removed as they consisted of small patches of ASOR and one tar ball. No attempt was made to remove the stain on the bedrock face at the western extremity of the segment.

REVIEWED 5-7-91

F.W. 5/5/91
Oiled site (HSOR) located at high zone drift line. This is a bedrock ramp and cobble beach site. Biota are black lichen, and little else. Below the site, there is dense Fucus, dense littorines, high barnacles densities (Balanus adults spat), and sparse mussels cover (adults and juveniles).

**MANUAL PICKUP PERFORMED DURING SURVEY.** Additional cleaning will not impact nearby biota, provided care is taken to prevent impacts to exposed headland in lower zone.

Oil (HSOR patties) located in high intertidal on the border of a cobble beach with adjacent bedrock outcrops. The oiled site biota are sparse to moderate barnacles, sparse Fucus and turf-like red algae, littorines, and limpets. The adjacent boulders have moderate cover of Fucus. The cobble beach has little biota attached. Lower on the beach barnacle densities are greater on cobble.

**MANUAL PICKUP PERFORMED DURING SURVEY.** Additional cleanup will have few, if any, negative impacts to intertidal biota.

Oiled site (SOR/ST) is a bedrock face in the upper intertidal with black lichen, Fucus drift algae, and little else. The headland below has a richer Fucus-dominated community.

**MANUAL PICKUP PERFORMED DURING SURVEY.** Additional cleanup, if necessary, can consist of manual pickup of oil patches with no impact to the site.

**WILDLIFE OBSERVATIONS:** Completed on all subdivisions

### BIRDS

<table>
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<th># of Species</th>
<th>Total Birds</th>
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<td>Seabirds</td>
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<td></td>
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</tr>
<tr>
<td>Waterfowl</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Gulls/Kittiwakes</td>
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<td>2</td>
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<tr>
<td>Shorebirds</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Corvids</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Other Birds</td>
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</tbody>
</table>

### MARINE MAMMALS

<table>
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<tr>
<th>Species</th>
<th># Observed</th>
<th>Species</th>
<th># Observed</th>
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</thead>
<tbody>
<tr>
<td>Sea Otters</td>
<td></td>
<td>River Otter</td>
<td>1</td>
</tr>
<tr>
<td>Pinnipeds (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whales (specify)</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

*Please include subdivision map showing important biological features attached.*
Bio Sketch Map CHO10-A
1 May 91

- Bedrock / Talus
- Well Sorted Pebbles
- Pebbles / Cobble
- Pebbles / Sand

Black Lichen
Fucus Drift

Sparse - Moderate Barnacles,
Sparse Fucus, Turf-like Red Algae, Littorines, Limpets

A Picked Up
B Picked Up

Reviewed 13/5/91
ADDENDUM: SUBDIVISION CONSTRAINTS
SEGMENT CH-10 SUBDIVISION C (3 of 3)

WORK WINDOW

Manual Pickup Tarmat Removal CLOSED

ARCHAEOLOGICAL STANDARD CONSTRAINT
If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1K Purse Seine Area No constraint to manual pickup and tarmat removal.

3N,O Harbor Seal and Sea Lion NO TIME CONSTRAINT. Authorized per memorandum dated 5/14/90 from Kathryn Frost/ADF&G to Mark Kuwada/ADF&G.

3P,Q Pupping and Molting

5T Bald Eagle Nest Closed to manual pickup and tarmat removal. USFWS 6/1/90 map indicates 2 active nests within 400m of the subdivision. Access denied by Mike Lockhart/USFWS on 5/12/90 survey (see map).

7II Subsistence: Deer Harvesting No constraint to manual pickup and tarmat removal.

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

FOSC: 6/15/90
Prepared by: 6/14/90
SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
3N, 3P Harbor seal and sea lion pupping (5/15 to 7/1)
3Q, 3R Harbor seal and sea lion molting (8/15 to 9/1)
5T-1 All bald eagle nests (3/1 to 6/1)—Active eagle nests (3/1 to 9/1)
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
6Y Recreation: Special use destination
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. Eagle nest in Subdivision A. Do not trample or otherwise damage mussel beds.

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

SHPO SIGNATURE: [Signature] DATE: 4/25/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 8 m: V.Light 766 m: No Oil 804 m
Subsurface Oil Observed: Yes X No Maximum Depth 15 cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes manual removal of tarmats, pooled oil, oiled debris and vegetation. Work should be conducted between 7/2 and 8/14 based on pinniped constraints, and after approval of ADF&G and USFWS regarding eagle nest. See constraints addition 04/24/90.

TAG COMMENTS: Manual Removal Recommended due to rich intertidal biota and comment of the field observer. No bioremediation.

TAG APPROVAL DATE: 4/25/90

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

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

A CVA Rep to be present
SEGMENT ST/CH-10 SUBDIVISION A (1 OF 3) DATE 4/2/90

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-1 All bald eagle nests (3/1 to 6/1)—Active eagle nests (3/1 to 9/1)
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
6Y Recreation: Special use destination
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. Eagle nest in Subdivision A. Do not trample or otherwise disturb mussel beds.

