



United States Air Force
15th Airlift Wing
Environmental Restoration Program

Final
PROJECT ACTIVITIES WORK PLAN
WAKE ISLAND POL INTERIM REMOVAL
ACTION
WAKE ISLAND AIRFIELD, WAKE ATOLL



APPENDIX D
Spill Prevention, Control, and
Countermeasures Plan

Contents

	Page
Acronyms and Abbreviations.....	v
1.0 Purpose	1-1
2.0 Record of Changes or Additions.....	2-1
3.0 Subfacility Description.....	3-1
4.0 Chemical Inventory	4-1
5.0 Spill and Release Scenarios	5-1
5.1 Tank and Container Leaks.....	5-1
5.2 Operational Spills	5-1
5.2.1 Fueling Operations.....	5-1
5.2.2 Drum Dispensing of Fuel	5-1
5.2.3 Portable Container Dispensing of Fuel	5-2
5.2.4 Product Recovery from Trench	5-2
5.2.5 Product Recovery from Groundwater.....	5-2
5.2.6 Filling of Portable Containers with Recovered Product	5-3
5.2.7 Storage of Portable Containers with Recovered Product	5-3
5.2.8 Spill Receptors	5-3
5.3 Operator Error During Loading/Unloading or Refueling Operations.....	5-3
5.4 Rupture of Tanks/Containers or Other Forms of Equipment Failure	5-4
5.5 Puncture of Tanks/Containers or Other Equipment by Heavy Equipment.	5-4
5.6 Small Drips, Leaks, and Spills from Lines or Valves	5-4
6.0 Spill Control Measures.....	6-1
7.0 Spill Reporting and Response.....	7-1
 Figures	
1 Project Location Map	
2 Locations of Equipment at Sites ST08 and ST09 <i>[Please note: This figure will be provided in the field and attached to this SPCC Plan.]</i>	
 Tables	
1 Product and Fuel Tanks: Spill Containment and Control Features	
2 Drum Storage Areas: Spill Containment and Control Features	
3 Other Equipment: Spill Containment and Control Features	

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Acronyms and Abbreviations

BOS	Base Operations Support
CFR	Code of Federal Regulations
DOT	U.S. Department of Transportation
gpm	gallons per minute
IRA	Interim Removal Action
IRP	Installation Restoration Program
LNAPL	light non-aqueous phase liquid
NA	not applicable or not available
O&M	operation and maintenance
OWS	oil/water separator
PAWP	Project Activities Work Plan
POL	petroleum, oils, and lubricants
SPCC	Spill Prevention, Control, and Countermeasures
UST	underground storage tank

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1.0 Purpose

The purpose of this Spill Prevention, Control, and Countermeasures (SPCC) Plan is to describe measures to be implemented by CH2M HILL Constructors, Inc. (CH2M HILL) during the Wake Island Petroleum, Oils, and Lubricants (POL) Interim Removal Action (IRA) project at Wake Atoll. These measures will prevent oil discharges from occurring and prepare CH2M HILL to respond in a safe, effective, and timely manner to mitigate the impacts of a discharge during the IRA work. This SPCC Plan meets the substantive requirements of 40 Code of Federal Regulations (CFR) 112, Subpart B.

The IRA will be conducted at four Installation Restoration Program (IRP) sites at Wake Island:

- Site ST08, JP-5/Diesel Fuel Leak
- Site ST09, Used Oil Underground Storage Tank (UST) Leak
- Site OT15, Power Plant Fuel Oil Storage Area
- Site DA44, Lagoon Transformer

Figure 1 shows the locations of these four sites. (Figures and tables referenced in this SPCC Plan are provided following Section 7.0.) Figure 2 shows the locations of equipment at Sites ST08 and ST09, including equipment referenced in this SPCC Plan. *[Please note: Figure 2 will be provided in the field and attached to this SPCC Plan.]* No fueling operations are planned for Sites OT15 and DA44 beyond incidental fueling of small portable equipment from safety cans with a volume of less than 5 gallons.

Spill containment and control features for the various kinds of equipment to be used during the IRA are indicated in Tables 1 through 3. Inspection checklists to be used during the IRA are presented in Appendix E in the Project Activities Work Plan (PAWP). Completed checklists will be maintained in project files at Wake Island.

