

RRT 5 Shoreline Cleanup Guidelines for VERY LIGHT OIL (e.g., gasoline) \*\* DRAFT \*\* 2/4/93 \*\*

| Shoreline Type Codes                       |                                    |
|--|------------------------------------|
| 1 - vertical rocky shores, seawalls, piers | 6 - gravel beaches                 |
| 2 - eroding scarps & sediments             | 7 - riprap                         |
| 3 - shelving bedrock ledges                | 8 - sheltered bedrock & bluffs     |
| 4 - sand beaches                           | 9 - sheltered low-lying banks      |
| 5 - mixed sand & gravel beaches            | 10 - fringing & extensive wetlands |

| Countermeasure   | Shoreline Types |   |   |   |   |      |      |   |      |      |
|--|-----------------|---|---|---|---|------|------|---|------|------|
|  | 1               | 2 | 3 | 4 | 5 | 6    | 7    | 8 | 9    | 10   |
| 1) No Action   | A               | A | A | A | A | A    | A    | A | A    | A    |
| 2) Manual Removal  | A               | A | A | A | A | Aa   | Aa   | A |      |      |
| 3) Passive Collection (Sorbents)                           | A               |   | A |   |   | A    | A    | A | A    | A    |
| 4) Debris Removal/Heavy Equipment                          |                 |   |   |   |   |      |      |   |      |      |
| 5) Trenching (recovery wells)                              |                 |   |   |   |   |      |      |   |      |      |
| 6) Sediment Removal  |                 |   |   |   |   |      |      |   |      |      |
| 7) Cold Water Flooding (deluge)                            |                 |   |   |   |   | Ab   | Ab   |   | Ab   | Ab   |
| 8) Cold Water Washing                                      |                 |   |   |   |   |      |      |   |      |      |
| a) Low Pressure (<50psi)                                   |                 |   |   |   |   | Cb,f | Ab,f |   | Ab,f | Ab,f |
| b) High Pressure (<100psi)                                 |                 |   |   |   |   |      |      |   |      |      |
| 9) Warm Water Washing (ambient to 90F)                     |                 |   |   |   |   |      |      |   |      |      |
| 10) Hot Water Pressure Washing (>90F)                      |                 |   |   |   |   |      |      |   |      |      |
| 11) Slurry Sand Blasting                                   |                 |   |   |   |   |      |      |   |      |      |
| 12) Vacuum   |                 |   |   |   |   | Ab   | Ab   |   | Ab   | Ab   |
| 13) Shore Removal/Replacement                              |                 |   |   | C | C |      |      |   | Cc   |      |
| 14) Cutting Vegetation (depends upon time of year)         |                 |   |   |   |   |      |      |   |      |      |
| <b>ALL METHODS BELOW REQUIRE RRT and/or STATE APPROVAL</b> |                 |   |   |   |   |      |      |   |      |      |
| 15) Chemical Treatment                                     |                 |   |   |   |   |      |      |   |      |      |
| a) Oil Stabilization                                       |                 |   |   |   |   |      |      |   |      |      |
| b) Protection of Beaches                                   |                 |   |   |   |   |      |      |   |      |      |
| c) Cleaning of Beaches                                     |                 |   |   |   |   |      |      |   |      |      |
| 16) Burning (depends upon time of year)                    |                 |   |   |   |   |      |      |   |      | C    |
| 17) Nutrient Enhancement                                   |                 |   |   |   |   |      |      |   |      |      |
| 18) Bacterial Addition                                     |                 |   |   |   |   |      |      |   |      |      |
| 19) Sediment Reworking                                     |                 |   |   | C | C |      |      |   |      |      |

**Key to Identifiers**

A = Acceptable

C = Conditional - Use after other less intrusive methods or following particularly heavy impact

Blank space = Not Advisable or Not Applicable

a = Manual removal of oiled debris or small persistent pockets.

b = Passive collection and vacuum should be coordinated with flooding or washing methods.

c = Shoreline removal/replacement with clay if substrate is saturated with oil.

f = Proximity to water intakes should be considered when pressure washing shoreline.

RRT 5 Shoreline Cleanup Guidelines for LIGHT OIL (e.g., diesel) \*\* DRAFT \*\* 2/4/93 \*\*

| Shoreline Type Codes                       |                                    |
|--|------------------------------------|
| 1 - vertical rocky shores, seawalls, piers | 6 - gravel beaches                 |
| 2 - eroding scarps & sediments             | 7 - riprap                         |
| 3 - shelving bedrock ledges                | 8 - sheltered bedrock & bluffs     |
| 4 - sand beaches                           | 9 - sheltered low-lying banks      |
| 5 - mixed sand & gravel beaches            | 10 - fringing & extensive wetlands |

