# NORTHWEST ARCTIC
# SUBAREA CONTINGENCY PLAN

# SCENARIOS
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# SCENARIOS: INTRODUCTION

In preparing the spill scenarios, the following topics were taken into consideration:

## A. SPILL HISTORY

The spill history from the files of ADEC Spills Database and the NOAA Scientific Support Coordinator provided the reference points for spill scenarios. The focus is only on significant and large spill events. This listing does not take into account the entire database of spills prepared by ADEC for the region, and small spills that had little or no anticipated environmental impact are not included in the Scientific Support Coordinator's files. (A brief synopsis of the Subarea spill history is provided in the Background Section, Part Three.)

## B. HAZARD ASSESSMENT

The majority of vessel spills occur due to a combination of bad weather and equipment failure. Mariners operating in good weather and with properly-maintained equipment do not typically experience difficulties.

Bulk ore carriers destined for Red Dog Mine are the majority of large vessel traffic for the area. Approximately 65 bulk ore carrier vessels over 20,000 gross tons transit the area annually. Chemical cargos include zinc slurry, zinc concentrate, magnesium oxide or propylene glycol. Foreign-flagged vessels transiting through this area may or may not have a federal tank or non-tank vessel response plan and Western Alaska geographic specific appendix, depending on whether they make US ports of call.

In 1991, the State of Alaska commissioned a Study of Non-crude Tank Vessels and Barges. This study (prepared by Arthur D. Little, Inc.) provides detailed summaries of the relative risks of spills, hazards, and fuel quantities transported.

## C. VULNERABILITY ANALYSIS

The natural habitats of the North West Arctic Subarea support extensive fish and wildlife populations that are extremely important to the social, economic, and cultural welfare of local residents. Offshore areas support a highly productive marine ecosystem, rich with intertidal, benthic, and pelagic plant and animal life that, in turn, provides nourishment for extensive populations of marine and anadromous finfish, shellfish, seabirds, and marine mammals. Rocky shorelines and cliffs provide nesting areas for seabirds.

There are a total of 31 towns and villages in the subarea. Deliveries of non-crude oils are made to these locales primarily by barges operating from Dutch Harbor or Cook Inlet. Deliveries are ice dependent, and do not occur as ice forms. Human activities in the Arctic and Subarctic regions revolve around the subsistence, sport, and commercial uses of fish and wildlife. Infrastructure development is minimal by national standards.

Historical properties and cultural sites important to the prehistory of the region could also be negatively affected by a spill. Potential effects of spills are not limited to the initial impact of oil, since the response methods used to mitigate a spill can be more detrimental to resources than the spill itself. Therefore,

appropriate response techniques need to be considered in relation to sensitive resources.

An overview of oil fate analysis can be found in Section E, Part 3, D (Oil Fate and General Risk Assessment) of this plan.

## D. SEASONAL CONSIDERATIONS

In the Bering Sea, the sea ice generally begins as fast ice formation along the shores of the Seward and Chukhotsk peninsulas in October. In November, as the cold weather continues and the waters in the open portions of the Bering Sea cool, the pack ice begins its seasonal southward formation. An estimated 97% of the ice in the Bering Sea is formed within the Bering Sea; very little is transported south from the Arctic Ocean through the Bering Strait. During periods of increasing ice and prevailing northerly winds, the ice moves southward with the wind before melting at its southern limit. During periods of southerly winds, ice coverage generally decreases in the Bering Sea, causing a wide variation in ice cover from month to month.

Portions of the region are in the arctic, transitional, and continental climatic zones. Permafrost underlies much of the region. The weather in the region is the result of the interaction between global air movements, land topography, and major weather systems that move north-south and east-west across the Bering Sea.

The larger river basins in the region include the Noatak, Kobuk, and Koyuk rivers. Marine waters associated with the region are comprised of the Chukchi and Bering Seas. Sea ice formation in the Chukchi Sea can begin in October and spreads south into the Bering. The ice pack can persist through late June, although the ice begins to melt and break up in April. The entire marine area of the region lies within the continental shelf.

An overview of wind, tide, ice and current conditions from the Bering Sea to the Chukchi Sea; including the Bering Strait, Norton Sound, and Kotzebue Sound can be found in Section E, Part 3, E (Ice, Wind and Currents) of this plan.

# SCENARIOS: PART ONE - COASTAL OIL

## *A. WORST CASE SCENARIO*

**Size of the Discharge:** 400,000 gallons (of the 624,000 total capacity) of a freight vessel's heavy fuel oil.

**Event Description:** The M/V United Ocean, a freight ship, is offshore and enroute to the Delong Mountain Terminal of the Cominco/Red Dog Mine to load a cargo of ore bound for British Columbia, Canada. For unknown reasons the vessel experiences a fire in the engine room and loses rudder control and propulsion. Prevailing winds and marginal sea conditions drive the vessel aground onto Little Diomede Island in the Bering Straight. The fire burns uncontrolled for over a day and the force of the grounding compromises the hull, resulting in a release of heavy fuel oil. The crew abandons ship and is rescued by a Coast Guard helicopter.

**Location:** Approximate position- Latitude 65$^{o}$ 45'N; Longitude 168$^{o}$ 56'W.

**Spill:** There is a steady release of fuel oil (4,000 gals/day) for two days, then slower release of 1,500 gals/day for the next several days. The vessel was carrying a total of 624,000 gallons of heavy fuel oil, 22,000 gallons of diesel fuel and 2000 gallons of lube oil.

**Cargo Salvage:** The ship is determined to be salvageable, although lightering cannot be accomplished due to the fire and general instability of the ship.

**Date:** May 10

**On-scene Weather:** Winds: SW @ 40 kts, decreasing to 15 kts on second day; Sea State: 10-30ft; Temp: 40 □F

**Sensitive Areas at Risk:** Specific information on resources at risk can be extracted from the Sensitive Areas Section in consultation with the resource trustees. From a general viewpoint, resources in the immediate area of the spill that are at risk include sea lions, walrus, polar bears, seals, subsistence fishing, waterfowl concentrations, historic properties and seabird colonies.

The shoreline geomorphology in the immediate vicinity of the spill is exposed rocky shores. Sand and gravel beaches, exposed wave-cut platforms and sheltered tidal flats can be expected to be impacted from this spill in the early stages due to their proximity to the spill event. The impacts of a spill of this volume are far reaching and would affect a large area. An extensive, coordinated effort between trustee agencies would be necessary to develop a comprehensive approach to environmental impact abatement. The Sensitive Areas Section provides a framework for accomplishing this task. Communities that would most likely be affected are Little Diomede and Wales. In addition, several downstream communities would be impacted by a spill of this magnitude.

**Initial Action Description:**

1. Notification (Assume the responsible party has notified the required agencies in accordance with the vessel response plan)

   FOSC will ensure the following are notified:
   ** ADEC Central Alaska Response Team or 24-hour ADEC reporting contact
   * ADNR
   * ADF&G
   * ADMVA, DHSEM
   ** CGD17 OPCEN, to activate support resources including:
   District (m), District Office, Marine Safety Division
   DRG, District Response Group
   DRAT, District Response Advisory Team
   PIAT, Public Information Assist Team
   RRT, Regional Response Team
   ** NRC, National Response Center
   *** NOAA SSC, Scientific Support Coordinator
   ** NSFCC, National Strike Force Coordinating Center
   ** NPFC, National Pollution Fund Center
   *** Northwest Arctic Borough
   *** Local Emergency Managers of directly impacted communities

   Key: * = Notification initiated by State
   ** = Message notification
   *** = Notification by FOSC

2. Response Activation

   - Commence with notification of all involved parties per the Response Section, providing initial situation assessment. Be brief, concise and provide specific spill information including exact location, quantity spilled, potential threat, and whether product is still being released.
   - Ensure the Responsible Party (RP) is notified and responding.
   - Dispatch representatives to the scene at the earliest opportunity.
   - Establish contact with the responsible party ("qualified individual") as soon as possible, and preferably with an individual on scene.
   - Request immediate helicopter support through D17 OPCEN to conduct overflights of vessel. Also, helicopter support may be required if vessel must be evacuated. Request USCG cutter support through D17 OPCEN. Cutter can provide initial on scene platform.
   - Commence activation/movement of in-house resources (State and Federal).
   - Draft POLREP (USCG) and SITREP (ADEC) and distribute.

3. Initial On-Scene Investigation, Inspection, Evaluation & Recommendations

   - Gather information from overflights, crew reports, video recordings and any other reliable source to document scene and develop initial response strategy.
   - Have investigation team immediately conduct drug testing of the vessel's crew and conduct interviews to determine cause of incident.
   - Determine cargo and fuel capacities. Contact last port if immediate cargo amounts are unknown.
   - Collect charts and log books for evidence.

- Determine fuel salvage options and lightering potential.
- Issue Notice of Federal Interest and Letter of State Interest.
- Evaluate slick size, direction of travel, weather, area of coverage, proximity to shore, wildlife areas and potential impacts, and other relevant information that might affect response decisions.
- Establish direct communication with the Incident Command Post (ICP), if it is established in the field. If no ICP is established, consider using USCG Sector Anchorage conference room as the initial Command Post while USCG/ADEC personnel are enroute to the field Command Center.