CH2M HILL will advise the Base Operations Support (BOS) Contractor at Wake Island, Chugach Support Services, on the provisions of this plan. CH2M HILL will also obtain a copy of the BOS Contractor's SPCC Plan, and will coordinate with the BOS Contractor to respond and report discharges consistent with its SPCC Plan.

This Plan provides guidance on key actions that CH2M HILL will perform to be consistent with SPCC rules and regulations, including:

- Complete and document inspections as outlined in Section 5.2.5 and in Appendix E of the PAWP.
- Perform preventative maintenance of equipment, secondary containment systems, and discharge prevention systems as described in this SPCC Plan.

- Notify the Wake Base Commander and the Air Force and BOS Contractor of all oil and fuel spills and releases to the environment.
- Amend this SPCC Plan within six months whenever there is a change in facility design, construction, operation, or maintenance that materially affects the spill potential of CH2M HILL's remediation activities at Wake Island.
- Review this SPCC Plan on an annual basis and update the Plan to reflect any administrative changes that are applicable, such as personnel changes or revisions to contact information. Also amend this Plan to include more effective prevention and control technology, if such technology will significantly reduce the likelihood of a spill event and has been proven effective in the field at the time of review.

A current version of this SPCC Plan will be maintained by the CH2M HILL Construction Site Manager for the duration of the IRA project, and will be filed with the BOS Contractor's office.

2.0 Record of Changes or Additions

The final SPCC Plan will be designated as "Revision 0". Each time modifications to the Plan are considered or implemented, a row in the following table will be filled in and the revision number increased by one:

Date	Issuance of Revised Version of Document	Reviewer	Signature	Facility	Revision Number
	I have completed review and evaluation of the SPCC Plan for CH2M HILL on __/__/__ and [will/will not] amend the Plan as a result.				
	I have completed review and evaluation of the SPCC Plan for CH2M HILL on __/__/__ and [will/will not] amend the Plan as a result.				
	I have completed review and evaluation of the SPCC Plan for CH2M HILL on __/__/__ and [will/will not] amend the Plan as a result.				
	I have completed review and evaluation of the SPCC Plan for CH2M HILL on __/__/__ and [will/will not] amend the Plan as a result.				

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3.0 Subfacility Description

Descriptions of the sites to be addressed during the IRA are provided in the PAWP.

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4.0 Chemical Inventory

During the IRA, POL product and light non-aqueous phase liquid (LNAPL) will be recovered from the product recovery trench and the excavation area (open excavation to the groundwater) at Sites ST08 and ST09. The quantity of product that will be recovered is not known at this time. CH2M HILL will provide facilities capable of holding approximately 7,500 gallons of recovered product in a fuel bladder tank, 3,150 gallons in 350-gallon stainless-steel fuel totes, and two (2) 240-gallon carbon-steel, double-walled, skid-mounted fuel tanks, for a total estimated capacity of 11,130 gallons; and miscellaneous 55-gallon U.S. Department of Transportation (DOT)-approved drums. The recovered product is expected to contain JP-5.

Fuel will also be stored in an approved portable container on the back of CH2M HILL's and/or its subcontractor's site pickup truck(s). In addition, petroleum will be stored in approved portable containers of less than five (5) gallons of capacity for the operation of portable equipment such as generators and pumps. The fuel typically used on Wake Island is JP-5.

The maximum volumes and types of chemicals subject to this Plan and consistent with the SPCC rules are as follows:

Substance	Activity	Maximum Quantity (gallons)
Fuel/JP-5	Storage and Equipment for Fueling Operations	200 gallons
POL product recovered from contaminated groundwater	Remediation	11,130 gallons

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5.0 Spill and Release Scenarios

The potential spill events and control measures discussed in Sections 5.1 through 5.6 have been identified for response planning purposes at Wake Island.

5.1 Tank and Container Leaks

Tank and container leaks may be caused by vessel failure, piping failure, or human error. For the IRA project, CH2M HILL and its subcontractor are providing new and inspected equipment that is in excellent condition. As such, spills resulting from the lack of integrity of tanks or containers are expected to be minimal. Spill control and containment materials will be available at the work areas.

