

2014-LTR-1014

Attachment 9

[Permit Attachment GG]

Contingency Plan

**ATTACHMENT GG**

Contingency Plan

MIXED WASTE FACILITY  
RCRA/TSCA PERMIT

**PERMA-FIX NW**  
RICHLAND, WASHINGTON  
Permit Number: WAR 0000 10355

This page intentionally left blank.

**ATTACHMENT GG CONTINGENCY PLAN**

[WAC 173-303-806(4)(a)(vii), 340, 350, 360, 640(7), 650(5), 660(6)]

**TABLE OF CONTENTS**

	<u>PAGE</u>
<b>G.1 GENERAL INFORMATION.....</b>	<b>11</b>
G.1.1 PURPOSE.....	11
G.1.2 PLAN AVAILABILITY .....	11
G.1.3 GOVERNING REGULATIONS AND PERMITS.....	11
G.1.4 RELATED DOCUMENTS.....	11
G.1.5 MWF DESCRIPTION.....	12
G.1.6 DANGEROUS WASTE CATEGORIES AND QUANTITIES MANAGED.....	12
G.1.7 OCCUPANCY .....	12
G.1.8 SITE SECURITY AND ACCESS.....	12
G.1.9 MWF LAYOUT AND OPERATIONS.....	12
<b>G.2 EMERGENCY RESPONSE ORGANIZATION .....</b>	<b>15</b>
G.2.1 EMERGENCY COORDINATOR.....	15
G.2.2 EMERGENCY RESPONSE GROUPS .....	15
G.2.3 OFFSITE EMERGENCY RESPONDERS.....	16
G.2.4 TRAINING .....	16
<b>G.3 CIRCUMSTANCES PROMPTING PLAN IMPLEMENTATION .....</b>	<b>17</b>
<b>G.4 EMERGENCY RESPONSE PROCEDURES .....</b>	<b>19</b>
G.4.1 GENERAL EMERGENCY PROCEDURES.....	19
G.4.2 INCIDENT COMMAND AND NOTIFICATION .....	26
G.4.3 IDENTIFICATION OF DANGEROUS MATERIALS.....	28
G.4.4 HAZARD ASSESSMENT AND REPORT.....	<del>29</del> 29
G.4.5 PREVENTION OF RECURRENCE OR SPREAD OF FIRES, EXPLOSIONS, OR RELEASES.....	<del>29</del> 30
G.4.6 POST-EMERGENCY ACTIONS.....	<del>30</del> 30
G.4.7 FINAL NOTIFICATION OF AUTHORITIES .....	<del>33</del> 33
<b>G.5 PREVENTION OF RECURRENCE OR SPREAD OF FIRES, EXPLOSIONS OR RELEASES.....</b>	<b><del>34</del>35</b>
G.5.1 RECORD KEEPING.....	<del>34</del> 35
G.5.2 DRILLS AND EXERCISES.....	<del>34</del> 35
G.5.3 OPERATIONAL PROCEDURES .....	<del>35</del> 36
G.5.4 OPERATIONAL CONTROLS IN RESPONSE TO ABNORMAL CONDITIONS .....	<del>38</del> 39
<b>G.6 EMERGENCY EQUIPMENT.....</b>	<b><del>40</del>41</b>
G.6.1 PROTECTIVE CLOTHING .....	<del>40</del> 41
G.6.2 RESPIRATORY PROTECTION EQUIPMENT .....	<del>40</del> 41
G.6.3 FIRE EXTINGUISHERS .....	<del>40</del> 41
G.6.4 SPILL RESPONSE EQUIPMENT.....	<del>40</del> 41
G.6.5 AIR SURVEY INSTRUMENTATION .....	<del>40</del> 41
G.6.6 COMMUNICATIONS EQUIPMENT.....	<del>40</del> 41
G.6.7 EQUIPMENT MAINTENANCE.....	<del>40</del> 41
<b>G.7 COORDINATION AGREEMENTS .....</b>	<b><del>42</del>43</b>
G.7.1 LOCAL .....	<del>42</del> 43
G.7.2 STATE .....	<del>42</del> 43
G.7.3 FEDERAL.....	<del>42</del> 43
<b>G.8 EVACUATION PLAN.....</b>	<b><del>44</del>45</b>

This page intentionally left blank.

**TABLES**

	<u>PAGE</u>
1. Emergency Response Contact Information.....	6
2. Hazard Classification.....	49
3. Emergency Conditions and Corresponding Incident Criteria.....	51
4. Volume of Liquid and Solid Waste in Containers and Equipment (Tanks, Miscellaneous Units).....	53
5. Personnel Responsibilities for Incident Alert.....	57
6. Procedures to be Used for Assessment of Direct and Indirect Impact of Material Release to Human Health and the Environment.....	59
7. MWF Emergency Response Equipment Inventory.....	61
8. Fire Suppressants and Usage.....	63
9. Typical Material and Equipment for Release Containment and Cleanup.....	65
10. Systems Supported by the Emergency Generator.....	67
11. Emergency Generator Load Distribution.....	69
12. General Purpose Decontamination Solutions.....	71
13. Minimum Quantities of Decontamination Reagents Maintained On-Site.....	71

**FIGURES**

	<u>PAGE</u>
1. General Location Map.....	74
2. Site Layout Map.....	75
3. Building 13 Fire Detection and Annunciation.....	76
4. Building 13 Smoke Detectors.....	78
5. Building 13 Safety Equipment.....	79
6. Site Assembly Areas for Evacuation.....	80
7. Overview of Hazardous Material Incident Notification.....	81
8. Injury Response Flow Chart.....	83
9. Fire/Explosion Response Flow Chart.....	85
10. Spill Response Flow Chart.....	87
11. Vapor Release Response Flow Chart.....	89
12. Off-Site Release Flow Chart.....	91
13. Extreme Natural Event Response Flow Chart.....	93
14. Power Failure Flow Chart.....	95
15. Filter Fan Failure Flow Chart.....	97
16. Activation of the Contingency Plan.....	99
17. Spill of PCB Containing Material.....	101

**APPENDICES**

	<u>PAGE</u>
A. Contingency Plan Distributions and Locations.....	111
B. Coordination Agreements.....	115
C. Evacuation Plan.....	119
D. Certification Statement.....	127

This page intentionally left blank.