| Countermeasure                                     | Shoreline Types |        |        |    |    |    |      |        |        |    |
|--|-----------------|--------|--------|----|----|----|------|--------|--------|----|
|  | 1               | 2      | 3      | 4  | 5  | 6  | 7    | 8      | 9      | 10 |
| 1) No Action                                       | A               | A      | A      | C  | C  | C  | A    | A      | A      | C  |
| 2) Manual Removal                                  | A               | A      | A      | C  | C  | C  | C    | A      | A      | Cd |
| 3) Passive Collection (Sorbents)                   | A               |        | A      | A  | A  | A  | A    | A      | A      | A  |
| 4) Debris Removal/Heavy Equipment                  | A               |        | A      | A  | A  | A  | A    | A      | A      | A  |
| 5) Trenching (recovery wells)                      |                 |        |        | Ce | Ce |    |      |        |        |    |
| 6) Sediment Removal                                |                 |        |        |    |    |    |      |        |        |    |
| 7) Cold Water Flooding (deluge)                    |                 |        |        | Cb | Cb | Ab | Ab   |        | Ab     | Ab |
| 8) Cold Water Washing                              |                 |        |        |    |    |    |      |        |        |    |
| a) Low Pressure (<50psi)                           | Ab,f            | Ab,f   | Ab,f   |    |    |    | Ab,f | Ab,f   | Ab,f   |    |
| b) High Pressure (<100psi)                         | Ab,f            |        | Ab,f   |    |    |    |      | Ab,f   |        |    |
| 9) Warm Water Washing (ambient to 90F)             | Cb,f,g          | Cb,f,g | Cb,f,g |    |    |    |      | Cb,f,g | Cb,f,g |    |
| 10) Hot Water Pressure Washing (>90F)              |                 |        |        |    |    |    |      |        |        |    |
| 11) Slurry Sand Blasting                           |                 |        |        |    |    |    |      |        |        |    |
| 12) Vacuum   | Ab              |        | Ab     | Cb | Cb | Ab | Ab   | Ab     | Ab     | Ab |
| 13) Shore Removal/Replacement                      |                 |        |        | C  | C  |    |      |        |        |    |
| 14) Cutting Vegetation (depends upon time of year) |                 |        |        |    |    |    |      | C      | C      | C  |

**ALL METHODS BELOW REQUIRE RRT and/or STATE APPROVAL**

|   |  |  |  |   |   |   |   |  |  |   |
|---|--|--|--|---|---|---|---|--|--|---|
| 15) Chemical Treatment                  |  |  |  |   |   |   |   |  |  |   |
| a) Oil Stabilization                    |  |  |  | C | C | C |   |  |  |   |
| b) Protection of Beaches                |  |  |  | C | C | C |   |  |  |   |
| c) Cleaning of Beaches                  |  |  |  | C | C | C |   |  |  |   |
| 16) Burning (depends upon time of year) |  |  |  |   |   |   |   |  |  | C |
| 17) Nutrient Enhancement                |  |  |  | C | C | C | C |  |  |   |
| 18) Bacterial Addition                  |  |  |  | C | C | C | C |  |  |   |
| 19) Sediment Reworking                  |  |  |  | C | C | C |   |  |  |   |

**Key to Identifiers**

A = Acceptable

C = Conditional - Use after other less intrusive methods or following particularly heavy impact

Blank space = Not Advisable or Not Applicable

b = Passive collection and vacuum should be coordinated with flooding or washing methods.

d = Low intensity removal of mobile debris only, e.g., vegetation or driftwood.

e = Trenching only if heavy impact exists and no other viable collection method is available.

f = Proximity to water intakes should be considered when pressure washing shoreline.

g = Consider biological community and porosity of substrate when using pressure or elevated temperature.

RRT 5 Shoreline Cleanup Guidelines for MEDIUM OIL (e.g., #4 or medium crude) \*\* DRAFT \*\* 2/4/93 \*\*

| Shoreline Type Codes                       |                                    |
|--|------------------------------------|
| 1 - vertical rocky shores, seawalls, piers | 6 - gravel beaches                 |
| 2 - eroding scarps & sediments             | 7 - riprap                         |
| 3 - shelving bedrock ledges                | 8 - sheltered bedrock & bluffs     |
| 4 - sand beaches                           | 9 - sheltered low-lying banks      |
| 5 - mixed sand & gravel beaches            | 10 - fringing & extensive wetlands |

| Countermeasure                                     | Shoreline Types |        |        |    |    |      |        |        |        |      |
|--|-----------------|--------|--------|----|----|------|--------|--------|--------|------|
|  | 1               | 2      | 3      | 4  | 5  | 6    | 7      | 8      | 9      | 10   |
| 1) No Action                                       | Ch              | Ch     | Ch     |    |    |      | Ch     |        |        | Ch,i |
| 2) Manual Removal                                  | A               | A      | A      | A  | A  | A    | A      | A      | A      | Cd   |
| 3) Passive Collection (Sorbents)                   | A               |        | A      | A  | A  | A    | A      | A      | A      | A    |
| 4) Debris Removal/Heavy Equipment                  |                 |        | A      | A  | A  | A    | A      | A      | A      |      |
| 5) Trenching (recovery wells)                      |                 |        |        | Ce | Ce |      |        |        |        |      |
| 6) Sediment Removal                                |                 | C      |        | A  | A  |      |        |        |        |      |
| 7) Cold Water Flooding (deluge)                    |                 |        |        | Cb | Cb | Ab   | Ab     |        | Ab     | Ab   |
| 8) Cold Water Washing                              |                 |        |        |    |    |      |        |        |        |      |
| a) Low Pressure (<50psi)                           | Ab,f            | Ab,f   | Ab,f   |    |    | Cb,f | Ab,f   | Ab,f   | Cb,f   | Cb,f |
| b) High Pressure (<100psi)                         | Ab,f            |        | Ab,f   |    |    | Cb,f | Ab,f   | Cb,f   | Cb,f   |      |
| 9) Warm Water Washing (ambient to 90F)             | Ab,f,g          | Cb,f,g | Ab,f,g |    |    |      | Cb,f,g | Cb,f,g | Cb,f,g |      |
| 10) Hot Water Pressure Washing (>90F)              | Cb,f,g,j        |        | Cb,f,g |    |    |      | Cg,j   |        |        |      |
| 11) Slurry Sand Blasting                           | Cj              |        |        |    |    |      | C      |        |        |      |
| 12) Vacuum   | Ab              |        | Ab     | Cb | Cb | Ab   | Ab     | Ab     | Ab     | Ab   |
| 13) Shore Removal/Replacement                      |                 |        |        | A  | A  | C    | C      |        |        |      |
| 14) Cutting Vegetation (depends upon time of year) |                 |        |        |    |    |      |        | C      | C      | C    |