5.2 Operational Spills

The BOS Contractor is responsible for fueling CH2M HILL's and its subcontractor's heavy equipment using any related protective measures, response equipment, and spill handling procedures detailed in the BOS Contractor's SPCC Plan. CH2M HILL and its subcontractor will handle the fueling of generators, pumps, and small equipment, as well as recovered product collection and transfer operations under this SPCC Plan. Operational spills are minor spills during routine activities that include transfers to storage facilities, fueling practices, and maintenance of facility equipment. The following is a summary of fueling operations conducted by CH2M HILL and its subcontractor.

5.2.1 Fueling Operations

Up to 1 gallon of fuel could be spilled during CH2M HILL's and/or its subcontractor's fueling operations from the portable tank on the pickup truck. The control measures for eliminating and/or limiting spills are ensuring the presence of the fueling operator during all fueling operations and the use of drip pans. **Fueling nozzles will not be locked in the On or Fill position. The fueling operator will be present and involved in the oversight of all fueling operations.** Spill control and containment materials will be available at all fueling locations.

5.2.2 Drum Dispensing of Fuel

Dispensing of fuel from bung-type drums is not planned during this IRA. It is anticipated that 55-gallon open-top drums will be used for the storage of spent absorbent booms, pads, and wipes.

5.2.3 Portable Container Dispensing of Fuel

Fuel will be dispensed from approved portable containers of less than 5 gallons to portable equipment including generators, pumps, and other such items. Any spills will be minor in nature and easily controlled by the use of spill pads and wipes.

5.2.4 Product Recovery from Trench

Spills could originate from the recovery of product from the recovery trench. The skimmer product recovery system is designed to be operated automatically without attendance from an operator. The recovery tubing runs from the skimmer in the sump wells to the product recovery system (2 lines). If these lines lose suction due to line failures, this may result in a minor fuel spill (expected to be less than 1 gallon). The recovered fuel will then be pumped directly to the 240-gallon double-walled tank that also includes an automatic float and interlock to shut the system down if the tank is near full. Because of the very slow rate of product recovery, the schedule for inspections, and the float and interlock, it is unlikely that the 240-gallon tank will be filled sufficiently to overflow. **The control measures for eliminating and/or limiting spills are continued inspections of the system.**

5.2.5 Product Recovery from Groundwater

Product recovery from the groundwater surface will occur using a floating skimmer connected to a pump that discharges to an oil/water separator (OWS). From the OWS, water will be discharged back into the excavation (gravity-fed) and recovered product will be discharged to the bladder tank and/or 350-gallon fuel totes (also gravity-fed), depending on the rate of product recovery. Control measures for eliminating and/or limiting spills are:

- The bladder tank will be installed within a shallow basin containing a fuel-resistant liner as secondary containment.
- The 350-gallon totes will be filled in a secondary containment area. The totes will not be placed directly on the liner, but on pallets or dunnage to avoid damage to the liner.
- The OWS will be elevated to allow gravity discharge, but will be contained in a shallow basin or bermed area with a fuel-resistant liner for secondary containment. The secondary containment basin will be sloped to one corner for direct overflow to the excavation or overflow to the excavation through a pipe.
- Hose connections will be inspected during operations.
- The floating skimmer feed rate will match downstream system flow rates. The expected maximum skimmer flow rate is 15 gallons per minute (gpm).
- Separated water will be discharged back to the excavation, with no potential for direct discharge from the site.
- Recovered product will be discharged to the fuel bladder tank or totes, with any spills contained within the secondary containment.

- In situations where the secondary containment area overflows or flows back to the excavation, inspections will be conducted every 4 to 8 hours as determined by the Construction Site Manager.
- In situations where it is not practical to overflow the secondary containment basin to the excavation, inspections will be conducted at a frequency to allow no more than 25 to 50 percent of the containment volume to fill based on the skimmer pumping rate.

5.2.6 Filling of Portable Containers with Recovered Product

Spills could originate from the transfer of product from the bladder tank to the 350-gallon fuel totes and/or if 55-gallon drums are used. Control measures for eliminating and/or limiting spills are the use of secondary containment and full-time oversight during transfer operations as well as working in lined areas.

5.2.7 Storage of Portable Containers with Recovered Product

Spills could originate from the storage of portable containers with recovered product. All containers are designed for their intended application and will be stored on secondary containment liners as necessary and/or in intermodal shipping containers.