## ACRONYM LIST

ACB	Access Control Building
AWFCO	Automated Waste Feed Cut-Off
BCAA	Benton Clean Air Authority
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
EC	Emergency Coordinator
Ecology	Washington Department of Ecology
EPA	Environmental Protection Agency
ERG	Emergency Response Group
ERO	Emergency Response Organization
<del>GASVIT™</del>	<del>Gasification/Vitrification</del>
GPM	Gallons per Minute
<del>GVB</del>	<del>GASVIT™ Building</del>
H <sub>2</sub>	Hydrogen
HAZMAT	Hazardous Material
IBC	Intermediate Bulk Containers
ICS	Incident Command System
ID	Induced Draft
IDLH	Immediately Dangerous to Life or Health
MLLW	Mixed Low Level Waste
MWF	Mixed Waste Facility
<del>MWT</del>	<del>Mixed Waste Thermal Building</del>
MWOP	Mixed Waste Operational Procedure
MTCA	Model Toxics Control Act
MSDS	Material Safety Data Sheet
NFPA	National Fire Protection Association
O <sub>2</sub>	Oxygen
OSHA	Occupational Safety and Health Agency
PCB	Polychlorinated Biphenyl
PESI	Perma-Fix Environmental Services
<del>PFNW</del>	<del>Perma-Fix Northwest Incorporated</del>
PFNW-R	Perma-Fix Northwest, Richland Incorporated
PLC	Programmable Logic Controller
PPE	Personnel Protective Equipment
PPM	Parts Per Million
RCA	Radiological Control Area
RO	Reverse Osmosis
RCRA	Resource Conservation Recovery Act
RSO	Radiation Safety Officer
SCBA	Self Contained Breathing Apparatus
STB	Stabilization Building
TSCA	Toxic Substances Control Act
TLD	Thermo Luminescent Dosimeter
TSD	Treatment, Storage, or Disposal
WAC	Washington Administrative Code
WAP	Waste Analysis Plan
WDOH	Washington State Department of Health
WSB	Waste Storage Building

This page intentionally left blank.

**TABLE 1<sup>1</sup>  
EMERGENCY RESPONSE CONTACT INFORMATION**

**COMPANY OFFICES**

MWF Plant Site                      2025 Battelle Boulevard; Richland, Washington 99354                      (509) 375-5160

**PERSONNEL**

<b>Emergency Coordinators</b>	<b>Name</b>	<b>Cell</b>	<b>Home Telephone</b>
Emergency Coordinator/RSO	Curt Cannon	(509)521-4740	(509) 588-6225
Alternate RSO/HP Manager	Scott Call	(509) 438-1225	(509) 627-4227
Regulatory Compliance Officer	Barry Nichols	(859) 394-2979	(859) 394-2979
Vice President and General Manager	Richard Grondin	(509) 528-0492	(509) 628-0510
Plant Operations Manager	Chuck White	(509) 551-6004	(509) 943-6920

**OFF-SITE RESPONDERS**

Emergency Assistance	911
Richland Fire Department	911
Kadlec Medical Center	(509) 946-4611
Richland Police	911

**AGENCY NOTIFICATION TELEPHONE NUMBERS**

Washington State Department of Health, Division of Radiation Protection	(206) 682-5327
Washington Military Department, Emergency Management Division	(800) 258-5990
Washington State Department of Ecology (Central Region)	(509) 575-2490
Benton County Emergency Management	(509) 628-2600
Chemtrec (Hazardous DOT)	(800) 424-9300
National Response Center	(800) 424-8802
Environmental Protection Agency, Region 10	(206) 553-1263

**Refer to Table 3 to identify primary responders and incident termination criteria.**

<sup>1</sup>Table 1.0 is an example format and does not depict all formats that may be used at the Mixed Waste Facility.

This page intentionally left blank.

**G.1 GENERAL INFORMATION**

**G.1.1 Purpose**

This Contingency Plan (Plan) is for the Perma-Fix Northwest Richland, Incorporated (PFNW-R) Mixed Waste Facility (MWF) in Richland, Washington. PFWN-R is a wholly-owned subsidiary of Perma-Fix Environmental Services (PESI). The Plan prescribes procedures and resources for MWF personnel to respond to unplanned sudden or non-sudden release of dangerous materials due to operator error, equipment failure, fires, explosions, natural disasters and other potentially injurious or damaging events. It identifies an emergency response organization, provides procedures to be followed, establishes requirements for reporting and record-keeping, identifies needed on-site emergency equipment, describes coordination arrangements with off-site emergency response organizations, and lays out the site evacuation plan.

This plan, and its associated procedures, applies to all personnel that are present on the MWF site. This includes, but is not limited to, MWF staff, temporary staff, contractors and subcontractors, visitors, emergency responders, auditors and inspectors, and any other on-site personnel (including employees, contractors, and visitors of any company that lease space at the MWF).

**G.1.2 Plan Availability**

Copies of this Plan are retained in the offices at the MWF site. Copies have been submitted to all agency locations listed in Appendix A.

**G.1.3 Governing Regulations and Permits**

This Plan was prepared to meet State and Federal requirements including those requirements outlined in the Washington Administrative Code (WAC) 173-303-806(4)(a)(vi) and (vii); WAC 173-303-340, -350, -360, -640(7), -650(5), and -660(6); and in Title 40 of the *Code of Federal Regulations*, Part 264 (40 CFR 264. Subpart D-56) and -264.196 and 40 CFR 761.120-187.

