Spill Contingency Plan
Swissport Fueling, Inc.

SeaTac Jet Fuel Storage/Distribution System
Seattle-Tacoma International Airport

2350 South 190th Street
Seattle, Washington 98188
King County
(206) 246-0407

Plan Distribution List

Swissport Fueling, Inc.
Dean Williams
2350 South 190th Street
Seattle, WA 98188
2 copies, copy numbers 001 and 002

Swissport Fueling, Inc.
Tucker Cornwell
45025 Aviation Drive Suite 350
Dulles, VA 20166
1 copy, copy number 004

Port of Seattle
Stacy Fox
Seattle-Tacoma International Airport
17900 International Boulevard, Suite 402
Seattle, WA 98111
1 copy, copy number 006

NRC Environmental Services
Ross McDonald
20500 Richmond Beach Drive NW
Seattle, WA 98177
1 copy, copy number 008

Alaska Airlines
Jay Long
PO Box 68900
Seattle, WA 98168-0900
1 copy, copy number 003

Port of Seattle Fire Department
Fire Cheif
2400 South 170th Street
Seattle, WA 98158
1 copy, copy number 005

Regional Administrator
US Environmental Protection Agency
Region X
1200 Sixth Avenue
Seattle, WA 98101
1 copy, copy number 007

Copy #_____

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Swissport Fueling, Inc.

SeaTac Jet Fuel Storage/Distribution System
Seattle-Tacoma International Airport

2350 South 190th Street
Seattle, Washington 98188
King County
(206) 246-0407

Original Date of Plan: ....April 2004
Date of Last Plan Amendment:.................................. August 2012
Date of Last Plan Review:... August 2012

Updated by:
Burns & McDonnell
SINCE 1898

9400 Ward Parkway
Kansas City, Missouri
(816) 333-9400

Copy #_____

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Management Approval and Commitment of Manpower

The undersigned certifies that Swissport, contracted operator of the SeaTac Jet Fuel Storage/Distribution System, has prepared this SCP, which will be implemented in the event of fuel spills at the facility. I also certify that this SCP is in effect for the SJFSDS and Swissport personnel are trained in the implementation of this plan.

I further certify that the availability of private personnel and equipment necessary to respond, to the maximum extent practicable, to any size spill or a substantial threat of a spill is ensured by contract.

Signature below verifies acceptance of this SCP for Swissport. SJFSDS personnel when responding to fuel spills will use this SCP. The authorized SJFSDS representative who signed below has the authority to make appropriate expenditures in order to execute the provisions of this SCP.

Authorized Facility Representative: ____
Name (please type or print)

____
Title

____
Signature

____
Date

SCP Plan Review and Amendment Log

All changes to the SCP are to be recorded in sequential order in the table below. Discard all pages that have been revised and replaced.

Revision Number	Revision Date	Inserted By	Date Inserted	Revised Section Number	Revised Section Title and Purpose of Amendment	Remove Page(s)	Replace with Page(s)	Ecology Notified?
1	2-12-04	MFA	2-12-04	Entire Document	Change of Station Manager from Ed Hampton to Mike Hagen	All	All	Yes
2	4/29/04	MFA	4/29/04	Entire document	All	All	All	Yes
3	4-19-05	Swissport	4-19-06	Section 4; List of appendices Appendix E	Spill Mitigation Procedures; List of Appendices ; Appendix E Add medical facility and Safety officer information to plan per Dept. of Ecology	All	All	Yes
4	4-10-06	Swissport	4-10-06	Section 1; Introduction; 1.2 Facility Information	Changed Swissport address and phone number into a new one. Also, changed Nestor Soriano's old cell phone number into a new number. And add Dean Williams to the alternate Qls contact.	All	All	Yes
				Section 1; Introduction; 1.2 Facility Information	Changed station manager into general manager and changed Mike Hagan into Michael Hagen.	All	All	Yes
				Plan distribution List	Changed the Tank Farm address and new phone number into a new one. Mike Hagan into Michael Hagen	All	All	Yes

Revision Number	Revision Date	Inserted By	Date Inserted	Revised Section Number	Revised Section Title and Purpose of Amendment	Remove Page(s)	Replace with Page(s)	Ecology Notified?
				Section 3; Incident Command System and Response Team ;Table 3-1	Changed Mike Hagan into Michael Hagan. Also, changed Nestor Soriano's phone number into a new one. Replaced Dean Williams on Logistics from Nestor Soriano. Replaced Ross McDonald on Planning from Jim Peschell	All	All	Yes
				Figure 11-11; Tank Farm Facility Map	Revised Seatac Jet fuel Storage/Distribution System Facility Map	All	All	Yes
				Figure 11-15; Tank Farm Facility Drainage Plan	Revised Seatac Jet fuel Storage/Distribution System Facility Drainage Plan	All	All	Yes
				Figure 11-9; Tank Farm Evacuation Plan	Revised Seatac Jet fuel Storage/Distribution System Evacuation Plan	All	All	Yes
				Section 2; Notification List & Procedures; pg 2-11	Changed Mike Hagan into Michael Hagan, Also changed Michael Hagan's office number and add Dean Williams into the alternate Qls contact list.	All	All	Yes

Revision Number	Revision Date	Inserted By	Date Inserted	Revised Section Number	Revised Section Title and Purpose of Amendment	Remove Page(s)	Replace with Page(s)	Ecology Notified?
				Section 4; Spill mitigation Procedures; pg 4-7	Revised first paragraph of 4.4.2.3; Fuel receipt	All	All	Yes
5	4-28-06	Swissport	4-28-06	Section 2; Notification List and Procedures; pg 2-1	Add page reference in paragraph 2, 3, 4 and 5			
				Figure 11-10; North Refueler Loading Rack Evacuation Plan	Revised drawing of North Refueling Loading Rack Evacuation plan			
6	1/2007	BMcD	1/2007	Section 3; Incident Command System and Response Team; Table 3-1	Updated on Incident Response Team Notification List			
				Section 2; Notification List & procedures; pg 2-11	Updated on phone numbers.			
				1,4, and 7	Updated to incorporate the construction of the hydrant system and hydrant pump pad and	All	All	Yes

Revision Number	Revision Date	Inserted By	Date Inserted	Revised Section Number	Revised Section Title and Purpose of Amendment	Remove Page(s)	Replace with Page(s)	Ecology Notified?
					the demolition of the south refueler loading rack and the UAL skid.			
7	1-2-07	BMcD	1-2-07	Figures 11-1 & 11-7	Updated to incorporate the construction of the hydrant system and hydrant pump pad and the demolition of the south refueler loading rack and the UAL skid.	All	All	Yes
8	11-19-10	Nestor Soriano	11-19-10	Page 1, Plan Distribution List	Removed Mike Hagan & replaced with Dean Williams.			
				Section 1, Introduction, 1.2, Facility Information, pg. 1-4	Put in correct email domain name & replaced Mr. Hagan with Dean Williams.			
				Section 1, Introduction, 1.2 Facility Information, pg. 1-5	Revised Facility Distance to Navigable Water to 3 miles from .5 miles.			

Revision Number	Revision Date	Inserted By	Date Inserted	Revised Section Number	Revised Section Title and Purpose of Amendment	Remove Page(s)	Replace with Page(s)	Ecology Notified?
				Section 2, Emergency Notification List, 2.2, pg. 2-5	Added WUTC to Additional Resource Notifications list. Updated phone numbers.			
				Section 4, Spill Mitigation Procedures, 4.4 Spill Detection Systems, 4.4.2.2 Fuel Storage Tanks, pg. 4-7	Added EHL (Emergency High Level Alarm) after the HHL alarm.			
				Section 4, Spill Mitigation Procedures, 4.4 Spill Detection Systems, 4.4.2.3 Fuel Receipt, pg. 4-8	Changed Wonderware to Factory Tank View.			

Revision Number	Revision Date	Inserted By	Date Inserted	Revised Section Number	Revised Section Title and Purpose of Amendment	Remove Page(s)	Replace with Page(s)	Ecology Notified?
				Section 7, Hazard Evaluation & Spill Prevention Measures, 7.1, Hazard Identifica-tion pg. 7-1	Changed Quantity Stored on all tanks. Lowered tanks 108 & 109 by 4,600, tanks 110, 111, 112, & 113 by 6,000, & tanks 114 & 115 by 12,100.			
				Section 8, Spill Scenarios, 8.2 Medium Spills, pg. 8-3	Updated the stripper pump to 2-75 hp with a 2,500 gpm/pump. Rate revised to 5,000 or 300,000 gph.			
				Section 8, Spill Scenarios, 8.2 Medium Spills, pg. 8-4	Revised two skimmers to one skimmer & Access Point 4 to one on IWS.			
				Section 3, Incident Command System & Response Team, Table 3-1, Incident Response Team Notification List, pg. 3-3	Changed QI to Dean Williams.			
9	10/21/10	Nestor Soriano	5/05/11	8.3 Worst Case Spill	Performed Deployment Exercise			Yes

Revision Number	Revision Date	Inserted By	Date Inserted	Revised Section Number	Revised Section Title and Purpose of Amendment	Remove Page(s)	Replace with Page(s)	Ecology Notified?
	10/22/09	Nestor Soriano	5/05/11	8.3 Worst Case Spill	Performed Tabletop Exercise			Yes
10	3/23/11	Nestor Soriano	3/23/11	Section 3, Incident Command System & Response Team Notification List, Table 3-1, Incident Response Team Notification List, pg. 3-3, 3-4	Inserted updated ICS Team list received from NRCES 12/06/10			
11	8/23/12	BMcD	5/23/12	All – Revisions Throughout	All – Revisions Throughout	Yes	Yes	No

Section 1.0
Introduction

1.1 Objective of Plan

This Spill Contingency Plan (SCP) provides guidelines to quickly, safely, and effectively respond to spills from the SeaTac Jet Fuel Storage/Distribution System (SJFSDS). Although not required by the Washington Department of Ecology (Ecology) to maintain a SCP, a plan has been prepared as a good management practice to meet the requirements under Washington Administrative Code (WAC) 173-182. This Plan has been prepared to meet the requirements of U.S. Environmental Protection Agency (USEPA), Region 10 (40 CFR 112.20 and 112.7). Appendix A includes the letter from Ecology stating SJFSDS is not required to maintain a SCP. The sections of the SJFSDS covered under this SCP include the following:

- A Tank Farm with eight aboveground storage tanks (ASTs);
- North Refueler Loading Area;
- Hydrant system;
- Truck Off-load and Testing Area;
- Sump Tanks
- Hydrant Pump Pad;
- Inbound and Outbound Filtration Vessels ;
- Fuel Recovery system;
- Tanker Trucks;
- Transfer Pumps; and
- Emergency generator diesel tanks;
- 55-gallon drums

SJFSDS is located within the property boundaries of the Seattle-Tacoma International Airport (SeaTac International Airport) at 2350 South 190th Street, Seattle, Washington. The purpose of the facility is to receive, perform quality control checks on, remove impurities from, and distribute all the Jet A fuel required to SeaTac International Airport. The facility operates and is manned by an operator 24 hours per day. The type of oil being transferred to and from this facility is Jet A fuel, a kerosene-like mixture of hydrocarbons.

Fuel is received from the BP/Olympic Pipeline Renton Station via a dedicated 12-inch pipeline that is owned and operated by BP/Olympic. The typical jet fuel delivery rate is 4,900 gallons per minute (gpm), or approximately 7,000 barrels per hour (bbl/hr). Batches of fuel received vary in volume from 20,000 to 160,000 barrels (bbl). This fuel is stored in the Tank Farm for distribution to the hydrant system and the north refueler loading area through two 20-inch distribution pipelines. The fuel is automatically distributed to the North Refueler Loading Area and the hydrant system based on demand. (b) (7)(F) [redacted]

A site plan showing the locations of each part of the SJFSDS is presented as Figure 1-1.

The Port of Seattle (POS) owns the SJFSDS. POS has leased the SJFSDS to SeaTac Fuel Facilities, LLC (SeaTac Fuel) consortium, a limited liability corporation operated by the commercial airlines that service Seattle Tacoma International Airport. In turn, SeaTac Fuel has hired Swissport Fueling, Inc (Swissport) to manage, operate, and maintain the SJFSDS on their behalf.

The objectives of this SCP are:

- To supplement a responder's training and experience during an actual response.
- To provide for orderly and effective implementation of response actions to protect humans, natural resources, and property.
- To promote the coordination of and describe the strategy for a unified and coordinated federal, state, local, potential responsible party, response contractor, and community response to a fuel spill.

The SCP is designed to satisfy the requirements of the Oil Pollution Act of 1990, and has been prepared in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 Code of Federal Regulations [CFR] 300), Northwest Area Contingency Plan (NWACP), Central Puget Sound Geographic Response Plan (CPSGRP), and Washington Statewide Master Oil and Hazardous Substance Spill Contingency Plan. Ecology is the lead agency to oversee prevention, abatement, response, containment, and cleanup efforts with regard to a fuel spill to waters of the state. The director is the head of the State Incident Command System (ICS) in response to a fuel spill and shall coordinate the response efforts of all state agencies and local emergency response personnel. The Ecology incident commander (IC) will coordinate with other state agencies and be the principal state spokesperson in the incident command as an advocate for all state interests. If SJFSDS personnel fail to respond in a manner deemed reasonably consistent with the NCP, NWACP, CPSGRP, or this SCP, Ecology may assume the lead for part of or the entire response. Specifically, the SCP is intended to satisfy requirements of the following:

- USEPA, Region 10 (40 CFR 112.20); and

The SCP also addresses any special requirements from the following:

- POS Aviation Division;
- SeaTac International Airport Schedule of Rules & Regulations;
- King County Office of Emergency Management; and
- King County Department of Development and Environmental Services.

This SCP is intended for use as a guideline for response actions to spill incidents and to ensure consistency in response to spills. Federal and state rules require that a Responsible Party, or spiller, must be able to manage spills with a pre-designated response management organization that accommodates a unified command structure in recognition of federal, state, tribal, or local jurisdiction.

SJFSDS will co-manage spills of fuel in close cooperation with federal, state, and local officials. The U.S. Coast Guard (USCG) has authority for response efforts in the Coastal Zone, the USEPA in the inland zone, and Washington State agencies within the state boundaries. The geographic boundary of this SCP is within a 36-mile radius of the SJFSDS site, which is the calculated response planning distance. The National Response Team (NRT) consists of 15 federal agencies with responsibilities, interests, and expertise in various aspects of emergency response. The NRT is primarily a national planning, policy, and coordination body and does not respond directly to incidents. NRT assistance usually takes the form of technical advice, access to additional resources/equipment, or coordination with other Regional Response Teams (RRTs). Each RRT has federal and state representation. RRTs are planning, policy, and coordinating bodies, and may be activated during a major incident to assist with resources. They also provide guidance support and approval for pursuing certain response strategies.

The Northwest Area Committee member agencies have adopted and will manage spill incidents using the National Interagency Incident Management System (NIIMS) model ICS, which is presented in Appendix B of this SCP. All spill responses will be coordinated with POS and Ecology assistance. The relationship between federal, state, local, and the SJFSDS SCPs is presented in Figure 1-2.

One full copy of the SCP will be maintained in the main control room at the Tank Farm, which is accessible to the response team 24 hours per day, seven days per week. Another full copy will be kept in the main office. Two field documents, or Emergency Response Action Plans (ERAPs), outlining initial notification procedures and immediate response actions in the event of a product spill, will be kept with each full copy. The field document contains area-specific spill reporting requirements, notification numbers, spill detection procedures, and immediate spill response actions.

This section of the SCP contains requirements for review of the SCP, a general description of the operations of the facility, management approval of the SCP, management commitment of resources to implement the SCP, and Professional Engineer certification.

1.2 Facility Information

This section presents information required by 40 Code of Federal Regulations (CFR), Part 112.20(h)(2).

Facility Name:	SeaTac Jet Fuel Storage/Distribution System
Location:	Swissport Fueling, Inc. 2350 South 190th Street Seattle, Washington 98188 King County

	(206) 246-0407
Wellhead Protection Area:	The facility is located within the Tyee wellhead protection area. The Tyee well is installed approximately 3,360 feet south of the Tank Farm. The Facility has measures in place to protect drinking water.
Owner:	Port of Seattle 2711 Alaskan Way Seattle, Washington 98111 (206) 728-3000
Operator:	Swissport Fueling, Inc.
Lessee:	SeaTac Fuel Facilities, LLC Jay Long (206) 392-7695
Facility Principal Corporate Executive:	Dawn Oakley Swissport Fueling, Inc. 45025 Aviation Drive, Suite 350 Dulles, Virginia 20166

Qualified Individual (QI):

Dean Williams General Manager	(206) 246-0407 (office) (206) 246-0409 (fax) (253) 670-0040 (cell) (206) 988-4989 (South Ops Control Room) Dean.williams@swissport.com

Alternate QIs:

Nestor Soriano Supervisor/Trainer	(206) 246-0407 (office) (206) 246-0409 (fax) (206) 849-9692 (cell) (206) 988-4989 (South Ops Control Room) nestor.soriano@swissport.com
Tucker Cornwell Manager Environmental Compliance	(703) 742-4338 (office) (703) 742-4388 (fax) (571)-220-0866 (cell) tucker.cornwell@swissport.com

These individuals are available on a 24-hour basis and have full authority, including contracting authority, to implement removal/corrective actions.

Date of Fuel Storage Startup: December 1970

Current Operations: Jet Fuel Receiving, Storage, Dispensing

Standard Industry Classification Code: 4581

Dun and Bradstreet Number: 00-324-2013/00-877-3020

[redacted] [redacted] (b

(b) (7)(F) [redacted] [redacted]

(b) (7)(F) [redacted] [redacted]

[redacted]

Facility Distance to Navigable Water: 3 mile

Date(s) and type(s) of substantial expansion(s): Olympic Pipeline Company began operations at SJFSDS Fuel Farm in 1970. In October 1994, a pre-filter was added to the system. The north refueler loading area was constructed in 1995. Swissport took over fuel farm operations in 2002. The hydrant system and hydrant pump pad were constructed in 2005 by the POS.

1.3 Review and Record of Revisions

In accordance with 40 CFR 112.2(c)(d), a review and evaluation of this SCP is conducted at least once every five years. At this time, the SCP is formally updated and updates are submitted to the USEPA. As a function of training (see Section 9.0), the SCP is reviewed and updated annually by Swissport. The SCP will also be amended when changes occur at the SJFSDS that materially may affect the response to a worst-case discharge, including:

1. A change in the SJFSDS configuration;
2. A change in the type of fuel handled, stored, or transferred;
3. A material change in capabilities of the contracted Oil Spill Response Organization (OSRO);
4. A change in the SJFSDS spill prevention and response equipment or emergency response procedures; and
5. Any other changes that materially affect the implementation of the response plan.

Ecology and USEPA will be notified in writing as soon as possible and within 24 hours of any significant change that could affect implementation of the SCP, including a substantial decrease in available spill response equipment or personnel. Within 30 calendar days of an approved change, Swissport will distribute the amended pages of the SCP to USEPA, and other plan holders. Every five years, the SCP will be submitted for reapproval unless Swissport submits a letter requesting that Ecology review the SCP already in Ecology's possession. Swissport will submit the SCP or such a letter at least 65 calendar days in advance of the SCP expiration date.

Each review or amendment to the SCP Plan will be documented in the *Review and Amendment Log* located on page ix. Documentation shall include a summary of the review or amendment, the number, date, and plan sections affected by the review or amendment, and the name and signature of the person completing the review or amendment.

Section 2.0 Notification List and Procedures

2.1 Emergency Prioritized Information and Notification Procedures

The notification sequence for a spill is as follows:

- If any SJFSDS employee, or first responder, discovers any condition that could adversely affect the safe operation of the fuel system, the operator will immediately report the condition to the QI unless immediate action is required to protect life, health, environment, or safety, in which case the employee shall take appropriate action. If reported to the QI, the QI will make the determination regarding shutdown of the SJFSDS. If the QI is unavailable, then the alternate QIs should be contacted. If none of the QIs are available, the first responder should make the call.

- As required by law, all spills of fuel into navigable waters must be immediately reported to the National Response Center (NRC). The NRC will contact appropriate local U.S. Coast Guard (USCG) or USEPA offices. The QI will make this phone call. If the QI is not available, the supervisor or other alternate QI will make the required notifications. If none of the QIs are available, the first responder should make the call.

- As required by law, the Washington State Military Department Emergency Management Division (EMD) must immediately be notified of all spills, whether on land or on water. The QI will make this phone call. If the QI is not available, then one of the alternate QIs will make this call. If none of the QIs are available, the first responder should make the call.

- The POS Fire Department and Swissport Corporate must immediately be notified of all spills, whether on land or on water. The QI will make this phone call. If the QI is not available, the supervisor or other alternate QI will make the required notifications. If none of the QIs are available, the first responder should make the call.

- The QI, in conjunction with taking steps to mitigate the spill or release, will notify the entities listed in the additional notification list provided in Section 2.2. The QI will use discretion in deciding which entities need to be notified. The priority of additional notifications will depend on actual circumstances and will be determined by the QI. If the QI is not available, one of the two alternate QIs will act in his place.

In the event of a spill, information summarized on the Spill Response Notification Form, provided in Appendix C, should be collected for notification. However, notification should not be delayed for the sake of collecting all information. All information must be documented using the Spill Response Notification Form. Information given to entities notified should include:

- Address or location of facility and phone number of facility;
- Reporter's name and contact number;
- Responsible party name;
- Date and time of spill;
- Location of spill;
- Type and quantity of spill;
- Source of where spill is coming form;
- Affected media;
- Actions that have been taken, including whether the spill has been stopped or contained;
- Cause of spill;
- Potential environmental damages or injuries;
- Whether evacuation may be needed;
- Who has already been notified of the spill; and
- Weather conditions.

All operators at the facility will undergo response training, in which they will learn how to properly and efficiently carry out agency notification procedures. This training program is outlined in Section 9.2.

2.2 Emergency Notification List

Required Notifications

As required by law, all spills of fuel into navigable waters must immediately be reported to the NRC. The NRC will contact appropriate local U.S. Coast Guard or USEPA offices.

National Response Center
1-800-424-8802 or
1-202-267-2675

As required by law, all spills of fuel must immediately be reported to the Washington State EMD, whether on land or on water, regardless of volume.

Washington Military Department Emergency Management Division
24-hour Emergency Spill Response
1-800-258-5990 or
1-800-OILS-911

As required by law, all spills of fuel into Washington State waters must be reported to the appropriate Ecology regional office. The Ecology regional spill reporting number is provided below:

- **Northwest Regional Office: (425) 649-7000 (Island, King, Kitsap, San Juan, Skagit, Snohomish and Whatcom counties)**

In addition, the POS Fire Department must immediately be notified of all spills, whether on land or on water (call 911)

Port of Seattle Fire Department
911 or
1-206-433-4654

The QI or one of the alternate QIs must immediately be notified of all spills, whether on land or on water. These individuals are available on a 24-hour basis and have full authority, including contracting authority, to implement removal/corrective actions.

Qualified Individual
Dean Williams
1-206-246-0407 (office)
1-253-670-0040 (cell)

Alternate QIs	**Alternate QIs**
Nestor Soriano	**Tucker Cornwell**
1-206-246-0407 (office)	**1-703-742-4338 (office)**
1-206-849-9692 (cell)	**1-571-220-0866 (cell)**

Additional Resource Notifications

The following list identifies the names and phone numbers of the organizations and personnel that may need to be notified in the event of a fuel spill. The QI shall use discretion in deciding which entities need to be notified.

Date of Last Update: May 2012

1. Spill Response Contractor, NRC Environmental Services: 1-206-607-3000

	To office 1-800-33SPILL After hours
2. Port of Seattle Operations:	1-206-787-3000
3. Washington State Department of Ecology:	1-425-649-7000
4. Washington Dept. of Fish/Wildlife:	1-425-775-1311
5. USCG Marine Safety Office, Puget Sound, Seattle:	1-206-217-6231
6. USEPA Region 10:	1-206-553-1264
7. King County Emergency Management (LEPC):	1-206-296-3830
8. BP/Olympic Renton Control Center (Receiving Pipeline):	1-888-271-8880
9. Police Department:	911
10. Ambulance:	911
11. Hospitals:	
Harborview Medical Center:	1-206-744-3000
Overlake Hospital:	1-425-688-5000
Swedish Medical Center:	1-206-386-6000
Virginia Mason Hospital:	1-206-624-1144
12. Poison Control Center:	1-800-222-1222
13. Local Water Supply System:	1-206-684-3000
14. Western Regional Climate Center:	1-775-674-7010
15. Industrial Wastewater System (IWS) Operations:	1-206-431-5911
16. Maintenance Duty Officer:	1-206-787-5406
17. Midway Sanitation District	1-206-824-4960 1-206-824-2760 Treatment Plant
18. Des Moines City Parks	1-206-870-6527
19. Tyee Golf Course	1-206-878-3540

20. Local TV Stations

KING5	1-800-45-NEWS-5
KOMO4	1-TV-TIPS-KOMO
KIRO7	1-206-728-7777
Q13	1-206-674-1313

21. Local Radio Stations

KIRO 710 AM	1-206-726-5476
KKMO 1360 AM	1-206-269-6263
KOMO 1000 AM	1-TV-TIPS-KOMO
KVI 570 AM	1-888-312-5757
KPLU 88.5 FM	1-253-535-7758
KUOW 94.9 FM	1-206-543-2710

22. Washington Utilities and Transportation Commission (WUTC) 1-800-424-8802 NRC
1-888-321-9146

2.3 Agency Notification Requirements

2.3.1 Reporting to National Response Center

The NRC must immediately be notified of any non-permitted fuel discharge to the environment. Information that must be given at the time of the call includes the following:

- Name and address of the operator.
- Name and telephone number of the reporter.
- Location of the release.
- Time of the release.
- Fatalities and personal injuries, if any.
- All other significant facts known by the operator that are relevant to the cause of the release or extent of the damages.

2.3.2 Reporting to Washington Emergency Management Division

All releases of fuel (any quantity) into state waters or the environment must be reported. The report shall include:

- Names of reporting party and company.
- Contact phone numbers.
- Material, quantity, concentration, and location of spill.
- Cleanup status.

- Responsible party.

2.4 Logistical Resources

Treatment, storage, and disposal facilities:

PRS Group 3303 Taylor Way Tacoma, WA 98402	(253)-383-4175
Clean Harbors 19320 Des Moines Memorial Drive SeaTac, WA 98148	800-645-8265 (24-hr)

Hospitals:

Harborview Medical Center:	1-206-744-3000
US Healthworks:	1-206-575-3136
Overlake Hospital:	1-425-688-5000
Swedish Medical Center:	1-206-386-6000
Virginia Mason Hospital:	1-206-624-1144
Group Health:	1-206-901-2400

Lodging and Command Post:

Holiday Inn SeaTac 17338 Pacific Hwy South SeaTac, WA 98188	1-206-248-1000
Radisson Hotel 17001 Pacific Hwy S Seattle, WA 98188	1-206-244-6666
Seattle Airport Hilton 17620 Pacific Hwy South Seattle, WA 98188	1-206-244-4800

Rental Equipment:

United Rental 3400 Lind Avenue Southwest Renton, WA 98055	1-425-656-5940
Hertz Equipment Rental Corporation	(206) 241-9255

12900 48th Avenue South
Seattle, WA 98168

NRC, Environmental Services (206) 607-3000
9520 10th Ave. S. Suite 150
Seattle, WA 98108

Additional resources can be found in the NWACP.

Section 3.0
Incident Command System and Response Team

3.1 Incident Command System

Spill incidents that occur at the SJFSDS will be managed using the NIIMS model ICS, which is presented in Appendix B of this SCP. This system allows for complex responses that cross-jurisdictional boundaries or involve multiple agencies with geographic or functional jurisdiction to function as a team with a common set of incident objectives and strategies. This organizational structure is known as a Unified Command. The Unified Command will incorporate both state and Federal On Scene Coordinators (FOSCs) in the decision making process. Actual Unified Command makeup for a specific incident will be determined on a case-by-case basis, taking the following into account:

- Specifics of the incident;
- Determinations outlined in the NWACP and/or CPSGRP; or
- Decisions reached during the initial meeting of the Unified Command.

The makeup of the Unified Command may change as an incident progresses, to account for changes in the situation.

The functions of the Unified Command and Command Staff must be accomplished during an incident; however, they can be performed by one individual or can be expanded, as needed, into additional organizational units with appropriate delegation of authority. Dean Williams, the SJFSDS QI, can be replaced only by another QI.

The QI's duties include assessing the spill, making all notifications, commanding the response efforts, and updating the UC during response efforts. The QI coordinates all personnel and contractors responding to the spill. The QI also holds meetings with the UC to inform all parties of the response efforts and status of spill cleanup.

Additional information regarding the ICS and Unified Command is presented in the USCG Oil Spill Field Operations Guide (FOG) ICS-OS-420-1, including, but not limited to, the following:

- Detailed descriptions of ICS structure;
- Job and task descriptions; and
- Organizational charts.

3.2 Incident Response Team

All response activities will involve coordination between SJFSDS, the POS, the POS Fire Department, Ecology, Oil Spill Response Organization (OSRO) personnel and any other entities deemed appropriate by the QI. The Incident Response Team is composed primarily of Swissport and OSRO personnel. A copy of the contract for emergency response and Incident Command services between Swissport and the emergency response contractor is provided in Appendix D. As Swissport gains experience through spill program drills, Swissport personnel will replace the emergency response contractor personnel in the Incident Response Team. Swissport personnel and volunteers will not be used during cleanup response efforts.

Using the ICS, the Incident Response Team will develop strategies and priorities for response, supervise contractors, handle safety and security matters, and provide logistics support for contractor personnel. The Incident Response Team is staffed to provide response capability for minor spills and to initiate response operations for larger spills. A minimum of one Swissport employee is at the SJFSDS 24 hours per day, seven days per week, and is available for immediate response.

Job descriptions for each Incident Response Team member are provided in the USCG FOG document. The Incident Response Team will train by participating in exercises as described in Section 9.0.

The QI will be responsible for contacting and assembling the Incident Response Team. The QI will contact the POS Airport Media Officer (Bob Parker, (206) 439-7725) to handle media communications. Response Team personnel will not release any information to the media. The Incident Response Team can be contacted and assembled within one hour. A notification call out list for the Incident Response Team is provided in Table 3-1. An incident organization chart is provided in Figure 3-1. The QI will contact POS and Swissport Corporate.

Table 3-1. Incident Response Team Notification List

POSITION	PRIMARY	TELEPHONE	ALTERNATE/OVERSIGHT	TELEPHONE
INCIDENT COMMANDER				
QI/Incident Commander	Dean Williams	(253) 670-0040	NRCES Employee	(206) 730-3118
Deputy/Command Staff	NRCES Employee	(206) 730-3118	NRCES Employee	(206) 423-1857
Information Officer	NRCES Employee	(503) 283-1150	NRCES Employee	(206) 730-3993
Liaison Officer	NRCES Employee	(206) 607-3000	NRCES Employee	(206) 730-7071
Safety Officer	Nestor Soriano	(206) 849-9692	NRCES Employee	(206) 607-3000
OPERATIONS				
Operations Section Chief	Dean Williams	(253) 670-0040	Rachel Drummond	(206) 849-9692
Staging Area Manager	NRCES Employee	(206) 607-3000	NRCES Employee	(206) 607-3000
Emergency Response	NRCES Employee	(206) 607-3000	NRCES Employee	(206) 607-3000
Recovery & Protection	NRCES Employee	(206) 607-3000	NRCES Employee	(206) 607-3000
On-Water Recovery & Protection	NRCES Employee	(206) 607-3000	NRCES Employee	(206) 607-3000
On-Shore Recovery & Protection	NRCES Employee	(206) 607-3000	NRCES Employee	(206) 607-3000
Disposal/Decon	NRCES Employee	(206) 730-2907	NRCES Employee	(206) 607-3000
Air Operations	Kenmore Air	(800) 543-9595	Aero Copters, Inc	(206) 763-2177
Fire Suppression	POS Fire Department	(206) 433-5327	POS Fire Department	(206) 433-5327
Wildlife	Focus Wildlife / WDFW	(206) 607-3000	Focus Wildlife (WDFW)	(206) 607-3000
PLANNING				
Planning Section Chief	Nestor Soriano	(206) 849-9692	NRCES Employee	(206) 607-3000
Situation	NRCES Employee	(206) 607-3000	NRCES Employee	(206) 607-3000
Resources	NRCES Employee	(206) 607-3000	NRCES Employee	(206) 607-3000
Environmental	State Trustee	(425) 649-7000	State Trustee	(425) 649-7000
Demobilization	NRCES Employee	(206) 607-3000	NRCES Employee	(206) 607-3000
Documentation	NRCES Employee	(206) 607-3000	NRCES Employee	(206) 607-3000
Technical Specialists	As necessary		As necessary	
Legal	NRCES Employee	(206) 607-3000	NRCES Employee	(206) 607-3000
• Disposal	NRCES Employee	(206) 607-3000	NRCES Employee	(206) 607-3000
• Wildlife	Focus Wildlife/State/Fed	(206) 607-3000	Focus Wildlife/State/Fed	(206) 607-3000

Table 3-1. Incident Response Team Notification List (continued)

POSITION	PRIMARY	TELEPHONE	ALTERNATE/OVERSIGHT	TELEPHONE
LOGISTICS				
Logistics Section Chief	NRCES Employee	(206) 730-3125	NRCES Employee	(206) 730-5444
Service	NRCES Employee	(206) 607-3000	NRCES Employee	(206) 607-3000
Support	NRCES Employee	(206) 607-3000	NRCES Employee	(206) 607-3000
FINANCE / ADMINISTRATION				
FA Section Chief	Kenan Chu	(206) 849-9685	NRCES Employee	(206) 786-1159
Time	NRCES Employee	(206) 607-3000	NRCES Employee	(509) 536-5960
Procurement	NRCES Employee	(509) 993-8408	NRCES Employee	(206) 546-7150
Compensation / Claims	NRCES Employee	(206) 546-7160	NRCES Employee	(206) 613-2539
Cost	NRCES Employee	(206) 607-3000	NRCES Employee	(206) 546-7150

Section 4.0
Spill Mitigation Procedures

4.1 Safety

The response procedures discussed in this section must be performed with safety in mind. Secondary considerations are impacts to the environment. Personal safety should never be compromised when responding to fuel spills.

Within the confines of every fuel spill there is an area where fuel and air have combined to form an explosive mixture. The only element necessary to provide ignition is a spark. Every spill, no matter how small, should be treated as a potential fire source and should be investigated to determine the cause and the remedial actions necessary.

Fuel fumes are heavier than air and will seek the lowest level and remain there until dispersed. This should be kept in mind when implementing a spill response action plan. The emergency response contractor will have equipment on site during a spill response to monitor fuel fumes in air. The air monitoring devices will measure air conditions for safe breathing and explosive atmosphere.

When there is doubt about the severity of the fuel spill or how the spill should be cleaned up or rendered safe, from both the safety and ecology standpoint, the POS Fire Department will be contacted immediately for assistance.

A copy of the Material Safety Data Sheet for Jet Fuel is provided in Appendix E.

An ICS Compatible Site Safety and Health Plan is provided in Appendix F and should be used for all spill responses. The ICS Compatible Site Safety and Health Plan is designed for safety and health personnel who use the ICS. It is intended to meet the requirements of the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulation (Title 29, CFR, Part 1910.120). The plan avoids the duplication found between many other site safety plans and certain ICS forms. It is also in a format familiar to users of ICSs. Although designed primarily for oil and chemical spills, the plan can be used for all hazard situations.

None of the hospital emergency rooms in the greater Seattle area are equipped to handle contaminated patients (i.e., patients that are covered in jet fuel). Injured persons must be decontaminated before transportation to a hospital (see Section 6.0 for decontamination procedures). If this is not possible, the hospital must be notified beforehand (see Section 2.2, Notification List) that a contaminated patient will be arriving. The hospital will need to be informed of the type of contamination and the proper handling procedures (see Appendix F, Site Safety and Health Plan).

4.2 Immediate Actions for All Spills

1. Locate and stop the source of the spill and if safe close valves upstream and downstream of the spill.

2. Activate alarm system with one of the emergency stop switches located at:

   a. CONTROL ROOM PANEL
   b. ENTRANCE TO FACILITY
   c. REFUELER LOADING AREA
   d. EVERY GATE ALONG HYDRANT SYSTEM

3. Shut off ignition sources. Do not operate electrical equipment located in the spill area.

4. Evacuate personnel, if necessary (See Figures 11-6 through 11-7).

5. Perform initial assessment. Contain the spill if possible. Prevent fuel from reaching utility manholes. Estimate the spill quantity, the wind direction, and if contained if there is impacted soil.

6. Follow notification procedures outlined in Section 2.0. Notify the POS Fire Department.

7. The QI will check the status of the spill and mobilize staff to establish initial incident objectives.

8. Conduct a safety meeting and initiate the plan.

9. Initial assessment by Safety Officer and Logistic Section Head set up command post.

10. Initiate initial cleanup deployment.

11. Start putting system back in service if POS Fire Department determines it is safe.

12. The spill contractor establishes zones and starts clean-up. After clean-up, demobilization, and clean-up of equipment.

13. QI debriefing.

A spill response checklist is provided in Section 5.2. A Spill Report and an Environmental Incident Report need to be filled out and submitted to proper Swissport personnel for every spill (see Appendix C). The spill response actions are completed in accordance with Swissport Local Procedures which are included in Appendix G.

4.3 Immediate Actions for Specific Spill Sources

A list of response equipment and personnel that will be used during the following response actions is provided in Section 10.

4.3.1 Refueler Loading Area

(I) Hose Rupture

a. If safe close valves upstream and downstream of the hose.
b. Activate Emergency Fuel Shut Off (EFSO).
c. Shut off ignition sources.
d. Position barricades to prevent other vehicles from entering the spill area.
e. Follow notification procedures outlined in Section 2.0.
f. Mobilize staff and conduct emergency shutdown procedure if required
g. Conduct safety meeting.
h. Conduct initial site assessment
i. Establish command post
j. Initiate the plan.
k. Check that the IWS catch basin is accepting spilled fuel. Redirect or pond fuel to prevent it from entering storm water manholes, using booms, sorbents, sandbags, etc.
l. Clean up residual spilled fuel with sorbents. If possible, dig up and place fuel-impacted soil on visqueen or in an appropriate container (e.g., 55-gallon drum, roll-off bin).
m. Containerize, or stockpile on visqueen, used sorbents for disposal.
n. Clean all shovels and brooms with clean water, drain, and rinse into IWS catch basin.

(II) Refueler Overfill

a. If safe close valve upstream of hose and input valve on refueler.
b. Activate EFSO.
c. Shut off ignition sources.
d. Position barricades to prevent other vehicles from entering the spill area.
e. Follow notification procedures outlined in Section 2.0.
f. Mobilize staff and conduct emergency shutdown procedure if required
g. Conduct safety meeting.
h. Conduct initial site assessment
i. Establish command post
j. Initiate the plan.
k. Check that IWS catch basin is accepting spilled fuel. Redirect or pond fuel to prevent it from entering storm water manholes, using booms, sorbents, sand bags, etc.
l. Clean up residual spilled fuel with sorbents. If possible, dig up and place fuel-impacted soil on visqueen or in an appropriate container (e.g., 55-gallon drum, roll-off bin).
m. Containerize, or stockpile on visqueen, used sorbents for disposal.

n. Clean all shovels and brooms with clean water, drain, and rinse into IWS catch basin.

(III) Tank Rupture

a. If safe close all upstream and downstream valves.
b. Activate EFSO.
c. Shut off ignition sources.
d. Surround spill area with sorbent boom to contain fuel in refueler loading area.
e. Position a barricade and evacuate all nonessential personnel from the area.
f. Follow notification procedures outlined in Section 2.0.
g. Mobilize staff and conduct emergency shutdown procedure if required
h. Conduct safety meeting.
i. Conduct initial site assessment
j. Establish command post
k. Initiate the plan.
l. Check that IWS catch basin is accepting spilled fuel. Redirect or pond fuel to prevent it from entering storm water manholes, using booms, sorbents, sand bags, etc.
m. Clean up residual spilled fuel with sorbents. If possible, dig up and place fuel-impacted soil on visqueen or in an appropriate container (e.g., 55-gallon drum, roll-off bin).
n. Containerize, or stockpile on visqueen, used sorbents for disposal.
o. Clean all shovels and brooms with clean water, drain, and rinse into IWS catch basin.

(IV) Equipment or Piping Failure

a. If safe close all upstream and downstream valves to isolate the area of the failure.
b. Activate EFSO.
c. Shut off ignition sources.
d. Position a barricade to prevent vehicles from entering the spill area.
e. Follow notification procedures outlined in Section 2.0.
f. Mobilize staff and conduct emergency shutdown procedure if required
g. Conduct safety meeting.
h. Conduct initial site assessment
i. Establish command post
j. Initiate the plan.
k. Place sorbents and booms around the spill area for containment.
l. Check that IWS catch basin is accepting spilled fuel. Redirect or pond fuel to prevent it from entering stormwater manholes, using booms, sorbents, sand bags, etc.
m. Clean up residual spilled fuel with sorbents. If possible, dig up and place fuel-impacted soil on visqueen or in an appropriate container (e.g., 55-gallon drum, roll-off bin).
n. Containerize, or stockpile on visqueen, used sorbents for disposal.
o. Clean all shovels and brooms with clean water; drain, and rinse into IWS catch basin.

4.3.2 Storage Tanks

(I) Tank Overfill

a. Activate EFSO to stop the airport supply pumps and if safe close the manifold valves.
b. Remove all nonessential personnel from containment area.
c. Shut off ignition sources.
d. Follow notification procedures outlined in Section 2.0.
e. Mobilize staff and conduct emergency shutdown procedure if required.
f. Conduct safety meeting.
g. Conduct initial site assessment.
h. Establish command post
i. Initiate the plan.
j. Open tank inlet valve and manifolded valve of the opposite header (header 1 is used to receive fuel to Tank 108 and Tank 109. Header 2 is used to receive fuel to Tank 111, Tank 114, and Tank 115. This will divert fuel to the opposite header and tanks).
k. Open inlet valve of the other tank on the same header. This will lower the level of the overflowed tank and gravity transfer fuel to the other tank with lower level.
l. Gravity transfer fuel until the alarm is cleared.
m. Check to ensure that spilled fuel is not leaving the bermed containment area.
n. Do not allow fuel to enter Des Moines Creek. If fuel enters Des Moines Creek, immediately deploy a containment boom to prevent fuel from traveling downstream.
o. Start putting system back in service if POS Fire Department determines it is safe.
p. The spill contractor establishes zones and starts clean-up. After clean-up, demobilization, and clean-up of equipment.
q. QI debriefing.

(II) Tank Rupture

a. Activate EFSO to stop the airport supply pumps and if safe close the manifold valves.
b. Remove all nonessential personnel from containment area.
c. Shut off ignition sources.
d. Follow notification procedures outlined in Section 2.0.
e. Mobilize staff and conduct emergency shutdown procedure if required.
f. Establish initial incident objectives.
g. Conduct safety meeting.
h. Establish command post.
i. Initiate the plan by isolating the tank and checking the integrity of the other tanks.
j. Check to ensure that spilled fuel is not leaving the bermed containment area.
k. Do not allow fuel to enter Des Moines Creek. If fuel enters Des Moines Creek, immediately deploy a containment boom to prevent fuel from traveling downstream.
l. Start putting the hydrant system back in service if POS Fire Department determines it is safe.
m. The spill contractor establishes zones and starts clean-up. After clean-up, demobilization, and clean-up of equipment.
n. QI debriefing.

(III) Equipment or piping failure

a. Isolate area of failure to stop fuel flow.
b. Activate EFSO to stop the airport supply pumps and if safe close the manifold valves.
c. Shut off ignition sources.
d. Small spills can be cleaned up immediately using sorbents. If possible, dig up and place fuel-impacted soil on visqueen or in an appropriate container (e.g., 55-gallon drum, roll-off bin).
e. Follow notification procedures outlined in Section 2.0.

4.3.3 Equipment and Piping

(I) Equipment or piping failure

a. If safe close valves upstream and downstream of failure to stop fuel flow.
b. Activate EFSO to stop the airport supply pumps and if safe close the manifold valves.
c. Contain spill using sorbents, booms, sand bags, etc.
d. Small spills can be cleaned up immediately using sorbents. If possible, dig up and place fuel-impacted soil on visqueen or in an appropriate container (e.g., 55-gallon drum, roll-off bin).
e. Follow notification procedures outlined in Section 2.0.

4.3.4 Hydrant Cart & Trucks

(I) Overfill

a. Release deadman to shut off release.
b. Activate the EFSO to stop the airport supply pumps and if safe close the manifold valves.
c. Position barricades to prevent other vehicles and/or airplanes from entering the spill area
d. Follow notifications procedures outlines in Section 2.0.
e. Check that IWS catch basin is accepting spilled fuel. Redirect or pond fuel to prevent it from entering storm water manholes using booms, sorbents, sandbags, etc.
f. Clean up residual spilled fuel with sorbents. If possible, dig up and place any fuel-impacted soil on Visqueen or in an appropriate container (e.g. 55-gallon drum or roll-off bin).
g. Containerize or stockpile Visqueen and/or used sorbents for disposal.
h. Clean all shovels and brooms with clean water, drain, and rinse into the IWS catch basin.

4.4 Spill Detection Systems

This section presents information required by 40 CFR, Part 112.20(h)(6). This section presents a detailed description of the procedures and equipment used to detect fuel leaks and spills. A section on spill detection by SJFSDS personnel and a discussion of automated spill detection are included.

4.4.1 Discharge Detection by SJFSDS Personnel

If any SJFSDS employee discovers any condition that could adversely affect the safe operation of the fuel system, the operator will immediately report the condition to the supervisor unless immediate action is required to protect life, health, environment, or safety, in which case the employee shall take appropriate action. If reported to the supervisor, the supervisor will make the determination regarding shutdown of the SJFSDS. The supervisor will then contact the station manager. Operations that are conducted outside of the tank farm require the fuel operator to carry a radio or Swissport-issued cellular phone. Daily inspections of the SJFSDS are made at the beginning of each workday, including weekends and holidays. The SJFSDS is manned 24 hours per day, seven days a week. Maintenance and inspection records are maintained at the SJFSDS and are available for review by regulatory agencies. Records are maintained for the life of the system. Additional information regarding SJFSDS inspections is provided in the SJFSDS Terminal Operators Guide.

4.4.1.1 Daily Inspections

Inspections are made at the beginning of each workday. All findings are recorded on standard inspection forms, which are presented in Appendix H. The following leak-detection items are included in the daily inspection:

- Under normal flow conditions, the differential pressure of all filters is checked and recorded.
- Aboveground piping, meters, valves, tanks, and pumps are visually inspected for leaks.
- The condition of storage facility security fencing and containment berms is visually inspected.
- Static grounding cables and clamps are checked, as well as the condition of fuel hoses, swivels, and nozzles.

4.4.1.2 Monthly, Quarterly, and Annual Inspections

Monthly, quarterly, and annual inspection findings are recorded on the standard inspection forms provided in Appendix H. The following leak detection items are included in the monthly, quarterly, and annual inspections as noted:

- Weekly leak testing of the hydrant system is completed by an automated system designed by Hansaconsult. These tests are submitted as a monthly report.
- Filtration tests and ground cable continuity tests are completed monthly.
- Nozzle screens, signs and placards, fire extinguishers, and floating suctions are inspected monthly.
- All low-, high-, high-high-, and emergency high-level alarms are tested quarterly.
- The EFSO are tested monthly for each section, and semi-annually for all EFSO.
- Storage tanks are opened and the interiors inspected annually.

- The accuracy of pressure gauges that monitor fuel pressure differentials at filter vessels is checked annually and the gauges are calibrated, as necessary.
- Filter elements, filter heaters, tank vents, cathodic protection, and line strainers are inspected annually.

4.4.1.3 Appurtenance Tank Testing

Appurtenance testing is conducted in accordance with API 653 on all ASTs every five years.

4.4.1.4 Fuel Storage Tanks

Fuel storage tanks are protected from corrosion with an impressed cathodic protection system supplied by rectifiers. The cathodic protection system at the Tank Farm prevents corrosion of the registered underground 238-barrel product sump tank and all aboveground storage tanks. The underground storage tank system is tested annually for cathodic protection by Norton Corrosion Limited (NCL). The annual cathodic inspections and certifications are included in Appendix I. In addition to cathodic protection, the underground storage tank is tested monthly for tightness and recorded in the fuel system operation. This test performed by an automated system designed by Hansaconsult.

Leak detection consists of daily inventory reconciliation.

The Operator tests and records the gravity and temperature of the fuel on a daily basis. The fuel gravity is corrected to 60 degrees Fahrenheit. The corrected gravity is used by the Operator to determine the net disbursement to the suppliers. The Operator tests and records the daily tank temperatures to determine the correction factor for net tank inventory.

All storage tanks are hand-gauged daily, before midnight, using measuring equipment in good condition. The gauging consists of measuring the actual level, API gravity, and temperature of the fuel tanks. The refueler loading areas remain idle during the reconciliation. A disbursement accumulation report is run as described in Section 4.4.2.3.

4.4.1.5 Fuel Receipt

The operator manually and electronically gauges the storage tank designated to receive fuel at least one hour before the receipt of fuel. The intent is to verify that sufficient storage space exists in the tank for the amount of fuel to be received. Prior to receipt, the receiving tank is checked to ensure that the sump is free of water or other contaminants. The valves on the receiving tank are placed in the proper position for receipt of fuel. Under no circumstances is it acceptable to receive and dispense fuel from the same tank simultaneously. Before receipt of fuel, BP/Olympic Pipeline is contacted to verify the correct destination, grade of fuel, and volume to be delivered. After delivery of the fuel is completed, the receiving tank inlet valve is closed and all other valves are returned to their proper positions.

4.4.2 Automated Spill Detection

4.4.2.1 Secondary Containment/Storm Water Containment

Storm water in the tank farm flows to an underground sump at the southwest corner of the tank farm. This underground sump is located in the Containment Building. Storm water discharge from the Containment Building is operated by the POS. The system has transfer pumps that discharge the storm water in the sump to the IWS. The sump is equipped with a float switch that activates a pump to discharge water through the piping system to the IWS. The system is equipped with a fuel sensor that will shut off the pump if fuel enters the sump. If fuel is detected, the POS and Swissport receive an alarm. To release impacted waters, an operator will arrive at the facility to manually start the pumps.

4.4.2.2 Fuel Storage Tanks

The tanks are equipped with the following:

- Automatic tank-level gauging.
- Primary low-, high-, and high-high-level alarms, emergency high level (EHL) alarm
- Vents.

A leak detection system is installed under each AST. The leak detection system consists of a perforated pipe installed under the bottom of each AST. A visual inspection of each piping system would identify a potential leak in the bottom of the AST. The leak detection inspection is conducted monthly for each AST.

4.4.2.3 Fuel Receipt

Fuel is delivered by dedicated pipeline from the BP/Olympic Pipeline 12-inch lateral line. Operations are conducted in accordance with Air Transport Association of America (ATA) Standards and Specifications. (b) (7)(F) [redacted] The inbound filtration station is located on the northeast side of the tank farm. The primary function of the filtration station is to remove impurities and water in the fuel when transferring fuel from the bulk storage to the issue tanks. The filtration station consists of one (1) 6,000-gpm micronic prefilter, four (4) 1,050-gpm clay treatment vessels, and four (4) 1,200-gpm filter separator vessels. One clay vessel and one filter separator vessel are piped together to form a filter train. There are four filter trains, each operating independently of the others. The outbound fuel is filtered through eleven (11) 1,170-gpm horizontal filter separators, equipped with a combination rate of flow, water slug, and check valve to a 20-inch discharge header.

Incoming fuel is metered by a custody transfer turbine meter and directed to storage. The Operator allocates inventory to suppliers, using a metered ticket generated during the receipt of the product. Receipts are reported to the suppliers when the pipeline reports the total receipts to the Operator. The total of all receipts and disbursements is entered on the ledger and reconciled to the ending physical inventory daily. Overages and shortages are disbursed to the suppliers' inventory monthly. The calculation is based on a percentage of the suppliers' net monthly disbursements.

Inventory records consist of:

- Open inventory (recorded in net),
- Receipts (recorded in net),
- Disbursements (recorded in gross and net), and
- Ending inventory (recorded in net).

There is one four-hose, four-lane refueler loading area located on POS property. The refueler loading area provides single-point coupler loading capability. Refueler loading accounting is accomplished with the PetroCount Inventory Management System, programmable logic controller (PLC), and TopTec Software. The system is accessed through individual identification numbers and Company authorization numbers via a keypad at each meter.

The PetroCount Inventory Management System accounts for refueler loading disbursements. Customers are charged disbursements on an accumulated basis. Each customer is assigned a discreet identification number, which is established in the computer files. All disbursements from tankage to refuelers loaded at the hoses can then be applied to each specific customer for inventory reconciliation. These records are stored in the TopTec Software System, which generates a daily report.

The Operator tests and records the gravity and temperature of the fuel on a daily basis. The fuel gravity is corrected to 60 degrees Fahrenheit. The corrected gravity is used by the Operator to determine the net disbursement to the suppliers. The Operator tests and records the daily tank temperatures to determine the correction factor for net tank inventory.

The storage tank designated to receive fuel is gauged at least one hour before the receipt of fuel. The intent is to verify that there is sufficient storage space in the tank for the receipt. Before receipt, the receiving tank is checked to ensure that the sump is free of water or other contaminants. Storage tanks are equipped with an automatic gauging system, which transmits both level and temperature to the PLC and Factory Tankview. Gauge reports are generated before and after all receipts or transfers to be used in inventory reconciliation. High and low levels are monitored by this gauging system. Any high or low level will be displayed on the computer console and will generate an alarm. These alarms are connected to an audible horn alarm.

All storage tanks are hand-gauged daily before midnight using measuring equipment in good condition. The gauging consists of measuring the actual level, API gravity, and temperature in the fuel tanks. The refueler loading areas and meter skid remain idle during the reconciliation. A disbursement accumulation report is run on the TopTec Software.

The fuel hydrant system is segmented into two parts. Leak detection testing is performed from the control building on a weekly basis and reported monthly. The leak detection system is an automated system designed by HansaConsult. Separate segments of the transfer piping and the hydrant system are isolated using automated double block and bleed valves. Each segment is pressurized and the change in pressure and fuel temperature is monitored and run through a computer program that analyzes results based upon a baseline established for each segment. The test results identify if the segment passes or fails. The operator receives confirmation of the results after each test. Each segment of the underground fuel distribution system is tested on a weekly basis. A report is printed once a month and recorded in the fuel system operation.

4.5 Incident Assessment

In the event of a spill, Swissport operators will be expected to respond immediately by locating and stopping the source of the spill, activating the alarm system, performing any necessary personnel evacuation, containing the spill (if possible), and contacting the POS Fire Department. At this point, Swissport should notify the QI for further response measures. Upon notification of any spill, the QI will immediately dispatch the emergency response contractor's personnel to visually observe and evaluate the incident. The spill size, type, direction, and speed of the spill will be assessed.

Each spill must be evaluated independently on the basis of incident-specific conditions. In general, the assessment process includes, but is not limited to, the following:

- Evaluate spill type and safety hazard to SJFSDS personnel, contractors, and the general public.
- Evaluate the properties of the spilled fuel, as this will influence movement, recovery, and environmental effects.
- Estimate spill size and movement.
- Evaluate level of ICS activation.
- Establish response priorities.
- Evaluate cause of spill.

The following information will be gathered to characterize the spill:

- Volume of spill.
- Size of slick, if on water.
- The prevailing climatic and hydrographic conditions at the time of a spill. These conditions can influence a variety of response factors and should be quantified to the extent practical and as soon as possible following the discovery of a spill (see Section 4.9).
- Wind speed and direction. These can influence a spill response in a number of ways, including aquatic spill trajectories, vapor plume dispersions, boom deployment, aircraft safety, and others (see Section 4.9).
- Precipitation. Seasonal rains occur primarily from November to March and periodically during the dry summer months. Only temperatures below freezing or above 80 to 90 degrees are of concern to fuel spill response operations. Temperatures above or below that range can adversely affect productivity and the health and safety of response personnel (see Section 4.9).
- Environmental sensitivities.
- Ability of response team to contain, protect and recover.

A Spill Report and an Environmental Incident Report will be filled out and submitted to proper Swissport personnel for every spill (see Appendix C).

4.5.1 Spill Categorization

An estimate of the total volume of the spill is needed to determine the level of response plan activation and the requirements of the disposal site. Potential release volumes from different SJFSDS sources are estimated in Section 7.0. A working estimate of the volume of a spill on the water surface can be made by visual assessment of its surface area appearance and thickness. Slick dimensions can be estimated from the air, using navigation electronics, and occasionally from the water surface, using radar. The following table shows the relationship of volume, thickness, appearance, and area covered for fuel on water:

Fuel on Water Size Estimation

Standard Term	**Appearance**	**Approx. Thickness**	**Approx. Volume**
Barely visible	Barely visible	>0.0000015 inches	25 gallons/square mile
Light sheen	Silvery	>0.000003 inches	50 gallons/square mile
Sheen	Slightly colored	>0.000006 inches	100 gallons/square mile
Sheen	Iridescent (rainbow)	>0.000012 inches	200 gallons/square mile
Fuel	Black to dark brown	>0.00004 inches	666 gallons/square mile
Emulsion	Chocolate brown to orange	>0.00008 inches	1,332 gallons/square mile

Source: USCG FOG, 2000 Edition

To ensure consistency in spill reporting and response, the following spill classification system will be used:

Spill Classification

Classification	**Spill Volume**
Small	Less than 2,100 gallons (50 bbl)
Medium	2,100 gallons (50 bbl) to 36,000 gallons (857 bbl)
Large	More than 36,000 gallons (857 bbl) and less than
(b) (7)(F) [redacted]	

4.6 Monitoring Fuel Movement

This section describes monitoring and controlling measures for surveillance of fuel spills as required by WAC 173-182-320

- For large releases that reach navigable waters or flow beyond the immediate vicinity of the SJFSDS, conduct over flights and collect detailed photographic, video, and/or infrared information.
- For large releases that reach navigable waters or flow beyond the immediate vicinity of the SJFSDS, conduct computer modeling and develop possible trajectories.

- For large releases that reach navigable waters, conduct shoreside and on-water assessments to monitor proximity of spill to sensitive areas.

In the event of a significant spill, computerized fuel spill movement predictions will be available through the FOSC, using the National Oceanic and Atmospheric Administration computerized Spill Model.

Fuel spill trajectories should be estimated to predict direction and speed of product movement, impact on shorelines and other sensitive areas, and the most effective location to mobilize spill response resources for protection, containment, and recovery.

Fuel spill trajectories can be estimated using vector addition or with computer programs. Surface currents will dominate spill movement unless the winds are extremely strong. Observations in actual spill situations have shown that the wind will cause a fuel slick to move at about 3 percent of the wind speed, and in the same general direction. The general methodology is described below:

- Draw current and wind component vectors in their relative direction and lengths (length of vector represents velocity).
- Draw a line parallel to the wind vector starting from the top of the current vector and measuring the exact length of the wind vector.
- Draw a line from the point of origin (present fuel slick position) to the top of the parallel wind vector line. This final line is the vector that gives the direction and speed of the fuel slick movement. The direction can be measured by using the cardinal points of the compass. The speed is determined by the length of the resulting vector relative to the scale used in drawing the vector component.

Other considerations:

- Time of day: Response activities to nighttime spills will require more time. For example, light sources will be needed.
- Weather: Poor weather conditions causing poor visibility will increase the time required for response activities.

The movement of fuel over land depends primarily on the physical properties of the fuel, topography, soil permeability, and vegetative cover. Topography is the dominant factor (fuel flows downhill). In general, fuel will flow until it reaches a surface water body or a depression, or until sorbent effects prevent further movement. Fuel flowing over land can infiltrate vegetation cover and soil. The rate of fuel movement and depth of penetration are dependent on a variety of factors, and best determined by direct observation and measurement.

4.7 Access, Staging Area, Command Post

If necessary, control points shall be established so that uninformed citizens, sightseers, and other non-emergency responders will not enter the incident area. State Police, highway patrol, local police, or other response agencies shall be used to set up control points at a safe distance to keep all unauthorized individuals from entering the response area.

Safe distances for the specific material (Jet Fuel) likely to be spilled at the SJFSDS is 1,000 feet (non-fire distance), as suggested by the Department of Transportation Emergency Response Guidebook. No one should enter this area without permission from the POS Fire Department IC or designee.

The Command Post and Staging Area(s) should be set up at a secure location away from the incident area. The Logistic Section Head should mark this area(s) for easy identification by responding personnel. The Command Post and Staging Area will be used as a place for personnel and equipment to gather and to be utilized by the POS Fire Department IC as needed, and will serve to keep responders from gathering too close to the incident area. The POS Fire Department IC must ensure that the responders have all the information available before advancing to the incident so that proper safety measures can be taken, e.g., personal protective equipment (PPE).

The Command Post Staging Area and access area to the incident should be uphill and upwind of the incident, if possible, and at a safe distance, taking into consideration the possibility of explosion or ignition of the spilled material. These areas should be supervised to control access to the incident only by those responders properly trained and equipped. Responders should exit the incident area from the designated access area, if it can be done safely, and proceed to a decontamination area if one has been established.

Criteria for choosing a long-term command post site (for a major spill incident) include the following:

- Facilities large enough for meetings of Swissport personnel, contractors, agencies, etc., for instance, a nearby hotel with conference rooms.
- Electrical and telephone connections for communications.
- Sufficient parking space for automobiles and trailers.
- Easy access.
- Nearby lodging and meals available.
- Proximity to the spill site.

Possible locations for command posts in hotel conference rooms are:

- Swissport Fueling Conference Room — 206-246-0407
  2350 South 190th Street
  Seattle, WA 98188

- Holiday Inn SeaTac — 206-248-1000
  17338 Pacific Hwy South
  SeaTac, WA 98188

- Radisson Hotel 206-244-6666
  17001 Pacific Hwy S
  Seattle, WA 98188

- Seattle Airport Hilton (206) 244-4800
  17620 Pacific Hwy South
  Seattle, WA 98188

Possible staging area locations are:

- For small spill responses, space is available at the SJFSDS Tank Farm for staging equipment.
- For large or worst-case spill responses, the POS owns several acres of property south and east of the SJFSDS Tank Farm. These properties have large parking lots that could be used for staging equipment. Permission from the POS is required before using these areas.

4.8 Discharge Planning Volume

Calculations to determine the sufficient amount of response equipment necessary to respond to a worst-case discharge are presented below.