ARCHAEOLOGICAL CONSTRAINTS:

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

SHPO SIGNATURE: DATE: 4/25/90

OILING CATEGORIZATION:

Wide 0 m; Medium 0 m; Narrow 0 m; V. Light 99 m; No Oil 459 m
Subsurface Oil Observed: Yes X No Maximum Depth 8 cm

RECOMMENDATIONS:

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

COMMENTS: Recommend removal of pooled oil by using pom poms and bioremediation of area shown on attached sketch map. Work should be conducted between 7/1 and 8/15 based on pinniped constraints, and after approval of USFWS regarding eagle nest.

TAG COMMENTS: MAKE PRIOR TO BIO IN AREA OF PIT 9

TAG APPROVAL DATE: 4/25/90
ADEC Art Weller
EXXON Art Weller
NOAA Joseph Talbot
USCG Kenneth Kao
FOSC: DATE: 5-9-90
CvL Rep to be present
SHORELINE EVALUATION

SEGMENT ST/ CH-10 SUBDIVISION B (2 OF 3) DATE 4/2/90

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

SUBDIVISION ECOCLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Eagle nest in Subdivision A.

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

SHPO SIGNATURE: DATE: 4/25/90

OILING CATEGORIZATION:
Wide 0_m: Medium 48_m: Narrow 0_m: V.Light 172_m: No Oil 185_m
Subsurface Oil Observed: Yes X No Maximum Depth 35 cm

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

COMMENTS:
Recommended treatment includes 1) manual pick up of oiled debris, 2) Bioremediation of areas indicated on attached sketch map. Work should be conducted between 7/2 and 8/14 based on pinniped constraints, after approval of USFWS regarding eagle nest.

TAG COMMENTS: MANUAL PICKUP OF OILED OIL + PATTIES OIL+OIL DEBRIS + TRASH AND ASPHALT PRIOR TO 8/10 AS INDICATED ON SKETCH

TAG APPROVAL DATE: 4/25/90
ADEC Art WEIN Art WEIN
EXXON Andy ENL Lee
NOAA Joseph VALLIER
USCG Kenneth KSTOP
SHORELINE EVALUATION

SEGMENT ST/ CH-10  SUBDIVISION C (3 OF 3) DATE 4/2/90

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-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
6Y Recreation: Special use destination
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. Eagle nest in Subdivision A. Do not trample or otherwise damage mussel beds.

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

SHPO SIGNATURE: DATE: 4/25/90

OILING CATEGORIZATION:
Wide 0 m: Medium 0 m: Narrow 8 m: V.Light 766 m: No Oil 304 m
Subsurface Oil Observed: Yes X No Maximum Depth 15 cm

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

COMMENTS: Recommended treatment includes manual removal of tarmats, pooled oil, oiled debris and vegetation. Work should be conducted between 7/2 and 8/14 based on pinnipede constraints, and after approval of ADF&G and USFWS regarding eagle nest.

TAG COMMENTS: MANUAL REMOVAL RECOMMENDED DUE TO RICH INTEGUMENT BIOTA AND COMMENT OF THE FIELD PERSONNEL NO BIOREMEDIATION.

TAG APPROVAL DATE: 4/25/90
ADEC EXXON  NOAA USCG
ART WOLF  philip gunn  joseph talbot  KEN
FOSC: DATE: 5-9-90
A CWA Rep to be present
REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/CH-10

SUBDIVISIONS: C (3 OF 3)
SHORELINE EVALUATION

SEGMENT ST/ CH-10 SUBDIVISION C (3 OF 3) DATE 4/2/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

3N,3P Harbor seal and sea lion pupping (5/15 to 7/1)
3O,3Q Harbor seal and sea lion molting (8/15 to 9/15)
5T-1 All bald eagle nests (3/1 to 6/1) - Active eagle nests (3/1 to 9/1)
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
6Y Recreation: Special use destination
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. Eagle nest in Subdivision A. Do not trample or otherwise damage mussel beds.

ARCHAEOLOGICAL CONSTRAINTS:
If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact 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 8 m: V.Light 766 m: No Oil 804 m
Subsurface Oil Observed: Yes X No Maximum Depth 15 cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes manual removal of tarmats, pooled oil, oiled debris and vegetation. Work should be conducted between 7/2 and 8/14 based on pinniped constraints, and after approval of ADF&G and USFWS regarding eagle nest.

TAG COMMENTS: __________________________________________________________

TAG APPROVAL DATE: __________________

ADEC EXXON FOSC: DATE: __________________
NOAA USCG
PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage.
No bioremediation or other chemical application within 100m of stream. Contact ADF&G Habitat Division prior to treatment for permits.

1C Salmon fry nursery area (4/1 to 7/31)
1D Estherv 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 (5/7 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 (5/11 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 uncolled intertidal and subtidal algae and seagrass.
Contact ADF&G for specific dates and locations.

3A, 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.

6F All Bald Eagle nests (6/1 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)
   Anchorage (6/1 to 9/15)
   Forest Service cabins (6/1 to 9/15)
   Lodge (6/1 to 9/15)
   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-810  SUBDIVISION: DATE 4-7-90

USCG
NAME  Kerwin H. Dreher SIGNATURE  Capt K.L. Decker

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED
COMMENTS
Manual pickup of oiled sediments. Trowel spotter from larger boulder faces.
Do not recommend bioremediation.