Operation of the MWF is regulated under the Washington State Department of Ecology's (Ecology) Dangerous Waste Regulations (WAC 173-303) and the Federal Resource Conservation and Recovery Act (RCRA) and the Toxic Substances Control Act (TSCA) regulations. Permits required include a Radioactive Materials License, issued by the Washington State Department of Health (WDOH), and a mixed waste and mixed-TSCA regulated polychlorinated biphenyl (PCB) waste permit issued by Ecology. Operation of the MWF also requires approval of a notice of construction for a new source by the Benton Clean Air Authority (BCAA) and approval from the Environmental Protection Agency (EPA) under TSCA for the storage and disposal of PCBs.

In addition to the above environmental permits, the MWF is constructed in accordance with local building permits as required by the City of Richland.

**G.1.4 Related Documents**

This document has been prepared as a "stand-alone" document for identifying, assessing and responding to hazardous material releases and other emergency situations. Other related documents include:

1. Emergency Plan
2. Facility Inspection Plan
3. Waste Analysis Plan
4. Quality Assurance Plan

**G.1.5 MWF Description**

G.1.5.a MWF Location

The facility is located at 2025 Battelle Blvd, Richland, WA, 99354 [Latitude 46° 20' 32" North (degrees, minutes, seconds) and longitude 119° 17' 52" West (degrees, minutes, seconds)] The facility is an industrial area within the City of Richland and is approximately 0.8 km (0.5 mile) south of Horn Rapids Road and 1.1 km (0.7 mile) west of Stevens Drive in the northwest quarter of Section 22, Township 10 N, Range 28 East, Willamette Meridian. A map showing the overview of the site is included as Figure 1.

G.1.5.b MWF Ownership and Management

The MWF facility is owned by Perma-Fix Northwest Richland, Inc. (PFNW-R). The corporate office is located at 8302 Dunwoody Place, Suite 250, Atlanta, Georgia 30350.

**G.1.6 Dangerous Waste Categories and Quantities Managed**

The MWF stores and/or treats mixed low-level waste (MLLW). Mixed wastes are materials that are contaminated with hazardous/dangerous compounds and radioactive material. Table 4 lists the location where MLLW and mixed-TSCA regulated PCB waste are stored. Also included in Table 4 are the storage limits (by volume) for each type of waste in each storage area.

**G.1.7 Occupancy**

~~The MWF was permitted under the premise that the Stabilization Building (STB), the Waste Storage Building (WSB), and Gasification/Vitrification (GASVIT™) Building (GVB) were going to be separate structures. All of these operations are now housed in one structure (Building 13MWF) which is divided into three main areas: Stabilization Building (STB), 2. Waste Storage Building (WSB), and the Mixed Waste Thermal Building (MWTH). Each of these operations have their own dedicated locations within the structure.~~ Hereinafter, this document will use the phrases Stabilization Area, GASVIT™-MWTH Area, and Waste Storage Area, ~~respectively,~~ to distinguish between the different areas within Building 13 where each of these operations occurs.

Areas of the MWF staffed by employees and contractors include the Access Control Building (ACB or Building 17), the Stabilization Area, the Waste Storage Area, and the GASVIT™Thermal Area. Under normal operating scenario, the operations in the MWF are staffed nine (9) to ten (10) hours per day, four (4) to five (5) days per week. Occasionally, the treatment operations will run 24 hours per day. Security personnel are maintained on-site 24 hours per day, 7 days per week.

**G.1.8 Site Security and Access**

Site security and access control points are shown in Figure 2. All emergency vehicles will stop at the main gate near the northwest corner of the facility. Security at the main gate is notified of any emergency situation and no vehicles other than emergency response are permitted to enter the MWF during an emergency incident. A representative from the onsite emergency response team will direct off-site emergency responders to the appropriate location.

**G.1.9 MWF Layout and Operations**

Figure 2 shows the relative locations of the MWF Yard, the Radiological Control Area (RCA), the ACB, the Stabilization Area, the Waste Storage Area and the GASVIT™Thermal Area. The arrangement of rooms housing the various process operations, safety and protective equipment, support services and amenities are shown in Figures 3, 4, and 5. The designated locations, types and volumes of wastes to be stored are shown in Table 4. Figure 6 shows evacuation routes for the facility. It should be noted,

however, that this contingency plan only covers areas that treat or store mixed waste (i.e., Building 13) and mixed waste loading and unloading areas.

Details are as follows:

G.1.9.1 MWF Yard and Truck Bay

The MWF yard boundary is delineated by the Radiological Control Area (RCA) fence. The yard provides space for staging of the waste shipment vehicles. The yard also provides a safe distance between the treatment/ storage buildings and the RCA boundary fence.

G.1.9.2 Treatment, Storage, or Disposal (TSD) Facility Boundary

The TSD boundary is contained within the RCA. The RCA encompasses the yard, portions of ACB, and the Waste Storage Area, Stabilization Area, and GASVIT™-MWTH Areas of Building 13. The RCA boundary in the yard is delineated by a six foot high chain-link fence. The RCA boundary is posted "Caution - Radioactive Material Area" and "Caution - Radiological Control Area." Personnel access to the Waste Storage Area, Stabilization Area, and MWTH Area is through ACB. Vehicle access to inside the RCA fence is through a gate adjacent to ACB. Both personnel and vehicle accesses to the site are subject to security and radiation control requirements. All personnel leaving the site are checked for radiation contamination before exiting the RCA. Likewise, incoming waste shipment vehicles are inspected before entering the RCA gate. Waste shipments are allowed to enter the RCA gate only after the initial vehicle radiation surveys are conducted and manifests and waste profile documents have been checked and found to be acceptable. Except for incoming hazardous wastewaters in tanker trucks, incoming and outgoing waste transportation vehicles are staged on the west side of Building 13 and inside of the RCA at the truck loading area or outside of the RCA at the rail loading area. Typically, vehicles are unloaded or loaded by fork-lift trucks. Occasionally, overhead cranes are used to unload large containers and/or equipment. Incoming hazardous wastewater tanker trucks undergo radiation survey and document review outside the RCA boundary. If found acceptable, tanker trucks then enter the MWF and are unloaded into hazardous wastewater storage tanks in the MWTH building. After unloading or loading operations, the trucks are inspected for radiation contamination and are allowed to leave the RCA only after they pass the inspection.