**ALL METHODS BELOW REQUIRE RRT and/or STATE APPROVAL**

|   |  |   |  |   |   |   |   |   |   |   |
|---|--|---|--|---|---|---|---|---|---|---|
| 15) Chemical Treatment                  |  |   |  |   |   |   |   |   |   |   |
| a) Oil Stabilization                    |  |   |  | C | C |   |   | C | C | C |
| b) Protection of Beaches                |  |   |  | C | C |   |   |   |   |   |
| c) Cleaning of Beaches                  |  |   |  | C | C |   |   |   |   |   |
| 16) Burning (depends upon time of year) |  | C |  |   |   |   |   | C | C | C |
| 17) Nutrient Enhancement                |  |   |  | C | C | C | C |   |   |   |
| 18) Bacterial Addition                  |  |   |  | C | C | C | C |   |   |   |
| 19) Sediment Reworking                  |  | C |  | C | C | C | C |   |   |   |

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Blank space = Not Advisable or Not Applicable

b = Passive collection and vacuum should be coordinated with flooding or washing methods.

d = Low intensity removal of mobile debris only, e.g., vegetation or driftwood.

f = Proximity to water intakes should be considered when pressure washing shoreline.

g = Consider biological community and porosity of substrate when using pressure or elevated temperature.

h = No action only if residual sheening is present.

i = No action only if the wetland fringes are impacted or access would result in unacceptable damage.

**RRT 5 Shoreline Cleanup Guidelines for HEAVY OIL (e.g., bunker c) \*\* DRAFT \*\* 2/4/93 \*\***

| Shoreline Type Codes                       |                                    |
|--|------------------------------------|
| 1 - vertical rocky shores, seawalls, piers | 6 - gravel beaches                 |
| 2 - eroding scarps & sediments             | 7 - riprap                         |
| 3 - shelving bedrock ledges                | 8 - sheltered bedrock & bluffs     |
| 4 - sand beaches                           | 9 - sheltered low-lying banks      |
| 5 - mixed sand & gravel beaches            | 10 - fringing & extensive wetlands |

| Countermeasure                                     | Shoreline Types |        |        |    |    |    |          |        |        |      |
|--|-----------------|--------|--------|----|----|----|----------|--------|--------|------|
|  | 1               | 2      | 3      | 4  | 5  | 6  | 7        | 8      | 9      | 10   |
| 1) No Action                                       | Ch              | Ch     | Ch     |    |    |    | Ch       |        |        | Ch,i |
| 2) Manual Removal                                  | C               | A      | A      | A  | A  | A  | A        | A      | A      | Cd   |
| 3) Passive Collection (Sorbents)                   | Ck              | Ck     | Ak     | Ak | Ak | Ak | Ak       | Ak     | Ak     | Ak   |
| 4) Debris Removal/Heavy Equipment                  |                 |        | A      | A  | A  | A  | A        | A      | A      |      |
| 5) Trenching (recovery wells)                      |                 |        |        | Ce | Ce |    |          |        |        |      |
| 6) Sediment Removal                                |                 | C      |        | A  | A  |    |          |        |        |      |
| 7) Cold Water Flooding (deluge)                    |                 |        |        | C  | C  | C  | C        |        | C      | C    |
| 8) Cold Water Washing                              |                 |        |        |    |    |    |          |        |        |      |
| a) Low Pressure (<50psi)                           |                 | Ab,f   | Ab,f   |    |    |    | Cb,f     | Ab,f   | Cb,f   | Cb,f |
| b) High Pressure (<100psi)                         |                 | Cb,f,g | Ab,f   |    |    |    | Cb,f     | Cb,f   |        |      |
| 9) Warm Water Washing (ambient to 90F)             | Ab,f,g          | Ab,f,g | Ab,f,g |    |    |    | Cb,f,g   | Cb,f,g | Cb,f,g |      |
| 10) Hot Water Pressure Washing (>90F)              | Ab,f,g,j        |        | Cb,f,g |    |    |    | Cb,f,g,j |        |        |      |
| 11) Slurry Sand Blasting                           | Cj              |        |        |    |    |    | Cj       |        |        |      |
| 12) Vacuum   | Ab              | Ab     | Ab     | Cb | Cb | Cb | Cb       | Ab     | Cb     | Cb   |
| 13) Shore Removal/Replacement                      |                 |        |        | A  | A  | A  |          |        |        |      |
| 14) Cutting Vegetation (depends upon time of year) |                 |        |        |    |    |    |          | C      | C      | C    |

**ALL METHODS BELOW REQUIRE RRT and/or STATE APPROVAL**

|   |  |   |  |   |   |   |   |  |   |   |
|---|--|---|--|---|---|---|---|--|---|---|
| 15) Chemical Treatment                  |  |   |  |   |   |   |   |  |   |   |
| a) Oil Stabilization                    |  |   |  |   |   |   |   |  |   |   |
| b) Protection of Beaches                |  |   |  | C | C |   |   |  |   |   |
| c) Cleaning of Beaches                  |  |   |  |   |   |   |   |  |   |   |
| 16) Burning (depends upon time of year) |  | C |  |   |   |   |   |  | C | C |
| 17) Nutrient Enhancement                |  |   |  | C | C | C | C |  |   |   |
| 18) Bacterial Addition                  |  |   |  | C | C | C | C |  |   |   |
| 19) Sediment Reworking                  |  | C |  | C | C | C | C |  |   |   |