Table 4-1. Worksheet to Plan Volume of Response Resources for Worst-Case Discharge

Part I Background Information

(b) (7)(F) [redacted]

Step (B)	Oil Group:	2
Step (C)	Operating Area:	Nearshore/Inland/Great Lakes
Step (D)	Percentages of Fuel: (D1) Lost to Natural Dissipation: (D2) Recovered Floating Fuel: (D3) Fuel Onshore:	 50% 50% 30%
Step (E1)	On-water Fuel Recovery ((D2 x A)/100):	48,500 bbl
Step (E2)	Shoreline Fuel Recovery ((D3 x A)/100):	29,100 bbl
Step (F)	Emulsification Factor:	1.8

Step (G)	On-Water Fuel Recovery Resource Mobilization Factor:	
	(G1) Tier 1:	0.15
	(G2) Tier 2:	0.25
	(G3) Tier 3:	0.40
Part II	<u>On-Water Fuel Recovery Capacity</u>	
	Tier 1 (E1 x F x G1):	13,095 bbl/day
	Tier 2 (E1 x F x G2):	21,825 bbl/day
	Tier 3 (E1 x F x G3):	34,920 bbl/day
Part III	<u>Shoreline Cleanup Volume</u>	
	(E2 x F):	52,380 bbl
Part IV	<u>On-Water Response Capacity by Operating Area</u>	
	(J1) Tier 1:	12,500 bbl/day
	(J2) Tier 2:	25,000 bbl/day
	(J3) Tier 3:	50,000 bbl/day
Part V	<u>On-Water Amount Needed to be Identified, but not Contracted for in Advance</u>	
	Tier 1 (Part II Tier 1–J1):	595 bbl/day
	Tier 2 (Part II Tier 2–J2):	-3,175 bbl/day
	Tier 3 (Part II Tier 3–J3):	-15,080 bbl/day

The spill response contractor, NRC, meets all classifications ratings for Inland/Nearshore environments. The facility has equipment capabilities to meet the minimum requirements for a Class W3 responder for Inland environments as defined by the USCG:

- 50,000 bbl/day of oil recovery capacity
- 1,000 feet of containment boom
- 30,000 feet of protective boom
- 100,000 bbl of temporary storage capacity
- 54 hour Facility response time

4.9 Climatic and Hydrographic Conditions

The prevailing climatic and hydrographic conditions at the time of a spill can influence a variety of response factors and should be quantified to the extent practical and as soon as possible following the discovery of a spill. A summary of the local climatic and hydrographic conditions is provided in Table 4-2.

Wind speed and direction can influence a spill response in a number of ways, including aquatic spill trajectories, vapor plume dispersions, boom deployment, aircraft safety, and others. Wind speed and direction can be determined by calling the National Weather Service at (206) 526-6087 (recording). In general, for the area covered by this SCP, the prevailing wind averages approximately 6 to 10 miles per hour (mph). The direction of the prevailing wind is south to southeast. Seasonal rains occur primarily from November to March and periodically during the dry summer months.

Visibility is determined by visual estimates concerning both the horizontal and vertical distances within which objects are clearly visible. The vertical visibility, or ceiling, is typically limited by low cloud cover or overcast conditions but can also be dramatically reduced by heavy fog. Lateral visibility is influenced by fog or heavy rain. In general, normal aircraft operations are restricted to ceilings greater than 500 feet and horizontal visibility in excess of 0.5 mile.

Temperature can be determined using an outdoor thermometer or by calling the weather service or airport. Only temperatures below freezing or above 80 to 90 degrees are of concern to fuel spill response operations. Temperatures above or below that range can adversely affect productivity and the health and safety of response personnel. The temperatures in the area covered by this SCP are not typically below freezing or above 80 degrees.

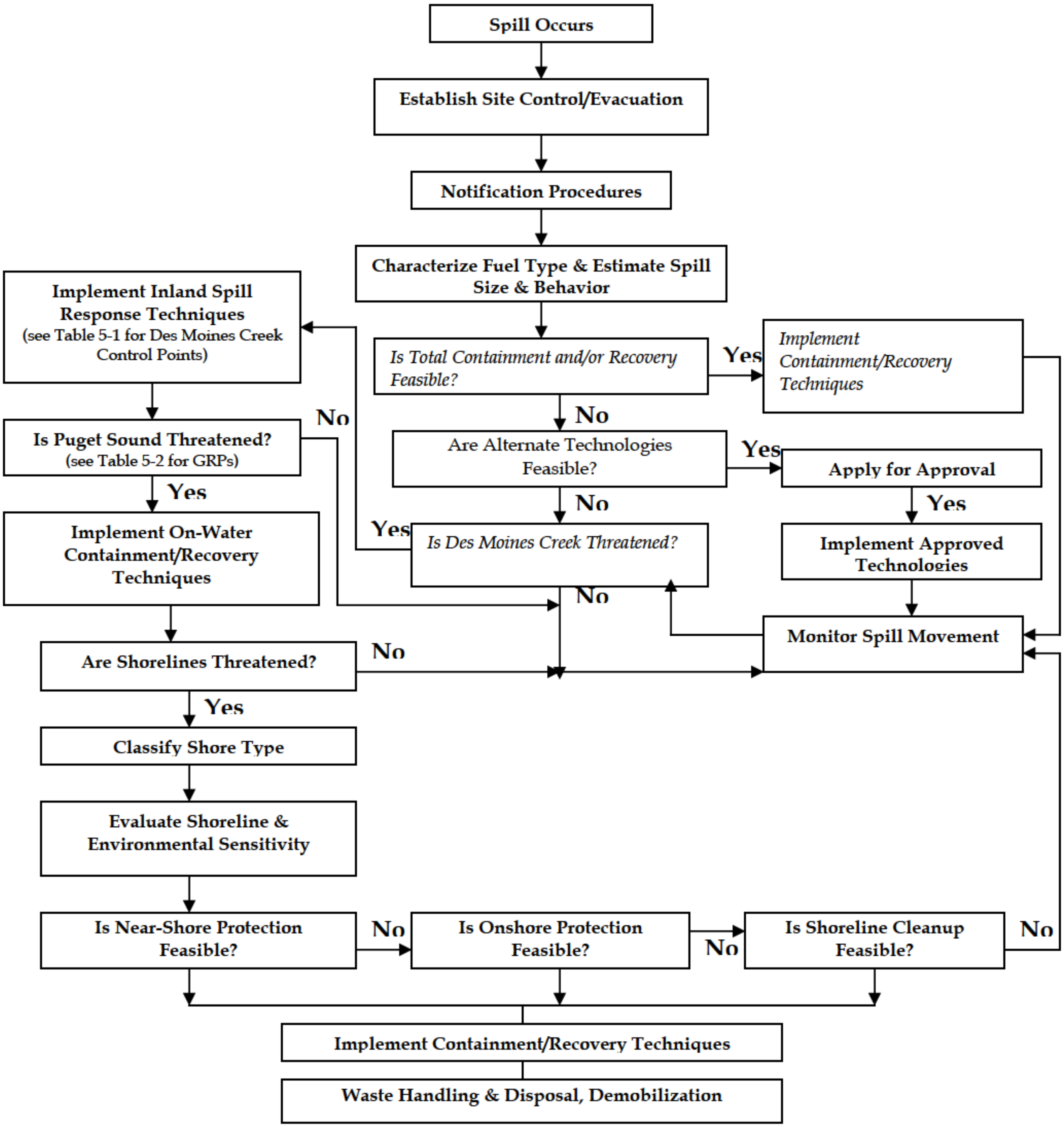
Table 4-2. 2001 Climatic Information

Parameter	Unit	Type	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Year
Temperature	^{o}F	Daily Max	56	54	65	71	85	78	82	87	77	71	61	53	70 avg.
	^{o}F	Daily Min	28	27	31	34	40	44	50	51	45	33	34	31	37 avg.
Visibility	Mean # of Days	Heavy Fog (1/2 square mile or less)	1.25	0.21	0.00	0.00	0.00	0.00	0.00	0.56	0.85	0.14	0.06	0.25	3.32 total
Precipitation	Inches	Total	2.70	2.04	2.73	3.14	1.43	2.90	0.00	2.34	0.85	3.07	9.16	5.89	36.25 total
Wind	mph	Average Speed	6.52	6.82	8.01	7.47	6.61	6.08	5.53	5.57	4.94	8.24	7.20	9.11	6.84 avg.
		Prevailing Direction	SE	SE	S	S	SE	SE	S	SE	SE	SE	SE	SE	---
Daylight	Average # of Hours	Sunrise to Sunset	8.9	10.3	11.9	13.6	15.1	16.0	15.6	14.3	12.6	10.9	9.3	8.5	12.3

Source: CDM hydrologic data center.

Section 5.0 Response Actions

5.1 Response Decision Flow Chart



5.2 Response Actions Overview and Checklist

Action	Person Taking Action (Initials)	Date/Time Action Taken
Attend to injured persons. Do not compromise personal safety, even to rescue others. Evacuate, if necessary.		
Stop flow of fuel, if safe to do so. Activate EFSO. Shut off ignition sources. Do not operate electrical equipment located in the spill area.		
Perform notification procedures.		
Assess the spill (size, type of fuel, equipment and personnel needs, predict spill movement, evaluate environmental sensitivity).		
Control spill movement as close to the source as possible. Use containment booms, dike with soil berms, dam with sandbags or sorbents, etc.		
Begin inland spill response techniques.		
Establish command post.		
Establish response team and ICS. Refer to the USCG Oil Spill FOG for duties and job descriptions of incident response personnel.		
Brief response team on spill and health and safety measures.		
Prepare communication equipment.		
Develop health and safety plan.		
Initiate meeting of Unified Command System members.		
Initiate planning meeting and approve planning document.		
Initiate Des Moines Creek containment/recovery response, if necessary.		
Establish staging area(s).		
Evaluate applicability of alternate technologies (availability, regulations, applications, environmental sensitivity, feasibility, request for approval letter).		
If Puget Sound threatened, implement on-water containment/recovery techniques and initiate shoreline cleanup as necessary.		
Initiate wildlife care, if necessary.		
Ensure that interim storage capacities are sufficient.		
Prepare disposal plan (interim storage, permanent disposal options).		
Debrief personnel.		
Prepare final spill report.		

5.3 Manpower, Scheduling, and Transporation

Initially, during a spill incident, the QI will be responsible for mobilizing the labor force, including scheduling manpower and ensuring that transportation is provided for the labor force. In the event of a major response, the responsibility for mobilizing the labor force will be coordinated by the Logistics Section Chief.

One of the basic components of the ICS is the planning cycle. The planning cycle is a highly structured process, conducted at the time of the incident, which will be followed during each operational period (i.e., shift) to facilitate the development of an Incident Action Plan (IAP). Incident Action Plans define the actions to be taken during the next operational period to achieve the strategic objectives and response priorities specified by the QI/IC. The planning cycle is graphically depicted in the USCG Oil Spill FOG.

Provisions will be made for the transportation of personnel and equipment. Transportation assets will be identified based on the scope of the response, and may include:

- Land transportation;
- Marine transportation; and/or
- Aviation transportation.

The emergency response contractor maintains contracts with local companies to provide aviation transportation, marine transportation, and land transportation in support of cleanup operations, equipment movement, and surveillance operations.

5.4 Sensitive Area Response Tactics

In the event of a fuel spill, it may be necessary to protect nearby sensitive areas if it appears that local containment and recovery efforts will not be sufficient to control the entire spill. A critical initial step in protecting sensitive resources is identifying the presence and types of sensitive areas in the likely path of the fuel. Once these areas have been identified, decisions need to be made as to the proper protection techniques for each locale and the priority for application of response resources to each site.

This section of the SCP describes in general terms different ecologically and culturally/economically sensitive areas. Additional discussion of sensitive areas can be found in the NWACP and CPSGRP. The NWACP Wildlife Section should also be referred to during response activities. Before implementing techniques described in the NWACP and CPSGRP, approval from the USEPA and Ecology will be obtained. The CPSGRP contains booming priorities, maps, booming strategies, boom length requirements, staging areas, site access, and sensitive resource information. The CPSGRP will be used to guide the response activities for spills with the potential to impact sensitive areas.

As discussed in Section 7.0, King County Water District Wells, Tyee wellhead protection area, residential areas, commercial areas, wetlands, and Des Moines Creek may be impacted by a release of fuel at the Tank Farm that breaches the secondary containment structures. According to the CPSGRP, there are no flight restriction zones in the vicinity of the SJFSDS.

The most likely location for fuel from the SJFSDS to reach navigable water or a shoreline is Des Moines Marina via Des Moines Creek. The CPSGRP has listed the shoreline type in the vicinity of Des Moines Marina as a combination of a gravel/cobble/riprap beach and an exposed rocky shoreline (or seawall). Cleanup methods for these types of shorelines impacted by jet fuel are discussed in Section 5.5.

As discussed in Section 7.0, there are environmentally and economically sensitive sites in the vicinity of SJFSDS; however, there are no known culturally sensitive sites. The marine and estuarine waters in the Puget Sound are among the most biologically rich and sensitive areas of the state of Washington. A wide diversity of shoreline and marine habitats, abundant food resources, and exceptional water quality all contribute to making this area especially valuable to wildlife.

This region contains a number of small to medium-sized seabird nesting colonies, a multitude of marine mammal breeding and resting sites, rearing and feeding habitat for marine fish, and one of the most impressive arrays of marine invertebrates in the world. The region is also a temporary home to many species of marine birds and mammals that are seasonal residents or that pass through the area during migration. Shoreline and marine habitats will be protected from fuel spills from the SJFSDS as discussed in Section 5.5.

Any fuel that comes in contact with the environment has the potential for adversely affecting biological and physical processes. In some cases, cleanup techniques may also result in adverse impacts of their own and, particularly if carelessly implemented, can result in greater ecological, aesthetic, recreational, and/or economic damage to the environment than the fuel itself. The types of physical and biological effects that can occur with different cleanup alternatives are described below. These impacts should be considered in selecting cleanup techniques from among those recommended. The Environmental Unit has responsibility for identifying potential impacts and providing guidance for minimizing the impact of cleanup operations. The State On-Scene Coordinators (SOSCs) and FOSCs should approve all cleanup methods before they are implemented.

- Vacuum trucks: slight surface disruption.
- Sump and pump vacuum: requires excavation of a sump; removal of organisms at sump location.
- Sorbent application: recovery of loose material can disturb sediments; persistence of fuel in unrecovered sorbents; materials contain plastic backing that may interfere with birds and small animals.
- Flushing-inert substrate or high-pressure flushing: may disturb surface of substrate; removes most organisms from the substrate.
- Manual scraping: may disturb sediments; removes some organisms, crushes organisms.
- Mechanized recovery (e.g., backhoe): removes sediment; accelerates erosion; removes organisms and habitat.
- Steam cleaning: adds heat to surface; heat kills organisms.

Response to fuel spills in wetland areas will be conducted in such a way as to minimize trampling and dragging of equipment over the habitat. Use of heavy equipment will also be minimized in these areas. Measures such as booms may be effective when conditions permit deployment. Dispersants will most likely not be used in wetland areas because dispersed fuel may impact grasses and organisms in these areas. Substrate removal may delay or prevent re-establishment of the original ecosystem, and vacuum pumping may result in removal of organisms and sediment. Both methods are not advisable. Low-pressure flushing may be a viable alternative. Vegetation cropping will be avoided, since it modifies the habitat and may kill important habitat plants.

Protective measures for sensitive areas will include exclusionary booming to prevent or exclude fuel from entering these areas. Booms will be used to divert fuel spills into recovery pools and away from sensitive areas. To reduce impacts of a fuel spill and response activities to sensitive areas, the following steps will be taken:

- Attempt to contain spilled fuel that has reached Des Moines Creek as far upstream as possible;
- The number of personnel working in a sensitive area will be minimized;
- Use of heavy equipment in sensitive areas will be minimized; and
- Minimize use of warm/hot water flushing tactics, since changes in water temperature may be detrimental to fish.

The Washington Department of Fish and Wildlife (WDFW) is the point of contact for all wildlife issues, and they will manage all wildlife rescues. The WDFW spill response team pager number is 360-534-8233.

While certain immediate environment protection response strategies must be planned in advance, the ongoing protection and cleanup during a major fuel spill will involve professional input from consultants, OSRO, USEPA, and Ecology. A wildlife rescue plan is presented in the NWACP.

5.5 Shoreline and Inland Response Tactics

This section describes shoreline and inland fuel spill response tactics as required by WAC 173-181-050 (19c,d). Additional information on this subject is presented in the NWACP and CPSGRP.

5.6 Shoreline and Inland Water Response Tactics

Shoreline protection procedures are conducted to prevent fuel impact to shorelines and reduce the impact on wildlife. In the event that fuel becomes stranded on a shoreline, response operations will be undertaken to reduce the environmental effects of the fuel. Before implementation of shoreline cleanup plans, approval must be obtained from Ecology. Assessment teams comprised of personnel from the appropriate agencies, SJFSDS personnel, and consultants will be utilized to determine the most appropriate response tactic.

Open water recovery techniques depend primarily on the physical characteristics of the fuel and on logistical considerations, such as availability of equipment and weather. Selection of the proper technique to clean a fuel-contaminated shoreline depends on the following factors:

- Type of shoreline;
- Degree of exposure to waves and currents;
- Biological sensitivity;
- Amount of fuel;
- Type of fuel; and
- Suitability of surface conditions for equipment operation on shoreline.

The most likely location for fuel from the SJFSDS to reach navigable water or a shoreline is Des Moines Marina via Des Moines Creek. It is imperative to contain spilled fuel that has reached Des Moines Creek as far upstream as possible. Locations to access Des Moines Creek for response efforts are shown on Figure 5-1. Descriptions of the access points and spill response strategies for these locations are summarized in Table 5-1.

The CPSGRP has listed the shoreline type in the vicinity of Des Moines Marina as a combination of a gravel/cobble/riprap beach and an exposed rocky shoreline (or seawall); therefore, the NWACP and CPSGRP do not recommend the use of in-situ burning, bioremediation, or dispersants for jet fuel if a fuel spill from SJFSDS reaches navigable waters. The following are recommended cleanup methods for these types of shorelines impacted by jet fuel as described in the NWACP:

- No Action. This is the recommended and preferred alternative for gravel/cobble/riprap beaches and exposed rocky shorelines. Access can be difficult and dangerous.
- Passive collection of oil is a conditional method of cleanup for a gravel/cobble/riprap beach. This method is not recommended for an exposed rocky shoreline. Examples of passive collection techniques are:

    - Removal of heavy accumulations of pooled fuel, using sorbents, skimmers, or other appropriate methods. Earthen barriers and booms can be used to for fuel diversion and pooling of fuel to aid in cleanup.
    - Low- to high-pressure flushing may be used to float fuel away from sediments for passive recovery. Extreme care must be taken not to spray in the biologically rich lower intertidal zone or when the tidal level reaches that zone.
    - Anchor sorbent/snare booms or other sorbent materials at the waterline adjacent to heavily impacted area to contain and recover fuel as it leaches from the sediments.

- Fuel-covered debris removal is a conditional method of cleanup for gravel/cobble/riprap beaches and exposed rocky shorelines. Examples of debris removal techniques are:

    - Removal and replacement of heavily impacted riprap.
    - Sediment removal should be limited.

- Cutting of oiled, attached algae is not recommended; tidal action will eventually float this fuel off, so sorbent booms should be deployed.
- Removal of miscellaneous debris on shoreline that has been impacted by fuel.

The NWACP contains a checklist for gathering dispersant use information prior to use. Completion of this checklist will aid in the decision of whether or not to use dispersants. Dispersants will not be used at the SJFSDS without prior permission from the USEPA and Ecology. Refer to the NWACP for dispersant use policies and procedures.

In-situ burning will not be used by the SJFSDS for fuel spill cleanup. Water/fuel mixtures recovered during site cleanup will either be transferred to a disposal facility or be processed through the IWS.

5.6.1 Terrestrial Response Tactics

Terrestrial protection procedures are conducted to prevent fuel impact to sensitive areas and reduce the impact on wildlife. In the event that terrestrial areas become impacted, response operations will be undertaken to reduce the environmental effects of the fuel. Before implementation of terrestrial cleanup plans, approval must be obtained from Ecology. Assessment teams comprised of personnel from the appropriate agencies, SJFSDS personnel, and consultants will be utilized to determine the most appropriate response tactic.

After removal of pooled fuel, residual fuel in soil is an environmental concern. Generally, terrestrial spills are treated by removal and replacement of contaminated soil, or by acceleration of natural degradation processes through bioremediation. Bioremediation is the process of stimulating the growth and activity of microorganisms such as bacteria and fungi that naturally feed on hydrocarbons. Biodegradation is a natural process by which the microorganism, in the presence of nutrients and oxygen, chemically break down hydrocarbons and other substances and produce by-products, including carbon dioxide, water, biomass, and partially oxidized products.

Biodegradation and physical removal are the primary natural mechanisms for the removal of fuel from soil. This process generally occurs at a very low rate but can often be enhanced by the application of nutrients such as nitrogen, phosphorus, potassium, and others. Bioremediation will not be used at the SJFSDS without prior permission from the USEPA and Ecology. SJFSDS does not plan on using bioremediation techniques for fuel spills in water, only in soil as a long-term remediation strategy.

Bioremediation can be accomplished by aeration (tilling), by dilution of the fuel content through mixing with non-contaminated soil, and by fertilization to stimulate naturally occurring fuel-consuming bacteria. There are no standard rules for defining the selection of terrestrial cleanup methods. In all cases, soil consultants will be used to investigate and recommend appropriate actions and to oversee implementation.

Assessment of the potential for groundwater contamination will be considered as part of the response. A consultant will be used to assess groundwater impacts and treatment.

5.7 Evacuation Plan

For small spills, evacuation is usually not necessary. All nonessential cleanup personnel should refrain from entering the spill area.

For large to worst-case spills, all nonessential personnel working in the SJFSDS and in the perimeter areas surrounding the SJFSDS must be evacuated.

EVACUATION STAGES

Stage One/small spills (less than 50 bbl):

- POS Fire Department is notified.
- Ensure that all nonessential cleanup personnel are evacuated from the spill area.
- Make emergency notifications by telephone outside the spill area.
- If fuel vapors are likely to be emitted, move to Stage Two.
- Command Post must be located outside spill area, upwind from spill, and uphill from spill.

Stage Two/medium-low spills (50 to 857 bbl):

- Sound facility evacuation alarm.
- Ensure that all nonessential cleanup personnel are evacuated from the spill area.
- Evacuate facility and surrounding buildings (250-foot range).
- Make emergency notifications by telephone outside the spill area.
- Give directions to move away from buildings and set up command post location with POS Fire Department consultation. Command Post must be located outside spill area, upwind from the spill, and uphill from the spill.

Stage Three/medium-high spill (857 bbl to [redacted] (b) (7)(F)

- Sound facility evacuation alarm.
- Ensure that all nonessential cleanup personnel are evacuated from the spill area.
- Evacuate facility and surrounding buildings (1,000-foot range).
- Make emergency notifications by telephone outside the facility.
- Give directions to move away from buildings and set up command post location with POS Fire Department consultation. Command Post must be located outside spill area, upwind from the spill, and uphill from the spill.

[redacted] (b) (7)(F)

- Sound facility evacuation alarm.
- Ensure that all nonessential cleanup personnel are evacuated from the spill area.
- Evacuate facility, airport, and surrounding communities.
- Make emergency notifications by telephone outside the facility.
- Give directions to move away from buildings and set up command post location with POS Fire Department consultation. Command Post must be located outside airport property, upwind from the spill, and uphill from the spill.

Washington State Patrol shall make the final determination with regard to community-wide evacuation, and will select the proper evacuation routes.

Recovery:
As conditions improve, evacuation orders should be rescinded. Determination of these actions will be the responsibility of the POS Fire Department. Establishment and control of the designated perimeters will also come from the POS Fire Department. Once the emergency is deemed over, the "mode" will be considered one of recovery and the SJFSDS QI will resume charge of the situation.

When there is doubt about the severity of the fuel spill or how the spill should be cleaned up or rendered safe, from both the safety and environmental standpoint, contact the POS Fire Department for assistance.

The site evacuation plan diagrams are presented as Figures 11-6 and 11-7. The assembly point is located at the guard entrance gate.

5.8 Security

This section presents information required by 40 CFR, Part 112.2(h)(10), which requires that a facility maintain a certain level of security, as appropriate. Security at the SJFSDS consists of the following:

- EFSOs are shown on Figures 11-3 through 11-4.
- All facilities are fenced.
- A 12-foot-high chain-link fence with razor wire surrounds the Tank Farm, and the entrance gate is locked to the public. The refueler loading area and the hydrant system are located within the fenced POS property, where only authorized personnel are permitted. The metering skid is fenced and located on POS property. Airport security personnel patrol these areas. The SJFSDS is manned 24 hours per day.
- Any valves that permit outward flow of a tank's contents are locked in the closed position when in non-operating or non-standby status.
- Starter controls on all fuel pumps in non-operating or non-standby status are locked or electrically isolated in the "OFF" position.
- The loading connections of fuel pipelines are capped or blank flanged when not in service or on standby service for extended periods (transport connections, etc.).
- The SJFSDS is adequately lighted during the nighttime and sufficiently to operate safely and to discover any leak during a walk-around in the area.

5.9 Demobilization and Post Incident Review

Demobilization procedures are described below.

- The Demobilization Unit Manager will determine which resources are ready for release from a specific collection site. The Demobilization Unit Manager will provide guidance on release priorities and demobilization recommendations. Information maintained by the QI will be used to assist in the prioritization.

- Each collection site will require a decontamination area. Decontaminated equipment will be returned to the appropriate staging area for release or redeployment. Transports for equipment will be required if remote from the staging area.
- The Documentation Manager will document all demobilization and decontamination activities.
- Equipment designated for reassignment will be mobilized to the appropriate staging area.
- The Decontamination Unit Manager will maintain a log documenting that proper decontamination procedures were performed for each piece of equipment.
- The Emergency Response Officer will ensure that redeployed personnel receive proper rest before their return to duty. The Health and Safety Officer will monitor personnel redeployment activities to ensure that the number of hours worked is within acceptable guidelines.
- The Demobilization Unit Manager must approve demobilization plans before decontamination, release, or redeployment of any resources.

The Documentation Manager shall debrief all SJFSDS personnel involved in the incident within two weeks after termination of operations. The primary purpose of the post-spill review is to identify actual or potential deficiencies in the SCP and determine the changes required to correct the deficiencies. The post-spill review is also intended to identify which response procedures, equipment, and techniques were effective and which were not, and the reason why. This type of information is helpful in the development of a functional SCP by eliminating or modifying those response procedures that are less effective and emphasizing those that are more effective. This process should also be used for evaluating training drills or exercises (Section 9.0). Key agency personnel that were involved in the response will be invited to attend the post-spill review.

A final, comprehensive report will be prepared for internal use by the QI or his designee, with the assistance of the Documentation Unit Leader, following completion of spill cleanup activities. It will be written in narrative form, including the nature of the spill, the response methods, the cleanup methods, and the results of the personnel debriefing.

Personnel from the various agencies involved in the spill, including Ecology, will participate in the debriefing process. Comments and suggestions from agency personnel will be included in the Final Spill Cleanup Report.

Section 6.0
Disposal and Decontamination Plan

6.1 Disposal Plan

Personnel managing waste are to review and follow the guidance in Section 9620 (Washington State Disposal Guidance) of the NWACP, which is incorporated into this SCP by reference.

Spill response and cleanup procedures produce contaminated materials that become wastes and need to be managed properly. These materials may be residue fuel, contaminated soil or water, sorbents, used clothing, and other debris. The waste materials must be characterized for proper handling. The management of waste material, including recycling, treatment, storage, and disposal, must comply with the standards set forth in 40 CFR, Parts 261 and 265, as mandated by the Resource Conservation and Recovery Act; Regulatory Code of Washington (RCW) 70.95, Solid Waste Management Act; RCW 70.105, Hazardous Waste Management Act; and WAC 173-303, Dangerous Waste Regulations. The following is the policy statement published in the Washington Statewide Master Oil and Hazardous Substance Spill Contingency Plan:

> "The general policy of the Department of Ecology during the cleanup of oil is whenever possible and to the maximum extent feasible, recovered oil and oily debris shall be recycled and reused, thus reducing the amount of oily debris incinerated or disposed of at a solid or hazardous waste landfill."

Waste handling procedures will be preceded by several steps with an overall objective of waste minimization, cost effectiveness, minimization of impact on unaffected areas or already cleaned areas, regulatory compliance, worker safety, and proper disposal. The Disposal Unit Leader is responsible for proper waste management.

The following procedure will be followed for waste handling and disposal:

- Report to the QI/IC.
- Contact the Operations Section Chief for assessment of the magnitude of material to be handled.
- Collect representative samples of fuel and fuel-impacted waste materials to be characterized.
- Deliver representative samples to laboratory for analysis. Both the federal and state criteria will be used when characterizing the waste.
- Contact subcontractor(s) to evaluate response capabilities and availability.
- Obtain permits and identification numbers from Ecology that are required for disposal of waste.
- Obtain acceptance of material by the disposal facility before transporting materials.

Recovered fuel will be placed in containers such as 55-gallon drums, portable tanks, tank trucks, available storage tanks at SJFSDS tank farm, or any other container that can be sealed to prevent spillage.

Fuel-impacted waste will be placed in leak-proof containers to prevent leakage during handling and transportation. Double-walled plastic bags are convenient for this purpose. For larger materials or those that could penetrate the bags, debris boxes or similar containers will be used as long as they are lined with plastic or by some other means. Hazardous waste bins and lined dump-truck beds may also be used for collection of fuel-impacted wastes.

A temporary storage site will need to be located until an effective means of handling can be determined (see Section 4.7 for staging area information). Once a temporary storage site is located, certain site preparations will be performed to minimize contamination of the area. The storage site should be surrounded by a containment structure, such as an earthen berm, sand bags, or booms, in case of a container breach. Entrance and exit ramps will be constructed over the containment structure to allow equipment access to the area. If the ground under a temporary storage site is permeable, several layers of plastic sheeting will be spread over the berms and across the floor of the storage site to contain leachate.

Licensed transporters will be arranged to transport waste. Waste materials will be covered during transportation. All truck roll-off bins will be lined with plastic sheets before loading to prevent leakage. New liners will be used for each load. Treatment, storage, and disposal facilities that can be contacted include:

- PRS Group
  3303 Taylor Way
  Tacoma, WA 98402
  (253) 383-4175

- Clean Harbors
  19320 Des Moines Memorial Drive
  Seatac, WA 98148
  (800) 645-8265

Waste disposal will be minimized. Proper identification, waste segregation, recycling, and treatment accomplish this. In accordance with Washington State law, management of waste should be prioritized in the following order:

- Waste reduction;
- Recycling;
- Physical, chemical and biological treatment;
- Incineration;
- Solidification/stabilization treatment; and
- Landfill.

Recycling is the preferred method of handling waste material. Fuel and water mixtures recovered during response activities can be handled using an oil/water separator or a storage container that can be decanted. This can be constructed using a container with a valved, bottom-draining pipe. The fuel/water mixture is pumped into the container and allowed to stand long enough for the fuel and water to separate. The water is then drained off the bottom through the valved pipe, and the fuel is pumped into a separate storage tank or truck. Water drained off by separation may be discharged to the IWS system, since it will contain minor amounts of fuel. The IWS operator must be notified of any discharge to the IWS that contains enough fuel to cause sheen on water. Decanting methods can substantially reduce the amount of temporary storage needed for recovered water.

6.2 Decontamination Plan

The spill response area will be divided into three work zones:

- Clean Zone or Cold Zone,
- Contamination Reduction Zone or Warm Zone, and
- Exclusion Zone or Hot Zone.

Figure 6-1 presents an example of the recommended work zones in relation to each other and the contamination.

Work zones shall be evaluated daily and enlarged when warranted. The QI and Safety Officer will be responsible for establishing work zones. All zones should be clearly identified by signs and/or barrier tape or other means. Work zone locations are based upon many factors, including:

Accessibility:	Roads, terrain, space availability; adjacent highways, or other limitations.
Wind direction:	Support facilities must be upwind of the exclusion zone. If shifts in wind direction or other conditions prohibit an upwind location, more distance from the contamination may be required.
Resources:	Power lines, water, shelter, and sanitation. Physical and topographical features of the area. Dimensions of contaminated area. Weather conditions. Potential for exposure, fire, explosion and flying debris. Known concentrations of air and soil contaminants. Operations planned and space needed to conduct the operations. Surrounding industries or other sources of contamination.

The exclusion zone surrounds the most highly contaminated area. This area will require the highest level of PPE. Only individuals with HAZWOPER training are allowed in this zone. Each time cleanup workers exit the exclusion zone they must perform decontamination procedures in the contamination reduction zone.

The contamination reduction zone is sometimes referred to as the decontamination area, or “decon area.” One central contamination reduction zone is established in the general work area. The contamination reduction zone will be established immediately upwind and adjacent to the exclusion zone for all equipment and personnel decontamination. All personnel and equipment must be decontaminated prior to entering the clean zone.

The clean zone is located on the outermost part of the spill response activities in a clean or non-contaminated area. Support equipment is located in this zone. Potentially contaminated garments, equipment, and samples are permitted in this zone only after they have been decontaminated or packaged for disposal. The central storage area at the site is considered part of the clean zone. The clean zone is located upwind and adjacent to the contamination reduction zone.

Decontamination (decon) activities take place in the contamination reduction zone. Equipment, materials, and supplies for decon are readily available in the contamination reduction zone. Soft-bristle scrub brushes or long-handled brushes are used to remove contaminants. Large galvanized washtubs, stock tanks, or wading pools can hold wash and rinse solutions. Water in buckets or garden sprayers is used for rinsing. Drums or plastic garbage cans lined with plastic bags store contaminated clothing and equipment. Decon solutions are captured and retained for proper disposal (see Section 6.1). Storage of decon solutions is in watertight containers supplied by the OSRO. Clothing, tools, buckets, brushes, and all other equipment that is contaminated are secured in drums or other containers, labeled and properly disposed of (see Section 6.1).

Gross dirt removal occurs at the source location so dirt is not removed from the area. Small equipment will be decontaminated by hand washing in a low-phosphate detergent solution and rinsed twice with tap water.

Decontaminate personnel with medical problems and injuries to the extent possible in the situation. If life-saving first aid or medical treatment is required, decontaminate only to remove contaminants that would endanger the health of the rescuer. No attempt should be made to wash or rinse the victim, unless the contaminants can cause severe injury or loss of life. Protective garments can be removed (depending on the weather) if removal does not cause delays, interfere with treatment, or aggravate the problem. Except in cases of spinal injury, remove the patient’s respirator or backpack. For minor medical problems or injuries, the normal decon procedure should be followed. Unless severe medical problems have occurred simultaneously with splashes, grossly contaminated protective clothing should be washed off as soon as possible after an exposure, and carefully removed. Workers showing symptoms of acute exposure should be transported immediately, following appropriate decon, to the nearest medical facility. None of the hospital emergency rooms in the greater Seattle area are equipped to handle contaminated patients. If this is not possible, the hospital must be notified beforehand (see Section 2.2, Notification List) that a contaminated patient will be arriving. The hospital will need to be informed of the type of contamination and the proper handling procedures (see AppendixF, Site Safety and Health Plan).

Heavy equipment contacting contaminated material must be decontaminated. Once contaminated, backhoes, trucks, and other heavy equipment are difficult to decontaminate. The method generally used is to wash them with water under high pressure and to scrub accessible parts with detergent in water solution. Hot water methods have the potential to evaporate contaminates into the work air space. Steam can also reduce the service life of air-purifying respirator cartridges. Particular care must be given to those components in direct contact with contaminants such as tires and scoops. All wash waters must be collected for proper disposal. Covering the ground below the heavy equipment with visqueen and using wood planks to support the visqueen edges to contain fluid can accomplish this. A sump pump can be used to transfer the captured decon solution into a temporary storage container (i.e., 55-gallon drum).

Decontamination is performed at a series of stations in the contamination reduction zone. The floor of each station is covered with visqueen to prevent contamination of the soil. Dikes are installed under the visqueen to prevent contaminated runoff from impacting soil.

When workers wear Level C PPE, the usual sequence of PPE removal and decontamination will be as follows:

1. Segregated equipment drop:
   Deposit equipment used on site (tools, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Segregation at the drop reduces the probability of cross-contamination.
2. Hardhat removal.
3. Boot cover wash:
   Scrub outer boot cover with decon solution or detergent and water.
4. Boot cover rinse:
   Rinse off decon solution using copious amounts of water.
5. Tape removal:
   Remove tape around boots and gloves and deposit in container with plastic liner.
6. Boot cover removal:
   Remove boot covers and deposit in containers with plastic liner.
7. Outer glove removal:
   Remove outer gloves and deposit in container with plastic liner.

8. Suit and boot wash:
   Wash splash suit, gloves, and safety boots. Scrub with long-handled scrub brush and decon solution.
9. Suit and boot, and glove rinse:
   Rinse off decon solution using copious amounts of water.
10. Canister or mask change:
    If worker leaves exclusion zone to change canister (or mask), this is the last step in the decontamination procedure. Worker's canister is exchanged, new outer gloves and boot covers donned, and joints taped, worker returns to duty.
11. Safety boot removal:
    Remove safety boots and deposit in container with plastic liner.
12. Splash suit removal:
    With assistance of helper, remove splash suit. Deposit in container with plastic liner.
13. Inner glove wash:
    Wash inner gloves with decon solution.
14. Inner glove rinse:
    Rinse inner gloves with water.
15. Face piece removal:
    Remove face piece. Deposit in container with plastic liner. Avoid touching face with fingers.
16. Inner glove removal:
    Remove inner gloves and deposit in lined container.
17. Inner clothing removal:
    Remove clothing soaked with perspiration and place in lined container. Do not wear inner clothing off site, since there is a possibility that small amounts of contaminants might have been transferred in removing PPE.
18. Field wash:
    Shower if highly toxic, skin-corrosive or skin-absorbable materials are known or suspected to be present. Wash hands and face if shower is not available.
19. Re-dress:
    Put on clean clothes.

These procedures can be modified when Level D PPE is used.

Section 7.0
Hazard Evaluation and Spill Prevention Measures

The hazard evaluation examines the SJFSDS operations to predict where spills could occur and allows the response team to develop a complete understanding of potential hazards and the response actions necessary to address the hazards.

7.1 Hazard Identification

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[redacted]

Tank ID	Substance Stored	Quantity Stored (avg. bbl)	Tank Type/Year Installed	Maximum Failure Capacity (bbl)	Failure History/ Cause
Mobile Tanker Truck	Jet-A	238	Not Applicable	238	None
Operation and Controls Building Drum	Used Oil	1.3	Steel	1.3	None
Vehicle Shop Drum	Used Oil	1.3	Steel	1.3	None
Mobile Generator	Diesel Fuel	3	Steel	1.3	None
North Ops Generator	Diesel Fuel	25	Fixed, steel	25	None
South Ops Generator	Diesel Fuel	70	Fixed, steel	70	None

All storage tanks are aboveground.

Tank ID	Substance Stored	Quantity Stored (avg. bbl)	Tank Type/Year Installed	Maximum Failure Capacity (bbl)	Failure History/ Cause
Recovery UST	Jet A	238	Fixed, steel	238	None
North Refueler Loading Area Sump Tank	Jet A	5	Fixed, steel	5	None

Hazard Identification Surface Impoundments

Date of Last Update: February 2007

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* SI = Surface Impoundment

Possible spill sources:

A. Refueler Loading
B. Storage Tanks
C. Venting
D. Valve Maintenance
E. Filters
F. Sump Separators
G. Receiving Pipeline
H. Piping Repair or Replacement
I. Fuel Transfer Activities
J. Hydrant system piping

Types of failures:

A. Hose Rupture
B. Refueler Overfill
C. Tank Overfill
D. Tank Rupture
E. Equipment or Piping Failure

Potential release volumes from spill sources:

Source	Type of Failure	Maximum Volume (gallons)	Maximum Flow Rate (gpm)
Refueler Loading	Hose Rupture	Varies	500
	Refueler Tank Overfill	Varies	500
	Refueler Tank Rupture	10,000	Varies
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Valve Maintenance	Valve Failure	Varies	Varies
Filters	Filter Rupture	Varies	1,200
	Equipment Failure	Varies	1,200

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Source	Type of Failure	Maximum Volume (gallons)	Maximum Flow Rate (gpm)
(b) (7)(F) [redacted]			
Hydrant system piping	Piping Failure	Varies	Varies

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7.2 Potential Spill Sources

REFUELER LOADING AREA

A worst-case spill is unlikely to occur at the refueler loading areas. Filling of a refueler is performed using a hand-held deadman switch. Refuelers are equipped with a high-level shutoff switch. Before loading a refueler, the Scully system cable is connected to the refueler.

The driver, operator, or attendant of any refueler will not remain in the refueler and will not leave the refueler unattended during the fueling process. To prevent leakage from the tank or compartment due to expansion of the contents from a rise in temperature during transit, sufficient freeboard is provided. Under no circumstance will the headspace in the tank or compartment be less than 1 percent of the total capacity.

The refueler's will have an integral brake interlock system that prevents the refuelers from moving until the bottom loading coupler has been disconnected from the refueler.

The refueler loading areas have catch basins to carry spills from refueler overfills or hose and pipe ruptures to the IWS system. Storm water in the tank farm flows to an underground sump (in the Containment Building) located at the southwest corner of the facility. The underground sump discharges to the IWS. The sump is equipped with a float switch that activates two pumps to discharge water through a piping system to the IWS. A fuel sensor in the sump will shut off the pump if fuel enters the sump and will activate an alarm that is received by the POS and Swissport. An IWS operator will arrive on-site to inspect and allow the discharge to the IWS. The drains in the tank farm can be covered to contain the fuel in the berm. Small spills from hoses are cleaned up immediately using sorbents.

<u>FUEL STORAGE FACILITY MAINTENANCE</u>

Maintenance operations on fuel storage facilities have the potential for causing spills. However, a worst-case spill is unlikely to occur during maintenance activities. Employees or other persons untrained in the specific operation of the fuel storage facility and components will not be allowed to work on any part of the SJFSDS.

Adequate spill containment materials are at the work site and placed in strategic locations near the work. After the maintenance work is completed, the work area is cleaned up and sorbent and waste materials are disposed of properly.

<u>FUEL STORAGE TANKS</u>

Catastrophic failure of one or more fuel storage tanks would result in a large or worst-case spill. Earth containment berms surround the AST area. Personnel inspecting the containment berms or walls report any abnormality that could cause a failure to occur when subjected to the stresses of a tank failure or fuel spill.

Each tank is equipped with high, high-high, and emergency high level liquid level detection, which causes an audible alarm to be sounded. A high-level alarm alerts BP/Olympic. If the alarm is not cleared in five minutes, BP/Olympic will start controlled shutdown.

<u>FUEL DELIVERY</u>

The risk of a fuel spill during fuel delivery is minimal. Fuel is delivered to the Tank Farm via pipeline. Fuel operators are located at both the originating and receiving facilities during the delivery, tank fuel levels are constantly monitored, and the operators are in communication with each other. Before delivery of fuel into a storage tank, the tank is accurately gauged to ensure that sufficient space is available to contain the delivery. The tank will not be filled with more liquid than it is designed to hold. A release from the receiving pipeline would be contained within the earth dike containment area.

<u>TRUCK UNLOADING AND TESTING AREA AT THE FUEL FARM</u>

The driver, operator, or attendant of any refueler will not remain in the refueler cab and will not leave the refueler unattended during the fueling process. At no time will the refueler be loaded liquid full. To prevent leakage from the tank or compartment due to expansion of the contents from a rise in temperature during transit, sufficient space is provided. Under no circumstance will the headspace in the tank or compartment be less than 1 percent of the total capacity. Drains in the truck unloading area discharge to the recovery UST.

PUMPING AND FILTRATION STATIONS

There is a risk of spills from the pump and filtration equipment. All equipment is visible and aboveground and is inspected daily. The inbound pipeline receipt filter system area of the Tank Farm has a concrete pad and curbing to control small releases. In addition, drip pans and sorbent materials control small releases from the filter system area. Because of the sloped topography at the Tank Farm, a large release of fuel from these areas would likely flow into the tank farm secondary containment area. A leak would be readily detected visually and by a measurable loss in pressure and flow during fuel transfer.

HYDRANT SYSTEM PIPING

The risk of fuel releases from the hydrant system piping is minimal. A leak would be readily detected by a loss in line pressure and inventory accounting. A leak from the pipe would be released into the surrounding soil.

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7.4 Analysis of the Potential for a Fuel Spill

There is a potential for a release of fuel from the SJFSDS. However, the risk from a spill is reduced by the control measures listed below.

- Tanks are constructed in accordance with applicable engineering standards.
- Tank material and construction comply with American Petroleum Institute specifications.
- Tanks are metallic and cathodically protected to guard against corrosion. The tanks are in compliance with federal and state storage tank regulations. Leak detection is conducted in accordance with federal and state storage tank regulations.
- Buried piping is wrapped, coated, and cathodically protected to reduce corrosion.
- Pipe supports are designed for expansion and contraction to minimize corrosion and abrasion.
- All aboveground piping, aboveground fuel storage tanks, and fuel carrying components have been coated to protect against atmospheric corrosion.
- Personnel are trained in spill prevention.
- SJFSDS is inspected daily, monthly, quarterly, and annually for evidence of corrosion and leaks.
- All fuel transfers are under the control of a trained, competent operator.
- SJFSDS operations are in accordance with ATA Standards and Specifications.
- Each tank has high and high-high level alarms.
- The operator supervises each fuel delivery into storage tanks and tank-to-tank transfers.
- Only trained and qualified employees are permitted to operate the SJFSDS.
- Training on SJFSDS operations is conducted annually.
- Hydrant system has a leak detection system and is tested weekly.

7.4.1 Accident Potential Assessment

An accident potential assessment for the SJFSDS was performed by evaluating equipment failure rates to determine release frequencies (i.e., the potential that a spill event will occur in any given year). Comparison of release frequencies, in turn, provides insight into the most likely location for and size of spills. The "*Handbook of Chemical Hazardous Analysis Procedures*" (Federal Emergency Management Agency/U.S. Department of Transportation/USEPA, 1989) suggests accident rates for typical storage and transfer equipment located at terminals, as summarized in Table 7-1 below.

Table 7-1. Estimated Accident Rates and Spill Size

Equipment	Accident Rate	Spill Size
Single-walled storage tanks	1.0 x 10^{-4}/tank-year	90% of the time, 10% of contents is released through a 1-inch hole before leak is plugged. 10% of the time, total contents are released instantaneously.
Loading hoses	1.05 x 10^{-2}/hose-year	100% of the time, release of full loading rate until flow is stopped.

Piping	1.5 x 10^{-6}/foot-year	90% of the time, 10% of complete rupture spill size is released through a 1-inch hole before leak is plugged. 10% of the time, release of full unloading rate until flow is stopped.

7.4.2 Estimate of Facility Release Frequencies

Number of single-walled tanks containing fuel: A = 8
Number of loading hoses at refueler areas: B = 4
Length of below-ground 12-inch diameter piping: C = 1,540 feet

Estimated Spill Frequencies

Single-walled tanks: D = A x 10^{-4} = 0.0008 spills/year
Loading hose: E = B x 10^{-2} = 0.04 spills/year each hose
Piping: F = C x 10^{-6} = 0.00154 spills/year

Estimated Spills by Size

<u>Storage tanks:</u>
10% of contents (1-inch hole): D x 0.9 = 0.00072 spills/year
100% of contents: D x 0.1 = 0.00008 spills/year

<u>Loading hose:</u> E x 0.1 = 0.004 spills/year each hose

<u>Piping:</u>
Release through 1-inch hole: F x 0.9 = 0.0014 spills/year
Release through rupture: F x 0.1 = 0.000154 spills/year

Summary of Findings and Conclusions

The spill probabilities for the storage tanks are relatively small (0.00008 spills/year). The Tank Farm secondary containment capacities will hold the total contents of the largest storage tank plus freeboard. The risk associated with a large spill event occurring at the Tank Farm appears limited.

While the spill probability for a release from the refueler loading areas is greater (0.004 spills/year) than that of the storage tanks, the volume of fuel released would be much smaller. The risk associated with a spill from the refueler loading areas also appears limited.

The spill probability for a release from a 1-inch hole in piping is greater (0.0014 spills/year) than that of the storage tanks; the volume of fuel released would be much smaller. The spill probability for a complete rupture of piping is very small (0.000154 spills/year). The risk associated with a spill from the 12-inch diameter fuel piping appears limited.

Earthquakes can be a risk in the area of the facility.

7.5 Facility Reportable Fuel Spill History

This section presents a written description of historic spills, corrective actions taken, and plans for preventing recurrence of each fuel release that occurred at the SJFSDS.

SPILL HISTORY					
Location/Date	(b) (7)(F) [redacted]	**Cause**	**Affected Watercourses**	**Corrective Action**	**Prevention Actions**
Tank Farm March 15, 1971	[redacted]	12-inch gasket failure	Info not available	840 gallons recovered	Replace gasket
Tank Farm March 23, 1973	[redacted]	Prover gasket failure	Info not available	42 gallons recovered	Replace gasket
Tank Farm November 24, 1985	[redacted]	Valve failure	5,000 gallons fuel released to Des Moines Creek	Most fuel was recovered using booms, blowers, & vac trucks	Upgrades to stormwater disposal facilities
Tank Farm filter system February 26, 1991	[redacted]	Pressure gauge failure	None	Excavation of fuel-impacted soil, analysis of soil & groundwater samples	Replace pressure gauge
South refueler rack/June 1996	[redacted]	Broken fitting	None	Excavation of fuel-impacted soil, most fuel drained to IWS	None
Tank Farm September 1999	[redacted]	Cracked fuel drain	None	Excavation of fuel-impacted soil	Repair fuel drain
Tank 111 Sump Tank November 27, 2010	[redacted]	Valve Failure	None	Excavation of fuel-impacted gravel	New sump tank valve installed and sump tanks will be monitored twice per shift

7.6 Containment and Drainage Planning

The spill containment areas manually drain into the IWS system. The drain valves are manual, normally closed design. All rainwater captured in the containment areas is inspected for signs of fuel before draining. In accordance with 40 CFR 112, containment calculations are presented below.

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Section 8.0
Spill Scenarios

This section presents a description of the SJFSDS potential worst-case spill and a small spill (less than 2,100 gallons). A tiered planning approach has been used so that the response actions to a spill (i.e., necessary equipment, products, and personnel) are dependent on the size of the spill. Planning for lesser spills is necessary because the nature of the response may be qualitatively different, depending on the size of the spill. Emphasis has been placed on the response team's ability to respond to the different types and sizes of spills and the potential direction of the spill pathway.

8.1 Initial Spill

To calculate an initial estimate of the amount of fuel released in an incident such as a pipeline failure the Department of Transportation (DOT) regulation 49 CFR, Part 194.105(1) is followed. This calculation is completed by using the pipeline's maximum release time in hours, plus the maximum shutdown response time in hours (based on historic discharge data or in the absence of such historic data, the operator's best estimate), multiplied by the maximum flow rate expressed in barrels per hour (based on the maximum daily capacity of the pipeline), plus the largest line drainage volume after shutdown of the line section(s) in the response zone expressed in barrels (cubic meters).

An estimated maximum release time would be a half hour since the entire system is under surveillance and a spill would be detected immediately. The maximum shut down time would be a half hour. (b) (7)(F) [redacted]

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8.2 Small Spills

To address tiered planning requirements, the types of facility-specific spill scenarios that may contribute to a small spill have been considered.

SMALL SPILL SCENARIO

This spill scenario assumes that a small spill (less than 2,100 gallons) has occurred at the north refueler loading area because a hose has ruptured. The following equipment is required for small spills:
OPA rules require facilities to have 1,000 feet of containment boom available within 1 hour to respond to small spills. NRC can be on-site with 1,000 feet of boom in 1-hour.

OPA rules require the Facility to have access to an oil recovery device, capable of responding within 2 hours of detection of an oil discharge that has a daily effective recovery rate exceeding 2,100 gallons. The OSRO can provide this recovery rate and be on-site in two hours. The Facility has a pump with a rate of 126 gpm which also can be used.

OPA rules require sufficient temporary storage capacity equal to or greater than twice the effective daily recovery rate (4,200 gallons). The OSRO has temporary storage to store more than 4,200 gallons.

Response Actions

Hour 1

1. During refueler loading activities, a hose ruptures. The driver immediately stops the flow at the source by activating the EFSO. The Swissport operator is alerted by an audible alarm that the EFSO has been activated.
2. The Swissport operator immediately calls the POS Fire Department and the QI. The QI then notifies the emergency response contractor of the spill. The operator then drives to the refueler loading area.
3. The QI arrives at the spill site. The POS Fire Department has already arrived at the scene. The POS Fire Department has attended to injured personnel and ensured that all ignition sources have been shut off.
4. The Swissport operator returns to the Tank Farm to discover that a valve is leaking. The operator immediately calls the QI. The leak consists of a small drip that can be contained using a bucket. The QI evaluates the second spill and determines that the threat to the environment and human safety is minimal. The QI directs the operator to maintain containment of the second spill, and further response actions will be continued following completion of response actions for the first spill.
5. The POS Fire Department, with the assistance of the QI, has placed barricades around the spill to prevent vehicles from entering the area. The POS Fire Department and the QI have placed a 100-foot boom along the downhill perimeter of the spill for containment. The spill is currently not flowing or threatening to enter any utility manholes in the vicinity.

6. The QI assesses the spill, using the information outlined in Section 4.5 of the SCP, and begins filling out the information required on the Spill Response Notification Form (Appendix C).
7. The QI begins the notification process.
8. The IWS catch basin is accepting the spilled fuel.

Hours 2 through 6

1. The emergency response contractor checks in at the spill site with a vacuum truck.
2. Most of the spilled fuel has entered the IWS catch basin. None of the fuel has flowed beyond the refueler loading containment area. The emergency response contractor's personnel clean up the residual spilled fuel with sorbents. The used sorbents and boom are contained in 55-gallon drums at the Tank Farm for disposal later.
3. The emergency response contractor's personnel, with the assistance of the IWS operator, use a skimmer to recover the fuel floating in the IWS detention pond. The recovered fuel is pumped into a vacuum truck. The fuel is then transported to the Tank Farm and transferred into the product recovery tank.
4. The QI assesses the second spill, using the information outlined in Section 4.5 of the SCP, and begins filling out the information required on the Spill Response Notification Form (Appendix C).
5. The QI begins the notification process for the second spill.
6. The operator is able to fix the leak in the valve for the second spill.
7. The fuel recovered during the second spill is transferred to the Tank Farm product recovery tank.
8. Personnel are debriefed and preparation of the final spill report is begun for both spills.

8.3 Medium Spills

MEDIUM SPILL SCENARIO

This spill scenario assumes that a 857-bbl (36,000-gal) spill occurs due to an expansion joint break on the hydrant pumps and the whole hydrant system is shut down. The following equipment is required for medium spills:

Oil recovery devices with a daily recovery rate equal to 50 percent of the medium discharge (18,000 gallons/day) that can arrive on the scene within 12 hours. NRC has pumps and skimmers that have a daily recovery rate in excess of 18,000 gallons of product.

Sufficient quantity of boom obtainable within 12 hours for oil collection and containment and protection of sensitive areas (the Facility's OSRO has sufficient quantities of boom).

Sufficient temporary storage capacity equal to or greater than twice the effective daily recovery rate (36,000 gallons). The OSRO has sufficient temporary storage capacity.

Response Actions

00:00 The spill is noticed by the Swissport operator (first responder), who immediately determines the cause of the spill, activates the EFSO, shutdown and notifies the POS Fire

Department and the supervisor. The supervisor then notifies the QI. The QI then notifies the emergency response contractor of the spill. The Swissport operator shuts down the SJFSDS operations, including ignition sources, and notifies BP/Olympic of the situation.

00:10 All Swissport personnel are notified by the QI of the spill and told to cease operations. All personnel and section chiefs with emergency response duties are asked to help with response efforts. Other personnel are requested to evacuate the property on foot and assemble at the evacuation point to ensure that all personnel have been accounted for. The evacuation point is next to the guard entrance gate. There are no injured personnel associated with the spill. The QI assumes the role of IC.

00:12 The POS Fire Department arrives at the hydrant pump pad and takes measures to prevent fire hazards associated with the spilled fuel. Air monitoring is also conducted by the POS Fire Department, and the results are submitted to the IC.

The POS Police Department also arrives on site and conducts evacuation procedures of the community.

00:30 The QI arrives at the facility and assumed the role of IC. He checks the spill status and mobilizes his staff. The QI begins the notification process. The NRC, EMD, the emergency response contractor, Ecology, the USEPA, Police, the POS Aviation Department, the King County Emergency Department, IWS operations, and the POS Maintenance Duty Officer are notified (within two hours). The QI contacts the supervisor and/or Swissport Headquarters to notify them of the incident and request assistance with making the notifications. The QI also notifies the Chairman of the Seattle Airline Fuel Consortium so that planning can begin for airport operations during the recovery process. All notifications are properly documented. The QI starts the ICS 201 form. The QI meets with his Safety Officer, Operation Section Chief, Planning Section Chief, Logistic Section Chief, and Finance Section Chief. Initial Incident Objectives are established.

00:40 Safety Officer conducts Safety meeting and begins site safety planning. The QI begins assessing the spill, using the information outlined in Section 4.5 of the SCP, and begins filling out the information required on the Spill Response Notification Form (Appendix C). Logistic Section Chief establishes Command Post.. A conference room in the Airport Terminal is established as the Incident Command Post, or base. He manages communication plan and processes request for resources with NRCES spill contractor.

00:45 Safety equipment is distributed to the Swissport response team by the safety officer. The Safety Officer also ensures the communication of the health and safety plan to the Swissport response team. He assesses the spilled area including spilled volume. He conducts air monitoring status of discharged fuel and environmental condition. The Swissport response team, with assistance from the POS Fire Department, positions a 100-foot boom between Des Moines Creek and the potential path of the fuel. A boom is also placed between the spill and wetlands on the east side of the SJFSDS Tank Farm. This boom is obtained from the NRC spill control supplies container located at the SJFSDS Tank Farm.

00:55 During the assessment, the QI determines that total containment or recovery is feasible. Some of the fuel has been retained in the concrete area around the hydrant pump pad which drains to the IWS. Some fuel has been released and spilled over the wall of the secondary containment and has impacted the ground of the secondary containment area. The QI assesses the situation and develops a preliminary plan for controlling the spilled fuel, using accessible response equipment.

The preliminary plan is implemented to remove the spilled fuel from the hydrant pump pad area and secondary containment. The IWS operator verifies that the IWS detention pond has the capacity to accept fuel. Fuel is pumped to the IWS detention pond drainage, 2-75 hp with a 2,500 gpm per pump. The fuel is pumped at a rate of 5,000 gpm or 300,000 gallons per hour (gph). The 36,000 gallon spill would be pumped to the IWS in approximately seven minutes. Temporary portable tankage is requested from the emergency response contractor (1 Baker tank with 500-bbl capacity). Clean up residual spilled fuel with sorbents. If possible, dig up and place fuel-impacted soil on visqueen or in an appropriate container (e.g., 55-gallon drum, roll-off bin).

01:00 The emergency response contractor checks in at the site and conducts a survey of conducts a survey of the spilled fuel area. Finance Section Chief monitors incident cost and other equipments procurement.

01:20 The QI holds a debriefing meeting with the Swissport response team and all officers to announce that the emergency response contractor has checked in with ten employees to start fuel recovery efforts. Exclusion, decontamination, support, and security zones are established by the emergency response contractor.

02:00 Ecology checks in and assumes role of SOSC. The QI meets with the SOSC for an Initial Incident Briefing Meeting to begin general response plan development. An operations meeting is held to revise the preliminary plan developed by the IC. At this meeting, additional staff are called up to fill out the full UC structure.

04:30 The UC prepares a statement regarding the spill and the cleanup. The UC is in charge of all media relations until the Joint Information Center (JIC) can be established.

05:00 The QI briefs the UC on the contents of the ICS 201 form.

06:00 A UC objective meeting is held as per the 2000 ICS FOG. The UC starts an operational period planning cycle and holds meetings accordingly.

The QI and the emergency response contractor create a disposal plan for recovered fuel. Transportation of recovered product from temporary storage to treatment and refining facilities is requested (Emerald Services, Inc.).

09:00 The JIC is established with members from Ecology, the USEPA, and the POS. A statement regarding the spill and the cleanup is prepared by the JIC, which is also in charge of all media relations.

10:00 A Demobilization Plan is initiated.

12:00 The IC briefs the UC on the situation and the IAP.

Equipment is demobilized and decontaminated. Move from Emergency Phase to Project Phase.

8.4 Worst-Case Spill

<u>WORST-CASE SPILL SCENARIO</u>

(b) (7)(F) [redacted] the Tank Farm. This volume assumes that the entire contents of the tank are released. The spill occurs at 9:00 PM in mid-December, when climatic conditions are worst. It is raining with heavy fog, winds are from the SE at 9 mph, and the temperature is 35 degrees Fahrenheit. Part of the secondary containment fails, causing the total volume of fuel spilled to enter Puget Sound through Des Moines Creek.

In most cases, it has been assumed that the recovery equipment's capacity takes into consideration the equipment's field efficiency. The recovery at the tank farm is considered to be mostly fuel, so the equipment's rate of recovery is assumed to be equal to its rated capacity.

Worst-Case Discharge Planning Volume Calculation for On-Shore Storage Facilities

The capacity of the largest single aboveground oil storage tank in an adequate secondary containment area was used to calculate the worst-case planning volume for the SJFSDS. The combined capacity of a group of aboveground oil storage tanks permanently manifolded together was not used for the worst-case volume because the tanks do not function as one storage unit (i.e., the multiple tank volumes are not equalized).

(b) (7)(F) [redacted]

Response Actions

00:00 The spill is noticed by the Swissport operator (first responder), who immediately determines the cause of the spill, activates the EFSO, shutdown and notifies the POS Fire Department and the supervisor. The supervisor then notifies the QI. The QI then notifies the emergency response contractor of the spill. The Swissport operator shuts down the SJFSDS operations, including ignition sources, and notifies BP/Olympic of the situation.

00:10 All Swissport personnel are notified by the QI of the spill and told to cease operations. All personnel and section chiefs with emergency response duties are asked to help with response efforts. Other personnel are requested to evacuate the property on foot and assemble at the evacuation point to ensure that all personnel have been accounted for. The evacuation point is next to the guard entrance gate. There are no injured personnel associated with the spill.

00:12 The POS Fire Department arrives at the Tank Farm and takes measures to prevent fire hazards associated with the spilled fuel. Air monitoring is also conducted by the POS Fire Department, and the results are submitted to the IC.

The POS Police Department also arrives on site and conducts evacuation procedures of the community.

00:30 The QI arrives at the facility and assumed the role of IC. He checks the spill status and mobilizes his staff. The QI begins the notification process. The NRC, EMD, the emergency response contractor, Ecology, the USEPA, Police, the POS Aviation Department, the King County Emergency Department, IWS operations, and the POS Maintenance Duty Officer are notified (within two hours). The QI contacts the supervisor and/or Swissport Headquarters to notify them of the incident and request assistance with making the notifications. The QI also notifies the Chairman of the Seattle Airline Fuel Consortium, so planning can begin for airport operations during the recovery process. All notifications are properly documented. The QI starts the ICS 201 form. The QI meets with his Safety Officer, Operation Section Chief, Planning Section Chief, Logistic Section Chief, and Finance Section Chief. Initial Incident Objectives are established.