4. Initial Response Actions

- Secure the source, if possible.
- Take actions to stabilize the vessel. Notify USCG Marine Safety Center of vessel information and situation. Request stability information.
- Deploy containment boom and/or plan and prioritize shoreline protection and cleanup areas. Utilize established Geographic Response Strategies (GRS), when possible.
- Evacuate any injured personnel or unnecessary crew members.
- Using **Unified Plan, Annex B** Implement some or all of the Incident Command Systems (ICS) principles listed below:
    - Develop a Unified Command (UC) that includes RPOSC, SOSC, FOSC and LOSC (if available).
    - Evaluate RP's capability to carry out an appropriate response.
    - Determine name of incident.
    - Determine goals and objectives
    - Determine UC staff and size- Liaison and RSC positions are critical for this region.
    - Establish an appropriate ICP to support UC activities- Plan for Nome.
    - Establish a Joint Information Center (JIC). Ensure joint website and/or appropriate local stakeholder communication plan is used to maximize information sharing.
- Utilize local knowledge, SSC and other NOAA hazmat resources as necessary to predict spill trajectory and potential impacts.
- Prepare initial press release with the Unified Command.
- Evacuate crew for drug testing if possible.
- Complete notification procedures. Include up-channel notification to include the RRT, DRG, DRAT, PIAT, MLCPAC contracting team, NPFC, and NSFCC.
- Issue Notice to Mariners restricting vessel traffic in the immediate vicinity of the incident.
- Issue Notice to Airmen, through the FAA, restricting aircraft traffic in the immediate vicinity of the incident.
- Ensure preparation of Site Safety Plan.
- Determine any fisheries impacts, and take appropriate action.
- Consider alternatives to mechanical response: dispersant application, *in situ* burning, or destruction of entire vessel and cargo by burning.
- Schedule routine overflights of the impacted area. Request USCG support in developing an aviation operations plan for the spill to control air traffic in the area.
- In consultation with trustee agencies, determine requirements for wildlife protection, collection, and rehabilitation.
- Determine feasibility of removal actions based on:

    - Will removal actions cause more damage to the environment than allowing the pollutant to naturally dissipate?
    - Can cleanup be initiated before the pollutant disperses, making recovery impractical?

- Can equipment be deployed without excessive risk to the life and health of personnel?

5. Spill Response Organization

A spill of this magnitude could be declared a Spill of National Significance (SONS). The command structure, roles and responsibilities of a SONS scenario are identified in the **Unified Plan, Annex B**. The pre-designated FOSC for the region becomes the Area Operations Coordinator. The SONS incident continues as a Unified Command response. The fact that an incident is declared a SONS does not indicate that the response has been poorly managed or that anyone has performed poorly. The escalation of an incident into a SONS is intended to make more resources and personnel available for the response.

A Liaison Officer will be assigned to act as a sounding board for landowners, leaseholders, affected interest groups that have no jurisdictional authority, and other interested parties. The Regional Stakeholder Committee will be formed to serve as the official stakeholder and community representative voice to the Unified Command.

6. Containment Countermeasures and Cleanup Strategies

- Secure the source, if possible.
- Stabilize the vessel through the best means available; fuel transfer, lightering, etc.
- Reduce the pollution potential by removing fuel from the vessel at the earliest opportunity.
- Boom the vessel at the earliest opportunity, pending favorable weather.
- If mechanical cleanup is not feasible or adequate, consider alternatives of *in situ* burning or dispersants.
- Organize Shoreline Cleanup Assessment Teams in preparation for shoreline surveys.
- Ensure the wildlife protection plan is in place and trustee agencies are working closely with RP to ensure minimum impact to resources in area.
- Ensure that trustee agencies with responsibility for determining the requirement for implementation of a Federal/State Natural Resource Damage Assessment (NRDA) are notified that wildlife may be affected. The lead trustee will then coordinate the NRDA separate from the response and with funds provided by the NPFC.
- Request NOAA provide spill tracking and trajectory modeling to determine present location and path of spill. Consider spill tracking/surveillance systems; the University of Alaska Fairbanks' Synthetic Aperture Radar facility, USCG Forward Looking Infrared Radar equipped aircraft, and USCG Side Looking Airborne Radar are potential resources.

7. Resource Requirements

a. Equipment: Quick deployment of high volume oil recovery vessels and other mechanical collection equipment is essential to ensure success of the response and to mitigate spill damage. A spill of this size will require all area response equipment as well as out-of-region response equipment in a joint coordinated cleanup effort. A complete list of available equipment for the Northwest Arctic subarea is located in section B of this plan. Equipment stored readily available in Nome by ACC is located at http://www.chadux.com/nome.html.

b. Vessels, Skimmers, Boom, and other Spill Response Equipment:

(1) Given the volume of this spill scenario, it is anticipated that skimming systems will be immediately requested from the major spill cooperatives in Alaska, and deployed to the spill area. (Mutual Aid Agreements between the major spill response co-ops should allow for temporary, out-of-region deployments of major spill response equipment.) Releasing equipment designated for a regulatory response requirement in one area to be used in a response in a different area must be addressed by the Unified Command. The equipment and vessels should arrive on scene with all equipment prepared for immediate deployment. The major spill cooperatives in the State include: Cook Inlet Spill Prevention and Response Inc. (CISPRI); Alyeska Pipeline Service Company (APSC) Ship Escort Response Vessel System (SERVS); Alaska Clean Seas (ACS); Alaska Chadux Corporation (ACC); Southeast Alaska Petroleum Resource Organization (SEAPRO); and the U.S. Navy Supervisor of Salvage (NAVSUPSALV). Resources available include, but are not limited to the following:

Skimmers

- Transrec 200
- Desmi ocean
- Foxtail
- Lori side collection
- Dynamic inclined plane
- Vikoma SS50
- Desmi 250

Boom: Alaska has one of the largest inventories of boom in the entire nation. Booms of all varieties and sizes can be found in nearby areas. Fire boom for *in situ* burning applications is also in local inventories. Exclusionary and deflection booms and associated mooring and anchoring equipment are also in local inventories.

Vessels of Opportunity: Both CISPRI and SERVS have a fleet of pre-identified and trained large vessels of opportunity. Vessels range in size and construction from landing craft (both large and small), fishing vessels (variety of sizes and horsepower), and numerous other vessels from charter boats for personnel transportation to skiffs for near shore response. CISPRI and SERVS fishing vessel fleets are experienced in boom deployment and have considerable local knowledge. A ready fleet of response vessels experienced in pollution operations meeting HAZWOPER requirements are located in Kodiak, English Bay, Port Graham, Homer, Kenai, and Seldovia all have sizable vessel of opportunity fleets. Seldovia SOS has a response structure to dispatch and support local vessel operations and maintains an immediate call out list of qualified vessels and personnel. An available armada of response vessels exists with great potential to benefit a spill response if properly supported and managed effectively. Logistical arrangements and support will be necessary to manage any large scale deployments of ocean-going vessels to the incident area in support of cleanup operations.

Personnel: Initial personnel activation will require several hours to days. The Northwest Arctic subarea, like much of the state, does not have a substantial cadre of HAZWOPER-trained individuals to man cleanup vessels and participate in other cleanup and response activities.

8. Resource Availability and Resource Procurement

For the purposes of this scenario, it is assumed that agreements would be reached between all involved parties (USCG, State of Alaska, ACC, CISPRI, ACS, SERVS) that would allow the resources of the spill cooperatives to be brought into the response. This assumption does not imply that such agreements are currently in place or that such agreements would be reached. MSRC and NAVSUPSALV are potential resources that could be available for this scenario, if proper agreements could be reached that are acceptable to the involved parties. All these response Co-Ops have highly organized management teams knowledgeable in the ICS structure and routinely exercise their roles as responders. A communications network is already in place and available for immediate usage.

Procuring the resources identified in this spill response is the RP's responsibility. A spill of this magnitude would likely exceed $1 million each day during the initial stages of the response. Committing this volume of funds in a short time is essential. Failure, on the part of the RP, to quickly settle accounts payable can quickly force local businesses out of business. Experience acquired during past spills has shown that funds must be processed at a much higher than normal rate to maintain the response. The Oil Spill Liability Trust Fund is available to the FOSC in the event the RP is unable or unwilling to pay the costs of the spill response.

9. Shortfalls

a. Equipment: A major shortfall in equipment could be expected if the response cooperatives, the State, and the USCG can't develop agreements that will allow all response resources of these groups to be brought to bear. The issues include, but are not limited to, liability, financial arrangements, release from regulatory requirements, and rules for operating facilities with less than the required response equipment. The lack of agreements in place could hinder a response effort that exceeds the capability of an individual response cooperative. No regulatory requirement exists that mandates such mutual aid agreements.

Lighterage for skimmed product is always a consideration when determining the adequacy of a response. Lighterage capability has increased dramatically over the last four years. Part of the lighterage concerns can't be answered without a determination as to whether or not decanting will be allowed and can be planned as part of the response. Fire fighting capability for this scenario is extremely limited. Resources to fight a fire in this scenario would have to be brought from outside the region.

b. Personnel (logistical/training issues):

(1) Housing – Local hotels, seafood processing facility mancamps, on-water vessels and barges will be required to sustain the response. Several organizations in Alaska cater "field camp" setups which include housing and feeding facilities. These facilities are available in flyaway form and as floating hotels. Most of these field camps are idle during the winter months in of Alaska.

(2) Food - Catering services for field personnel would likely be procured coincidentally with the remote housing units. Catering for response personnel not deployed to the field could be handled using resources within the region.

(3) Fuel - Several fuel facilities are located in the subarea. These facilities would be required to supply the numerous vessels operating in the area. Fuel may become a concern

given the long term response anticipated for a spill of this magnitude.

(4) Transportation: Kotzebue and Nome are the only major commercial airports located in the immediate vicinity of the spill area, and would serve as the primary logistics supply points. In most cases, equipment must be transported overwater or sling loaded via helicopter. Favorable weather conditions are also a major factor in hindering both air and water transportation for personnel and equipment.

(5) Manpower and Training: Shoreline cleanup crews will require OSHA level Hazwoper training commensurate with the tasks they will be directed to perform. Volunteers will not be solicited, and individuals desiring to help will be directed to a central coordinator for hiring emergency response workers.

c. Funding: Funds availability and access should pose no problem regardless of the financial capabilities of the RP. If funding problems arise, the FOSC has access to the Oil Spill Liability Trust Fund and procedures are in place to make these funds available. The SOSC, in the event of a State funded response, has access to the 470 Fund and procedures are in place to make these funds available as well.