G.1.9.3 Stabilization Area of Building 13

Operations in the Stabilization Area of Building 13 include, but are not limited to, the following:

1. Access corridor,
2. Containerized waste storage
3. Bulk container storage,
4. Container inspection,
5. Cutting and shearing,
6. Size reduction,
7. Sorting and stabilization,
8. Compaction and liquid handling,
9. Empty container rinsing,
10. Building Ventilation,
11. Control room, and
12. Analytical Laboratory.

The types of waste to be treated in the stabilization area include hazardous waste, radioactive waste, TSCA-regulated waste, and any combination of these three wastes.

G.1.9.4 GASVIT™MWT Area of Building 13

Operations in the ~~GASVIT™~~-MWT Area of Building 13 include, but are not limited to, following

1. Gasification and vitrification of waste,
2. Waste feed preparation,
3. ~~PCB waste staging~~
4. Hazardous Materials ~~Enclosure-Transfer~~ (including waste staging, opening, sampling, and transferring ~~storage tanks, evaporators, or sludge tank~~)
5. Electrical power distribution,
6. Building ventilation system,
7. ~~Control Room, and~~
7. ~~Utility Room~~
8. ~~Evaporation System (storage tanks, sludge tank, and two evaporators)~~

G.1.9.5 Waste Storage Area of Building 13

Operations in the Waste Storage Area(s) of Building 13 include, but are not limited to, the following:

1. Raw waste storage,
2. Treated waste storage (north),
3. Treated waste storage (south), and
4. Covered storage pad.

G.1.9.6 ACB - Building 17

This building houses, but is not limited to, the following functions:

1. Routine personnel access to the RCA,
2. Emergency personnel decontamination shower,
3. Changing rooms, and
4. Administrative functions (e.g., offices, conference rooms, break rooms, etc.).

**G.2 EMERGENCY RESPONSE ORGANIZATION**

The Emergency Response Organization (ERO) consists of an Emergency Coordinator (EC), an Emergency Response Group (ERG) and various off-site emergency responders. The EC serves as the ultimate authority in situations that require activating emergency procedures. The ERG is composed of staff trained for the necessary posts.

Medical service arrangements have been made with Kadlec Medical Center in Richland. As a back-up, Kennewick General Hospital in Kennewick may be used. Police support will be provided by Richland Police Department and off-site fire fighting support will be provided by the Richland Fire Department.

**G.2.1 Emergency Coordinator**

*350(3)d, 360(1)*

The names, titles, office and cell phone numbers, and duties of primary and alternative emergency coordinators are provided in Table 1. The EC is authorized to commit the necessary resources to carry out the Contingency Plan in the event of an emergency (see certification in Appendix D). All personnel acting as an EC will be:

1. Familiar with all aspects of this contingency plan,
2. Familiar with all operations and activities at the facility,
3. Familiar with the location and properties of the wastes handled at the facility,
4. Familiar with the locations of all environmental records within the facility, and
5. Familiar with the layout of the facility.

Information on contacting the EC is contained on the Emergency Response Contact Information sheet located in the front of this plan and in the Tables section of this plan. Emergency contacts and telephone numbers, shown in at the front of this document, will be revised as necessary.

The EC has full authority to commit the necessary resources to implement the response actions specified in this Plan and to carry them out until the incident ends satisfactorily. The primary EC or alternate will continue executing EC duties until either a higher authority EC-candidate arrives on the scene to assume the EC role, or the EC role is transferred to a more qualified outside emergency responder. In all cases, the EC on-duty will promptly update any new EC on the status of an incident.

**G.2.2 Emergency Response Groups**

The on-site ERG provides support to the EC during an emergency response. The ERG may consist of individuals ready to serve as required in the following functional areas (as appropriate):

1. Emergency Coordinator (responsible for overall implementation of plan)
2. Radiation Safety Officer/Health Physics Manager (assist the EC in matters relating to radiation protection)
3. Regulatory Compliance Officer (providing guidance to the EC in matters relating to hazardous waste)
4. Vice President and General Manager (responsible for interfacing with the corporate office)
5. Plant Engineering/Maintenance Manager (providing the EC with information on engineering issues associated with the incident)
6. Public Information Officer (assisting the EC in contact with the public)

This list does not preclude the ERG from adding additional individuals with other fields of expertise should they be needed for the response to a specific incident.

**G.2.3 Offsite Emergency Responders**

Table 1 lists the entities external to the MWF operations that are called upon to respond to emergencies. A copy of this Plan has been distributed to the organizations listed in Appendix A. Emergency response coordination agreements are included in Appendix B of this Plan.

**G.2.4 Training**

The Training Plan of the RCRA/TSCA permit (Permit Number WAR000010355) describes the minimum training required for personnel at the facility.

**G.3 CIRCUMSTANCES PROMPTING PLAN IMPLEMENTATION**  
*350(1) and (2), 360(2)*

The objectives of enacting emergency procedures are to protect workers, public health and the environment. When possible and without compromising the aforementioned objectives, actions are also taken to protect the integrity of the plant and its equipment.