ADEC
NAME  Patrick J. Endres SIGNATURE  Patrick J. Endres

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED Pending Biological Consi
COMMENTS Surface oiling observed ranged from tar coat and covers to
asphylling patches. In some areas the first inch or two of fine sediments under
the cobles and pebbles retained a black shiny oil. Subsurface oil noted in one area
refereed by Pit #10 on map, penetration to 1 5 cm (I question any treatment on this
area.) The asphylling areas were sporadic and mostly behind bedrock outcrops
in the Hitz. Manual removal of the asphalt would be possible. Some of
the sediment types are tillable (manually) if this appropriate relative to
the wave exposure and any other considerations. If treatment occurs it
is possible to avoid much of the mid and low intertidal zones.

LAND MANAGER
NAME  Larry M. Evanoff SIGNATURE

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED
COMMENTS
RECOMMEND MANUAL PICK-UP, TILING, AND WASHING IN SELECTED AREAS.
TROWEL SCRAP AS MUCH OIL FROM ROCK FACES AND CRACKS. FROM
NEEDS TO BE PICKED UP. NO BIOREMEDIATION.
**SHORELINE OILING SUMMARY**

**TEAM NO.:** 14  
**DATE:** 4/17/90  
**TIME:** 15:30 to 18:05  
**DATE:** 4/17/90  
**TIDE LEVEL:** S0 to +0.5

**SEGMENT STI:** CH-010

**LOCATION:**
- **USCG:**
- **EXXON:**
- **LAND REP:**
- **ADEC:**
- **P. Endres**

**EST. SUBDIVISION LENGTH:** 14.46 m

**UPLANDS DESCRIPTION:**
- Foot
- Sea
- Fog
- Rain
- Snow

**SURVEYED FROM:**
- Foot
- Boat
- Helo

**WORKING DIRECTION:**
- N to S

**TIME:** 15:30 to 18:05

**TIDAL STAGE:**
- Sun
- Clouds
- Fog
- Rain
- Snow

**SURFACED SEDIMENTS:**
- R 40 % B 45 % C 30 % P 5 % G 0 % S 0 % M 0 % V 0 %

**SLOPE:**
- Lang 40 %
- Hang 50 %
- Vert 10 %

**WAVE EXPOSURE:**
- Low
- Med
- High

**OIL CATEGORY LENGTH:**
- W 0 m M 0 m N 0 m V 0 m

### SURFACE OIL

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**PIT PIT SUBSURFACE OILED BELOW OIL FILM COLOR**

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**COMMENTS:**
- Oiler along this segment consists primarily of a deep trench or swale, with a few asphalt patches, and in a grassy area at mid segment and at the 3 end of the segment. In vicinity of pit 10 there was a plane on the grass surface at low tide. Shores extended across the beach to a small depth at low tide. Only a thin (1 to 2 cm) oil layer was detected in the substrate. Pellets were not seen and were not protected. Remainder of segment received low to moderate wave action. Reviewers estimate that segment is a moderate risk due to beach and wave action. Review: reviewer 1234567890

**REVIEWED**

**DATE:** 4/13/80
### SUBSURFACE OIL (CONTINUED)

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**COMMENTS**

- surveyed by helicopter only
- *sheen on H2O in pit*
SHORELINE ECOLOGICAL SUMMARY

Segment ST CH010 Subdivision C Date (mo/day/yr) 04/06/90

Time (24 hr) 1855-1913, Biologist K A Cotes

(9h) 1537-1805

(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 60 Moderate 15 Low 25

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

BARNACLES

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Wildlife Observations/General Comments: Cobble + boulder beaches and headlands combined. Dense, new settlement barnacles noted throughout subdivision on both G & J. April, water clarity dropped in segment - greenish, possible early plankton bloom. Known sensitivities: Deer harvesting, recreation - anchorage, tides, special use; seal & sea lion pupping and melting. Two dead carasses in supralittoral Ecological Considerations: rocks; juvenile dungeness crab; juvenile eel; abundant deer droppings.

Diverse habitat, productive, relatively low energy. Embayed area apparently provides a good invertebrate spawning area. Within northern Chenega Island area and around Point Nowell, the barnacle spot seen is the densest and most recent. Spot coat all available rock surfaces from lower intertidal to...
Notes:
1. Surveyed from northwest to southeast—beginning at boundary of STCH10 Subdiv. B. Includes 8 cobble beaches and headlands, or sills/dykes, between.

2. Beaches consisting of smaller mobile cobbles, % nearer mouth of bay and second last in subdivision, without attached Fucus, littorines, mussels or barnacles. Fucus wash with Agarum cribosum & laminarians abundant just above last high-tide line. Oligochaetae, nemerteans moderately abundant under cobbles from mid to upper intertidal.