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Blank space = Not Advisable or Not Applicable

b = Passive collection and vacuum should be coordinated with flooding or washing methods.

d = Low intensity removal of mobile debris only, e.g., vegetation or driftwood.

f = Proximity to water intakes should be considered when pressure washing shoreline.

g = Consider biological community and porosity of substrate when using pressure or elevated temperature.

h = No action only if residual sheening is present.

i = No action only if the wetland fringes are impacted or access would result in unacceptable damage.

j = Hot water pressure wash or slurry sand blast for aesthetic reasons.

k = Passive collection only if viscosity is low enough to result in sorbent effectiveness.

Shoreline Type 1

**VERTICAL ROCKY SHORELINE, SEAWALLS, PIERS**

| Countermeasure   | Oil Type |        |          |          |
|--|----------|--------|----------|----------|
|  | Very Lt  | Light  | Medium   | Heavy    |
| 1) No Action   | A        | A      | Ch       | Ch       |
| 2) Manual Removal  | A        | A      | A        | C        |
| 3) Passive Collection (Sorbents)                           | A        | A      | A        | Ck       |
| 4) Debris Removal/Heavy Equipment                          |          | A      |          |          |
| 5) Trenching (recovery wells)                              |          |        |          | Ce       |
| 6) Sediment Removal  |          | C      |          | A        |
| 7) Cold Water Flooding (deluge)                            |          |        |          | C        |
| 8) Cold Water Washing                                      |          |        |          |          |
| a) Low Pressure (<50psi)                                   |          | Ab,f   | Ab,f     |          |
| b) High Pressure (<100psi)                                 |          | Ab,f   | Ab,f     |          |
| 9) Warm Water Washing (ambient to 90F)                     |          | Cb,f,g | Ab,f,g   | Ab,f,g   |
| 10) Hot Water Pressure Washing (>90F)                      |          |        | Cb,f,g,j | Ab,f,g,j |
| 11) Slurry Sand Blasting                                   |          |        | Cj       | Cj       |
| 12) Vacuum   |          | Ab     | Ab       | Ab       |
| 13) Shore Removal/Replacement                              |          |        |          |          |
| 14) Cutting Vegetation (depends upon time of year)         |          |        |          |          |
| <b>ALL METHODS BELOW REQUIRE RRT and/or STATE APPROVAL</b> |          |        |          |          |
| 15) Chemical Treatment                                     |          |        |          |          |
| a) Oil Stabilization                                       |          |        |          |          |
| b) Protection of Beaches                                   |          |        |          |          |
| c) Cleaning of Beaches                                     |          |        |          |          |
| 16) Burning (depends upon time of year)                    |          |        |          |          |
| 17) Nutrient Enhancement                                   |          |        |          |          |
| 18) Bacterial Addition                                     |          |        |          |          |
| 19) Sediment Reworking                                     |          |        |          |          |

**Key to Identifiers**

A = Acceptable

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Blank space = Not Advisable or Not Applicable

b = Passive collection and vacuum should be coordinated with flooding or washing methods.

f = Proximity to water intakes should be considered when pressure washing shoreline.

g = Consider biological community and porosity of substrate when using pressure or elevated temperature.

h = No action only if residual sheening is present.

j = Hot water pressure wash or slurry sand blast for aesthetic reasons.

k = Passive collection only if viscosity is low enough to result in sorbent effectiveness.

Shoreline Type 2

**ERODING SCARPS & SEDIMENTS**

| Countermeasure   | Oil Type |        |        |        |
|--|----------|--------|--------|--------|
|  | Very Lt  | Light  | Medium | Heavy  |
| 1) No Action   | A        | A      | Ch     | Ch     |
| 2) Manual Removal  | A        | A      | A      | A      |
| 3) Passive Collection (Sorbents)                           |          |        |        | Ck     |
| 4) Debris Removal/Heavy Equipment                          |          |        |        |        |
| 5) Trenching (recovery wells)                              |          |        |        |        |
| 6) Sediment Removal  |          |        | C      | C      |
| 7) Cold Water Flooding (deluge)                            |          |        |        |        |
| 8) Cold Water Washing                                      |          |        |        |        |
| a) Low Pressure (<50psi)                                   |          | Ab,f   | Ab,f   | Ab,f   |
| b) High Pressure (<100psi)                                 |          |        |        | Cb,f   |
| 9) Warm Water Washing (ambient to 90F)                     |          | Cb,f,g | Cb,f,g | Ab,f,g |
| 10) Hot Water Pressure Washing (>90F)                      |          |        |        |        |
| 11) Slurry Sand Blasting                                   |          |        |        |        |
| 12) Vacuum   |          |        |        | Ab     |
| 13) Shore Removal/Replacement                              |          |        |        |        |
| 14) Cutting Vegetation (depends upon time of year)         |          |        |        |        |
| <b>ALL METHODS BELOW REQUIRE RRT and/or STATE APPROVAL</b> |          |        |        |        |
| 15) Chemical Treatment                                     |          |        |        |        |
| a) Oil Stabilization                                       |          |        |        |        |
| b) Protection of Beaches                                   |          |        |        |        |
| c) Cleaning of Beaches                                     |          |        |        |        |
| 16) Burning (depends upon time of year)                    |          |        | C      | C      |
| 17) Nutrient Enhancement                                   |          |        |        |        |
| 18) Bacterial Addition                                     |          |        |        |        |
| 19) Sediment Reworking                                     |          |        | C      | C      |

**Key to Identifiers**

A = Acceptable

C = Conditional - Use after other less intrusive methods or following particularly heavy impact

Blank space = Not Advisable or Not Applicable

b = Passive collection and vacuum should be coordinated with flooding or washing methods.

f = Proximity to water intakes should be considered when pressure washing shoreline.

g = Consider biological community and porosity of substrate when using pressure or elevated temperature.

h = No action only if residual sheening is present.

k = Passive collection only if viscosity is low enough to result in sorbent effectiveness.