5.2.8 Spill Receptors

The potential causes of releases and in-place preventative controls are summarized above. Petroleum spills and releases are most likely to occur from equipment failure or operator error. In these scenarios, if a spill discharges to the ground, it would not be able to reach water because of the small size of the spill, the flat topography of the work areas, and the use of secondary containment liners and spill control equipment. The spill would also tend to stay near the point of origin. Therefore, because of the proximity of the work areas, it is unlikely that spills would be discharged or migrate to water bodies. Soil contaminated by a fuel spill will be excavated and placed in the on-island landfarm cell for treatment.

5.3 Operator Error During Loading/Unloading or Refueling Operations

The BOS Contractor is responsible for refueling CH2M HILL's and its subcontractor's heavy equipment (although the subcontractor may conduct incidental fueling from a pickup-truck-mounted tank) using any related protective measures, response equipment, and spill handling procedures detailed in the BOS Contractor's SPCC Plan. During loading and unloading activities, potential operator errors include:

- Overfilling
- Failing to disconnect lines prior to departure
- Drain valves left open

- Fill valves left open
- Failure to implement oversight of fueling operations

5.4 Rupture of Tanks/Containers or Other Forms of Equipment Failure

While the potential for such a release will always exist, it will be minimized at the CH2M HILL project sites at Wake Island by selecting storage tanks and containers that are compatible with the materials and conditions of storage and maintained to manufacturers specifications (refer to the equipment and O&M information provided in Appendix E in the PAWP). The rate and quantity of release to the secondary containment and/or the environment would be dependent on the location and nature of the failure, but could be assumed to be the total volume of the tank or container being released in 15 minutes. The associated release to the environment would be at the same rate, and the volume would be the total volume minus the secondary containment volume. To minimize the potential for a significant release to the environment, inspections and maintenance will be performed in accordance with this SPCC Plan, the PAWP, and manufacturers' instructions. Problems will be noted and addressed in a timely manner through repair, replacement, or the removal of equipment from service.

5.5 Puncture of Tanks/Containers or Other Equipment by Heavy Equipment

Heavy equipment and vehicle operators will be well trained in operating large equipment at Wake Island. Tanks will also be highly visible because of their size, signage, flagging, and/or protective paint color. In addition, all staff operating in the field during the IRA will participate in a daily Health and Safety Tailgate Meeting specific to each task being performed. Included in this meeting will be orientation to the particular location and any changes to the location of equipment and/or traffic routing. In the event of nighttime work, sufficient lighting will be provided to make tanks and other equipment visible. The rate and volume of any releases that may occur would be the same as those calculated in Section 5.4.

5.6 Small Drips, Leaks, and Spills from Lines or Valves

To minimize the potential for release, equipment will be inspected regularly in accordance with manufacturers' recommendations and the PAWP, and will be repaired in a timely manner when a problem is discovered. Release rates should be negligible and are not likely to produce significant quantities.

6.0 Spill Control Measures

The following spill control measures will be implemented as part of the IRA project:

- To the degree feasible, product recovery operations will occur in locations where secondary containment is provided.
- Fueling operations will not use nozzles that can be locked in the “On” position.
- Inspections of active operations will be conducted as described in Section 5.2.5.
- Drips and minor spills from containers will be controlled by a combination of drip trays and absorbent granules, socks, and pads.
- Oil in process equipment will be contained by integrated vessels such as gearboxes and oil reservoirs. Operators will be in attendance of process equipment when in operation and will respond to any incipient oil leaks. Any leaks from process equipment will be controlled by a combination of drip trays, absorbent granules, socks, and pads.
- Tanks will be scheduled for routine engineering inspections for reliability and integrity. Monthly SPCC inspections will be conducted of secondary containment facilities and double-walled tanks. During these routine inspections, all tank equipment components will be inspected and an assessment made of the general conditions. In addition, the outside of each container will be inspected for signs of discharges or the accumulation of oil inside diked areas. Inspection checklists are presented in Appendix E in the PAWP, and completed checklists will be maintained in the project files at Wake Island.
- Personnel will be fully trained to establish the skills needed to implement emergency procedures in case of a release to the environment. These training records will be maintained with the Health and Safety records at Wake Island.
- Absorbent pads and floor-dry absorbent will be readily available for minor spills. These materials will be disposed of in accordance with all applicable regulations.