00:40 Safety Officer conducts Safety meeting and begins site safety planning. The QI begins assessing the spill, using the information outlined in Section 4.5 of the SCP, and begins filling out the information required on the Spill Response Notification Form (Appendix C). Logistic Section Chief establishes Command Post. A conference room in the Airport Terminal is established as the Incident Command Post, or base. He manages communication plan and processes request for resources with NRCES spill contractor.

00:30 Ecology checks in and assumes role of SOSC. The IC meets with the SOSC for an Initial Incident Briefing Meeting to begin general response plan development.

00:45 Safety equipment is distributed to the Swissport response team by the safety officer. The Safety Officer also ensures the communication of the health and safety plan to the Swissport response team. He assesses the spilled area including spilled volume. He conducts air monitoring status of discharged fuel and environmental condition. The Swissport response team, with assistance from the POS Fire Department, positions a 100-foot boom between Des Moines Creek and the potential path of the fuel. A boom is also placed between the spill and wetlands on the east side of the SJFSDS Tank Farm. This boom is obtained from the NRC spill control supplies container located at the SJFSDS Tank Farm.

00:55 During the assessment, the QI determines that total containment or recovery is not feasible, alternate technologies are not feasible, and the direction of fuel flow is entering

Des Moines Creek and threatening the Puget Sound. The QI notifies Tyee Golf Course, Des Moines City Park, and Midway City Sanitation Plant of the spill and directs to evacuate occupants as practical during operational hours.

The QI assesses the situation and develops a preliminary plan for controlling the spilled fuel, using accessible response equipment.

The preliminary plan is implemented by the Operation Section Chief to stop fuel flow to Des Moines Creek by diverting it to the IWS detention pond. The IWS operator verifies that the IWS detention pond has capacity to accept fuel. Fuel is pumped to the IWS detention pond drainage, using the two 75-hp pumps each with a 2,500-gpm capacity. The fuel is pumped at a rate of 5,000-gpm or 300,000gallons per hour (gph), exceeding the benchmark of 97 bbls or 4,100 gph. (b) (7)(F) [redacted] r.) Temporary portable tankage is requested from the emergency response contractor (30 Baker tanks with 500-bbl capacity each). The IC calls the emergency response contractor to request deployment of response equipment for Access Points 1, 2, 3, and 4, including skimmers, vacuum trucks, boom, and vessels.

01:00 The emergency response contractor checks in at the site and conducts a survey of Des Moines Creek to determine the extent of downstream movement. Finance Section Chief monitors incident cost and other equipments procurement.

01:20 The QI holds a debriefing meeting with the Swissport response team and all officers to announce that the emergency response contractor has checked in with 20 employees to start fuel recovery efforts. Exclusion, decontamination, support, and security zones are established by the emergency response contractor.

01:30 Ecology checks in and assumes role of SOSC. The QI meets with the SOSC for an Initial Incident Briefing Meeting to begin general response plan development.

01:45 The emergency response contractor adds two 1,000-ft booms and sandbags to the boom previously placed between Des Moines Creek and the tank farm.

The emergency response contractor's personnel are sent to Des Moines Creek Access Point 1 to set up a control point. Access Point 1 is located on Tyee Golf Course between the 9th and 10th tees.

The two culverts are partially blocked using plywood lined with poly sheet. Two 50-ft sorbent booms are deployed upstream and two downstream to capture escaping product.

02:00 The U.S. Coast Guard checks in.

An operations meeting is held to revise the preliminary plan developed by the QI. At this meeting, additional staff are called up to fill out the full UC structure. Liaison Officer, and Information Officers are contacted and requested to report to the site.

An emergency response contractor team consisting of five employees is sent to Des Moines Creek Access Point 2. Access Point 2 is located 1 mile to the west of I-5 on South 200th Street. The two culverts are partially blocked using plywood lined with poly sheet, and two 50-ft booms are deployed upstream and two downstream to capture escaping product.

Two other emergency response contractor teams consisting of five employees each are sent to Des Moines Creek Access Points 3 and 4. Access Point 3 is located 0.2 miles north of the Des Moines Creek Water Treatment Plant by the entrance driveway bridge. The culvert at Access Point 4 is located under the bridge at Des Moines Beach Park. Two 50-ft containment booms are deployed to divert fuel to the collection point on the left descending bank above the bridge at Access Point 3. Another two 50-ft booms are positioned at Access Point 4.

The Operations Section Chief calls for additional skimmers and vacuum trucks to report to the site. Additional storage is also requested from emergency response contractor's barges to supplement the on-shore storage capacity (eight barges with a total capacity of 91,068 bbls after taking into account a 50% efficiency).

02:30 The survey results are submitted to the SOSC. From the survey of fuel movement on Des Moines Creek, the SOSC determines that Puget Sound is threatened and orders recovery operations to be deployed to Access Point 3 and Access Point 4. Two skimmers with an Effective Daily Recovery Containment (EDRC) of 411 bbls are sent to Access Point 3 to be used in conjunction with the positioned boom to recover fuel. Two additional 3,430-bbls-per-day (bpd) vacuum trucks have checked in, each with a capacity of 70 bbls. Both of these vacuum trucks are deployed to Access Point 3 upon arrival. Each vacuum truck has one driver and each skimmer has two operators. These personnel are in addition to those already at Access Point 3. Intermediate tanks (Baker 155-bbl portable tanks) are set up at each access point to receive product from the skimmers and provide storage for the vacuum trucks.

The emergency response contractor's personnel set up a collection point on the left descending bank above the bridge on Des Moines Creek.

Two skimmers with EDRC of 411 bbls are sent to Access Point 4 to be used in conjunction with the positioned boom to recover fuel. Two additional 3,430-bpd vacuum trucks have checked in, each with a capacity of 70 bbls. Both of these vacuum trucks are deployed to Access Point 4 upon arrival. Each vacuum truck has one driver and each skimmer has two operators. Intermediate tanks (Baker 155-bbl portable tanks) are set up at each access point to receive product from the skimmers and provide storage for the vacuum trucks.

The emergency response contractor teams are deployed to Puget Sound Access Points to implement water containment/recovery techniques.

The emergency response contractor arrives at the mouth of the creek with two 1,000-ft booms angled from the creek bank to direct the spilled fuel to two Marco class I self-propelled skimmers with EDRC of 3,678 bbls. Each skimmer is manned by two operators.

03:00 A fuel supply plan is developed by the airlines and the Swissport operator to have those flights with appropriate capacities fuel through Seattle. A truck delivery and transfer plan is developed and implemented to supply fuel to the Seattle airport on an emergency/temporary basis. The airline schedule is also thinned to match the available fuel supply.

04:00 The emergency response contractor's vacuum trucks check in. A 3,430-bpd, 120-bbl capacity vacuum truck and two skimmers with EDRC of 411 bbls are deployed to the IWS detention pond to begin recovering fuel. Two additional 3,430-bpd, 70-bbl capacity vacuum trucks begin recovering fuel from the Tank Farm containment area. Each vacuum truck has one driver, and the skimmers are run by two of the emergency response contractor's employees.

04:30 The UC prepares a statement regarding the spill and the cleanup. The UC is in charge of all media relations until the JIC can be established.

Recovered fuel is transferred from vacuum trucks into the available capacity of storage tanks at the Tank Farm.

05:00 The SOSC briefs the UC on the contents of the SOSCS 201 form.

05:30 The SOSC requests that the National Oceanic and Atmospheric Administration Scientific Support Coordinator come to the site to provide a daily computer trajectory analysis based on local weather conditions and available information on currents if necessary.

06:00 A UC objective meeting is held as per the 2000 SOSCS FOG. The UC starts an operational period planning cycle and holds meetings accordingly.

Additional temporary portable tankage arrives from the emergency response contractor (ten tanks with a total 5,000-bbl storage volume with 2,500 bbl of product capacity to account for an average of 50% equipment efficiency). The additional tankage and the storage capacity of the recovery equipment are sufficient to store 9,700 bbls of fuel within a 24-hour period. (b) (7)(F) [redacted].)

The SOSC and the emergency response contractor create a disposal plan for recovered fuel. Transportation of recovered product from temporary storage to treatment and refining facilities is requested (Emerald Services, Inc.).

07:00 A health and safety plan is developed.

08:00 Trailers containing empty temporary storage tanks are sent to the collection point. Permission is obtained from the POS, and temporary tankage is set up in the parking lot on the south side of the Tank Farm. Additional temporary storage containers are being deployed to the scene.

09:00 The JIC is established with members from Ecology, the USEPA, and the POS. A statement regarding the spill and the cleanup is prepared by the JIC, which is also in charge of all media relations.

10:00 The UC determines that shorelines are threatened. The shore type, shoreline, and environmental sensitivity are classified using information contained in the Northwest Area Contingency Plan.

Additional barge tankage arrives.

11:00 The Wildlife Recovery Branch will set up an oiled-wildlife rehabilitation center to provide information on wildlife impact if necessary.

12:00 Additional temporary portable tankage arrives from the emergency response contractor (ten tanks with a total 5,000-bbl storage volume with 2,500 bbl of product capacity to account for an average of 50% equipment efficiency). The additional tankage and the storage capacity of the recovery equipment are sufficient to store 14,550 bbls of fuel. (b) (7)(F) [redacted].

The SOSC briefs the UC on the situation and the IAP.

- **Volume recovered = 5,800 bbls**
- **Available storage exceeds 14,550 bbls**
- **Volume evaporated or dispersed = 24,250 bbls**
- (b) (7)(F) [redacted]

14:00 The UC determines that near- or on-shore protection is feasible. Shoreline cleanup is implemented.

20:00 The media statement is updated by the JIC and approved by the SOSC.

24:00 Additional temporary portable tankage and recovery equipment arrive from the emergency response contractor (ten tanks with a total 5,000-bbl storage volume with 2,500 bbl of product capacity to account for an average of 50% equipment efficiency). The additional tankage and the recovery equipment capacity are sufficient to store 19,400 bbls of fuel. (b) (7)(F) [redacted]

The SOSC briefs the UC on the situation and the IAP.

- **Volume recovered = 14,200 bbls**
- **Available storage exceeds 19,400 bbls**

- **Volume evaporated or dispersed = 48,500 bbls**[1]
- [redacted]

24:30 The planning cycle continues. Recovery efforts and documentation continue. The IAP for the next operational period is completed.

30:00 The media statement is updated by the SOSC and the JIC.

36:00 The SOSC briefs the UC on the situation and the IAP.

- **Volume recovered = 22,500 bbls**
- **Available storage exceeds 30,000 bbls**
- **Volume evaporated or dispersed = 63,000 bbls**
- [redacted]

36:30 The planning cycle continues. Recovery efforts and documentation continue. The IAP for the next operational period is completed.

40:00 The media statement is updated by the SOSC and the JIC.

48:00 Additional temporary barge tankage and recovery equipment arrive from the emergency response contractor. The additional recovery equipment includes four skimmers with EDRC of 411 bbls or larger. Each skimmer is manned by two operators. The additional tankage and the recovery equipment capacity are sufficient to store 35,000 bbls of liquid, which exceeds the benchmark of 24,250 bbls (equal to the recovery benchmark of 25% of worst-case spill volume). Transportation of recovered product from temporary storage to treatment and refining facilities begins (Emerald Services, Inc.).

The SOSC briefs the UC on the situation and the IAP.

- **Volume recovered = 31,000 bbls**
- **Available storage exceeds 35,000 bbls**
- **Volume evaporated or dispersed = 66,000 bbls**
- **Total free product left = 0 bbls**

The UC creates a demobilization plan.

48:30 The planning cycle continues. Recovery efforts and documentation continue. The IAP for the next operational period is completed.

It is determined that product is no longer recoverable on Puget Sound due to evaporation and dispersion of the Jet A fuel. A Demobilization Plan is initiated.

50:00 The media statement is updated by the SOSC and the JIC.

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[1] This number was provided by Rebecca Post at the Department of Ecology. The number was calculated using modeling software.

60:00 The SOSC briefs the UC on the situation and the IAP.

The media statement is updated by the SOSC and the JIC.

60:30 The planning cycle continues. Recovery efforts and documentation continue. The IAP for the next operational period is completed.

66:00 The SOSC meets with all officers to discuss the progress of recovery efforts and to update the IAP for the next 12 hours.

70:00 The media statement is updated by the SOSC and the JIC.

72:00 The additional tankage and the recovery equipment capacity are sufficient to store 35,000 bbls at 48:00 hours, which exceeds the benchmark of 29,100 bbls of liquid (equal to the estimated recovery of 30% of worst-case spill volume).

The SOSC briefs the UC on the situation and the IAP.

Equipment is demobilized and decontaminated. Move from Emergency Phase to Project Phase. The emergency response contractor will consolidate efforts for continued recovery at Access Point 3.

Section 9.0 Self-Inspection, Drills/Exercises, and Response Training

This section presents information required by 40 CFR, Part 112.20(h)(8).

9.1 Facility Self-Inspection

A detailed description of the procedures and equipment used to detect fuel leaks and discharges by SJFSDS personnel and automated spill detection systems is presented in Section 4.4. Forms used for SJFSDS inspections are Air Transport Association Specification 103, specifically forms ATA 103.01 and 103.07. These forms are presented in Appendix H. Maintenance and inspection records are maintained at the SJFSDS for the life of the system and are available for review by regulatory agencies.

If a condition is discovered that may result in a release of fuel, corrective actions must be implemented immediately. A record of the condition identified, the corrective action planned, and a schedule to implement the corrective action should be documented on the Discharge Prevention Meeting Log provided in Appendix J.

9.1.1 Tank Inspection

<u>TANK INSPECTION CHECKLIST</u>

1. CHECK TANKS FOR LEAKS, SPECIFICALLY LOOKING FOR:
   a. Drip marks;
   b. Discoloration;
   c. Puddles containing spilled or leaked fuel;
   d. Corrosion;
   e. Cracks; and
   f. Localized unintended dead vegetation.

CHECK FOUNDATION FOR:
   a. Cracks;
   b. Discoloration;
   c. Puddles containing spilled or leaked fuel;
   d. Settling;
   e. Gaps between tank and foundation; and
   f. Damage caused by vegetation roots.

2. CHECK PIPING FOR:
   a. Droplets of fuel;
   b. Discoloration;

c. Corrosion;
d. Bowing of pipe between supports;
e. Evidence of fuel seeping from valves or seals; and
f. Localized unintended dead vegetation.

During the inspection, make note of any discrepancies and report them immediately to the Station Manager.

9.1.2 Response Equipment

RESPONSE EQUIPMENT INSPECTION CHECKLIST

Using the list of Response Equipment provided in Section 10, check for the following:

1. Inventory (item and quantity);
2. Storage location;
3. Accessibility (time to access and respond);
4. Operational status/condition;
5. Actual use/testing (last test date and frequency of testing); and
6. Shelf life (present age, expected replacement date).

Note any discrepancies between the list provided in Section 10 and the available response equipment.

9.1.3 Secondary Containment

SECONDARY CONTAINMENT INSPECTION CHECKLIST

Inspect the secondary containment, checking the following:

Dike or berm system:

a. Level of precipitation in dike/available capacity;
b. Operational status of drainage valves;
c. Dike or berm permeability;
d. Debris;
e. Erosion;
f. Permeability of the floor of dike area; and
g. Location/status of pipes, inlets, drainage beneath tanks, etc.

2. Secondary containment:

a. Cracks;
b. Discoloration;
c. Presence of spilled or leaked fuel (standing liquid);
d. Corrosion; and
e. Valve conditions.

During the inspection, make note of any discrepancies and report them immediately to the Station Manager.

9.2 Facility Drills/Exercises and Response Training

This section presents a description of the drill/exercise program to put into practice under the SCP. Key supervisory, operations, maintenance, management, and indirect operations personnel must participate in the training program. After completing an exercise, the station manager should assess the results of the exercise to identify plan and resource strengths and weaknesses and to assess the adequacy of training programs and the need for additional training. The training program outline below is designed following National Preparedness for Response Exercise Program (PREP) requirements. The core components of the training program are outlined below.

Core Components	Description
1. Notifications	Test the notifications procedures identified in this SCP.
2. Staff Mobilization	Demonstrate the ability to assemble the spill response organization identified in this SCP.
3. Ability to Operate within the Response Management System Described in this SCP: • Unified Command • Response Management System	Demonstrate the ability of the spill response organization to work within a unified command. Demonstrate the ability of the response organization to operate within the framework of the response management system identified in this SCP.
4. Discharge Control	Demonstrate the ability of the spill response organization to control and stop the discharge at the source.
5. Assessment	Demonstrate the ability of the response organization to provide initial assessment of the discharge and provide continuing assessments of the effectiveness of the tactical operations.
6. Containment	Demonstrate the ability of the spill response organization to contain the discharge at the source or in various locations for recovery operations.
7. Recovery	Demonstrate the ability of the spill response organization to recover the discharged product.
8. Protection	Demonstrate the ability of the spill response organization to protect the environmentally and economically sensitive areas identified in the NWACP and this SCP.
9. Disposal	Demonstrate the ability of the spill response organization to dispose of the recovered material and contaminated debris.
10. Communications	Demonstrate the ability of the spill response organization to establish an effective

Core Components	Description
	communications system.
11. Transportation	Demonstrate the ability of the spill response organization to establish multi-mode transportation both for execution of the discharge and for support functions.
12. Personnel Support	Demonstrate the ability of the spill response organization to provide the necessary support of all personnel associated with response.
13. Equipment Maintenance and Support	Demonstrate the ability of the spill response organization to maintain and support all equipment associated with the response.
14. Procurement	Demonstrate the ability of the spill response organization to establish an effective procurement system.
15. Documentation	Demonstrate the ability of the spill response organization to document all operational and support aspects of the response and provide detailed records of decisions and actions taken.

9.2.1 Training Objectives

Training exercises serve several important functions. Some benefits from performing training exercises include, but are not limited to, the following:

1. Readiness for response is increased in the event of an actual emergency.
2. Procedural and policy gaps are identified.
3. Resource needs are identified.
4. Effectiveness of training is evaluated and additional training needs are identified.
5. Modifications and improvements to emergency plans, procedures, and action checklists are identified based on the lessons learned from the exercise.
6. Response personnel practice working together as a team.
7. Knowledge of the characteristics and hazards of fuel stored on site is gained.
8. Personnel learn to recognize conditions that are likely to cause emergencies, predict the consequences of facility malfunctions or failures and fuel spills, and take appropriate corrective action.
9. Personnel learn the steps necessary to control accidental releases of fuel and to minimize the potential for fire, explosion, toxicity, or environmental damages.
10. Personnel learn the proper use of fire fighting procedures and equipment.
11. Personnel become familiar with government rules and regulations and Swissport policies and procedures.

A significant number of fuel spills at facilities are caused by operator error, such as failing to close valves or overfilling tanks during transfer operations. Because operator error is more likely to be a factor in causing spills, training and briefings are critical for the safe and proper functioning of a facility. Proper training of facility personnel can reduce the occurrence of operator-related spills and reduce the severity of impacts when a spill does occur. Training encourages up-to-date planning for the control of, and response to, a fuel spill, and also helps to sharpen operating and response skills.

9.2.2 Training Requirements and Frequency

The USEPA requires owners and operators of facilities to conduct training on facility-specific fuel spill prevention and response measures (40 CFR 112.20 (8), 112.21). The training program described in this section focuses on response procedures during a fuel spill.

The USEPA requires facilities to develop and implement a fuel spill drill/exercise program that is specific in nature and scope to the responsibilities of SJFSDS personnel identified in the SCP. The drill/exercise program should include tabletop and equipment deployment exercises that are both announced and unannounced, as well as participation in larger area drills and exercises. As required by the PREP guidelines, one tabletop and two deployment exercises must be conducted per year. A worst-case tabletop exercise must by conducted once every three years.

The current CFR does not specify the frequency of implementing the drill/exercise program. In 1991, the USEPA proposed revisions to the regulations to clarify the mandatory nature of the fuel spill prevention-training requirements and proposed several additional requirements. The proposed revisions are listed below. It is recommended that the facility-training program adhere to the proposed revisions.

- All employees who are involved in fuel-handling activities are required to receive eight hours of facility-specific training.
- In subsequent years, employees are required to undergo four hours of refresher training.
- Employees hired after the training program has been initiated are required to receive eight hours of facility-specific training within one week of starting work, and four hours each subsequent year.

Currently at the SJFSDS, all new hires are required to have an eight-hour spill prevention training, which includes a complete review of the SJFSDS SPCC plan, federal regulations, Washington State regulations, POS regulations, and airport regulations. Employees are also instructed and tested on the job. All personnel are instructed and trained by qualified Swissport supervisors and/or consultants in all phases of normal and emergency operating procedures before being assigned positions at SJFSDS. Training records are kept at SJFSDS for a minimum of five years. Once a year, refresher training and deployment exercises for spill response are conducted.

A record will be kept of SJFSDS personnel who have received prevention and response training, type of training, hours of training, and date of training. A Personnel Response Training Log is provided in Appendix J.

Exercise requirements are outlined below.

Exercise Type	Exercise Characteristics
SJFSDS /QI Notification	• Conducted quarterly • Lead operator initiates mock spill notification to supervisor, who then notifies QI • Lead operator documents time/date of notification, name and phone number of individual contacted • Document in accordance with the Spill Management Team Exercise Log in Appendix J
Equipment Deployment	• Conducted two times per year • Response contractors listed in SCP must participate in annual deployment exercise • Document on Spill Management Team Exercise Log in Appendix J
Tabletop Exercise	• Conducted annually • Tests team's response activities/responsibilities • Documents SCP effectiveness • Exercises ICS organization and forms • Must exercise worst-case discharge scenario once every three years • Must test all plan components at least once every three years • Document on Spill Management Team Exercise Log in Appendix J
Unannounced	• Company will participate in an unannounced equipment deployment exercise on an annual basis • Company may take credit for participation in government-initiated unannounced drill in lieu of drill required by PREP guidelines • SCP holders who have participated in a PREP government-initiated unannounced exercise will not be required to participate in another one for at least 36 months from the date of the exercise
Area	• An industry plan holder that participates in an Area Exercise would not be required to participate in another Area Exercise for a minimum of six years

Other Exercise Considerations	
Drill Program Evaluation Procedures	• Company conducts post-exercise meetings to discuss positive items and areas for improvement and to develop action item checklist to be implemented later
Records of Drills	• Company will maintain exercise records for five years following completion of each exercise • Records will be made available to USEPA, Ecology, and other applicable agencies upon request • Company will verify that appropriate records are kept for each spill response contractor listed in the SCP, as required by PREP guidelines (annual equipment deployment drill, triennial unannounced drill, etc.)

The following table lists training requirements for spill responders.

Training Type	Training Characteristics
Training in Use of SCP and SPCC	• Field personnel will be trained to properly report/monitor spills • Plan will be reviewed annually with all employees and contract personnel • Training Logs are provided in Appendix J
OSHA and Washington Industrial Safety and Health Administration Training Requirements	• Company responders designated in SCP must have 24 hours of initial spill response training • Laborers having potential for minimal exposure must have 24 hours of initial oil spill response instruction and eight hours of actual field experience • Spill responders having potential exposure to hazardous substances at levels exceeding permissible exposure limits must have 40 hours of initial training off site and 24 hours of actual field experience • On-site management/supervisors required to receive same training as equipment operators/general laborers plus eight hours of specialized/hazardous waste management training • HAZWOPER Emergency Response Levels presented in table below
Training for casual laborers or volunteers	• Untrained personnel will not be used for operations requiring HAZWOPER training
Wildlife	• Only trained personnel approved by WDFW and appropriate state agency will be used to treat impacted wildlife
Training Documentation and Record Maintenance	• Training activity records will be retained five years for all personnel following completion of training • Company will retain training records indefinitely for individuals assigned specific duties in SCP

The following table summarizes the type of training required for each spill responder.

Unit Name/Response Skill	**Incident Command System Orientation**	**Section-Specific Training**	**Annual Exercise**	**HAZWOPER 24-hour Training**
Frequency	**Once**	**Annual**	**Annual**	**Refresher—Annual**
Command Staff				
QI	X	X	X	X
Safety Officer	X	X	X	X
Liaison Officer	X	X	X	X
Information Officer	X	X	X	X
Operations Section				
Section Chief—Operations	X	X	X	X
Recovery and Protection Branch	X	X	X	X
Staging Area Manager	X	X	X	X
Wildlife Unit	X	R	R	X
Emergency Response Unit	X	R	R	X
Planning Section				
Section Chief—Planning	X	X	X	R
Situation Unit Leader	X	X	X	R
Resource Unit	X	X	X	R
Environmental Unit	X	X	X	X
Documentation Unit	X	X	X	R
Demobilization Unit	X	R	R	
Logistics Section				
Section Chief—Logistics	X	X	X	R
Service Branch	X	X	X	
Support Branch	X	X	X	
Communications Unit	X	X	X	
Finance Section				
Section Chief—Finance	X	X	X	
Time	X	R	R	
Procurement	X	R	R	
Compensation/Claims	X	R	R	
Cost Unit	X	R	R	

X = Required Training
R = Recommended Training

The following table summarizes HAZWOPER emergency response levels.

Level	Description
1	**Witness or discoverer** of a spilled product discharge; emergency response responsibilities are to activate the EFSO to stop fuel flow, warn personnel, shut off ignition sources, contain the spill, and notify the POS Fire Department and SJFSDS QI. Training Requirement: Sufficient to demonstrate competency at position.
2	**First Responders** who respond to releases as part of the initial response effort; trained to respond within a defensive manner (i.e., booming to contain the release and prevent it from spreading), but not to stop the release. **Training Requirement:** HAZWOPER First Responder Awareness Level **Frequency:** Annual **Time Estimate:** 8+ hours **Employees Required to be Trained:** Individuals who are likely to witness or discover a hazardous material release and who have been trained to initiate an emergency response sequence by notifying the appropriate authorities. (OSHA 29 CFR 1910.120(e), (g)(6)(I)) and WAC 296-62 Part P) **Competencies:** • Understand what hazardous substances are, and the risks associated with them in an incident • Understand the potential outcome associated with an emergency created when hazardous substances are present • Recognize the presence of hazardous substances in an emergency • Identify the hazardous substances, if possible • Understand the role of the First Responder awareness individual in the SCP, including site security and control and the U.S. Department of Transportation Emergency Response Guidebook • Realize the need for additional resources and for making appropriate notifications

Level	Description
3	**Hazardous materials technicians** trained to aggressively stop the release; these individuals plug, patch, or otherwise block the release of product at the source. **Training Requirement:** HAZWOPER Hazardous Material Technician Level **Frequency:** Initial **Employees Required to be Trained:** Individuals who respond to hazardous material releases or potential releases for the purpose of stopping the release. (OSHA 29 CFR 1910.120 and WAC 296-62 Part P) **Competencies:** • Meet requirements for First Responder • Implement SCP • Classify, identify, and verify hazardous material, using field survey equipment • Function an assigned role in the Incident Command System • Hazard and risk assessment techniques • Advance control containment, or confined operations (within capacities of resources and the PPE available) • Decontamination procedures • Termination procedures

9.2.3 Exercise Types

Three types of exercises, tabletop, deployment, and worst-case, are described in detail below. The major difference among the three exercise types is the variation in complexity and size.

9.2.3.1 Tabletop

A tabletop exercise is an activity in which fuel-spill response staff meets, usually in a conference room, to “drill” the SCP for adequacy. This exercise is performed at least once per year. The primary characteristic is a verbal “walk through” of a response to an emergency situation. The tabletop exercise is designed to elicit constructive discussion by the participants, without time constraints, as they examine and resolve problems based on the SCP.

The purpose of a tabletop exercise is to have participants practice problem solving and resolve questions of coordination and assignment of responsibilities in a non-threatening format, under minimum stress. Tabletop exercises can be used in preparation for a deployment or worst-case exercise.

Tabletop exercises typically involve a limited demonstration of operational response and/or internal coordination activities. Post-exercise evaluation activities include an oral critique session during which recommendations for improvement are discussed with and among participants. A report summarizing exercise activities and recommendations for improvement should be prepared. The Spill Management Team Exercise Log provided in Appendix J can be used for this purpose.

9.2.3.2 Deployment

Response equipment deployment exercises are performed at least twice per year to ensure that response equipment is operational and that the personnel who would operate the equipment in a spill response are capable of deploying and operating the equipment. Only a representative sample of each type of response equipment needs to be deployed and operated, as long as the remainder is properly maintained. When appropriate, testing of response equipment is conducted while the equipment is being deployed.

A deployment exercise is more extensive than a tabletop exercise in that activities are conducted beyond a conference room atmosphere. This exercise can take place concurrently with Airport personnel training, for example, during simulated air-crash incidents. Often, this type of exercise focuses on a single function or activity within a function (e.g., direction and control).

Boom deployment exercises include inspection of booms for signs of wear or structural deficiencies. If tears in fabric or rotting are observed, the booms will be repaired or replaced. In addition, end connectors will be inspected for evidence of corrosion. If severe corrosion is detected, equipment will be repaired or replaced.

Other response equipment identified in this SCP will be inventoried and tested at least once per year to ensure that the stated quantities are in inventory and in proper working order.

The purpose of a deployment exercise is to test the planning and response capabilities of personnel and systems relative to the tested function. For example, a direction and control deployment exercise would be designed to test and evaluate the response team's operations capability and response time in a stressful environment. Another example might be a transportation exercise designed to test the capability of SJFSDS and POS Fire Department personnel to establish a command post at the scene and coordinate the on-site response activities. The scope of activity in a deployment exercise will include more policy and coordination personnel than are usually involved in tabletop exercises.

Post-exercise evaluation activities include an oral critique session during which recommendations for improvement are discussed with and among participants. A report summarizing exercise activities and recommendations for improvement should be prepared. The Spill Management Team Exercise Log provided in Appendix J can be used for this purpose.

9.2.3.3 Worst-Case

A worst-case exercise is used to evaluate operational capabilities of the response team in a worst-case spill scenario. The purpose of a worst-case exercise is to test a major part of the functions in the SCP. A worst-case exercise incorporates a high degree of realism, extensive involvement of resources and personnel, and an increased level of stress.

This type of exercise includes mobilization of personnel and resources and the actual movement of emergency personnel equipment, and resources required to demonstrate a coordinated response capability.

As with the deployment exercise, activities will include operations, coordination, and policy-level personnel, but with broader participation. Post-exercise evaluation activities include an oral critique session during which recommendations for improvement are discussed with and among participants. A report summarizing exercise activities and recommendations for improvement should be prepared. The Spill Management Team Exercise Log provided in Appendix J can be used for this purpose.

9.2.4 Exercise Planning

Once the SCP is in place, certain advance planning activities need to be completed before an exercise is conducted. These activities include:

- Establishing an exercise design team,
- Deciding on the scale of the exercise,
- Selecting exercise objectives,
- Developing the exercise scenario, and
- Evaluating the exercise.

These activities are described below.

9.2.4.1 Exercise Design Team

A key element in the successful development of an exercise is to establish an exercise design team. The responsibility of this team is to select the functions and the objectives of the exercise.

A multidisciplinary approach to team composition provides an excellent opportunity to understand the needs of others. Team members should be knowledgeable in the disciplines or functions being exercised. It is also beneficial if team members have experience in emergency management and response, are creative, and possess "team building skills."

The team may include representatives from the POS Fire Department and Ecology. The team may also include representatives from the fuel supplier. Because they will generally be made aware first of unusual and potentially dangerous events, they play a crucial role in the design of a realistic exercise. Representatives of the Washington State Department of Emergency Management and King County Emergency Management Committee are also good members for an exercise design team.

Once the team is established, the next step is to appoint or elect one member to be the team director. Exercise development is a complex task; therefore this person should be someone who can motivate people to continue working when things get difficult.

The team is responsible for coordinating exercise activities and writing the scenario. For the exercise to be successful, the players should not be included in writing the scenario, and the scenario should be kept confidential. Team members would also make ideal controllers or evaluators of an exercise. An exercise team should consider the types of participants to be involved in their exercise.

There are two additional ingredients necessary for a successful exercise program. The first is to ensure that sound safety practices and principles are designed into the exercise to prevent injuries to players and the public (e.g., how will the public and bystanders be handled the day of the exercise).

9.2.4.2 Scale of Exercise

The team should select the right type of exercise based on experience, needs, and resources. A good strategy may be to start with a less ambitious exercise (tabletop) and to build up to a worst-case exercise. This approach builds on exercise successes, boosts confidence, and gains management support. This gradual approach avoids the frustration of holding a worst-case exercise as an initial effort and having everything go wrong.

As with the exercise design team, potential participants may include representatives from Ecology, the POS Fire Department, fuel supplier, and Local Emergency Planning Committee. Consider combining efforts with the POS Fire Department or OSRO.

9.2.4.3 Exercise Scenario Development

After selecting the exercise objectives, the next step is to develop an exercise scenario. An exercise scenario is a sequential, narrative account of a hypothetical accident. The scenario provides the catalyst for the exercise and is intended to introduce situations that will inspire responses, and thus allow testing of the exercise objectives. Most scenarios are initiated with an accident resulting in a release of, or the potential for a release of, a hazardous material.

For example, one scenario might entail an incident where a breach in a Jet-A storage tank has occurred. The scenario would include a description of where, what, and when it occurred, the area affected, weather conditions, etc. The scenario would also include clearly defined, preplanned times of the various stages of the accident; that is, what scenario events should occur to get agencies to carry out response actions.

These scenario events are often communicated via a control message. The control message describes the problems that prompt an agency to take action. One example of a preplanned control message may be that the tank valve cannot be shut off. The response action would be to utilize a “C Kit” and trained response personnel to stop the release until further repairs can be made to the valve. Another example of a preplanned control message may be that a fuel delivery is scheduled to the affected tank. The response action would be to notify the fuel supplier and advise them not to transfer fuel because of the accident.

A realistic exercise scenario provides the best opportunity to evaluate the response team’s emergency plan, training, and overall preparedness to operate under emergency conditions. There are several ways to incorporate realism into an exercise scenario.

One way to develop a realistic scenario is to evaluate real incidents and consider incorporating this real-world information into an exercise scenario. A great deal can be learned by reviewing case histories of incidents and accidents that have already occurred. Another way to provide a realistic exercise scenario is to develop and use props and other simulation materials to the extent possible. Because of the lack of genuine physical cues (e.g., visible vapors or leaking liquids), it can be difficult to exercise field teams. Dry ice or smoke bombs are commonly used to simulate a hazardous material. Above all, think safety first when simulating hazardous materials.

Determine before the exercise whether field kits for environmental monitoring will be fully stocked for demonstration purposes or if only some of the more fragile equipment or expensive supplies will be simulated.

The team should make arrangements to use a specifically identified radio channel on the day of the exercise. Begin and end each communication with “This is an exercise,” because many people monitoring emergency radio channels may mistake the messages for a real incident. Everyone must know it is an exercise. Develop a fail-safe mechanism or code (i.e., Code “red”) to indicate when to immediately end an exercise for safety reasons or for a real emergency. Real emergencies take precedence over an exercise.

Once the advance exercise planning activities are completed, the next steps are to fine-tune the scenario, stage and set up the site and equipment, and to finalize logistical and coordination aspects of the exercise. For example, shortly before the exercise, the team should conduct an orientation seminar (often called a pre-exercise meeting) to inform players of last-minute changes, and to review roles, responsibilities, and objectives. Players are instructed on the extent of exercise “play” expected from them during the exercise—what can and cannot be simulated. Often, in exercises, responders say, “In an actual emergency I would have done this, but this is only an exercise.” Make the exercise a worthwhile training experience by ensuring that all involved understand their roles.

The orientation seminar or pre-exercise meeting is a convenient time to distribute badges to all exercise personnel. These badges can be used to identify players, controllers, evaluators, and observers. The use of badges minimizes confusion about who may insert control messages, and identifies personnel to one another, maintaining the integrity of the exercise/evaluation process. Badges will work only in limited situations, however, primarily tabletop exercises. In deployment and worst-case exercises, something readily visible and distinctive should be used (colored hats, t-shirts, etc.).

It is important to note that the number of last-minute activities will increase proportionately with the scope of the exercise. Thus, final preparations for a tabletop exercise will require less effort than those required for a worst-case exercise. Consequently, appropriate time and resources should be allowed to complete the critical last-minute activities.

9.2.4.4 Exercise Evaluation

The extent and depth of the evaluation are based on the participating response team’s needs and resources. One method of evaluation is to use related criteria or standards of performance. These standards of performance, agreed to before the exercise, are based on observable response measures that must be performed to meet each objective. It is more useful for a response team to receive an objective-based evaluation and know that a particular task was or was not performed and that it was or was not consistent with the plan, rather than a subjective judgment based solely on an evaluator's opinion of "how well" an overall function was accomplished. Opinions are important, but they should be based on specific observations and facts.

When possible, ensure that evaluators are trained, technically qualified to observe hazardous materials response activities, and experienced at evaluation of emergency response activities. Using qualified evaluators in technical areas (e.g., chemical characteristics, impacts) and/or evaluators experienced in evaluation can result in an objective and useful evaluation. If trained evaluators are not available locally, the response team can gain its own evaluation experience by participating in a neighboring response organization's exercise, or by requesting help from state and/or federal agencies. These agencies may be able to provide assistance in locating trained evaluators, providing evaluators, or training local evaluators.

There are numerous activities that should be conducted after an exercise. These activities include:

- Evaluation Process,
- Exercise Feedback, and
- Followup.

Evaluation Process

Exercise evaluation is the systematic examination of the effectiveness of the emergency preparedness program. It provides decisionmakers with justification for improving the emergency plan or providing additional training.

Evaluation activities are ongoing throughout the exercise as evaluators record data and observations and make tentative judgments. One important post-exercise activity is a post-exercise debriefing in which facts and findings are presented, compared, and discussed by and among evaluators, players, and controllers, and conclusions are provided to exercise players. Tentative conclusions are generally provided shortly after the exercise, and final conclusions are often provided later in a formal written report. The exercise evaluation should address each exercise objective:

- Was the objective met?
- If yes, what were the results?
- If no, what changes are necessary to achieve the objective?

The most successful exercise is not one where all went well and participants walked away thinking "aren't we great?" Rather, the successful exercise is one that forces an honest look at capabilities and leads to improvement. Exercise evaluation answers such important questions as:

- Are additional resources necessary?
- Are parts of the plan in need of revision?

- Is additional training required?
- Are staffing levels adequate?
- Is the communication system vulnerable to overload?
- Can first response units communicate with one another?

Exercise Feedback

In addition to exercise evaluation, other post-exercise activities may include having exercise players complete an evaluation questionnaire. This will produce information about the exercise, particularly the effectiveness of the plans and emergency response to the exercise scenario. Other post-exercise activities may include:

- Arranging for feedback mechanisms (e.g., participant debriefings, oral critiques, or a brief or comprehensive exercise evaluation report) to provide participants with an indication of opportunities for improvement in their plans and performance.
- Scheduling a followup exercise to test corrected deficiencies from previous exercises and to validate response under more complex situations and increased agency involvement.
- Making concrete recommendations for resolving problems and improving procedures (additional practice, training, staffing, equipment). Re-plan, re-train, and re-exercise where objectives were not fully met.

Followup

Of particular importance is "following up" on the exercise evaluation recommendations. Recommendations without followup would limit the response team from receiving the full benefit of the exercise. The followup is one of the most neglected areas of exercise development. Experts suggest the following techniques to ensure that followup occurs:

- Use the exercise to establish goals for a long-term preparedness program that includes exercises.
- Assign tasks, a schedule, and the responsibility for recommended improvement.
- Monitor the progress of implementing recommended improvements.
- Test improvements during the next exercise.
- Reconvene the original exercise design team following an exercise to determine what followup activity is necessary.

9.2.4.5 Exercise Conduct

Advance planning sets the stage for the smooth conduct of an exercise. The team director must assume responsibility for the conduct of the exercise to ensure that the exercise stays on track and thus, the agreed upon objectives are tested. The team director's job is to:

- Present the players with the exercise-initiating narrative.
- Announce the first event of the scenario.

- Stimulate player responses, without intervening in a way that assumes control of the play, unless it appears likely that the players will not initiate a response action critical to the objective(s) of the exercise.
- Manage the flow and pace of the exercise by introducing the remaining events in sequence through the use of control messages.
- Keep the exercise on schedule and terminate play at the specified end-time.

In general, it is best to let the exercise play develop naturally, with the players responding to the scenario events as they deem appropriate. Some response actions are so critical to the completion of the exercise objectives, however, that the exercise director and/or controllers may have to intervene in exercise play by interjecting additional response-stimulating messages to ensure that such responses occur. If intervention is necessary, it should be noted and discussed during the exercise evaluation.

Section 10.0
Equipment Lists

The response equipment available to SJFSDS consists of equipment and supplies owned and stored on the SJFSDS facility, and equipment available from the emergency response contractor. All equipment is available year-round. Equipment available from the emergency response contractor is listed in Appendix D. The extent to which the emergency response contractor's equipment is relied upon by other plans is discussed in Appendix D. This section lists equipment stored at the SJFSDS facility.

COLLECTION EQUIPMENT

Operational Status:	Ready
Type:	3-inch diesel trash pump, trailer-mounted
Capacity:	126 gallons per minute (24.5 gpm at 20% efficiency)
Storage Location:	Tank Farm
Response Time:	Immediate

Operational Status:	Ready
Type:	Skimmer
Capacity:	230 gallons per minute
Storage Location:	Tank Farm
Response Time:	Immediate

SORBENTS AND CONTAINMENT

Operational Status:	Ready
Type:	All Response or equivalent
Amount:	1 double weight, wide sorbent roll, 38″ W x 144′ L
Absorption Capacity:	50 gallons/roll
Storage Location(s):	Spill Response Trailer

Operational Status:	Ready
Type:	All Response or equivalent
Amount:	100 sorbent pads
Absorption Capacity:	29 oz./pad
Storage Location(s):	Spill Response Trailer

Operational Status:	Ready
Type:	Sphag Sorb or equivalent
Amount:	2-cubic-foot bag loose absorbent
Absorption Capacity:	15 gallons/bag
Storage Location(s):	Spill Response Trailer

Operational Status:	Ready
Type:	Dawg or equivalent
Amount:	500 feet of 5″ diam. x 10′ L sorbent booms
Absorption Capacity:	34 gallons/boom

Storage Location(s): Spill Response Trailer

Operational Status: Ready
Type: PSI or equivalent
Amount: 1,000 feet of containment boom with 6-inch skirt
Storage Location(s): Spill Response Trailer

HAND TOOLS

TYPE	QUANTITY	STORAGE LOCATION
Shovel	5	Spill Response Trailer
Rake	5	Spill Response Trailer
Pitchfork	2	Spill Response Trailer
Post hole digger	1	Spill Response Trailer
Pick-ax	2	Spill Response Trailer
Ax	1	Spill Response Trailer
Fence post driver	1	Spill Response Trailer
Saw	2	Spill Response Trailer
6-foot pry bar	1	Spill Response Trailer
6-pound sledgehammer	1	Spill Response Trailer
100 feet poly rope	1	Spill Response Trailer

COMMUNICATIONS EQUIPMENT

TYPE	QUANTITY	STORAGE LOCATION/NUMBER
Cell Phone	1	Dean Williams / (253) 670-0040
Swissport-issued radios	5	One for each employee

The emergency response contractor will provide their own communications appropriate to the spill scenario including, but not limited to, VHF, UHF, intrinsically safe radios, and cellular phones. The emergency response contractor will use the same radio types and frequencies that Swissport uses. Swissport has a radio available for the emergency response contractor's use. Swissport will utilize cell phone communication with the emergency response contractor in addition to radio communication.

Swissport has four (4) portable ICOM ICF21 radios and one (1) ICOM ICF420S radio. Swissport radios are operated on two channels with frequencies of 46.450 / 466.450. Channel 1 transmits on frequency 461.450 and receives on frequency 466.450. Channel 2 transmits and receives on frequency 467.050.

All communication systems will be consistent with the NWACP, section 5310. Swissport will utilize cell phones to communicate with OSRO and the POS Fire Department.

FIRE FIGHTING AND PERSONAL PROTECTIVE EQUIPMENT

TYPE	QUANTITY	STORAGE LOCATION
Assorted Boots and Gloves	Varies	Spill Response Trailer

Tyvek Coveralls and Rain Gear	Varies	Spill Response Trailer
Fire Extinguishers	11	Tank Farm, Load Areas
Wheeled Fire Extinguishers	2	Load Areas
Eyewash	1	Spill Response Trailer
Safety Goggles	2	Spill Response Trailer

REPLACEMENT PARTS, MISC.

Everything listed below is stored in the Spill Response Trailer:

- decontamination kit (1)
- 12-inch aluminum tubes (2)
- 20- x 8-inch plastic pipes (4)
- 2- x 12-inch weir boards (2)
- eyewash (1)
- burlap bags (50)
- chicken wire
- “T” metal posts (12)
- plastic tubes (2)
- visqueen (2 rolls)
- poly bags (1 roll)
- wooden stakes (2 bundles)
- 5-gallon buckets (5)
- reflecting vests (2)
- box of rags (1)
- slow/stop sign (1)
- plywood 4 feet by 8 feet (2)

The table presented below is intended to satisfy the requirements of Ecology regarding response capabilities and response times for worst-case discharges at the SJFSDS. This table also shows that the SJFSDS meets Ecology oil containment/recovery benchmarks.

Table 10-1. Response Equipment

Response Benchmark	Requirements			Equipment Available		
	Boom	Recovery	Storage	Boom	Recovery	Storage
1 hour (equipment on site)	1,000 feet	0.1% of WCD = 97 bbl	5X Recovery Benchmark = 485 bbl	500 feet sorbent, 1,000 feet containment (SJFSDS)	1,000 bpd*	500 bbl (OSRO)
6 hours (equipment within 210 miles)	10,000 feet	10% of WCD = 9,700 bbl	5X Recovery Benchmark = 48,500 bbl	10,000 feet (OSRO)	10,000 bpd (OSRO)	50,000 bbl (OSRO)
12 hours (equipment within 420 miles)	Sensitive Areas	15% of WCD = 14,550 bbl	5X Recovery Benchmark = 72,750 bbl	Unlimited (OSRO)	15,000 bpd (OSRO)	73,000 bbl (OSRO)
24 hours (equipment within 840 miles)	Sensitive Areas	20% of WCD = 19,400 bbl	5X Recovery Benchmark = 97,000 bbl	Unlimited (OSRO)	20,000 bpd (OSRO)	97,000 bbl (OSRO)
48 hours (equipment within 1,680 miles)	Sensitive Areas	25% of WCD = 24,250 bbl	5X Recovery Benchmark = 121,250 bbl	Unlimited (OSRO)	25,000 bpd (OSRO)	121,250 bbl (OSRO)

*bpd = barrels per day

Section 11.0
Diagrams

This section presents Facility Diagrams required by 40 CFR, Part 112.20(h)(9). Figures 11-1 and 11-2 show the site plans, which include the following:

- Facilities to scale;
- Above and below ground storage tanks;
- Contents and capacities of storage tanks;
- Contents and capacities of secondary containment;
- Buildings;
- Transfer areas; and
- Location of communication and emergency response equipment.

Figures 11-3 through 11-5 present the drainage plans, which include the following:

- Facilities to scale;
- Major sanitary and storm sewers, manholes, and drains;
- Shut-off valves and EFSO;
- Surface water receiving streams;
- Fire fighting resources;
- Other utilities;
- Response personnel ingress and egress;
- Response equipment transportation routes; and
- Direction of spill flow from discharge points.

Figures 11-6 and 11-7 present the site evacuation plans, which include the following:

- Facilities to scale;
- Site plan diagram with evacuation routes; and
- Location of evacuation regrouping area.

FIGURES

(b) (7)(F)

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Figure 1-2. Relationship of Federal, State, and Local Contingency Plans

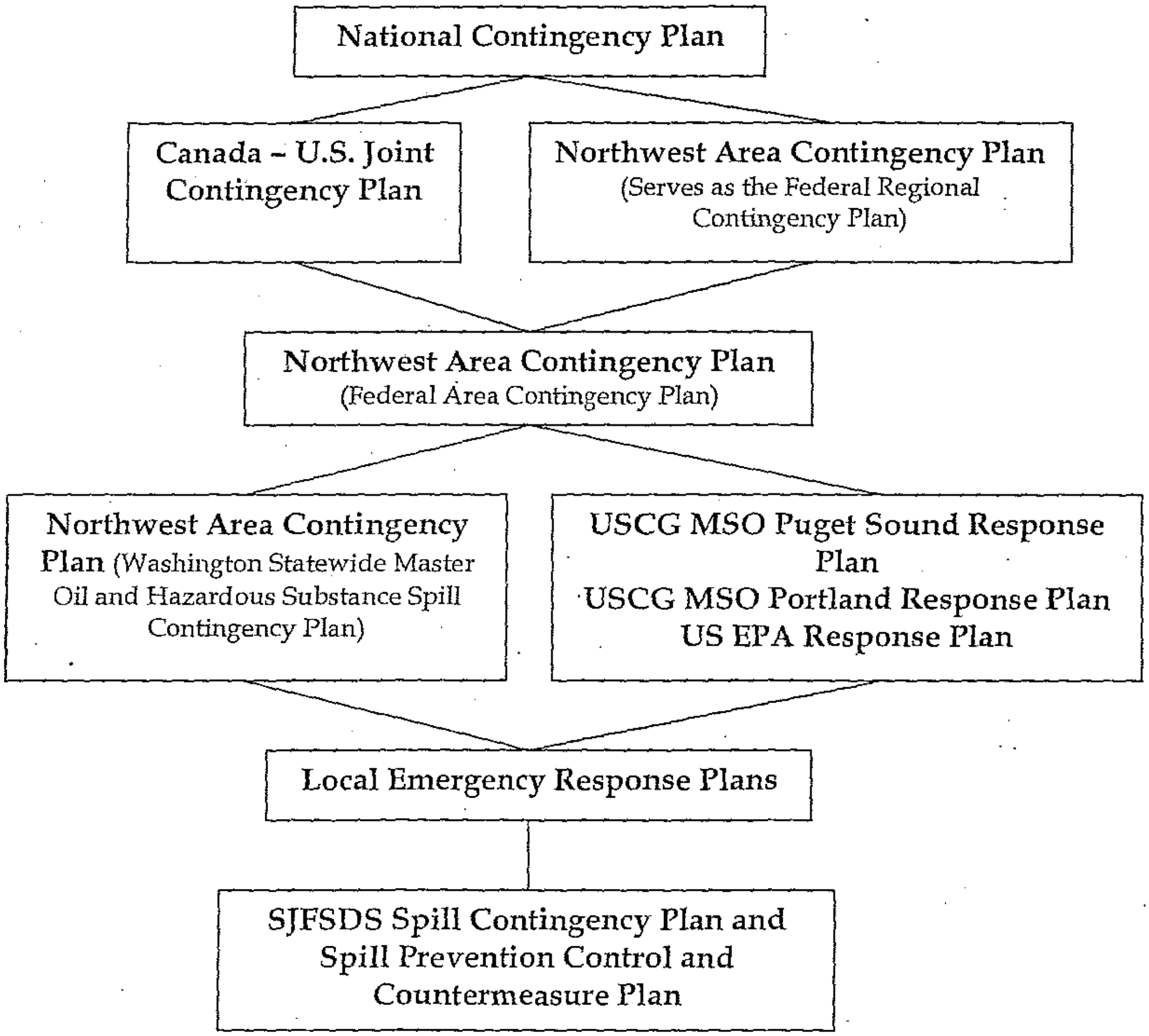
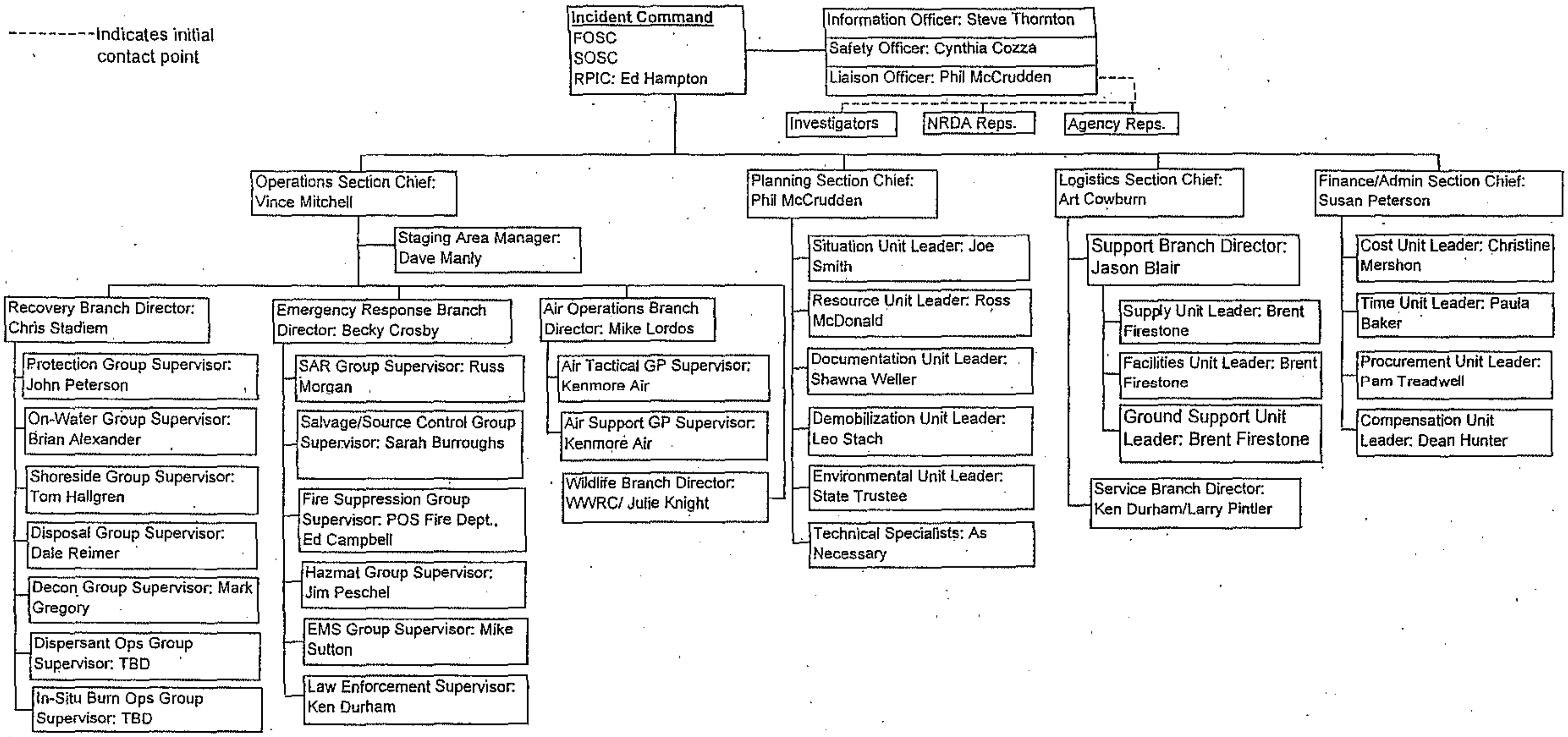


Figure 3-1. Incident Organization Chart



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Portland: (971) 544-2139
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Figure 5-1
SEATAC JET FUEL STORAGE/DISTRIBUTION SYSTEM
(SJFSDS)
SEATAC, WASHINGTON

DES MOINES CREEK ACCESS LOCATIONS

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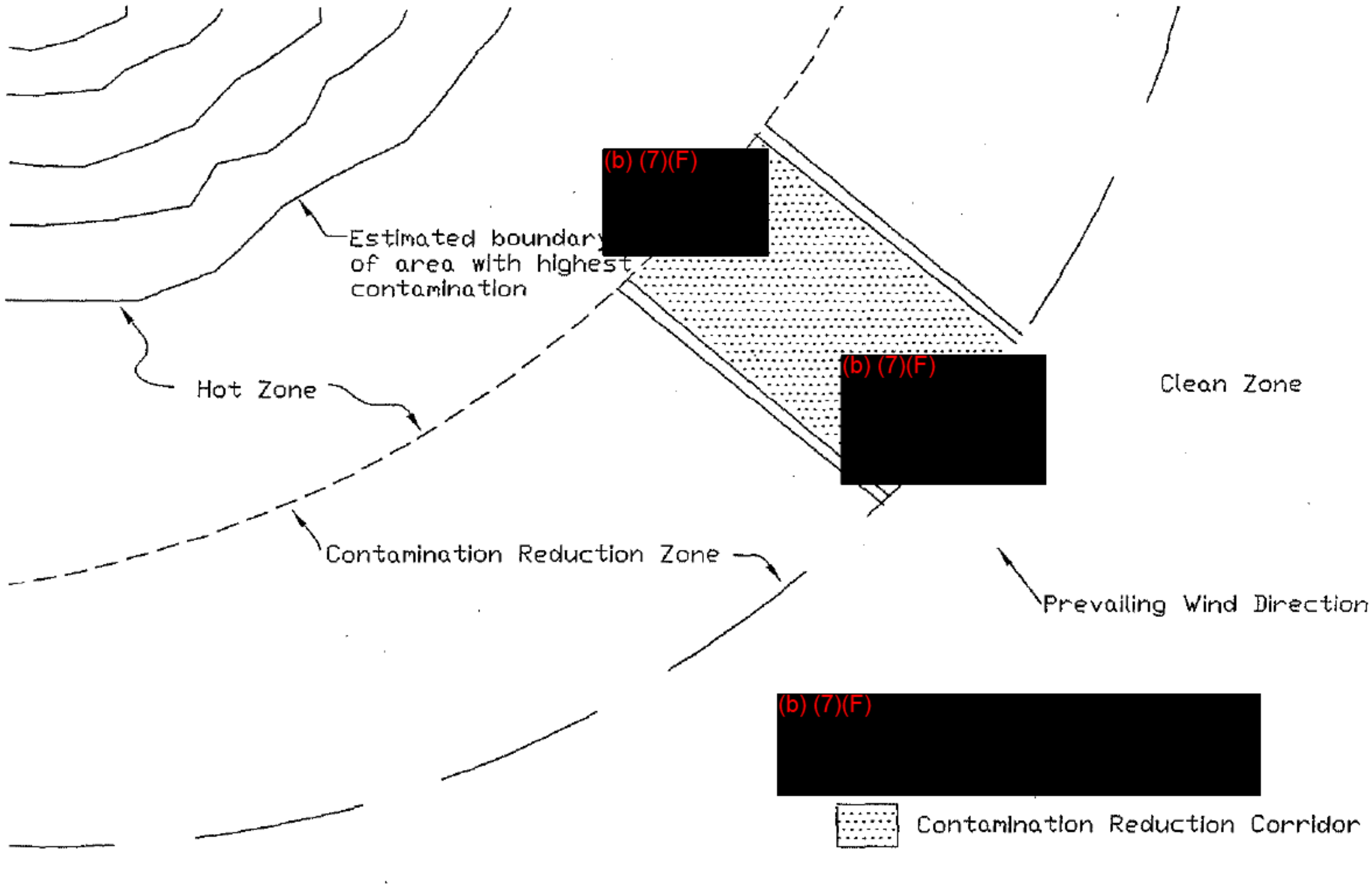
LAYOUT: 1



Note: Area dimensions not to scale. Distances between points may vary.

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Figure 6-1
SEATAC JET FUEL STORAGE/DISTRIBUTION SYSTEM
(SJFSDS)
SEATAC, WASHINGTON

SPILL RESPONSE WORK ZONES

LAYOUT: 1

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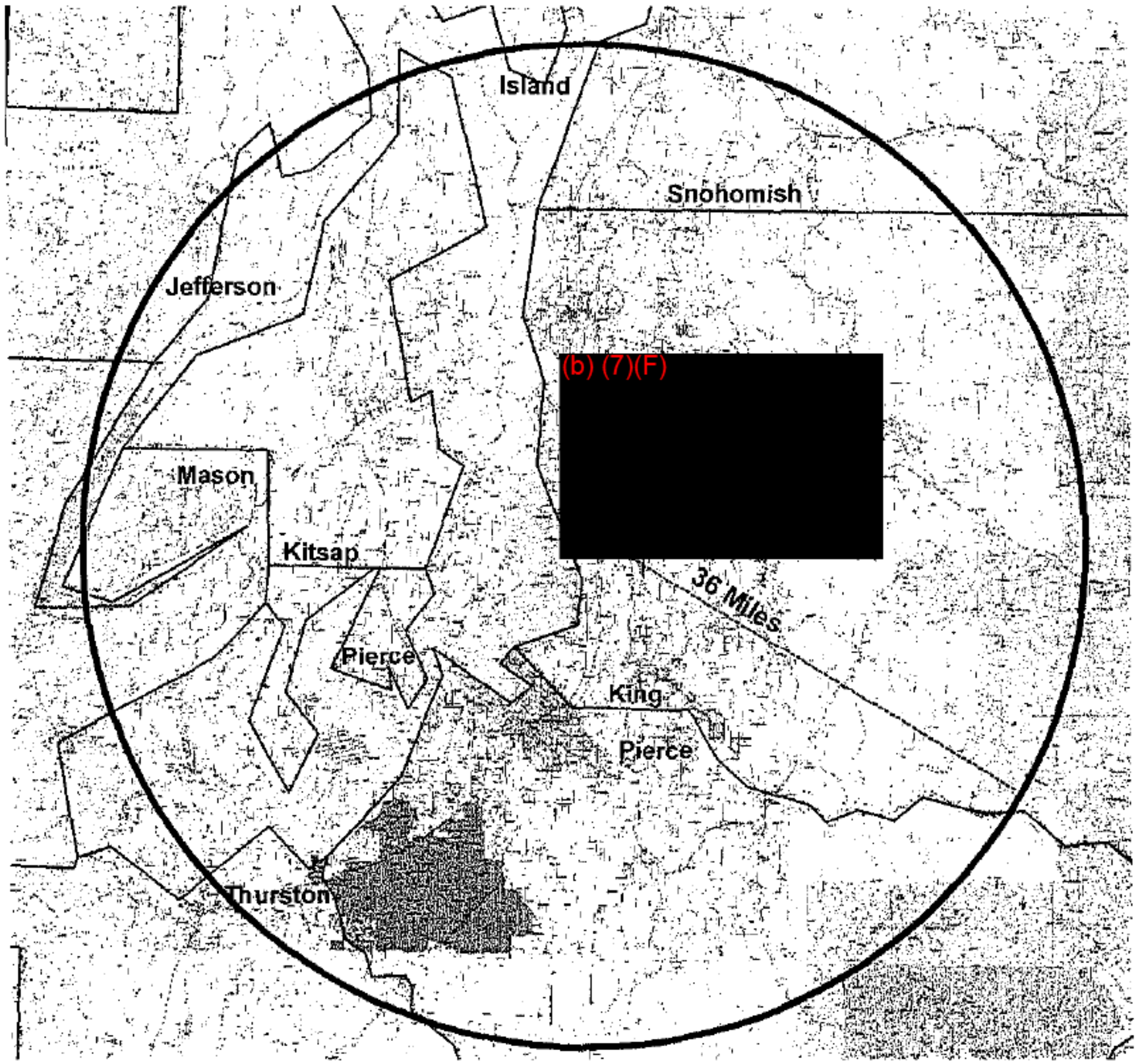

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Figure 7-1
SEATAC JET FUEL STORAGE/DISTRIBUTION SYSTEM
(SJFSDS)
SEATAC, WASHINGTON

PLANNING DISTANCE MAP

LAYOUT: 1

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REVIS.
PROJECT NO.
2002.02.01

Figure 7-2
SEATAC JET FUEL STORAGE/DISTRIBUTION SYSTEM
(SJFSDS)
SEATAC, WASHINGTON

SENSITIVITY MAP

LAYOUT: 1

(b) (7)(F)

[redacted]

(b) (7)(F)

[redacted]

K:\ENV\SWISSPORT FUELING INC\SITE\42807\CAD\42807FIGURES\42807-SWISSPORT-FG11-2.DWG 11-07-2006 8:21 C_WHITE

(b) (7)(F)

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APPENDIX A
Department of Ecology Letter

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
TTY 711 or 800-833-6388 (For the Speech or Hearing Impaired)

October 9, 2007

Michael Hagan
Swissport Fueling, Inc.
2350 South 190th Street
Seattle, WA 98188

Dear Mr. Hagan:

This letter is in response to your letter dated July 11, 2007, requesting withdrawal from coverage under the provisions of Chapter 90.56 RCW, Chapter 173-180 WAC, and Chapter 173-182 WAC. A site visit, made on September 18, 2007 by Richelle Perez and Gary Lee, verified the engineering controls mentioned in your request. Based on their inspection of your facility, it has been determined that you are no longer required to maintain an approved oil spill contingency plan, operations manual, prevention plan, or training and certification plan. We are requesting that you continue to maintain the same response capability within your organization.