**Shoreline Type 3**  
**SHELVING BEDROCK LEDGES**

| Countermeasure   | Oil Type |        |        |        |
|--|----------|--------|--------|--------|
|  | Very Lt  | Light  | Medium | Heavy  |
| 1) No Action   | A        | A      | Ch     | Ch     |
| 2) Manual Removal  | A        | A      | A      | C      |
| 3) Passive Collection (Sorbents)                           | A        | A      | A      | Ak     |
| 4) Debris Removal/Heavy Equipment                          |          | A      | A      | A      |
| 5) Trenching (recovery wells)                              |          |        |        |        |
| 6) Sediment Removal  |          |        |        |        |
| 7) Cold Water Flooding (deluge)                            |          |        |        |        |
| 8) Cold Water Washing                                      |          |        |        |        |
| a) Low Pressure (<50psi)                                   |          | Ab,f   | Ab,f   | Ab,f   |
| b) High Pressure (<100psi)                                 |          | Ab,f   | Ab,f   | Ab,f   |
| 9) Warm Water Washing (ambient to 90F)                     |          | Cb,f,g | Ab,f,g | Ab,f,g |
| 10) Hot Water Pressure Washing (>90F)                      |          |        | Cb,f,g | Cb,f,g |
| 11) Slurry Sand Blasting                                   |          |        |        |        |
| 12) Vacuum   |          | Ab     | Ab     | Ab     |
| 13) Shore Removal/Replacement                              |          |        |        |        |
| 14) Cutting Vegetation (depends upon time of year)         |          |        |        |        |
| <b>ALL METHODS BELOW REQUIRE RRT and/or STATE APPROVAL</b> |          |        |        |        |
| 15) Chemical Treatment                                     |          |        |        |        |
| a) Oil Stabilization                                       |          |        |        |        |
| b) Protection of Beaches                                   |          |        |        |        |
| c) Cleaning of Beaches                                     |          |        |        |        |
| 16) Burning (depends upon time of year)                    |          |        |        |        |
| 17) Nutrient Enhancement                                   |          |        |        |        |
| 18) Bacterial Addition                                     |          |        |        |        |
| 19) Sediment Reworking                                     |          |        |        |        |

| Key to Identifiers   |
|--|
| A = Acceptable   |
| C = Conditional - Use after other less intrusive methods or following particularly heavy impact          |
| Blank space = Not Advisable or Not Applicable  |
| b = Passive collection and vacuum should be coordinated with flooding or washing methods.                |
| f = Proximity to water intakes should be considered when pressure washing shoreline.                     |
| g = Consider biological community and porosity of substrate when using pressure or elevated temperature. |
| h = No action only if residual sheening is present.  |
| k = Passive collection only if viscosity is low enough to result in sorbent effectiveness.               |

**Shoreline Type 4**  
**SANDY BEACHES**

| Countermeasure   | Oil Type |       |        |       |
|--|----------|-------|--------|-------|
|  | Very Lt  | Light | Medium | Heavy |
| 1) No Action   | A        | C     |        |       |
| 2) Manual Removal  | A        | C     | A      | A     |
| 3) Passive Collection (Sorbents)                           |          | A     | A      | Ak    |
| 4) Debris Removal/Heavy Equipment                          |          | A     | A      | A     |
| 5) Trenching (recovery wells)                              |          | Ce    | Ce     | Ce    |
| 6) Sediment Removal  |          |       | A      | A     |
| 7) Cold Water Flooding (deluge)                            |          | Cb    | Cb     | C     |
| 8) Cold Water Washing                                      |          |       |        |       |
| a) Low Pressure (<50psi)                                   |          |       |        |       |
| b) High Pressure (<100psi)                                 |          |       |        |       |
| 9) Warm Water Washing (ambient to 90F)                     |          |       |        |       |
| 10) Hot Water Pressure Washing (>90F)                      |          |       |        |       |
| 11) Slurry Sand Blasting                                   |          |       |        |       |
| 12) Vacuum   |          | Cb    | Cb     | Cb    |
| 13) Shore Removal/Replacement                              | C        | C     | A      | A     |
| 14) Cutting Vegetation (depends upon time of year)         |          |       |        |       |
| <b>ALL METHODS BELOW REQUIRE RRT and/or STATE APPROVAL</b> |          |       |        |       |
| 15) Chemical Treatment                                     |          |       |        |       |
| a) Oil Stabilization                                       |          | C     | C      |       |
| b) Protection of Beaches                                   |          | C     | C      | C     |
| c) Cleaning of Beaches                                     |          | C     | C      |       |
| 16) Burning (depends upon time of year)                    |          |       |        |       |
| 17) Nutrient Enhancement                                   |          | C     | C      | C     |
| 18) Bacterial Addition                                     |          | C     | C      | C     |
| 19) Sediment Reworking                                     | C        | C     | C      | C     |

| <b>Key to Identifiers</b>   |
|---|
| A = Acceptable  |
| C = Conditional - Use after other less intrusive methods or following particularly heavy impact |
| Blank space = Not Advisable or Not Applicable   |
| b = Passive collection and vacuum should be coordinated with flooding or washing methods.       |
| e = Trenching only if heavy impact exists and no other viable collection method is available    |
| k = Passive collection only if viscosity is low enough to result in sorbent effectiveness.      |