More sheltered beaches and/or beaches with larger cobbles and with bedrock extensions, with moderate to dense mussels on bedrock: barnacles and in crevices to higher mid-tide; littorines abundant in crevices in bedrock at supralittoral and upper intertidal also very abundant in patches of Endocladia at mid to upper intertidal. Macoma balthica and Saxidomus shells live. Saxidomus moderately abundant in lower intertidal between cobbles. Mytilus dense at ends of beaches near bedrock outcrops from mid to lower intertidal. Fucus moderately abundant in the same areas. Limpets, Nucella, amphipods, relatively abundant, under cobbles at low water "line (+3'); moderately abundant, serpulids (tubes) on undersides of cobbles

5. Innermost, largest, cobble beach at southeast end of subdiv. C, with littorines and limpets moderate to dense on and under cobbles up to upper intertidal. Nucella, large green amphipods, spawning. Leptasterias and bunnies moderately abundant at low water under cobbles. Barnacle spot dense on large cobbles from low to lower upper intertidal. Small egg masses moderate
5. (cont'd) Under cobble throughout same area. Fucus, spaghetti brown, sparse at low water; Palmeria, Polysiphonia and filamentous greens abundant.

OG N. 8
SEGMENT ST/CH-010-C
SUBDIVISION C
DATE 4/18/90

CHECKLIST
- N Arrow
- Approx. Scale
- Seg/Sub Binry
- Oil lath
- Width
- Length
- % Cover
- Subscale Character
- Est. HWL/WLA
- SSL
- Profile Location(s)
- Profile(s)
- Pit Location(s)
- Photo Location(s)

LEGEND
1 ▲
   Pit - No Subsurface Oil
2 ▲
   Pit - Subsurface Oil

CT/C Continuous Distribution
CT/B Blank Distribution
CT/P Pedest Distribution
CT/S Splashed Distribution

Oiled Vegetation
   Photo location, direction, and number

Oil Character Length (m): AP 45 PO 3 CV 330 CT 35 ST 417 MS 0 PT 0 TB 0 FL 0 NO 925
SEGMENT ST / CH-010
SUBDIVISION C
DATE 4/7/90

CHECKLIST
- N Arrow
- Appox. Scale
- Seg/Sub Body
- Oil Dist.
- Width
- Length
- % Cover
- Substrate Character
- Est. HW/LWL
- SWD SSL
- Profile Location(s)
- Profile(s)
- Pit Location(s)
- Photo Location(s)

LEGEND
1 △
- Pit - No Subsurface Oil
2 △
- Pit - Subsurface Oil

Continuous Distribution
Broken Distribution
Patchy Distribution
Splashed Distribution

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

SEGMENT CH-10 SUBDIVISION A (1 of 3)

WORK WINDOW

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<th>Manual Pickup</th>
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<td>Other Approved Treatment</td>
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ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1K  Purse Seine Hook-off
    No constraint to manual pickup. Closed to bioremediation, manual raking, and other approved treatment after 7/20.

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
    Closed to manual pickup, bioremediation, manual raking, and other approved treatment. USFWS bald eagle impact assessment completed on 5/12/90 by Mike Lockhart indicates an active nest within 400m of the work area.

7II  Subsistence: Deer Harvesting
     No constraint to manual pickup. Closed to bioremediation 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 Mercer  6/12/90
EXXON  Away Ten  6/12/90
NOAA  Lynn Fellman  6/12/90
USCG  Date  6/12/90

Prepared by  Andrea May  6/3/90
Incorporate information from USFWS Bald Eagle survey 7/24/80

ECOLOGY MAP 5/28
SEGMENT CH-10

SUBDIVISION A (1 of 3)

ECOLOGY MAP 5/28
SEGMENT CH-10

ECOLOGY MAP 5/28
SEGMENT CH-10

EXXON

Exxon Company, USA
Map Key: PhS-CH-10
May 11, 1990

EXXON

Exxon Company, USA
Map Key: PhS-CH-10
May 11, 1990

EXXON

Exxon Company, USA
Map Key: PhS-CH-10
May 11, 1990

EXXON

Exxon Company, USA
Map Key: PhS-CH-10
May 11, 1990

1 inch = 1362 feet

**Seabird Colony**

**Eagle Nest**

1 inch = 1362 feet
SHORELINE EVALUATION

SEGMENT ST. CH-10 SUBDIVISION A (1 OF 3) DATE 4/2/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

4,3P Harbor seal and sea lion pupping (5/15 to 7/1)
4,3Q Harbor seal and sea lion molting (8/15 to 9/15)
5T-L Bald eagle nests (3/1 to 6/1) - Active eagle nests (3/1 to 9/1)
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
6Y Recreation: Special use destination
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. Eagle nest in Subdivision A. Do not trample or otherwise disturb mussel beds.

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

SHPO SIGNATURE DATE: 4/25/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 99 m: No Oil 459 m
Subsurface Oil Observed: Yes X No Maximum Depth 8 cm

RECOMMENDATIONS:

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

COMMENTS: Recommend removal of pooled oil by using pom poms and bioremediation of area shown on attached sketch map. Work should be conducted between 7/1 and 8/15 based on pinned constraints, and after approval of USFWS regarding eagle nest. See Addendum noted 6/3/90.