The termination of your status as an oil spill contingency planning and prevention planning facility and withdrawal from coverage approval is contingent on your engineering controls remaining in place.

While Ecology's termination and withdrawal approval is made in good faith, you should be aware that the definition of a facility could be broadened in the future to include your facility.

Thank you again for taking the time to show my staff your facility. It is obvious that many improvements have been made to stormwater and spill management at the facility. We appreciate the investments that you have made in spill prevention. If you have any questions or comments, please do not hesitate to contact Richelle Perez at 360-407-6972 or via e-mail at rdeg461@ecy.wa.gov.

Sincerely,

Dale Jensen
Program Manager
Spill Prevention, Preparedness and Response Program

DJ/lh

CERTIFIED MAIL 7099 3220 0009 8782 2288

cc: Nestor Soriano, Swissport Fueling, Inc.
Tucker Cornwall, Swissport Fueling, Inc.
Richelle Perez, Washington Department of Ecology
Gary Lee, Washington Department of Ecology
USCG Sector Seattle
US EPA Region 10
Central Files, Spills Program

swissport

July 11, 2007

Swissport Fueling, Inc.
45025 Aviation Drive
Suite 350
Dulles, VA 20166
Phone: 703-742-4338
Fax: 703-742-4388

Linda Pilkey-Jarvis
Preparedness Section Manager
Spill Prevention, Preparedness, and Response Program
Department of Ecology
3190 160th Avenue, SE
Bellvue, Washington, 98008-5452

RE: Evaluation of Spill Contingency Plan Requirements

Dear Ms. Pilkey-Jarvis,

The purpose of this letter is to evaluate the Oil Spill Contingency Plan requirements; more specifically Chapter 173-182 of the Washington Administrative Code (WAC), the Oil Spill Contingency Plan Rules; and their applicability to Swissport Fueling's operations at the Sea-Tac Airport Jet-A storage tank farm in Seattle, Washington. Swissport Fueling's operations at the Sea-Tac airport do not appear to meet the criteria that require a Spill Contingency Plan, and the accompanying planning and drill events. Swissport is providing this letter so that the Department of Ecology (DOE) can review pertinent information regarding the facility that may warrant Swissport requirements be reduced; or Swissport be exempted from the Oil Spill Contingency Plan requirements.

According to Chapter 173-183-030 (14) of the WAC a "Facility" is defined as "any structure, group of structures, equipment, pipeline, or device, other than a vessel, located on or near the navigable waters of the state"; and (22) defines "Navigable waters of the state" as "those waters of the state, and their adjoining shorelines, that are subject to the ebb and flow of the tide and/or are presently used, have been used in the past, or may be susceptible for use to transport intrastate, interstate, or foreign commerce."

It is Swissport's view that our tank farm operations do not meet the definition of a facility as it is not "located on or near the navigable waters of the state". The tank farm is located near Des Moines Creek, 3 miles north of the Puget Sound, which is the closest "navigable waterway". Des Moines Creek is not subject to the ebb and flow of the tide and is not presently used, been used in the past, or is susceptible for use to transport intrastate, interstate, or foreign commerce; and is therefore, not considered a navigable waterway.

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The Revised Code of Washington (RCW) Section 90.56 Oil and Hazardous Substance Spill Prevention and Response regulates the requirement for certain facilities to prepare and maintain contingency and prevention plans. According to RCW 90.56.200 (1) "The owner or operator for each onshore and offshore facility shall prepare and submit to the department an oil spill prevention plan in conformance with the requirements of this chapter." Onshore facility is defined in RCW 90.56.010 (19) as "any facility any part of which is located in, on, or under any land of the state, other than submerged land, that because of its location, could reasonably be expected to cause substantial harm to the environment by discharging oil into or on the navigable waters of the state or the adjoining shorelines."

Based on the regulations and definitions cited above, it does not appear that Swissport clearly meets the definition of a "facility" or "onshore facility"; and therefore may not be subject to the Oil Spill Contingency Plan Rules. However, Swissport does acknowledge that in the event of a catastrophic failure of a tank and the containment area, i.e. worst case scenario, it is feasible that product released during the event could reach the Puget Sound via Des Moines Creek; although this scenario is only feasible in the event of a worst case scenario, which is highly unlikely. The following measures and procedures are in place to ensure the integrity of the operation and the tank farm system as well as to eliminate the possibility for releases from the Swissport operations.

- All tanks are constructed in accordance with applicable engineering standards and are maintained by the strict American Petroleum Institute (API) 653 standard which governs periodic internal and external tank inspection to ensure tank integrity.
- Tanks are metallic and cathodically protected to guard against corrosion. The tanks are in compliance with federal and DOE storage tank regulations. Buried piping is wrapped, coated and cathodically protected to reduce the possibility of corrosion.
- The tank farm and all operating components, including the storage tanks, piping, and valves are inspected on a daily basis for signs of wear, corrosion and other abnormalities. Any issues identified are reported and addressed immediately.
- Highly trained and qualified employees are in charge of monitoring all computer gauging, leak detection, and operating systems.
- All fuel transfers and receipts are under the control of a highly trained and qualified operator.

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- Operations meet the strict standards of the Air Transport Authority (ATA) 103 Standards and Specifications which governs fuel storage and distribution system operations at airports throughout the country.
- Each tank is equipped with high and high-high level alarms to prevent overfilling of a tank. All tanks are electronically monitored; information is transmitted to a computerized software system that is manned 24 hours a day in the control room. Any abnormalities in tank or piping operations or levels is indicated via alarm and investigated immediately.
- Recurrent training for all employees regarding the operation and maintenance of the facility is conducted at least annually.
- The airport hydrant pipeline distribution system is equipped with a leak detection system and is tested monthly.
- As part of daily inspections, the secondary containment structure and berm system is inspected for cracks, discoloration, presence of spilled or leaked fuel, corrosion and valve conditions. Any discrepancies are reported and addressed immediately.

In addition to the procedures and policies mentioned above, secondary containment and spill control at the tank farm is more than sufficient to contain a worst case scenario event. Based on a worst case scenario, i.e. a storage tank releasing all of its contents, (b) (7)(F) [redacted] would be released into the secondary containment area. During the recent tank farm upgrade project, the secondary containment area was constructed to be able to (b) (7)(F) [redacted] of fuel, (b) (7)(F) [redacted]. In the event of a catastrophic failure of a tank, secondary containment capacity at the tank farm is more than adequate for complete containment and control of a release. Another spill prevention measure constructed as part of the tank farm upgrade was the Port of Seattle (POS) Industrial Water System (IWS) containment building. All storm water that contacts the secondary containment area discharges through manually operated drain valves into the IWS containment building adjacent to the tank farm. The valves in the secondary containment area are normally closed; stormwater accumulated in the containment area is visually inspected for sheen prior to discharge to the IWS. Water accumulated in the containment building is then discharged to the POS IWS system which consists of three containment lagoons which are constructed with a concrete floor and has walls that are lined with a thick plastic liner. The liner is set into the concrete and the seams are sealed.

swissport

In order to minimize or eliminate impact to Des Moines Creek and Puget Sound, in the event of a release Swissport has the ability to open the manual valves in the containment area and divert fuel to the POS IWS system. This action would take coordination with the POS and the IWS operators, but within a matter of minutes the drains could be opened and fuel diverted to the three concrete, plastic lined containment ponds. The use of these drains and IWS system could eliminate any potential impact to Des Moines Creek. All fuel accumulated in the lined ponds could then be addressed and recovered without impact to any environmentally sensitive areas. This procedure would go into effect in the event of a breach in the secondary containment structure.

Based on the regulations and the various contingencies, procedures, and measures Swissport has in place to mitigate, minimize, and eliminate the potential for releases impacting any environmentally sensitive area or a navigable waterway, Swissport would like to reconsider the applicability of the full scale Oil Spill Contingency Plan and associated drill requirements for the Swissport operations at Sea-Tac. That being said, Swissport is fully committed to environmental integrity, awareness, and planning and realizes some form of tabletop exercise or alternative drill schedule may be required and appropriate for the operation. Swissport would like to discuss this letter and the applicability if the Oil Spill Contingency Plan Rule with DOE at your earliest convenience. As you are aware, we received comments on the latest SCP plan submission on July 1, 2007. The letter from DOE requires us to submit the missing sections of the plan within 30 days of receipt of the letter. Swissport would also like to consider this timeframe along with the review of the applicability of the Oil Spill Contingency Plan Rule.

Swissport appreciates the DOE considering this matter and looks forward to working with you. Please contact me with any questions, comments, and to discuss his situation further.

Sincerely,

Tucker M. Cornwell
Manager, Environmental Compliance

CC: File, Mike Hagan, Swissport Station Manager

APPENDIX B
Incident Command System Forms

INCIDENT COMMAND SYSTEM

NATIONAL TRAINING CURRICULUM

ICS GLOSSARY

October 1994

PREFACE

The ICS Glossary contains definitions of terms used in the Incident Command System (ICS) National Training Curriculum. It does not contain terms or definitions related to specific resources for particular application areas. Users should supplement this glossary with agency-specific terms and definitions as appropriate.

-A-

<u>ACTION PLAN:</u>
(See Incident Action Plan.)

<u>AGENCY:</u>
An agency is a division of government with a specific function, or a non-governmental organization (e.g., private contractor, business, etc.) that offers a particular kind of assistance. In ICS, agencies are defined as jurisdictional (having statutory responsibility for incident mitigation) or assisting and/or cooperating (providing resources and/or assistance). (See Assisting Agency, Cooperating Agency, and Multi-agency.)

<u>AGENCY EXECUTIVE OR ADMINISTRATOR:</u>
Chief executive officer (or designee) of the agency or jurisdiction that has responsibility for the incident.

<u>AGENCY DISPATCH:</u>
The agency or jurisdictional facility from which resources are allocated to incidents.

<u>AGENCY REPRESENTATIVE:</u>
An individual assigned to an incident from an assisting or cooperating agency who has been delegated authority to make decisions on matters affecting that agency's participation at the incident. Agency Representatives report to the Incident Liaison Officer.

<u>AIR OPERATIONS BRANCH DIRECTOR:</u>
The person primarily responsible for preparing and implementing the air operations portion of the Incident Action Plan. Also responsible for providing logistical support to helicopters operating on the incident.

<u>ALLOCATED RESOURCES:</u>
Resources dispatched to an incident.

AREA COMMAND:
An organization established to: 1) oversee the management of multiple incidents that are each being handled by an Incident Command System organization; or 2) to oversee the management of a very large incident that has multiple Incident Management Teams assigned to it. Area Command has the responsibility to set overall strategy and priorities, allocate critical resources based on priorities, ensure that incidents are properly managed, and ensure that objectives are met and strategies followed.

ASSIGNED RESOURCES:
Resources checked in and assigned work tasks on an incident.

ASSIGNMENTS:
Tasks given to resources to perform within a given operational period, based upon tactical objectives in the Incident Action Plan.

ASSISTANT:
Title for subordinates of the Command Staff positions. The title indicates a level of technical capability, qualifications, and responsibility subordinate to the primary positions. Assistants may also be used to supervise unit activities at camps.

ASSISTING AGENCY:
An agency directly contributing tactical or service resources to another agency.

AVAILABLE RESOURCES:
Incident-based resources which are ready for deployment.

-B-

BASE:
The location at which primary logistics functions for an incident are coordinated and administered. There is only one Base per incident. (Incident name or other designator will be added to the term Base.) The Incident Command Post may be collocated with the Base.

BRANCH:
The organizational level having functional or geographic responsibility for major parts of incident operations. The Branch level is organizationally between Section and Division/Group in the Operations Section, and between Section and Units in the Logistics Section. Branches are identified by the use of Roman Numerals or by functional name (e.g., medical, security, etc.).

-C-

CACHE:
A pre-determined complement of tools, equipment, and/or supplies stored in a designated location, available for incident use.

CAMP:
A geographical site, within the general incident area, separate from the Incident Base, equipped and staffed to provide sleeping, food, water, and sanitary services to incident personnel.

CHECK-IN:
The process whereby resources first report to an incident. Check-in locations include: Incident Command Post (Resources Unit), Incident Base, Camps, Staging Areas, Helibases, Helispots, and Division Supervisors (for direct line assignments).

CHAIN OF COMMAND:
A series of management positions in order of authority.

CHIEF:
The ICS title for individuals responsible for command of functional sections: Operations, Planning, Logistics, and Finance/Administration.

CLEAR TEXT:
The use of plain English in radio communications transmissions. No Ten Codes or agency-specific codes are used when utilizing Clear Text.

COMMAND:
The act of directing and/or controlling resources by virtue of explicit legal, agency, or delegated authority. May also refer to the Incident Commander.

COMMAND POST:
(See Incident Command Post.)

COMMAND STAFF:
The Command Staff consists of the Information Officer, Safety Officer, and Liaison Officer. They report directly to the Incident Commander. They may have an assistant or assistants, as needed.

COMMUNICATIONS UNIT:
An organizational unit in the Logistics Section responsible for providing communication services at an incident. A Communications Unit may also be a facility (e.g., a trailer or mobile van) used to provide the major part of an Incident Communications Center.

COMPACTS:
Formal working agreements among agencies to obtain mutual aid.

COMPENSATION UNIT/CLAIMS UNIT:
Functional unit within the Finance/Administration Section responsible for financial concerns resulting from property damage, injuries, or fatalities at the incident.

COMPLEX:
Two or more individual incidents located in the same general area which are assigned to a single Incident Commander or to Unified Command.

COOPERATING AGENCY:
An agency supplying assistance other than direct tactical or support functions or resources to the incident control effort (e.g., Red Cross, telephone company, etc.).

COORDINATION:
The process of systematically analyzing a situation, developing relevant information, and informing appropriate command authority of viable alternatives for selection of the most effective combination of available resources to meet specific objectives. The coordination process (which can be either intra- or inter-agency) does not involve dispatch actions. However, personnel responsible for coordination may perform command or dispatch functions within the limits established by specific agency delegations, procedures, legal authority, etc.

COORDINATION CENTER:
Term used to describe any facility that is used for the coordination of agency or jurisdictional resources in support of one or more incidents.

COST SHARING AGREEMENTS:
Agreements between agencies or jurisdictions to share designated costs related to incidents. Cost sharing agreements are normally written but may also be oral between authorized agency or jurisdictional representatives at the incident.

COST UNIT:
Functional unit within the Finance/Administration Section responsible for tracking costs, analyzing cost data, making cost estimates, and recommending cost-saving measures.

CREW:
(See Single Resource.)

-D-

DELEGATION OF AUTHORITY:
A statement provided to the Incident Commander by the Agency Executive delegating authority and assigning responsibility. The Delegation of Authority can include objectives, priorities, expectations, constraints, and other considerations or guidelines as needed. Many agencies require written Delegation of Authority to be given to Incident Commanders prior to their assuming command on larger incidents.

DEPUTY:
A fully qualified individual who, in the absence of a superior, could be delegated the authority to manage a functional operation or perform a specific task. In some cases, a Deputy could act as relief for a superior and therefore must be fully qualified in the position. Deputies can be assigned to the Incident Commander, General Staff, and Branch Directors.

DEMOBILIZATION UNIT:
Functional unit within the Planning Section responsible for assuring orderly, safe, and efficient demobilization of incident resources.

DIRECTOR:
The ICS title for individuals responsible for supervision of a Branch.

DISPATCH:
The implementation of a command decision to move a resource or resources from one place to another.

DISPATCH CENTER:
A facility from which resources are assigned to an incident.

DIVISION:
Divisions are used to divide an incident into geographical areas of operation. A Division is located within the ICS organization between the Branch and the Task Force/Strike Team. (See Group.) Divisions are identified by alphabetic characters for horizontal applications and, often, by floor numbers when used in buildings.

DOCUMENTATION UNIT:
Functional unit within the Planning Section responsible for collecting, recording, and safeguarding all documents relevant to the incident.

-E-

EMERGENCY MANAGEMENT COORDINATOR/DIRECTOR:
The individual within each political subdivision that has coordination responsibility for jurisdictional emergency management.

EMERGENCY MEDICAL TECHNICIAN (EMT):
A health-care specialist with particular skills and knowledge in pre-hospital emergency medicine.

EMERGENCY OPERATIONS CENTER (EOC):
A pre-designated facility established by an agency or jurisdiction to coordinate the overall agency or jurisdictional response and support to an emergency.

EMERGENCY OPERATIONS PLAN:
The plan that each jurisdiction has and maintains for responding to appropriate hazards.

EVENT:
A planned, non-emergency activity. ICS can be used as the management system for a wide range of events, e.g., parades, concerts, or sporting events.

-F-

FACILITIES UNIT:
Functional unit within the Support Branch of the Logistics Section that provides fixed facilities for the incident. These facilities may include the Incident Base, feeding areas, sleeping areas, sanitary facilities, etc.

FIELD OPERATIONS GUIDE:
A pocket-size manual of instructions on the application of the Incident Command System.

FINANCE/ADMINISTRATION SECTION:
The Section responsible for all incident costs and financial considerations. Includes the Time Unit, Procurement Unit, Compensation/Claims Unit, and Cost Unit.

FOOD UNIT:
Functional unit within the Service Branch of the Logistics Section responsible for providing meals for incident personnel.

FUNCTION:
In ICS, function refers to the five major activities in the ICS, i.e., Command, Operations, Planning, Logistics, and Finance/Administration. The term function is also used when describing the activity involved, e.g., the planning function.

-G-

GENERAL STAFF:
The group of incident management personnel reporting to the Incident Commander. They may each have a deputy, as needed. The General Staff consists of:

Operations Section Chief
Planning Section Chief
Logistics Section Chief
Finance/Administration Section Chief

GENERIC ICS:
Refers to the description of ICS that is generally applicable to any kind of incident or event.

GROUND SUPPORT UNIT:
Functional unit within the Support Branch of the Logistics Section responsible for the fueling, maintaining, and repairing of vehicles, and the transportation of personnel and supplies.

GROUP:
Groups are established to divide the incident into functional areas of operation. Groups are composed of resources assembled to perform a special function not necessarily within a single geographic division. (See Division.) Groups are located between Branches (when activated) and Resources in the Operations Section.

-H-

HELIBASE:
The main location for parking, fueling, maintenance, and loading of helicopters operating in support of an incident. It is usually located at or near the incident base.

HELISPOT:
Any designated location where a helicopter can safely take off and land. Some helispots may be used for loading of supplies, equipment, or personnel.

HIERARCHY OF COMMAND:
(See Chain of Command.)

-I-

ICS NATIONAL TRAINING CURRICULUM:
A series of 17 training modules consisting of instructor guides, visuals, tests, and student materials. The modules cover all aspects of ICS operations. The modules can be intermixed to meet specific training needs.

INCIDENT:
An occurrence either human caused or by natural phenomena, that requires action by emergency service personnel to prevent or minimize loss of life or damage to property and/or natural resources.

INCIDENT ACTION PLAN:
Contains objectives reflecting the overall incident strategy and specific tactical actions and supporting information for the next operational period. The Plan may be oral or written. When written, the Plan may have a number of forms as attachments (e.g., traffic plan, safety plan, communications plan, map, etc.).

INCIDENT BASE:
Location at the incident where the primary logistics functions are coordinated and administered. (Incident name or other designator will be added to the term Base.) The Incident Command Post may be collocated with the Base. There is only one Base per incident.

INCIDENT COMMANDER:
The individual responsible for the management of all incident operations at the incident site.

INCIDENT COMMAND POST (ICP):
The location at which the primary command functions are executed. The ICP may be collocated with the incident base or other incident facilities.

INCIDENT COMMAND SYSTEM (ICS):
A standardized on-scene emergency management concept specifically designed to allow its user(s) to adopt an integrated organizational structure equal to the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries.

INCIDENT COMMUNICATIONS CENTER:
The location of the Communications Unit and the Message Center.

INCIDENT MANAGEMENT TEAM:
The Incident Commander and appropriate Command and General Staff personnel assigned to an incident.

INCIDENT OBJECTIVES:
Statements of guidance and direction necessary for the selection of appropriate strategy(s), and the tactical direction of resources. Incident objectives are based on realistic expectations of what can be accomplished when all allocated resources have been effectively deployed. Incident objectives must be achievable and measurable, yet flexible enough to allow for strategic and tactical alternatives.

INFORMATION OFFICER:
A member of the Command Staff responsible for interfacing with the public and media or with other agencies requiring information directly from the incident. There is only one Information Officer per incident. The Information Officer may have assistants.

INITIAL ACTION:
The actions taken by resources which are the first to arrive at an incident.

INITIAL RESPONSE:
Resources initially committed to an incident.

INCIDENT SUPPORT ORGANIZATION:
Includes any off-incident support provided to an incident. Examples would be Agency Dispatch centers, Airports, Mobilization Centers, etc.

-J-

JURISDICTION:
The range or sphere of authority. Public agencies have jurisdiction at an incident related to their legal responsibilities and authority for incident mitigation. Jurisdictional authority at an incident can be political/geographical (e.g., city, county, state, or federal boundary lines) or functional (e.g., police department, health department, etc.). (See Multijurisdiction.)

JURISDICTIONAL AGENCY:
The agency having jurisdiction and responsibility for a specific geographical area, or a mandated function.

-L-

LANDING ZONE:
(See Helispot.)

LEADER:
The ICS title for an individual responsible for a Task Force, Strike Team, or functional unit.

LIAISON OFFICER:
A member of the Command Staff responsible for coordinating with representatives from cooperating and assisting agencies.

LOGISTICS SECTION:
The Section responsible for providing facilities, services, and materials for the incident.

LIFE-SAFETY:
Refers to the joint consideration of both the life and physical well being of individuals.

-M-

MANAGERS:
Individuals within ICS organizational units that are assigned specific managerial responsibilities, e.g., Staging Area Manager or Camp Manager.

MANAGEMENT BY OBJECTIVES:
In ICS, this is a top-down management activity which involves a three-step process to achieve the incident goal. The steps are: establishing the incident objectives, selection of appropriate strategy(s) to achieve the objectives, and the tactical direction associated with the selected strategy. Tactical direction includes: selection of tactics, selection of resources, resource assignments, and performance monitoring.

MEDICAL UNIT:
Functional unit within the Service Branch of the Logistics Section responsible for the development of the Medical Emergency Plan, and for providing emergency medical treatment of incident personnel.

MESSAGE CENTER:
The Message Center is part of the Incident Communications Center and is collocated or placed adjacent to it. It receives, records, and routes information about resources reporting to the incident, resource status, and administrative and tactical traffic.

MOBILIZATION:
The process and procedures used by all organizations federal, state, and local for activating, assembling, and transporting all resources that have been requested to respond to or support an incident.

MOBILIZATION CENTER:
An off-incident location at which emergency service personnel and equipment are temporarily located pending assignment, release, or reassignment.

MULTI-AGENCY INCIDENT:
An incident where one or more agencies assist a jurisdictional agency or agencies. May be single or unified command.

MULTI-AGENCY COORDINATION (MAC):
A generalized term which describes the functions and activities of representatives of involved agencies and/or jurisdictions who come together to make decisions regarding the prioritizing of incidents, and the sharing and use of critical resources. The MAC organization is not a part of the on-scene ICS and is not involved in developing incident strategy or tactics.

MULTI-AGENCY COORDINATION SYSTEM (MACS):
The combination of personnel, facilities, equipment, procedures, and communications integrated into a common system. When activated, MACS has the responsibility for coordination of assisting agency resources and support in a multi-agency or multijurisdictional environment. A MAC Group functions within the MACS.

MULTIJURISDICTION INCIDENT:
An incident requiring action from multiple agencies that have a statutory responsibility for incident mitigation. In ICS these incidents will be managed under Unified Command.

MUTUAL AID AGREEMENT:
Written agreement between agencies and/or jurisdictions in which they agree to assist one another upon request, by furnishing personnel and equipment.

-N-

NATIONAL INTERAGENCY INCIDENT MANAGEMENT SYSTEM (NIIMS):
An NWCG-developed program consisting of five major subsystems which collectively provide a total systems approach to all-risk incident management. The subsystems are: The Incident Command System, Training, Qualifications and Certification, Supporting Technologies, and Publications Management.

NATIONAL WILDFIRE COORDINATING GROUP (NWCG):
A group formed under the direction of the Secretaries of the Interior and Agriculture to improve the coordination and effectiveness of wildland fire activities, and provide a forum to discuss, recommend appropriate action, or resolve issues and problems of substantive nature. The NWCG has been a primary supporter of ICS development and training.

-O-

<u>OFFICER:</u>
The ICS title for the personnel responsible for the Command Staff positions of Safety, Liaison, and Information.

<u>OPERATIONAL PERIOD:</u>
The period of time scheduled for execution of a given set of operation actions as specified in the Incident Action Plan. Operational Periods can be of various lengths, although usually not over 24 hours.

<u>OPERATIONS SECTION:</u>
The Section responsible for all tactical operations at the incident. Includes Branches, Divisions and/or Groups, Task Forces, Strike Teams, Single Resources, and Staging Areas.

<u>OUT-OF-SERVICE RESOURCES:</u>
Resources assigned to an incident but unable to respond for mechanical, rest, or personnel reasons.

<u>OVERHEAD PERSONNEL:</u>
Personnel who are assigned to supervisory positions which include Incident Commander, Command Staff, General Staff, Directors, Supervisors, and Unit Leaders.

-P-

<u>PLANNING MEETING:</u>
A meeting held as needed throughout the duration of an incident, to select specific strategies and tactics for incident control operations, and for service and support planning. On larger incidents, the planning meeting is a major element in the development of the Incident Action Plan.

<u>PLANNING SECTION:</u>
Responsible for the collection, evaluation, and dissemination of tactical information related to the incident, and for the preparation and documentation of Incident Action Plans. The Section also maintains information on the current and forecasted situation, and on the status of resources assigned to the incident. Includes the Situation, Resource, Documentation, and Demobilization Units, as well as Technical Specialists.

PROCUREMENT UNIT:
Functional unit within the Finance/Administration Section responsible for financial matters involving vendor contracts.

-R-

RADIO CACHE:
A supply of radios stored in a pre-determined location for assignment to incidents.

RECORDERS:
Individuals within ICS organizational units who are responsible for recording information. Recorders may be found in Planning, Logistics, and Finance/ Administration Units.

REINFORCED RESPONSE:
Those resources requested in addition to the initial response.

REPORTING LOCATIONS:
Location or facilities where incoming resources can check-in at the incident. (See Check-in.)

RESOURCES UNIT:
Functional unit within the Planning Section responsible for recording the status of resources committed to the incident. The Unit also evaluates resources currently committed to the incident, the impact that additional responding resources will have on the incident, and anticipated resource needs.

RESOURCES:
Personnel and equipment available, or potentially available, for assignment to incidents. Resources are described by kind and type, e.g., ground, water, air, etc., and may be used in tactical support or overhead capacities at an incident.

-S-

SAFETY OFFICER:
A member of the Command Staff responsible for monitoring and assessing safety hazards or unsafe situations, and for developing measures for ensuring personnel safety. The Safety Officer may have assistants.

SECTION:
That organization level with responsibility for a major functional area of the incident, e.g., Operations, Planning, Logistics, Finance/Administration. The Section is organizationally between Branch and Incident Commander.

SECTOR:
Term used in some applications to describe an organizational level similar to an ICS Division or Group. Sector is not a part of ICS terminology.

SEGMENT:
A geographical area in which a task force/strike team leader or supervisor of a single resource is assigned authority and responsibility for the coordination of resources and implementation of planned tactics. A segment may be a portion of a division or an area inside or outside the perimeter of an incident. Segments are identified with Arabic numbers.

SERVICE BRANCH:
A Branch within the Logistics Section responsible for service activities at the incident. Includes the Communications, Medical, and Food Units.

SINGLE RESOURCE:
An individual, a piece of equipment and its personnel complement, or a crew or team of individuals with an identified work supervisor that can be used on an incident.

SITUATION UNIT:
Functional unit within the Planning Section responsible for the collection, organization, and analysis of incident status information, and for analysis of the situation as it progresses. Reports to the Planning Section Chief.

SPAN OF CONTROL:
The supervisory ratio of from three-to-seven individuals, with five-to-one being established as optimum.

STAGING AREA:
Staging Areas are locations set up at an incident where resources can be placed while awaiting a tactical assignment. Staging Areas are managed by the Operations Section.

STRATEGY:
The general plan or direction selected to accomplish incident objectives.

STRIKE TEAM:
Specified combinations of the same kind and type of resources, with common communications and a leader.

SUPERVISOR:
The ICS title for individuals responsible for command of a Division or Group.

SUPPLY UNIT:
Functional unit within the Support Branch of the Logistics Section responsible for ordering equipment and supplies required for incident operations.

SUPPORT BRANCH:
A Branch within the Logistics Section responsible for providing personnel, equipment, and supplies to support incident operations. Includes the Supply, Facilities, and Ground Support Units.

SUPPORTING MATERIALS:
Refers to the several attachments that may be included with an Incident Action Plan, e.g., communications plan, map, safety plan, traffic plan, and medical plan.

SUPPORT RESOURCES:
Non-tactical resources under the supervision of the Logistics, Planning, Finance/Administration Sections, or the Command Staff.

-T-

TACTICAL DIRECTION:
Direction given by the Operations Section Chief which includes the tactics appropriate for the selected strategy, the selection and assignment of resources, tactics implementation, and performance monitoring for each operational period.

TASK FORCE:
A combination of single resources assembled for a particular tactical need, with common communications and a leader.

TEAM:
(See Single Resource.)

TECHNICAL SPECIALISTS:
Personnel with special skills that can be used anywhere within the ICS organization.

TEMPORARY FLIGHT RESTRICTIONS (TFR):
Temporary airspace restrictions for non-emergency aircraft in the incident area. TFRs are established by the FAA to ensure aircraft safety, and are normally limited to a five-nautical-mile radius and 2000 feet in altitude.

TIME UNIT:
Functional unit within the Finance/Administration Section responsible for recording time for incident personnel and hired equipment.

TYPE:
Refers to resource capability. A Type 1 resource provides a greater overall capability due to power, size, capacity, etc., than would be found in a Type 2 resource. Resource typing provides managers with additional information in selecting the best resource for the task.

-U-

UNIFIED AREA COMMAND:
A Unified Area Command is established when incidents under an Area Command are multijurisdictional. (See Area Command and Unified Command.)

UNIFIED COMMAND:
In ICS, Unified Command is a unified team effort which allows all agencies with responsibility for the incident, either geographical or functional, to manage an incident by establishing a common set of incident objectives and strategies. This is accomplished without losing or abdicating agency authority, responsibility, or accountability.

UNIT:
The organizational element having functional responsibility for a specific incident planning, logistics, or finance/administration activity.

UNITY OF COMMAND:
The concept by which each person within an organization reports to one and only one designated person.

1. Incident Name	2. Operational Period to be covered by IAP (Date/Time) From: To:	IAP COVER SHEET

3. Approved by:

FOSC ______________________

SOSC ______________________

RPIC ______________________

________ ______________________

________ ______________________

INCIDENT ACTION PLAN

The items checked below are included in this Incident Action Plan:

- ☐ ICS 202-OS (Response Objectives)
- ☐ ICS 203-OS (Organization List) – OR – ICS 207-OS (Organization Chart)
- ☐ ICS 204-OSs (Assignment Lists)
  One Copy each of any ICS 204-OS attachments:
  - ☐ Map
  - ☐ Weather forecast
  - ☐ Tides
  - ☐ Shoreline Cleanup Assessment Team Report for location
  - ☐ Previous day's progress, problems for location
- ☐ ICS 205-OS (Communications List)
- ☐ ICS 206-OS (Medical Plan)
- ☐ ______________________
- ☐ ______________________
- ☐ ______________________
- ☐ ______________________
- ☐ ______________________
- ☐ ______________________

4. Prepared by: **Date/Time**

1. Incident Name	2. Operational Period (Date/Time) From: To:	EXECUTIVE SUMMARY
3. Operations:		
4. Environmental		
5. Planning		
6. Other		
7. Prepared by:	Date/Time	
EXECUTIVE SUMMARY	June 2000	

1. **Incident Name**	2. **Prepared by:** (name) Date Time:	INCIDENT BRIEFING ICS 201-OS (pg 1 of 4)

3. Map/Sketch (include maps drawn here or attached, showing the total area of operations, the incident site/area, overflight results, trajectories, Impacted shorelines, or other graphics depicting situational and response status)

1. **Incident Name**	**2. Prepared by:** (name) Date Time:	INCIDENT BRIEFING ICS 201-OS (pg 2 of 4)

4. Initial Incident Objectives

5. Summary of Current Actions

Time	Action/Note

1. Incident Name	2. Prepared by: (name) Date Time:	INCIDENT BRIEFING ICS 201-OS (pg 3 of 4)

3. Current Organization

Unified Command

FOSC

SOSC

RPIC

Safety Officer

Liaison Officer

Information Officer

Operations Section	Planning Section	Logistics Section	Finance Section

Div./Group

Div./Group

Div./Group

Div./Group

Div./Group

1. Incident Name	2. Prepared by: (name) Date Time:	INCIDENT BRIEFING ICS 201-OS (pg 4 of 4)

7. Resources Summary

Resources Needed	Time Ordered	Resources Identifier	ETA	On-Scene? (X)	NOTES: (Location/Assignment/Status)

1. Incident Name		GENERAL PLAN
2. Prepared By	Date/Time Prepared	3. Operational Period (Date/Time) From: To:
4. Notification (Date and time completed)		5. Response Initiation (Date and time completed)

6. Plan Item Timeframe ==> (Enter days or weeks)	
Site Characterization, Forecasts, and Analysis	
Site Safety	
Site Security	
Source Stabilization, Salvage, and Lightering	
Surveillance	
On Water Containment and Recovery	
Sensitive Areas / Resources at Risk	
Alternative Response Technology	
Shoreline Protection and Recovery	
Wildlife Protection and Rehabilitation	
Logistics Support	
Response Organization	
Communications	

Public Information	
Financial Management and Cost Documentation	
NRDA and Claims	
Training	
Information Management	
Restoration / Mitigation	
Waste Management	
Demobilization	

INITIAL INCIDENT INFORMATION	INCIDENT NAME	Information as of: Date / Time
NAME OF PERSON REPORTING THE INCIDENT		
Call-Back Number(s) of person reporting the incident:		

VESSEL/FACILITY INFORMATION AND POINTS OF CONTACT

Vessel / Facility Name:	Number of people onboard/on site:
Location:	
Type of Vessel / Facility:	
Contact / Agent:	Phone:
Owner:	Phone:
Operator / Charterer:	Phone:

VESSEL SPECIFIC INFORMATION

Last Port of Call: Destination: Flag:

Particulars: Length: Ft. Tonnage (Gross/Net/DWT): | Draft Fwd: Aft: | Year Built:

Type of Hull: ☐Single ☐Double ☐Double-Bottom ☐Double-Sided

Hull Material:

Type of Propulsion: ☐Diesel ☐Steam ☐Gas Turbine ☐Nuclear ☐Other

Petroleum Products or Crude Oil ☐Yes ☐No

Type of Cargo: Total Number of Tanks on Vessel:

Total Quantity: Barrels x 42 = Gallons Total Capacity: Barrels

Type of Fuel: Quantity on Board: Barrels

INCIDENT INFORMATION

Location: Lat/Long:

Type of Casualty: ☐Grounding ☐Collision ☐Allision ☐Explosion ☐Fire ☐Other

Number of Tanks Impacted: Total Capacity of Affected Tanks:

Material(s) Spilled: Viscosity:

Estimated Quantity Spilled: (☐Gallons/☐Barrels) Classification: ☐Minor ☐Medium ☐Major

Source Secured?: ☐Yes ☐No If Not, Estimated Spill Rate: ☐Barrels ☐Gallons / Hour

Notes:

INCIDENT STATUS

Injuries/Casualties: ☐ SAR Underway

Vessel Status: ☐Sunk ☐Aground ☐Dead in Water Set and Drift:

☐Anchored ☐Berthed ☐Under Tow Estimated Time to Dock / Anchor:

☐Enroute to Anchorage / Berth Under Own Power Estimated Time of Arrival:

☐Holed: ☐Above Waterline ☐Below Waterline ☐At Waterline Approximate Size of Hole:

☐Fire: ☐Extinguished ☐Burning ☐Assistance Enroute ☐Assistance On-Scene

☐Flooding: ☐Dewatering ☐Lightering ☐Assistance Enroute ☐Assistance On-Scene

☐List: ☐Port ☐Starboard Degrees: ☐Trim: ☐Bow ☐Stern Degrees:

ENVIRONMENTAL INFORMATION

Wind Speed: Knots	Wind Direction:	Air Temperature: F°	Water Temperature: F°
Wave Height: Feet	Wave Direction:	Conditions:	Tide: ☐Slack ☐Flood ☐Ebb
Current: Knots	Current Direction:		High Tide at: Hours
Swell Height: Feet	Swell Direction:		Low Tide at: Hours

Prepared By: Date / Time Prepared	June 2000 INITIAL INCIDENT INFORMATION

1. Incident Name	2. Operational Period (Date/Time) From: To:	INCIDENT OBJECTIVES ICS 202-OS
3. Overall Incident Objective(s)		
4. Objectives for specified Operational Period		
5. Safety Message for Specified Operational Period Approved Site Safety Plan Located at:		
6. Weather	See Attached Weather Sheet	
7. Tides/Currents	See Attached Tide/Current Data	
8. Time of Sunrise	Time of Sunset	
9. Attachments (mark "X" if attached)		
☐ Organization List (ICS 203-OS)	☐ Medical Plan (ICS 206-OS)	☐ Resource at Risk Summary (ICS 232-OS)
☐ Assignment List (ICS 204-OS)	☐ Incident Map(s)	☐ ______
☐ Communications List (ICS 205-OS)	☐ Traffic Plan	☐ ______
10. Prepared by: (Planning Section Chief)		Date/Time

1. Incident Name	2. Operational Period (Date/Time) From: To:	ORGANIZATION ASSIGNMENT LIST ICS 203-OS

3. Incident Commander and Staff

	Primary	Deputy
Federal:		
State:		
RP(s):		
Safety Officer:		
Information Officer:		
Liaison Officer:		

4. Agency Representatives

Agency	Name

5. PLANNING SECTION

Chief	
Deputy	
Resources Unit	
Situation Unit	
Environmental Unit	
Documentation Unit	
Demobilization Unit	
Technical Specialists	

6. LOGISTICS SECTION

Chief	

7. OPERATION SECTION

Chief		
Deputy		
a. Branch I – Division Groups		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division Group		
Division Group		
Division Group		
b. Branch II – Division/Groups		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
c. Branch III – Division/Groups		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
d. Air Operations Branch		
Air Operations Br. Dir		

Deputy		Air Tactical Supervisor	
a. Support Branch		Air Support Supervisor	
Director		Helicopter Coordinator	
Supply Unit		Fixed Wing Coordinator	
Facilities Unit		**8. FINANCE/ADMINISTRATION SECTION**	
Transportation Unit			
Vessel Support Unit		Chief	
Ground Support Unit		Deputy	
b. Service Branch		Time Unit	
Director		Procurement Unit	
Communications Unit		Compensation/Claims Unit	
Medical Unit		Cost Unit	
Food Unit			

9. Prepared By: (Resources Unit) **Date/Time**

1. Incident Name	2. Operational Period (Date/Time) From: To:	ASSIGNMENT LIST ATTACHMENT ICS 204a-OS
3. Branch	4. Division/Group	
5. Strike Team/Task Force/Resource Identifier	6. Leader	7. Assignment Location

8. Work Assignment Special Instructions (if any) [Ops]

9. Special Equipment/Supplies Needed for Assignment (if any) [Ops]

10. Special Environmental Considerations (if any) [P.S.C.]

11. Special Site-Specific Safety Considerations (if any) [S.O.]

Approved Site Safety Plan Located at:

12. Other Attachments (as needed)

- ☐ Map
- ☐ Weather Forecast
- ☐ Shoreline Cleanup Assessment Team Report
- ☐ Tides
- ☐ ______________
- ☐ ______________

13. Prepared by: (Resources Unit Leader)

1. Incident Name	2. Operational Period (Date/Time) From: To:	Assignment List ICS 204-OS
3. Branch	4. Division/Group	

5. Operations Personnel Name Affiliation Contact # (s)

Operations Section Chief: ______________________

Branch Director: ______________________

Division/Group Supervisor: ______________________

6. Resources Assigned This Period "X" indicates 204a attachment with special instructions

Strike Team/Task Force/Resource Identifier	Leader	Contact Info. #	# of Persons	Notes/Remarks	
					☐
					☐
					☐
					☐
					☐
					☐
					☐

7. Assignments

8. Special Instructions for Division/Group

9. Communications (radio and/or phone contact numbers needed for this assignment)

Name/Function	Radio: Freq./System/Channel	Phone	Pager

Emergency Communications

Medical ______________ Evacuation ______________ Other ______________

10. Prepared By (Resource Unit Leader	Date/Time	11. Approved By (Planning Section Chief)	Date/Time

1. Incident Name	2. Operational Period (Date / Time) From: To:	**COMMUNICATIONS LIST** **ICS 205A-OS**

3. Basic Local Communications Information

Assignment	Name	Method(s) of contact (radio frequency, phone, pager, cell #(s), etc.)

4. Prepared by: (Communications Unit) **Date / Time**

1. Incident Name	2. Operational Period (Date / Time) From: To:	INCIDENT RADIO COMMUNICATIONS PLAN ICS 205-OS

3. BASIC RADIO CHANNEL USE

SYSTEM / CACHE	CHANNEL	FUNCTION	FREQUENCY	ASSIGNMENT	REMAKRS

4. Prepared by: (Communications Unit) Date / Time

1. Incident Name	2. Operational Period (Date / Time) From: To:	MEDICAL PLAN ICS 206-OS

3. Medical Aid Stations

Name	Location	Contact #	Paramedics On site (Y/N)

4. Transportation

Ambulance Service	Address	Contact #	Paramedics On board (Y/N)

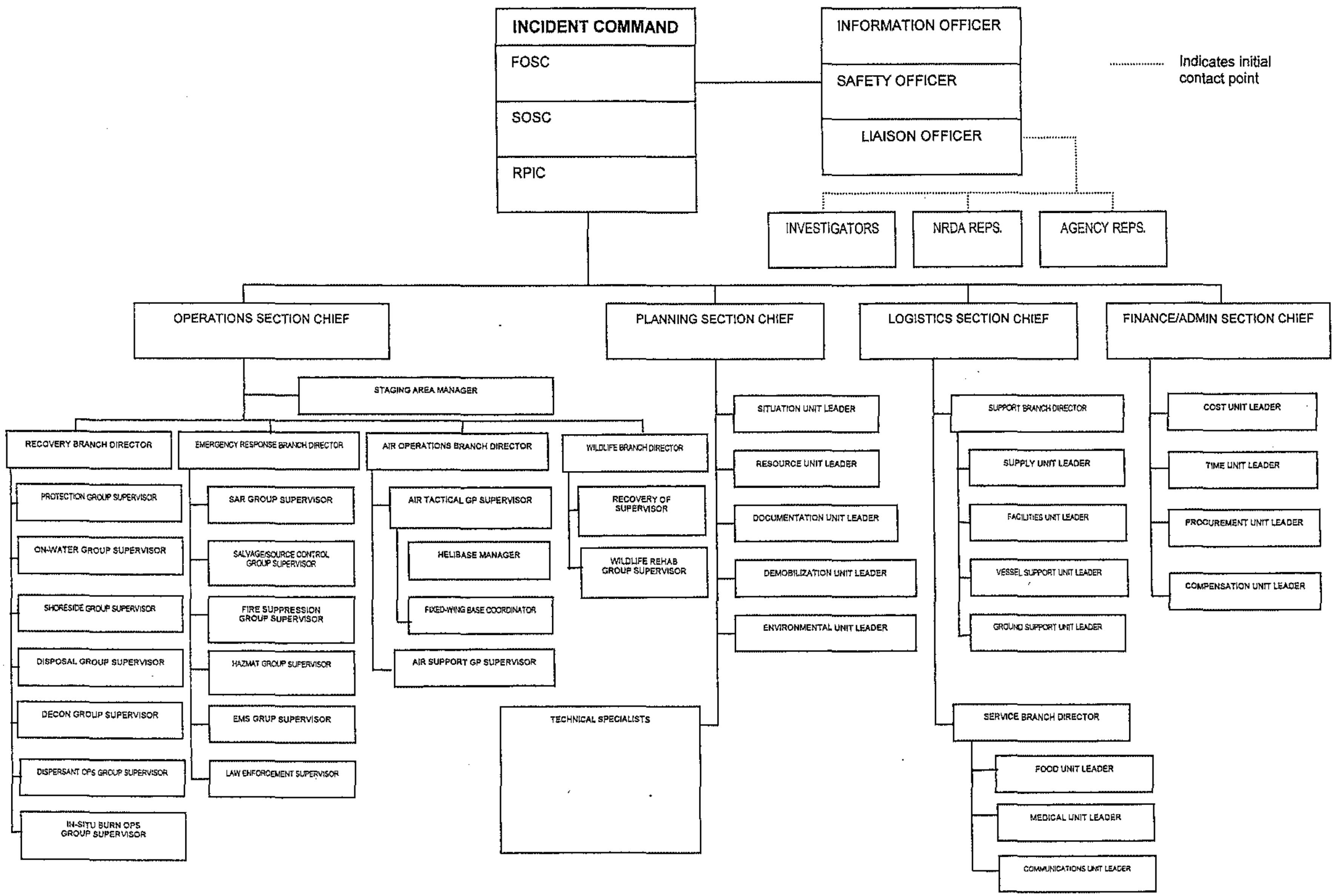
5. Hospitals

Hospital Name	Address	Contact #	Travel Time		Burn Ctr?	Heli-Pad?
			Air	Ground		

6. Special Medical Emergency Procedures

7. Prepared by: (Medical Unit Leader) Date/Time	8. Reviewed by: (Safety Officer) Date/Time

1. Incident Name	2. Operational Period (Date/Time) From: To:	INCIDENT ORGANIZATION CHART ICS 207-OS



1. Incident Name	2. Operational Period (Date/Time) From: To:	Time of Report	INCIDENT STATUS SUMMARY ICS 209-OS

3. Spill Status (Estimated, in Barrels) [Ops & EUL/SSC]

Source Status: Remaining Potential (bbl):

☐ Secured Rate of Spillage (bb/hr):

☐ Unsecured

	Since Last Report	Total
Volume Spilled		
Mass Balance/Oil Budget		
Recovered Oil		
Evaporation		
Natural Dispersion		
Chemical Dispersion		
Burned		
Floating, Contained		
Floating, Uncontained		
Onshore		
Total spilled oil accounted for:		

4. Waste Management (Estimated) [Ops/Disposal]

	Recovered	Stored	Disposed
Oil (bbl)			
Oily Liquids (bbl)			
Liquids (bbl)			
Oily Solids (tons)			
Solids (tons)			

5. Shoreline Impacts (Estimated, in miles) [PSC/EUL/SSC]

Degree of Oiling	Affected	Cleaned	To Be Cleaned
Light			
Medium			
Heavy			
Total			

6. Wildlife Impacts [Ops/Wildlife Br.]

Numbers in () indicate subtotal that are threatened/endangered species.

	Captured	Cleaned	Released	DOA	Died in Facility: Euth.	Died in Facility: Other
Birds						
Mammals						
Reptiles						
Fish						
Total						

7. Safety Status [Safety Officer]

	Since Last Report	Total
Responder Injury		
Public Injury		

8. Equipment Resources [RUL]

Description	Ordered	Available/ Staged	Assigned	Out of Service
Spill Resp. Vsls				
Fishing Vessels				
Tugs				
Barges				
Other Vessels				
Skimmers				
Boom (ft.)				
Sbnt/Snr Bm. (ft.)				
Vacuum Trucks				
Helicopters				
Fixed Wing				

9. Personnel Resources [RUL]

Description	People in Cmd. Post	People in the Field	Total People On Scene
Federal			
State			
Local			
RP			
Contract Personnel			
Volunteers			
Total Response Personnel from all Organizations:			

10. Special Notes

11. Prepared by: (Situation Unit Leader)

1. Incident Name	2. Operational Period (Date / Time) From: To:	STATUS CHANGE ICS 210-OS
3. Personnel / Resource Name or I.D.		
4. New Status ☐ Available / Staged ☐ Assigned ____________ ☐ Out of Service		
5. FROM Location or Status	6. TO Location or Status	
7. Time of Location / Status Change		
8. Comments		
9. Prepared by:	Date / Time	
10. Processed by: (Resource Unit)	Date / Time	

CHECK-IN LIST	1. INCIDENT NAME	2. CHECK-IN LOCATION ____ BASE ____ CAMP ____ ____ STAGING AREA ____ ICP RESOURCES ____ HELIBASE	3. DATE/TIME

CHECK-IN INFORMATION

4. LIST PERSONNEL (OVERHEAD) BY AGENCY & NAME - OR - LIST EQUIPMENT BY THE FOLLOWING FORMAT:					5.	6.	7.	8.	9.		10.	11.	12.	13.	14.	15.	16.
									MANIFEST		CREW WEIGHT OR INDIVIDUALS WEIGHT						
AGENCY	SINGLE T/F S/T	KIND	TYPE	ID. NO./NAME	ORDER/ REQUEST NUMBER	DATE/TIME CHECK-IN	LEADER'S NAME	TOTAL NO. PERSONNEL	YES	NO		HOME BASE	DEPARTURE POINT	METHOD OF TRAVEL	INCIDENT ASSIGNMENT	OTHER QUALIFICATION	SENT TO RESOURCES TIME/INT.

17. ICS 211 PAGE ____ of ____	18. PREPARED BY (NAME AND POSITION) USE BACK FOR REMARKS OR COMMENTS

1. Incident Name	2. Operational Period (Date / Time) From: To:	3. Check-in Location ☐ Command Post ☐ Other ☐ Staging Area	**CHECK-IN LIST (Equipment)** **ICS 211e-OS**

Equipment Check-in Information

4. Equipment Description	5. Equipment Identifier	6. Supplier/Owner	7. Assignment	8. Contact Information	9. Initial Incident Check-In? (X)	10. Time In	10. Time Out
					☐		
					☐		
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11. Prepared by: Date / Time	12. Date / Time Sent to Resources Unit

1. Incident Name	2. Operational Period (Date / Time) From: To:	3. Check-in Location ☐ Command Post ☐ Other ☐ Staging Area	CHECK-IN LIST (Personnel) ICS 211p-OS

Personnel Check-in Information

4. Name	5. Company/Agency	6. ICS Section / Assignment / Quals.	7. Contact Information	8. Initial Incident Check-In? (X)	9. Time In	Out
				☐		
				☐		
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10. Prepared by: Date / Time	11. Date / Time Sent to Resources Unit

1. Incident Name	2. Date and Time of Message	GENERAL MESSAGE ICS 231-OS
3. TO: ICS Position		
4. FROM: ICS Position		
5. Subject:		
6. Message		
7 Reply		
8. Signature/Position (person replying)	Date/Time of reply	

1. Incident Name	2. Operational Period (Date/Time) From: To:	INDIVIDUAL LOG ICS 214a-OS

3. Individual Name	4. ICS Section	5. Assignment/Location

6. Activity Log	Page of
Time	Major Events

7. Prepared by:	Date/Time

1. Incident Name	2. Operational Period (Date/Time) From: To:	UNIT LOG ICS 214-OS
3. Unit Name/Designators	4. Unit Leader (Name and ICS Position)	

5. Personnel Assigned

NAME	ICS POSITION	HOME BASE

6. Activity Log (Continue on Reverse)

TIME	MAJOR EVENTS

7. Prepared by: Date/Time

1. Incident Name	2. Operational Period (Date/Time) From: To:	UNIT LOG (CONT.) ICS 214-OS

6. Activity Log (Continue on Reverse)

TIME	MAJOR EVENTS

7. Prepared by: **Date/Time**

1. Incident Name	2. Operational Period (Date/Time) From: To:	OPERATIONAL PLANNING WORKSHEET ICS 215-OS

3. Division/ Group or Location	4. Work Assignments	5. Resource/Equipment														6. Notes/Remarks	7. Reporting Location	8. Requested Arrival Time	9. "X" here if 204a Needed
		Resource																	
		Req.																	
		Have																	☐
		Need																	
		Req.																	
		Have																	☐
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		Req.																	
		Have																	☐
		Need																	
10. Total Resources Required																13. Prepared by:			
11. Total Resources On Hand																Date		Time	
12. Total Resources Needed																			

RADIO REQUIREMENTS WORKSHEET			1. INCIDENT NAME		2. DATE		3. TIME				
4. BRANCH		5. AGENCY		6. OPERATIONAL PERIOD			7. TACTICAL FREQUENCY				
8. DIVISION/GROUP ____ AGENCY ____			DIVISION/ GROUP ____ AGENCY ____			DIVISION/ GROUP ____ AGENCY ____			DIVISION/ GROUP ____ AGENCY ____		
9. AGENCY	ID NO.	RADIO RQMTS	AGENCY	ID NO.	RADIO RQMTS	AGENCY	ID NO.	RADIO RQMTS	AGENCY	ID NO.	RADIO RQMTS
216 ICS 3-82		PAGE				10. PREPARED BY (COMMUNICATIONS UNIT)					

PHMSA, 000003154

RADIO FREQUENCY ASSIGNMENT WORKSHEET

1. INCIDENT NAME	2. DATE	3. OPERATIONAL PERIOD (DATE/TIME) From:

4. INCIDENT ORGANIZATION

5. RADIO DATA

SOURCE	FUNCTION	CH#	FREQUENCY	BRANCH	DIVISION	DIVISION	DIVISION	BRANCH	DIVISION	DIVISION	DIVISION	BRANCH	DIVISION	DIVISION	DIVISION	INCIDENT COMMAND	SAFETY OFFICER	OPERATIONS SECTION CHIEF	AIR OPERATION	AIR TACTICAL SUPERVISOR	PLANNING SECTION CHIEF	GROUND SUPPORT UNIT	BASE UNIT							COMM. CENTER	TOTAL BY REQ.
6. AGENCY	ID	CH#	FREQUENCY																												

7. TOTAL RADIOS REQUIRED	
217 ICS	8. PREPARED BY (NAME/POSITION)

SUPPORT VEHICLE INVENTORY (USE SEPARATE SHEET FOR EACH VEHICLE CATEGORY)	1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED

VEHICLE INFORMATION

a. TYPE	b. MAKE	c. CAPACITY/SIZE	d. AGENCY/OWNER	e. I.D. NO.	f. LOCATION	g. RELEASE TIME

218 ICS 8-78	PAGE	5. PREPARED BY (GROUND SUPPORT UNIT)

1. Incident Name	2. Operational Period (Date / Time) From: To:	AIR OPERATIONS SUMMARY ICS 220-OS

3. Distribution

☐ Fixed-Wing Bases ______ ☐ Helibase ______

4. Personnel and Communications

	Air Operations Director	Air / Air Frequency	Air / Ground Frequency
Air Operations Director			
Air Tactical Supervisor			
Air Support Supervisor			
Helicopter Coordinator			
Fixed-Wing Coordinator			

5. Remarks (Spec. Instructions, Safety Notes, Hazards, Priorities)

6. Location / Function	7. Assignment	8. Fixed-Wing		9. Helicopter		10. Time		11. Aircraft Assigned	12. Operating Base
		NO.	TYPE	NO.	TYPE	Available	Commence		
	13. TOTALS								

14. Air Operation Support Equipment	15. Prepared by	Date / Time

1. Incident Name	2. Operational Period (Date / Time) From: To:	DEMOB. CHECK-OUT ICS 221-OS
3. Unit / Personnel Released	4. Release Date / Time	

5. Unit / Personnel

You and your resources have been released, subject to signoff from the following:
(Demob. Unit Leader "X" appropriate box(es))

Logistics Section

☐ Supply Unit ______

☐ Communications Unit ______

☐ Facilities Unit ______

☐ Ground Unit ______

Planning Section

☐ Documentation Unit ______

Finance / Admin. Section

☐ Time Unit ______

Other

☐ ______ ______

☐ ______ ______

☐ ______ ______

6. Remarks

______

______

______

______

7. Prepared by: **Date / Time**

1. Incident Name	2. Operational Period (Date/Time) From: To:	DAILY MEETING SCHEDULE ICS 230-OS

3. Meeting Schedule (Commonly-held meetings are included)

Date/ Time	Meeting Name	Purpose	Attendees	Location
	Tactics Meeting	Develop primary and alternate Strategies to meet Incident Objectives for the next Operational Period.	PSC, OPS, LSC, EUL, RUL & SUL	
	Planning Meeting	Review status and finalize strategies and assignments to meet Incident Objectives for the next Operational Period.	Determined by the IC/UC	
	Operations Briefing	Present IAP and assignments to the Supervisors / Leaders for the next Operational Period.	IC/UC, Command Staff, General Staff, Branch Directors, Div. Sups., Task Force/Strike Team Leaders and Unit Leaders	
	Unified Command Objectives Meeting	Review/ identify objectives for the next operational period.	Unified Command members	

4. Prepared by: (Situation Unit Leader)	Date/Time

1. Incident Name	2. Meeting Date/Time	MEETING SUMMARY ICS 231-OS
3. Meeting Name		
4. Meeting Location		
5. Facilitator		
6. Attendees		
7. Notes (with summary of decisions and action items)		
8. Prepared by:	Date/Time	

1. Incident Name	2. Operational Period (Date/Time) From: To:	ACP Site Index ICS 232a-OS

3. Index to ACP/GRP sites shown on Situation Map

Site #	Priority	Site Name and/or Physical Location	Action	Status

Note: This form is designed to be posted next to the situation map. Use additional sheets, as needed.

4. Prepared by: Date/Time

1. Incident Name	2. Operational Period (Date/Time) From: To:	RESOURCES AT RISK SUMMARY ICS 232-OS

3. Environmentally-Sensitive Areas and Wildlife Issues

Site #	Priority	Site Name and/or Physical Location	Site Issues

Narrative

4. Archaeo-cultural and Socio-economic Issues

Site #	Priority	Site Name and/or Physical Location	Site Issues

Narrative

5. Prepared by: (Environmental Unit Leader) **Date/Time**

Field Operations Guide
ICS

Glossary

2000 Edition

AVAILABLE RESOURCES - Incident-based resources which are immediately available for assignment.

BASE - The location at which the primary logistics functions are coordinated and administered. (Incident name or other designator will be added to the term "Base") The Incident Command Post may be collocated with the base. There is only one base per incident.

BRANCH - The organizational level having functional/geographic responsibility for major incident operations. The Branch level is organizationally between Section and Division/Group in the Operations Section, and between Section and Units in the Logistics Section.

CACHE - A pre-determined complement of tools, equipment, and/or supplies stored in a designated location, and available for incident use.

CAMP - A geographical site, within the general incident area, separate from the base, equipped and staffed to provide sleeping areas, food, water, and sanitary services to incident personnel.

CHECK-IN - The process whereby resources first report to an incident response. Check-in locations include: Incident Command Post (Resources Unit), Incident Base, Camps, Staging Areas, Helibases, and Division/Group Supervisors (for direct line assignments).

CHIEF - The ICS title of individuals responsible for command of functional sections: Operations, Planning, Logistics, and Finance/Administration.

CLEAR TEXT - The use of plain English in radio communications transmissions. No Ten Codes nor agency specific codes are used when using Clear Text.

DEMOBILIZATION UNIT - Functional unit within the Planning Section responsible for assuring orderly, safe, and efficient demobilization of incident resources.

DIRECTOR - The ICS title for individuals responsible for supervising a Branch.

DISPATCH - The implementation of a command decision to move resources from one place to another.

DISPATCH CENTER - A facility from which resources are directly assigned to an incident.

DIVISION - The organization level having responsibility for operation within a defined geographic area or with functional responsibility. The Division level is organizationally between the Task Force/Strike Team and the Branch. (See also "Group")

DOCUMENTATION UNIT - Functional unit within the Planning Section responsible for collecting, recording, and safeguarding all documents relevant to the incident.

EMERGENCY MEDICAL TECHNICIAN (EMT) - A health-care specialist with particular skills and knowledge in pre-hospital emergency medicine.

EMERGENCY OPERATIONS CENTER (EOC) - A pre-designated facility established by an agency or jurisdiction to coordinate the overall agency or jurisdictional response and support to an emergency response.

FACILITIES UNIT - Functional unit within the Support Branch of the Logistics Section that provides fixed facilities for the incident. These facilities may include the Incident Base, feeding areas, sleeping areas, sanitary facilities, etc.

GROUP - Groups are established to divide the incident into functional areas of operation. Groups are composed of resources assembled to perform a special function not necessarily within a single geographic division. (See Division.) Groups are located between Branches (when activated) and Single Resources in the Operations Section.

HELIBASE - A location within the general incident area for parking, fueling, maintaining, and loading helicopters.

HELISPOT - A location where a helicopter can take off and land. Some helispots may be used for temporary loading.

INCIDENT ACTION PLAN (IAP) - The Incident Action Plan, which is initially prepared at the first meeting, contains general control objectives reflecting the overall incident strategy, and specific action plans for the next operational period. When complete, the Incident Action Plans will include a number of attachments.

INCIDENT AREA - Legal geographical area of the incident including affected area(s) and traffic route(s) to corresponding storage and disposal sites.

INCIDENT BASE - See BASE.

INCIDENT COMMANDER (IC) - The individual responsible for managing all incident operations.