**Shoreline Type 5  
MIXED SAND & GRAVEL BEACHES**

| Countermeasure   | Oil Type |       |        |       |
|--|----------|-------|--------|-------|
|  | Very Lt  | Light | Medium | Heavy |
| 1) No Action   | A        | C     |        |       |
| 2) Manual Removal  | A        | C     | A      | A     |
| 3) Passive Collection (Sorbents)                           |          | A     | A      | Ak    |
| 4) Debris Removal/Heavy Equipment                          |          | A     | A      | A     |
| 5) Trenching (recovery wells)                              |          | Ce    | Ce     | Ce    |
| 6) Sediment Removal  |          |       | A      | A     |
| 7) Cold Water Flooding (deluge)                            |          | Cb    | Cb     | C     |
| 8) Cold Water Washing                                      |          |       |        |       |
| a) Low Pressure (<50psi)                                   |          |       |        |       |
| b) High Pressure (<100psi)                                 |          |       |        |       |
| 9) Warm Water Washing (ambient to 90F)                     |          |       |        |       |
| 10) Hot Water Pressure Washing (>90F)                      |          |       |        |       |
| 11) Slurry Sand Blasting                                   |          |       |        |       |
| 12) Vacuum   |          | Cb    | Cb     | Cb    |
| 13) Shore Removal/Replacement                              | C        | C     | A      | A     |
| 14) Cutting Vegetation (depends upon time of year)         |          |       |        |       |
| <b>ALL METHODS BELOW REQUIRE RRT and/or STATE APPROVAL</b> |          |       |        |       |
| 15) Chemical Treatment                                     |          |       |        |       |
| a) Oil Stabilization                                       |          | C     | C      |       |
| b) Protection of Beaches                                   |          | C     | C      | C     |
| c) Cleaning of Beaches                                     |          | C     | C      |       |
| 16) Burning (depends upon time of year)                    |          |       |        |       |
| 17) Nutrient Enhancement                                   |          | C     | C      | C     |
| 18) Bacterial Addition                                     |          | C     | C      | C     |
| 19) Sediment Reworking                                     | C        | C     | C      | C     |

| <b>Key to Identifiers</b>   |
|---|
| A = Acceptable  |
| C = Conditional - Use after other less intrusive methods or following particularly heavy impact |
| Blank space = Not Advisable or Not Applicable   |
| b = Passive collection and vacuum should be coordinated with flooding or washing methods.       |
| e = Trenching only if heavy impact exists and no other viable collection method is available    |
| k = Passive collection only if viscosity is low enough to result in sorbent effectiveness.      |

**Shoreline Type 6**  
**GRAVEL BEACHES**

| Countermeasure   | Oil Type |       |        |       |
|--|----------|-------|--------|-------|
|  | Very Lt  | Light | Medium | Heavy |
| 1) No Action   | A        | C     |        |       |
| 2) Manual Removal  | Aa       | C     | A      | A     |
| 3) Passive Collection (Sorbents)                           | A        | A     | A      | Ak    |
| 4) Debris Removal/Heavy Equipment                          |          | A     | A      | A     |
| 5) Trenching (recovery wells)                              |          |       |        |       |
| 6) Sediment Removal  |          |       |        |       |
| 7) Cold Water Flooding (deluge)                            | Ab       | Ab    | Ab     | C     |
| 8) Cold Water Washing                                      |          |       |        |       |
| a) Low Pressure (<50psi)                                   | Cb,f     |       | Cb,f   |       |
| b) High Pressure (<100psi)                                 |          |       | Cb,f   |       |
| 9) Warm Water Washing (ambient to 90F)                     |          |       |        |       |
| 10) Hot Water Pressure Washing (>90F)                      |          |       |        |       |
| 11) Slurry Sand Blasting                                   |          |       |        |       |
| 12) Vacuum   | Ab       | Ab    | Ab     | Cb    |
| 13) Shore Removal/Replacement                              |          |       | C      | A     |
| 14) Cutting Vegetation (depends upon time of year)         |          |       |        |       |
| <b>ALL METHODS BELOW REQUIRE RRT and/or STATE APPROVAL</b> |          |       |        |       |
| 15) Chemical Treatment                                     |          |       |        |       |
| a) Oil Stabilization                                       |          | C     |        |       |
| b) Protection of Beaches                                   |          | C     |        |       |
| c) Cleaning of Beaches                                     |          | C     |        |       |
| 16) Burning (depends upon time of year)                    |          |       |        |       |
| 17) Nutrient Enhancement                                   |          | C     | C      | C     |
| 18) Bacterial Addition                                     |          | C     | C      | C     |
| 19) Sediment Reworking                                     |          | C     | C      | C     |

| <b>Key to Identifiers</b>   |
|---|
| A = Acceptable  |
| C = Conditional - Use after other less intrusive methods or following particularly heavy impact |
| Blank space = Not Advisable or Not Applicable   |
| a = Manual removal of oiled debris or small persistent pockets.                                 |
| b = Passive collection and vacuum should be coordinated with flooding or washing methods.       |
| f = Proximity to water intakes should be considered when pressure washing shoreline.            |
| k = Passive collection only if viscosity is low enough to result in sorbent effectiveness.      |