TAG COMMENTS: RAKE PRIOR TO OIL IN AREA OF HT 9

TAG APPROVAL DATE: 4/25/90

ADEC ARTWORTH /Artz
EXXON H. TAYLOR /Rey
NOAA J. TALLON /Rey
USCG H. L. KRAMER /Rey

FOSC: 5/7 DATE: 5-9-90

CVC Rep to be present.
ADDENDUM: SUBDIVISION CONSTRAINTS
SEGMENT CH-10 SUBDIVISION B (2 of 3)

<table>
<thead>
<tr>
<th>WORK WINDOW</th>
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<tbody>
<tr>
<td>Manual Pickup</td>
</tr>
<tr>
<td>Tarmat Removal</td>
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<tr>
<td>OPEN</td>
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<tr>
<td>Bioremediation</td>
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<tr>
<td>WORK PRIOR TO 7/20</td>
</tr>
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</table>

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

<table>
<thead>
<tr>
<th>Segment</th>
<th>Activity</th>
<th>Constraint Details</th>
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<tr>
<td>1K</td>
<td>Purse Seine Hook-off</td>
<td>No constraint to manual pickup and tarmat removal. Closed to bioremediation after 7/20.</td>
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<tr>
<td>3N,0</td>
<td>Harbor Seal &amp; Sea Lion</td>
<td>NO TIME CONSTRAINT. Authorized per memorandum dated 5/14/90 from Kathryn Frost/ADF&amp;G to Mark Kuwada/ADF&amp;G.</td>
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<tr>
<td>3P,0</td>
<td>Pupping &amp; Molting</td>
<td>NO CONSTRAINT. Eagle nest in adjacent Segment CH-12 is more than 400m from recommended treatment area.</td>
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<tr>
<td>5T</td>
<td>Bald Eagle Nest</td>
<td>No constraint to manual pickup and tarmat removal. Closed to bioremediation after 8/15.</td>
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<tr>
<td>7II</td>
<td>Subsistence: Deer Harvesting</td>
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</table>

OTHER ECOLOGICAL CONSIDERATIONS

Restrict boat and air traffic to essential minimum after 7/20. 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 beach disturbance to essential minimum after 8/15. When working on or near haulouts, complete the job as quickly as possible with minimum personnel, equipment, noise and disturbance. Keep boats and personnel as far from actual haulouts as is practical to do the work specified. Minimize air traffic near haulouts, maintain elevation as is practical, and avoid repeated overflights of the same haulout areas. Avoid any unnecessary disturbance or damage to uniled birds and substrate.
ECOLOGY MAP
SEGMENT CH-10
SUBDIVISION B (R of X)

WORK AREA

CH-11
CH-10
CH-9
CH-8
CH-7
CH-13
CH-12

METERS
0 415 830
1 inch = 1302 feet

★ Seabird Colony
△ Eagle Nest
SHORELINE EVALUATION

SEGMENT ST/CH-10 SUBDIVISION B (2 OF 3) DATE 4/2/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
3N,3P Harbor seal and sea lion pupping (5/15 to 7/1)
3O,3Q Harbor seal and sea lion molting (8/15 to 9/15)
5T-1 All bird eagle nests (3/1 to 6/1)—Active eagle nests (3/1 to 9/1)
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
6Y Recreation: Special use destination
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. Eagle nest in Subdivision A.

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

SHPO SIGNATURE: [Signature] DATE: 4/25/90

OILING CATEGORISATION:
Wide 0 m: Medium 48 m: Narrow 0 m: V. Light 172 m: No Oil 185 m
Subsurface Oil Observed: Yes X No Maximum Depth 35 cm

RECOMMENDATIONS:
___No Treatment Recommended ___Snare/Absorbent Booms
X Treatment Recommended ___Oil Snares (pom poms)
X Manual Pickup ___Absorbents (pads, rolls, etc)
X Bioremediation ___Spot Washing: ___Wands
X Tarmat: ___Breakup ___Spot Washing: ___Beach Cleaner
___X Removal ___Other (see comments)

COMMENTS: Recommended treatment includes 1) manual pick up of oiled debris. 2) Bioremediation of areas indicated on attached sketch map. Work should be conducted between 7/2 and 8/14 based on pinned constraints, after approval of USFWS regarding eagle nest.

TAG COMMENTS: Manual pick up of oiled debris, oil-soaked debris + trash, asphalt, wood, i.e. marked on sketch.

TAG APPROVAL DATE: 4/25/90
ADEC
EXXON
NOAA
USCG
FOSC: DATE: 5/2-90

[Signature] Rep to be present.
REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/CH-10

SUBDIVISIONS: A (1 OF 3)
SHORELINE EVALUATION

SEGMENT ST/ CH-10  SUBDIVISION A (1 OF 3) DATE 4/2/90

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-1 All bald eagle nests (3/1 to 6/1)—Active eagle nests (3/1 to 9/1)
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
6Y Recreation: Special use destination
71I 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. Eagle nest in Subdivision A. Do not trample or otherwise disturb mussel beds.

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact 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 0 m: V. Light 99 m: No Oil 459 m

Subsurface Oil Observed: Yes X No ______ Maximum Depth 8 cm

RECOMMENDATIONS:

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

COMMENTS: Recommend removal of pooled oil by using pom poms and bioremediation of area shown on attached sketch map. Work should be conducted between 7/1 and 8/15 based on pinneped constraints, and after approval of USFWS regarding eagle nest.

TAG COMMENTS: ___________________________

TAG APPROVAL DATE: ______________________

ADEC  ___________________________
EXXON  ___________________________
NOAA  ___________________________
USCG  ___________________________
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.