INCIDENT COMMAND POST (ICP) - The location at which the primary command functions are executed; may be collocated with the incident base.

INCIDENT COMMAND SYSTEM (ICS) - A standardized on-scene emergency management system specifically

JURISDICTION - A range or sphere of authority. At an incident, public agencies have jurisdiction related to their legal responsibilities and authority for incident mitigation. Jurisdictional authority at a incident can be political/geographical (e.g., city, county, state, or Federal boundary lines), or functional (e.g., police department, health department, etc.). (See Multi-Jurisdiction).

JURISDICTIONAL AGENCY - The agency having jurisdiction and responsibility for a specific geographical area, or a mandated function.

LANDING ZONE - See Helispot.

LEADER - The ICS title for an individual responsible for a Task Force/Strike Team or functional Unit.

LIAISON OFFICER (LO) - A member of the Command Staff responsible for coordinating with stakeholder groups and representatives from assisting and cooperating agencies.

LOGISTICS SECTION - The Section responsible for providing facilities, services, and materials for the incident.

MANAGERS - Individuals within ICS organizational units who are assigned specific managerial responsibilities (e.g., Staging Area Manager or Camp Manager).

MEDICAL UNIT - Functional unit within the Service Branch of the Logistics Section responsible for developing the Medical Plan, and for providing emergency medical treatment for incident response personnel.

MESSAGE CENTER - The message center is part of actions specified in the Incident Action Plan. Operational Periods can be various lengths, usually not over 24 hours.

OPERATIONS SECTION - Responsible for all operations directly applicable to the primary mission. Directs unit operational plans preparation, requests or releases resources, makes expedient changes to the Incident Action Plan (as necessary), and reports such to the Incident Commander. Includes the Recovery and Protection Branch, Emergency Response Branch, Air Operations Branch, and Wildlife Branch.

OUT-OF-SERVICE RESOURCES - Resources assigned to an incident but unable to respond for mechanical, rest, or personnel reasons.

PLANNING MEETING - A meeting, held as needed throughout the duration of an incident, to select specific strategies and tactics for incident control operations and for service and support planning.

PLANNING SECTION - Responsible for collecting, evaluating, and disseminating tactical information related to the incident, and for preparing and documenting Incident Action Plans. The section also maintains information on the current and forecast situation, and on the status of resources assigned to the incident. Includes the Situation, Resource, Environmental, Documentation, and Demobilization Units, and Technical Specialists.

POLREP - Pollution report.

PROCUREMENT UNIT - Functional unit within the Finance/Administration Section responsible for financial matters involving vendor contracts.

QUALIFIED INDIVIDUAL (Q.I.) - The person authorized

RESPONSIBLE PARTY (RP) – The owner/operator of the vessel or facility which is the spill source.

RESPONSIBLE PARTY INCIDENT COMMANDER (RPIC) - Responsible Party's designated incident commander.

SAFETY OFFICER (SO) - A member of the Command Staff responsible for monitoring and assessing safety hazards or unsafe situations, and for developing measures for ensuring personnel safety. The Safety Officer may have assistants.

SECTION - The organization level having functional responsibility for primary segments of incident operation such as: Operations, Planning, Logistics, Finance/Administration. The Section level is organizationally between Branch and Incident Commander.

SERVICE BRANCH - A Branch within the Logistics Section responsible for service activities at the incident. Includes the Communications, Medical, and Food Units.

SINGLE RESOURCE - An individual, a piece of equipment and its personnel complement, or a crew or team of individuals with an identified work supervisor that can be used on an incident.

SITE SAFETY AND HEALTH PLAN (SSHP) – Site-specific document required by state and Federal OSHA regulations and specified in the Area Contingency Plan. The SSHP, at minimum, addresses, includes, or contains the following elements: health and safety hazard analysis for each site task or operation, comprehensive operations workplan, personnel training requirements, PPE selection criteria, site-specific occupational medical monitoring requirements, air communications and a leader.

SUPERVISOR - The ICS title for individuals responsible for directing the activities of a Division or Group.

SUPPLY UNIT - Functional unit within the Support Branch of the Logistics Section responsible for ordering equipment and supplies required for incident operations.

SUPPORT BRANCH - A Branch within the Logistics Section responsible for providing personnel, equipment, and supplies to support incident operations. Includes the Supply, Facilities, Ground Support, and Vessel Support Units.

SUPPORTING MATERIALS - Refers to the several attachments that may be included with an Incident Action Plan (e.g., communications plan, map, site safety and health plan, traffic plan, and medical plan).

TACTICAL DIRECTION - Directions given by the Operations Section Chief including: the tactics appropriate for the selected strategy; the selection and assignment of resources; tactics implementation; and performance monitoring for each operational period.

TACTICS – Deploying and directing resources during an incident to accomplish the desired objective.

TASK FORCE - A group of resources with common communications and a leader assembled for a specific mission.

TECHNICAL SPECIALISTS - Personnel with special skills who can be used anywhere within the ICS organization.

TEMPORARY FLIGHT RESTRICTIONS (TFR)- Temporary airspace restrictions for non-emergency

ACRONYMS

ACP	Area Contingency Plan
AOBD	Air Operations Branch Director
CUL	Communications Unit Leader
DMOB	Demobilization Unit Leader
EOC	Emergency Operations Center
EMS	Emergency Medical Services
EMT	Emergency Medical Technician
EPA	Environmental Protection Agency, US
FSC	Finance/Administration Section Chief
FOG	Field Operations Guide
FOSC	Federal On-Scene Coordinator
GIS	Geographic Information System
GSUL	Ground Support Unit Leader
HAZMAT	Hazardous Materials
HAZSUB	Hazardous Substances
H/C	Historic/Cultural
IAP	Incident Action Plan
IC	Incident Commander
ICP	Incident Command Post
ICS	Incident Command System
IO	Information Officer
IMT	Incident Management Team
ISB	*In-situ* Burn
JIC	Joint Information Center
LO	Liaison Officer
LSC	Logistics Section Chief
MACS	Multi-agency Coordination System
MUL	Medical Unit Leader
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NIC/RIC	National/Regional Incident Command
NIIMS	National Interagency Incident Management System
NOAA	National Oceanic and Atmospheric Administration
NRDA	Natural Resource Damage Assessment
NRS	National Response System

APPENDIX C
Spill Forms

Spill Response Notification Form

Reporter's Last Name:____

First Name:_________________________ Middle Initial:_______________________

Position:____

Phone Numbers:

Day ( ) -

Evening ( ) -

Company:____

Organization Type:____

Address:____

____

City:____

State:____

Zip:____

Were Materials Discharged?____________ (Y/N)

Meeting Federal and State Obligations to Report?_________________________ (Y/N)

Date Called:_________________________ Time Called:_______________________

Calling for Responsible Party?____ (Y/N)

Incident Description

Source and/or cause of incident:____

____

____

____

____

Date of incident:____

Time of incident:____ AM/PM

Incident Address/Location:____

____

Nearest City:______________________________ State:________________________

County:___________________________________ Zip:__________________________

Distance from City:__________________________ Units of Measure:______________

Direction from City:__________________________

Section:_________________ Township:______________ Range:_________________

Spill Response Notification Form

Container Type:______________________________ Storage Capacity:______________

Latitude:___________ Degrees __________ Minutes __________ Seconds

Longitude:__________ Degrees __________ Minutes __________ Seconds

Material

CHRIS Code	Discharged Quantity	Unit of Measure	Material Discharged in Water	Quantity	Unit of Measure

Response Action

Actions taken to correct, control or mitigate incident:______________________________

____

____

____

____

Impact

Number of injuries:_____________________ Number of deaths:____________________

Were there evacuations?__________ (Y/N) Number evacuated:____________________

Was there any damage? __________ (Y/N)

Damage in dollars (approximate):____

Medium affected:____

Description:____

More information about medium:____

____

____

____

____

Spill Response Notification Form

Additional Information

Any information about the incident not recorded elsewhere in the report:_____________

APPENDIX D
Emergency Response Contractor Letter of Intent and Equipment List

NATIONAL RESPONSE CORPORATION

May 2, 2011

Nestor Soriano
Quality Assurance and Training Supervisor
Swissport Fueling – SEA
2350 S. 190th Street
Seattle, WA 98188

Via Email: nestor.soriano@swissport.com

RE: Swissport USA OSRO Coverage

RESPONSE CONTRACTOR CERTIFICATION

This letter confirms that National Response Corporation (NRC) has a Facility Standby Services Agreement, Number 4309, with Swissport USA. This Agreement provides OSRO services for the Swissport USA's facility located at the Seatac International Airport. NRC confirms that Swissport USA is authorized to reference NRC resources and certifications in its state and/or federal contingency and response planning documents pursuant to terms of the Agreement.

NRC is a California State approved Oil Spill Response Organization (OSRO), a Primary Response Contractor (PRC) in Washington and Oregon, and has been rated by the U.S. Coast Guard as an OSRO meeting all classification ratings for Rivers/Canals, Inland/Nearshore and Oceans environments, as well as providing Shoreline response capabilities. NRC is capable of beginning mobilization of response efforts within one hour of a spill notification.

If you have any questions, or if I can be of further assistance, please don't hesitate to contact me either by phone at 206-730-3993 or by e-mail at sbarton@nrces.com.

Sincerely,

Stephanie Barton

Stephanie Barton
Director, Emergency Response Programs
NRC Environmental Services Inc.

Personnel Terms:

1. Minimum call out is 4 hours per person, except for projects over 50 miles from office location require 8-hour daily minimum.
2. Rates for FS, MC, EO, DR, RT, SF, LO, VO, DH, TE, SA, AS and ST are subject to the following:
   a. Weekdays: 0700 to 1500 hours charged at Straight Time (ST = Hourly Rate); 1500 to 1900 hours charged at Overtime (OT = 1½ times the Hourly Rate); 1900 to 0700 hours charged at Double Time (DT = 2 times the Hourly Rate). Changes to start times for Weekday ST, OT and DT may be requested by Client and may be approved by NRCES on a case-by-case basis for longer projects.
   b. Saturday: First 8 hours charged at Overtime (1½ times the Hourly Rate); hours over first 8 hours charged at Double Time (2 times the Hourly Rate).
   c. Sundays and Holidays: All time charged at Double Time (2 times the Hourly Rate).
   d. The following are included holidays: New Years Day, Presidents Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Day after Thanksgiving and Christmas Day. Other holidays may apply when employing certain union personnel, including but not limited to: Martin Luther King, Jr. Day, Cesar Chavez's Birthday, Veterans Day, day before Christmas and day after Christmas.
   e. The above Rates are applied regardless of the number of hours worked for any Client on any particular day. Rates for hours subsequent to a break of less than 8 hours are calculated as continuous to hours prior to break.
3. All project specific personnel, including accounting, administrative, personnel support, logistics and management, whether on site, at NRC Environmental Services offices, or at support locations, are chargeable per the above rates. All personnel are charged according to the above rates, regardless of full-time, part-time or third party labor source status, unless provided as part of a specified subcontracted service. Labor rates for remote sites and prevailing-wage projects may require a surcharge.
4. Time charges begin with equipment and personnel mobilization activities. Time charges terminate at the conclusion of the services, which includes transportation of equipment and personnel back to operations centers and any necessary demobilization activities. Personnel time is charged in half-hour increments for all personnel. All hourly rates will be charged Portal-to-Portal from the location of personnel when dispatched, including but not limited to NRCES office, personnel home, hotel or other jobsite as applicable. Personnel on standby for Customer will be charged at 8 hours per 24-hour period.
5. Transportation and any incidental costs for all emergency response personnel, both on site, at support locations and traveling to and from the site or support locations, are charged at cost plus 20%. Per Diem charges for food in metropolitan areas are $50.00 per person per day. Typical per diem rates for lodging, based on double occupancy, are $100.00 per person per day. Rates for premium areas and remote sites to be determined.

EQUIPMENT

CATEGORY	*ITEM #*	*DESCRIPTION*	*UNIT*	*RATE*
BOOM	1001/1002	Anchor Gear / Boom Mooring Light	Day/Each	30.00/13.00
	1003	Contractor Boom, up to 21"	Ft/Day	1.75
	1004	Petro Barrier, up to 24"	Ft/Day	2.50
	1005	Ocean Boom, up to 42"	Ft/Day	6.75
RECOVERY / SKIMMERS	2001	Air Conveyor, VS-50	Day	3,000.00
	2002	Belt Skimmer, Marco Class XI-C	Day	4,000.00
	2003	Belt Skimmer Vessel, JBF DIP 3001	Hour	350.00
	2004	Belt Skimmer Vessel, Marco I C	Hour	375.00
	2005	Brush Skimmer, Lamor	Day	3,600.00
	2006	Brush Skimmer, Aquaguard RBS-40	Day	2,500.00
	2007	Brush Skimmer, Aquaguard RBS-25 or 10 Twin	Day	2,000.00
	2008	Brush/Drum/Disc Skimmer, Aquaguard RBS-05	Day	850.00
	2009	Disc Skimmer, MI-30, Komara 12K	Day	1,800.00
	2010	Disc Skimmer, Vikoma Sea Skimmer	Day	2,000.00
	2011	Drum Skimmer, Roto 70	Day	3,500.00
	2012	Drum Skimmer, Action Petroleum Model 60	Day	1,400.00
	2013	Drum Skimmer, Action Petroleum Model 36	Day	1,200.00
	2014	Drum Skimmer, Action Petroleum Model 24	Day	800.00
	2015	Rope Mop Skimmer, II-9	Day	800.00
	2016	Rope Mop Skimmer, I-4, II-4, II-6	Day	600.00
	2017	Rope Mop Skimmer, extra rope, 100'	Day	110.00
	2018	Vacuum/Transfer Unit (VTU)	Day	1,800.00
	2019	Weir Skimmer, Desmi 250	Day	3,500.00
	2020	Weir Skimmer, Foilex, vacuum	Day	1,500.00
	2021	Weir Skimmer, Foilex, hydraulic	Day	2,500.00
	2022	Weir, Cascade LP 3000 or Vikoma Fastflow	Day	1,600.00
	2023	Weir Skimmer, Skimpak or Oleo, 2" or 3"	Day	300.00
TEMPORARY STORAGE	3001	Bladder Tank, 24 barrel	Day	250.00
	3002	Bladder Tank, 25 - 100 barrel	Day	500.00

CATEGORY	ITEM #	DESCRIPTION	UNIT	RATE
	3003	Bladder Tank, 101 - 240 barrel	Day	1,000.00
	3004/3005	Container, Intermodal or Connex Storage, 20'/40'	Day	22.00/44.00
	3006/3007	Roll-off Bins, up to 20 cu. yd. / 30-40 cu. yd.	Day	22.00/44.00
	3008	Storage Tank, 500 to 2,500 gal	Day	20.00
	3009	Storage Tank, 2,500 to 4,500 gal	Day	25.00
	3010	Storage Tank, 4,500 to 6,000 gal	Day	35.00
	3011	Tank Barge, up to 210 bbls (NRCES only)	Day	1,500.00
	3012	Tote Tank, DOT approved, 275 to 300 gal	Day	80.00
	3013	Vacuum Box, up to 25 cu. yd.	Day	80.00
VESSELS / SUPPORT	4001	Deck Barge, up to 110'	Day	500.00
	4002	Response Vessel, 65'	Hour	375.00
	4003	Response Vessel, 35' - 55'	Hour	225.00
	4004	Response Vessel, 30' - 34'	Hour	160.00
	4005	Response Vessel, 25' - 29'	Hour	125.00
	4006	Response Vessel, 16'- 24'	Hour	100.00
	4007	Skiffs w/outboard, 15' or less	Hour	50.00
	4008	Skiffs w/o outboard	Hour	25.00
EXCAVATION	5001	Backhoe, 710 or equivalent	Day	375.00
	5002	Backhoe, 580 or equivalent	Day	325.00
	5003/5004	Backhoe Attachment, Breaker / Compactor	Each/Day	220.00/125.00
	5005	Dozer, 75-105 HP or equivalent	Day	500.00
	5006	Dump Bed, Morooka 5-10 cu. yd.	Day	350.00
	5016	Dump Truck, off road, 35 ton	Day	800.00
	5007	Excavator, Mini	Day	325.00
	5008	Excavator, up to 37,000 lb	Day	850.00
	5009	Excavator, 38,000 to 53,000 lb	Day	1,050.00
	5010	Excavator, over 53,000 lb	Day	1,500.00
	5017	Excavator, over 100,000 lb	Hour	250.00
	5011/5012	Excavator Attachment, Thumb or Wheel / Hammer	Each/Day	350.00/550.00
	5013	Loader, Bobcat, Skidsteer or equivalent	Day	350.00
	5014	Loader Attachment, Breaker, Compactor, Grapple	Each/Day	175.00
	5015	Loader, up to 4 yds.	Day	650.00
	5018	Smooth Drum Roller / Compactor	Hour	110.00
TRAILERS	6001	Trailer, Confined Space Entry/Rescue	Day	2,000.00
	6002	Trailer, Decon, up to 24'	Day	350.00
	6003	Trailer, Dump, 7,000 lb	Day	250.00
	6004	Trailer, Dump, Side/End, 18 yd.	Hour	35.00
	6005	Trailer, Emergency Response, up to 24'	Day	350.00
	6006	Trailer, Emergency Response, 40'- 48'	Day	500.00
	6007	Trailer, Equipment, Utility, 1-2 ton	Day	100.00
	6008	Trailer, Equipment, Utility, 3-10 ton	Day	250.00
	6009	Trailer, Flatbed, up to 48'	Day	250.00
	6010	Trailer, Incident Command Center, 24'	Day	650.00
	6011	Trailer, Incident Command Center, 48'	Day	1,500.00
	6012	Trailer, Low Boy	Day	300.00
	6013	Trailer, MTR (boom, boat, skimmer add'l if deployed)	Day	350.00
	6014	Trailer, Office	Day	200.00
	6015	Trailer, Rocket (Roll Off) Launcher	Hour	40.00
	6016	Trailer, Side Dump, 3 axle	Day	600.00
	6017	Trailer, Tilt Top, 26 ton	Day	250.00
	6018	Trailer, Van, up to 48'	Day	350.00
	6019	Trailer, Water Buffalo (up to 500 gallons, with pump)	Day	200.00
	6020	Trailer, Wildlife Response and Rehab (supplies add'l)	Day	2,500.00
	6021	Trailer, Wildlife Search & Collection	Day	1,000.00
	6022	Trailer, Wildlife Support, Water or Electrical	Day	850.00

CATEGORY	ITEM #	DESCRIPTION	UNIT	RATE
TRUCKS	7001	Tractor, Diesel	Hour	40.00
	7002	Truck, Camera	Hour	125.00
	7003	Truck, Crane, 1 ton - 6 ton	Hour	65.00
	7004	Truck, Crane, 7 ton - 10 ton	Hour	75.00
	7005	Truck, Crane, 10 ton - 18 ton	Hour	95.00
	7006	Truck, Crane, 40 ton	Hour	140.00
	7007	Truck, Dump, up to 10 yard	Hour	60.00
	7008/7009	Truck, Dump, over 10 yard / with pup	Hour	65.00/70.00
	7010	Truck, Gear, less than 1 ton	Day	125.00
	7012	Truck, Gear, 1 ton	Day	150.00
	7014	Truck, Gear, 2 ton - 5 ton	Day	225.00
	7016	Truck, Gear, over 5 ton	Hour	45.00
	7017	Truck, Hazmat Response, pickup, or van, up to 24'	Hour	75.00
	7018	Truck, Marine Response	Hour	50.00
	7019/7020	Truck, Roll Off, bobtail / with trailer	Hour	70.00/80.00
	7021	Truck, Water, up to 3000 gallons	Hour	110.00
VACUUM TRUCKS / TRAILERS	8001	Guzzler/Air Mover	Hour	150.00
	8002	Vactor/Jetter - Combo Unit (attachments add'l)	Hour	185.00
	8003/8004	Vacuum Trailer, 120 -130 bbl, black iron/ stainless	Hour	30.00/45.00
	8005/8006	Vacuum Truck, less than 35 bbl / 35 - 70 bbl	Hour	50.00/60.00
	8007	Vacuum Trailer, less than 50 bbl	Hour	25.00
VEHICLES	9001/9002	All Terrain Vehicle / cargo carrying	Day	240.00/375.00
	9003	Auto, Personnel or Support	Day	100.00
	9004	Van, MTR (boom, boat, skimmer add'l if deployed)	Day	400.00
	9005	Van, Maintenance, Personnel or Support	Day	150.00
	9006	Wildlife Transport-Care Vehicle	Day	600.00
BLOWERS / COMPRESSORS	1101	Air Compressor, up to 100 CFM	Day	150.00
	1102	Air Compressor, 100 to 185 CFM	Day	225.00
	1103	Air Compressor, 210 to 375 CFM	Day	325.00
	1104	Blower, Coppus, Electric/Pneumatic	Day	100.00
	1105/1106	Blower, Negative Air Exhaust, 6" / 12" (filters add'l)	Day	75.00/110.00
	1107	Blower, Venturi, Horn	Day	30.00
	1108	Exhaust Duct, 25' x 6", 10" or 12"	Day	25.00
PRESSURE WASHERS	1201	Specialty Nozzles, Roto Jet or Butterworth	Day	45.00
	1202	Hydroblaster, 6,000 psi	Hour	50.00
	1203	Hydroblaster, 10,000 psi	Hour	70.00
	1204	Hydroblaster, 20,000 psi	Hour	180.00
	1209	Jetter Trailer	Hour	95.00
	1206	Pipeline Lancing Nozzle, w/ Hose & Foot Pedal	Day	75.00
	1207/1210	Pressure Washer, up to 3,000 psi, single / dual w/ tank	Day	250.00/600.00
	1208	Pressure Washer, 3,000 to 5,000 psi	Day	350.00
	1205	Remote Tank Cleaning (Gamajet) Head	Day	275.00
PUMPS	1301/1302	Pump, up to 1", Petroleum / Chemical	Day	60.00/75.00
	1303/1304	Pump, 2", Petroleum / Chemical	Day	85.00/150.00
	1305	Pump, 2", Chemical Peristaltic	Day	350.00
	1306/1307	Pump, 3", Petroleum / Chemical	Day	100.00/200.00
	1312	Pump, 3", Hydraulic (Archimedes/MT30) w/power pack	Day	1,500.00
	1308/1309	Pump, 4", Trash / Petro-Submersible	Day	175.00/325.00
	1310	Pump, 5"- 6", Petroleum	Day	400.00
	1311	Air Conveyor, Vac-U-Max	Day	150.00
HOSES / PIPES FITTINGS	1401/1402	Hose, Fire, 1.5" / 2.5"	50 Ft/Day	15.00/17.50
	1403/1404	Hose, Guzzler, Flex or Pipe, 4" / 6"	Ft/Day	3.50/4.00
	1405	Guzzler Vacuum Breaker	Day	30.00

CATEGORY	ITEM #	DESCRIPTION	UNIT	RATE
	1406	Guzzler/Jetter Fittings (elbows, tees, etc.)	Day/Each	8.00
	1407	Hose, Pneumatic	50 Ft/Day	10.00
	1408/1409	Hose, Suction & Discharge, 2", Petro / Chemical	25 Ft/Day	15.00/30.00
	1410/1411	Hose, Suction & Discharge, 3", Petro / Chemical	25 Ft/Day	18.00/36.00
	1412/1413	Hose, Suction & Discharge, 4", Petro / Chemical	25 Ft/Day	20.00/40.00
	1414	Hose, Suction & Discharge, 6", Petro	25 Ft/Day	35.00
	1415/1416	Hose, Discharge (lay flat) 2" / 3"	50 ft/Day	10.00/12.00
	1417/1418	Hose, Discharge (lay flat) 4" / 6"	50 ft Day	15.00/25.00
	1419	Hose, Wash, up to 1"	50 ft/Day	10.00
SUPPORT	1501	Air Knife	Day	150.00
	1554	Airless Sprayer at $85/day.	Day	85.00
	1502	Bag Filter System "Dual Pod" (bag filters add'l)	Day	75.00
	1503	Carbon Filtration System, 55 gal drum	Each	350.00
	1504	Chipping Gun, Pneumatic	Day	40.00
	1505	Compactor, Hand Operated	Day	150.00
	1506	Decon Cleaning Pool, Portable 10' x 15'	Day	125.00
	1507	Decon Cleaning Pool, Portable 10' x 30'	Day	200.00
	1508	Decon Cleaning Pool, Portable 20' x 100'	Day	550.00
	1509	Decon Cleaning Pool, Portable 25' x 50'	Day	275.00
	1510/1553	Decon Station, Personnel 2 / 3 Stage (supplies add'l)	Day	50.00/75.00
	1511	Electrical Accessories (cords, GFI, adaptors)	Day	14.00
	1512	Forklift, 6K to 10K lb	Day	275.00
	1513	Forklift Attachment	Day	100.00
	1514	Generator, less than 4 kW	Day	50.00
	1515	Generator, 4 to less than 7.5 kW	Day	115.00
	1516	Generator, 7.5 kW to 12.5 kW	Day	165.00
	1517	Handheld Pipeline Locator System	Day	150.00
	1518	Jackhammer	Day	150.00
	1519	Ladder, Extension & Folding	Day	40.00
	1520	Lights, Tower Trailer Mounted	Day	175.00
	1521	Light, Explosion-Proof	Day	44.00
	1522/1523	Light, Stand, Regular, 500W / 1000W	Day	16.00/60.00
	1524	Office Space (for command post at NRCES as available)	Day	1,500.00
	1525	Pipe Plug 4" to 18" (includes 20' air line hose)	Day	95.00
	1526	Pipe Plug 18" to 24" (includes 20' air line hose)	Day	155.00
	1527	Pipe Plug 24" to 36" (includes 20' air line hose)	Day	175.00
	1528	Pipe Plug 36" to 48" (includes 20' air line hose)	Day	215.00
	1529	Pipe Plug 48" to 60" (includes 20' air line hose)	Day	350.00
	1530	Power Pack, Hydraulic, 1 hp	Day	50.00
	1531	Power Pack, Hydraulic, 16 hp	Day	138.00
	1532	Power Pack, Hydraulic, 40 hp	Day	275.00
	1533	Power Pack, Hydraulic, 60 hp	Day	500.00
	1534	Road Closure Signs, reflective	Day/Each	50.00
	1535	Road Closure, Barricades, Cones, Delineators	Day/Each	5.00
	1537/1538	Saw, Chain / Cutoff	Day	60.00/125.00
	1539	Soil Sampler, Hollow Stem	Day	50.00
	1540	Tools, Hand (brooms, shovels, etc.)	Each/Day	5.00
	1541	Tools, Mechanical Set	Each/Day	50.00
	1542	Tools, Non-Sparking	Each/day	15.00
	1543	Tools, Power, small (drills, sawzall etc.)	Each/Day	35.00
	1544	Truck Ramps	Day	150.00
	1545/1546	Vacuum, HEPA / Shop (filters add'l)	Day	250.00/50.00
	1547	Vactor/Jetter Attachment (hydro-exca, Drum-It Head, nozzles)	Day/Each	95.00
	1548	Welding Unit / Torch Set, Portable	Day	85.00
	1549	Wildlife Rehabilitation Pool	Day	200.00

CATEGORY	ITEM #	DESCRIPTION	UNIT	RATE
	1550	Wildlife Rehabilitation Shelter, 19' x 35'	Day	2,000.00
	1551	Wildlife Support Shelter, 20' x 20'	Day	750.00
	1552	Yokohama Fenders, 8' diameter	Day	175.00
COMMS	1601	Base Station	Day	75.00
	1602	Cellular Phone (airtime over $10 per day add'l)	Day	35.00
	1603	Computer and/or Printer	Day	95.00
	1604	GPS Unit	Day	50.00
	1605	High Power Repeater System w/Generator	Day	300.00
	1606	Radio, UHF or VHF, Portable	Day	25.00
	1607	Satellite Phone (includes 20 minutes airtime per day)	Day	75.00
	1608	Satellite Dish for HS Internet	Day	125.00
SAFETY	1701	Air Sampling Kit (tubes add'l)	Day	40.00
	1702	Chest or Hip Waders, Insulated Cooling Vests	Day	25.00
	1703	Chlorine A/B/C Response Kits (gaskets add'l)	Day	500.00
	1704	Eyewash Station	Day	35.00
	1705	Drager CMS Meter	Day	200.00
	1706	Floatation Work Suit	Day	50.00
	1707	Floatation Work Vest, PDF	Day	10.00
	1708	Full Face Respirator (cartridges add'l)	Day	25.00
	1709	Half Face Respirator (cartridges add'l)	Day	20.00
	1710	Harness/Lanyard/Safety Line	Day	25.00
	1711	Meter, 4EC Radiation	Day	350.00
	1712	Meter, LEL/O2/H2S/CO	Day	150.00
	1713	Meter, Jerome Mercury	Day	600.00
	1723	Meter, Lumex Mercury	Day	850.00
	1714	Meter, Personal / Gillian, H2S 4-gas	Each/Day	35.00
	1715	Meter, Personal / Particulate Monitoring	Day	150.00
	1716	Meter, PID/HNU/OVA	Day	200.00
	1717	Mercury Vacuum (bags add'l)	Day	750.00
	1718	Salvage Cylinder/Coffin	Day	1,500.00
	1719	SCBA or Egress Bottles w/ lines	Day	125.00
	1720	Six Pack / Regulated Air Supply with 300' line	Day	300.00
	1721	Tripod and Winch	Day	250.00
	1722	Truck Rollover/Cylinder Drill Kit/Betts Valve	Day	400.00

Equipment Terms:

1. NRCES does not rent equipment in a bare condition. All equipment shall be operated and controlled by NRCES Personnel only. All equipment sent to site by NRCES shall be in a basic operating condition. Additional components charged to customer include, but are not limited to, multiple hose lengths, blast shields, specialty tips or fittings, specialty connections, noise abatement, catalytic converters, etc. Equipment prices do not include fuel, operator or mobilization unless otherwise stated. Fuel consumed in non-mileage related operation of equipment, including vehicle and non-vehicle equipment and vessels, will be charged at cost plus 20%. Vacuum truck washouts will be charged at cost plus 20%. Regulatory permits and environmental fees (HP Fees, BTU Fees, etc) shall be assessed at cost plus 20% based upon the equipment and duration of such unit.
2. Time charges are calculated portal to portal, beginning with equipment mobilization activities from the NRCES office or operations center unless otherwise specified, including all time at the site. Time charges terminate at the conclusion of the operation, which includes transportation of equipment back to NRCES office or operations center and completion of any necessary demobilization activities, including cleaning, repair, replacement and/or delivery to NRCES of restored equipment.
3. Day rates are based on 8 hours of operation. Equipment will be charged in half-day increments for additional hours over 8, up to a total of 3 days charge during a 24-hour period. Minimum charge for daily rate equipment is daily charge per day. Minimum call out for hourly equipment is four hours per day for local projects and eight hours per day for projects over 50 miles from mobilization site. Customers will be charged for unused requested equipment until released and returned to service per Note 2.
4. Equipment not specified on the Price List will be charged at cost (including rental, insurance, freight, fuel, etc.) plus 20%.
5. In addition to payment of rental charges, Customer agrees to pay NRCES, in accordance with rates contained in this Price List, for any cleaning or repairs necessary to return all equipment to the same condition as at the commencement of services (with the exception of normal wear and tear). Customer is also responsible for the payment of all transportation and disposal charges for any waste generated during cleaning. Only NRCES or its subcontractors shall perform any cleaning and decontamination operations on all equipment owned, rented or subcontracted by NRCES. If NRCES determines that equipment cannot be returned to the condition it was in at the commencement of the services, Customer shall pay for all costs at cost plus 20%, including freight and other expenses incurred by NRCES to replace this equipment. All boom, whether new or used, that is damaged beyond repair shall be replaced by NRCES with new boom at Customer's expense at cost plus 20%, including freight and other expenses.

MATERIALS AND SUPPLIES

CATEGORY	ITEM #	DESCRIPTION	UNIT	RATE
BAGS/SHEETING	M100	Bulk Bag, 1 yard	Each	22.00
	M101	Plastic Bag, 36" x 60", 6 mil, 50/roll or box	Roll/Box	95.00
	M102	Plastic Bag, 36" x 60" (drum liner)	Each	3.00
	M103	Roll Off Box Liner	Each	35.00
	M104	Sheeting, 20' to 32' x 100', 10 mil	Roll	155.00
	M105	Sheeting, 20' to 32' x 100', 6 mil	Roll	115.00
~~CLEANERS~~	~~M205/M200~~	~~Cleaner, Hand, 14 oz tub / 1 gallon~~	~~Each~~	~~4.00/30.00~~
	M201	Cleaner, Marine (Simple Green, etc.)	Gallon	25.00
	M202	Disinfectant (bleach, A-33, etc.)	Gallon	3.00
	M203	Decon Solvent (HD Citrus Degreaser), 55 gallon drum	Each	2,900.00
	M204	Decon Solvent (HD Citrus Degreaser, BioSolve)	Gallon	55.00
CONTAINERS	M301	5 Gallon, Bucket, w/ Lid	Each	15.00
	M313	5 Gallon, Plastic Carboy	Each	20.00
	M302	10 Gallon, Open Top	Each	95.00
	M303	20 Gallon, Open Top	Each	65.00
	M304	30 Gallon, Open Top	Each	65.00
	M305	55 Gallon, Close Top, Refurbished	Each	60.00
	M314	55 Gallon, Close Top,	Each	70.00
	M306	55 Gallon, Open Top, Refurbished	Each	55.00
	M315	55 Gallon, Open Top	Each	75.00
	M307	55 Gallon, Poly Open/Closed Top	Each	90.00
	M308	85 Gallon, Overpack, Unlined, Black	Each	195.00
	M309	85 Gallon, Overpack, Lined, Yellow	Each	255.00
	M310	95 Gallon, Overpack, Poly	Each	220.00
	M311	275-300 Gallon, Liquid Tote, DOT Approved	Each	450.00
	M312	Triwall Box, Cubic Yard, DOT Approved	Each	125.00
SAFETY	M400	Acid Suit, 1 Piece	Each	90.00
	M401	Boot, Steel Toed, PVC/Nitrile	Pair	28.00
	M402	Glove, Brown Jersey	Pair	3.00
	M403	Glove, Inner, Cotton/Latex/Nitrile	Pair	1.00
	M404	Glove, Inner, Cotton/Latex/Nitrile, 50/box	Box	30.00
	M405	Glove, Silver Shield	Pair	4.50
	M406	Glove, Heavy Duty, PVC,Green, PVC 14"	Pair	4.00
	M407	Glove, Heavy Duty, Black	Pair	8.00
	M408	Glove, Heavy Duty, Butyl Rubber	Pair	30.00
	M409	Hard Hat	Each	25.00
	M442	Hard Hat Face Shield and Bracket	Set	10.00
	M410	Overboot, Disposable	Pair	5.00
	M425	Protective Gear Level A	Each	1,400.00
	M426/M427	Protective Gear Level B	Each/Change	450.00/300.0
	M428/M429	Protective Gear Level C	Each/Change	85.00/55.00
	M430/M431	Protective Gear Level D	Each/Change	35.00/20.00
	M432	Rain Gear, 2 Piece	Set	20.00
	M433	Respirator, Cartridge, Mulit-Gas	Pair	17.00
	M434	Respirator, Cartridge, Hepa/Mercury	Pair	90.00
	M435	Respirator, Half-Face	Each	25.00
	M436	Safety Glasses	Each	6.75
	M437	Safety Goggles	Each	7.25
	M438	Safety Vest	Each	25.00
	M439	Tyvek Suit, Coated, Saranex / Durafab	Each	30.00
	M440	Tyvek Suit, Disposable	Each	12.00
	M441	Tyvek Suit, Poly-Coated, Durafab	Each	13.00

CATEGORY	ITEM #	DESCRIPTION	UNIT	RATE
SORBENTS	M500	Absorbent, Chemical Stabilizer, 35 lb	Bag	130.00
	M501	Absorbent, Absorb X	Bag	17.50
	M512	Chemical pads, 15" x 9", 100/Bale	Bale	90.00
	M502	Floor Dry 25 lb	Bag	10.50
	M503	Neutralizer (citric acid, soda ash or bicarbonate)	Bag	65.00
	M504	Oil Snare on Rope, 50 ft/Bag	Bag	135.00
	M505	Oil Snare, 30/Carton	Carton	110.00
	M513	Snow Fence, 4'x100'	Roll	45.00
	M506	Sorbent Boom 5" x 10', 4/Bale	Bale	100.00
	M507	Sorbent Boom 8" x 10', 4/Bale	Bale	185.00
	~~M508~~	~~Sorbent Roll, SXT 638, 38" x 144' x 3/8"~~	Roll	175.00
	M509	Sorbent Sheet 17" x 19" x 3/8", 100/Bale	Bale	75.00
	M510	Sorbent Sweep 17" x 100' x 3/8"	Each	130.00
	M514	Straw Waddles, 25 ft/Roll	Roll	30.00
	M511	Vermiculite, 4 cu.ft. /Bag	Bag	28.00
MISCELLANEOUS	M600	Banner Tape, 3" x 1000' Roll	Roll	20.00
	M601	Cotton Rags, 25 lb Box/Bale	Each	50.00
	M602	Decon Pool, Small Personnel	Each	30.00
	M603	Sample Supplies (pogo pump, jars, brass tubes, caps)	Each	7.00
	M604	Duct Tape, 2"	Roll	5.00
	M605	HazCat Kit (each fingerprint)	Per Test	25.00
	M606	Mercury Meter Bags (cloth only)	Each	135.00
	M607	Petro Flag Test Kit	Per Test	35.00
	M612	Photo Documentation, Disposable or Digital	Each	35.00
	M613	Poly Rope, 600', up to 1/2"	Roll	90.00
	M614	Sand Bags, Filled	Each	8.50
	M615	Spilfyter Strips	Each	10.00
	M616	Sprayer, Hand Held (Hudson), 3 gal.	Each	55.00
	M801	Water, Drinking, 24/case	Case	14.00
	M850	Mileage for Car (M850 + Eq Item#)	Mile	0.50
	M851	Mileage for Trucks/Vans (M851 + Eq Item#)	Mile	0.65
	M852	Mileage for Commercial Trucks (M852 + Eq Item#)	Mile	0.85
	M860	Fuel (Gas) for Equipment (M860 + Eq Item#)	Gallon	3.50
	M870	Fuel (Diesel) for Equipment (M870 + Eq Item#)	Gallon	3.75
	M901	Transportation of Triwalls to TSDF	Each	160.00
	M902	Transportation of Drums to TSDF	Each	45.00
	M903	Disposal of Non-Haz Liquid Waste at NRCES	Gallon	0.35
	M904	Disposal of Non-Haz Solid Waste at NRCES	Ton	95.00

Materials and Supplies Terms:

1. All materials and supplies utilized, whether listed in daily reports or not, are chargeable. Any materials or supplies not listed on Price List, including Wildlife Trailer supplies and expendables and third-party invoices for services, charged at cost plus 20%.
2. Quotes for waste disposal are based on meeting approved profiles. NRCES will assist Customer in identifying disposal facility options and provide price quotes. However, this does not constitute a referral and it is the sole responsibility of the Customer to designate the disposal facility. NRCES will not take title to any wastes: dangerous, hazardous or non-hazardous.
3. The number of change-outs of Personal Protective Equipment (PPE) are based on conditions occurring in the work area. PPE shall be changed at a frequency that conforms to safety practices to prevent exposure to employees during the work activity. PPE categories:
   - Level D: Coveralls/Uniform, Steel Toe Boots, Safety Glasses, Work Gloves, Hard Hat and Safety Vest as applicable
   - Level C: Level D plus, Disposable Tyvek, Full Face or Half Face Respirator (excluding cartridges)
   - Level B: Level C plus supplied air and egress air bottle or SBCA (Supplied air equipment includes mask, 100' air supply hose, supplied air, bottle manifold and egress bottle or SBCA)
   - Level A: Quoted per Price List for specific project requests and requirements
4. All materials and supplies prices subject to surcharge based on percentage increase of price for diesel over $3.75 per gallon. Petroleum based products prices subject to change at any time based on increased manufacturing costs.
5. NRCES reserves the right to substitute products or equal quality and construction without affecting the performance. NRCES applies the Brand Name of a product as a reference only, and reserves the right to substitute the product for similar and or equivalent products as it deems necessary.
6. NRCES use of facility-directed or customer-directed decontamination products, including but not limited to degreasing agents, cleaners, strippers, conditioners, cutter stock, etc , shall be done at the facility's or customer's risk.
7. A fuel surcharge of an additional $0.15 will be added to the base mileage charges for every $0.50 increase above $3.75 per gallon of diesel in the local NRCES office area at the time of service.

APPENDIX E
Material Safety Data Sheet – Jet Fuel

JET A COMMERCIAL JET FUEL - TURBINE FUEL - AVIATION FUEL
MATERIAL SAFETY DATA SHEET
NSN: 9130003592026
Part No. Indicator: A
Part Number/Trade Name: JET A COMMERCIAL JET FUEL

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General Information

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Item Name: TURBINE FUEL, AVIATION FUEL
Date MSDS Prepared: 15JUN89
Safety Data Review Date: 01DEC94
Specification Number: ASTM D1655
Spec Type, Grade, Class: JET A TYP
Hazard Characteristic Code: F4
Unit Of Issue: GL
Unit Of Issue Container Qty: BULK
Type Of Container: BULK

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Ingredients/Identity Information

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Proprietary: NO
Ingredient: HYDROCARBONS, W/A BOILING POINT RANGE OF 300F TO 572F.
Ingredient Sequence Number: 01
Percent: 100
NIOSH (RTECS) Number: 1006778HY
CAS Number: 68476-53-9
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

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Physical/Chemical Characteristics

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Appearance and Odor: WATER WHITE TO LIGHT AMBER COLORED LQI; KEROSENE ODOR.
Boiling Point: 300F, 149C
Melting Point: <51F, <11C
Vapor Pressure (MM Hg/70 F): 0.1
Vapor Density (Air=1): 6
Specific Gravity: 0.77-0.84
Evaporation Rate and Ref: N/A
Solubility In Water: NEGLIGIBLE
Percent Volatiles By Volume: SLIGHT
Viscosity: 1.3-2.2 @100F
pH: N/A
Autoignition Temperature: 210C

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Fire and Explosion Hazard Data

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Flash Point: >100F, >38C
Flash Point Method: PMCC
Lower Explosive Limit: 0.7
Upper Explosive Limit: 5.0
Extinguishing Media: DRY CHEMICAL, FOAM, CARBON DIOXIDE, HALON. WATER FOG OR WATERSPRAY ARE OF VALUE FOR COOLING BUT MAY NOT ACHIEVE EXTINGUISHMENT
Special Fire Fighting Proc: DO NOT ENTER ENCLSD FIRE SPACE W/O PROPER PROT EQPMT INCLUDING SCBA. COOL TANKS/CNTNRS EXPO TO FIRE W/WATER.
Unusual Fire And Expl Hazrds: MODERATELY COMBUST.WILL RELEASE FLAMM VAP WHICH IF EXPO TO IGN SOURCE CAN BURN IN OPEN/EXPLOIVE IN CONFINED SPACES.
MIST/SPRAY MAY BE FLAMM @ TEMP <FLASH POINT.

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Reactivity Data

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Stability: YES
Cond to Avoid (Stability): HEAT, SPARKS, AND OPEN FLAME.
Materials to Avoid: REACTS W/STRONG ACIDS AND STRONG OXIDIZING MATERIALS.
Hazardous Decomp Products: BURNING/EX HEATING MAY PRODUCE CARBON MONOXIDE & OTHER HARMFUL GASES & VAP INCLUDING OXIDES &/OR OTHER CMPDS OF SULFUR.
Hazardous Poly Occur: NO
Conditions to Avoid (Poly): NOT APPLICABLE.

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Health Hazard Data

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LD50-LC50 Mixture: NOT ESTABLISHED.
Route of Entry - Inhalation: YES
Route of Entry - Skin: YES
Route of Entry - Ingestion: YES
Health Haz Acute and Chronic: LIQ/MIST/VAP CAN CAUSE EYE, SKIN, RESP TRACT IRRITATION. INGEST OF LIQ & ASPIRATION INTO LUNGS CAN RESULT IN CHEMICAL PNEUMONIA. INHAL: NOSE/THROAT/LUNGS IRRIT, CNS DEPRESSION. EYE/SKIN: IRRIT LEADING TO DERM. INGEST: MOUTH/THROAT/STOMACH IRRIT, ASPIRATION INTO LUNGS WILL CAUSE CHEMICAL PNEUMONIA.
Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO
Carcinogenicity - OSHA: NO
Signs/Symptoms Of Overexp: INHAL: NOSE/THROAT/LUNGS IRRIT, CNS DEPRESSION. EYE/SKIN: IRRITATION, DERMATITIS. INGEST: MOUTH/THROAT/STOMACH IRRITATION, NAUSEA, VOMITING, DIARRHEA, RESTLESSNESS, ASPIRATION INTO LUNG WILL CAUSE CHEMICAL PNEUMONIA.
Med Cond Aggravated by Exp: CAUTION IS RECOMMENDED FOR PRE-EXISTING CENTRAL NERVOUS SYSTEM DISEASES. PERSONNEL W/PRE-EXISITING CENTRAL NERVOUS SYSTEM DISEASE, SKIN DISORDERS, OR CHRONIC RESP DISEASES SHOULD AVOID EXPOSURE TO PRODUCT
Emergency/First Aid Proc: INHAL:IMMED REMOVE TO FRESH AIR. RESP DISTRESS GIVE OXY OR GIVE CPR. GET IMMED MED ATTN. EYE: FLUSH W/CLEAN LOW-PRESSURE WATER FOR @ LEAST 15MINS. IRRIT PERSISTS GET MED ATTN. SKIN: IMMED REMOVE CONTAMIN CLOTH. WASH WELL W/SOAP & WATER. IRRIT PERSISTS GET MED ATTN. PERSONNEL W/PRE-EXISTING SKIN DISORDERS/CHRONIC RESP DISEASE AVOID EXPOSURE

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Precautions for Safe Handling and Use

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Steps If Matl Released/Spill: CONTAIN SPILL. REMOVE IGN SOURCES. USE PROPER PROTECTIVE EQPMT. PADS/ABSORBENT MATL CAN BE USED. WILL FLOAT ON WATER. CALL NAT RESP CNTR 800-424-8802 & COMPLY W/ALL LAWS. SPILLED MATL/CONTAMIN MATLS MAY BE HAZ TO ANIMAL/AQUATIC LIFE.
Neutralizing Agent: NOT APPLICABLE.
Waste Disposal Method: MAX MATL RECOVER FOR REUSE/RECYCLE. UNUSED LIQ LIKELY EPA IGN HAZ WASTE D001. USE APPROVED TREAT/TRANSP/DISPOSAL SITE IAW ALL LAWS. SPILL INTO WASTEWATER SYS CHEM/BIO OXY DEMAND WILL INCREASE. ACCLIMATE BIOMASS TO SPILL. LAND FARMING,INCINER,LAND DISPOSAL
Precautions-Handling/Storing: FOLLOW SPECIAL SLOW LOAD PROCEDURES FOR SWITCH LOADING WHEN LOADED INTO TANKS PREVIOUSLY HAVING GASOLINE/LOW FLASH PT MATL (SEE API PUBLICATION 2003).
Other Precautions: KEEP CNTNR CLSD & AWAY FROM HEAT/IGN SOURCES. ALL ELECTR EQPMT IN AREA SHOLD BE INSTALLED IAW APPLICABLE RQMTS OF NAT ELECT CODE, NFPA. DO NOT USE

AS CLEANING AGENT. EMPTY CNTNR RETAIN LIQ/VAP RESIDUE; OBSERVE HAZ PRECAUTIONS.

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Control Measures

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Respiratory Protection: MATERIAL IS NOT EXPECTED TO PRESENT RESP HAZ BECAUSE OF ITS LOW VAP PRESSURE. BUT IF EXCESSIVE MIST/VAPORS RESULT FROM CONDITIONS OF USE, WEAR PROPER NIOSH/MSHA APPROVED RESP EQUIPMENT.

Ventilation: USE ADEQUATE VENTI TO KEEP VAP CONCEN OF MATL BELOW OCCUPATIONAL EXPOSURE LIMITS.

Protective Gloves: CLEAN, IMPERVIOUS GLOVES.

Eye Protection: CHEM-TYP GOGGLES &/OR FACE SHIELD.

Other Protective Equipment: EYEWASH WATER. CONTACT LENSES SHOULD NOT BE WORN. CLEAN/IMPERVIOUS PROT CLOTH (APRON, BOOTS, FACIAL PROTECTION).

Work Hygienic Practices: USE GOOD PERSONAL HYGIENE PRAC. WASH W/SOAP & WATER OR WATERLESS HAND CLEANER. WASH SOILED CLOTH BEFORE REUSE; DISCARD SHOE

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Transportation Data

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Trans Data Review Date: 94335
DOT PSN Code: GOA
DOT Proper Shipping Name: FUEL, AVIATION, TURBINE ENGINE
DOT Class: 3
DOT ID Number: UN1863
DOT Pack Group: III
DOT Label: FLAMMABLE LIQUID
IMO PSN Code: HIA
IMO Proper Shipping Name: FLAMMABLE LIQUID, N.O.S. o
IMO Regulations Page Number: 3345
IMO UN Number: 1993
IMO UN Class: 3.3
IMO Subsidiary Risk Label: -
IATA PSN Code: MMF
IATA UN ID Number: 1863
IATA Proper Shipping Name: FUEL, AVIATION, TURBINE ENGINE
IATA UN Class: 3
IATA Label: FLAMMABLE LIQUID
AFI PSN Code: MMF
AFI Prop. Shipping Name: FUEL, AVIATION, TURBINE ENGINE
AFI Class: 3
AFI ID Number: UN1863
AFI Pack Group: III

AFI Basic Pac Ref: 7-7
Additional Trans Data: PER MSDS: DOT PROPER SHIPPING NAME: FUEL, AVIATION, TURBINE ENGINE, UN1863. NO CODE FOR IMO THEREFORE USED FLAMM LIQ NOS.

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Disposal Data

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Waste Disposal Method: MAX MATL RECOVER FOR REUSE/RECYCLE. UNUSED LIQ LIKELY EPA IGN HAZ WASTE D001. USE APPROVED TREAT/TRANSP/DISPOSAL SITE IAW ALL LAWS. SPILL INTO WASTEWATER SYS CHEM/BIO OXY DEMAND WILL INCREASE. ACCLIMATE BIOMASS TO SPILL. LAND FARMING,INCINER,LAND DISPOSAL

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Label Data

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Label Required: YES
Technical Review Date: 01DEC94
Label Status: F
Common Name: JET A COMMERCIAL JET FUEL
Signal Word: WARNING!
Acute Health Hazard-Moderate: X
Contact Hazard-Moderate: X
Fire Hazard-Moderate: X
Reactivity Hazard-None: X
Special Hazard Precautions: LIQ/MIST/VAP CAN CAUSE EYE/SKIN/RESP TRACT NOSE/THROAT/LUNGS IRRIT, CNS DEPRESSION. EYE/SKIN: IRRIT, DERM. INGEST: MOUTH/ INHAL: IMMED REMOVE TO FRESH AIR. RESP DISTRESS GIVE OXY/CPR. GET IMMED MED ATTN. EYE: FLUSH W/CLEAN LOW-PRESS WATER FOR @ LEAST 15MINS. IRRIT PERSISTS GET MED ATTN. SKIN: IMMED REMOVE CONTAMIN CLOTH. WASH WELL W/SOAP & WATER. IRRIT PERSISTS GET MED ATTN. INGEST: DO NOT INDUCE VOMIT; ASPIRATION HAZ. MUST GET MED ATTN IMMED. NOTE DR: PERSONNEL W/PRE-EXISTING SKIN DISORDERS/CHRONIC RESP DISEASE AVOID EXPOSURE
Protect Eye: Y
Protect Skin: Y
Protect Respiratory: Y

APPENDIX F
ICS Compatible Site Safety and Health Plan

ICS Compatible Site Safety and Health Plan

Purpose. The ICS Compatible Site Safety and Health Plan is designed for safety and health personnel that use the Incident Command System (ICS). It is compatible with ICS and is intended to meet the requirements of the Hazardous Waste Operations and Emergency Response regulation (Title 29, Code of Federal Regulations, Part 1910.120). The plan avoids the duplication found between many other site safety plans and certain ICS forms. It is also in a format familiar to users of ICS. Although primarily designed for oil and chemical spills, the plan can be used for all hazard situations.

Development. The ICS Compatible Site Safety and Health Plan was initiated at U.S. Coast Guard Headquarters, Office of Response [(Commandant (G-MOR-3)] in 1998. Several Coast Guard personnel were involved in the development and review of the plan. They are listed below.

CDR Rick Muth (National Strike Force Coordination Center)
LCDR Roger R. Laferriere (Commandant G-MOR-3, Office of Response)
LCDR Tommey Meyers (Commandant G-WKS-2, Shore Safety & Environmental Health Division)
LCDR Tim Deal (Commandant G-MOR-3, Office of Response)
LCDR Scott Paradis, (Maintenance and Logistics Command (kse))
LCDR Ed Parsons (Marine Safety Office Portland, OR)
LCDR Merrie Austin (Marine Safety Unit Galveston, TX)
LCDR Wayne Mackenzie (First District Safety and Environmental Health Officer)
LT Steve Ober (Gulf Strike Team)
LT Rob Campbell (Gulf Strike Team)
LT Eric Doucette (Pacific Strike Team)
LT Kathy Slawson (Fifth District Safety and Environmental Health Officer)
LT Tom Glynn (Safety and Occupational Health Instructor, RTC Yorktown)
LTJG Stacy Tyler (Pacific Strike Team)
GM1 Tracy Taylor (National Strike Force Coordination Center)
DC1 Pete Pritchard (Atlantic Strike Team)

Mr. Nir Barnea, CIH for the National Oceanic Atmospheric Administration also assisted in the development and review of the plan.

The following industry representatives were involved in the review and refinement of the plan:

Mr. Phil Glenn, President Clean Channel Association
Mr. Michael Zustra, Director, Health and Safety, MPW Industrial Services Inc. CIH, MSPH
Mr. J. Fritz Kin, Marathon Ashland Petroleum LLC, CSP, CET CHMM
Dr. Fred Halvorsen, Halvorsen EHS Services, Ph.D., P.E., CIH
Mr. John Weirz, Marine Spill Response Corporation
Mr. Mike De Bettencourt, URS Grenier Woodward Clyde

uestions on the document should be addressed to the Coast Guard Office of Response at (202) 267-0448.

EMERGENCY SAFETY AND RESPONSE PLAN (FORM SSP-A)

Purpose: The Emergency Safety and Response Plan provides the Safety Officer and ICS personnel a plan for safeguarding personnel during the initial emergency phase of the response. *It is only used during the emergency phase of the response, which is defined as a situation involving an uncontrolled release.* It is also intended to meet the requirements of the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulation, Title 29 Code of Federal Regulations Part 1910.120.

Preparation: The Safety Officer or his/her designated staff starts the Emergency Site Safety and Response Plan. They initially address the hazards common to all operations involved in the response (initial site characterization). Outside support organizations must be contacted to ensure the plan is consistent with other plans (local, state, other federal plans). Form SSP-G need not be completed if this form is used. When the operation proceeds into the post-emergency phase (site stabilized and cleanup operations begun) forms SSP-B and SSP-G should be used. For large incidents, the Emergency Site Safety and Response Plan complements the Incident Action Plan. For smaller incidents, the Emergency Site Safety and Response Plan complements ICS Form 201.

Distribution: The Emergency Safety and Response Plan completed by the Safety Officer is forwarded to the Planning Section Chief. Copies are made and attached to the Assignment List(s) (ICS Form 204). The Operations Section Chief, Directors, Supervisors or Leaders get a copy of the plan. They must ensure it is available on site for all personnel to review. The Safety Officer is responsible for ensuring that the Emergency Site Safety and Response Plan properly addresses the hazards of the operation. The Safety Officer accomplishes this through on site enforcement and feedback to the operational units.

Instructions:

Item #	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident.
2	Date/Time Prepared	Enter date (month, day, year) prepared.
3	Operational Period	Enter the time interval for which the assignment applies.
4	Attachments	Enter attachments. Material Safety Data Sheets are mandatory under 1910.120. Safe Work Practices may also be attached.
5	Organization	List the personnel responsible for these positions. IC and Safety Officer are mandatory.
6	Physical Hazards & Protection	Check off the physical hazards at the site. Identify the major tasks involved in the response (skimming, lightering, overpacking, etc.). Check off the controls that would be used to safeguard workers from the physical hazards for each major task.
7	Chemicals	List the chemicals involved in the response. Chemicals may be listed numerically. Check off the hazards, potential health effects, pathway of dispersion, and exposure route of the chemical. Numbers corresponding to the chemical may be entered into the check blocks to differentiate. Check off the PPE to be used. Identify the type of PPE selected (for example: gloves: butyl rubber).
8	Instruments	Indicate the instruments being used for monitoring. List the action levels adjacent to the instruments being used. Identify the chemicals being monitored (2). List the physical parameters of the chemicals. Use a separate form for additional chemicals monitored.

EMERGENCY SAFETY AND RESPONSE PLAN (FORM SSP-A) (Instructions Continued)

9	Decontamination	Check off the decontamination steps to be used. Numbers may be entered to indicate the preferred sequence. Identify any intervening steps necessary on the form or in a separate attachment.
10	Site Map	Draw a rough site map. Ensure all the information listed is identified on the map.
11	Potential Emergencies	Identify any potential emergencies that may occur. If none, so state. Check off the appropriate alarms that may be used. Identify emergency prevention and evacuation procedures in the space provided or on a separate attached sheet.
12	Communications	Indicate type of site communications (phone, radio). Indicate phone numbers or frequencies for the command, tactical and entry functions.
13	Site Security	Identify the personnel assigned. Identify security procedures in the space provided or on a separate attached sheet. Identify the equipment needed to support security operations.
14.	Emergency Medical	Identify the personnel assigned. Identify emergency medical procedures in the space provided or on a separate attached sheet. Identify the equipment needed to support security operations.
15.	Prepared by:	Enter the name and position of the person completing the worksheet.
16	Date/time briefed:	Enter the date/time the document was briefed to the appropriate workers and by whom.

SITE SAFETY PLAN (FORM SSP-B)

Purpose: The Site Safety Plan provides the Safety Officer and ICS personnel a plan for safeguarding personnel during the post-emergency phase of an incident. The post-emergency phase is when the situation is stabilized and cleanup operations have begun. SSP-B is intended to meet the requirements of the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulation, Title 29 Code of Federal Regulations Part 1910.120.

Preparation: The Safety Officer or his/her designated staff starts the Site Safety Plan. They initially address the hazards common to all operations involved in the response (initial site characterization). The plan is then reproduced and as a minimum sent to ICS Group/Division Supervisors. They amend it according to unique job or on-scene hazards with support from the Safety Officer and/or his/her staff (detailed site characterization). The plan is continuously updated to address changing conditions. During the first hours of the response, where most response functions are in the emergency phase, the Safety Officer may chose to use the Emergency Safety and Response Plan (SSP-A) in place of the Site Safety Plan. For large incidents, SSP-B compliments the Incident Action Plan (IAP). For smaller incidents, SSP-B compliments ICS Form 201. The Safety Officer is encouraged to use the HAZWOPER Compliance Checklist (Form SSP-K) to ensure the IAP and the 201 address the requirements and all other pertinent ICS forms (203, 205, 206, etc.) are completed.

Distribution: The initial Site Safety Plan completed by the Safety Officer is forwarded to the Planning Section Chief. Copies are made and attached to the Assignment List(s) (ICS Form 204). The Operations Section Chief, Directors, Supervisors or Leaders get a copy and make on site amendments specific to their operation. They must also ensure it is available on site for all personnel to review. The Safety Officer provides personnel from his/her staff to assist in the detailed site characterization. The Safety Officer is responsible for ensuring that the Site Safety Plan for each assignment properly addresses the hazards of the assignment. The Safety Officer must ensure that the safety plans on site are consistent. The Safety Officer accomplishes this through on site enforcement and feedback to the operational units.

Instructions:

Item #	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident.
2	Date/Time Prepared	Enter date (month, day, year) prepared.
3	Operational Period	Enter the time interval for which the assignment applies.
4	Safety Officer	Enter the name of the Safety Officer and means of contact.
5	Group/Division Supv Strike Team/TF Leader	The Supervisor/Leader who receives this form will enter their name here.
6	Location & size of site	Enter the geographical location of the site and the approximate square area.
7	Site Accessibility	Check the block(s) if the site is accessible by land, water, air, etc.
8	For Emergencies Contact	Enter the name and way to contact the individual who handles emergencies.
9	Attachments	Enter attachments. Material Safety Data Sheets are mandatory under 1910.120. Safe Work Practices may also be attached.
10	Job/Task Activity	Enter Job/Task & Activities, list hazards, list potential injury and health effects, check exposure routes and identify controls. If more detail is needed for controls, provided attachments.
11	Prepared by	Enter the name and position of the person completing the worksheet.
12	Briefed on ______ by	Enter the date/time the document was briefed to the appropriate workers and by whom.

SITE MAP FOR SITE SAFETY PLAN (SSP-C)

Purpose: The Site Map for the Site Safety Plan is required by Title 29 Code of Federal Regulations Part 1910.120. It provides in 1 place a visual description of the site which can help ICS personnel locate hazards, identify evacuation routes and places of refuge.

Preparation: The Site Map for the Site Safety Plan can be completed by the Safety Officer, his/her staff or by ICS field personnel (Group Supervisors, Task Force/Strike Team Leaders) working at a site with unique and specific hazards. One or several maps may be developed, depending on the size of the incident and the uniqueness of the hazards. The key is to ensure that the workers using the map(s) can clearly identify the work zones, locations of hazards, evacuation routes and places of refuge.

Distribution: This form must be located with the Site Safety Plan (SSP-B). It therefore follows the same distribution route.

Instructions:

Item #	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident.
2	Date/Time Prepared	Enter date (month, day, year) prepared.
3	Operational Period	Enter the time interval for which the assignment applies.
4	Safety Officer	Enter the name of the Safety Officer and means of contact.
5	Supervisor/Leader	The Supervisor/Leader who receives this form will enter their name here.
6	Location & size of site	Enter the geographical location of the site and the approximate square area.
7	Site Accessibility	Check the block(s) if the site is accessible by land, water, air, etc.
8	For Emergencies Contact	Enter the name and way to contact the individual who handles emergencies.
9	Include	Ensure the map includes the listed items provided in this block.
10	Prepared by	Enter the name and position of the person completing the worksheet.
11	Briefed on ______ by	Enter the date/time the document was briefed to the appropriate workers and by whom.

EMERGENCY RESPONSE PLAN (ICS FORM 208D)

Purpose: The Emergency Response Plan provides information on measures to be taken in the event of an emergency. It is used in conjunction with the Site Safety Plan (Form SSP-B). It is also required by Title 29 Code of Federal Regulations Part 1910.120.