If the spill is "federalized," problems have been identified regarding the payment of accounts due. The response organizations will likely be unable financially to expend the amounts of money anticipated if reimbursement occurs on a 30 day payout. Ten days, as a maximum, has been discussed as the period when receipts must be paid. Failure to pay in this time period could result in a collapse of the logistical supply line, and therefore the response. Federal contracting personnel must evaluate this requirement and determine a feasible solution.

d. Minimum Response Times: Estimates indicate that the RP could have response personnel and equipment on scene within 24-hours of the incident report, pending favorable weather. The response to this spill will depend heavily upon the sea state and weather in the incident area.

10. Spill Cleanup Timetable

The on-water spill response will continue until all recoverable oil is collected or the fall/winter weather forces a halt in operations due to personnel safety. Operations may continue through September depending on weather, specifically the onset of winter storms. Shoreline cleanup will begin as soon as possible after beaches are oiled. The shoreline cleanup can then be expected to resume as soon as spring weather will allow. The number of years required to terminate cleanup operations depends heavily upon the efficiency of the initial on-water response.

11. Disposal Options

Debris disposal is the responsibility of the RP. The volume of oil contaminated debris will exceed the disposal capability of the region, unless on-site disposal methods are approved by the appropriate agencies. The RP must present a disposal plan to appropriate agencies along with necessary permits for the requested disposal plan. Disposal options for debris are limited in Alaska.

Information on waste streams and typical waste products that will be generated during a response is contained in this Subarea plan in the Response Section, Part Two and in the Unified Plan, Annex E,

Appendix II. This scenario will generate a very large volume of oil contaminated equipment and recovered product. The remoteness of the region will complicate disposal and elevate the costs of handling and transportation. The availability of shipping and storage facilities make it difficult to comply with the time frames contained in hazardous waste handling regulations. The task of managing waste disposal must be approached aggressively and very early in the response. Facility/vessel owners must investigate and identify potential staging areas for contaminated debris and equipment as well as the potential for long-term storage capabilities due to severe weather preventing timely transportation disposal of accumulated waste. Also, areas designated for cleaning contaminated equipment must be able to handle the contaminated runoff.

12. Cleanup Termination

Termination of cleanup should be a joint decision by the Unified Command based on the following criteria:

a. There is no longer any detectable oil present on the water, on adjoining shorelines, or in places where it is likely to reach the water again; or

b. Further removal operations would cause more environmental harm than the oil to be removed; or

c. Cleanup measures would be excessively costly in view of their insignificant contribution to minimizing a threat to the public health or welfare, or the environment; and

d. Activities required to repair unavoidable damage resulting from removal actions have been performed.

## B. MAXIMUM MOST PROBABLE CASE SCENARIO

The maximum most probable case is determined by the largest recorded oil spill to date in the Northwest Arctic subarea. The largest to date was the M/V Cape Nome grounding. During this event, a total of 20,000 gallons of diesel were released.

**Size of the Discharge:** 20,000 gallons (of the 725,000 total capacity) of a barges cargo.

**Event Description:** The fuel barge planning to refuel the Alaska Village Electric Cooperative facility site in Kiana strikes a partially submerged object en route to the marine header. The object is struck is unknown. The vessel continues to the location having no direct indication of damage since no product is seen escaping. Apparently, as long as the vessel is underway, fuel does not escape from the damaged tanks. But after the vessel moors up, awaiting fuel transfer, free product is detected on the water.

**Location:** Approximate position - Latitude 66° 58' N, Longitude 160° 26' W.

**Spill:** Approximately 500 bbls of arctic diesel are released over a one hour period.

**Cargo Salvage:** Crew begins transferring fuel as necessary to maintain stability and attempt to hydrostatically load the damaged tanks. Salvage of the remaining cargo is successful.

**Date:** April 10

**On-scene Weather:** Winds: E @ 20 kts, decreasing to 15 kts on second day; Sea State: 10-30ft; Temp: 40

**Sensitive Areas at Risk:** Specific information on resources at risk can be extracted from the Sensitive Areas Section in consultation with the resource trustees. From a general viewpoint, resources in the immediate area of the spill that are at risk include sea lions, otters, waterfowl concentrations, and seabird colonies.

The shoreline geomorphology in the immediate vicinity of the spill is sheltered tidal flats. The impacts of a spill of this volume are far reaching and would affect a large area. An extensive, coordinated effort between trustee agencies would be necessary to develop a comprehensive approach to environmental impact abatement. The Sensitive Areas Section provides a framework for accomplishing this task. Communities that would most likely be affected are Noorvik and Okok Point. In addition, several downstream communities would be impacted by this spill.

**Initial Action Description:**

1. **Notification:** All notifications identified in the Worst Case Scenario will be utilized in this scenario. See above.

2. **Response Activation:** Commence with notification of all potentially involved parties and provide initial situation assessment. Be brief but concise and provide specific spill information: exact location, quantity spilled, potential immediate threats, source is/is not controlled, etc. Establish contact with the responsible party as quickly as possible, preferably an individual on scene. Begin recall of local in-house personnel (USCG, ADEC, ADNR, etc.) as needed to support 24-hour operations for a spill of this magnitude.

3. **Initial On-Scene Investigation/Inspection, Evaluation and Recommendations:** Dispatch pollution investigators (Sector Anchorage and DEC NART) to the scene at the earliest opportunity. Aircraft schedules may not allow arrival until the following day depending upon time of spill and time of notification. All information must come from individuals on scene that may or may not be knowledgeable of emergency procedures or pollution response. Conflicting reports can be expected during the early phases of gathering information.

4. **Initial Response Actions:**
   - Dispatch rep from SECTOR Anchorage and DEC NART (Fairbanks) as needed
   - Stabilize the vessel
   - Secure the source of discharge through fuel transfer
   - Ensure health and safety of personnel
   - Complete notification procedures
   - Activate the response structure to the level deemed necessary
   - Through SSC interaction, determine spill path, resources at risk and wildlife impacts
   - Prepare Initial POLREP (USCG)
   - Prepare Initial SITREP (State)
   - Establish Anchorage-based command post for FOSC/SOSC and Staff
   - FOSC/SOSC will operate from offices and will not travel to the scene
   - Determine feasibility of removal actions based on:

     1) Will removal actions cause more damage to the environment than allowing the pollutant to naturally dissipate?

     2) Can cleanup be initiated before the pollutant disperses, making cleanup impractical?

     3) Can equipment be deployed without excessive risk to the life and health of personnel?

5. **Spill Response Organization:** Establish the command structure as described in the Unified Plan, Annex B. Include the FOSC, SOSC, RP's Incident Commander, and local community liaison. The group will always strive to reach consensus decisions. Only when the group has reached an impasse and the timeliness of the situation requires action will the FOSC make unilateral decisions.

6. **Containment, Countermeasures and Cleanup Strategies**: Immediate containment is required to mount an effective recovery operation. Vessel crew deploys response equipment carried aboard as required by the Vessel Response Plan. Containment boom is deployed and approximately 40% of the released product is contained and skimming begun.

   Natural dispersion and evaporation will act to remove the product from the water surface. A spill of this volume will spread, disperse, and evaporate making recovery, if not initially contained, very difficult.

   In situ burning and dispersant strategies will not be employed.

   A spill of this volume that is not contained immediately but is allowed to spread will likely not be recoverable under these conditions. The time required to mount an effective response added to the extraordinary travel time and logistical difficulties may make "chasing" this oil spill infeasible.

7. **Response Requirements:**

   a. **Equipment:** The equipment required in the State and Coast Guard vessel response plans should adequately address this spill. It is unlikely that additional equipment can be brought to bear in a timely manner and at a reasonable cost to respond to this spill volume. Natural processes will drastically reduce the spill volume in a matter of hours rather than days.

   b. **Personnel:** Expect to use only on board personnel for this response. The crew should be capable of deploying equipment and recovering product without assistance. Trustees and other agencies should not require augmentation or additional manpower to deal with this spill.

8. **Resource Availability and Resource Procurement:** Resources should be on hand to deal with this spill. The volume of product that can be expected to be recovered will be relatively small and additional resources will probably be unnecessary by the time they arrive on scene.

9. **Shortfalls**

   a. **Equipment:** None anticipated.

   b. **Personnel:** None anticipated.

   c. **Funding:** No funding problems anticipated.

   d. **Minimum Response Times:** Vessel owner should comply with the approved vessel response plan. If these response times are met, response should be adequate assuming the crew acts quickly to contain the product being released as soon as it's detected.

10. **Spill Cleanup Timetable:**

    a. **Mechanical Cleanup Only:** Two days.

    b. **Mechanical in Conjunction with Non-Mechanical:** Not applicable.

11. **Disposal Options:** Debris disposal is the responsibility of the RP. A small volume of oil contaminated debris will likely be produced. The RP must dispose of contaminated debris according to existing laws. The RP will typically be knowledgeable in the methods and requirements for disposing of small quantities of oiled debris.

12. **Cleanup Termination**. Termination of cleanup should be a joint decision by the Unified Command based on the following criteria:

    a. There is no longer any detectable oil present on the water, adjoining shorelines, or places where it is likely to reach the water again; or

    b. Further removal operations would cause more environmental harm than the oil to be removed; or

    c. Cleanup measures would be excessively costly in view of their insignificant contribution to minimizing a threat to the public health and welfare; and activities required to repair unavoidable damage resulting from removal actions have been performed.

## C. AVERAGE MOST PROBABLE CASE SCENARIO

The average most probable case is determined by the greatest percentage of average spills in the area over the past ten years. For the Northwest Arctic Borough, over 50% of oil spills were less than 10 gallons with storage facilities accounting for 90% of spill locations.

**Size of the Discharge:** Approximately 50 gallons of No. 1 diesel fuel.

**Event Description:** A lightering vessel is transferring fuel to the Elim AVEC bulk fuel storage facility when the 4 inch transfer hose ruptures near the marine header.

**Location:** Approximate position - Latitude 64° 37' N, Longitude 162° 15' W.

**Spill:** Approximately 50 gallons of arctic diesel.

**Cargo Salvage:** Upon discovery of the rupture, the transfer pump is secured and the valves at the marine header and aboard the lightering vessel are closed, preventing the loss of additional cargo.