The following is a listing of available spill control equipment:

- Super Duty Shop Towels
- Skimming sweeps
- Oil booms
- Oil-Only socks, pads, and booms
- Mats with dispensers
- Flannel and white sweatshirt rags
- Heavy-duty and all-purpose wipes
- Spill kits
- 55-gallon open-top drums for disposal of spent items

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7.0 Spill Reporting and Response

The contact list and phone numbers for the National Response Center and key individuals who will be contacted in the event of a spill are provided below.

National Response Center: 800-424-8802

Air Force Base Commander, Wake Atoll: Capt. Nicholas Musgrove, 808-424-2468, or Air Operations at 808-424-2101 – Personnel on duty 24 hours a day

BOS Contractor: Manny Ycu, Chugach Support Services, 808-424-2429

Air Force Project Manager: Jeff Klein, 808-449-1564, ext. 225

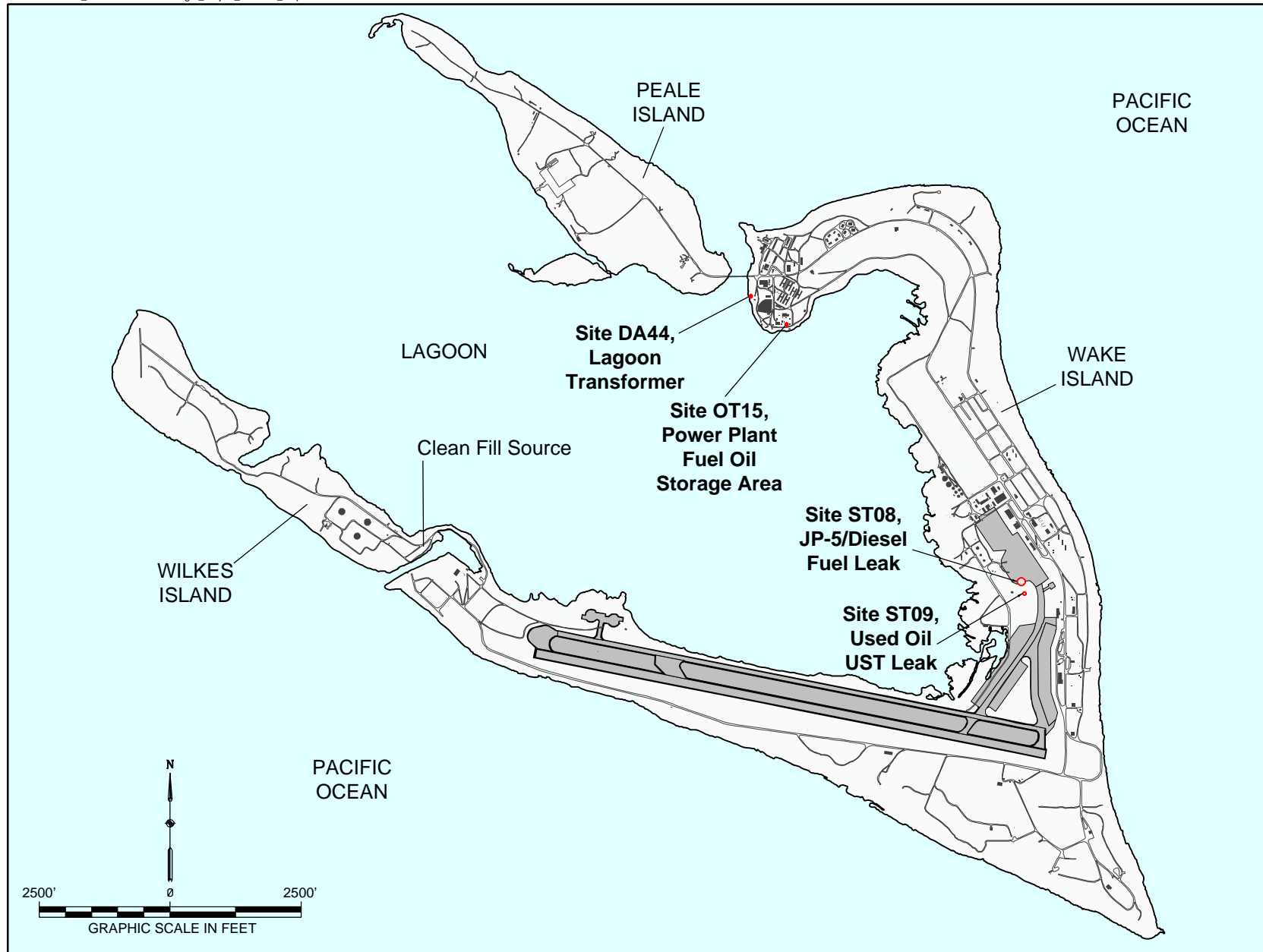
CH2M HILL Project Manager: Jay Gaudlitz, 808-943-7135; Teresa Colbert, 808-783-0044