Shoreline Type 7

RIPRAP

| Countermeasure   | Oil Type |       |        |          |
|--|----------|-------|--------|----------|
|  | Very Lt  | Light | Medium | Heavy    |
| 1) No Action   | A        | A     | Ch     | Ch       |
| 2) Manual Removal  | Aa       | C     | A      | A        |
| 3) Passive Collection (Sorbents)                           | A        | A     | A      | Ak       |
| 4) Debris Removal/Heavy Equipment                          |          | A     | A      | A        |
| 5) Trenching (recovery wells)                              |          |       |        |          |
| 6) Sediment Removal  |          |       |        |          |
| 7) Cold Water Flooding (deluge)                            | Ab       | Ab    | Ab     | C        |
| 8) Cold Water Washing                                      |          |       |        |          |
| a) Low Pressure (<50psi)                                   | Ab,f     | Ab,f  | Ab,f   | Cb,f     |
| b) High Pressure (<100psi)                                 |          |       | Ab,f   | Cb,f     |
| 9) Warm Water Washing (ambient to 90F)                     |          |       | Cb,f,g | Cb,f,g   |
| 10) Hot Water Pressure Washing (>90F)                      |          |       | Cg,j   | Cb,f,g,j |
| 11) Slurry Sand Blasting                                   |          |       | C      | Cj       |
| 12) Vacuum   | Ab       | Ab    | Ab     | Cb       |
| 13) Shore Removal/Replacement                              |          |       | C      |          |
| 14) Cutting Vegetation (depends upon time of year)         |          |       |        |          |
| <b>ALL METHODS BELOW REQUIRE RRT and/or STATE APPROVAL</b> |          |       |        |          |
| 15) Chemical Treatment                                     |          |       |        |          |
| a) Oil Stabilization                                       |          |       |        |          |
| b) Protection of Beaches                                   |          |       |        |          |
| c) Cleaning of Beaches                                     |          |       |        |          |
| 16) Burning (depends upon time of year)                    |          |       |        |          |
| 17) Nutrient Enhancement                                   |          | C     | C      | C        |
| 18) Bacterial Addition                                     |          | C     | C      | C        |
| 19) Sediment Reworking                                     |          |       | C      | C        |

**Key to Identifiers**

A = Acceptable

C = Conditional - Use after other less intrusive methods or following particularly heavy impact

Blank space = Not Advisable or Not Applicable

a = Manual removal of oiled debris or small persistent pockets.

b = Passive collection and vacuum should be coordinated with flooding or washing methods.

f = Proximity to water intakes should be considered when pressure washing shoreline.

g = Consider biological community and porosity of substrate when using pressure or elevated temperature.

h = No action only if residual sheening is present.

j = Hot water pressure wash or slurry sand blast for aesthetic reasons.

k = Passive collection only if viscosity is low enough to result in sorbent effectiveness.

Shoreline Type 8

**SHELTERED BEDROCK & BLUFFS**

| Countermeasure   | Oil Type |        |        |        |
|--|----------|--------|--------|--------|
|  | Very Lt  | Light  | Medium | Heavy  |
| 1) No Action   | A        | A      |        |        |
| 2) Manual Removal  | A        | A      | A      | A      |
| 3) Passive Collection (Sorbents)                           | A        | A      | A      | Ak     |
| 4) Debris Removal/Heavy Equipment                          |          | A      | A      | A      |
| 5) Trenching (recovery wells)                              |          |        |        |        |
| 6) Sediment Removal  |          |        |        |        |
| 7) Cold Water Flooding (deluge)                            |          |        |        |        |
| 8) Cold Water Washing                                      |          |        |        |        |
| a) Low Pressure (<50psi)                                   |          | Ab,f   | Ab,f   | Ab,f   |
| b) High Pressure (<100psi)                                 |          | Ab,f   | Cb,f   | Cb,f   |
| 9) Warm Water Washing (ambient to 90F)                     |          | Cb,f,g | Cb,f,g | Cb,f,g |
| 10) Hot Water Pressure Washing (>90F)                      |          |        |        |        |
| 11) Slurry Sand Blasting                                   |          |        |        |        |
| 12) Vacuum   |          | Ab     | Ab     | Ab     |
| 13) Shore Removal/Replacement                              |          |        |        |        |
| 14) Cutting Vegetation (depends upon time of year)         |          | C      | C      | C      |
| <b>ALL METHODS BELOW REQUIRE RRT and/or STATE APPROVAL</b> |          |        |        |        |
| 15) Chemical Treatment                                     |          |        |        |        |
| a) Oil Stabilization                                       |          |        | C      |        |
| b) Protection of Beaches                                   |          |        |        |        |
| c) Cleaning of Beaches                                     |          |        |        |        |
| 16) Burning (depends upon time of year)                    |          |        | C      |        |
| 17) Nutrient Enhancement                                   |          |        |        |        |
| 18) Bacterial Addition                                     |          |        |        |        |
| 19) Sediment Reworking                                     |          |        |        |        |

**Key to Identifiers**

A = Acceptable

C = Conditional - Use after other less intrusive methods or following particularly heavy impact

Blank space = Not Advisable or Not Applicable

b = Passive collection and vacuum should be coordinated with flooding or washing methods.

f = Proximity to water intakes should be considered when pressure washing shoreline.

g = Consider biological community and porosity of substrate when using pressure or elevated temperature.

k = Passive collection only if viscosity is low enough to result in sorbent effectiveness.