As a rule, the first priority of response action is to prevent additional personnel injury. Recognizing that incidents that lead to personnel injuries during the early stages of an event are likely to pose additional threats to personnel on the scene, MWF staff are trained to recognize hazards and are familiar with incident reporting procedures and personnel evacuation procedures.

The Contingency Plan will be implemented when damaged shipments are received as well as for fires, explosions, spills and releases that could threaten either human health or the environment. However the Contingency Plan may not be activated for a small spill that does not exceed de minimis losses, as defined in 40 CFR 261.3(a) (2) (iv) (D). De minimis losses include those from normal material handling operations (e.g. loading and unloading wastes into equipment, or leaks from process piping) or other plant operations. These spills will be cleaned up as part of the normal site operations.

The EC may use the following guidelines to determine if an event has met the requirements of WAC 173-303-360(2)(a):

1. The event involved an unplanned spill, release, fire, explosion, or receipt of damaged shipment of mixed waste

AND

- 2.a The unplanned spill or release involved a dangerous waste, or the material involved became a dangerous waste as a result of the event (e.g., product that is not recoverable.)

OR

- 2.b The unplanned fire or explosion occurred at the waste processing equipment or storage area or transportation activity subject to the RCRA contingency planning requirements

AND

3. Time-urgent response from an emergency services organization was required to mitigate the event, or a threat to human health or the environment exists.

As soon as possible, after stabilizing event conditions, the EC shall determine if notification to the Ecology is needed to meet WAC-173-303-360 (2)(d) reporting requirements. If all of the conditions under 1, 2, and 3 above are met, notifications are to be made to Ecology. Any release above the "reportable quantity" must also be reported to the National Response Center. If review of all available information does not yield a definitive assessment of the danger posed by the incident, a worst-case condition may be presumed and appropriate protective actions and notifications will be initiated. The EC is responsible for initiating any protective actions based on his or her best judgment of the incident.

The EC will assess each incident to determine the response necessary to protect personnel, the facility, and the environment. If outside assistance from Richland Police Department, Richland Fire Department, or ambulance units is required, the Emergency Response Number (911) must be used to request the desired assistance.

Figure 16 shows the methodology for determining whether to activate the contingency plan.



**G.4 EMERGENCY RESPONSE PROCEDURES**  
*350(3)(a) and (b), 360(2)(a),(b) and (c)*

These procedures will be implemented to lessen the potential impact on human health and the environment in the event of an emergency incident. The first rule of any emergency response is to ensure the safety of the responding personnel. It is the facility's policy that no workers or persons, including emergency responders, are expected to take unreasonable risk by entering into hazardous circumstances while responding to an emergency. The hierarchy of importance will be as follows: personnel safety, long-term environmental impact, plant/equipment integrity, short-term environmental impact.

As a rule of thumb, any emergency response is to ensure the safety of the responding personnel. It is policy that workers or persons, including emergency responders, are not expected to take unreasonable risk by entering into hazardous circumstances while responding to an emergency. ~~The hierarchy of importance shall always be, in decreasing order: personnel safety, long-term environmental impact, plant/equipment integrity, short-term environmental impact.~~

Comment [BN1]: Redundant.

It is within this framework that the emergency response organization is structured and that all response actions are carried out.

**G.4.1 General Emergency Procedures**

Actions to be taken to control hazards for specific situations are described in the following sections. Figures 8 to 15 are provided in support of hazard control for both single and multiple events.

G.4.1.1 Management of Damaged Shipments

**Receipt**

Incoming trucks will enter the MWF through the Battelle Blvd. access road and park outside the MWF security gate. If the truck passes the inspection, it will be allowed to enter the MWF yard through the security gate. Rail vehicles will enter the facility property via the rail spur from the south and will be loaded and unloaded at the rail loading area. Containers will be inspected prior to being transferred from the rail loading area to the MWF.

**Inspection**

Once inside the loading and unloading areas, the containers in shipment are visually inspected for any evidence of damage, leakage or loss of integrity. When a waste shipment arrives at the MWF, and visual inspection reveals that the shipment container is damaged or that there is a weight or variance in piece count, an incident of potential release has occurred (also known as discrepancies).

**Dealing with Discrepancies**

Leaking or failed containers may have their contents transferred to a compatible container or placed inside a "salvage container" using a safe handling procedure. Factors such as radiological contamination and the size of the container may require that a leaking or failed container is patched or repaired to allow the container to be safely moved into the MWF. Staff will assess the magnitude of the discrepancy or the potential or actual release and immediately notify the MWF EC. The EC or designee will direct emergency response actions. Additional actions may be required depending on the specific situation. The generator (shipping originator) may be notified of the damaged shipment. Hazardous properties of the shipment content may be ascertained by consulting with the generator and

by examining the information in the pre-shipment documents and on the shipment manifest. Any required emergency response operations may be aided by this information.

A container that does not pass the confirmation inspection process is moved and placed in an appropriate storage location as soon as such a discrepancy is discovered and the waste can be moved safely. The rejected container will be kept there during the resolution process that includes notifying the generator and attempting to resolve the discrepancy. If it becomes evident that the container can not be processed by MWF, arrangements are made for re-containerizing the shipment and returning the container back to the generator or another MWF, as authorized by the generator.

**Acceptance**

If discrepancies are successfully resolved, the container is formally accepted and moved to designated storage areas. Similarly, when inspections reveal there are no discrepancies on a shipment, the waste is accepted into the MWF and moved to the appropriate storage area.