Salmon fry nursery area (4/31 to 7/31)
Esther Hatchery release (4/15 to 6/1)
Main Bay Hatchery release (4/20 to 5/10)
Sawmill Bay Hatchery release (4/15 to 6/1)
Cannery Creek Hatchery release (4/21 to 6/1)
Remote release site
Gill net area (6/7 to 8/31)
Purse seine area (7/20 to 9/30)
Purse seine hook-off (7/20 to 9/30)
Set net sites (6/11 to 7/25)

For Codes 1C through 1L contact ADF&G for specific dates, locations and constraints.

Herring spawning (4/1 to 6/15)
Restrict boat traffic to essential minimum. Avoid damage to uncoiled intertidal and subtidal algae and seagrasses. Contact ADF&G for specific dates and locations.

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.

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.

Shorebird/waterfowl concentration (4/1 to 5/15)
Restrict all activity to essential minimum, especially air traffic.

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.

Recreation: Tent sites (6/1 to 9/15)
Anchorage (6/1 to 9/15)
Forest Service cabins (6/1 to 9/15)
Lodge (6/1 to 9/15)
Special use destination

Subsistence area: Salmon harvesting (5/1 to 9/30)
Finfish harvesting
Deer harvesting (8/15 to 2/28)
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-010 SUBDIVISION: A DATE 02 APR 90

USCG NAME Kerwin L. Dreher SIGNATURE CWO3 K. L. Dreher

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED

COMMENTS

Trailing or small amount of pooled oil at base of protective boulders.

ADEC NAME Patrick Endres SIGNATURE Patrick J. Endres

☐ NO TREATMENT RECOMMENDED ☑ TREATMENT SUGGESTED

COMMENTS

Very satisfactory survey of segment subdivision. Minimal oiling found. I recommend small team of manual removal - (trowel or shovel)

LAND MANAGER

NAME __________________________ SIGNATURE __________________________

☐ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED

COMMENTS

Land manager unfit for duty.
SHORELINE OILING SUMMARY

D. LITTLE K. BREMER
USCG ADEO

K. COATES P. ENGER
EXXON SEGMENT ST/ TIME 12:30 TO 15:45
TEAM NO.: 14 DATE 1/2/90
TIDE LEVEL: 1:00 TO 3:00
EST. SUBDIVISION LENGTH: 650 m
UPLANDS DESCRIPTION: ☐ Grass ☑ Forest ☐ Rock
SURVEYED FROM: ☑ Foot ☐ Boat ☐ Helo
SURFACE SEDIMENTS: ☑ R ☑ F ☑ B 15% ☑ C 20% ☑ P 20% ☑ G ☑ S 10% ☑ M ☑ V ☑ S
SLOPE: Lang 10% Hang 20% Vert 10%
WAVE EXPOSURE: ☑ Low ☑ Med ☑ High
OIL CATEGORY

SURFACE OIL

<table>
<thead>
<tr>
<th>CHARACTER</th>
<th>DISTRIBUTION</th>
<th>OIL / FILM COLOR</th>
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PAVEMENT: ☑ H ☑ F ☑ S ☑ sq. m by ☑ cm
PATTIES / TARBALLS ☑ BAGS
NEAR SHORE SHEEN? ☑ 8R RW SL TL
OILED DEBRIS AMOUNT
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<tr>
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Photographs:
Roll No. ST-14-2
Frames: 4

SUBSURFACE OIL

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<tr>
<th>PIT</th>
<th>OILED INTERVAL</th>
<th>OIL / FILM COLOR</th>
<th>PIT ZONE</th>
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<td>6 30</td>
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</table>

COMMENTS
This subdivision consists of bedrock alkaline-to-subangular cobble (pebble) pocket beaches. Oiling is limited to the UI and was usually found in corners of the embayments, protected by boulders and cobbles. Only 5 cm oil penetration occurred, again usually in the UI, although pit 2 was in the MI. Oiling was generally slightly heavier to the west, and the significant bedrock ridge was oiled along its central spine in the last embayment.

DATE 4/18/90
# SHORELINE OILING SUMMARY (PAGE 2 of 2)

## SEGMENT ST/CH-010 SUBDIVISION A

## SUBSURFACE OIL (CONTINUED)

<table>
<thead>
<tr>
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<th>PIT DEPTH (cm)</th>
<th>SUBSURFACE OIL CHARACTER</th>
<th>OILED INTERVAL (CM-OIL)</th>
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<th>OIL / FILM COLOR</th>
<th>PIT ZONE</th>
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</table>

## COMMENTS

Date 2 of 2

Reviewed__________ Date__________
### Wildlife Observations/ General Comments:
- Harlequin ducks; deer droppings; sea otters in bay; displaying ravens; small area eel grass in mid-tide; gastropod and asteroid reproduction common in lower mid-tidal. Known sensitivities for full segment.

### Ecological Considerations:
- Deer, harvest; recreation including specials; tenting & anchorage; scat; sea lion pupping & molting.