CH2M HILL Emergency Coordinator: Bruce Hopkins, 808-943-7135 *[Please note: This is a Honolulu telephone number that will be replaced by a Wake Island number following project mobilization.]*

Information required for reporting spills to the appropriate agencies, including the National Response Center, is provided below:

- Name, location, organization, and phone number
- Name and address of the party responsible for the incident
- Time and date of the discharge
- Location of the discharge
- Source and cause of the discharge
- Type of material discharged
- Quantity of material discharged
- Danger or threat posed by the discharge
- Number and types of injuries
- A description of all affected or threatened media
- Weather conditions at the discharge location
- Any other information that may be useful to emergency personnel in responding to the incident

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Adapted from Figure 2-1 in EA Engineering, Science, and Technology, July 2006,
Final Action Memorandum for Site ST08/09, Wake Island Airfield, Wake Atoll.

Figure 1
Project Location Map
Wake Island POL Interim Removal Action, Wake Atoll

TABLE 1
Product and Fuel Tanks: Spill Containment and Control Features

Tank Identification/ Construction	Location	Type of Oil	Capacity (gallons)	Leak Detection and Inspections	Secondary Containment Structure	Secondary Containment Capacity (gallons)	Overfill Warning System or Protection	Drainage of Contained Area	Containment of Unloading Area/Where Storm Water Discharges	Rainwater Collection	Discharge Point <i>Note: Any contained oil will be removed by an oil waste service.</i>
Double-Walled Skid-Mounted Tanks	Sites ST08/ST09	Recovered JP-5	240	Visual Inspection	Double-Walled Tank	NA	Interlock to Product Recovery System	NA	NA	NA	Pump to Fuel Totes for Off-Island Recycling
Fuel Totes	Sites ST08/ST09	Recovered JP-5	350	Visual Inspection	Fuel-Resistant Liner	400+	Visual Inspection	Pump	NA	Pump	Off-Island Recycling
Drums	Sites ST08/ST09	Recovered JP-5	55	Visual Inspection	Fuel-Resistant Liner	60+	Visual Inspection	Pump	NA	Pump	Off-Island Recycling
Fuel Bladder Tank	Sites ST08/ST9	Recovered JP-5	7,500	Visual Inspection	Fuel-Resistant Liner	7,500+	Visual Inspection	Pump	NA	Pump	Transfer to Fuel Totes and/or Drums

TABLE 2
Drum Storage Areas: Spill Containment and Control Features

Containers	Location	Maximum Number of Containers Stored	Size of Largest Container (gallons)	Leak Detection and Inspections	Secondary Containment Structure	Secondary Containment Capacity (gallons)	Comments	Drainage of Contained Area/ Discharge from Area
Intermodal Shipping Containers	Sites ST08/ST09 or Location Designated by BOS Contractor	10	55	Visual Inspection	Fuel-Resistant Liner	600+		NA – Stored in Intermodal Shipping Container or Other Designated Location
Intermodal Shipping Containers	Sites ST08/ST09 or Location Designated by BOS Contractor	18	350	Visual Inspection	Fuel-Resistant Liner	600+		NA – Stored in Intermodal Shipping Container or Other Designated Location

TABLE 3
Other Equipment: Spill Containment and Control Features

Equipment	Location	Equipment Number (if applicable)	Identification and Materials of Construction	Type of Oil	Capacity (gallons)	Leak Detection and Inspections	Secondary Containment Structure	Secondary Containment Capacity (gallons)	Overfill Warning System or Protection	Spill Equipment Available In Area	Containment of Unloading Area/Where Storm Water Discharges	General Secondary Containment Rainwater Collection
Oil/Water Separator (OWS)	Sites ST08/ST09	OWS	Stainless Steel	JP-5	NA	Visual Inspection	Fuel-Resistant Liner	500+	Visual Inspection	Yes	NA	Pump