G.4.1.2 Fire/Explosion

In the event of a fire or explosion, the procedures in Figure 9 (Fire/Explosion Response Flow Chart) will be implemented unless the fire can be safely extinguished by those at the scene. In this situation:

1. Non-emergency-response personnel evacuate the affected area.
2. Notification to the fire department is made.
3. The person at the scene then uses portable fire extinguishers to control the fire if ALL of the following conditions are met:
  - a. the person is trained to use fire-suppression devices effectively,
  - b. the fire is assessed to be controllable with the fire extinguisher devices available to the person and is not threatening further danger by explosion or contact with toxic gases,
  - c. an escape path exists and is not likely to be blocked by advancing fire, and
  - d. the fire-fighting attempt does not expose the person to hazardous materials.
4. In any event, if the fire is not extinguished within a few minutes, the person will abandon the effort and evacuate the area, leaving building doors open.
5. The EC will provide updates of the following information to the responding fire department as requested:
  - a. Caller's name,
  - b. Company name/location,
  - c. Type and intensity of fire,
  - d. Exact location of the incident,
  - e. Properties of materials involved,
  - f. Potential for fire spreading to other dangerous materials,
  - g. Extent of spread of released material to the air and surrounding areas,
  - h. Potential exposure to hazardous vapors and/or radiation,
  - i. Need for additional outside assistance and/or evacuation,
  - j. Proper extinguishing agent (i.e., water, foam, dry chemical, etc.),
  - k. Wind direction and recommended direction of approach,
  - l. Meeting location, and
  - m. Further means of communication.
6. If the fire is large, spreading rapidly or threatens further danger, personnel will be evacuated.

7. Upon arrival of the fire department crew, the duties of the EC will be transferred to the fire department crew chief.
8. The ERG members will stay near the Incident Command Post and lend assistance to the EC (fire crew chief) as requested.
9. Only personnel, and outside emergency responders who are issued radiation monitoring devices (i.e., pocket dosimeters) and who are wearing appropriate protection equipment shall be allowed in the vicinity of the fire-fighting operations.
10. Affected areas will be monitored for potential release of hazardous materials. Radiation in the form of external radiation levels and airborne concentrations of radionuclides will be monitored.
11. If an evacuation is necessary the Evacuation Plan presented in Appendix C shall be implemented.

G.4.1.3 Vehicle Fires and Brush Fires:

Due to the likely presence of volatile, flammable and possibly explosive gasoline or diesel fumes, workers are not expected to attempt to extinguish vehicle fires. Similarly, workers are not expected to fight brush fires. Site security is responsible for diverting any onsite traffic away from the accident area and securing all access control stations to eliminate additional traffic. A representative from the onsite emergency response team will direct all off-site emergency responders to the appropriate location.

G.4.1.4 Spills and Releases

In response to a spill and release setting up down wind evacuation distances are dependent on the nature and magnitude of the spill. For this Contingency Plan, small and large spills are defined according to the Emergency Response Guidebook. A small spill is less than 200 liters (approximately 52 gallons). A large spill is greater than 200 liters (approximately 52 gallons).

Responses to spills, vapor releases and releases with potential or actual off-site impact are shown in the flow charts of Figures 10, 11, and 12. In general:

1. Standing liquids will be bermed to prevent run-off and treated with approved sorbents as soon as possible.
2. Absorbents containing hazardous liquids will be placed in containers which will be moved to safe storage.
3. Verification will be made that contaminated surfaces are appropriately cleaned and/or decontaminated.
4. Solids will be collected into containers, which will be moved to safe storage.
5. Incompatible wastes generated during an incident will be separated by means of a berm by a separate containment system (i.e., pallets or portable sheds). No waste that might be incompatible with the released material will be treated or stored in impacted equipment or containment areas until cleanup is completed.

For spills of PCB-contaminated wastes of 50 parts per million (ppm) or greater, the notification, spill response procedures, and reporting will be done in accordance with the steps listed in Section G.4.2.3 and G.4.7 and in compliance with 40 CFR Part 761, Subpart G. See Figure 17.

The general response to prevent releases under extreme natural events is shown in Figure 13.

G.4.1.5 Shutdown of Operations

G.4.1.5.1 EC Directed Shutdown

If required, the EC will communicate the need to shut down operations and whether evacuation is required and whether potential downwind receptors need to be notified. If time allows, one of the following shutdown procedures will also be initiated as appropriate:

1. Proper isolation or containment of the emergency which does not require shutdown of the operating unit or plant.
2. Normal operating unit or plant shutdown (30 minutes or less).
3. Rapid securing of the operating unit or plant shutdown (15 minutes or less).
4. Immediate securing of the operating unit or plant shutdown (less than 5 minutes)

G.4.1.5.2 Power Loss Shutdown

The procedures followed in the event of a power failure are shown in Figure 14. The response to a filter fan failure either from power loss or hardware failure is shown in Figure 15.

~~G.4.1.5.3 GASVIT™ Automatic Waste Feed Cut Off (AWFCO)~~

~~The feed control and AWFCO logic is the overall safeguard of the GASVIT™ system for ensuring that the emissions from the process are controlled and that system is automatically shut down in the event that a critical process parameter is outside of the operating range specified in the permit.~~

~~The AWFCO is designed to automatically shut down the GASVIT™ feeders in the event a critical process parameter drifts outside the normal operating range specified as permit operating limits. The AWFCO subsystem integrates key instrumentation from the feed subsystem, process chamber subsystem, and syngas processing subsystems to initiate a single total feed shutdown to ensure GASVIT system permit compliance. AWFCO is implemented by a controller which is housed inside the main programmable logic controller (PLC).~~

~~The following critical process parameters are alarmed and used as inputs to the AWFCO controller. Under normal conditions, these parameters are kept within the specified operating range, the AWFCO controller is not activated; and waste feeding to the process chamber is permitted. In the event one of these critical parameters reaches the specified set point, the AWFCO controller will activate interlock logic that will stop the feeding process until the parameter returns to the normal operating range. Operator action is required to reinstate feed flow to the system.~~

~~The automatic interlock will shut down the feeding process for each of the three feed systems as follows:~~

- ~~1. The control signal to the liquid feed solenoid will be interrupted, closing the valve and preventing liquid feeding.~~
- ~~2. The control signal to the solids feed solenoid will also be interrupted, closing the valve and preventing solid feeding.~~
- ~~3. The close signal to the batch feeder charge chamber feed gates motor will be initiated, closing the gates and preventing batch feeding.~~

For Interlock setpoints refer to Tables VI-3 and VII-3 of the Permit for the Storage and Treatment of MLLW and for Storage and Disposal of Mixed TSCA Regulated PCB Wastes.