**Date:** April 10

**On-scene Weather:** Winds: W @ 25 kts, decreasing to 15 kts on second day; Sea State: 10-30ft; Temp: 40

**Sensitive Areas at Risk:** Specific information on resources at risk can be extracted from the Sensitive Areas Section in consultation with the resource trustees. From a general viewpoint, resources in the immediate area of the spill that are at risk include sea lions, otters, waterfowl concentrations, and seabird colonies.

The shoreline geomorphology in the immediate vicinity of the spill is exposed rocky shores. Sand and gravel beaches, exposed wave-cut platforms and sheltered tidal flats are not expected to be impacted from this spill. The Sensitive Areas Section provides a framework for identifying any at-risk resources.

**Initial Action Description:**

1. **Notification:** All notifications identified in the Worst Case Scenario will be utilized in this scenario. See above.

2. **Response Activation:** Commence with notification of all potentially involved parties and provide initial situation assessment. Be brief but concise and provide specific spill information: exact location, quantity spilled, potential immediate threats, source is/is not controlled, etc. Establish contact with the responsible party as quickly as possible, preferably an individual on scene. Begin recall of local in-house personnel (USCG, ADEC, ADNR, etc.) as needed to support 24-hour operations for a spill of this magnitude.

   b. **Response Activation:** Commence with notification of all potentially involved parties and provide initial situation assessment. Be brief but concise and provide specific spill information: exact location, quantity spilled, potential immediate threats, source is/is not controlled, etc. Establish contact with the responsible party as quickly as possible, preferably an individual on scene. Begin recall of local in-house personnel (USCG, ADEC, ADNR, etc.) as needed to support a spill of this magnitude.

c. **Initial Response Actions On-Scene:**

- Alert vessel tankerman to secure pumping
- Secure electrical power and sources of ignition
- Close valves to prevent the flow of fuel through the ruptured hose
- Maintain a safety zone due to health hazards; evacuate personnel as necessary
- Ensure proper PPE is available and used by responders
- Alert the Northwest Arctic Borough to activate the initial ICS
- Contain and recover the charged product
- Properly dispose of recovered oil and oily waste
- Properly decontaminate all oiled response equipment

d. **Initial Agency Evaluation and Recommendations:**

- FOSC/SOSC/RP establish direct communications
- Evaluate the RP's response capabilities
- As required, dispatch representatives to the scene at the earliest opportunity
- Ensure health and safety of all individuals
- Coordinate with local emergency response personnel to establish a Safety Zone, as necessary
- Determine feasibility of removal actions based on the following considerations:

  1) Will removal actions cause more damage to the environment than allowing the pollutant to naturally dissipate?

  2) Can cleanup be initiated before the pollutant disperses, making cleanup impractical?

  3) Can equipment be deployed without excessive risk to the life and health of personnel?

- Ensure development of a Site Safety Plan
- Prepare initial POLREP (USCG)
- Prepare initial SITREP (State)

3. **Spill Response Organization:** Establish the command structure as described in the Unified Plan, Annex B. Include the FOSC, SOSC, RP's Incident Commander, and local community liaison. The group will always strive to reach consensus decisions. Only when the group has reached an impasse and the timeliness of the situation requires action will the FOSC make unilateral decisions.

4. **Containment, Countermeasures and Cleanup Strategies**: Due to the small amount of discharged product, nature of diesel fuel, and weather conditions, the product will likely weather quickly through evaporation and emulsification. Safety of response personnel is of primary importance, as is early detection of the rupture and quick action to secure flow of product through the hose and contain the spill.

5. **Response Requirements:**

a. **Equipment:** Personal Protective Equipment for response personnel required to approach the vicinity of the spill is mandatory.

b. **Personnel:** Facility personnel and other emergency response personnel will likely be

the most crucial individuals in this scenario.

6. **Resource Availability and Resource Procurement.** The RP is required to have resources on hand to respond to spills. It is anticipated that adequate resources would be available from the RP to respond to this event. In the event the RP does not have adequate equipment, the Northwest Arctic Borough maintains some response equipment that may be available, through appropriate agreements, for this scenario. Out-of-region resources are not considered necessary for this response.

7. **Shortfalls**

   a. **Equipment:** No shortfall of cleanup equipment is anticipated.

   b. **Personnel:** No shortfalls in personnel are anticipated.

   **c.** **Funding:** Funds availability and access are not anticipated to be a problem due to identification of a responsible party. Federal and State could access their respective spill funds if necessary.

   d. **Minimum Response Times:** Response times in excess of one hour may prove futile with regard to recovering any free product or containment to control the migration and areas impacted by the spill. Emergency response personnel should respond immediately to the spill site to maintain safety.

8. **Spill Cleanup Timetable:**

   a. **Mechanical Cleanup Only:** One day.

   b. **Mechanical in Conjunction with Non-Mechanical:** Not applicable.

9. **Disposal Options:** Debris disposal is the responsibility of the RP. Limited amount of contaminated debris will likely be produced. Disposal procedures must meet Federal and State requirements. The RP will typically be well versed in these procedures due to the nature of their fuel handling operations.

10. **Cleanup Termination:** Termination of cleanup should be a joint decision by the Unified Command based on the following criteria:

    a. There is no longer any detectable oil present on the water, adjoining shorelines, or places where it is likely to reach the water again; or

    b. Further removal operations would cause more environmental harm than the oil to be removed; or

    c. Cleanup measures would be excessively costly in view of their insignificant contribution to minimizing a threat to the public health and welfare; and activities required to repair unavoidable damage resulting from removal actions have been performed.

## D. OUTER CONTINENTAL SHELF SCENARIO

**Size of the Discharge:** 300,000 bbls 25-30 API Crude Oil.

**Event Description:** An exploratory well experiences a blowout and begins releasing 20,000 barrels of oil per day (BOPD) from the blowout preventer on the sea floor. Winter is fast approaching. The ice edge has already passed the platform and is continuing to advance rapidly. Ice coverage exceeds 60% at the time of the spill. Estimates indicate ice coverage will exceed 75% in 30 days and approach 100% within 60 days of the initial spill date.

**Location:** Approximately 60 miles offshore of the North Slope District –
Lat/Long: 71º 18' 17.2 N 163º 45' 9 W

**Spill:** The blowout is releasing crude oil at the rate of 20,000 BOPD. Rough trajectory is based on circulation patterns, oil type and quantity, and weather. Trajectory assumes flow through low ice concentrations and should only be used for the purposes of this scenario. (Note: Trajectory information taken out of context with this scenario should not be relied upon as a forecast for actual conditions or spill events). Currents, weather and product spilled will combine to limit the spread of the slick and also keep it from traveling a great distance over this time period.

**Cargo Salvage:** Not Applicable.

**Date:** October 30

**On-scene Weather:** Winds: SW @ 40 kts, decreasing to 15 kts on second day; Sea State: 10-30ft; Temp: 40 □F

**Sensitive Areas at Risk:** Specific information on resources at risk can be extracted from the Sensitive Areas Section in consultation with the resource trustees. From a general viewpoint, resources in the immediate area of the spill that are at risk include polar bears, seals, migratory whales, subsistence fish, waterfowl concentrations, and seabird colonies.

The shoreline geomorphology in the immediate vicinity of the spill is predominantly sand/rocky shoreline. Sand and gravel beaches, exposed wave-cut platforms and sheltered tidal flats can be expected to be impacted from this spill in the early stages due to their proximity to the spill event. The impacts of a spill of this volume are far reaching and would affect a large area. An extensive, coordinated effort between trustee agencies would be necessary to develop a comprehensive approach to environmental impact abatement. The Sensitive Areas Section provides a framework for accomplishing this task. Several downstream communities would be impacted by a spill of this magnitude.

**Initial Action Description:**

1. Notification (Assume the responsible party has notified the required agencies in accordance with the vessel response plan)

   FOSC will ensure the following are notified:
   ** ADEC Central Alaska Response Team or 24-hour ADEC reporting contact
   * ADNR
   * BOEMRE
   * ADF&G
   * ADMVA, DHSEM
   ** CGD17 OPCEN, to activate support resources including:
   District (m), District Office, Marine Safety Division
   DRG, District Response Group
   DRAT, District Response Advisory Team
   PIAT, Public Information Assist Team
   RRT, Regional Response Team
   ** NRC, National Response Center
   *** NOAA SSC, Scientific Support Coordinator
   ** NSFCC, National Strike Force Coordinating Center
   ** NPFC, National Pollution Fund Center
   *** North Slope Borough
   *** North West Arctic Borough
   *** Local Emergency Managers of directly impacted communities
   DOI Fish and Wildlife
   NIMS

   Key: * = Notification initiated by State
   ** = Message notification
   *** = Notification by FOSC

2. Response Activation

   - Dispatch representatives to the scene at the first opportunity
   - FOSC/SOSC/RP Representatives establish direct communications
   - Ensure health and safety of platform crew
   - Ensure stability of platform
   - Attempt to make initial determination of cause of blowout
   - Ensure contact with BOEMRE personnel to draw on expertise in offshore platforms
   - Establish Safe Zone around platform until proper safety evaluation completed
   - Evaluate slick size, direction, area of coverage, proximity to shore, wildlife impacts, wildlife observed in area, on scene weather, etc.
   - Determine what response actions have occurred or are underway
   - Issue Notice of Federal Interest and State Interest to RP

3. Initial On-Scene Investigation, Inspection, Evaluation & Recommendations

   - Ensure notification of resource trustees using the Emergency Notification Checklist
   - Evaluate the capability of the RP to carry out an appropriate response given the situation
   - Prepare Initial POLREP (USCG)

- Prepare Initial SITREP (State)
- Instruct RP to develop in situ burning plan for consideration and to begin marshaling resources for burning activity if actions are not already underway
- Instruct RP to determine his/her ability to mechanically recover spilled product before 100% ice cover
- Evaluate capability to contain and recover oil after 100% ice cover using innovative techniques appropriate to arctic conditions
- Evaluate RP's plan for securing the source