### Shingle Type Summary:

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<thead>
<tr>
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<th>Dense</th>
<th>Moderate</th>
<th>Sparse</th>
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<tr>
<td>Sand</td>
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</table>

### Overall % Cover of Biot (of segment):
- Dense 40, Moderate 40, Low 50

### Density, Substrate Preference (by number from A, above), & Vertical Zonation of Major taxa:
- Juveniles / adults (X), new settlement (3)

#### Barnacles

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<th>1M</th>
<th>1L</th>
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#### Mytilus

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#### Gastropods

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#### Fucus

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<tr>
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### Photographs:
- Roll No. ST-14-2
- Frame 4

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*NOT PRESENT* on pebble; sand.
1. Amphipods abundant throughout lower mid-tidal, under cobble. Palmaria Pinnata, Polysiphonia dense into this habitat. Limpets abundant at lower mid-intertidal under small cobble.

2. Snail egg masses, small yellow eggs of small, low-spired snail (diam = 3-4mm). Small masses of littorines - transparent with white to translucent eggs. Leptasterias also spawning on lower surface of medium cobble. Small Hastella also under rocks.

3. Anthopleura artemisia in pools at upper intertidal.

4. Cobble beach with dense populations of Mytilus edulis (about 4-5 cm) in mid-intertidal. Balanus glandula patchy in same area, uniform size of 3-4 mm. Sparse Notoacma scutum, some 7.1 cm. Moderate numbers of Tithorea scutulata. Same cobble areas with little or no Fucus (higher energy).

5. Pocket beaches with most algae in small protected zones adjacent to bedrock dykes that separate beaches.

6. Nucella lamellosa, Littorina scutulata and Balanus cariosus numerous in small area of exposed bedrock. Balanus glandulosis and Fucus dense in upper intertidal on these surfaces.
REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/CH-10

SUBDIVISIONS: B (2 OF 3)
SHORELINE EVALUATION

SEGMENT ST/CH-10 SUBDIVISION B (2 OF 3) DATE 4/2/90

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-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
6Y Recreation: Special use destination
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. Eagle nest in Subdivision A.

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

SHPO SIGNATURE: __________________________ DATE: __________________________

OILING CATEGORIZATION:

Wide 0 m: Medium 48 m: Narrow 0 m: V.Light 172 m: No Oil 185 m
Subsurface Oil Observed: Yes X No Maximum Depth 35 cm

RECOMMENDATIONS:

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

COMMENTS: Recommended treatment includes 1) manual pick up of oiled debris, 2) Bioremediation of areas indicated on attached sketch map. Work should be conducted between 7/2 and 8/14 based on pinniped constraints, after approval of USFWS regarding eagle nest.

TAG COMMENTS: ____________________________________________________________

TAG APPROVAL DATE: __________

ADEC EXXON FOSC: __________ DATE: __________
NOAA USCG
PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

1A
Salmon stream mouth - fry outmigration (3/1 to 5/15)
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 (5/7 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 unolied 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)
Harbor seal and sea lion molting (8/15 to 9/15)
Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts.

5R
Seabird colony (5/1 to 9/1)
Restrict air traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance. Contact ADF&G and USFWS prior to treatment.

5S
Shorebird/waterfowl concentration (4/1 to 5/15)
Restrict all activity to essential minimum, especially air traffic.

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

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

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

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

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

6Y
Special use destination

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

7HH
Finfish harvesting

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

7JJ
Invertebrate harvesting
For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.
FIELD SHORELINE COMMENT SHEET

SEGMENT ST  CH-O10  SUBDIVISION:  B  DATE  4/5/90

USCG
NAME  K. DREHER  SIGNATURE  2WOZ K. H. DEPER

☐ NO TREATMENT RECOMMENDED  ☑ TREATMENT SUGGESTED

COMMENTS
Most of what I observed was spotty and light. I recommend tilling were possible and bioremediation in lower areas of tidal zone. Medium oil pooling (light) in upper tidal can be tilled out let natural remediation progress. N

ADEC
NAME  P. ENDRES  SIGNATURE  Patrick J. Endres

☐ NO TREATMENT RECOMMENDED  ☑ TREATMENT SUGGESTED

COMMENTS
CH O10-B, like many other segments had varying degrees of oiling. The Hitz had bands of coals + cover as well as pooled oil in the angular slate talus. Remediation of this would be difficult, except perhaps bioremediation. One particular area refered to by pit #10 had significant subsurface oiling, retrieval of this section would be difficult because of its depth. On the same beach in the high tide berm was some oiled vegetation that is mixed within the pebble matrix. I think raking the oiled vegetation as well as flattening the high tide berm would be helpful. Manual removal of sporadic areas of surface oil where possible is recommended, manual tilling would speed up natural remediation.

LAND MANAGER
NAME  L. EVANOFF  SIGNATURE  [Signature]

☐ NO TREATMENT RECOMMENDED  ☑ TREATMENT SUGGESTED

COMMENTS
THE PEOPLE OF CHENOA BAY, AS WELL AS MYSELF, HAVE TO MANY UNANSWERED QUESTIONS ABOUT BIOREMEDIATION. UNTIL THESE QUESTIONS ARE ANSWERED I CANNOT RECOMMEND TREATMENT ACTIONS, I BELIEVE SOME TILLING W/WASHING IN THIS AREA SHOULD BE USED.
SHORELINE OILING SUMMARY

OIL: D. LITTLE
USCG: K. DESMER
SEGMENT ST:
CH-010

BIO: K. COFFEY
LAND REP: L. EVANS
SUBDIVISION:

EXXON: G. STILES
ADEC: P. ENDRUS

DATE: 04/05/90
TIME: 14:45 to 15:00

TEAM NO.: 14-1
TIDE LEVEL: 8.2' to 14'

UPLANDS DESCRIPTION:
- Sun
- Clouds
- Rock
- Fog
- Rain
- Snow

SURVEYED FROM:
- Foot
- Boat
- Helo

SURFACE SEDIMENTS:
- Grass
- Forest
- Uplands
- Subdivision

LENGTH:
- 520 m
- 6430 m

DATE:
- 04/05/90

EST. SUBDIVISION LENGTH:
- 520 m
- 6430 m

OIL CATEGORY LENGTH:
- W: 20 m
- M: 3 m
- N: 4 m
- VL: 200 m
- NO: 300 m

SURFACE OIL

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PAVEMENT:
- H F 2 sq. m by 2 cm

PATTIES / TARBALLS:
- 1 BAGS

NEAR SHORE SHEEN?
- NO

OILED DEBRIS AMOUNT

- Logs
- Vegetation
- Trash

DEBRIS COLLECTED TYPE

- # BAGS

PHOTOGRAPHS:
- Roll No.: ST-14-2
- Frame: 5-8

SUBSURFACE OIL

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<th>PIT NO.</th>
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COMMENTS

Most of the subdivision was only lightly oiled, with much of the oil found being detected in the extreme UT to SU in the very angular slate talus surrounded by bedrock outcrops which are subjected to very little wave action. Thus oil was sometimes pooled and more frequently assumed as a thick brown cover between slate talus particles, such that upper particle surfaces were usually clean. A bathtub ring was common but very intermittent on bedrock.

Page 4 of 2

Next page for subsurface oil.

REVIEWED: DATE: 
### SHORELINE OILING SUMMARY (PAGE 2 of 2)

**SEGMENT ST/ CH-810**

**SUBDIVISION B**

---

#### SUBSURFACE OIL (CONTINUED)

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<td>PC</td>
<td>p cage peat/anoxic in lag neal</td>
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**COMMENTS**

Only pits 6, 7, 10 and 11 had subsurface oil; this was most visible in the first bay to the east of the high, bare rock promontory after the first pocket beach. The only micro-subsurface oil detected was in the sandy peat near the Sisgrass lagoon. An anoxic lagoon substrate was found nearby, although healthy fauna were in evidence.

---

 Reviewed by: [Signature]

 Date: 4/8/90
SHORELINE ECOLOGICAL SUMMARY

Segment ST/CHO10 Subdivision B Date (mo/day/yr) 04.05.90

Time (24 hr) 0730-1500 Biologist KACoates

(A) Substrate type and % of segments:
(1) Bedrock 55  (2) Boulder 5  (3) Cobble 10  (4) Pebble 25  (5) Sand 5

(B) Overall % cover of biota (% of segment): Dense 10  Moderate 60  Low 30

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

BARNACLES

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MYTILUS

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Wildlife Observations/ General Comments: Beach survey terminated at 4' (1.3m)
tide. 3 lower intertidal not covered. Beyond superficial - through
water observations. Sea otters just west; harlequin ducks - 2 male,
1 female; eagle in flight + vocalizing in trees behind segment;
Ecological Considerations:

Known sensitivities: deer harvest; recreation; seals; seabirds;
pupping and molting. Heavy, healthy growths of
mussels on bedrock. Vertical faces and dense populations
in between cobble and pebble could be used for subsistence
or recreational/personal use harvesting. Clams also
1. Complex subdivision including 5 primary pocket beaches separated by bedrock dykes; The most northerly pocket in segment sheltered by offshore outcrops of bedrock — united to shore by mussel-pebble deposits at lower tides.

2. Fucus and mussel populations at upper and mid-tide levels; dense but patchy. Barnacles generally sparse at higher levels — starting below Fucus. B. cariosus moderate in lower mid-intertidal. Small littorines (new settlement) dense in upper 'upper-mid-intertidal'.

3. Littorines dense in few upper intertidal pools with *Spongomonas*-type algae (*note* redness of this alga) and in upper mid-tide pools with *E. Endocladia / R. Rhodomesa*.

4. Mytilus moderate to dense from upper mid-intertidal around cobbles and among pebbles on all cobbles-pebble beaches of subdivision. New recruitment in these habitats dense.
Segment: ST-CHO10  Subdivision: B  Date: 04.05.90
Time: 1230-1500  Biologist: KA Costas

Notes (cont'd)

5. Third pocket (working from northwest end of segment to east and south) beach with shallow pool and small surfgrass bed. Mucky bottom, algal ooze, just below surface; numerous clam shells in pool area, however no live limpets were found—only a minor search was made. Small Protothaca found on adjacent pocket beach—#4. Beaches 3 and 4 separated by gravel berm covered by beach grasses. Shells found on beaches 3 & 4 included Protothaca, Saxidomus and native oyster.

6. Fifth pocket beach primarily large cobbles. Large limpets, > 1.5cm, present in moderate numbers on this beach.

7. Moderate amounts wash algae, primarily Fucus but including Nereocystis, laminarians; reds in upper intertidal and supra-littoral on these beaches. From upper intertidal to lower mid, oligochaetes abundant. Same worms also found in dried up mouse with hemlock needles. These worms are abundant here.