In addition to generating inputs to the AWFCO controller, the Syngas Discharge Flow Rate device (related alarm: Hi flow) on the syngas discharge initiates an alarm at the PLC/computer when an out-of-spec condition occurs.

G.4.1.6 Monitoring Under Emergency Shutdown Conditions

If the MWF stops operations in response to an emergency, the EC or designee will monitor valves, pipes, and other equipment for leaks, pressure buildup, gas generation, or ruptures, as necessary and practical. Inspections will follow procedures described in the Facility Inspection Plan.

Any areas that appear to have the potential for ignition of a fire or explosion are isolated and the Richland Fire Department notified for appropriate action.

G.4.1.7 Tank System Releases

Leaking tank systems or secondary containments are removed from service immediately. The system is inspected to determine the cause of the release. Staff will remove the waste from the system within 24 hours to prevent further release of hazardous waste to the environment and to allow inspection and repair of the tank system to be performed. If the integrity of the tank system is compromised by the release, the tank system will be returned to service only when the extensive repairs are certified in accordance with 40 CFR 264.196(f).

G.4.1.8 Area Decontamination and Clean-Up Levels

Immediately after a release is under control, clean-up actions will commence. ERG will ensure that:

1. All clean-up personnel are issued with necessary respiratory and personal protective equipment including personal radiation dosimeters,
2. The impacted area is monitored for dangerous vapors and radiation levels and the extent of release of hazardous materials is determined,
3. Corrosive spills are neutralized (pH adjustment),
4. Reactive materials are chemically treated,
5. Contents from leaking containers are transferred to compatible containers, the container and contents are overpacked, or the container is patched or repaired to allow safe movement into the MWF.
6. Solid surfaces impacted by released material are decontaminated, (e.g., exterior surfaces of intact containers, equipment, floors, containment systems, etc).
7. Contaminated soil and any contaminated porous materials that cannot be decontaminated is disposed,
8. Recovered materials are sampled and placed in containers for classification and determination of proper disposal technique,
9. Decontaminated surfaces are sampled to determine adequacy of cleanup, and
10. Cleanup is to background or non-detect levels or levels established based on standard risk assessment procedures and/or criteria (i.e., Model Toxics Control Act or MTCA WAC 173-340-700 through 760).

G.4.1.9 Separation of Incompatible Wastes

Released material and contaminated debris are managed in a manner similar to that for incoming wastes to the MWF. They are checked for compatibility before they are placed into containers, so that incompatible wastes are not ~~be~~ in the same container. The containers are placed in storage areas appropriate for their compatibility class and in accordance with MWF operating procedures.

They remain in storage until analyses provide the necessary information to guide their final treatment/disposal.

G.4.1.10 Additional Response Based on Location and Process

The MWF consists of the following three waste management areas:

1. Stabilization Area of Building 13,
2. Storage Area of Building 13, and
3. **GASVIT™ Mixed Waste Thermal** Area of Building 13.

The potential of wide-spread contamination exists if process units or storage areas are involved in a fire or explosion. Additional emergency response considerations are described below for process and storage components in each area.

G.4.1.10.1 Stabilization Area of Building 13

Minor spills will be collected. The collected materials may be returned to the process units for treatment.

Other spills and releases from the process units in the Stabilization Area are most likely to occur during operations that transfer material between containers. Standard Operating Procedures and engineering controls for container handling, spill containment and area decontamination limit the likelihood and consequences of releases.

Releases may also occur as a result of malfunctioning equipment or unanticipated violent chemical reactions. If the spill is caused by malfunctioning of equipment, the equipment is to be taken out of service and not returned to service until the cause of its malfunctioning has been removed. For spills caused by unanticipated chemical reaction, further processing of a like-kind material is halted until a safe processing method is identified for this material.

G.4.1.10.2 Storage Area of Building 13

The storage units are designed and constructed for secondary containment of liquid and solid spills. On days when the MWF is operating, containers placed in these areas are subject to daily inspections. The term 'daily' shall mean only those days which the Permittee considers to be regular workdays which shall include Monday through Friday excluding holidays. In no case shall 72-hours elapse between inspections listed at a frequency of 'daily'. When the integrity of a container becomes questionable, the contents or the entire container with contents will be transferred into a container in good condition. The probability of unattended spills and leaks from primary containers is low. When a release occurs in a storage unit, the following takes place:

1. The person-at-the-scene alerts all workers in the affected area of the release
2. The person-at-the-scene reports the release to the EC and includes the information listed in Table 5 (Personnel Responsibilities for Incident Alert).