4. Initial Response Actions

- Secure the source, if possible.
- Stabilize the platform if required
- Activate the response structure to the level deemed necessary (This scenario would appear to be considered a Spill of National Significance (SONS) and would likely be handled at the national level. Although a 60-day discharge of 20,000 BOPD would equate to a 1.2 million bbl spill, the timeframe of the spill and the fact that the trajectory shows the oil traveling along the coastline and not seriously impacting the shoreline are factors which would lead to declaring this a SONS).
- Deploy containment boom and/or plan and prioritize shoreline protection and cleanup areas. Utilize established Geographic Response Strategies (GRS), when possible.
- Evacuate any injured personnel or unnecessary crew members.
- Using **Unified Plan, Annex B** Implement some or all of the Incident Command Systems (ICS) principles listed below:
  - Develop a Unified Command (UC) that includes RPOSC, SOSC, FOSC and LOSC (if available).
  - Evaluate RP's capability to carry out an appropriate response.
  - Determine name of incident.
  - Determine goals and objectives
  - Determine UC staff and size- Liaison and RSC positions are critical for this region.
  - Establish an appropriate ICP to support UC activities- Plan for Prudhoe Bay.
  - Establish a Joint Information Center (JIC). Ensure joint website and/or appropriate local stakeholder communication plan is used to maximize information sharing.
- Utilize local knowledge, SSC and other NOAA hazmat resources as necessary to predict spill trajectory and potential impacts.
- Establish local (Anchorage) command post while individuals are en route to the field command post and plan for relocation to Prudhoe Bay.
- Prepare initial press release with the Unified Command.
- Complete notification procedures. Include up-channel notification to include the RRT, DRG, DRAT, PIAT, MLCPAC contracting team, NPFC, and NSFCC.
- Issue Notice to Mariners restricting vessel traffic in the immediate vicinity of the incident.
- Issue Notice to Airmen, through the FAA, restricting aircraft traffic in the immediate vicinity of the incident.
- Ensure preparation of Site Safety Plan.
- Determine any fisheries impacts, and take appropriate action.
- Consider alternatives to mechanical response: dispersant application, *in situ* burning
- Schedule routine overflights of the impacted area. Request USCG support in developing an aviation operations plan for the spill to control air traffic in the area.
- In consultation with trustee agencies, determine requirements for wildlife protection, collection, and rehabilitation.

- Determine feasibility of removal actions based on:

    - Will removal actions cause more damage to the environment than allowing the pollutant to naturally dissipate?
    - Can cleanup be initiated before the pollutant disperses, making recovery impractical?
    - Can equipment be deployed without excessive risk to the life and health of personnel?

5. Spill Response Organization

A spill of this magnitude would normally be declared a Spill of National Significance (SONS). If the Unified Command determines the spill to be a SONS, the command structure, roles and responsibilities of a SONS scenario are identified in the **Unified Plan, Annex B**. The pre-designated FOSC for the region becomes the Area Operations Coordinator. The SONS incident continues as a Unified Command response. The fact that an incident is declared a SONS does not indicate that the response has been poorly managed or that anyone has performed poorly. The escalation of an incident into a SONS is intended to make more resources and personnel available for the response.

A Liaison Officer will be assigned to act as a sounding board for landowners, leaseholders, affected interest groups that have no jurisdictional authority, and other interested parties. The Regional Stakeholder Committee will be formed to serve as the official stakeholder and community representative voice to the Unified Command.

6. Containment Countermeasures and Cleanup Strategies

- Evaluate/determine whether a relief well is appropriate.
- Evaluate/determine feasibility of in-situ burn.
- Boom the rig at the earliest opportunity, pending favorable weather.
- Evaluate/determine feasibility of dispersants.
- Organize Shoreline Cleanup Assessment Teams in preparation for shoreline surveys.
- Ensure the wildlife protection plan is in place and trustee agencies are working closely with RP to ensure minimum impact to resources in area.
- Ensure that trustee agencies with responsibility for determining the requirement for implementation of a Federal/State Natural Resource Damage Assessment (NRDA) are notified that wildlife may be affected. The lead trustee will then coordinate the NRDA separate from the response and with funds provided by the NPFC.
- Request NOAA provide spill tracking and trajectory modeling to determine present location and path of spill. Consider spill tracking/surveillance systems; the University of Alaska Fairbanks' Synthetic Aperture Radar facility, USCG Forward Looking Infrared Radar equipped aircraft, and USCG Side Looking Airborne Radar are potential resources.
- Response procedures for on-ice/under-ice recovery is located: pdfhttp://www.alaskacleanseas.org/tech-manual/, and http://www.alaska.boemre.gov/ref/ProjectHistory/tactics_manual.pdf

7. Resource Requirements

a. Equipment: Operators on the OCS are required to have oil spill response assets immediately available to respond to spills from their facilities. Quick deployment of high volume oil recovery vessels and other mechanical collection equipment is essential to

ensure success of the response and to mitigate spill damage. A spill of this size will require all area response equipment as well as out-of-region response equipment in a joint coordinated cleanup effort. A complete list of available equipment for the Northwest Arctic subarea is located in section B of this plan. Equipment stored readily available within the North Slope Borough by ACC is located at http://www.alaskacleanseas.org/adobefiles/equipmentprofile/2010%20Equipment%20Profile-%20Final%20[Read-Only]%20[Compatibility%20Mode].pdf, and the equipment stored by Shell is located: http://www.alaska.boemre.gov/ref/ProjectHistory/tactics_manual.pdf.

b. Vessels, Skimmers, Boom, and other Spill Response Equipment:

(1) Given the volume of this spill scenario, it is anticipated that skimming systems will be immediately requested from the major spill cooperatives in Alaska, and deployed to the spill area. (Mutual Aid Agreements between the major spill response co-ops should allow for temporary, out-of-region deployments of major spill response equipment.) Releasing equipment designated for a regulatory response requirement in one area to be used in a response in a different area must be addressed by the Unified Command. The equipment and vessels should arrive on scene with all equipment prepared for immediate deployment. The major spill cooperatives in the State include: Cook Inlet Spill Prevention and Response Inc. (CISPRI); Alyeska Pipeline Service Company (APSC) Ship Escort Response Vessel System (SERVS); Alaska Clean Seas (ACS); Alaska Chadux Corporation (ACC); Southeast Alaska Petroleum Resource Organization (SEAPRO); and the U.S. Navy Supervisor of Salvage (NAVSUPSALV). Resources available include, but are not limited to the following:

Skimmers

- Lamor 30
- Lamor 12
- Manta Ray
- Skimpak 1800
- Desmi Minimax
- Stellar vac unit
- Rovac

Boom: Alaska has one of the largest inventories of boom in the entire nation. Booms of all varieties and sizes can be found in nearby areas. Fire boom for *in situ* burning applications is also in local inventories. Exclusionary and deflection booms and associated mooring and anchoring equipment are also in local inventories.

Vessels of Opportunity: Both CISPRI and SERVS have a fleet of pre-identified and trained large vessels of opportunity. Vessels range in size and construction from landing craft (both large and small), fishing vessels (variety of sizes and horsepower), and numerous other vessels from charter boats for personnel transportation to skiffs for near shore response. CISPRI and SERVS fishing vessel fleets are experienced in boom deployment and have considerable local knowledge. A ready fleet of response vessels experienced in pollution operations meeting HAZWOPER requirements are located in Kodiak, English Bay, Port Graham, Homer, Kenai, and Seldovia all have sizable vessel of opportunity fleets. Seldovia SOS has a response structure to dispatch and support local vessel operations and maintains an immediate call out list of qualified vessels and personnel. An available armada of

response vessels exists with great potential to benefit a spill response if properly supported and managed effectively. Logistical arrangements and support will be necessary to manage any large scale deployments of ocean-going vessels to the incident area in support of cleanup operations.

Personnel: Initial personnel activation will require several hours to days. The Northwest Arctic subarea, like much of the state, does not have a substantial cadre of HAZWOPER-trained individuals to man cleanup vessels and participate in other cleanup and response activities.

8. Resource Availability and Resource Procurement

For the purposes of this scenario, it is assumed that agreements would be reached between all involved parties (USCG, State of Alaska, ACC, CISPRI, ACS, SERVS) that would allow the resources of the spill cooperatives to be brought into the response. This assumption does not imply that such agreements are currently in place or that such agreements would be reached. MSRC and NAVSUPSALV are potential resources that could be available for this scenario, if proper agreements could be reached that are acceptable to the involved parties. All these response Co-Ops have highly organized management teams knowledgeable in the ICS structure and routinely exercise their roles as responders. A communications network is already in place and available for immediate usage.

Procuring the resources identified in this spill response is the RP's responsibility. A spill of this magnitude would likely exceed $1 million each day during the initial stages of the response. Committing this volume of funds in a short time is essential. Failure, on the part of the RP, to quickly settle accounts payable can quickly force local businesses out of business. Experience acquired during past spills has shown that funds must be processed at a much higher than normal rate to maintain the response. The Oil Spill Liability Trust Fund is available to the FOSC in the event the RP is unable or unwilling to pay the costs of the spill response.

9. Shortfalls

a. Equipment: A major shortfall in equipment could be expected if the response cooperatives, the State, and the USCG can't develop agreements that will allow all response resources of these groups to be brought to bear. The issues include, but are not limited to, liability, financial arrangements, release from regulatory requirements, and rules for operating facilities with less than the required response equipment. The lack of agreements in place could hinder a response effort that exceeds the capability of an individual response cooperative. No regulatory requirement exists that mandates such mutual aid agreements.

Lighterage for skimmed product is always a consideration when determining the adequacy of a response. Lighterage capability has increased dramatically over the last four years. Part of the lighterage concerns can't be answered without a determination as to whether or not decanting will be allowed and can be planned as part of the response. Fire fighting capability for this scenario is extremely limited. Resources to fight a fire in this scenario would have to be brought from outside the region.

b. Personnel (logistical/training issues):

(1) Housing – Local hotels, seafood processing facility mancamps, on-water vessels and

barges will be required to sustain the response. Several organizations in Alaska cater "field camp" setups which include housing and feeding facilities. These facilities are available in flyaway form and as floating hotels. Most of these field camps are idle during the winter months in of Alaska.