Preparation: The Safety Officer, his/her staff member or the Site Supervisor/Leader prepares the Emergency Response Plan. A copy of the Medical Plan (ICS Form 206) must always be attached to this form.

Distribution: This form must be located with Site Safety Plan (SSP-B). It therefore follows the same distribution route.

Instructions:

Item #	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident.
2	Date/Time Prepared	Enter date (month, day, year) prepared.
3	Operational Period	Enter the time interval for which the assignment applies.
4	Safety Officer	Enter the name of the Safety Officer and means of contact.
5	Supervisor/Leader	The Supervisor/Leader who receives this form will enter their name here.
6	Location & size of site	Enter the geographical location of the site and the approximate square area.
7	For Emergencies Contact	Enter the name and way to contact the individual who handles emergencies.
8	Attachments	Enter attachments. ICS Form 206 must be included.
9	Emergency Alarm	Enter a description of the sound of the emergency alarm and it's location.
10	Backup Alarm	Enter a description of the sound of the emergency alarm and it's location.
11	Emergency Hand Signals	Enter the emergency hand signals to be used.
12	Emergency Personal Protective Equipment Required	Enter the emergency personal protective equipment that may be needed in the event of an emergency.
13	Emergency Notification Procedures	Enter the procedures for notifying the appropriate personnel and organizations in the event of an emergency.
14	Places of Refuge	Enter by name the place of refuge personnel can go to in the event of an emergency.
15	Emergency Decon & Evacuation Steps	Enter emergency decontamination steps and evacuation procedures.
16	Site Security Measures	Enter site security measures needed for emergencies.
17	Prepared by	Enter the name and position of the person completing the worksheet.
18	Briefed on ______ by	Enter the date/time the document was briefed to the appropriate workers and by whom.

DAILY AIR MONITORING LOG (FORM SSP-E)

Purpose: The Daily Air Monitoring Log provides documentation of air monitoring conducted during a spill. The log is a supplement to the Site Safety Plan (SSP-B). It is only required when performing air monitoring operations. The information used from the log can help update the Site Safety Plan.

Preparation: Persons conducting monitoring complete the Daily Air Monitoring Log. Normally these are air monitoring units under the Site Safety Officer. If there is a decision not to monitor during a spill, the reasons must be stated clearly in the Site Safety Plan (SSP-B).

Distribution: The Daily Air Monitoring Log when completed is copied and forwarded to the Site Safety Officer who must review and sign the form. The original form must be available on site, readily available and briefed to all impacted ICS personnel.

Instructions:

Item #	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident.
2	Date/Time Prepared	Enter date (month, day, year) prepared.
3	Operational Period	Enter the time interval for which the assignment applies.
4	Safety Officer	Enter the name of the Safety Officer and means of contact.
5	Location & size of site	Enter the geographical location of the site and the approximate square area.
6	Hazards of Concern	Enter the hazards being monitored.
7	Action Levels	Enter the action levels/readings for the monitoring teams.
8	Weather	Enter weather information. Ensure units of measure are listed.
9	Air Monitoring Data	Enter the instrument type and number, persons monitoring, results with appropriate units, location of reading, time of reading and interferences and comments.
10	Safety Officer Review	The Safety Officer must review and sign the form.

PERSONAL PROTECTIVE EQUIPMENT (SSP-F)

Purpose: The Personal Protective Equipment form is a list of personal protective equipment to be used in operations. The listing of personal protective equipment is required by Title 29 Code of Federal Regulations Part 1910.120.

Preparation: The Personal Protective Equipment form is completed by the Site Safety Officer, or his/her staff. Personal protective equipment common to all ICS Operations personnel is addressed first. Jobs with unique personal protective equipment requirements (fall protection) are addressed next. When the form is delivered on site, the ICS Director, Supervisor, or Leader may amend the list to ensure personnel are adequately protected from job hazards. It must be completed prior to the onset of any operations, unless addressed elsewhere by Standard Operating Procedures.

Distribution: This form must be located with Site Safety Plan (SSP-B). It therefore follows the same distribution route.

Instructions:

Item #	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident.
2	Date/Time Prepared	Enter date (month, day, year) prepared.
3	Operational Period	Enter the time interval for which the assignment applies.
4	Safety Officer	Enter the name of the Safety Officer and means of contact.
5	Supervisor/Leader	The Supervisor/Leader who receives this form will enter their name here.
6	Location & size of site	Enter the geographical location of the site and the approximate square area.
7	Hazard(s) Addressed:	Enter the hazards that need to be safeguarded.
8	For Emergencies Contact	Enter the name and way to contact the individual who handles emergencies.
9	Equipment	List the equipment needed to address the hazards. If pre-designed Safe Work Practices are used, indicate here and attach to form.
10	References consulted	List the references used in making the selection for PPE.
11	Inspection Procedures	Enter the procedures for inspecting the Personal Protective Equipment prior to donning. If pre-designed Safe Work Practices are used, indicate here and attach to form.
12	Donning Procedures	Enter the procedures for putting on the PPE. If pre-designed Safe Work Practices are used, indicate here and attach to form.
13	Doffing Procedures	Enter the information for removing the PPE. If pre-designed Safe Work Practices are used, indicate here and attach to form.
14	Limitations and Precautions	List the limitations and precautions when using PPE. Include the maximum time to be inside the PPE, Heat Stress concerns, psychomotor skill detraction and other factors.
15	Prepared by	Enter the name and position of the person completing the worksheet.
16	Briefed on ______ by	Enter the date/time the document was briefed to the appropriate workers and by whom.

DECONTAMINATION (SSP-G)

Purpose: The Decontamination form provides information on how workers can avoid contamination and how to get decontaminated. It is a supplemental form to the Site Safety Plan.

Preparation: The Decontamination Form can be completed by the Site Safety Officer, a member of his/her staff or by the Group/Division Supervisor, Task Force/Strike Team Leader on the site

Distribution: This form must be located with Site Safety Plan (SSP-B). It therefore follows the same distribution route.

Instructions:

Item #	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident.
2	Date/Time Prepared	Enter date (month, day, year) prepared.
3	Operational Period	Enter the time interval for which the assignment applies.
4	Safety Officer	Enter the name of the Safety Officer and means of contact.
5	Supervisor/Leader	The Supervisor/Leader who receives this form will enter their name here.
6	Location & size of site	Enter the geographical location of the site and the approximate square area.
7	For Emergencies Contact	Enter the name and way to contact the individual who handles emergencies.
8	Hazard(s) Addressed:	Enter the hazards that need to be safeguarded.
9	Equipment	Enter the decontamination equipment needed for the site. If pre-designed Safe Work Practices are used, indicate here and attach to this form.
10	References consulted	List the references used in making the selection for PPE.
11	Contamination Avoidance Practices	Enter procedures for personnel to avoid contamination. If pre-designed Safe Work Practices are used, indicate here and attach to form.
12	Decon Diagram	Draw a diagram for the decontamination operation. If pre-designed Safe Work Practices are used, indicate here and attach to form.
13	Decon Steps	List the decontamination steps.
14	Prepared by	Enter the name and position of the person completing the worksheet.
15	Briefed on ______ by	Enter the date/time the document was briefed to the appropriate workers and by whom.

SITE SAFETY ENFORCEMENT LOG (SSP-H)

Purpose: The Site Safety Plan Enforcement Log is used to help enforce safety during an incident.

Preparation: The Safety Officer and/or his/her staff complete the Site Safety Plan Enforcement Log. The log is completed as Safety personnel are on scene reviewing the site. It should be completed at a minimum once per day. The number of enforcement logs to be completed depends on the size of the incident. Enough should be completed to ensure that site safety is being adequately enforced.

Distribution: The Site Safety Plan enforcement log when completed is delivered to the Safety Officer. The Safety Officer can use the form to amend the Site Safety Plan (SSP-A or B).

Instructions:

Item #	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident.
2	Date/Time Prepared	Enter date (month, day, year) prepared.
3	Operational Period	Enter the time interval for which the assignment applies.
4	Safety Officer	Enter the name of the Safety Officer and means of contact
5	Supervisor/Leader	The Supervisor/Leader who receives this form will enter their name here.
6	For Emergencies Contact	Enter the name and way to contact the individual who handles emergencies.
7	Attachments	List any attached supporting documentation.
8	Job/Task Activity	Enter only those Job Task/activities for which a deficiency is noted.
	Hazards	Enter the hazard not being sufficiently addressed.
	Deficiency	Enter the deficiency.
	Action Taken	Enter the corrective action taken to address the deficiency.
	Safety Plan Amended?	Enter whether the on site safety plan was amended.
	Signature of Supervisor/Leader	Ensure the Supervisor/Leader signs the form to acknowledge the deficiency.
9	Prepared by	Enter the name and position of the person completing the worksheet.
10	Briefed on ______ by	Enter the date/time the document was briefed to the appropriate workers and by whom.

WORKER ACKNOWLEDGEMENT FORM (SSP-I)

Purpose: The Worker Acknowledgement form is used to document workers who have received safety briefings.

Preparation: Those personnel responsible for conducting safety briefings complete this form initially. Once the briefings are completed, workers who were briefed print their name, sign, date and indicate the time of the briefing.

Distribution: This form is returned to the Safety Officer or designated representative at the end of each operational period.

Instructions:

Item #	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident.
2	Site Location	Indicate the location where the briefings are held.
3	Attachments	Indicate any attachments used as part of the briefings.
4	Type of briefing	Check the block next to the type of briefing.
5	Presented by	Enter the name of the person conducting the briefing.
6	Date	Enter the date of the briefing.
7	Time	Enter the time of the briefing.
8	Worker Name	Workers receiving the briefing print their name, sign, date and enter the time they acknowledge the briefing.

EMERGENCY SAFETY & RESPONSE PLAN COMPLIANCE CHECKLIST (SSP-J)

Purpose: The Emergency Safety and Response Plan 1910.120 Compliance Checklist is to ensure that incident response operations are in compliance with Title 29, Code of Federal Regulations Part 1910.120, Hazardous Waste Operations and Emergency Response. It also identifies how form SSP-J can be used to satisfy the HAZWOPER requirements. This checklist is an optional form.

Preparation: The Emergency Safety and Response Plan 1910.120 Compliance Checklist is completed by the Safety Officer or his/her staff as frequently as necessary whenever the Safety Officer wants to ensure regulatory compliance. It is best used in conjunction with the Site Safety Plan Enforcement Log (SSP-H). Many of the requirements are performance based and are best evaluated on scene by the Safety Officer or his/her staff.

Distribution: The Safety Officer should maintain The Emergency Safety and Response Plan (ERP) 1910.120 Compliance Checklist.

Instructions:

Item #	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident.
2	Date/Time Prepared	Enter date (month, day, year) prepared.
3	Operational Period	Enter the time interval for which the assignment applies.
4	Supervisor/Leader	The Supervisor/Leader who receives this form will enter their name here.
5	Location of Site	Enter the site location.
	Cites	These are the regulatory cites within 1910.120. The major headings are highlighted in bold. Informational cites or cites that are duplicative are not included.
	Requirement	This lists the requirement in a question format. Some require documentation or some form of action.
	ICS Form	Lists those requirements covered by SSP-A.
	Check Block	Enter the check if the site satisfies the requirement.
	Comments	This provides additional information on the requirement. The user may also enter comments.
6	Prepared by	Enter the name and position of the person completing the worksheet.

HAZWOPER 1910.120 COMPLIANCE CHECKLIST (SSP-K)

Purpose: The HAZWOPER 1910.120 Compliance Checklist is to ensure that incident response operations are in compliance with Title 29, Code of Federal Regulations Part 1910.120, Hazardous Waste Operations and Emergency Response. It also identifies how other ICS forms can be used to satisfy the HAZWOPER requirements. This is an optional form.

Preparation: The HAZWOPER 1910.120 Compliance Checklist is completed by the Safety Officer or his/her staff as frequently as necessary whenever the Safety Officer wants to ensure regulatory compliance. It is best used in conjunction with the Site Safety Plan Enforcement Log (SSP-H). The Site Safety Plan Forms (A-G) best meet some of the requirements. The Incident Action Plan is suited to address other requirements, and the Safety Officer should ensure the IAP addresses them. Other requirements are performance based and are best evaluated on scene by the Safety Officer or his/her staff.

Distribution: The HAZWOPER 1910.120 Compliance Checklist should be maintained by the Safety Officer.

Instructions:

Item #	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident.
2	Date/Time Prepared	Enter date (month, day, year) prepared.
3	Operational Period	Enter the time interval for which the assignment applies.
4	Supervisor/Leader	The Supervisor/Leader who receives this form will enter their name here.
5	Location of Site	Enter the site location.
	Cites	These are the regulatory cites within 1910.120. The major headings are highlighted in bold. Informational cites or cites that are duplicative are not included.
	Requirement	This lists the requirement in a question format. Some require documentation or some form of action.
	ICS Form	Lists those ICS Forms that cover the requirement. **IAP designations means it should be covered in IAP, it does not guarantee it is covered. The Safety Officer must ensure this.**
	Check Block	Enter the check if the site satisfies the requirement.
	Comments	This provides information on where else the requirement may be met. The user may also enter comments.
6	Prepared by	Enter the name and position of the person completing the worksheet.

HAZWOPER 1910.120 DRUM COMPLIANCE CHECKLIST (SSP-L)

Purpose: The HAZWOPER 1910.120 Drum Compliance Checklist is to ensure that incident response operations are in compliance with Title 29, Code of Federal Regulations Part 1910.120, Hazardous Waste Operations and Emergency Response whenever drums are encountered during an incident. This is an optional form.

Preparation: The HAZWOPER 1910.120 Drum Compliance Checklist is completed by the Safety Officer or his/her staff as frequently as necessary whenever the Safety Officer wants to ensure regulatory compliance. It is best used in conjunction with the Site Safety Plan Enforcement Log (SSP-H). The Site Safety Plan Forms (A-G) best meet some of the requirements. Other requirements are performance based and are best evaluated on scene by the Safety Officer or his/her staff.

Distribution: The HAZWOPER 1910.120 Drum Compliance Checklist should be maintained by the Safety Officer.

Instructions:

Item #	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident.
2	Date/Time Prepared	Enter date (month, day, year) prepared.
3	Operational Period	Enter the time interval for which the assignment applies.
4	Safety Officer	Enter the name of the Safety Officer and means of contact.
5	Supervisor/Leader	The Supervisor/Leader who receives this form will enter their name here.
6	Location & size of site	Enter the geographical location of the site and the approximate square area.
7	For Emergencies Contact	Enter the name and way to contact the individual who handles emergencies.
8	Note	Tanks and vaults should also be treated in the same manner as described in the checklist (1910.120((j)(9)).
9	Cites	These are the regulatory cites within 1910.120. The major headings are highlighted in bold. Informational cites or cites that are duplicative are not included.
	Requirement	This lists the requirement in a question format. Some require documentation or some form of action.
	Check Block	Enter the check if the site satisfies the requirement.
	Comments	This provides information on where else the requirement may be met. The user may also enter comments.
10	Prepared by	Enter the name and position of the person completing the worksheet.

SITE SAFETY PLAN ATTACHMENTS (SSP-ATTACH 1-#)

Purpose: The Site Safety Plan attachments provide ready made safe work practices for the Safety Officer and ICS personnel. They are optional documents designed to assist the Safety Officer in communicating and enforcing control of safety hazards. They were derived from the U.S. Coast Guard's National Strike Force's Guide for Developing Oil Spill Site Safety Plans (NSFCCINST M16465.2).

Preparation: The SSP-Attachments require little to no preparation. Some of them have blank sections (due to information changing) that are required to be filled by the Safety Officer or his/her staff. The Safety Officer is encouraged to use the format presented by the attachments for developing his/her own additional safe work practices.

Distribution: These forms must be located with Site Safety Plan (SSP-A). They therefore follow the same distribution route.

CG ICS SPECIF... HAZARD ATTACHMENT	1. Hazard Products containing Benzene Additional Attachments:	2. Divisions/G... Units affected:	3. Job Tasks Involving Hazard:

Medical Condition	Action Level	Reference	Signs, Symptoms & Potential Health Effects	Exposure Route	Controls: Engineering, Administrative, PPE	Medical Response
Cancer			Bone marrow depression, Abnormal blood counts, Cancer of the blood (leukemia), incapacitating illness & death	Inhalation X Absorption X Ingestion Injection Membrane ________	- Avoid Contact - Avoid confined & tight spaces - Keep upwind - Air monitoring - Chem resistance clothing - Respirators > PEL	- Test blood & urine for phenol
Dermatitis			Reddening of the skin, benzene is a suspected skin carcinogen	Inhalation Absorption X Ingestion Injection Membrane ________	- Avoid Contact - Keep upwind - Wear chemical resistance gloves & clothing - Wash frequently	- Wash skin & exposed areas with soap and water
Eye Irritation			Red eye, weeping eye, blurry vision	Inhalation Absorption X Ingestion Injection Membrane ________	- Avoid Contact - Keep upwind - Wear safety glasses - High splash zone, wear chemical resistance goggles	- Flush eyes with water
Central Nervous System Effect			Giddiness, headache, nausea, staggered gait, fatigue -	Inhalation X Absorption X Ingestion Injection Membrane ________	- Avoid contact, & confined/tight spaces - Keep upwind - Air monitoring - Chem resistance clothing Respirators > PEL	- Test blood & urine for phenol
Respiratory Irritant			Irritation of nose, throat and lungs	Inhalation X Absorption X Ingestion Injection Membrane ________	- Avoid confined & tight spaces - Keep upwind - Air monitoring - Chem resistance clothing Respirators > PEL	- Test blood & urine for phenol

4. Prepared by:	5. Date/time briefed:	**Last Update: 3/21/03**	**SSP-Attach 1: Benzene** **Page ______ of ______**

CG I[illegible] SPECIFIC HAZARD ATTACHMENT	1. Hazard Products Containing Hydrogen Sulfide Additional Attachments:	2. Divisions/Groups/Units affected:	3. Job Tasks Involving Hazard:

Medical Condition	Action Level	Reference	Signs, Symptoms & Potential Health Effects	Exposure Route	Controls: Engineering, Administrative, PPE	Medical Response
Chemical asphyxiation	**Note: Poor Warning Properties**		Headache, dizziness, fatigue, staggered gait, giddiness	Inhalation X Absorption Ingestion Injection Membrane ________	- Avoid Contact - Avoid confined & tight spaces - Keep upwind - Air monitoring - SCBA > PEL	
Diarrhea			Runny or loose stool	Inhalation X Absorption Ingestion X Injection Membrane ________	- Avoid Contact - Keep upwind - Wash frequently - Avoid confined & tight spaces - Keep upwind - Air monitoring - SCBA > PEL	- If ingested, induce vomiting, drink large volumes of water
Respiratory Paralysis			Difficulty breathing, fatigue, strong signs of weakness	Inhalation X Absorption Ingestion Injection Membrane ________	- Avoid Contact - Keep upwind - Wash frequently - Avoid confined & tight spaces - Keep upwind - Air monitoring - SCBA > PEL	- Provide support respiration where needed
Chemical Burns			Severe burning of skin, eyes and other external organs -	Inhalation Absorption Ingestion Injection Membrane Contact X	- Avoid areas above 10% LEL - Keep upwind - Air monitoring - Flash protective clothing SCBAs > PEL	-Treat for burns as appropriate
Central Nervous System Depression			Headache, dizziness, fatigue, staggered gait, giddiness	Inhalation X Absorption Ingestion Injection Membrane ________	- Avoid confined & tight spaces - Keep upwind - Air monitoring - Chem resistance clothing SCBA > PEL	- Remove from site

4. Prepared by:	5. Date/time briefed:	**Last Update: 3/21/03**	**SSP-Attach 2: Hydrogen Sulfide Page ______ of _______**

G ICS SSP SPECIFIC HAZARD ATTACHMENT	1. Hazard Generic Signs & Symptoms of Toxic Exposure Attachments:	2. Divisions/Groups/Units affected:	3. Job Tasks Involving Hazard:

Signs and Symptoms	Action to be Taken
- Sudden weight loss or change in appetite. - Unusual fatigue or sleeping difficulties - Unusual irritability - Skin rashes/allergies/sores - Hearing loss - Vision loss or problems - Changes in sense of smell Shortness of breath, asthma, cough, wheeze, excess sputum - Chest pains - Nausea, vomiting, dizziness - Weakness, tremors - Headaches - Stomach pains - Personality changes	**1. REMOVE PERSON AND OTHERS FROM SITE.** **2. REPORT SYMPTOM TO SUPERVISOR** **3. EVALUATE POTENTIAL SOURCES** **4. REQUEST SITE CHARACTERIZATION BY SITE SAFETY OFFICER**

4. Prepared by:	5. Date/time briefed:	**Last Update:** **3/21/03**	**SSP-Attach 3: Signs/Symptoms of Toxic Exposure** **Page _____ of ______**

CG IC[illegible] SPEC[illegible] HAZARD ATTACHMENT	1. Hazard Heat Stress Attachments:		2. Division/Units affected:		3. Job Tasks Involving Hazard:	
Medical Condition	Action Level	Reference	Signs, Symptoms & Potential Health Effects	Exposure Route	Controls: Engineering, Administrative, PPE	Medical Response
Heat Stroke	Minimize exposure	NIOSH: Working in Hot Environments	Skin is hot Skin is dry Skin is red and spotted Body Temp: 105 or > Mental confusion Convulsions Unconscious	Inhalation Absorption X Ingestion Injection Membrane ________	- Acclimitize workers - Avoid direct sun - Institute work/rest regimens - Provide cool rest areas - Drink 5-7 ounces water every 15-20 minutes - Consider ccoling garments - Use heat stress monitors - Use canopies or other shelter - Minimize workers with illnesses and excessive weight	- Get EMT assistance immediately - Remove victim to cool area - Soak clothing w/water - Fan body to increase cooling
Heat Exhaustion	Minimize exposure	NIOSH: Working in Hot Environments	Extreme weakness Giddiness, headache Nausea, Vomiting Skin is clammy & moist Complexion is pale/flushed Body Temp: normal to slightly elevated	Inhalation Absorption X Ingestion Injection Membrane ________		- Notify EMT - Rest victim in cool place - Have victim drink plenty of water
Heat Cramps	Minimize exposure	NIOSH: Working in Hot Environments	Painful spasms of muscles Profuse sweating	Inhalation Absorption X Ingestion Injection Membrane ________		- Remove victim from site - Ensure victim drinks plenty of water and replaces electrolytes
Fainting	Minimize exposure	NIOSH: Working in Hot Environments	Victim faints due to lack of blood to the brain	Inhalation Absorption X Ingestion Injection Membrane ________		- Remove victim to cool area - Ensure victim drinks plenty of fluid - Ensure victim is not sedentary in direct heat
Heat Rash	Minimize exposure	NIOSH: Working in Hot Environments	Skin rash Experience of prickly heat	Inhalation Absorption X Ingestion Injection Membrane ________		- Remove victim to cool place - Ensure victim drinks plenty of water
4. Prepared by:	5. Date/time briefed:		**Last Update: 3/21/03**		**SSP-Attach 4: Heat Stress Page ______ of ______**	

CG ICS SPECII HAZARD ATTACHMENT	1. Hazard Cold Stress Attachments:	2. Divisions/Units affected:	3. Job Tasks Involving Hazard:

Medical Condition	Action Level	Reference	Signs, Symptoms & Potential Health Effects	Exposure Route	Controls: Engineering, Administrative, PPE	Medical Response
Hypothermia	Minimize exposure	NIOSH: Working in Cold Environments	Pain in extremities Uncontrollable shivering Reduced core temperature Cool skin Rigid muscles Slowed heart rate Weakened pulse Low blood pressure Slow irregular breathing Slurred speech Drowsiness Incoherence Uncoordination Diminished dexterity Diminished judgement	Inhalation Absorption **X** Ingestion Injection Membrane ________	- Reduce manual work load - Ensure workers drink plenty of water - Establish warm locations for breaks - Establish work & rest regimens - Establish shelters, canopies or other devices to reduce wind effect - Minimize sitting still or standing around - Ensure proper sleep - Ensure proper diet - Ensure right balance of protective clothing - Ensure workers are not overheated by clothing	- Remove victim from wind, snow & rain - Minimize use of energy - Keep person awake - Remove wet clothing - Get into dry clothing - Wrap blanket around - Pack neck, groin, armpits with warm packs or towels - Give sweat warm drinks - Remove person to medical facility
Frostbite	Minimize exposure	NIOSH: Working in Cold Environments	Whitened areas of skin Burning sensation at first Blistering Affected part; cold, numb & tingling	Inhalation Absorption **X** Ingestion Injection Membrane ________		- Cover frozen part - Provide extra clothing & blankets - Place affected part in warm water or with warm packs - If no pads, wrap in blanket - Discontinue warming when part becomes flushed and swollen - Exercise part after warming, but place no pressure on it - Give sweet warm fluids - Do not rub part with anything - Do not use hot heating devices on part - Obtain medical assistance

4. Prepared by:	5. Date/time briefed:	**Last Update: 3/21/03**	**SSP-Attach 5: Cold Stress**

CG ICS SPECIFIC HAZARD ATTACHMENT	1. Hazard Cold Stress Attachments:	2. Divisions/Groups/Units affected:	3. Job Tasks Involving Hazard:

Medical Condition	Action Level	Reference	Signs, Symptoms & Potential Health Effects	Exposure Route	Controls: Engineering, Administrative, PPE	Medical Response
Chilblain	Minimize exposure	NIOSH: Working in Cold Environments	Recurring localized ithcing Swelling, painful inflammation of fingers, toes, or ears Severe spasms	Inhalation Absorption **X** Ingestion Injection Membrane	- Reduce manual work load - Ensure workers drink plenty of water - Establish warm locations for breaks - Establish work & rest regimens - Establish shelters, canopies or other devices to reduce wind effect - Minimize sitting still or standing around - Ensure proper sleep - Ensure proper diet - Ensure right balance of protective clothing - Ensure workers are not overheated	- Remove to warmer area - Consult physician
Frostnip	Minimize exposure	NIOSH: Working in Cold Environments	Skin turns white	Inhalation Absorption **X** Ingestion		- Remove to warmer area - Refer to treatment for frost bite
Acrocyanosis	Minimize exposure	NIOSH: Working in Cold Environments	Hands and feet are cold, blue and sweaty	Inhalation Absorption **X** Ingestion		- Remove to warmer area - Loosen tight clothing - Consult physician
Trench Foot	Minimize exposure	NIOSH: Working in Cold Environments	Swelling of the foot Tingling, itching Severe pain Blistering	Inhalation Absorption **X** Ingestion		- Remove to warmer area - Refer to treatment for frost bite - Consult physician
Raynaud's Disease	Minimize exposure	NIOSH: Working in Cold Environments	Fingers turn white & stiff Intermittent blanching & reddening of fingers and toes Affected areas tingle & becomes very red or reddish purple	Inhalation Absorption **X** Ingestion Injection Membrane		- Remove to warmer area - Consult physician

4. Prepared by:	5. Date/time briefed:	**Last Updated: 3/21/03**	**SSP-Attach 5: Cold Stress Page 2 of 2**

CG ICS LOG/RECORD OF SAFETY BREIFINGS ATTACHMENT	1. Incident Name	2. Site Location:	3. Site Supervisors:

4. Type of Briefing	5. Presented by:	6. Date	7. Time
Start Shift ☐ Pre-Entry ☐ Exit ☐ End of Shift ☐ Specify Other:			
Start Shift ☐ Pre-Entry ☐ Exit ☐ End of Shift ☐ Specify Other:			
Start Shift ☐ Pre-Entry ☐ Exit ☐ End of Shift ☐ Specify Other:			
Start Shift ☐ Pre-Entry ☐ Exit ☐ End of Shift ☐ Specify Other:			
Start Shift ☐ Pre-Entry ☐ Exit ☐ End of Shift ☐ Specify Other:			
Start Shift ☐ Pre-Entry ☐ Exit ☐ End of Shift ☐ Specify Other:			
Start Shift ☐ Pre-Entry ☐ Exit ☐ End of Shift ☐ Specify Other:			
Start Shift ☐ Pre-Entry ☐ Exit ☐ End of Shift ☐ Specify Other:			
Start Shift ☐ Pre-Entry ☐ Exit ☐ End of Shift ☐ Specify Other:			
Start Shift ☐ Pre-Entry ☐ Exit ☐ End of Shift ☐ Specify Other:			
Start Shift ☐ Pre-Entry ☐ Exit ☐ End of Shift ☐ Specify Other:			
Start Shift ☐ Pre-Entry ☐ Exit ☐ End of Shift ☐ Specify Other:			

CG ICS SPECIFIC HAZARD ATTACHMENT	1. Hazard Helicopter Operations Additional Attachments:	2. Helicopter Location	3. Emergency contacts:

Activity	Safe Work Practice	4. Checked [X]
Pre-boarding	- Receive Safety briefing from helicopter operators	☐
	- Receive emergency extrication briefing	☐
	- Know location of emergency equipment	☐
	- Know water landing procedures	☐
	- Loose fitting hats, clothing & other gear removed at minimum 100 ft away	☐
	- Ensure operator knows how to contact emergency services	☐
	- Ensure operator has good communications with coordinating vessels	☐
	-	
Approaching and Exiting Helicopter	- Approach from front	☐
	- Approach only when signaled by pilot	☐
	- Never walk under tail blade	☐
	- Approach in clear view of pilot	☐
	- Approach in crouching position	☐
Onboard Helicopter/Helicopter Startup	- Wear seatbelts	☐
	- Wear hearing protection	☐
	- Ground crew & other persons maintain minimum 50 ft from operating helo	☐
	- Be alert for ground traffic and air traffic to assist pilot	☐
Other	-	☐
	-	☐
	-	☐
	-	☐
	-	☐
	-	☐
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	-	☐
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	-	☐
	-	☐
	-	☐

5. Prepared by:	6. Date/time briefed:	**Last Updated: 3/21/03**	**SSP-Attach 7: Helicopter Safety** **Page ______ of ______**

CG ICS S… SPECIFI… HAZARD ATTACHMENT	1. Hazard Small Boat Operations Additional Attachments:	2. Small Boat L… signment	3. Emergency contacts:

Activity	Safe Work Practice	4. Checked [X]
Pre-boarding	- Receive safety briefing from boat crew operators	☐
	- Receive emergency extrication briefing	☐
	- Know location of emergency equipment	☐
	- Ensure operator knows how to contact emergency services	☐
	- Ensure operator has good comms with coordinating vessels & shore units	☐
	- Ensure comms schedule with parent unit is understood	☐
	- Ensure distress signals are available for day & night operations (3 per shift)	☐
	- Ensure qualified operators are running the boats	☐
	- Ensure appropriate number of CG approved Type I & II preservers	☐
	- Confirm location of safe seating from boat operator	☐
	- Ensure portable fuel tanks are full prior to boarding	☐
	- Keep all sources of ignition away from fueling area	☐
	- Ensure boat does not exceed safe load capacity (personnel & equipment)	☐
	- Ensure proper footwear for maintaining adequate boat deck contact	☐
	- Ensure equipment on boat is distributed evenly to ensure stability	☐
	- Ensure at least 2 people are operating the boat	☐
	- Ensure sun protection is available (glasses, and sun screen)	☐
	- Ensure adequate food & water is available for duration of operation	☐
	- Ensure first aid kits, fire extinguishers, alternate means of propulsion	☐
	- Ensure adequate fenders and mooring lines are available	☐
Boat Operations	- Remain seated whenever possible. Keep low in the boat.	☐
	- Ensure boat is able to maintain direct contact visually or by radio	☐
	- Avoid anchoring the boat by the stern	☐
Boat mooring and egress	- Keep hands & feet away from pinch points between boat & dock	☐
	- Stay clear of lines being used for mooring	☐
	- Do not disembark with bulky or heavy equipment, get assistance	☐
	- If not assisting in the mooring operation, remain seated until lines are tied	☐
		☐
		☐

5. Prepared by:	6. Date/time briefed:	**Last Updated: 3/21/03**	**SSP-Attach 8: Small Boat Safety** **Page ______ of _______**

CG ICS SPECIFIC HAZARD ATTACHMENT	1. Hazard Vehicle Operations:	2. Vehicle Unit Designator	3. Emergency contacts:

Activity	Safe Work Practice	4. Checked [X]
Before driving	- Ensure tires are inflated	☐
	- Ensure gas cap is in place & tight	☐
	- Ensure front hood and trunk are secured	☐
	- Ensure spare tire is in good condition	☐
	- Locate tire changing equipment	☐
	- Locate emergency road kit	☐
	- Check headlights, brake, emergency, turn signals and parking lights	☐
	- Adjust side mirrors	☐
	- Adjust review mirrors	☐
	- Ensure horn is in working order	☐
	- Ensure seat belts fasten	☐
	- Ensure sunglasses are available	☐
	- Locate operating switches for lights, wipers, temperature control, defroster	☐
	- Ensure adequate directions to destination are available	☐
	- Check to ensure driving route avoids high crime areas	☐
	- Ensure adequate fuel (keep half full during emergencies)	☐
Vehicle Operations	- After ignition, look for warning lights.	☐
	- Test braking system	☐
	- Obey all traffic signs and speeds	☐
	- Do not drive if hearing, sight or appendages are impaired	☐
	- Take frequent breaks; once every 100 miles	☐
	- During breaks, if sleeping, park in lighted lot and keep doors locked	☐
	- Do not drive if tired, on medication or under influence of alcohol	☐
	- Monitor traffic reports for accidents, weather and construction	☐
Other Precautions	-	☐
	-	☐
	-	☐
	-	☐
	-	☐
	-	☐

5. Prepared by:	6. Date/time briefed:	**Last Updated: 3/21/03**	**SSP-Attach 9: Vehicle Safety** **Page ______ of _______**

CG ICS S SPECIF. HAZARD ATTACHMENT	1. Hazard Insect Hazards Additional Attachments:	2. Divisions/Gr... Units affected:	3. Job Tasks Involving Hazard

Hazard Type	Potential Sources	Signs & Symptoms	Control	Medical Treatment
Insect Bites & Stings	Bees	<u>Allergic person</u>: -Swollen throat -Difficult breathing -Noisy breath -Sudden pain -Severe itching, hives, acute redness, swelling -white firm swelling -reduced consciousness, shock	- Recon area prior to work & identify nests & habitats - Identify as hazard areas & place on SSP map - Provide insect repellent - Encourage long sleeves & pants if practical - Conduct tick & bite inspection during breaks and prior to departing site - Identify persons with insect allergies & restrict them where necessary - Obtain emergency insect bite kits	- Wash wound with soap & water - Request med assistance for allergic persons - Remove stinger without pinching or squeezing - Use cold pack to reduce swelling, use pad between skin and pack - Keep wounded area below heart to slow spread of venom - Do not administer aspirin or alcohol
	Black Widow Spider	-Systemic poison -Flu – like symptoms -Severe abdominal pain -Rigidity, muscle pain, cramping, -Chest tightness, breathing difficulty, -Pain in soles of feet -Alternating dry & salivating mouth, -Nausea, vomiting -Profuse sweating or swollen eyelids		- Wash wound with soap & water - Request med assistance address symptoms - Use cold pack to reduce swelling, use pad between skin and pack
	Brown Recluse	-Severe redness -Red circle around bite -Bite takes several months to heal		- Wash wound with soap & water - Request med assistance for allergic persons - Remove stinger without pinching or squeezing - Use cold pack to reduce swelling, use pad between skin and pack
	Ticks	-Flu like symptoms -Fever -Rash, joint pain, headaches		- Wash wound with soap & water - Request med assistance for allergic persons - Remove tick with oil, alcohol or heated tweezers - Use tweezers to remove imbedded head - If fever, rash, unusual markings develop around bite, contact physician
4. Prepared by:	5. Date/time briefed:	**Last Updated: 3/21/03**		**SSP-Attach 10: Insect Hazards** **Page ______ of _______**

CG ICS SPECIFIC HAZARD ATTACHMENT	1. Hazard Animal Hazards Additional Attachments:	2. Divisions/Groups/Units affected:		3. Job Tasks Involving Hazard:
Hazard Type	Potential Sources	Signs & Symptoms	Control	Medical Treatment
Mammal Bites	Dogs, Cats Skunks, Raccoons Foxes, Badgers Wolves, Bears Cows	-Pain & tenderness of wound -Redness, heat, swelling -Puss under the skin -Red streaks around wound -Swollen lymph nodes in arm pits, groin & neck	- Recon area prior to work & identify nests & habitats - Identify animals & any unusual behavior - Relocate animals if necessary using wildlife experts - Report rabid animals to local wildlife authorities - Obtain emergency bite kits	- Get medical attention ASAP to address infection - Ensure tetanus shot is updated - Interview individual to determine appearance/disposition of animal - Control serious bleeding - Apply pressure using gauze pad, tourniquets are inadvisable - Wash before touching wound - Wear rubber gloves when treating victim - Wash wounds that are not bleeding heavily - Cover with clean dressing and bandage
		<u>Rabies</u> -Drooling -Irritability -Strange, abnormal behavior		- Get medical assistance immediately
Snake Bites	Coral Snakes Water Moccasins Rattle Snakes Pit Vipers Ticks	*Some or all of these symptoms may be present:* -Fang marks -Swelling, discoloration, pain -Heat around fang marks -Weakness, sweating, faintness, shock <u>Coral snake</u>: -Respiratory paralysis -Bizarre behavior -Unusual eye movement	- Recon area prior to work & identify nests & habitats - Place locations on SSP map - Identify animals & any unusual behavior - Relocate animals if necessary using wildlife experts - Report agressive animals to local wildlife authorities - Obtain emergency bite kits	- Get medical attention ASAP - Ensure tetanus shot is updated - Interview individual to determine appearance/disposition of snake - Control serious bleeding - Apply pressure using gauze pad, tourniquets are inadvisable - Wash before touching wound - Wear rubber gloves when treating victim - Wash wounds that are not bleeding heavily - Cover with clean dressing and bandage **Poisoned Victim** - Get immediate medical attention - Keep patient still to slow spread of venom - Place bite area below heart to slow venom - Wash with soap & water - Use splint to immobilize bitten arms/legs - Use cold pack with gauze before skin - Do not administer aspirin or alcohol - Do not suck out poison - Do not use tournequets
4. Prepared by:	5. Date/time briefed:	**Last Updated: 3/21/03**		**SSP-Attach 11: Animal Hazards** **Page ______ of ______**

CG ICS S... SPECIFI... HAZARD ATTACHMENT	1. Hazard Marine Animal and Plant Hazards Additional Attachments:	2. Divisions/Gr... nits affected:		3. Job Tasks Involving Hazard
Hazard Type	Potential Sources	Signs & Symptoms	Control	Medical Treatment
Animal Stings & Punctures	*Group I* Jellyfish, Portuguese Man-o-war Anemones Corals Hydras *Group II* Urchins, Cone Shells, Stingrays, Spiny fish	-Pain & tenderness of wound -Redness, heat, swelling -Puss under the skin -Red streaks around wound *Sensitive Individuals* -Allergic reactions -Respiratory arrest -Fainting -Infections & tetanus may develop	- Recon area prior to work & identify nests & habitats - Place locations on SSP map - Outfit workers with protective clothing for water activities and to prevent bites	- Get medical attention ASAP to address infection - Ensure tetanus shot is updated - Interview individual to determine appearance of animal - Control serious bleeding *Group I* - Do not rub or scratch affected area - Sprinkle alcohol on affected area, follow with meat tenderizer or talcum if available (denatures toxin) *Group II* - Soak in very warm water for 30 minutes - Do not use very hot water
Plants	Poison Ivy Poison Oak Poison Sumac	*Some or all of these symptoms may be present:* -Itching -Burning -Blistering -Rash & bumpy skin	- Recon area prior to work & identify plant types - Place locations on SSP map - Remove if necessary - Long sleeve shirts and pants should be worn - Gloves should be worn - Wash frequently during breaks & prior to departing work site. - Employ body screen salves	- If contact occurs, wash with soapy water immediately - Do not scratch - Provide medical attention of spreading is severe
4. Prepared by:	5. Date/time briefed:	**Last Updated: 3/21/03**		**SSP-Attach 11: Animal Hazards** Page ______ of ______

ICS Compatible
Site Safety and Health Plan

Table of Forms

FORM NAME	FORM #	USE	REQUIRED	OPTIONAL	ATTACHED?
Emergency Safety and Response Plan	A	Emergency response phase (uncontrolled)	X		
Site Safety Plan	B	Post-emergency phase (stabilized, cleanup)	X		
Site Map	C	Post-emergency phase map of site and hazards	X		
Emergency Response Plan	D	Part of Form B, to address emergencies	X		
Air Monitoring Log	E	To log air monitoring data	X*		
Personal Protective Equipment	F	To document PPE equipment and procedures	X*		
Decontamination	G	To document decon equipment and procedures	X*		
Site Safety Enforcement Log	H	To use in enforcing safety on site		X	
Worker Acknowledgement Form	I	To document workers receiving briefings		X	
Form A Compliance Checklist	J	To assist in ensuring HAZWOPER compliance		X	
Form B Compliance Checklist	K	To assist in ensuring HAZWOPER compliance		X	
Drum Compliance Checklist	L	To assist in ensuring HAZWOPER compliance		X	
Other:					

** Required only if function or equipment is used during a response*

EMERGENC... SAFETY ... RESPONS... LAN	1. Incident Name	2. Date/Time Pre PHMSA, 000003221	3. Operational Period	4. Attachments: Attach MSDS f... ch Chemical
5. Organization IC:	Safety: Group Supv:	Entry Team:	Backup Team:	Decon Team:

6. Physical Hazards and Protection: Confined Space ☐ Noise ☐ Heat Stress ☐ Cold Stress ☐ Electrical ☐ Animal/Plant/Insect ☐ Ergonomic ☐ Ionizing Rad ☐ Slips/Trips/Falls ☐ Struck by ☐ Water ☐ Violence ☐ Excavation ☐ Biomedical waste and/or needles ☐ Fatigue ☐ Other (specify)

Major Tasks	Entry Permit	Ventilate	Hearing Protection	Shoes (type)	Hard Hats	Clothing (cold wx)	Life Jacket	Work/ Rest (hrs)	Fluids (amt/time)	Signs and Barricade	Fall Protect	Post Guards	Flash Protect	Work Gloves	Other

7. Chemicals	Hazards		Target Organs	Exposure Routes	PPE	Type of PPE
	Explosive ☐ Flammable ☐ Reactive ☐ Biomedical ☐ Toxic ☐	Radioactive ☐ Carcinogen ☐ Oxidizer ☐ Corrosive ☐ Specify Other:	Eyes ☐ Nose ☐ Skin ☐ Ears ☐ Central Nervous System ☐ Respiratory ☐ Throat ☐ Lungs ☐ Heart ☐ Liver ☐ Kidney ☐ Blood ☐ Lungs ☐ Circulatory ☐ Gastrointestinal ☐ Bone ☐ Other:	Inhalation ☐ Absorption ☐ Ingestion ☐ Injection ☐ Membrane ☐ ☐	Face Shield ☐ Eyes ☐ Gloves ☐ Inner Suit ☐ Splash Suit ☐ Level A Suit ☐ SCBA ☐ APR ☐ SAR ☐ Cartridges ☐ Fire Resistance ☐	

8. Instruments	Action Levels	Chemical Name:	LEL/UEL %	Odor Thresh Ppm	Ceiling/ IDLH	STEL/TLV	Flash Point/ Ignition Pt (F or C)	Vapor Pressure (mm)	Vapor Density	Specific Gravity	Boiling Point F or C
O2 ☐ CGI ☐ Radiation ☐ Total HCs ☐ Colorimetric ☐ Thermal ☐ Other ☐											

Form SSP-A:

Page of

10. Site M… …lude: Work Zones, Locations of Hazards, Security Perimeter, Place PHMSA, 00003222 …Decontamination Line, Evacuation Routes, Assembly Point, Direct… …f North

11. Decontamination: Instrument Drop Off ☐ Outer Boots/Glove Removal ☐ Suit/Gloves/Boot Disposal ☐	Suit Wash ☐ Decon Agent: Water ☐ Other ☐ Specify:	Bottle Exchange ☐ Outer Suit Removal ☐ Inner Suit Removal ☐ SCBA/Mask Removal ☐	SCBA/Mask Rinse ☐ Inner Glove Removal ☐ Work Clothes Removal ☐ Body Shower ☐	Intervening Steps ☐ Specify:

12. Potential Emergencies Fire ☐ Explosion ☐ Other ☐	Evacuation Alarms: Horn ☐ # Blasts ☐ Bells ☐ #Rings ☐ Radio Code ☐ Other:	Emergency Prevention and Evacuation Procedures: Safe Distance

13. Communications: Radio? ☐ Phone? ☐	Command #:	Tactical #:	Entry #:

14. Site Security Personnel Assigned	Procedures:	Equipment
15. Emergency Medical Personnel Assigned	Procedures:	Equipment

16. Prepared By:	17. Date/Time Briefed:	**Form SSP-A:** Page of

CG ICS SAFETY PLAN ( ) HAZARD ID/EVAL/CONTROL	1. Incident Name	2. Date/Time P	3. Operational Period	4. Safety Officer (include metho contact
5. Supervisor/Leader	6. Location and Size of Site	7. Site Accessibility Land☐ Water☐ Air ☐ Comments:	8. For Emergencies Contact:	9. Attachments: **Attach MSDS for each Chemical**
10. Job Task/Activity	Hazards* ⇨	Potential Injury and Health Effects	Exposure Routes	Controls: Engineering, Administrative, PPE
			Inhalation ☐ Absorption ☐ Ingestion ☐ Injection ☐ Membrane ☐ ☐	
			Inhalation ☐ Absorption ☐ Ingestion ☐ Injection ☐ Membrane ☐ ☐	
			Inhalation ☐ Absorption ☐ Ingestion ☐ Injection ☐ Membrane ☐ ☐	
			Inhalation ☐ Absorption ☐ Ingestion ☐ Injection ☐ Membrane ☐ ☐	
			Inhalation ☐ Absorption ☐ Ingestion ☐ Injection ☐ Membrane ☐ ☐	
11. Prepared By:	12. Date/Time Briefed:	***HAZARD LIST**: Physical/Safety, Toxic, Explosion/Fire, Oxygen Deficiency, Ionizing Radiation, Biological, Biomedical, Electrical, Heat Stress, Cold Stress, Ergonomic, Noise, Cancer, Dermatitis, Drowning, Fatigue, Vehicle, Diving		**Form SSP-B:** Page of

CG IC SITE MAP	1. Incident Name	2. Date/Time	3. Operational Period	4. Safety Officer (include method of co
5. Supervisor/Leader	6. Location and Size of Site	7. Site Accessibility Land☐ Water☐ Air ☐ Comments:	8. For Emergencies Contact:	9. Include: - Work Zones - Locations of Hazards - Security Perimeter - Places of Refuge - Decontamination Line - Evacuation Routes

10. Sketch of Site:

11. Prepared By:	12. Date/Time Briefed:	**HAZARD LIST:** Physical/Safety, Toxic, Explosion/Fire, Oxygen Deficiency, Ionizing Radiation, Biological, Biomedical, Electrical, Heat Stress, Cold Stress, Ergonomic, Noise, Cancer, Dermatitis, Drowning, Fatigue, Vehicle, Diving	**Form SSP-C:** Page of

EMERGENCY RESPONSE PLAN	1. Incident Name	2. Date/Time Prepared PHMSA, 000003225	3. Operational Period	4. Safety Officer (include method of contact)
5. Supervisor/Leader	6. Location and Size of Site	7. For Emergencies Contact:		8. Attachments: **INCLUDE ICS FORM 206 and EMT Medical Response Procedures**
9. Emergency Alarm (sound and location)	10. Backup Alarm (sound and location)	11. Emergency Hand Signals	12. Emergency Personal Protective Equipment Required:	

13. Emergency Notification Procedures	14. Places of Refuge (also see site map form 208B)	15. Emergency Decon and Evacuation Steps	16. Site Security Measures

17. Prepared By:	18. Date/Time Briefed:	**HAZARD LIST**: Physical/Safety, Toxic, Explosion/Fire, Oxygen Deficiency, Ionizing Radiation, Biological, Biomedical, Electrical, Heat Stress, Cold Stress, Ergonomic, Noise, Cancer, Dermatitis, Drowning, Fatigue, Vehicle, Diving	**Form SSP-D:** Page of

CG IC[illegible]?: AIR MON[illegible]RING LOG	1. Incident Name	2. Date/Time Prepared	3. Operational Period	4. Safety Officer (include method of c[illegible]ct)
5. Site Location	6. Hazards of Concern	7. Action Levels (include references):		8. Weather: Temperature: Precipitation: Wind: Relative Humidity: Cloud Cover:

9. Instrument, ID Number Calibrated? Indicate below.	Monitoring Person Name(s)	Results (units)	Location	Time	Interferences and Comments

10. Safety Officer Review:	Potential Health Effects: Bruise/Lacerations, Organ Damage, Central Nervous System Effects, Cancer, Reproductive Damage, Low Back Pain, Temporary Hearing Loss, Dermatitis, Respiratory Effects, Bone Breaks, Eye Burning	**Form SSP-E:** Page of

CG IC[illegible] PERSONAL PROTE[illegible]IVE EQUIPMENT	1. Incident Name	2. Date/Time	3. Operational Period	4. Safety Officer (include method of co[illegible])
5. Supervisor/Leader	6. Location and Size of Site	7. Hazards Addressed:	8. For Emergencies Contact:	

9. Equipment:				10. References Consulted:

11. Inspection Procedures:	12. Donning Procedures:	13. Doffing Procedures:	14. Limitations and Precautions (include maximum stay time in PPE):

15. Prepared By:	16. Date/Time Briefed:	Potential Health Effects: Bruise/Lacerations, Organ Damage, Central Nervous System Effects, Cancer, Reproductive Damage, Low Back Pain, Temporary Hearing Loss, Dermatitis, Respiratory Effects, Bone Breaks, Eye Burning	**Form SSP-F:** Page of

CG ICS : DECONTAMINATION

1. Incident Name	2. Date/Time	3. Operational Period	4. Safety Officer (include method of contact)	
5. Supervisor/Leader	6. Location and Size of Site	7. For Emergencies Contact:	8. Hazard(s) Addressed:	
9. Equipment:				10. References Consulted:

11. Contamination Avoidance Practices:

12. Decon Diagram

13. Decon Steps

14. Prepared By:

15. Date/Time Briefed:

Potential Health Effects: Bruise/Lacerations, Organ Damage, Central Nervous System Effects, Cancer, Reproductive Damage, Low Back Pain, Temporary Hearing Loss, Dermatitis, Respiratory Effects, Bone Breaks, Eye Burning

Form SSP-G:
Page of

CG ICS ENFORCEMENT LOG	1. Incident Name	2. Date/Time	3. Operational Period	4. Safety Officer (include method of contact)	
5. Supervisor/Leader	6. For Emergencies Contact:			7. Attachments:	
8. Job Task/Activity	Hazards	Deficiency	Action Taken	Safety Plan Amended?	Signature of Supervisor/Leader
9. Prepared By:	10. Date/Time Briefed:	**HAZARD LIST**: Physical/Safety, Toxic, Explosion/Fire, Oxygen Deficiency, Ionizing Radiation, Biological, Biomedical, Electrical, Heat Stress, Cold Stress, Ergonomic, Noise, Cancer, Dermatitis, Drowning, Fatigue, Vehicle, Diving		**Form SSP-H:** Page of	

CG ICS WORKER ACKNOWLEDGEMENT FORM	1. Incident Name	ocation:	3. Attachments:

PHMSA, 000003230

4. Type of Briefing	5. Presented By:	6. Date	7. Time
Safety Plan/Emergency Response Plan ☐ Start Shift ☐ Pre-Entry ☐ Exit ☐ End of Shift ☐ Specify Other:			

8. Worker Name (Print)	Signature*	Date	Time

* *By signing this document, I am stating that I have read and fully understand the plan and/or information provided to me.*	**SSP-I: Worker Acknowledgement** **Page of**

5. Locat[illegible] Site				
CG IC[illegible] mergency Response Plan 1910.120 COMPLIANCE CHECKLIST	1. Incident Name	2. Date/Time Prepared	3. Operational Period	4. Site Supervisor/Leader

Cite: 1910.120	Requirement(sections that duplicate or explain are omitted)	ICS Form	[4]	Comments
(q)(1)	Is the plan in writing?	SSP-A	☐	
(1)	Is the plan available for inspection by employees?	N/A	☐	Performance based
(q)(2)(i)	Does the plan address pre-emergency planning and coordination?	SSP-A	☐	
(ii)	Does it address personnel roles?	SSP-A	☐	
(ii)	Does it address lines of authority?	SSP-A	☐	
(ii)	Does it address communications?	SSP-A	☐	
(iii)	Does it address emergency recognition?	SSP-A	☐	
(iii)	Does it address emergency prevention?	SSP-A	☐	
(iv)	Does it identify safe distances?	SSP-A	☐	
(iv)	Does it address places of refuge?	SSP-A	☐	
(v)	Does it address site security and control?	SSP-A	☐	
(vi)	Does it identify evacuation routes?	SSP-A	☐	
(vi)	Does it identify evacuation procedures?	SSP-A	☐	
(vii)	Does it address decontamination?	SSP-A	☐	
(viii)	Does it address medical treatment and first aid?	SSP-A	☐	
(ix)	Does it address emergency alerting procedures?	SSP-A	☐	
(ix)	Does it address emergency response procedures	SSP-A	☐	
(x)	Was the response critiqued?	N/A	☐	Performance based
(xi)	Does it identify Personal Protection Equipment?	SSP-A	☐	
(xi)	Does it identify emergency equipment?	SSP-A	☐	
(q)(3)(ii)	All the hazardous substances identified to the extent possible?	N/A	☐	Performance based
(ii)	All the hazardous conditions identified to the extent possible?	N/A	☐	Performance based
(ii)	Was site analysis addressed?	N/A	☐	Performance based
(ii)	Were engineering controls addressed?	N/A	☐	Performance based
(ii)	Were exposure limits addressed?	N/A	☐	Performance based
(ii)	Were hazardous substance handling procedures addressed?	N/A	☐	Performance based
(iii)	Is the PPE appropriate for the hazards identified?	N/A	☐	Performance based
(iv)	Is respiratory protection worn when inhalation hazards present?	N/A	☐	Performance based
(v)	Is the buddy system used in the hazard zone?	N/A	☐	Performance based
(vi)	Are backup personnel on standby?	N/A	☐	Performance based
(vi)	Are advanced first aid support personnel standing by?	N/A	☐	Performance based
(vii)	Has the ICS designated safety official been identified?	SSP-A	☐	
(vii)	Has the Safety Official evaluated the hazards?	N/A	☐	Performance based
(viii)	Can the Safety Official communicate with IC immediately?	N/A	☐	Performance based
(ix)	Are appropriate decontamination procedures implemented?	N/A	☐	Performance based

Form SSP-J

CG IC[illegible]: 1910.120 COM[illegible]ANCE CHECKLIST	1. Incident Name	2. Date/Time	3. Operational Period	4. Site Supervisor/Leader	5. Locati[illegible] Site

Cite: 1910.120	Requirement(sections that duplicate or explain are omitted)	ICS Form	[4]	Comments
(b)(1)(ii)(A)	Organizational structure?	203	☐	
(B)	Comprehensive workplan?	IAP	☐	Incident Action Plan
(C)	Site Safety Plan?	SSP-B	☐	
(D)	Safety and health training program?	N/A	☐	Responsibility of each employer
(E)	Medical surveillance program?	N/A	☐	Responsibility of each employer
(F)	Employer SOPs?	N/A	☐	Responsibility of each employer
(G)	Written program related to site activities?	N/A	☐	
(b)(1)(iii)	Site excavation meets shored or slope requirements in 1926?	N/A	☐	
(b)(2)(i)(D)	Lines of communication?	201 203 205	☐	
(b)3(iv)	Training addressed?	N/A	☐	Responsibility of each employer
(v)-(vi)	Information and medical monitoring addressed?	N/A	☐	Responsibility of each employer
(b)4(i)	Site Safety Plan kept on site?	N/A	☐	
(ii)(A)	Safety and health hazard analysis conducted?	N/A	☐	
(B)	Properly trained employees assigned to right jobs?	N/A	☐	
(C)	Personnel Protective Equipment issues addressed?	SSP-F	☐	
(E)	Frequency and types of air monitoring addressed?	SSP-E	☐	
(F)	Site control measures in place?	SSP-B	☐	
(G)	Decontamination procedures in place?	SSP-G	☐	
(H)	Emergency Response Plan in place?	SSP-D	☐	
(I)	Confined space entry procedures?	SSP-B	☐	
(J)	Spill containment program	SSP-B	☐	
(iii)	Pre-entry briefings conducted?	SSP-I	☐	
(iv)	Site Safety Plan effectiveness evaluated?	SSP-H	☐	
(c)(1)	Site characterization done?	N/A	☐	
(c)(2)	Preliminary evaluation done by qualified person?	N/A	☐	
(c)(3)	Hazard identification performed?	SSP-B	☐	
(c)(4)(i)	Location and size of site identified?	SSP-B	☐	
(ii)	Response activities, job tasks identified?	SSP-B	☐	
(iii)	Duration of tasks identified?	SSP-B	☐	Operational period
(iv)	Site topography and accessibility addressed?	SSP-C	☐	
(v)	Health and safety hazards addressed?	SSP-B	☐	
(vi)	Dispersion pathways addressed?	SSP-B	☐	
(vii)	Status and capabilities of medical emergency response teams?	206	☐	
(c)(5)(i)(iv)	Chemical protective clothing addressed and properly selected?	SSP-F	☐	
(ii)	Respiratory protection addressed?	SSP-B and F	☐	
(iii)	Level B used for unknowns?	N/A	☐	
(c)(6)(i)	Monitoring for ionization conducted?	SSP-E	☐	
(ii)	Monitoring conducted for IDLH conditions?	SSP-E	☐	
(iii)	Personnel looking out for dangers of IDLH environments?	N/A	☐	
(iv)	Ongoing air monitoring program in place?	SSP-E	☐	

COMF CE CHEC..IST	...ent Name	2. Date/Time P...red PHMSA, 000003233	3. Operational Period		
Cite: 1910.120	Requirement	ICS Form	[4]	Comments
(c)(7)	Employees informed of potential hazard occurrence?	SSP-B	☐	
(c)(8)	Properties of each chemical made aware to employees?	SSP-B	☐	
(d)(1)	Appropriate site control procedures in place?	IAP, SSP-B	☐	
(d)(2)	Site control program developed during planning stages?	IAP, SSP-B	☐	
(d)(3)	Site map, work zones, alarms, communications addressed?	IAP, SSP-B	☐	
(g)(1)(i)	Engineering, admin controls considered?	SSP-B	☐	
(iii)	Personnel not rotated to reduce exposures?	N/A	☐	
(g)(5)(i)	PPE selection criteria part of employer's program?	N/A	☐	Responsibility of employer
(ii)	PPE use and limitations identified?	SSP-F	☐	
(iii)	Work mission duration identified?	SSP-F	☐	
(iv)	PPE properly maintained and stored?	N/A	☐	Responsibility of employer
(vi)	Are employees properly trained and fitted with PPE?	N/A	☐	Responsibility of employer
(vii)	Are donning and doffing procedures identified?	SSP-F	☐	
(viii)	Are inspection procedures properly identified?	SSP-F	☐	
(ix)	Is a PPE evaluation program in place?	SSP-F	☐	
(h) (3)	Periodic monitoring conducted?	SSP-E	☐	
(k)(2)(i)	Have decontamination procedures been established?	SSP-G	☐	
(ii)	Are procedures in place for contamination avoidance?	SSP-G	☐	
(iii)	Is personal clothing properly deconned prior to leaving the site?	SSP-G	☐	
(iv)	Are decontamination deficiencies identified and corrected?	SSP-H	☐	
(k)(3)	Are decontamination lines in the proper location?	SSP-C	☐	
(k)(4)	Are solutions/equipment used in decon properly disposed of?	N/A	☐	
(k)(6)	Is protective clothing and equipment properly secured?	N/A	☐	
(k)(7)	If cleaning facilities are used, are they aware of the hazards?	N/A	☐	
(k)(8)	Have showers and change rooms provided, if necessary?	N/A	☐	
(l)(1)(iii)	Are provisions for reporting emergencies identified?	SSP-D	☐	
(iv)	Are safe distances and places of refuge identified?	SSP-B and C	☐	
(v)	Site security and control addressed in emergencies?	SSP-D	☐	
(vi)	Evacuation routes and procedures identified?	SSP-D	☐	
(vii)	Emergency decontamination procedures developed?	SSP-D	☐	
(ix)	Emergency alerting and response procedures identified?	SSP-D	☐	
(x)	Response teams critiqued and followup performed?	SSP-H	☐	
(xi)	Emergency PPE and equipment available?	SSP-D	☐	
(l)(3)(i)	Emergency notification procedures identified?	SSP-D	☐	
(ii)	Emergency response plan separate from Site Safety Plan?	SSP-D	☐	
(iii)	Emergency response plan compatible with other plans?	SSP-D	☐	
(iv)	Emergency response plan rehearsed regularly?	SSP-D	☐	
(v)	Emergency response plan maintained and kept current?	SSP-H	☐	
1910.165(b)(2)	Can alarms be seen/heard above ambient light and noise levels?	N/A	☐	
(b)(3)	Are alarms distinct and recognizable?	N/A	☐	

CG IC[illegible]SP: 1910.120 COMPLIANCE CHECKLIST	1. Incident Name	2. Date/Time Prepared	3. Operational Period		
Cite: 1910.165	Requirement		ICS Form	[4]	Comments
(b)(4)	Are employees aware of the alarms and are they accessible?		SSP-D	☐	
(b)(5)	Are emergency phone numbers, radio frequencies clearly posted?		206	☐	
(b)(6)	Signaling devices in place where there are 10 or more workers?		IAP	☐	
(c)(1)	Are alarms like steam whistles, air horns being used?		IAP	☐	
(d)(3)	Are backup alarms available?		IAP	☐	
1910.120(m)	Are areas adequately illuminated?		IAP	☐	
(n)(1)(i)	Is an adequate supply of potable water available?		IAP	☐	
(ii)	Are drinking water containers equipped with a tap?		IAP	☐	
(iii)	Are drinking water containers clearly marked?		IAP	☐	
(iv)	Is a drinking cup receptacle available and clearly marked?		IAP	☐	
(n)(2)(i)	Are non-potable water containers clearly marked?		IAP	☐	
(n)(3)(i)	Are their sufficient toilets available?		IAP	☐	
(n)(4)	Have food handling issues been addressed?		IAP	☐	
(n)(6)	Have adequate wash facilities been provided outside hazard zone?		IAP	☐	
(n)(7)	If response is greater than 6 months, have showers been provided?		IAP	☐	
4. Prepared By:				**Form SSP-K: Page 3**	

1910.120 DRUM COMPLIANCE CHECKSHEET	1. Incident Name	2. Date/Time	3. Operational Period	4. Safety Officer (include method of co
5. Supervisor/Leader	6. Location and Size of Site	7. For Emergencies Contact:		8. Note: tanks and vaults should also be treated in the same manner as described below [1910.120(j)(9)]. Many can also pose confined space hazards.