Shoreline Type 9

**SHELTERED LOW LYING BANKS**

| Countermeasure   | Oil Type |        |        |        |
|--|----------|--------|--------|--------|
|  | Very Lt  | Light  | Medium | Heavy  |
| 1) No Action   | A        | A      |        |        |
| 2) Manual Removal  |          | A      | A      | A      |
| 3) Passive Collection (Sorbents)                           | A        | A      | A      | Ak     |
| 4) Debris Removal/Heavy Equipment                          |          | A      | A      | A      |
| 5) Trenching (recovery wells)                              |          |        |        |        |
| 6) Sediment Removal  |          |        |        |        |
| 7) Cold Water Flooding (deluge)                            | Ab       | Ab     | Ab     | C      |
| 8) Cold Water Washing                                      |          |        |        |        |
| a) Low Pressure (<50psi)                                   | Ab,f     | Ab,f   | Cb,f   | Cb,f   |
| b) High Pressure (<100psi)                                 |          |        | Cb,f   |        |
| 9) Warm Water Washing (ambient to 90F)                     |          | Cb,f,g | Cb,f,g | Cb,f,g |
| 10) Hot Water Pressure Washing (>90F)                      |          |        |        |        |
| 11) Slurry Sand Blasting                                   |          |        |        |        |
| 12) Vacuum   | Ab       | Ab     | Ab     | Cb     |
| 13) Shore Removal/Replacement                              | Cc       |        |        |        |
| 14) Cutting Vegetation (depends upon time of year)         |          | C      | C      | C      |
| <b>ALL METHODS BELOW REQUIRE RRT and/or STATE APPROVAL</b> |          |        |        |        |
| 15) Chemical Treatment                                     |          |        |        |        |
| a) Oil Stabilization                                       |          |        | C      |        |
| b) Protection of Beaches                                   |          |        |        |        |
| c) Cleaning of Beaches                                     |          |        |        |        |
| 16) Burning (depends upon time of year)                    |          |        | C      | C      |
| 17) Nutrient Enhancement                                   |          |        |        |        |
| 18) Bacterial Addition                                     |          |        |        |        |
| 19) Sediment Reworking                                     |          |        |        |        |

**Key to Identifiers**

A = Acceptable

C = Conditional - Use after other less intrusive methods or following particularly heavy impact

Blank space = Not Advisable or Not Applicable

b = Passive collection and vacuum should be coordinated with flooding or washing methods.

c = Shoreline removal/replacement with clay if substrate is saturate with oil.

f = Proximity to water intakes should be considered when pressure washing shoreline.

g = Consider biological community and porosity of substrate when using pressure or elevated temperature.

k = Passive collection only if viscosity is low enough to result in sorbent effectiveness.

Shoreline Type 10

**FRINGING & EXTENSIVE WETLANDS**

| Countermeasure   | Oil Type |       |        |       |
|--|----------|-------|--------|-------|
|  | Very Lt  | Light | Medium | Heavy |
| 1) No Action   | A        | C     | Ch,i   | Ch,i  |
| 2) Manual Removal  |          | Cd    | Cd     | Cd    |
| 3) Passive Collection (Sorbents)                           | A        | A     | A      | Ak    |
| 4) Debris Removal/Heavy Equipment                          |          | A     |        |       |
| 5) Trenching (recovery wells)                              |          |       |        |       |
| 6) Sediment Removal  |          |       |        |       |
| 7) Cold Water Flooding (deluge)                            | Ab       | Ab    | Ab     | C     |
| 8) Cold Water Washing                                      |          |       |        |       |
| a) Low Pressure (<50psi)                                   | Ab,f     |       | Cb,f   | Cb,f  |
| b) High Pressure (<100psi)                                 |          |       |        |       |
| 9) Warm Water Washing (ambient to 90F)                     |          |       |        |       |
| 10) Hot Water Pressure Washing (>90F)                      |          |       |        |       |
| 11) Slurry Sand Blasting                                   |          |       |        |       |
| 12) Vacuum   | Ab       | Ab    | Ab     | Cb    |
| 13) Shore Removal/Replacement                              |          |       |        |       |
| 14) Cutting Vegetation (depends upon time of year)         |          | C     | C      | C     |
| <b>ALL METHODS BELOW REQUIRE RRT and/or STATE APPROVAL</b> |          |       |        |       |
| 15) Chemical Treatment                                     |          |       |        |       |
| a) Oil Stabilization                                       |          |       | C      |       |
| b) Protection of Beaches                                   |          |       |        |       |
| c) Cleaning of Beaches                                     |          |       |        |       |
| 16) Burning (depends upon time of year)                    | C        | C     | C      | C     |
| 17) Nutrient Enhancement                                   |          |       |        |       |
| 18) Bacterial Addition                                     |          |       |        |       |
| 19) Sediment Reworking                                     |          |       |        |       |

**Key to Identifiers**

|   |
|---|
| A = Acceptable  |
| C = Conditional - Use after other less intrusive methods or following particularly heavy impact       |
| Blank space = Not Advisable or Not Applicable   |
| b = Passive collection and vacuum should be coordinated with flooding or washing methods.             |
| d = Low intensity removal of mobile debris only, e.g., vegetation or driftwood.                       |
| f = Proximity to water intakes should be considered when pressure washing shoreline.                  |
| h = No action only if residual sheening is present.   |
| i = No action only if the wetland fringes are impacted or access would result in unacceptable damage. |
| k = Passive collection only if viscosity is low enough to result in sorbent effectiveness.            |