(2) Food - Catering services for field personnel would likely be procured coincidentally with the remote housing units. Catering for response personnel not deployed to the field could be handled using resources within the region.

(3) Fuel - Several fuel facilities are located in the subarea. These facilities would be required to supply the numerous vessels operating in the area. Fuel may become a concern given the long term response anticipated for a spill of this magnitude.

(4) Transportation: Bethel is the only major commercial airport located in the immediate vicinity of the spill area, and would serve as the primary logistics supply points. In most cases, equipment must be transported overwater or sling loaded via helicopter. Favorable weather conditions are also a major factor in hindering both air and water transportation for personnel and equipment.

(5) Manpower and Training: Shoreline cleanup crews will require OSHA level Hazwoper training commensurate with the tasks they will be directed to perform. Volunteers will not be solicited, and individuals desiring to help will be directed to a central coordinator for hiring emergency response workers.

c. Funding: Funds availability and access should pose no problem regardless of the financial capabilities of the RP. If funding problems arise, the FOSC has access to the Oil Spill Liability Trust Fund and procedures are in place to make these funds available. The SOSC, in the event of a State funded response, has access to the 470 Fund and procedures are in place to make these funds available as well.

If the spill is "federalized," problems have been identified regarding the payment of accounts due. The response organizations will likely be unable financially to expend the amounts of money anticipated if reimbursement occurs on a 30 day payout. Ten days, as a maximum, has been discussed as the period when receipts must be paid. Failure to pay in this time period could result in a collapse of the logistical supply line, and therefore the response. Federal contracting personnel must evaluate this requirement and determine a feasible solution.

d. Minimum Response Times: Estimates indicate that the RP would have response personnel and equipment on scene within 24-hours of the incident report, pending favorable weather. The response to this spill will depend heavily upon the sea state and weather in the incident area.

10. <u>Spill Cleanup Timetable</u>

The on-water spill response will continue until all recoverable oil is collected or the fall/winter weather forces a halt in operations due to personnel safety. Operations may continue through November, depending on weather, specifically the onset of winter storms. Shoreline cleanup will begin as soon as possible after beaches are oiled. The shoreline cleanup can then be expected to resume as soon as spring weather will allow. The number of years required to terminate cleanup

operations depends heavily upon the efficiency of the initial on-water response.

11. Disposal Options

Debris disposal is the responsibility of the RP. The volume of oil contaminated debris will exceed the disposal capability of the region, unless on-site disposal methods are approved by the appropriate agencies. The RP must present a disposal plan to appropriate agencies along with necessary permits for the requested disposal plan. Disposal options for debris are limited in Alaska.

Information on waste streams and typical waste products that will be generated during a response is contained in this Subarea plan in the Response Section, Part Two and in the Unified Plan, Annex E, Appendix II. This scenario will generate a very large volume of oil contaminated equipment and recovered product. The remoteness of the region will complicate disposal and elevate the costs of handling and transportation. The availability of shipping and storage facilities make it difficult to comply with the time frames contained in hazardous waste handling regulations. The task of managing waste disposal must be approached aggressively and very early in the response. Facility/vessel owners must investigate and identify potential staging areas for contaminated debris and equipment as well as the potential for long-term storage capabilities due to severe weather preventing timely transportation disposal of accumulated waste. Also, areas designated for cleaning contaminated equipment must be able to handle the contaminated runoff.

12. Cleanup Termination

Termination of cleanup should be a joint decision by the Unified Command based on the following criteria:

a. There is no longer any detectable oil present on the water, on adjoining shorelines, or in places where it is likely to reach the water again; or

b. Further removal operations would cause more environmental harm than the oil to be removed; or

c. Cleanup measures would be excessively costly in view of their insignificant contribution to minimizing a threat to the public health or welfare, or the environment; and

d. Activities required to repair unavoidable damage resulting from removal actions have been performed.

## *SCENARIOS: PART TWO – HAZMAT*

1. Situation

The incident occurred on May 5. Toward the end of night shift (at 8:45 AM), during an ammonia transfer operation a "liquid hammer" occurred in the high pressure (HP) receiver. As a result of the liquid hammer a Sight Glass on the level column began to leak at the bottom of the HP receiver.

The refrigeration technician first attempted to isolate the leaking Sight Glass. The technician was quickly overcome by the ammonia and left the area because of discomfort even though he was using respiratory protection.

When the anhydrous ammonia release occurred, a fixed ammonia air monitor sounded an audible alarm. The liquid ammonia release is ongoing. Refrigeration people ran into the fish processing area to report the leak and clear the area after they sounded the facility evacuation alarm. During the resulting evacuation of the building, several people were overcome by the ammonia.

The anhydrous ammonia release occurs at a rate of 60 lbs/min over a period of approximately one hour, for a total of 3600 lbs.

2. Location

The incident occurred at a seafood processing facility in Dutch Harbor. approximately 1 mile east-northeast of the City of Unalaska.

3. Release Information

Over a period of approximately one hour, approximately 3,600 pounds of anhydrous ammonia is released into the atmosphere. The volume released begins to slow after an hour, as the entire contents of the receiver have either been emptied or emergency shutoff valves successfully isolated the release.

4. Date of Incident: May 5

5. On-scene Weather

Winds: Westerly at 6 mph
Temperature: 50°F
Relative Humidity: 87%
Cloudy, overcast, with showers forecasted

6. Sensitive Areas at Risk

Intertidal spawning salmon (May thru Sept); waterfowl concentrations; eagle nesting; seals; employees at the seafood processing facility; Small Boat Harbor; City of Unalaska and local residents.

7. Initial Actions:

- Initial call taken by the Unalaska Fire Department, and up-channel reporting in initiated.
- Determine and confirm personnel safety hazards in the immediate area and downwind of the ammonia release.

- Ensure public health and safety by either evacuating populace at risk or directing them to shelter in place.

- Immediate notification of ADEC via the Spill Report Hotline. Captain of the Port, Western Alaska, also receives notification simultaneously from the Marine Safety Detachment in Dutch Harbor, followed by notification from the National Response Center. Follow-on federal/state/local agency notifications are made based on the Emergency Notification List in the Response Section.

- DEC notifies the Statewide Hazmat Response Team of the situation and the need for possible deployment.

- DEC also notifies Aware Consulting, and activates a term contract with them for technical advice on dealing with the ammonia release and post-incident investigation.

- Activate response structure including local responders and the Statewide Hazmat Response Team.

- Contact FAA to restrict airspace.

- Prepare initial press release.

- Due to the threat to public health and safety, the initial Incident Commander or a representative from the City of Unalaska will continue to serve as a member of the Unified Command until the threat is abated.

- Commence mobilization of response personnel.

- Incident Command System activated, and Unified Command formed.

- COTP directs the MSD to establish a Safety Zone around the facility.

- USCG drafts POLREP One. ADEC drafts and releases initial SITREP.

- USCG issues Letter of Federal Interest. ADEC issues Notice of State Interest in a Pollution Incident.

- Issue Letter of Designation.

- State of Alaska alerts additional response action contractors for possible activation, and also alerts other members of the Statewide Hazmat Response Team for additional support, if required.

- Determine if the Hazmat response is categorically excluded under the national programmatic agreement to protect historic properties, and if not, activate an FOSC Historic Properties Specialist.

8. Initial On-Scene Investigation/Inspection Evaluation and Recommendations

- Develop information from facility worker reports, release size, utilize video recording as much as possible to document scene and develop initial response strategy.
- Determine overall system capacities for anhydrous ammonia, and determine potential for additional releases, in consultation with the facility manager and refrigeration specialist.
- Collect charts and refrigeration system maintenance and resupply files for evidence.

9. Containment Countermeasures and Cleanup Strategies

The Unified Command will coordinate and develop an Incident Action Plan to:

- Conduct initial containment,
- Establish the initial on scene command post and staging area.
- Support local responders, and provide updated information to Federal, State, loca, and tribal entities.

10. Resource Requirements

- Due to the short nature of the release, the Statewide Hazmat Response Team will likely be stood down after determination that the ammonia release has stopped. The team will remain on standby pending any further releases that may be prolonged in nature. The Aware Consulting staff person will be mobilized to Dutch Harbor along with several DEC responders to provide additional support to the local responders.

11. Response Requirements

a. **Equipment:** Any action to contain, plug or prevent additional release will require the use of appropriate personal protective equipment (PPE).

b. **Personnel:** Personnel responding to this incident (local firefighters, and other responders) will be required to be trained to at least the first responder awareness level. Those entering the scene to secure the leak source and initiate cleanup and containment will require training to the technician level.

12. Shortfalls

a. **Equipment:** The City of Unalaska does not maintain a Level A entry capable Hazmat Team. Level A PPE is not available in Unalaska, aside from limited pieces of equipment maintained by the seafood processing facility.

b. **Personnel:** Due to the location of the accident and the localized hazard (i.e., anhydrous ammonia release over an hour's period), additional emergency response personnel are not deemed necessary, unless the release recurs over a prolonged period of time.

c. **Funding:** Funding of response and clean-up actions will be the responsibility of the Responsible Party.

d. **Minimum Response Times:** Response should be initiated immediately. Based on the location of the incident, the RP, local fire chief, and Coast Guard will initially respond to the situation. The FOSC, SOSC, and Aware Consulting representative (all deploying from Anchorage) is expected to arrive at the scene by early afternoon.

13. Spill Cleanup Timetable

This response should last no more than several days. Cleanup of the immediate area will be required, and may simply consist of facility ventilation. The RP indicates that he/she will direct a complete inventory of the ammonia refrigeration system, and determine the potential for any potential releases. DEC directs the Aware Consulting ammonia specialist to assist with the inventory and conduct a thorough inspection of the system to determine the cause of the release and potential for future ammonia releases.

14. Cleanup Termination

The FOSC and SOSC will determine the appropriate time to terminate operations based on the RP's ability and assurances that further releases will not occur. The investigation into the cause of the release will continue after response termination.