9. Cite: 1910.120 (Cites that duplicate or explain requirements are omitted)	Requirement	[4]	Comments
(j)(1)(ii)	Drums meet DOT, OSHA, EPA regs for waste they contain, including shipment?	☐	
(iii)	Drums inspected and integrity ensured prior to movement?	☐	
(iii)	Or drums moved to an accessible location (staging area) prior to movement?	☐	
(iv)	Unlabelled drums treated as unknown until properly identified and labeled?	☐	
(v)	Site activities organized to minimize drum handling?	☐	
(vi)	Employers properly warned about the hazards of moving and handling drums?	☐	
(vii)	Suitable overpack drums are available for addressing leaking and ruptured drums?	☐	
(viii)	Leaking materials from drums properly contained?	☐	
(ix)	Are drums that cannot be moved, emptied of contents with transfer equipment?	☐	
(x)	Are suspect buried drums surveyed with underground detection system?	☐	
(xi)	Are soil and covering material above buried drums removed with caution?	☐	
(xii)	Is the proper extinguishing equipment on scene to control incipient fires?	☐	
(j)(2)(i)	Are airlines on supplied air systems protected from leaking drums?	☐	
(ii)	Are employees at a safe distance, using remote equipment, when handling explosive drums?	☐	
(iii)	Are explosive shields in plane to protect workers opening explosive drums?	☐	
(iv)	Is response equipment positioned behind shields when shields are used?	☐	
(v)	Are non-sparking tools used in flammable or potentially flammable atmospheres?	☐	
(vi)	Are drums under extreme pressure opened slowly & workers protected by shields/distance?	☐	
(vii)	Are workers prohibited from standing and working on drums?	☐	
(j)(3)	Is the drum handling equipment positioned and operated to minimize sources of ignition?	☐	
(j)(5)(i)	For shock sensitive drums, have all non-essential employees been evacuated?	☐	
(ii)	For shock sensitive drums: is handling equipment provided with shields to protect workers?	☐	
(iii)	Are alarms that announce start/finish of explosive drum handling actions in place?	☐	
(iv)	Are continuous communications in place between the drum handling site & command post?	☐	
(v)	Are drums under pressure properly controlled for prior to handling?	☐	
(vi)	Are drums containing packaged laboratory wastes treated as shock sensitive?	☐	
(j)(6)(i)	Are lab packs opened by trained and experienced personnel?	☐	
(ii)	Are lab packs showing crystallization treated as shock sensitive?	☐	
(j)(8)(ii-iii)	Are drum staging areas manageable with marked access and egress?	☐	
(iv)	Is bulking of drums conducted only after drum contents have been properly identified?	☐	

10. Prepared By:	**Form SSP-L:**

APPENDIX G
Local Procedures

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SEATAC

LOCAL PROCEDURE

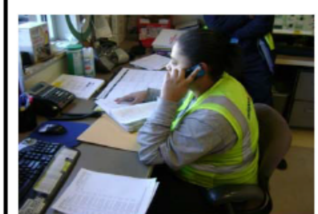
PHMSA 000003237

VALID DATE: 1/22/2010

Emergency Procedure (Large Spill)

PROCESS OWNER: Kiley Ross

BACK TO LIST OF LP

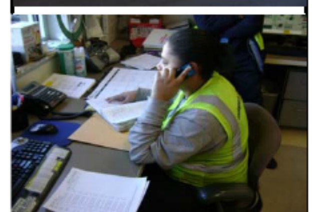
ITEM	DESCRIPTION	RESPONSIBILITY	REFERENCE
Start			
Locate and stop the source of the spill.	Do this by closing valves upstream and downstream of the spill.	operator	
Activate EFSO pushbuttons to stop airport supply pumps and close the manifold valves.	This will close online tank outlet valve and Tank farm MOVs going to the airport	operator	
Shut off ignition sources.	Do not operate electrical equipment located in the spill area.	Operator	
Evacuate personnel, if necessary.	evacuate non-essential personnel from the facility and proceed established meeting area	Operator	
Perform Initial Assessment	Estimate the spill qty, wind direction, if contained, if soil is impacted etc.	First Responder	
Follow Notification Procedure		First Responder QI	
QI checks status, mobilize stafff and establish initial incident objectives.		QI	
Conduct Safety meeting and initiate the PLAN		Safety Officer PSC	
1			

1			
Initial assessment by Safety Officer and Logistic Section Head set up command post		Safety Officer LSC	
Initiate initial deployment		QI	
Minimized economic impact	Start putting system back if POS Fire Dept says it is safe	QI	
Spill contractor establishes ,zones, start clean up	After clean-up, Demobilization, and clean-up of equipment	NRCES	
QI debriefing		QI	
A spill report and environmental incident report need to be filled out and submitted to proper Swissport personnel for every spill.		QI	
End			

swissport LOCAL PROCEDURE	Valid as of : January 25, 2010
TANK RUPTURE	Process Owner: Kiley Ross

OBJECTIVE : To be able to maintain the valve and check if it is functioning properly
SCOPE : SeaTac Fuel Facility LLC (SFFLLC)
KPI : N/A

Back to List of Local Procedures

Item	Description	Responsibility	Reference
Start			
Activate EFSO button.	This will shut off the airport supply pumps and close the manifold valves.	operator	
Remove all nonessential personnel from containment area.		operator	
Shut off ignition sources		operator	
Follow notification procedures.		operator QI	
Mobilize staff and conduct emergency shutdown procedure if required.	QI establishes	QI	
Establish initial incident objectives.		QI	
1			

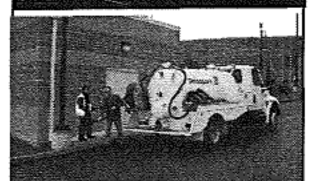
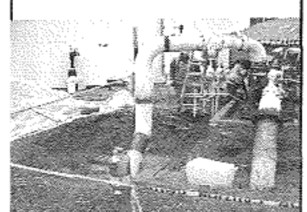
1			
Conduct Safety Meeting		Safety Officer	
Establish Command Post		LSH	
Initiate the Plan	Isolate the tank, check , check integrity of other tanks Check that fuel is not leaving the berm	PSC	
Initiate initial Deployment	If fuel enters Des Moines Creek, immediately deploy a containment boom to prevent fuel from traveling downstream.	PSC Operator	
Minimized economic impact	Start putting the hydrant system back in service if POS Fire Dept says it is safe.	QI	
Spill contractor establishes zones and start clean-up		NRCES	
QI debriefing		QI	
End			

swissport LOCAL PROCEDURE	Valid as of : January 25, 2010
TANK OVER FILL PROCEDURE	Process Owner: Kiley Ross

OBJECTIVE : To be able to maintain the valve and check if it is functioning properly
SCOPE : SeaTac Fuel Facility LLC (SFFLLC)
KPI : N/A

Back to List of Local Procedures

Item	Description	Responsibility	Reference
Start			
Activate Emergency Fuel Shut Off (EFSO) pushbuttons.	This will stop the airport supply pumps and close the manifold valves.	operator	
Remove all nonessential personnel from the containment area.		operator	
Shut off ignition sources		operator	
Follow notification procedures.		operator QI	
Mobilize staff and conduct emergency shut down procedure if required.		QI supervisor	
1			

1			
Conduct safety meeting.		safety officer	
Conduct initial site assessment.		safety officer	
Establish command post		LSC	
Initiate the plan		PSC	
Open tank inlet valve and manifold valve of the opposite header	Header 1 is used to receive fuel to T108 and T109. Header 2 is used to receive fuel to T111, T114 and T115. This will divert fuel to the opposite header and tanks.	operator	
Open inlet valve of the other tank on the same header	This will lower the level of the overflowed tank and gravity transfer fuel to the other tank with lower level.	operator	
Gravity transfer fuel	Gravity transfer until the alarm is cleared	operator	
Check to ensure that spilled fuel is not leaving the bermed containment area.		QI operator	
2			

2			
Initiate initial Deployment	If fuel enters Des Moines Creek, immediateloy deploy a containment boom to prevent fuel from traveling downstream.	operator	
Minimized economic impact	Start putting System back if POS Fire Dept says it is safe.	QI	
Spill contractor establisheszones and starts clean-up	After clean-up, Demobilization, and clean-up of equipment.	NRCES	
Qualified Individual debriefing.		QI	
end			

APPENDIX H
Inspection Report Forms

MONTHLY DRUM INSPECTION FORM

	Inspection Items	DRUM OIL STORAGE CONTAINER VISUAL INSPECTION			
		Operations and Control Building Drum		Vehicle Building Drum	
		OK	Defect	OK	Defect
Drums	Signs of Leaks from Shell				
	Signs of Leaks from Manways				
	Signs of Leaks from Nozzles				
	Signs of Cracks/Fractures				
	Signs of Corrosion				
Secondary Containment	Level of Preciptation in Containment				
	Signs of Breech in Earthen Walls				
	Signs of Erosion to Earthen Walls				
	Signs of Breech in Concrete Walls				
	Debris Inside of Containment				

Inspector's Signature Date

Designated Individual's Signature Date

Comments:

swissport

FUEL FACILITY CHECKS																															
STATION																															
FACILITY																															
MONTH																															
DAILY - USE APPLICABLE RATINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1. GENERAL CONDITION OF TANK YARD																															
2. SECURITY, FIRE & SAFETY DEFICIENCIES																															
3. FUEL LEAKS																															
4. HOSES, NOZZLES AND SWIVELS																															
5. BONDING REELS, CABLES AND CLAMPS																															
6. FLOATING SUCTION																															
IDENTIFICATION OF PERSON PERFORMING TASKS OR PERSON ACCEPTING RESPONSIBILITY THAT TASKS WERE PERFORMED																															

MONTHLY - USE APPLICBLE RATINGS						DATE		SIGNATURE
1. Filtration test								
2. Ground Cable Continuity								
3. Nozzle Screens								
4. Signs and Placards								
5. Fire Extinguishers								
6. Floating Suction								

NOTE #1 - RATING OF SUMP SAMPLES: SOLIDS - (1) CLEAR (2) SLIGHT (3) PARTICULATE (4) DIRTY: WATER - (A) BRIGHT (B) HAZY (C) CLOUDY (D) WET (E) SURFACTANTS

For questions about this form call DynAir Technical Services at (703) 742-4338

NOTE #2 - MULTIPLE TANKS, FILTERS AND OTHER EQUIPMENT MUST HAVE SUPPORTING DOCUMENTATION SHOWING RESULTS OF REQUIRED CHECKS. SIGNATURE OF PERSON PERFORMING ACTUAL CHECKS MUST BO ON SUPPORTING DOCUMENTS.

NOTE #3 - RECORD SUMP RESULTS & FILTER DIFFERENTIAL PRESSURE ON BACK OF FORM.

REMARKS:

Managers Signature for Monthly Inspection

Date:

ATA FORM NO. 103.01A   MODIFIED BY Swissport 2/6/2000   RETAIN FORM FOR 12 MONTHS

For questions about this form call Swissport Technical Services at (703) 742-4338

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TANK SUMP RESULTS

SUMP TANKS DAILY - RECORD RESULTS - NOTE 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

FILTER SUMP RESULTS

SUMP FILTERS DAILY - RECORD RESULTS - NOTE 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

FILTER DIFFERENTIAL PRESSURE

RECORD DAILY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Management Signature for Inspection   Date:

NOTE #1 - RATING OF SUMP SAMPLES: SOLIDS - (1) CLEAR (2) SLIGHT (3) PARTICULATE (4) DIRTY: WATER - (A) BRIGHT (B) HAZY (C) CLOUDY (D) WET (E) SURFACTANTS

For questions about this form call Swissport Technical Services at (703) 742-4338

ATA FORM NO. 103.01B   MODIFIED BY Swissport 2/6/2000   RETAIN FORM FOR 12 MONTHS

swissport

QUARTERLY & ANNUAL FUEL FACILITY CHECKS		STATION	FACILITY	YEAR
QUARTERLY CHECKS	1st QTR	2nd QTR	3rd QTR	4th QTR
1. EMERGENCY SHUTDOWN DATE				
RATING				
CHECKED BY				
2. WATER DEFENSE SYSTEMS DATE				
RATING				
CHECKED BY				
3. TANK HIGH LEVEL CONTROLS DATE				
RATING				
CHECKED BY				

ANNUAL CHECKS

1. STORAGE TANK INTERIORS	ID#	ID#	ID#	ID#	ID#	ID#	ID#	ID#	ID#	ID#
DATE & RATING										
CHECKED BY										
2. PRESSURE GAUGES										
DATE & RATING										
CHECKED BY										
3. FILTER ELEMENTS										
DATE & RATING										
CHECKED BY										

REMARKS

Management Signature for Quarterly Inspection	Date:

RATINGS: S = SATISFACTORY: C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION): N/U = NOT USED: N/A = NOT APPLICABLE

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For questions about this form call Swissport Technical Services at (703) 742-4338

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ANNUAL CHECKS - continued

4. FILTER/SEPARATOR HEATERS	ID#	ID#	ID#	ID#	ID#	ID#	ID#	ID#	ID#	ID#
DATE & RATING										
CHECKED BY										
5. TANK VENTS										
DATE & RATING										
CHECKED BY AND DATE										
6. CATHODIC PROTECTION										
DATE & RATING										
CHECKED BY AND DATE										
7. FACILITY CONDITION										
DATE & RATING										
CHECKED BY										
8. LINE STRAINERS										
DATE & RATING										
CHECKED BY										

REMARKS

Management Signature for Annual Inspection   Date:

RATINGS: S = SATISFACTORY: C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION): N/U = NOT USED: N/A = NOT APPLICABLE

ATA FORM NO. 103.01D   MODIFIED BY Swissport 2/6/2000   RETAIN FORM FOR 12 MONTHS

For questions about this form call Swissport Technical Services at (703) 742-4338

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JET FUEL STORAGE FACILITY

RECORD OF RECEIPT BY TRANSPORT TRUCK

AIRPORT ________________ FACILITY ____________________ DATE ___________

REQUIRED CHECKS	RECEIPT NO.					
	1	2	3	4	5	6
PRIOR TO RECEIPT						
DESIGNATE & SUMP RECEIVING TANK						
GAGE TANK & RECORD VOLUME						
SET VALVES FOR RECEIVING						
CONDITION OF OFF-LOAD HOSE						
BILL OF LADING/DELIVERY TICKET / NO.						
CORRECT DESTINATION						
CORRECT GRADE OF FUEL						
CORRECT VOLUME						
TRANSPORT TRUCK						
CONNECT GROUND CABLE						
COMPARTMENT SEALS						
CLEAR AND BRIGHT TEST						
API GRAVITY, CORRECTED TO 60 deg F						
FUEL TEMP, deg F (OBSERVED)						
DURING RECIEPT						
DIFFERENTIAL PRESS. REC. FILT (PSI)						
SYSTEM FOR LEAKS						
AFTER RECEIPT						
RE-POSITION VALVES						
DISCONNECT & STOW HOSE						
DISCONNECT GROUND CABLE						
GAGE TANK & RECORD VOLUME						
WHITE BUCKET CHECK - TANK SUMP						
WHITE BUCKET CHECK - FILTER SUMP						
SIGNATURE OF PERSON PERFORMING CHECKS						
Management Signature for Inspection				Date:		

√ = SATISFACTORY **X** = UNSATISFACTORY - ENTER REMARK

ATA FORM NO. 103.02 MODIFIED BY Swissport 2/6/2000 RETAIN FORM FOR 24 MONTHS

For questions about this form call Swissport Technical Services at (703) 742-4338

JET FUEL STORAGE FACILITY

swissport

RECORD OF RECEIPT BY PIPELINES

AIRPORT ______________ FACILITY ______________ DATE ______________

REQUIRED CHECKS		RECEIPT NO. ______			RECEIPT NO. ______		
		FRONT	MIDDLE	END	FRONT	MIDDLE	END
PRIOR TO RECEIPT							
DESIGNATE & SUMP RECEIVING TANK							
GAGE TANK & RECORD VOLUME							
SET VALVES FOR RECEIVING							
PIPELINE COORDINATION							
CORRECT DESTINATION							
CORRECT GRADE OF FUEL							
CORRECT VOLUME							
DURING RECEIPT							
CLEAR AND BRIGHT TEST							
API GRAVITY, CORRECTED TO 60 deg F							
OBSERVED FUEL - TEMPERATURE def F							
MEMBRANE FILT, TEST - BEFORE FILT.							
WATER TEST - BEFORE FILTER							
CHECK SYSTEM FOR LEAKS							
DIFFERENTIAL PRESS. REC. FILT (PSI)	NO:						
	NO:						
	NO:						
	NO:						
[PSI]	NO:						
	NO:						
	NO:						
	NO:						
AFTER RECEIPT							
RE-POSITION VALVES							
GAGE TANK & RECORD VOLUME							
WHITE BUCKET CHECK - TANK SUMP							
WHITE BUCKET CHECK - FILTER SUMP							
SIGNATURE OF PERSON PERFORMING CHECKS							

√ = SATISFACTORY **X** = UNSATISFACTORY - ENTER REMARK

Management Signature for Inspection	Date:

ATA FORM NO. 103.03 MODIFIED BY Swissport 2/6/2000 RETAIN FORM FOR 24 MONTHS

For questions about this form call Swissport Technical Services at (703) 742-4338

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AIRCRAFT FUELING EQUIPMENT CHECKS	STATION								EQUIPMENT ID#									MONTH					YEAR									
DAILY - USE APPLICABLE RATING	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1. GENERAL CONDITION																															
2. FILTER SUMPS - RECORD RATING																															
3. FILTER DIFFERENTIAL PRESSURE - PSI																															
4. DEADMAN CONTROLS																															
5. BRAKE (SAFETY) INTERLOCKS																															
6. NOZZLE FUELING PRESSURE																															
7. HOSES, NOZZLES AND SWIVELS																															
8. STATIC REELS, CABLES AND CLAMPS																															
9. LIFT PLATFORMS																															
10. FIRE EXTINGUISHERS																															
11. SURGE/WASTE TANKS																															
12. AIR TANKS																															
13. TANKER THROUGHS																															
14. TANKER SUMPS - RECORD RATINGS																															
15. TANKER BOTTOM LOADING PRE-CHECK																															
IDENTIFICATION OF PERSON PERFORMING TASKS OR PERSON ACCEPTING RESPONSIBILITY THAT TASKS WERE PERFORMED																															

RATINGS: S = SATISFACTORY: C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION): N/U = NOT USED: N/A = NOT APPLICABLE

SUMP SAMPLE RATINGS: SOLIDS - 1 = CLEAN, 2 = SLIGHT, 3 = PARTICULATE, 4 = DIRTY: WATER - A = BRIGHT, B = HAZY, C = CLOUDY, D = WET

REMARKS:

Management Signature for Monthly Inspection

Date:

ATA FORM NO. 103.04A MODIFIED BY Swissport 2/6/2000 RETAIN FORM FOR 12 MONTHS

For questions about this form call Swissport Technical Services at (703) 742-4338

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MONTHLY

	RATING	DATE	SIGNATURE
1. FILTRATION TEST			
2. STATIC SYSTEM CONTINUITY TEST			
3. NOZZLE SCREENS			
4. FUEL HOSES			
5. SIGNS AND PLACARDS			
6. METER SEALS			
7. FIRE EXTINGUISHERS			
8. EMERGENCY SHUTDOWN SYSTEM			
9. LIFT PLATFORMS			
10. TANK INTERIORS			
11. TANK VENT AND DOME COVERS			
12. TANK TROUGH DRAINS			

REMARKS:

Management Signature for Monthly Inspection Date:

RATINGS: S = SATISFACTORY: C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION): N/U = NOT USED

ATA FORM NO. 103.04B MODIFIED BY Swissport 2/6/2000 RETAIN FORM FOR 12 MONTHS

For questions about this form call Swissport Technical Services at (703) 742-4338

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QUARTERLY & ANNUAL AIRCRAFT FUELING EQUIPMENT CHECKS	STATION	EQUIP. ID	YEAR	
QUARTERLY CHECKS	1ST QTR	2ND QTR	3RD QTR	4 QTR
1. VEHICLE INSPECTION RATING				
CHECKED BY AND DATE				
2. PRESSURE CONTROLS RATING				
SECONDARY FUEL PRESSURE SETTING IN PSI				
CHECKED BY AND DATE				
3. METER CALIBRATION HYDRANT TRUCKS				
RATING				
CHECKED BY AND DATE				
4. WATER DEFENSE SYSTEM TEST				
RATING				
CHECKED BY AND DATE				
ANNUAL CHECKS				
1. FILTER ELEMENT CHANGE RATING				
CHECKED BY AND DATE				
2. PRESSURE GAUGE RATING				
CHECKED BY AND DATE				
3. METER CALIBRATION RATING				
CHECKED BY AND DATE				
4. WATER DEFENSE SYSTEM TEST RATING				
CHECKED BY AND DATE				

REMARKS:

Management Signature for Quarterly Inspection Date:

RATINGS: S = SATISFACTORY: C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION): N/U = NOT USED: N/A = NOT APPLICABLE

ATA FORM NO. 103.04C MODIFIED BY Swissport 2/6/2000 RETAIN FORM FOR 12 MONTHS

For questions about this form call Swissport Technical Services at (703) 742-4338 Rev. date July 27, 1998

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HYDRANT SYSTEM CHECKS														STATION							FACILITY						MONTH						
DAILY - USE APPLICABLE RATINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
1. Pit Leaks and Cleanliness																																
2. Hydrant Valve Condition																																
3. Hydrant Pit Covers																																
4. EFS Stations																																
5. Pressure/Flow Charts																																
IDENTIFICATION OF PERSON PERFORMING TASKS OR PERSON ACCEPTING RESPONSIBILITY THAT TASKS WERE PERFORMED																																

MONTHLY - USE APPLICABLE RATINGS		DATE	SIGNATURE	SEMI-ANNUAL-USE APPLICABLE RATINGS	DATE	SIGNATURE
1. Hydrant Valve Assembly				1. High Point Vents		
2. Isolation Valve Pits				2. Surge Absorbers		
3. Low Point Drains				3. Pipeline Casings		
4. Emergency Shutdown						

ANNUAL - USE APPLICABLE RATINGS		DATE	SIGNATURE
1. Cathodic Protection			
2. Instrumentation/Electrical Controls			

NOTE#1 - MULTIPLE TANKS, FILTERS AND OTHER EQUIPMENT MUST HAVE SUPPORTING DOCUMENTATION SHOWING RESULTS OF REQUIRED CHECK

SIGNATURE OR PERSON PERFORMING ACTUAL CHECKS MUST BE ON SUPPORTING DOCUMENTS

RATINGS: S = SATISFACTORY: C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION); N/U = NOT USED; N/A = NOT APPLICABLE

REMARKS:

Management Signature for Monthly Inspection   Date:

ATA FORM NO. 103.05   MODIFIED BY Swissport 2/6/2000   RETAIN FORM FOR 12 MONTHS

For questions about this form call Swissport Technical Services at (703) 742-4338

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JET FUEL FILTER VESSEL RECORD

AIRPORT ________________ FACILITY ____________________

VESSEL MFG. __________________	DATE LAST ELEMENT CHANGED ____________
MODEL NO. ____________________	DATE LAST INTERIOR INSP. ______________
FIXED UNIT NO. ________________	P/N ELEMENTS INSTALLED ________________
MOBILE UNIT NO. ______________	
RATED FLOW (GPM) ____________	DATE WATER DEFENSE CHECK ____________

DIFFERENTIAL PRESSURE RECORD

DIFFERENTIAL PRESSURE [psi]																															
20	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
19	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
18	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
17	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
16	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
15	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
14	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
13	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
12	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
11	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
10	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
9	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
8	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
7	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
6	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
5	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
4	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
3	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
2	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
1	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
0	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SIGNATURE																															

Remarks

MONTH ______ YEAR _________

Management Signature for Inspection	Date:

ATA FORM NO. 103.06 MODIFIED BY Swissport 2/6/2000 RETAIN FORM FOR 24 MONTHS

For questions about this form call Swissport Technical Services at (703) 742-4337

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STORAGE TANK

INSPECTION AND CLEANING RECORD

AIRPORT ________________ FACILITY ____________________

TANK NO. ____________

DATE INSPECTED	CONDITION							ACTION		SIGNATURE
	1	2	3	4	S	R	N	CL	NC	

CONDITION CODES: 1 = CLEAN 2 = TRACE 3 = MODERATE 4 = HEAVY

S = SEDIMENT R = RUST M = MICROBIAL GROWTH

ACTION CODES: CL = CLEANED NC = NOT CLEANED

REMARKS: ____

Management Signature for Inspection Date:

ATA FORM NO. 103.07 MODIFIED BY Swissport 2/6/2000 RETAIN FORM INDEFINITELY

For questions about this form call Swissport Technical Services at (703) 742-4338

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FUEL QUALITY TEST RECORD

AIRPORT ____________________ FACILITY ____________________

AGENCY ____________________ DATE ____________________

SAMPLING POINT	MEMBRANE FILTRATION TEST ASTM D-3830	WATER SEPARATION ASTM D-3984	WATER TEST	
BEFORE FILTRATION ( ) PARTICULATE ( ) CLAY ( ) FILTER/SEPARATOR ΔP _____ (PSI) UNIT NO. ______	MEMBRANE DRY RATING _____ SAMPLE SIZE _____ GAL			___ ppm
AFTER FILTRATION ( ) PARTICULATE ( ) CLAY ( ) FILTER/SEPARATOR ΔP _____ (PSI) UNIT NO. ______	MEMBRANE DRY RATING _____ SAMPLE SIZE _____ GAL			___ ppm

NOTES:

Management Signature for Monthly Inspection Date:

ATA FORM NO. 103.08 MODIFIED BY Swissport 2/7/2000 RETAIN FORM FOR 24 MONTHS

For questons about this form call Swissport Technical Services at (703) 742-4338

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USED FILTER ELEMENT ANALYSIS
PHMSA, 000003259
REPORT AND REQUEST

DATE:		STATION:	TEST REQUESTED BY:
REASON FOR TEST: [ ] SERVICE LIFE EXTENSION [ ] PERFORMANCE CHECK			FIXED UNIT NUMBER:
MOBILE UNIT NO:		FILTER VESSEL MODEL NO:	RATED FLOW (GPM):
COALESCER ELEMENT P/N:		QUANTITY INSTALLED:	DATE INSTALLED NEW:
PRESENT DELTA P (PSI):		TEFLON SCREEN SEPARATOR ELEMENT DATA [ ] TEST GOOD [ ] CLEANED/TEST GOOD [ ] REPLACED	

VISUAL INSPECTION OF COALESCER ELEMENT TO BE TESTED:

OUTER SOCK	[ ] CLEAN	[ ] UNIFORM STAIN	[ ] RANDOM STAINS
INSIDE TUBE	[ ] CLEAN	[ ] VISIBLE CONTAMINATION	
STRUCTURE	[ ] ACCEPTABLE	[ ] UNACCEPTABLE	

FLOW TEST AT	TIME (MIN)	ΔP (PSI)	APPEARANCE OF FUEL EFFLUENT
	2		[ ] CLEAR [ ] HAZED
______ GPM	4		[ ] CLEAR [ ] HAZED
	6		[ ] CLEAR [ ] HAZED

COALESCING	TIME (MIN)	ΔP (PSI)	WATER DROPLET SIZE	COLOR
TEST AT	2		1/4" 3/16" 1/8" 1/16" 1/36" [ ] HAZE	
	4		1/4" 3/16" 1/8" 1/16" 1/36" [ ] HAZE	
______ GPM	6		1/4" 3/16" 1/8" 1/16" 1/36" [ ] HAZE	
0.25% WATER	8		1/4" 3/16" 1/8" 1/16" 1/36" [ ] HAZE	
	10		1/4" 3/16" 1/8" 1/16" 1/36" [ ] HAZE	

POST TEST TEARDOWN:

INNER PLEATS ______________________ OUTER WRAP ______________________

TEST PERFORMED BY:	TESTING AGENCY:	TEST TESTED:

TESTING AGENCY RECOMMENDATION:

[ ] EXTENDED SERVICE LIFE
[ ] REPLACE ELEMENTS
[ ] FURTHER INVESTIGATION

______________________ TESTING AGENCY REPRESENTATIVE ________ DATE

VENDOR / DYNAIR ACTION:

[ ] EXTENDED SERVICE LIFE TO ________
[ ] REPLACE ELEMENTS
[ ] FURTHER INVESTIGATION

______________________ TESTING AGENCY REPRESENTATIVE ________ DATE

Management Signature for Inspection Date:

ATA FORM NO. 103.09 MODIFIED BY Swissport 2/8/2000 RETAIN FORM FOR 24 MONTHS

For questions about this form call Swissport Technical Services at (703) 742-4338

APPENDIX I
Cathodic Protection Inspections and Certifications

NORTON CORROSION LIMITED

8820 222nd Street SE, Woodinville, WA 98077
Phone (425) 483-1616 • Fax (425) 485-1754
E-mail: sales@nortoncorrosion.com

December 8, 2011

Mr. Dan Liss
Swissport Fueling Inc.
4200 E Air LN Dr
Phoenix, AZ 85034

Subject: **2011 ANNUAL CATHODIC PROTECTION SURVEY
SEATTLE-TACOMA INTERNATIONAL AIRPORT
BULK STORAGE FACILITY AND HYDRANT PIPING
UNDERGROUND STORAGE TANK**

Dear Mr. Liss:

On October 25-26, 2011, Norton Corrosion Limited (NCL) personnel completed the annual Cathodic Protection (CP) testing for the Bulk Storage Facility and Hydrant Piping at Seattle-Tacoma International Airport (Seatac). This work was authorized per Swissport Project Number SeaTac-2011-CPA. During that survey, the underground storage tank (UST) on the south side of the tank farm, south of Tank 114 was tested per Washington State Department of Ecology (DOE) requirements.

Results:

The potentials obtained indicate the UST is receiving adequate protection.

Work performed:

NCL inspected the CP system in accordance with the procedures established in NACE International Test Method TM0101, entitled "Measurement Techniques Related to Criteria for Cathodic Protection on Underground or Submerged Metallic Tank Systems." Structure-to-soil potentials were measured at representative test locations using a portable copper/copper sulfate (CSE) half-cell to determine the level of protection being obtained on the tank.

Criteria:

NACE International has established criteria that indicate, when used separately or in combination, that adequate CP is being achieved. The applicable criteria are listed in NACE Standard RP-0285, entitled "Corrosion Control of Underground Storage Tank Systems by Cathodic Protection." NCL has evaluated your CP system based on the following criteria:

- Adequate CP is indicated by a potential difference of -0.850 volts or more negative between a steel structure and a CSE reference half-cell. This criterion requires all voltage drops, other than those across the structure-to-electrolyte boundary, to be considered for a valid interpretation of the potential data.
- Adequate protection is also indicated by a cathodic polarization shift of not less than 100 millivolts. This is equivalent to the difference between the instant-off (polarized) and native (depolarized) potential measurements. This criterion is only valid where bi-metallic couples (contact between different metals, i.e., steel to copper grounding) do not exist.

NCL appreciates this opportunity to be of service to Swissport Fueling Inc. If you have any questions or concerns, please do not hesitate to contact our office.

Sincerely,

Eric Shadle, P.E.
Corrosion Engineer

Y:\Documents\ENGINEERING\20545_Swissport_Seatac\20545_UST_report.doc

DEPARTMENT OF ECOLOGY
State of Washington

Underground Storage Tank Impressed Current Cathodic Protection Evaluation Checklist

Instructions

- The attached Underground Storage Tank (UST) checklist is required for the activity above. Completing this checklist certifies the Cathodic Protection evaluation activities are performed and conducted according to Chapter 173-360 WAC.
- This checklist must be filled out completely. (*) Denotes an optional field.

I. **UST Facility.** Fill out Facility Compliance Tag # (License Plate), UBI # (Master Business License), Facility Name, Address, City, County, State, Zip Code, and Phone Number of **Facility** where evaluation is being performed.

II. **UST Owner.** Fill out Name, Address, City, State, Zip Code, and Phone Number of **Owner** (company/individual) of UST Facility.

III. **CP Tester.** Fill out Tester's Name, Company Name, Address, City, State, Zip Code, Phone Number, Certification Type, Number, and Expiration Date.

IV. **Cathodic Protection Tester's Evaluation.** Overall Evaluation of Cathodic Protection System for UST System (Tanks and Piping). Testing criteria shall be in accordance with a code of practice developed by a nationally recognized association (i.e. NACE) – Circle Pass or Fail. CP Tester signs and dates Section IV.

V. **Retrofit or Repair Design.** All retrofitting or repairs to cathodic protection systems shall be designed by a Corrosion Expert. Attach both a copy of the design of the retrofit or repair, and a copy of the Underground Storage Tank Retrofit and Repair checklist. Corrosion Expert fills out Name, Company Name, Nationally Recognized Organization, Certification Number, and signs and dates Section V.

VI. **Criteria Applicable to Evaluation.** Choose criteria used to meet Cathodic Protection Requirements. Fill in Number of Tanks and piping that are meeting the specific criteria (Note: Standard chosen to meet criteria shall be documented in the survey portions of the Checklist.)

a. Continuity Test: All Impressed current UST systems (including associated piping) shall be continuous to meet criteria to pass continuity test.
b. -850 "Instant Off": Can only be used if current can be interrupted.
c. 100 mV Polarization: Can only be used if current can be interrupted.

VII. **Action Required as a Result of this Evaluation. Choose appropriate action:**

a. None: Cathodic Protection is adequate. No further action is necessary at this time.
b. Retest: Cathodic Protection may not be adequate. Retest is necessary.
c. Retrofit/Repair and Retest: Cathodic Protection is not adequate. Repairs/upgrades and retesting is necessary.

VIII. **Impressed Current Rectifier Data.** Fill in Rectifier Manufacturer, Rated DC Output, Rectifier Model and Rectifier Serial Number.

a. **Rectifier "As Found" Data.** All readings and measurements are to be completed **prior to making** any rectifier adjustments. Measure (*) AC Input Voltage and (*) AC Step-Down Voltage. Record Coarse and Fine Tap Settings, DC Voltage and Amperage from panel meter (if equipped), measure DC Voltage on Rectifier Output Terminal, (*) Shunt Rating, (*) Shunt Measurement, DC Amps from Shunt Reading, and the (*) Cycles - Secondary Taps and DC Output.

b. **Rectifier "As Left" Data.** All readings and measurements are to be completed **after making** rectifier adjustments. Measure (*) AC Input Voltage and (*) AC Step-Down Voltage. Record Coarse and Fine Tap Settings, DC Voltage and Amperage from panel meter (if equipped), measure DC Voltage on Rectifier Output Terminal, (*) Shunt Rating, (*) Shunt Measurement, DC Amps from Shunt Reading, and (*) Cycles - Secondary Taps and DC Output.

IX. **Individual Anode Data.** Complete only if Anode Measurements can be taken independently.

X. **Remarks.** Describe any modifications that were made to the CP System.

XI. **Impressed Current Cathodic Protection System Continuity Survey.** Necessary to show Impressed Current System is protecting structures that are intended to be protected.

a. Compare various structures within the UST System (Structure A and B) using a "Fixed Cell" Technique or "Point to Point" Technique depending on the standard used. NACE recommends "Fixed Cell", STI recommends either "Fixed Cell" or "Point to Point".

b. If the Voltage Difference (between Structure A and B) is less than 10 mV, Structures are likely continuous.

Example:

Structure "A"	Structure "B"	Point "A" to Point "B" or Fixed Cell Location >30'	Structure "A" Fixed Voltage >30'	Structure "B" Fixed Voltage >30'	Point to Point or Fixed Voltage Difference	Pass or Fail?	Method and Standard Used (e.g. RP-0285, R051)
Tank Bottom	Vapor Recovery	NE Corner (30')	-876 mV	-843 mV	33 mV	☐ Pass ☒ Fail	"Fixed" R051

XII. **Impressed Current Cathodic Protection System Survey.** Readings of the structures' potentials.

a. Structure: Description of Structure (i.e. Tank #1).
b. Contact Point: Description of Contact point (i.e. Tank Bottom).
c. Half Cell Location: Location of Placement of Half Cell.
d. Local Voltage (On): Voltage measured as current is impressed on system.
e. Local Voltage (Instant Off): Voltage measured during interruption cycle.
f. Local Voltage (Depolarized): Voltage measured after structure has depolarized
g. Voltage Change: Instant Off subtracted from the Depolarized Potential (100mV Polarization Criteria).
h. Pass or Fail: Documentation of whether or not system passes.
i. Method and Standard Used: Use one of the criteria and document standard applied:
   1) 850 "Instant Off"
   2) 100 mV Polarization

Example:

Structure	Contact Point	Half Cell Location	Local Voltage (ON)	Local Voltage (Instant Off)	Local Voltage (Depolarized)	Voltage Change	Pass or Fail?	Method and Standard Used
UST #1	Tank bottom	Crack in NE corner of tank nest	1020mV	-920 mV			☒ Pass ☐ Fail	-850 I/O RP-0285
UST #2	Tank bottom	Crack in NE corner of tank nest	-948 mV	-800 mV	-680 mV	120 mV	☒ Pass ☐ Fail	100 mV Pol. RP-0285

XIII. **UST Site Plan.** Diagram the UST system.

XIV. **Ecology 60-Day Record of Rectifier Operation.**

a. Fill out UST owner and UST Facility information.

b. Fill out Rectifier Manufacturer, Model and Serial number, and Rated DC output. Provide most recently recommended rectifier range in Volts and Amps.

c. **At Least Every 60 Days Inspect Rectifier Operation:** Fill out Rectifier Log with date of inspection, whether Rectifier is turned on at time of inspection, Tap Settings, Volts, Amps, Hour Meter reading (if available), and any other relevant comments. Inspector initials log.

DEPARTMENT OF ECOLOGY State of Washington

Underground Storage Tank Impressed Current Cathodic Protection Evaluation Checklist

Instructions are on back of form

I. UST Facility	II. UST Owner		
Facility Compliance Tag #:	Name: Swissport Fueling Inc.		
UBI:	Address: 4200 E Air Lane Drive		
	City: Phoenix	State: AZ	ZIP: 85034
Facility Name: Swissport Fueling Inc.	Phone: 602-275-3047		
Address: 2350 190th Street	**III. CP Tester**		
City: Seattle	Tester's Name: Eric Shadle		
County: King	Company Name: Norton Corrosion Limited		
State: WA	Address: 8820 222nd St SE		
ZIP: 98188	City: Woodinville	State: WA	ZIP: 98077
Phone: 206-246-0407	Phone: 425-483-1616		
	Certification Type: IFCI UST Supervisor		
	Certification Number: 0873699-U4		Exp: 02/11

IV. Cathodic Protection Tester's Evaluation

☒ Pass	I certify that the criteria used to evaluate whether cathodic protection is adequate, as required by the Washington State Underground Storage Tank Regulations, were in accordance with a code of practice developed by a nationally recognized association (e.g. NACE).
☐ Fail	
CP Tester's Signature: [signature]	Date CP Survey Performed: **10/25/2011**

V. Retrofit or Repair Design

All retrofitting or repairs to CP systems shall be designed by a Corrosion Expert. I certify that I am a Corrosion Expert qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. I have attached copies of the retrofit/repair design and of the Underground Storage Tank Retrofit and Repair Checklist.

Corrosion Expert's Name:	National Recognized Organization:
Company Name:	Certification Number:
Corrosion Expert's Signature:	Date:

VI. Criteria Applicable to Evaluation

Continuity Test		☒ PASS ☐ FAIL		USTs must show discontinuity using an approved testing method
Neg. 850 ON	X	☐ Pass ☐ Fail	Tanks	Negative (cathodic) potential of at least -850 mV with the cathodic protection applied. This potential is with respect to a saturated copper-copper sulfate reference electrode containing electrolyte.
	X	☐ Pass ☐ Fail	Piping	
Neg. 850 Instant Off	X	☒ Pass ☐ Fail	Tanks	A negative polarized potential of at least 850 mV relative to a saturated copper-copper sulfate reference electrode (Instant Off Potential).
	X	☐ Pass ☐ Fail	Piping	
100 mV Pol.	X	☐ Pass ☐ Fail	Tanks	A minimum of 100 mV of cathodic polarization between the structure surface and a stable reference electrode contacting the electrolyte.
	X	☐ Pass ☐ Fail	Piping	

VII. Action Required as a Result of this Evaluation

☒ **NONE**	Cathodic Protection is adequate. No further action is necessary at this time.
☐ **RETEST**	Cathodic Protection may not be adequate. Retest is necessary.
☐ **RETROFIT/REPAIR and RETEST**	Cathodic Protection is not adequate. Retrofitting or Repairing is necessary.

Remarks (Include type of gear; Ex: Multi-meter): **Fluke 87 Meter, CSE, Wire, DC Interrupter.**

VIII. Impressed Current Rectifier Data			
Rectifier Manufacturer	**Combination of 10 rectifiers - see attached data sheet**	Rectifier Model Number	
Rated DC Output	_____ Volts _____ Amps	Rectifier Serial Number	

Rectifier "As Found" Data

(*) AC Input Voltage		_____ Volts	DC Voltage on Panel Meter	_____ Volts
(*) AC Step-Down Voltage		_____ Volts	DC Voltage on Rectifier Output Terminal	_____ Volts
Tap Settings		C-_____ F-_____	DC Amps on Panel Meter	_____ Amps
(*) Cycles	Secondary Taps _____ Hz		(*) Shunt Rating	_____
	DC Output _____ Hz		(*) Shunt Measurement	_____ mV
			DC Amps from Shunt Reading	_____ Amps

Rectifier "As Left" Data

(*) AC Input Voltage		_____ Volts	DC Voltage on Panel Meter	_____ Volts
(*) AC Step-Down Voltage		_____ Volts	DC Voltage on Rectifier Output Terminal	_____ Volts
Tap Settings		C-_____ F-_____	DC Amps on Panel Meter	_____ Amps
(*) Cycles	Secondary Taps _____ Hz		(*) Shunt Rating	_____
	DC Output _____ Hz		(*) Shunt Measurement	_____ mV
			DC Amps from Shunt Reading	_____ Amps

IX. Individual Anode Data

Complete only if Anode Measurements can be taken independently

"As Found"

Anode #	1	2	3	4	5	6	7	8	9	10
Volts										
Amps										

"As Left"

Anode #	1	2	3	4	5	6	7	8	9	10
Volts										
Amps										

X. Remarks (Describe any modifications that were made to the CP System)

Remarks/Other:

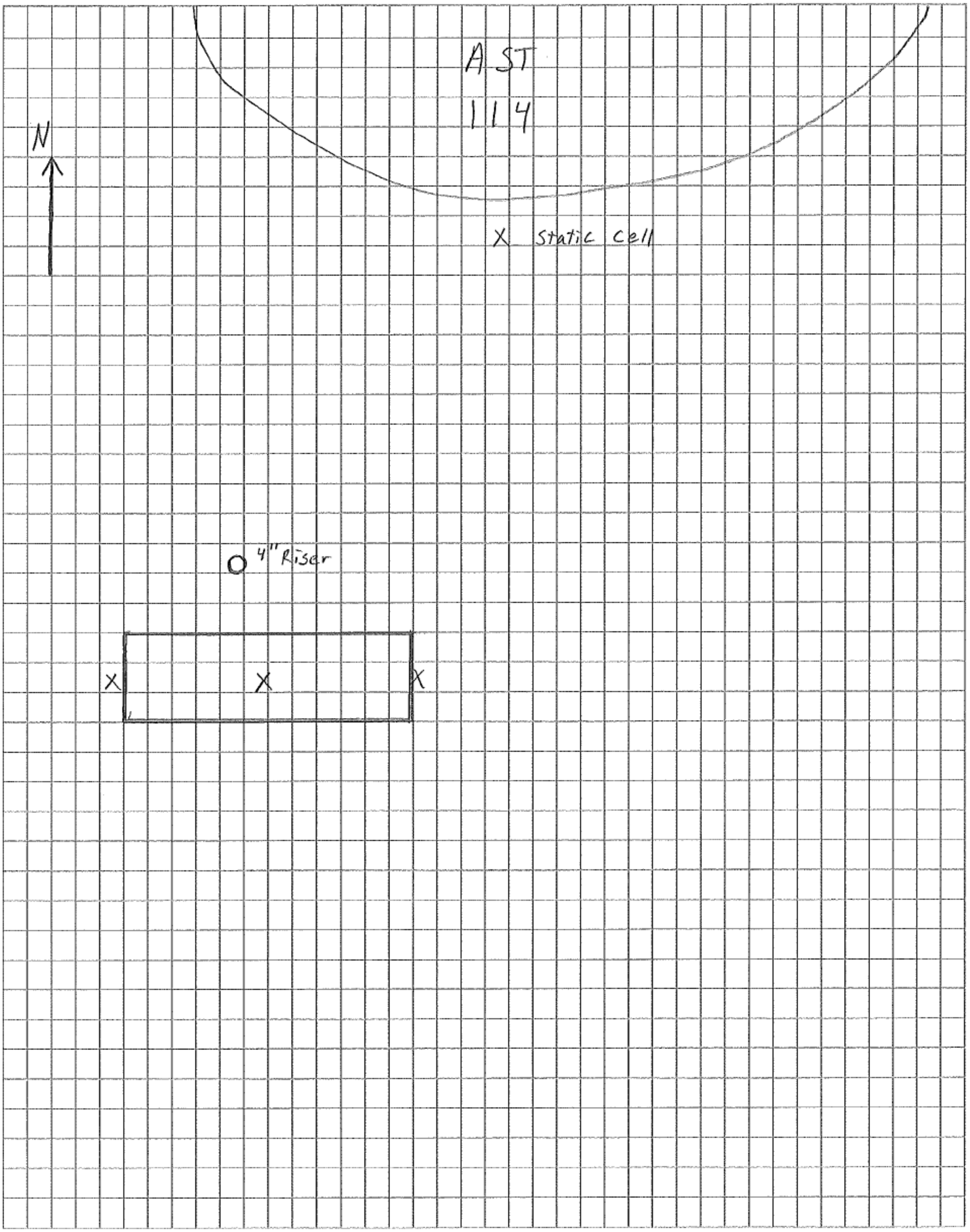
XI. Impressed Current Cathodic Protection System Continuity Survey

Structure A"	Structure "B"	Point "A" to Point "B" or Fixed Cell Location >30'	Structure A" Fixed Voltage -30'	Structure "B" Fixed Voltage ->30'	Point to Point or Fixed Voltage Difference	Pass or Fail?	Method and Standard Used (e.g. RP-0285, R051)
Tank	**AST 114**	**South side of AST 114**	**-2007**	**-2007**	**0**	☒ Pass ☐ Fail	**RP-0285**
4" Riser, 10' north	**Tank**	**South side of AST 114**	**-2007**	**-2007**	**0**	☒ Pass ☐ Fail	**RP-0285**
						☐ Pass ☐ Fail	
						☐ Pass ☐ Fail	
						☐ Pass ☐ Fail	
						☐ Pass ☐ Fail	
						☐ Pass ☐ Fail	
						☐ Pass ☐ Fail	
						☐ Pass ☐ Fail	
						☐ Pass ☐ Fail	
						☐ Pass ☐ Fail	
						☐ Pass ☐ Fail	
						☐ Pass ☐ Fail	
						☐ Pass ☐ Fail	

XII. Impressed Current Cathodic Protection System Survey

Structure	Contact Point	Half Cell Location	Local Voltage (ON)	Local Voltage (Instant Off)	Local Voltage (Depolarized)	Voltage Change	Pass or Fail?	Method and Standard Used
Tank	**Vault lid**	**west end**	**-2200**	**-1105**			☒ Pass ☐ Fail	**-0.850 I/O RP-0285**
Tank	**Vault lid**	**middle**	**-2106**	**-1232**			☒ Pass ☐ Fail	**-0.850 I/O RP-0285**
Tank	**Vault lid**	**east end**	**-2513**	**-1378**			☒ Pass ☐ Fail	**-0.850 I/O RP-0285**
							☐ Pass ☐ Fail	**-0.850 I/O RP-0285**
							☐ Pass ☐ Fail	**-0.850 I/O RP-0285**
							☐ Pass ☐ Fail	
							☐ Pass ☐ Fail	
							☐ Pass ☐ Fail	
							☐ Pass ☐ Fail	
							☐ Pass ☐ Fail	
							☐ Pass ☐ Fail	
							☐ Pass ☐ Fail	
							☐ Pass ☐ Fail	
							☐ Pass ☐ Fail	
							☐ Pass ☐ Fail	
							☐ Pass ☐ Fail	

XIII. <u>UST Site Plan</u>. Diagram the UST System, including tanks, piping, and dispenser locations, approximate scale, and any other notable structures/physical features. Indicate north with arrow. Include the cathodic protection test locations used during this testing. The test points must be easily identifiable, so that testing can be reproduced and your results verified.



XIV. Washington State Department of Ecology 60-Day Record of Rectifier Operation

UST Owner			UST Facility		
Name:			Name:		
Address:			Address:		
City:	State:	ZIP:	City:	State:	ZIP:

Rectifier Manufacturer		Rectifier Model Number	
Rated DC Output	_____ Volts _____ Amps	Rectifier Serial Number	

What is the "as designed" or most recently recommended rectifier range?

VOLTS:	_____ TO _____	**AMPS:**	_____ TO _____

!!If Volt/Amp readings recorded below are out of recommended ranges, contact your service provider.!!

60 Day Log of Rectifier Operation

Date Inspected	Rectifier Turned On?	Tap Settings	Volts	Amps	Hour Meter	Inspector Initials	Comments

2011 ANNUAL CATHODIC PROTECTION INSPECTION
SWISSPORT FUELING
SEATAC INTERNATIONAL AIRPORT

NCL JOB NO.: O-20545-AST
DATE: OCTOBER 2011
BY: E. SHADLE

Rectifier No. 108 (5 rectifiers in one cabinet - tanks 108, 109, 110, 114, 115)
Structure Tank 108, 120' Diameter Tank = 11,310 ft²
Location NW corner of truck load rack and pump area, Seatac Fueling Facility

Anode Description Undertank CP system, installed 400 lbs of coke in left and right bores. 104' undertank anode pipes and 120' undertank reference cell installation and wiring.

Rectifier Info

Manufacturer	Universal
Model No.	ASAI
Serial No.	43634
Stacks	Silicon
Air-Cooled	Yes
Oil-Cooled	
APC	
Manual	Yes
Both	

DC Rating

Volts	40
Amps	30

AC Rating

Volts	115/230
Amps	73.5/36.7
Phase	1

AC Input	**Initial**	**Final**
Volts	203.4	N/A
Amps	9.6	N/A
Across taps	39.0	N/A

DC Output

Panel Meter

Volts	34.5	N/A
Amps	9.0	N/A

Portable Meter

Volts	33.7	N/A
Amps	8.6	N/A
Shunt (30A/50mV)	14.4	N/A

Tap Setting

(max. C3/F6)	C3/F2	N/A

Junction Box at Tank		Output (amps)
Anodes	1	3.4
	2	1.4
	3	2.9
	4	1.2
Structure		2.4
Potentials	On potential data sheet	

Notes:
- ►The permanent reference cells in the rectifier cabinet are the same as those in the j-boxes at the tanks.
- ►Rectifier was functioning properly.

2011 ANNUAL CATHODIC PROTECTION INSPECTION
SWISSPORT FUELING
SEATAC INTERNATIONAL AIRPORT

NCL JOB NO.: O-20545-AST
DATE: OCTOBER 2011
BY: E. SHADLE

Rectifier No. 109 (5 rectifiers in one cabinet - tanks 108, 109, 110, 114, 115)
Structure Tank 108, 120' Diameter Tank = 11,310 ft²
Location NW corner of truck load rack and pump area, Seatac Fueling Facility

Anode Description Undertank CP system, installed 500 lbs of coke in left and and 400 lbs of coke in right bores. 104' undertank anode pipes and 120' undertank reference cell installation and wiring.

Rectifier Info

Manufacturer	Universal
Model No.	ASAI
Serial No.	43634
Stacks	Silicon
Air-Cooled	Yes
Oil-Cooled	
APC	
Manual	Yes
Both	

DC Rating

Volts	40
Amps	30

AC Rating

Volts	115/230
Amps	73.5/36.7
Phase	1

AC Input	**Initial**	**Final**
Volts	203.4	N/A
Amps	7.3	N/A
Across taps	44.7	N/A

DC Output

Panel Meter		
Volts	40.0	N/A
Amps	7.0	N/A
Portable Meter		
Volts	39.0	N/A
Amps	6.5	N/A
Shunt (30A/50mV)	10.9	N/A

Tap Setting

(max. C3/F6)	C3/F4	N/A

Junction Box at Tank	Output (amps)	
Anodes	1	3.3
	2	1.6
	3	1.3
	4	0.6
Structure		
Potentials	On potential data sheet	

Notes:
▶ The permanent reference cells in the rectifier cabinet are the same as those in the j-boxes at the tanks.
▶ Rectifier was functioning properly.

Rectifier No. 110 (5 rectifiers in one cabinet - tanks 108, 109, 110, 114, 115)
Structure Tank 110, 100' Diameter Tank = 7,854 ft²
Location NW corner of truck load rack and pump area, Seatac Fueling Facility

Anode Description Undertank CP system, installed 450 lbs of coke in left and 400 lbs of coke in right bores. 86' undertank anode pipes and 100' undertank reference cell installation and wiring.

Rectifier Info

Manufacturer	Universal
Model No.	ASAI
Serial No.	43634
Stacks	Silicon
Air-Cooled	Yes
Oil-Cooled	
APC	
Manual	Yes
Both	

DC Rating

Volts	40
Amps	30

AC Rating

Volts	115/230
Amps	73.5/36.7
Phase	1

AC Input	**Initial**	**Final**
Volts	203.4	N/A
Amps	6.4	N/A
Across taps	44.7	N/A

DC Output

Panel Meter		
Volts	40.0	N/A
Amps	5.8	N/A
Portable Meter		
Volts	39.2	N/A
Amps	5.6	N/A
Shunt (30A/50mV)	9.3	N/A

Tap Setting

(max. C3/F6)	C3/F4	N/A

Junction Box at Tank		Output (amps)
Anodes	1	1.5
	2	0.7
	3	3.5
	4	0.0
Structure		3.0
Potentials	On potential data sheet	

Notes:

▶The permanent reference cells in the rectifier cabinet are the same as those in the j-boxes at the tanks.

▶Rectifier was functioning properly.

Rectifier No. 114 (5 rectifiers in one cabinet - tanks 108, 109, 110, 114, 115)
Structure Tank 114, 100' Diameter Tank = 7,854 ft²
Location NW corner of truck load rack and pump area, Seatac Fueling Facility

Anode Description Undertank CP system, installed 400 lbs of coke in left and right bores. 104' undertank anode pipes and 120' undertank reference cell installation and wiring.

Rectifier Info

Manufacturer	Universal
Model No.	ASAI
Serial No.	43634
Stacks	Silicon
Air-Cooled	Yes
Oil-Cooled	
APC	
Manual	Yes
Both	

DC Rating

Volts	40
Amps	30

AC Rating

Volts	115/230
Amps	73.5/36.7
Phase	1

AC Input	**Initial**	**Final**
Volts	203.4	N/A
Amps	4.7	N/A
Across taps	44.8	N/A

DC Output

Panel Meter		
Volts	40.0	N/A
Amps	4.5	N/A
Portable Meter		
Volts	39.3	N/A
Amps	4.1	N/A
Shunt (30A/50mV)	6.9	N/A

Tap Setting

(max. C3/F6)	C3/F4	N/A

Junction Box at Tank	Output (amps)	
Anodes	1	1.3
	2	0.7
	3	1.5
	4	0.7
Structure		7.5
Potentials	On potential data sheet	

Notes:
- ▶The permanent reference cells in the rectifier cabinet are the same as those in the j-boxes at the tanks.
- ▶Rectifier was functioning properly.

2011 ANNUAL CATHODIC PROTECTION INSPECTION
SWISSPORT FUELING
SEATAC INTERNATIONAL AIRPORT

NCL JOB NO.: O-20545-AST
DATE: OCTOBER 2011
BY: E. SHADLE

Rectifier No. 115 (5 rectifiers in one cabinet - tanks 108, 109, 110, 114, 115)
Structure Tank 115, 120' Diameter Tank = 11,310 ft²
Location NW corner of truck load rack and pump area, Seatac Fueling Facility

Anode Description Undertank CP system, installed 500 lbs of coke in left and 450 lbs in right bores. 104' undertank anode pipes and 120' undertank reference cell installation and wiring.

Rectifier Info

Manufacturer	Universal
Model No.	ASAI
Serial No.	43634
Stacks	Silicon
Air-Cooled	Yes
Oil-Cooled	
APC	
Manual	Yes
Both	

DC Rating

Volts	40
Amps	30

AC Rating

Volts	115/230
Amps	73.5/36.7
Phase	1

AC Input	**Initial**	**Final**
Volts	203.4	N/A
Amps	6.4	N/A
Across taps	44.8	N/A

DC Output

Panel Meter		
Volts	40.0	N/A
Amps	6.0	N/A
Portable Meter		
Volts	39.2	N/A
Amps	5.8	N/A
Shunt (30A/50mV)	9.7	N/A

Tap Setting

(max. C3/F6)	C3/F4	N/A

Junction Box at Tank		Output (amps)
Anodes	1	1.4
	2	0.8
	3	2.4
	4	1
Structure		
Potentials	On potential data sheet	

Notes:
- ▶The permanent reference cells in the rectifier cabinet are the same as those in the j-boxes at the tanks.
- ▶Rectifier was functioning properly.

2011 ANNUAL CATHODIC PROTECTION INSPECTION
SWISSPORT FUELING
SEATAC INTERNATIONAL AIRPORT

NCL JOB NO.: O-20545-AST
DATE: OCTOBER 2011
BY: E. SHADLE

Rectifier No. 111 (3 rectifiers in one cabinet - tanks 111, 112, 113)
Structure Tank 111, 100' Diameter = 7,854 ft²
Location NW corner of truck load rack and pump area, Seatac Fueling Facility

Anode Description Undertank CP system, installed 375 lbs of coke in left and right bores. 80' and 90' undertank anode pipes and 99' undertank reference cell installation and wiring.

Rectifier Info

Manufacturer	Universal
Model No.	ASAI
Serial No.	43635
Stacks	Silicon
Air-Cooled	Yes
Oil-Cooled	
APC	
Manual	Yes
Both	

DC Rating

Volts	30
Amps	20

AC Rating

Volts	115/**230**
Amps	22.0/**11.0**
Phase	1

AC Input	**Initial**	**Final**
Volts	204.4	N/A
Amps	2.8	N/A
Across taps		

DC Output

Panel Meter		
Volts	29.0	N/A
Amps	5.5	N/A
Portable Meter		
Volts	28.5	N/A
Amps	5.1	N/A
Shunt (25A/50mV)	10.2	N/A

Tap Setting

(max. C3/F6)	C3/F3	N/A

Junction Box at Tank		Output (amps)
Anodes	1	2.0
	2	0.9
	3	0.9
	4	1.5
Structure		5.1
Potentials	On potential data sheet	

Notes:
- ▶The permanent reference cells in the rectifier cabinet are the same as those in the j-boxes at the tanks.
- ▶Rectifier was functioning properly.

Rectifier No. 112 (3 rectifiers in one cabinet - tanks 111, 112, 113)
Structure Tank 112, 100' Diameter = 7,854 ft²
Location NW corner of truck load rack and pump area, Seatac Fueling Facility

Anode Description Undertank CP system, installed 375 lbs of coke in left and right bores. 86' undertank anode pipes and 100' undertank reference cell installation and wiring.

Rectifier Info

Manufacturer	Universal
Model No.	ASAI
Serial No.	43635
Stacks	Silicon
Air-Cooled	Yes
Oil-Cooled	
APC	
Manual	Yes
Both	

DC Rating

Volts	30
Amps	20

AC Rating

Volts	115/**230**
Amps	22.0/**11.0**
Phase	1

AC Input	**Initial**	**Final**
Volts	204.4	N/A
Amps		N/A
Across taps		

DC Output

Panel Meter		
Volts	28.7	N/A
Amps	4.8	N/A
Portable Meter		
Volts	28.3	N/A
Amps	4.3	N/A
Shunt (25A/50mV)	8.5	N/A

Tap Setting

(max. C3/F6)	C3/F3	N/A

Junction Box at Tank		Output (amps)
Anodes	1	1.3
	2	0.7
	3	0.9
	4	1.6
Structure		4.4
Potentials	On potential data sheet	

Notes:

▶The permanent reference cells in the rectifier cabinet are the same as those in the j-boxes at the tanks.

▶Rectifier was functioning properly.

Rectifier No. 113 (3 rectifiers in one cabinet - tanks 111, 112, 113)
Structure Tank 113, 100' Diameter = 7,854 ft²
Location NW corner of truck load rack and pump area, Seatac Fueling Facility

Anode Description Undertank CP system, installed 400 lbs of coke in left and right bores. 86' undertank anode pipes and 100' undertank reference cell installation and wiring.

Rectifier Info

Manufacturer	Universal
Model No.	ASAI
Serial No.	43635
Stacks	Silicon
Air-Cooled	Yes
Oil-Cooled	
APC	
Manual	Yes
Both	

DC Rating

Volts	30
Amps	20

AC Rating

Volts	115/**230**
Amps	22.0/**11.0**
Phase	1

AC Input	**Initial**	**Final**
Volts	204.4	N/A
Amps	6.4	N/A
Across taps		

DC Output

Panel Meter		
Volts	29.0	N/A
Amps	4.5	N/A
Portable Meter		
Volts	28.4	N/A
Amps	3.9	N/A
Shunt (25A/50mV)	7.8	N/A

Tap Setting

(max. C3/F6)	C3/F3	N/A

Junction Box at Tank		Output (amps)
Anodes	1	1.3
	2	0.7
	3	1.5
	4	0.9
Structure		4.1
Potentials	On potential data sheet	

Notes:
- ▶The permanent reference cells in the rectifier cabinet are the same as those in the j-boxes at the tanks.
- ▶Rectifier was functioning properly.

2011 ANNUAL CATHODIC PROTECTION INSPECTION
SWISSPORT FUELING
SEATAC INTERNATIONAL AIRPORT

NCL JOB NO.: O-20545-AST
DATE: OCTOBER 2011
BY: E. SHADLE

Rectifier No. Filter Pad
Structure Inbound filtration system
Location Seatac Fueling Facility

Anode Description Existing anodes unknown. 5 MMO canister anodes installed thoughtout Filter Pad area in 2008.

Rectifier Info

Manufacturer	Universal
Model No.	CSA-ASAI
Serial No.	70544
Stacks	Silicon
Air-Cooled	Yes
Oil-Cooled	
APC	
Manual	Yes
Both	

DC Rating

Volts	80
Amps	10

AC Rating

Volts	115/**230**
Amps	9.8/4.9
Phase	1

AC Input	**Initial**	**Final**
Volts	118.4	N/A
Amps		N/A
Across taps	34.0	

DC Output

Panel Meter

Volts	29.0	N/A
Amps	0.7	N/A

Portable Meter

Volts	29.4	N/A
Amps	0.8	N/A
Shunt (50A/50mV)	0.8	N/A

Tap Setting

(max. C3/F6)	C2/F5	N/A

Junction Box #1 (West)		Output (amps)
Anodes	1	
	2	
	3	
	4	

Junction Box #2 (East)		Output (amps)
Anodes	4	
	5	
	6	

Notes:
▶The permanent reference cells in the rectifier cabinet are the same as those in the j-boxes at the tanks.
▶Rectifier was functioning properly.