# SCENARIOS: PART THREE – INLAND OIL
# WORST CASE DISCHARGE

**Location:** Ambler, 67° 5' North Latitude, 157° 51'West Longitude

**Date:** Mid May

**Situation:** A spring storm has produced 6 inches of rain and more is forecast with a storm total of up to 10 inches in Ambler, AK. (Note: Ambler has received such a rainfall in the past)

The foundation of a 9,362 gallon oil tank at the power plant tank farm has failed and the tank has tipped to a 45 degree lean. The foundation failure is attributed to a rotting wood foundation and ground failure due to saturated soils. The valve at the base of the tank has been sheared and the welded seam has partially split at the top of the tank, releasing the entire tank's contents. The tank is leaning out over the sandbag dike surrounding the tank farm and an estimated 4,000 gallons has spilled from the top of the tank outside of the containment dike. Approximately 5,000 gallons has been released to secondary containment. However, 6 inches of standing storm water is also in the containment area (approximately 4,500 gallons water) and the tank collapse has damaged the dike allowing some oil to escape. Additional storm water accumulating in the containment area will continue to displace oil. AVEC estimates that the containment dike is currently capable of containing 9,000 gallons and if storm water accumulates it will displace oil. AVEC is operating a portable pump, capable of 20 gpm, to move water outside of the containment dike.

Terrestrial containment outside of power plant lot has been complicated by the heavy rains and saturated soil. Oil has reached the Kobuk River. Oil is visible on the ice and in water between ice sheets.

Ice on the Kobuk River is in the early stages of break-up: the central portion of the ice sheet is "arched" where the central portion of the ice sheet is lifted while the edges of the sheet remain firmly attached to the banks; ponded runoff will concentrate in channels along the banks while the center of the ice sheet is dry. The increased river flow due to the heavy rain will cause either the ice that is frozen to the banks to break free or the ice sheet to break away from the bank ice. The ice sheet will float on the rising water levels. A few miles downstream from Ambler the ice has begun to break up. Further downstream, *[insert potential likely location,<10 miles downstream]*, an ice jam has formed and water levels upstream of the jam are rising.

**Spill Information:** Approximately 2,000 gallons of fuel oil has been released in the partially iced Kobuk River. An additional 3,000-4,000 gallons has escaped the secondary containment at the power plant, but has not reached the river. AVEC personnel have constructed trenches and dams immediately west and south of the tank farm to contain some of the oil. Oil has accumulated at these trenches, as well as in low spots in the surrounding tundra and hillside. Storm water runoff is continuing to displace oil captured at containment trenches. Approximately 4,000 gallons of oil is currently in the tank farm's secondary containment area.. The floor of the containment area is not lined or impermeable.

The direction of flow is to east, towards Dahl Avenue and Brooks Street. The tank farm is approximately 700 feet northwest of and 175 feet above the Kobuk River, near its confluence with the Ambler River.

**Weather:** Rain, storm total up to 10 inches. Temp: 48F. Wind: East 10 mph. Visibility: 1 miles

**Sensitive Areas at Risk:**

| Area | Description, Reason for Sensitivity | Distance (By air) | Distance (By river) | Management |
|---|---|---|---|---|
| Ambler River | Chum salmon & sheefish, other fish. Subsistence use area. | 0 | 0 | |
| Kobuk River | The river supports a large number of sheefish, Arctic char, whitefish and chum salmon. Subsistence use area (sheefish, whitefish, chum salmon, grayling, and northern pike berry picking and plant collection, waterfowl). Connected wetlands, important to nesting waterfowl. | 0 | 0 | |
| Traditional subsistence harvest areas on lands surrounding the village. | Subsistence use area. (caribou, berry picking, plant collection) | 0 | 0 | Various |
| Kobuk Valley National Park | National Park | 10 miles | | NPS |
| Onion Portage Archeological District (National Historic Landmark, National Register of Historic Places) | Cultural and Historic Resources | 12 miles | | National Park Service, NANA Regional Corporation, Ambler and private inholders |
| Onion Portage Subsistance and Important Habitat Area [1] | Subsistence use area (salmon, sheefish and whitefish; caribou migration corridor) | 12 miles | | National Park Service, NANA Regional Corporation, Ambler and private inholders |
| Selawik National Wildlife Refuge | National Wildlife Refuge | | | U.S. FWS |
| Kobuk River Delta Subsistence and Important Habitat Area [1] | Subsistence use area (waterfowl, sheefish, chum salmon, Dolly Varden | | | |
| Salmon River Sensitive Use Area, National Wild and Scenic River (confluence with Kobuk River; located within Kobuk Valley National Park) [1] | Subsistence use area (salmon and whitefish) Biological resources - salmon, Dolly Varden and whitefish spawning. | | | NPS |
| | | | | |

Source: [1] Northwest Arctic Borough Coastal District, Coastal Management Plan, 2005

**Initial Action Description:**

1. Notifications**:** AVEC Power Plant operator notifies ADEC and the National Response Center of the spill and the NRC relays the information to the EPA.

The FOSC (EPA) will ensure the following are notified:

- ADEC Central Alaska Response Team or 24-Hour ADEC reporting contact, (ADEC also receives notification by RP). ADEC initiates notification of:
  - ADNR
  - ADF&G
  - ADMVA, DHSEM
- RRT, Regional Response Team
- NOAA SSC, Scientific Support Coordinator
- NRC, National Response Center**
- NSFCC, National Strike Force Coodinating Center**
- NPFC, National Pollution Fund Center**

Key: ** = Message Notification

2. Response Activation

- Commence with notification of all involved parties per the Response Section, providing initial situation assessment. Be brief, concise and provide specific spill information including exact location, quantity spilled, potential threat, and whether product is still being released.
- Ensure the Responsible Party (RP) is notified and responding.
- Dispatch representatives to the scene at the earliest opportunity.
- Establish contact with the responsible party ("qualified individual") as soon as possible, and preferably with an individual on scene.
- Request overflights of Kobuk River from XXXXXXX to assess condition of river ice and extent of visible oil.
- Commence activation/movement of in-house resources (State and Federal).
- Draft Initial POLREP (EPA) and SITREP (ADEC) and distribute.

3. Initial On-Scene Investigation, Inspection, Evaluation & Recommendations

- Gather information from on-scene reports, overflights and any other reliable source to document scene and develop initial response strategy.
- Issue Notice of Federal Interest and Letter of State Interest.
- Notify and consult with communities downstream.
- Evaluate current extent of oil in the river, condition of river ice and water levels, current and forecasted weather, potential of ice jam flooding and escape of oil from river corridor, sensitive areas and potential impacts, and other relevant information that might affect response decisions.
- Establish direct communication with the Incident Command Post (ICP), if it is established in Ambler. If no ICP is established, consider using EPA Emergency Response warehouse as the initial Command Post while EPA/ADEC personnel are enroute to the field Command Center in Ambler or Kotzebue.

4. Initial Response Actions

- Secure the source, if possible. Reinforce, if possible, secondary containment at tank farm, manage storm water in the containment area. Remove remaining fuel from the damaged tank.
- Secure spill area and contamination zone. Keep residents out of contaminated areas. Prevent vehicles from crossing contaminated areas.
- Deploy containment measures between the tank and riverbank – dikes, berms and dams and pits, trenches and slots to prevent additional release of oil to river. Extend and reinforcement initial containment trenches and dams constructed immediately south and east of tank farm. Construct additional measures to prevent oil from reaching surrounding tundra.
- Due to the broken ice in the river, containment boom is not recommended. Recovery tactics are also limited due to the conditions.
- Using **Unified Plan, Annex B** Implement some or all of the Incident Command Systems (ICS) principles listed below:
    - Develop a Unified Command (UC) that includes RPOSC, SOSC, FOSC and LOSC (if available).
    - Evaluate RP's capability to carry out an appropriate response.
    - Determine name of incident.
    - Determine goals and objectives
    - Determine UC staff and size- Liaison and RSC positions are critical for this region.
    - Establish an appropriate ICP to support UC activities- Plan for Nome.
    - Establish a Joint Information Center (JIC). Ensure joint website and/or appropriate local stakeholder communication plan is used to maximize information sharing.
- Utilize local knowledge, SSC and other NOAA hazmat resources as necessary to predict spill trajectory and potential impacts.
- Coordinate with NWS River Forecast Center, Army Corp of Engineers Cold Region Research and Engineering Laboratory and xxxxxxxxxxxx to assess ice jam situation and potential impacts (upstream and downstream) of ice jam flooding and ice jam release.
- Prepare initial press release with the Unified Command.
- Complete notification procedures. Include up-channel notification to include the RRT, DRG, DRAT, PIAT, MLCPAC contracting team, NPFC, and NSFCC.
- Issue Notice to Airmen, through the FAA, restricting aircraft traffic in the immediate vicinity of the incident.
- Ensure preparation of Site Safety Plan.
- Consider *in situ* burning, as alternative to mechanical response.
- Schedule routine overflights of the impacted area. Request USCG support in developing an aviation operations plan for the spill to control air traffic in the area.
- In consultation with trustee agencies, determine requirements for wildlife protection, collection, and rehabilitation.
- Determine feasibility of removal actions based on:
    - Will removal actions cause more damage to the environment than allowing the pollutant to naturally dissipate?
    - Can cleanup be initiated before the pollutant disperses, making recovery impractical?
    - Can equipment be deployed without excessive risk to the life and health of personnel?

5. Spill Response Organization

This incident is a Unified Command response, consisting of a FOSC (EPA), SOSC, LOSC and the

RP (AVEC).

A Liaison Officer will be assigned to act as a sounding board for landowners, leaseholders, affected interest groups that have no jurisdictional authority, and other interested parties. The Regional Stakeholder Committee will be formed to serve as the official stakeholder and community representative voice to the Unified Command.

6. Containment Countermeasures and Cleanup Strategies

- Secure the source, if possible. Remove fuel remaining in damaged tank to other secure tanks.
- Reconstruct and reinforce secondary containment at tank farm. manage storm water in the containment area.
- Manage storm water within in the containment area. Collected storm water will reduce overall capacity of containment area for fuel. To prevent release of an oil/water mixture, storm water removed from containment area will need to be pumped to a alternate containment area or tank.
- Deploy containment measures between the tank and riverbank, to prevent additional release of oil to river. This will utilize a combination of dikes, berms and dams and pits as well as trenches and slots.
- Due to the broken ice in the river, containment boom is not recommended. Recovery tactics are also limited due to the conditions.
- Consider *in situ* burning.
- Organize Shoreline Cleanup Assessment Teams in preparation for shoreline surveys once river is navigable.
- Ensure the wildlife protection plan is in place and trustee agencies are working closely with RP to ensure minimum impact to resources in area.
- Ensure that trustee agencies with responsibility for determining the requirement for implementation of a Federal/State Natural Resource Damage Assessment (NRDA) are notified that wildlife may be affected. The lead trustee will then coordinate the NRDA separate from the response and with funds provided by the NPFC.
- Request NOAA provide spill tracking and trajectory modeling to determine present location and path of spill. Consider spill tracking/surveillance systems; the University of Alaska Fairbanks' Synthetic Aperture Radar facility, USCG Forward Looking Infrared Radar equipped aircraft, and USCG Side Looking Airborne Radar are potential resources.
- Ice Jam Flooding Considerations: During an ice jam, water levels rise on the upstream of the jam, creating a lakelike effect. Water levels may rise above the riverbanks, allowing oil to escape the river channel area as the area is flooded. When the ice jam releases, water, upstream of the jam, drains at a high velocity. Downstream of the jam water levels should be expected to rise rapidly. Along with the high velocity water, ice blocks and sheets which accumulated at or above the jam are released. These fast-moving, very large blocks of ice can be very destructive.
    - Extreme care should be taken regarding any personnel operating downstream of an ice jam in the event of a release.
    - Sensitive Areas outside of the river channel but which may be threatened due to the ice jam flooding should be identified and plans to protect these areas established.
    - Any protection plans need to consider the potential high velocity force or water ice that occurs during a release when determining measures to protect these areas.

7. Resource Requirements

a. Equipment:
Containment and Recovery Equipment: AVEC maintains some spill response equipment to

meet federal planning equipment. This includes sorbent material, a 20 gpm portable pump, hose and an 5 KW generator, all of which would likely be in use prior to the arrival of any additional responders. The equipment required to respond to a spill of this size and the conditions exceeds this supply. Additional equipment will need to be brought.

Earthmoving Equipment: According the AVEC Tank Farm Facility Response Plant, the City of Ambler has one backhoe and one loader. It may be available for use at this time. Additional heavy equipment will be limited in size to that available for delivery by aircraft into Ambler.

Vessels, Skimmers, Boom, and other Spill Response Equipment: Due to ice conditions, the river is not navigable. Vessels, skimmers and boom cannot be utilized until ice condition change, at which time the oil is expected to have discharged downstream. If oil continues to seep into the river, from contaminated tundra, these may be utilized when the river is ice-free.

Equipment Resources: AVEC has 51 facilities throughout Alaska and an Anchorage operations base. Some additional equipment can likely be shifted from these locations. Additionally, AVEC maintains a spill response contract with Alaska Chadux Corporation (Chadux). Chadux maintains one of its 10 hubs in Nome, equipment stored at this location is listed at at http://www.chadux.com/nome.html. A list of additional equipment for the Northwest Arctic subarea is located in section B of this plan.

b. Personnel: Initial personnel activation will require several hours to days. The Northwest Arctic subarea, like much of the state, does not have a substantial cadre of HAZWOPER-trained individuals to man participate in other cleanup and response activities.

8. Resource Availability and Resource Procurement

For the purposes of this scenario, it is assumed that agreements would be reached between all involved parties (EPA, State of Alaska, Northwest Arctic Borough, AVEC, and Chadux) that would allow the resources of the spill cooperatives to be brought into the response. This assumption does not imply that such agreements are currently in place or that such agreements would be reached. All these response Co-Ops have highly organized management teams knowledgeable in the ICS structure and routinely exercise their roles as responders. A communications network is already in place and available for immediate usage.

Procuring the resources identified in this spill response is the RP's responsibility. Committing this volume of funds in a short time is essential. Failure, on the part of the RP, to quickly settle accounts payable can quickly force local businesses out of business. Experience acquired during past spills has shown that funds must be processed at a much higher than normal rate to maintain the response. If the RP's response is insufficient, EPA may issue a "Notice of Federal Assumption" and take the lead on response activities. The Oil Spill Liability Trust Fund is available to the FOSC in the event the RP is unable or unwilling to pay the costs of the spill response.

9. Shortfalls

a. Oil Spill Tactics & Technology:

(1) Oil in Broken Ice/Moving Ice: There are no effective means to contain or recovery oil in fast water with broken ice. Once oil reaches a river in this condition, little can be done short of tracking the spill trajectory to identify areas to assess the need for recovery and clean-up once river is ice-free and navigable.

(2) Oily Water vs. Product: Due to the heavy rains, it can be expected that much of the oil

recovered will be diluted and may more accurately described as oily water rather than product. This can be harder to recover. It is also harder to track the amount of product recovered.

(3) Oil in Tundra: It is difficult and problematic to recover oil from tundra. Depending on extent of contamination to tundra and type and condition of tundra (frozen vs. thawed) they techniques utilized will vary, but the impact on tundra by recovery tactics is expected to significant, at least in the short-term. The Tundra Tactics Manual addresses the considerations and options available.

b. Equipment:

Any equipment not currently located in Ambler must be transported by aircraft. Weather conditions, availability of aircraft, and the condition of the Ambler gravel runway may limit the availability of equipment.

c. Personnel (logistical/training issues):

(1) Housing – Housing is very limited in Ambler. A local lodge can accommodate 10 visitors. Additional housing space may be available from the school or city, however, these areas may also be required for command or operations centers. Several organizations in Alaska cater "field camp" setups which include housing and feeding facilities. These facilities are available in flyaway form, however the options may be limited due to the season.

Kotzebue is the nearest large community with additional housing. It is the regional hub and seat of the Northwest Arctic Borough. It is 138 miles southeast of Ambler, a flight time of 45 minutes.

(2) Food - Catering services for field personnel would likely be procured coincidentally with the remote housing units. Catering for response personnel not deployed to the field could be handled using resources within the region.

(4) Manpower and Training: Cleanup crews will require OSHA level Hazwoper training commensurate with the tasks they will be directed to perform. Volunteers will not be solicited, and individuals desiring to help will be directed to a central coordinator for hiring emergency response workers.

d. Fuel:

Fuel is available from the native corporation. Due to the season, fuel supplies may be limited and additional fuel may be required to be brought in by aircraft.

e. Transportation:

Kotzebue and Nome are the only major commercial airports located in the immediate vicinity of the spill area, and would serve as the primary logistics supply points. Equipment must be by aircraft into Ambler. Weather conditions are also a major factor in hindering air transportation for personnel and equipment. If precipitation is as significant as forecast, the condition of the runway may be compromised, as well.

f. Funding:

Funds availability and access should pose no problem regardless of the financial capabilities of the RP. If funding problems arise, the FOSC has access to the Oil Spill Liability Trust Fund and procedures are in place to make these funds available. The SOSC, in the event of a State funded response, has access to the 470 Fund and procedures are in place to make these funds available as well. If the spill is "federalized," problems have been identified regarding the payment of accounts due. The response organizations will likely be unable financially to expend the amounts of money anticipated if reimbursement occurs on a 30 day payout. Ten days, as a maximum, has been discussed as the period when receipts must be paid. Failure to pay in this time period could result in a collapse of the logistical supply line, and therefore the response. Federal contracting personnel must evaluate this requirement and determine a

feasible solution.

g. Minimum Response Times:
Estimates indicate that the RP could have additional response personnel and equipment, from outside of Ambler, on scene within 24-hours of the incident report, pending favorable weather. The response to this spill will depend heavily upon the weather.

10. Spill Cleanup Timetable

The spill response will continue until all recoverable oil is collected. Riverbank cleanup will begin as soon the river is ice-free and navigable and would likely be completed by the end of summer.

Clean-up of any lands, outside of the river course but flooded by ice jam flooding would also, likely, be completed by the end of summer. Ongoing monitoring may continue beyond this period. Depending on the extent of oil released into surrounding tundra and muskeg or to wetlands adjacent to the Kobuk River, oil may continue to leach out for an extended period of time, and would require monitoring.

11. Disposal Options

Debris disposal is the responsibility of the RP. The volume of oil contaminated debris will exceed the disposal capability of the region, unless on-site disposal methods are approved by the appropriate agencies. The RP must present a disposal plan to appropriate agencies along with necessary permits for the requested disposal plan. Disposal options for debris are limited in Alaska.

Information on waste streams and typical waste products that will be generated during a response is contained in this Subarea plan in the Response Section, Part Two and in the Unified Plan, Annex E, Appendix II. This scenario will generate a very large volume of oil contaminated equipment and recovered product. The remoteness of the region will complicate disposal and elevate the costs of handling and transportation. The availability of shipping and storage facilities make it difficult to comply with the time frames contained in hazardous waste handling regulations. The task of managing waste disposal must be approached aggressively and very early in the response. Facility/vessel owners must investigate and identify potential staging areas for contaminated debris and equipment as well as the potential for long-term storage capabilities due to severe weather preventing timely transportation disposal of accumulated waste. Also, areas designated for cleaning contaminated equipment must be able to handle the contaminated runoff.

12. Cleanup Termination

Termination of cleanup should be a joint decision by the Unified Command based on the following criteria:

a. There is no longer any visible oil (sheen, sludge, etc.) or petroleum contamination in concentrations in the soil or groundwater exceeding ADEC clean-up levels;
b. Further removal operations would cause more environmental harm than the oil to be removed; or
c. Cleanup measures would be excessively costly in view of their insignificant contribution to minimizing a threat to the public health or welfare, or the environment; and
d. Activities required to repair unavoidable damage resulting from removal actions have been performed.