2011 ANNUAL CATHODIC PROTECTION INSPECTION
SWISSPORT FUELING
SEATAC INTERNATIONAL AIRPORT

NCL JOB NO.: O-20545-AST
DATE: OCTOBER 2011
BY: E. SHADLE

Rectifier No. Deepwell
Structure Buried fuel piping thoughout tank farm.
Location Seatac Fueling Facility

Anode Description 2 existing deepwell anode beds reactivated in June 2007. Deepwell specifications not available. 8 MMO canister anodes installed near north island April 2008.

Rectifier Info

Manufacturer	Universal
Model No.	CSA-ASAI
Serial No.	70543
Stacks	Silicon
Air-Cooled	Yes
Oil-Cooled	
APC	
Manual	Yes
Both	

DC Rating

Volts	80
Amps	30

AC Rating

Volts	115/**230**
Amps	29.4/14.7
Phase	1

AC Input	**Initial**	**Final**
Volts	201.3	N/A
Amps	8.7	N/A
Across taps	88.7	

DC Output

Panel Meter

Volts	79.0	N/A
Amps	16.0	N/A

Portable Meter

Volts	79.1	
Amps	16.8	N/A
Shunt (50A/50mV)	16.8	N/A

Tap Setting

(max. C6/F6)	C6/F4	N/A

Anode Cables	Output (amps)	
North DW J-box		
South DW J-box		
Truck Load J-box		

Negative Cables	Output (amps)	
Truck Load Piping		
Tank 114		

Notes:
- ▶The permanent reference cells in the rectifier cabinet are the same as those in the j-boxes at the tanks.
- ▶Rectifier was functioning properly.

Additional anode junction boxes

Location NW corner of truck load rack and pump area, Seatac Fueling Facility

North Deepwell

		Shunt 0.01 Ω (mV)	Output (amps)
Anodes	1	11.7	1.17
	2	17.2	1.72
	3	0.0	0.00
	4	0.0	0.00
	5	7.6	0.76
	6	5.9	0.59
	7	10.2	1.02
	8	0.1	0.01
	9	10.3	1.03

South Deepwell

		Shunt 0.01 Ω (mV)	Output (amps)
Anodes	1	3.5	0.35
	2	6.1	0.61
	3	11.4	1.14
	4	5.5	0.55
	5	4.1	0.41
	6	8.4	0.84
	7	13.8	1.38
	8	5.5	0.55

Truck Load

		Shunt 0.01 Ω (mV)	Output (amps)
Anodes	1	2.4	0.24
	2	2.6	0.26
	3	3.6	0.36
	4	3.2	0.32
	5	6.0	0.60
	6	4.5	0.45
	7	12.9	1.29
	8	2.9	0.29

Notes:

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NORTON CORROSION LIMITED

8820 222nd Street SE, Woodinville, WA 98077
Phone (425) 483-1616 • Fax (425) 485-1754
E-mail: sales@nortoncorrosion.com

December 5, 2011

Mr. Dan Liss
Swissport Fueling Inc.
4200 E Air Lane Drive
Phoenix, AZ 85034

Subject: **2011 ANNUAL CATHODIC PROTECTION SURVEY**
SEATTLE-TACOMA INTERNATIONAL AIRPORT
BULK STORAGE FACILITY AND HYDRANT PIPING

Dear Mr. Liss:

In October 2011, Norton Corrosion Limited (NCL) personnel completed the annual Cathodic Protection (CP) testing for the Bulk Storage Facility and Hydrant Piping at Seattle-Tacoma International Airport (Seatac). This work was authorized per Swissport Project Number SeaTac-2011-CPA. NCL returned in November 2011, to complete some follow-up isolation testing at vault CVP-5 and to measure the effects from the underground train on the piping.

Work Performed

⇒ Bulk Storage Facility

This is an impressed current CP system utilizing 10 rectifiers. All but 2 of the rectifiers are designated for a corresponding Aboveground Storage Tank (AST). However, each of these systems is also providing some protection to the buried piping routed throughout the facility. Included with this piping is an underground storage tank (UST). To satisfy Washington State Department of Ecology (DOE) regulations, this UST is addressed in a separate report with corresponding state forms. All rectifiers were thoroughly tested and any minor repairs and adjustments were completed as required. The operational effectiveness of the system was evaluated by monitoring structure-to-soil potentials at representative test locations. On and instant-off potentials were measured by interrupting the CP current output from all the rectifiers for approximately 2.0 seconds on a 10 second cycle. Any isolation was tested for effectiveness utilizing potentials and/or a Tinker & Rasor Model RF-IT isolation checker. The fire/foam piping was also tested to determine if it was electrically continuous with the CP system.

⇒ Hydrant Piping

This is a galvanic CP system utilizing magnesium anodes buried at corresponding test stations (TS) along the piping. The piping is routed from the Bulk Storage Facility to the North Load Rack via the Airport's concourses/terminals. The operational effectiveness of the system was evaluated by monitoring structure-to-soil potentials at each TS. Potentials were measured with the corresponding TS's anode (where available) connected and disconnected. In addition, the potential of each anode while disconnected was measured. The current output from the anodes was measured utilizing a shunt or with a multi-meter placed in series. The direction of current flow was also noted, i.e. discharging from the anode or collecting on the anode. Any available isolation was tested for effectiveness utilizing potentials and/or a Tinker & Rasor Model RF-IT isolation checker.

NCL returned at a later date to perform additional testing at vault CVP-5 to determine the location of an apparent shorted isolation flange. Also, additional testing was performed at one of the casings for the underground rail system to determine if it was creating interference on the hydrant piping. This was completed by visually monitoring the potentials for 25 minutes.

Criteria for Protection

NACE International has established criteria for evaluating the level of CP being received. These criteria are set forth in NACE Standard SP-0169 "Control of External Corrosion on Underground or Submerged Metallic Piping Systems," and RP-0193 "External Cathodic Protection of On-Grade Carbon Steel Storage Tank Bottoms." The criteria used to evaluate these structures are explained below.

- Adequate protection is indicated on a structure by obtaining a potential difference of -0.850 volts DC or more negative in reference to a saturated copper/copper sulfate (CSE) reference half cell. This requires voltage drops, other than those across the structure-to-electrolyte boundary, to be considered for a valid interpretation of the potential measurement. In order to account for these voltage drops (IR drop) with the impressed current system, both on and instant-off potential measurements were recorded while interrupting the CP current from the rectifiers.

- Adequate protection is also indicated by a polarization shift of at least 100 millivolts. The polarization shift is equivalent to the difference between the native and instant-off potential measurements.

Test Results and Recommendations

⇒ Bulk Storage Facility

1. The potentials around each of the AST's indicated adequate protection was being obtained.
2. In addition, the Fuel Piping around the AST's also indicated adequate protection was being obtained.
3. The Meter and Filter Pad area has miscellaneous buried piping. The potentials indicate adequate protection was being obtained in this area.
4. The UST, located southwest of Tank 114, was tested per Washington DOE requirements. This testing indicated adequate protection was being obtained on the tank. The results of this testing are provided in a separate letter and with a corresponding DOE evaluation checklist.
5. There are several buried pipes associated with the pump pad and load rack area. The majority of the potentials on these lines indicate adequate protection is being obtained per the 100-millivolt criterion. The instant off potentials are approaching the limit for adequate protection, so the installation of additional anodes in this area may be needed in the next few years. New anodes could be connected to the existing rectifiers.

6. Numerous potentials were measured on the foam piping throughout the facility. This piping was found to not be electrically continuous with the CP system and was therefore not being protected. NCL is not sure what type of material the foam piping is and if it is electrically continuous along its length. To better determine if there are any further recommendations for this piping, NCL requests further information on the installation of this piping.

⇒ Hydrant Piping

The potentials measured on the hydrant piping indicated adequate protection was being obtained on the piping except for one location. The potentials at the north TS of CVP-5 were below the criteria for adequate protection. NCL returned to the site and performed additional testing at the vault to determine the location of an apparent shorted isolation flange. The shorted flange appeared to be on the north side of the vault on the short loop of piping extending out the north side and back into the vault. Since this pipe has an isolation kit on each side of the loop, just inside the vault wall, and all the other pipes have additional isolation kits, this explains why this shorted isolation only affected the north TS. Testing with an isolation checker indicated the west pipe had the faulty flange. Each bolt on each flange was also tested with potentials and the isolation checker, but this did not indicate any specific bolts with problems. NCL was informed that testing with a megger was completed by an electrical company and numerous bolts indicated possible problems. The washers and sleeves are to be replaced on these bolts. This location should be retested once the repair is complete to determine if the problem is resolved or if further repair is necessary. It may be necessary to replace the gasket if the problem is not resolved.

The additional interference testing performed at one of the casings for the underground rail system was completed at the gate A4 test station. A minimal shift of 30 millivolts was seen about every 5-10 minutes, while a 100 millivolt shift was noted at a 20 minute interval. Further monitoring with a data logger would be needed if a more exact interval was desired. NCL assumes similar results would be found at the other rail crossings. Since the shifts noted were not very significant and adequate protection was being maintained, no further work is recommended.

NCL is pleased to have the opportunity to provide this service to Swissport Fueling, Inc. If you have any questions or require additional information, please do not hesitate to contact this office.

Sincerely,

Eric Shadle, P.E.
Corrosion Engineer

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Enclosure

Rectifier No. 108 (5 rectifiers in one cabinet - tanks 108, 109, 110, 114, 115)
Structure Tank 108, 120' Diameter Tank = 11,310 ft²
Location NW corner of truck load rack and pump area, Seatac Fueling Facility

Anode Description Undertank CP system, installed 400 lbs of coke in left and right bores. 104' undertank anode pipes and 120' undertank reference cell installation and wiring.

Rectifier Info

Manufacturer	Universal
Model No.	ASAI
Serial No.	43634
Stacks	Silicon
Air-Cooled	Yes
Oil-Cooled	
APC	
Manual	Yes
Both	

DC Rating

Volts	40
Amps	30

AC Rating

Volts	115/230
Amps	73.5/36.7
Phase	1

AC Input	**Initial**	**Final**
Volts	203.4	N/A
Amps	9.6	N/A
Across taps	39.0	N/A

DC Output

Panel Meter		
Volts	34.5	N/A
Amps	9.0	N/A
Portable Meter		
Volts	33.7	N/A
Amps	8.6	N/A
Shunt (30A/50mV)	14.4	N/A

Tap Setting

(max. C3/F6)	C3/F2	N/A

Junction Box at Tank		Output (amps)
Anodes	1	3.4
	2	1.4
	3	2.9
	4	1.2
Structure		2.4
Potentials	On potential data sheet	

Notes:
▶ The permanent reference cells in the rectifier cabinet are the same as those in the j-boxes at the tanks.
▶ Rectifier was functioning properly.

Rectifier No.	109	(5 rectifiers in one cabinet - tanks 108, 109, 110, 114, 115)
Structure	Tank 108, 120' Diameter Tank = 11,310 ft²	
Location	NW corner of truck load rack and pump area, Seatac Fueling Facility	

Anode Description Undertank CP system, installed 500 lbs of coke in left and and 400 lbs of coke in right bores. 104' undertank anode pipes and 120' undertank reference cell installation and wiring.

Rectifier Info

Manufacturer	Universal
Model No.	ASAI
Serial No.	43634
Stacks	Silicon
Air-Cooled	Yes
Oil-Cooled	
APC	
Manual	Yes
Both	

DC Rating

Volts	40
Amps	30

AC Rating

Volts	115/230
Amps	73.5/36.7
Phase	1

AC Input	**Initial**	**Final**
Volts	203.4	N/A
Amps	7.3	N/A
Across taps	44.7	N/A

DC Output

Panel Meter

Volts	40.0	N/A
Amps	7.0	N/A

Portable Meter

Volts	39.0	N/A
Amps	6.5	N/A
Shunt (30A/50mV)	10.9	N/A

Tap Setting

(max. C3/F6)	C3/F4	N/A

Junction Box at Tank		Output (amps)
Anodes	1	3.3
	2	1.6
	3	1.3
	4	0.6
Structure		
Potentials	On potential data sheet	

Notes:

- ▶The permanent reference cells in the rectifier cabinet are the same as those in the j-boxes at the tanks.
- ▶Rectifier was functioning properly.

Rectifier No. 110 (5 rectifiers in one cabinet - tanks 108, 109, 110, 114, 115)
Structure Tank 110, 100' Diameter Tank = 7,854 ft²
Location NW corner of truck load rack and pump area, Seatac Fueling Facility

Anode Description Undertank CP system, installed 450 lbs of coke in left and 400 lbs of coke in right bores. 86' undertank anode pipes and 100' undertank reference cell installation and wiring.

Rectifier Info

Manufacturer	Universal
Model No.	ASAI
Serial No.	43634
Stacks	Silicon
Air-Cooled	Yes
Oil-Cooled	
APC	
Manual	Yes
Both	

DC Rating

Volts	40
Amps	30

AC Rating

Volts	115/230
Amps	73.5/36.7
Phase	1

AC Input	**Initial**	**Final**
Volts	203.4	N/A
Amps	6.4	N/A
Across taps	44.7	N/A

DC Output

Panel Meter

Volts	40.0	N/A
Amps	5.8	N/A

Portable Meter

Volts	39.2	N/A
Amps	5.6	N/A
Shunt (30A/50mV)	9.3	N/A

Tap Setting

(max. C3/F6)	C3/F4	N/A

Junction Box at Tank		Output (amps)
Anodes	1	1.5
	2	0.7
	3	3.5
	4	0.0
Structure		3.0
Potentials	On potential data sheet	

Notes:
- ►The permanent reference cells in the rectifier cabinet are the same as those in the j-boxes at the tanks.
- ►Rectifier was functioning properly.

Rectifier No. 114 (5 rectifiers in one cabinet - tanks 108, 109, 110, 114, 115)
Structure Tank 114, 100' Diameter Tank = 7,854 ft²
Location NW corner of truck load rack and pump area, Seatac Fueling Facility

Anode Description Undertank CP system, installed 400 lbs of coke in left and right bores. 104' undertank anode pipes and 120' undertank reference cell installation and wiring.

Rectifier Info

Manufacturer	Universal
Model No.	ASAI
Serial No.	43634
Stacks	Silicon
Air-Cooled	Yes
Oil-Cooled	
APC	
Manual	Yes
Both	

DC Rating

Volts	40
Amps	30

AC Rating

Volts	115/230
Amps	73.5/36.7
Phase	1

AC Input	**Initial**	**Final**
Volts	203.4	N/A
Amps	4.7	N/A
Across taps	44.8	N/A

DC Output

Panel Meter

Volts	40.0	N/A
Amps	4.5	N/A

Portable Meter

Volts	39.3	N/A
Amps	4.1	N/A
Shunt (30A/50mV)	6.9	N/A

Tap Setting

(max. C3/F6)	C3/F4	N/A

Junction Box at Tank		Output (amps)
Anodes	1	1.3
	2	0.7
	3	1.5
	4	0.7
Structure		7.5
Potentials	On potential data sheet	

Notes:
- ▶The permanent reference cells in the rectifier cabinet are the same as those in the j-boxes at the tanks.
- ▶Rectifier was functioning properly.

Rectifier No. 115 (5 rectifiers in one cabinet - tanks 108, 109, 110, 114, 115)
Structure Tank 115, 120' Diameter Tank = 11,310 ft²
Location NW corner of truck load rack and pump area, Seatac Fueling Facility

Anode Description Undertank CP system, installed 500 lbs of coke in left and 450 lbs in right bores. 104' undertank anode pipes and 120' undertank reference cell installation and wiring.

Rectifier Info

Manufacturer	Universal
Model No.	ASAI
Serial No.	43634
Stacks	Silicon
Air-Cooled	Yes
Oil-Cooled	
APC	
Manual	Yes
Both	

DC Rating

Volts	40
Amps	30

AC Rating

Volts	115/230
Amps	73.5/36.7
Phase	1

AC Input	**Initial**	**Final**
Volts	203.4	N/A
Amps	6.4	N/A
Across taps	44.8	N/A

DC Output

Panel Meter

Volts	40.0	N/A
Amps	6.0	N/A

Portable Meter

Volts	39.2	N/A
Amps	5.8	N/A
Shunt (30A/50mV)	9.7	N/A

Tap Setting

(max. C3/F6)	C3/F4	N/A

Junction Box at Tank		Output (amps)
Anodes	1	1.4
	2	0.8
	3	2.4
	4	1
Structure		
Potentials	On potential data sheet	

Notes:
- ▶The permanent reference cells in the rectifier cabinet are the same as those in the j-boxes at the tanks.
- ▶Rectifier was functioning properly.

Rectifier No. 111 (3 rectifiers in one cabinet - tanks 111, 112, 113)
Structure Tank 111, 100' Diameter = 7,854 ft²
Location NW corner of truck load rack and pump area, Seatac Fueling Facility

Anode Description Undertank CP system, installed 375 lbs of coke in left and right bores. 80' and 90' undertank anode pipes and 99' undertank reference cell installation and wiring.

Rectifier Info

Manufacturer	Universal
Model No.	ASAI
Serial No.	43635
Stacks	Silicon
Air-Cooled	Yes
Oil-Cooled	
APC	
Manual	Yes
Both	

DC Rating

Volts	30
Amps	20

AC Rating

Volts	115/**230**
Amps	22.0/**11.0**
Phase	1

AC Input	**Initial**	**Final**
Volts	204.4	N/A
Amps	2.8	N/A
Across taps		

DC Output

Panel Meter

Volts	29.0	N/A
Amps	5.5	N/A

Portable Meter

Volts	28.5	N/A
Amps	5.1	N/A
Shunt (25A/50mV)	10.2	N/A

Tap Setting

(max. C3/F6)	C3/F3	N/A

Junction Box at Tank	Output (amps)	
Anodes	1	2.0
	2	0.9
	3	0.9
	4	1.5
Structure		5.1
Potentials	On potential data sheet	

Notes:

▶The permanent reference cells in the rectifier cabinet are the same as those in the j-boxes at the tanks.

▶Rectifier was functioning properly.

Rectifier No. 112 (3 rectifiers in one cabinet - tanks 111, 112, 113)
Structure Tank 112, 100' Diameter = 7,854 ft²
Location NW corner of truck load rack and pump area, Seatac Fueling Facility

Anode Description Undertank CP system, installed 375 lbs of coke in left and right bores. 86' undertank anode pipes and 100' undertank reference cell installation and wiring.

Rectifier Info

Manufacturer	Universal
Model No.	ASAI
Serial No.	43635
Stacks	Silicon
Air-Cooled	Yes
Oil-Cooled	
APC	
Manual	Yes
Both	

DC Rating

Volts	30
Amps	20

AC Rating

Volts	115/**230**
Amps	22.0/**11.0**
Phase	1

AC Input	**Initial**	**Final**
Volts	204.4	N/A
Amps		N/A
Across taps		

DC Output

Panel Meter

Volts	28.7	N/A
Amps	4.8	N/A

Portable Meter

Volts	28.3	N/A
Amps	4.3	N/A
Shunt (25A/50mV)	8.5	N/A

Tap Setting

(max. C3/F6)	C3/F3	N/A

Junction Box at Tank		Output (amps)
Anodes	1	1.3
	2	0.7
	3	0.9
	4	1.6
Structure		4.4
Potentials	On potential data sheet	

Notes:
- ▶The permanent reference cells in the rectifier cabinet are the same as those in the j-boxes at the tanks.
- ▶Rectifier was functioning properly.

Rectifier No.	113	(3 rectifiers in one cabinet - tanks 111, 112, 113)
Structure	Tank 113, 100' Diameter = 7,854 ft²	
Location	NW corner of truck load rack and pump area, Seatac Fueling Facility	

Anode Description Undertank CP system, installed 400 lbs of coke in left and right bores. 86' undertank anode pipes and 100' undertank reference cell installation and wiring.

Rectifier Info

Manufacturer	Universal
Model No.	ASAI
Serial No.	43635
Stacks	Silicon
Air-Cooled	Yes
Oil-Cooled	
APC	
Manual	Yes
Both	

DC Rating

Volts	30
Amps	20

AC Rating

Volts	115/**230**
Amps	22.0/**11.0**
Phase	1

AC Input	**Initial**	**Final**
Volts	204.4	N/A
Amps	6.4	N/A
Across taps		

DC Output

Panel Meter

Volts	29.0	N/A
Amps	4.5	N/A

Portable Meter

Volts	28.4	N/A
Amps	3.9	N/A
Shunt (25A/50mV)	7.8	N/A

Tap Setting

(max. C3/F6)	C3/F3	N/A

Junction Box at Tank		Output (amps)
Anodes	1	1.3
	2	0.7
	3	1.5
	4	0.9
Structure		4.1
Potentials	On potential data sheet	

Notes:

- The permanent reference cells in the rectifier cabinet are the same as those in the j-boxes at the tanks.
- Rectifier was functioning properly.

2011 ANNUAL CATHODIC PROTECTION INSPECTION
SWISSPORT FUELING
SEATAC INTERNATIONAL AIRPORT

NCL JOB NO.: O-20545-AST
DATE: OCTOBER 2011
BY: E. SHADLE

Rectifier No. Filter Pad
Structure Inbound filtration system
Location Seatac Fueling Facility

Anode Description Existing anodes unknown. 5 MMO canister anodes installed thoughtout Filter Pad area in 2008.

Rectifier Info

Manufacturer	Universal
Model No.	CSA-ASAI
Serial No.	70544
Stacks	Silicon
Air-Cooled	Yes
Oil-Cooled	
APC	
Manual	Yes
Both	

DC Rating

Volts	80
Amps	10

AC Rating

Volts	**115**/230
Amps	**9.8**/4.9
Phase	1

AC Input	**Initial**	**Final**
Volts	118.4	N/A
Amps		N/A
Across taps	34.0	

DC Output

Panel Meter

Volts	29.0	N/A
Amps	0.7	N/A

Portable Meter

Volts	29.4	N/A
Amps	0.8	N/A
Shunt (50A/50mV)	0.8	N/A

Tap Setting

(max. C3/F6)	C2/F5	N/A

Junction Box #1 (West)		Output (amps)
Anodes	1	
	2	
	3	
	4	

Junction Box #2 (East)		Output (amps)
Anodes	4	
	5	
	6	

Notes:
► The permanent reference cells in the rectifier cabinet are the same as those in the j-boxes at the tanks.
► Rectifier was functioning properly.

Rectifier No. Deepwell
Structure Buried fuel piping thoughout tank farm.
Location Seatac Fueling Facility

Anode Description 2 existing deepwell anode beds reactivated in June 2007. Deepwell specifications not available. 8 MMO canister anodes installed near north island April 2008.

Rectifier Info

Manufacturer	Universal
Model No.	CSA-ASAI
Serial No.	70543
Stacks	Silicon
Air-Cooled	Yes
Oil-Cooled	
APC	
Manual	Yes
Both	

DC Rating

Volts	80
Amps	30

AC Rating

Volts	115/230
Amps	29.4/14.7
Phase	1

AC Input	**Initial**	**Final**
Volts	201.3	N/A
Amps	8.7	N/A
Across taps	88.7	

DC Output

Panel Meter

Volts	79.0	N/A
Amps	16.0	N/A

Portable Meter

Volts	79.1	
Amps	16.8	N/A
Shunt (50A/50mV)	16.8	N/A

Tap Setting

(max. C6/F6)	C6/F4	N/A

Anode Cables	Output (amps)	
North DW J-box		
South DW J-box		
Truck Load J-box		

Negative Cables	Output (amps)	
Truck Load Piping		
Tank 114		

Notes:

▶The permanent reference cells in the rectifier cabinet are the same as those in the j-boxes at the tanks.

▶Rectifier was functioning properly.

Additional anode junction boxes

Location NW corner of truck load rack and pump area, Seatac Fueling Facility

North Deepwell		Shunt 0.01 Ω (mV)	Output (amps)
Anodes	1	11.7	1.17
	2	17.2	1.72
	3	0.0	0.00
	4	0.0	0.00
	5	7.6	0.76
	6	5.9	0.59
	7	10.2	1.02
	8	0.1	0.01
	9	10.3	1.03

South Deepwell		Shunt 0.01 Ω (mV)	Output (amps)
Anodes	1	3.5	0.35
	2	6.1	0.61
	3	11.4	1.14
	4	5.5	0.55
	5	4.1	0.41
	6	8.4	0.84
	7	13.8	1.38
	8	5.5	0.55

Truck Load		Shunt 0.01 Ω (mV)	Output (amps)
Anodes	1	2.4	0.24
	2	2.6	0.26
	3	3.6	0.36
	4	3.2	0.32
	5	6.0	0.60
	6	4.5	0.45
	7	12.9	1.29
	8	2.9	0.29

Notes:

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Tank Farm Potentials

Notes:
▶Portable CSE reference used unless noted otherwise.
▶All potentials are negative values unless noted otherwise.
▶10 rectifiers interrupted

Location	Potentials - millivolts				
	On	Instant Off	Native by others	Polarization Decay	IF % effective
Date→	10/18/2011		5/7/2009		
Tank 108 (120') - tank fuel level 35'					
N	3093	884	190	694	
E	2301	476	153	323	
S	2454	459	165	294	
W side Jbox, Perm. Ref 1 (red) - 40'	4550	680	53	627	
Perm. Ref 2 (blk) - 80'	2265	518	19	499	
W	3570	1151	153	998	
Tank 108 - buried piping					
In-use fuel piping					
12" Riser SE side - W	2070	908	357	551	
E	1967	811	353	458	
2"/4" Riser w/ IU N side	1820	670	262	408	
12" Riser @ Pumps - E	1396	914	501	413	
NE	1338	977	501	476	
NW	1338	977	501	476	
W	1307	1084	501	583	
TS South of pump pad ~10'	1437	1097	645	452	
4" Riser Pumpback Pipe S side	1284	834	411	423	
Miscellaneous structures					
2 - 4" Risers Foam Line - NW	1170	864	530	334	
2 - 4" Risers Foam Line - SE	928	593	548	45	
Tank - ref at same location as line above	5029	1345			
Tank 109 (120') - tank fuel level 35'					
N	2755	646	257	389	
E	3094	851	167	684	
S	2146	361	169	192	
W side Jbox, Perm. Ref 1 (red) - 40'	2791	519	172	347	
Perm. Ref 2 (blk) - 80'	2128	545	169	376	
W	4832	1509	226	1283	
Tank 109- buried piping					
In-use fuel piping					
12" Riser SE side - W	1862	776	336	440	same ref location
E	1908	815	355	460	same ref location
2"/4" Riser w/ IU N side	2827	720	293	427	
Miscellaneous structures					
2 - 4" Risers Foam Line - NW	310	372	528	-156	same ref location

NORTON CORROSION LIMITED

PHMSA, 000003295

2011 ANNUAL CP INSPECTION
SWISSPORT FUELING
SEATAC INTERNATIONAL AIRPORT

NCL JOB NO.: O-20545-AST
DATE: OCTOBER 2011
BY: E. SHADLE

Location	Potentials - millivolts				
	On	Instant Off	Native by others	Polarization Decay	IF % effective
Date→	10/18/2011		5/7/2009		
2 - 4" Risers Foam Line - SE	1310	784	437	347	same ref location
Tank	4262	811			same ref location
3 Risers Foam Line - S			554		
Tank 110 (100') - tank fuel level 37'					
N	1330	620	182	438	
E	1281	500	242	258	
S	2512	1383	329	1054	
W side Jbox, Perm. Ref 1 (red) - 40'	2328	487	-76	563	
Perm. Ref 2 (blk) - 80'	1297	436	-59	495	
W	1651	809	117	692	
Tank 110 - buried piping					
In-use fuel piping					
24" Riser w/ IF SW side - W	1520	1157	691	466	
E	1486	1071	680	391	
24" Riser TS	1520	1157	718	439	
anode disc.		1112	1587 anode	4 mA collection	
8" Riser w/IF S side	2620	1383	478	905	
8" Riser TS	2620	1383	567	816	
anode disc.		1380	1545 anode	11.6 mA collection	
12" Riser SE side - W	2056	1153	489	664	
E	2022	1218	455	763	
2"/4" Riser w/ IU NE side	1285	783	350	433	
Miscellaneous structures					
2 - 4" Risers Foam Line - NW	485	392	549	-157	same ref location
tank	2098	1201			same ref location
4" Risers Foam Line - SE	707	712	652	60	
E	355	320	610	-290	same ref location
tank	1664	851			same ref location
3 Risers Foam Line - SW	294	305	596	-291	
Tank 111 (100') - tank fuel level 34'					
N	2838	977	289	688	
E	3337	1190	204	986	
S	3534	1333	163	1170	
W side Jbox, Perm. Ref 1 (red) - 40'	1353	515	70	445	
Perm. Ref 2 (blk) - 80'	1356	464	101	363	
W	3737	1441	137	1304	
Tank 111 - buried piping					
In-use fuel piping					
12" Loop @ CC Vault N side	1525	893	486	407	
12" Riser NW side - W	1550	976	531	445	
E	1525	893	551	342	
12" E of 4 Risers	1610	1033			

Location	Potentials - millivolts On	Instant Off	Native by others	Polarization Decay	IF % effective
Date→	10/18/2011		5/7/2009		
2"/4" Riser w/IU S side	2250	945	496	449	
4 - 12" Risers @ Pumps - E	1654	1039	476	563	
Mid East - pipe and conduit	1523	1050	476	574	
Mid West	1523	1050	476	574	
W	1675	1053	476	577	
Miscellaneous structures					
2 - 4" Risers Foam Line - NW	483	502	547	-45	same ref location 1
tank	1525	893			same ref location 1
2 - 4" Risers Foam Line - SE	990	275	531	-256	same ref location 2
tank	2465	670			same ref location 2
3 Risers Foam Line - N	511	602	629	-27	
Tank 112 (100') - tank fuel level 36'					
N	2012	692	244	448	
E	1877	658	223	435	
S	1734	658	131	527	
W side Jbox, Perm. Ref 1 (red) - 40'	1736	535	101	434	
Perm. Ref 2 (blk) - 80'	2040	446	70	376	
W	2362	802	207	595	
Tank 112 - buried piping					
In-use fuel piping					
24" Riser w/ IF SW side - W	2934	1104	306	798	
E	3055	1121	291	830	
24" Riser TS	3241	1136	315	821	
anode disc.		1084	1693 anode	21 mA collection	
8" Riser w/ IF SE side	1800	984	669	315	
8" Riser TS	1714	973	709	264	
anode disc.		944	1397 anode	4 mA collection	
12" Riser NE side - W	1843	915	452	463	
E	1654	1007	565	442	
4" Riser NE	1863	1016	472	544	
2"/4" Riser w/ IU S side	1681	677	343	334	
Miscellaneous structures					
2 - 4" Risers Foam Line - NW	780	682	610	72	same ref location
tank	2467	918			same ref location
2 - 4" Risers Foam Line - SE	282	324	640	-316	
Tank 113 (100') - tank fuel level 23'					
N	2634	601	222	379	
E	2126	519	218	301	
S	2650	847	284	563	
W side Jbox, Perm. Ref 1 (red) - 40'	2252	468	165	303	
Perm. Ref 2 (blk) - 80'	2853	552	166	386	
W	2530	810	253	557	

Location	Potentials - millivolts				
	On	Instant Off	Native by others	Polarization Decay	IF % effective
Date→	10/18/2011		5/7/2009		
Tank 113 - buried piping					
In-use fuel piping					
24" Riser w/IF SW side - W	2564	882	280	602	
E	2060	817	239	578	
24" Riser TS	2280	821	276	545	
anode disc.			1530 anode	9.8 mA collection	
12" Riser capped SE	2395	854	289	565	
8" Riser w/IF S side	2758	851	281	570	
8" Riser TS	2751	828	279	549	
anode disc.			1624 anode	12 mA collection	
12" Riser NE side - W	1990	736	256	480	
E	2153	757	264	493	
2"/4" Riser w/ IU S side	3793	1236	346	890	
Miscellaneous structures					
2 - 4" Risers Foam Line - NW	608	331	344	-13	
2 - 4" Risers Foam Line - SE	375	529	550	-21	same ref location
tank	1878	627			same ref location
3 Risers Foam Line - SE	683	675	533	142	
Tank 114 (120') - tank fuel level 36'					
N	1427	856	258	598	
E	2649	1353	132	1221	
S	3490	2007	258	1749	
W side Jbox, Perm. Ref 1 (red) - 40'	1927	197	97	100	
Perm. Ref 2 (blk) - 80'	1611	450	27	423	
W	2593	1072	159	913	
Tank 114 - buried piping					
In-use fuel piping					
24" Riser NE side - W	1204	985	698	287	
E	1426	884	601	283	
4" Riser NE	1411	948	694	254	
2"/4" Riser w/ IU S side	3080	1457	569	888	
Miscellaneous structures					
2 - 4" Risers Foam Line - NW	123	325	649	-324	same ref location 1
tank	2468	808			same ref location 1
2 - 4" Risers Foam Line - SE	420	602	701	-99	same ref location 2
tank	3053	1505			same ref location 2
Tank 115 (120') - tank fuel level 30'					
N	1834	503	105	398	
E	2054	630	150	480	
S	1664	476	246	230	
W side Jbox, Perm. Ref 1 (red) - 40'	856	359	67	292	
Perm. Ref 2 (blk) - 80'	1041	379	-49	428	

Location	Potentials - millivolts				
	On	Instant Off	Native by others	Polarization	IF
Date→	10/18/2011		5/7/2009	Decay	% effective
W	1706	420	174	246	
Tank 115 - buried piping					
In-use fuel piping					
30" Riser capped E	2611	902	357	545	
30" Riser TS	2615	935	368	567	
anode disc.		864	1532 anode	10 mA collection	
12" Riser NE side - W	2821	1018	407	611	
E	1813	1022	447	575	
2"/4" Riser w/ IU S side	1850	766	353	413	
30" Riser w/ IF through S concrete wall, ~40' SE of tank	1401	961	332	629	100%
across iso (OPL side)	1231	958			
TS ~ 45' N of 30" Riser @ concrete wall	2150	1123	447	676	
anode disc.		1061	1578 anode	25 mA collection	
TS @ concrete wall S of tank	606	324	95	229	
anode disc.		321	1248 anode	6 mA discharge	
Miscellaneous structures					
2 - 4" Risers Foam Line - NW	711	658	556	102	same ref location 1
tank	2033	603			same ref location 1
2 - 4" Risers Foam Line - SE	876	725	489	236	same ref location 2
tank	2569	1033			same ref location 2
Underground Storage Tank - 30' SW of Tank 114					
UST W End	2200	1105	475	630	
UST Middle	2106	1232	513	719	
UST E End	2513	1378	506	872	
4" Riser N	2627	1178	476	702	
Meter & Filter Station					
In-use fuel piping					
Air Line 10' N of Rectifier	772	678			
2 - 12" Risers S end Filter Pad - E	1121	927	303	624	
W	1177	960	303	657	
Water Valve between 12" Risers	77	101			
5 - 12" Risers & 5 - 8" Risers 10' W of Insulated Pipe Loop	1548	952	448	504	
6" Riser capped (bond cable attached)	1800	939	448	491	
TS under Insulated a/g Pipe Loop (beside asph entrance rd - looped removed 2010)	1750	994	392	602	
anode disc.			1492 anode	5.3 mA collection	
TS Permanent Ref Cell (defective)			310		
8" Riser SW end a/g Pipe Loop	1800	939	387	552	
12" Riser 7' W of TS	1757	964	387	577	
6" Riser clay sys #4	875	730	227	503	

NORTON CORROSION LIMITED

2011 ANNUAL CP INSPECTION
SWISSPORT FUELING
SEATAC INTERNATIONAL AIRPORT

NCL JOB NO.: O-20545-AST
DATE: OCTOBER 2011
BY: E. SHADLE

Location	Potentials - millivolts				
	On	Instant Off	Native by others	Polarization Decay	IF % effective
Date→	10/18/2011		5/7/2009		
4" Riser capped W side Filter Pad	1895	900	258	642	
TS @ 4" Loop	1895	900	298	602	
8" Riser sys #1 W side Pump Pad	1552	1067	234	833	
8" Riser sys #2 W side Pump Pad	1655	1020	234	786	
8" Riser sys #3 W side Pump Pad	1336	1041	118	923	
8" Riser sys #4 W side Pump Pad	1200	920	115	805	
2" Drain line 10' SW of Jbox 2	994	870			
2" Drain line 15' SW of Jbox 2	994	870			
4" Loop w/ IF #4 N, W side of Filter Pad	NA	NA	115		
3 - Big Fink TS	2580	1892			
12" Riser w/ IF	2550	2743			100%
Truck Load & Pump Pad					
Pump Pad					
2 ea. 20" riser W end w/ IF, 30' W near rect, hydrant side	1322	1266	294	972	
across IF	554	358			100%
SW corner - risers					
6" riser, #1 W, LP drain 20" to airfield, 30' W near rect, hydrant side	1322	1266	294	972	
across IF	4526	2507			100%
6" riser, #3 W, LP drain 20" to airfield, 30' W near rect, hydrant side	1322	1266	294	972	
across IF	4526	2507			100%
8" riser, E of 6" risers	4051	1602			
across IF	3747	1522			100%
3" Riser, #4 E SW corner, 30' W near rect, truck rack side	854	359	294	65	
across IF	4056	1591			100%
South Island - ref located on wet concrete at seam at west end					
4" Riser capped W end	1107	625	270	355	
W end TS at 4" Riser	1107	625	270	355	
anode				4.2 mA discharge	
1" Riser capped w/ end	1107	625	273	352	
4" Riser capped W side Filter Pad	1107	625	302	323	
6" Loop middle	1107	625	302	323	
TS @ 6" Loop middle	1107	625	302	323	
anode				2.9 mA discharge	
3" Riser capped middle	1107	625	302	323	
1" Riser capped middle	1129	625	302	323	
East end 6" Riser w/ IF E - east	1107	629	303	326	
across IF	795	606			100%
East end 6" Riser w/ IF E - west	1107	629	266	363	
across IF	795	615			100%
E end TS @ 6" Riser	1107	625	264	361	

NORTON CORROSION LIMITED

2011 ANNUAL CP INSPECTION
SWISSPORT FUELING
SEATAC INTERNATIONAL AIRPORT

NCL JOB NO.: O-20545-AST
DATE: OCTOBER 2011
BY: E. SHADLE

Location	Potentials - millivolts				
	On	Instant Off	Native by others	Polarization Decay	IF % effective
Date→	10/18/2011		5/7/2009		
anode				6.3 mA discharge	
1" Riser to a/g piping W	1107	627	223	404	
North Island					
3" Riser capped E end	1107	622	250	372	
4" Riser w/IF W end	1107	622	219	403	
across IF	754	438			100%
1" Riser capped middle	1107	629			

2011 ANNUAL CATHODIC PROTECTION INSPECTION
SWISSPORT FUELING
SEATAC INTERNATIONAL AIRPORT

NCL JOB NO.: O-20545-AST
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Hydrant Piping

Notes:

▶All potentials are negative values unless noted otherwise.

▶For the column indicating Direction of current flow, 'discharge' means the current is discharging from the anode and 'collection' means the current is

			Potentials - millivolts						Current - mA		Comments
			Portable CSE				Permanent CSE				
Location	Vault/Gate	TS type	Connected	Disconnected	Anode - disc	Casing	Connected	Disconnected	Output	Direction	
Central Terminal (Concourse A)											
	A1	Flush	1207	1194	1443	590	1068	1052	2.0	discharge	
	A4	Flush	1269	1234	1681	575	1272	1244	4.0	discharge	Initially casing and pipe terminals shorted in TS.
	IVP-A1	Flush	1496	1478			1459	1449	1.9	discharge	
	A11	Flush	1528	1517	1778		1100	1089	2.0	discharge	
	SSP-1	Flush	1600	1595	1707		1455	1451	1.0	discharge	
Central Terminal (Concourse B)											
	B8	flush	1145	1085	1509	620	1242	1170	3.0	discharge	
	B14	flush	Could not locate								
	B15	flush	1390	1324	1672		Defective		12.0	discharge	
	CVP-2	flush	1230	1207	1289		Defective		3.0	discharge	
	B9/B7	flush	1197	1172	1552		Defective		5.0	discharge	
	B7/B5	flush	1123	1096	1720		1150	1128	10.0	discharge	6 structure leads
	B5	flush	1163	1135	1722		1150	1108	15.0	discharge	6 structure leads
	B5/B3	flush	1134	1109	1697		1093	1123	11.0	discharge	6 structure leads
	B3/B1	flush	1138	1122	1702		1119	1080	7.0	discharge	
	Central	flush	1162	1098	1786		Defective				TS located ~300' W of Central B Terminal
Foreign xing	IVP-B2	flush	490	252	1658		507	270	11.0	discharge	Foreign TS, 1157 potential on hyd pit S of vault
Central Terminal (Concourse C)											
	Central W	flush	1174	1130	1802		1168	1120	8.6	discharge	TS located ~300' W of Central C Terminal
	Central E	flush	921	904	1599		968	929	9.7	discharge	3 sets of leads - 20E, 20W, 12E
	C4	flush	1045	1020	1708		Defective		9.0	discharge	3 sets of leads - 20E, 20W, 12E
	C6	flush	1163	1132	1751		1114	1089	9.0	discharge	
	C14	flush	1191	1159	1650		1034	1008	7.8	discharge	
	CVP-3S	flush	1161	1125	1570		1119	1090	9.0	discharge	

2011 ANNUAL CATHODIC PROTECTION INSPECTION
SWISSPORT FUELING
SEATAC INTERNATIONAL AIRPORT

NCL JOB NO.: O-20545-AST
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			Potentials - millivolts						Current - mA		Comments
			Portable CSE				Permanent CSE				
Location	Vault/Gate	TS type	Connected	Disconnected	Anode - disc	Casing	Connected	Disconnected	Output	Direction	
	CVP-3E	flush	1510	1487	1542		1463	1438	1.8	discharge	
	C20	flush	1380	1257	1673	581	Defective		8.0	discharge	
	C9	flush	1573	1564	1603		Defective		0.6	discharge	
	IVP-C1	flush	1594	1630	1446		1059	1094	-2.0	collection	
Central Terminal (Concourse D)											
	D5	flush	1185	1104	1492	691	Defective		12.0	discharge	
	IVP-D1	flush	1267	1310	1080		Defective		-5.0	collection	
	SSP-2	flush	1515	1482	1749		Defective		2.0	discharge	
South Satellite											
	S16/IVP-S1	flush	1153	1134	1645		1115	1103	2.0	discharge	
	IVP-S3	flush	1235	1196	1720		Defective		10.0	discharge	
	S7	flush	1483	1428	1793	734	1478	1436	5.0	discharge	
	IVP-S2	flush	1585	1553	1771		1534	1505	5.0	discharge	
	S11	flush	1444	1423	1674	654	Defective		4.0	discharge	
	CVP-1	flush	1227	1227	1224		1163	1163	0.2	discharge	N hydrant pit
	S12	flush	1156	1155	1317		1120	1118	1.0	discharge	
North Satellite											
	CVP-4 NW	flush	1025	1000			975	946	4.4	discharge	4 structure wires
	CVP-4 SE	flush	1455	1452			1464	1462	0.4	discharge	4 structure wires, no shunt
	N12	flush	1285	1262	1621	498	1023	1003	4.2	discharge	
	N15	flush	1563	1559	1604		1462	1461	0.7	discharge	
	IVP-N1 NW	flush	1543	1542	1636		1427	1420	1.9	discharge	
	IVP-N1 SE	flush	1551	1546	1653		1483	1470	2.7	discharge	
	N7	flush	1406	1278	1801	716	Defective		16.5	discharge	
	IVP-N3 SW	flush	1657	1660	1628		1542	1545	-0.6	collection	
	IVP-N3 SE	flush	1532	1523	1579				1.1	discharge	
	IVP-N3 NE	flush	1640	1638	1634		1624	1623	0.2	discharge	
	IVP-N2 SE	flush	1611	1607	1629		955	952	1.0	discharge	
	IVP-N2 NW	flush	1588	1628	1162		Defective		-6.0	collection	
	N14	flush	1482	1476	1601		1487	1482	0.7	discharge	Terminal not making contact initially

2011 ANNUAL CATHODIC PROTECTION INSPECTION
SWISSPORT FUELING
SEATAC INTERNATIONAL AIRPORT

NCL JOB NO.: O-20545-AST
DATE: OCTOBER 2011
BY: E. SHADLE

			Potentials - millivolts						Current - mA		Comments
			Portable CSE				Permanent CSE				
Location	Vault/Gate	TS type	Connected	Disconnected	Anode - disc	Casing	Connected	Disconnected	Output	Direction	
North Truck Load											
	CVP-5 N	flush	441	285			430	310	16.0	discharge	Shorted IF in vault - see additional test data on attached drawing of CVP-5
	CVP-5 SW	flush	1023	1012			1148	1126	6.4	discharge	Shunt broken
	CVP-5 SE	flush	1100	1083			1085	1069	6.0	discharge	
At pumps	12" riser	flush	1606	1612	1598		1581	1586	-0.1	collection	Bond to UST piping installed in 2010
At pumps	UST piping	flush	1580	1454					0.2	discharge	New TS 2011
At pumps	OPL riser	N/A	640								Blind flange, abandoned in 2006
Trk rack	Riser 5	N/A	1445								Isolation 100%
Trk rack	Riser 6	N/A	1515								Isolation 100%
Trk rack	Riser 7	N/A	1337								Isolation 100%
Trk rack	Riser 8	N/A	1492								Isolation 100%
Trk load	Riser 5	N/A	1585								Isolation 100%, includes 2 other risers S
Trk load	Riser 6	N/A	1585								Isolation 100%, includes 2 other risers S
Trk load	Riser 7	N/A	1576								Isolation 100%, includes 2 other risers S
Trk load	Riser 8	N/A	1561								Isolation 100%, includes 2 other risers S
Mainline from Airport Tank Farm											
Inside tank farm fence				Rect off				Rect off			
At rect's	N Line	J-Box	1430	1240			1303	1264	-12.7	collection	Instant off with rect off and anodes disc 1071
At rect's	S Line	J-Box	1430	1240			1232	1200	-12.7	collection	Instant off with rect off and anodes disc 1071
Outside tank farm fence											
see comments	S TS	flush	1784	1791	1538		1810	1823	-3.3	collection	E edge of road, W of tank 113
see comments	N TS	flush	1885	1891	1609		1730	1734	-2.5	collection	E edge of road, W of tank 113
see comments	S TS	flush	1332	1329	1449	520	1234	1232	1.1	discharge	NW tk farm, E edge of road, S end of overpass
see comments	N TS	flush	1291	1287	1430	390	1235	1233	1.4	discharge	NW tk farm, E edge of road, S end of overpass
see comments		flush	1349	1343	1677		1198	1184	2.5	discharge	N of overpass, middle of road

NORTON CORROSION LIMITED

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December 8, 2011

Mr. Dan Liss
Swissport Fueling Inc.
4200 E Air LN Dr
Phoenix, AZ 85034

Subject: **2011 ANNUAL CATHODIC PROTECTION SURVEY**
SEATTLE-TACOMA INTERNATIONAL AIRPORT
BULK STORAGE FACILITY AND HYDRANT PIPING
UNDERGROUND STORAGE TANK

Dear Mr. Liss:

On October 25-26, 2011, Norton Corrosion Limited (NCL) personnel completed the annual Cathodic Protection (CP) testing for the Bulk Storage Facility and Hydrant Piping at Seattle-Tacoma International Airport (Seatac). This work was authorized per Swissport Project Number SeaTac-2011-CPA. During that survey, the underground storage tank (UST) on the south side of the tank farm, south of Tank 114 was tested per Washington State Department of Ecology (DOE) requirements.

Results:

The potentials obtained indicate the UST is receiving adequate protection.

Work performed:

NCL inspected the CP system in accordance with the procedures established in NACE International Test Method TM0101, entitled "Measurement Techniques Related to Criteria for Cathodic Protection on Underground or Submerged Metallic Tank Systems." Structure-to-soil potentials were measured at representative test locations using a portable copper/copper sulfate (CSE) half-cell to determine the level of protection being obtained on the tank.

Criteria:

NACE International has established criteria that indicate, when used separately or in combination, that adequate CP is being achieved. The applicable criteria are listed in NACE Standard RP-0285, entitled "Corrosion Control of Underground Storage Tank Systems by Cathodic Protection." NCL has evaluated your CP system based on the following criteria:

- Adequate CP is indicated by a potential difference of -0.850 volts or more negative between a steel structure and a CSE reference half-cell. This criterion requires all voltage drops, other than those across the structure-to-electrolyte boundary, to be considered for a valid interpretation of the potential data.
- Adequate protection is also indicated by a cathodic polarization shift of not less than 100 millivolts. This is equivalent to the difference between the instant-off (polarized) and native (depolarized) potential measurements. This criterion is only valid where bi-metallic couples (contact between different metals, i.e., steel to copper grounding) do not exist.

NCL appreciates this opportunity to be of service to Swissport Fueling Inc. If you have any questions or concerns, please do not hesitate to contact our office.

Sincerely,

Eric Shadle, P.E.
Corrosion Engineer

ERIC J. SHADLE
STATE OF WASHINGTON
34349
REGISTERED PROFESSIONAL ENGINEER

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6. Numerous potentials were measured on the foam piping throughout the facility. This piping was found to not be electrically continuous with the CP system and was therefore not being protected. NCL is not sure what type of material the foam piping is and if it is electrically continuous along its length. To better determine if there are any further recommendations for this piping, NCL requests further information on the installation of this piping.

⇒ Hydrant Piping

The potentials measured on the hydrant piping indicated adequate protection was being obtained on the piping except for one location. The potentials at the north TS of CVP-5 were below the criteria for adequate protection. NCL returned to the site and performed additional testing at the vault to determine the location of an apparent shorted isolation flange. The shorted flange appeared to be on the north side of the vault on the short loop of piping extending out the north side and back into the vault. Since this pipe has an isolation kit on each side of the loop, just inside the vault wall, and all the other pipes have additional isolation kits, this explains why this shorted isolation only affected the north TS. Testing with an isolation checker indicated the west pipe had the faulty flange. Each bolt on each flange was also tested with potentials and the isolation checker, but this did not indicate any specific bolts with problems. NCL was informed that testing with a megger was completed by an electrical company and numerous bolts indicated possible problems. The washers and sleeves are to be replaced on these bolts. This location should be retested once the repair is complete to determine if the problem is resolved or if further repair is necessary. It may be necessary to replace the gasket if the problem is not resolved.

The additional interference testing performed at one of the casings for the underground rail system was completed at the gate A4 test station. A minimal shift of 30 millivolts was seen about every 5-10 minutes, while a 100 millivolt shift was noted at a 20 minute interval. Further monitoring with a data logger would be needed if a more exact interval was desired. NCL assumes similar results would be found at the other rail crossings. Since the shifts noted were not very significant and adequate protection was being maintained, no further work is recommended.

NCL is pleased to have the opportunity to provide this service to Swissport Fueling, Inc. If you have any questions or require additional information, please do not hesitate to contact this office.

Sincerely,

Eric Shadle, P.E.
Corrosion Engineer

ERIC J. SHADLE
STATE OF WASHINGTON
34349
REGISTERED
PROFESSIONAL ENGINEER

Y:\Documents\ENGINEERING\20545_Swissport_Seatac\20545_report.doc
Enclosure

APPENDIX J
Training Logs
Discharge Prevention Meeting Log
Spill Management Team Exercise Log
Personnel Response Training Log

Discharge Prevention Meeting Log

Date:____

Attendees:____

Subject/Issue Identified	Required Action	Implementation Date

Spill Management Team Exercise Log

Retain this form for a minimum of 5 years.

1. Date(s) performed: ______________________

2. Exercise: ________ Actual Spill: ________
   Announced: ________ Unannounced: ________ Deployment: ________
   Notification: ________ Tabletop: ________
   Quarter: ________ Annual: ________

3. Location of exercise/spill: ______________________

4. Time started: ________ Time completed: ________

5. Description of scenario or spill including volume and type of material: ________

____

____

____

6. Describe how the following objectives were exercised:

Response team's knowledge of fuel-spill response plan:

	Yes	No
Conduct briefing meeting	☐	☐
Establish Incident Command Post	☐	☐
Confirm source was stopped	☐	☐
Develop site safety plan	☐	☐
Prepared ICS 201	☐	☐
Established work zones and perimeter security	☐	☐
Develop short-range tactical plan	☐	☐
Develop long-range tactical plan	☐	☐
Proper notifications	☐	☐

Transportation/Communications system:

Establish primary/secondary communication system ☐ ☐
Primary: cell phone ___ radio ________ land line ____
Secondary: cell phone _ radio ________ land line ____
Other: ______________________

Vehicles deployed: ______________________

Describe function (i.e., transportation, surveillance, dispersant application): ________

____

Ability to access contracted OSRO:

Name of individual contacted: ______________________
When contacted: ______________________

Spill Management Team Exercise Log

Response time projection for deployment: ______________________________
Type and amount of containment used: ______________________________

____

Describe amount and type of spilled material recovered: ______________________________

____

____

Describe disposal of materials: ______________________________

____

____

Incident Management Team's ability to coordinate spill response with On-Scene Coordinator:

List name of On-Scene Coordinator(s) and agency represented: ______________________________

____

____

Incident Management Team's ability to access sensitive site and resource information in the FRP:

	Yes	No
Was pre-impact assessment conducted?	☐	☐
Were pre-impact samples taken?	☐	☐
Were pre-impacted photographs taken?	☐	☐
Were environmental consultants mobilized?	☐	☐

7. Exercise Evaluation:

Any deficiencies identified?	☐	☐
If yes, changes implemented?	☐	☐

If no, why were changes not implemented? ______________________________

____

____

Lessons Learned	Person Responsible for Follow-up of Corrective Measures

Certifying Signature: ______________________________
Print Name: ______________________________

Personnel Response Training Log

Name	Response Training/Date and Number of Hours	Prevention Training/Date and Number of Hours

APPENDIX K
Alcohol and Drug Awareness Program

The Drug and Alcohol Awareness Program materials are only available in hard-copy and will be inserted in to the final document

APPENDIX L
Glossary and Acronyms

Acronyms and Abbreviations

API	American Petroleum Institute
ATA	Air Transportation Association of America
BBL	Barrel (equivalent to 42 gallons)
Bpd	Barrels per day
CFR	Code of Federal Regulations
CPSGRP	Central Puget Sound Geographic Response Plan
Ecology	Washington Department of Ecology
EFSO	Emergency Fuel Shut Off
EMD	Washington Emergency Management Division
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Administration
FOG	Field Operations Guide
FOSC	Federal On-Scene Coordinator
ICS	Incident Command System
IWS	Industrial Waste System
Jet A	Aviation Turbine Fuel
mph	Miles per hour
MSDS	Material Safety Data Sheet
NCP	National Contingency Plan
NIIMS	National Interagency Incident Management System
No.	Number
NRC	National Response Center
NRDA	Natural Resource Damage Assessment
NRT	National Response Team
NWACP	Northwest Area Contingency Plan
OPA 90	Oil Pollution Act of 1990
OSHA	Occupational Safety and Health Administration
OSRO	Oil Spill Response Organization
POS	Port of Seattle
PPE	Personal Protective Equipment
PREP	National Preparedness for Response Exercise Program
QI	Qualified Individual
RCRA	Resource Conservation and Recovery Act
RPIC	Responsible Party Incident Commander
RRT	Regional Response Team
SAR	Search and Rescue
SCP	Spill Contingency Plan
SIC	Standard Industrial Classification
SFFL	SeaTac Fuel Facilities, LLC
SJFSDS	SeaTac Jet Fuel Storage/Distribution System
SOSC	State On-Scene Coordinator
SPCC	Spill Prevention Control and Countermeasures
Swissport	Swissport Fueling, Inc.
TBD	To Be Determined
U.S.C.G.	United States Coast Guard
U.S.DOT	United States Department of Transportation
U.S.EPA	United States Environmental Protection Agency
WAC	Washington Administrative Code
WCD	Worst case discharge
WISHA	Washington Industrial Safety and Health Administration
WDFW	Washington Department of Fish and Wildlife
WWRC	Washington Wildlife Rescue Coalition

Appendix I
Acronyms and Abbreviations

AST	aboveground storage tank
ATA	Air Transport Association of America
bbl	barrel
bbl/hr	barrels per hour
CFR	Code of Federal Regulations
CPSGRP	Central Puget Sound Geographic Response Plan
Ecology	Department of Ecology (Washington)
EFSO	Emergency Fuel Shut Off
EMD	Emergency Management Division (Washington)
FOG	Field Operations Guide
FOSC	Federal On-Scene Coordinator
gpm	gallons per minute
HAZWOPER	hazardous waste operations and emergency response
ICS	Incident Command System
IWS	industrial wastewater system
mph	miles per hour
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NIIMS	National Interagency Incident Management System
NRC	National Response Center
NRT	National Response Team
NWACP	Northwest Area Contingency Plan
OSRO	Oil Spill Response Organization
PLC	programmable logic controller
POS	Port of Seattle
PPE	personal protective equipment
PREP	Preparedness for Response Exercise Program
QI	Qualified Individual
RCW	Regulatory Code of Washington
RRT	Regional Response Teams
SCP	spill contingency plan
SeaTac International Airport	Seattle-Tacoma International Airport
SFFL	SeaTac Fuel Facilities, LLC
SJFSDS	SeaTac Jet Fuel Storage/Distribution System
SOSC	State On-Scene Coordinator
Swissport	Swissport Fueling, Inc.
UAL	United Airlines
USCG	U.S. Coast Guard
USEPA	U.S. Environmental Protection Agency
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife

APPENDIX M
Cross-References

APPENDIX M
EPA STANDARD FORMAT
CROSS REFERENCE TABLE

SECTION IN 40 CFR 112 APPENDIX F		SECTION IN THIS RESPONSE PLAN	
1.1	Standard Facility Response Plan		Sections 2.0, 3.0, 4.0, 5.6, 9.0, 10.0, Figures 11-1 through 11-7
1.2	Facility Information	1.2	Facility Information
1.3	Emergency Response Notification	2.0	Notification List and Procedures
1.3.1	Notification	2.0	Notification List and Procedures
1.3.2	Equipment	10.0	Equipment Lists
1.3.3	Personnel	3.2	Incident Response Team
1.3.4	Evacuation Plans	5.6	Evacuation Plan
1.3.5	Coordinator's Duties	3.0	Incident Command System and Response Team
1.4	Hazard Evaluation	7.0	Hazard Evaluation and Spill Prevention Measures
1.4.1	Hazard Identification	7.1	Hazard Identification
1.1.2	Vulnerability Analysis	7.3	Vulnerability Analysis
1.4.3	Analysis of Potential for a Spill	7.4	Analysis of the Potential for a Fuel Spill
1.4.4	Facility Spill History	7.5	Facility Reportable Fuel Spill History
1.5	Discharge Scenarios	8.0	Spill Scenarios
1.5.1	Small and Medium Discharges	8.2 8.3	Small Spills Medium Spills
1.5.2	Worst-Case Discharges	8.4	Worst-Case Spill
1.6	Discharge Detection Systems	4.4	Spill Detection Systems
1.6.1	Discharge Detection by Personnel	4.4.1	Discharge Detection by SJFSDS Personnel
1.6.2	Automated Discharge Detection	4.4.2	Automated Spill Detection
1.7	Plan Implementation	1.1	Objective of Plan
1.7.1	Response Resources for Small, Medium, and Worst-Case Spills	5.0	Response Actions

SECTION IN 40 CFR 112 APPENDIX F		SECTION IN THIS RESPONSE PLAN	
1.7.2	Disposal Plans	6.1	Disposal Plan
1.7.3	Containment and Drainage Planning	7.6	Containment and Drainage Planning
1.8	Self Inspection, Training, and Meeting Logs	9.0	Self-Inspection, Drills/Exercises, and Response Training
1.8.1	Facility Self Inspection	9.1	Facility Self-Inspection Inspection
1.8.1.1	Tank Inspection	9.1.1	Tank Inspection
1.8.1.2	Response Equipment Inspections	9.1.2	Response Equipment
1.8.1.3	Secondary Containment Inspection	9.1.3	Secondary Containment
1.8.2	Mock Alert Drills	9.2	Facility Drills/Exercises and Response Training
1.8.2.1	Mock Alert Drill Logs	9.2	Facility Drills/Exercises and Response Training
1.8.3	Training and Meeting Logs		Appendix J
1.8.3.1	Personnel Training Logs		Appendix J
1.8.3.2	Discharge Prevention Meeting Logs		Appendix J
1.9	Diagrams	11.0	Diagrams
1.10	Security	5.7	Security
2.0	Response Plan Cover Sheet	Prior to TOC	
3.0	Definitions	In Text	
4.0	Acronyms	Appendix L	
5.0	References	Cited in the text	

APPENDIX N
Job Descriptions

Qualified Individual

1. Assess the situation and/or obtain a briefing from the prior Incident Commander.
2. Determine incident objectives and strategies.
3. Establish the immediate priorities.
4. Approve and authorize implementation of an Incident Action Plan.
5. Coordinate with key stakeholders and officials through the Liaison Officer.
6. Approve requests for additional resources or for the release of resources.

Information Officer

1. The information Officer is responsible for developing and releasing information about the incident to the news media, to incident personnel, and to other appropriate agencies and organizations.
2. Determine from the Incident Commander if there are any limits on information release.
3. Develop material for use in news briefings.
4. Arrange for tours and other interviews or briefings that may be required.

Liaison Officer

1. Provide a point of contact for assisting and cooperating Agency Representatives.
2. Maintain a list of assisting and cooperating agency and stakeholder group contacts.
3. Assist in establishing and coordinating interagency contacts.
4. Keep agencies supporting incident aware of incident status.
5. Monitor incident operations to identify current or potential interorganizational issues and advise Incident Command, as appropriate.

Safety Officer

1. Assess the spilled area and check for any hazardous and unsafe situations.
2. Develop and successfully implement site safety and health plan.
3. Assures personnel safety.
4. Participate in Planning meeting
5. Exercise emergency authority to prevent or stop unsafe acts.

Operations Section Chief

1. Direct and coordinate all incident tactical operations and strategies. Tactical assignments also include PS strategies.
2. Prepare strategies for containment, berming, channeling and diverting.
3. Work with PS to ensure accuracy of status.

Planning Section Chief

1. Collect, evaluate, and disseminate tactical information.
2. Maintain information on current and forecast information.
3. Organize Documentation, Resources, Environment and Demobilization unit.
4. Ensure attendance and participation at mtgs.

Logistic Section Chief

1. In-charge of payroll.
2. Equipment procurement.
3. Tracking the total value of loss due to the incident.
4. Monitor incident cost.
5. Perform time recording.