G.4.1.10.3 **GASVIT™ Mixed Waste Thermal** Area of Building 13 (MWTH)

Potential releases from the Evaporation System could occur in the MWTH area of the MWF due to leaks from storage tanks, evaporators, sludge tank, and pumps/valves

~~associated with the Evaporation System. The entire evaporation system is provided with a secondary containment inside the MWTB building with a capacity greater than the largest tank (i.e. 10,950 gallons) within the containment. Leaking equipment will be removed from service immediately and inspected to determine the cause of the release. Hazardous wastes from leaking storage/sludge tanks or evaporators will be removed if there is a risk of further release, and repairs of the leaking unit will be scheduled. If the integrity of the tank system is compromised and if it will require extensive repairs, the tank system will be returned to service only when the repairs are certified in accordance with 40 CFR 264.196(f). Any spills inside the secondary containment of the evaporation system will be cleaned up within 24 hours of discovery. In the GASVIT™ building there is potential for spillage of molten slag. The principal objective in responding to a spill of molten slag is to prevent development of secondary hazards, which include fire, damage of equipment (e.g., melting electrical wiring insulation), steam explosion and emission of hazardous compounds.~~

~~If the spilled slag threatens to cause a fire, the responders will isolate the slag from combustible materials, using proper isolation devices such as metal or other non-combustible berm materials. If possible, the slag is allowed to cool naturally without application of quench water. When the slag is sufficiently cooled, it is collected and stored for later treatment.~~

~~The responders apply a fine water mist spray onto the slag and the threatened combustible material and will continue to do so until the slag has cooled sufficiently to not present a fire hazard. The cooled slag is collected and stored in containment vessels. Quench water on the floor is recovered and assumed to be mixed waste or mixed TCSA regulated PCB waste and managed accordingly. Disposition of the recovered quench water depends on its confirmed presence or absence of hazard properties. Disposition may include, but is not limited to, treatment via one of the treatment processes of the plant, or shipment to a permitted off-site treatment storage disposal facility.~~

**G.4.1.11 Personnel Injured or Exposed to Hazardous Materials**

During an emergency, the primary concern is to prevent loss of life or injury to plant/area personnel. If immediate medical assistance is required to save a life, decontamination may be delayed until the victim is stabilized (this should be done only if the first responder is not endangered).

In the event that an individual is contaminated by hazardous materials, the EC and RSO will be notified immediately. If there is injury, actions to deal with the injury, shown in Figure 8 (Injury Response Flow Chart), shall take precedence over actions needed to deal with the contamination. If necessary, medical assistance will be summoned by calling “911”.

For all injuries, on-site first-aid/medical personnel will be alerted and they will immediately come to the aid of the injured. Directions to the hospital are available in Section C.10 of Appendix C (Evacuation Plan).

**G.4.2 Incident Command and Notification**

360(2)(a)

**G.4.2.1 Responding to an Incident Alert**

Upon the discovery of any imminent or actual emergency, personnel will activate the emergency alarm and promptly notify their supervisor and the EC of the situation. If there is a fire, the fire alarm will also be activated either manually or automatically as a result of heat or smoke detection.

Personnel responsibilities for incident alert are described in Table 5.

In the event of an emergency during a non-operational period, dialing the emergency phone number will connect the caller with the main gate security guard who will then contact the EC and if required, the appropriate off-site emergency services. A MWF map is available to the guard to assist in providing necessary details to the Emergency Coordinator.

Comment [BN2]: True????

G.4.2.2 Activating the Incident Command System

After being notified an incident has occurred, the EC will establish an Incident Command. The EC will assess the situation and arrive at a course-of-action based on the answers to the following questions:

1. What is the location of the incident (reference Figures 2 and 3) What personnel injury, if any, has occurred?
2. What is the likelihood that the situation will continue to threaten personnel safety and to cause additional personnel injury? (Refer to Table 6 for procedures to assist in making a determination).
3. What are the consequences, in terms of personnel safety, long-term environmental impact, equipment integrity and short-term environmental impact, if there is no intervention. Procedures to assess hazard impact, shown in Table 6, should be followed.
4. What does it take to rescue and protect the injured from further harm? Does it pose unreasonable risk to responder's safety?
5. What does it take to stabilize the emergency condition, in terms of human resource and equipment? How much time would be required before these human resources and equipment can be deployed?
6. What is the end-result of a "successful" response, as measured by personnel safety, long-term environmental impact, equipment integrity and short-term environmental impact, assuming a best-case scenario?

The EC assesses the situation and initiates the alert. As soon as possible after initiating the alert, the EC or designee will ensure that the Radiation Safety Officer (RSO) is notified.

G.4.2.3 Initial Notifications

G.4.2.3.1 MWF and Company Personnel

The EC or designee will activate the alarm or other communication systems to notify MWF personnel. The EC will contact available supervisors and indicate that an emergency is in progress. The site radio will be cleared and may be used to contact all employees with radios to advise them of the emergency condition.

G.4.2.3.2 Federal, State and Local Agencies

In addition, the EC or designee will ensure that the appropriate federal, state, or local authorities are contacted if their assistance is needed (see Contact Information at the front of this document). Notifications shall be at the earliest time consistent with the

emergency response effort, but will not be later than 24 hours from the onset of the incident. A notification flow chart is shown in Figure 7.

The EC or designee will immediately report to Ecology, but in no case longer than 24 hours, spills and/or leaks to the environment of hazardous materials. A written report will be submitted within 15 days

The National Response Center (NRC) will be notified if the emergency response involves a release of more than a reportable quantity to the environment in any 24-hour period greater than the minimum reportable quantities of release listed in 40 CFR § 302. The notification number provided from the NRC will be recorded and a written report submitted as required by 49 CFR 171.16 and/or 40 CFR 264.56(i).

**G.4.2.3.2 Outside Emergency Response Providers**

If necessary, the EC, or designee, will contact outside emergency service providers. The EC, or designee, will evaluate the severity and nature of the incident, and the character, source quantity and areal extent of the released materials. Contact information for outside emergency response providers to be notified in the event of a fire, release or explosion with the potential to threaten human health or the environment is provided in Table 1.

**G.4.3 Identification of Dangerous Materials**

*360(2)(b)*

For liquid spills and releases, the EC (or designee), with the PFNW ERG, will attempt to identify the character, source, quantity and aerial extent of the released materials through the following methods and sources of information:

1. Eyewitness accounts
2. Visual inspection of areal extent, fumes, odors, reactions
3. Origin of release including equipment involved (e.g., specific tank or container), type of waste stored or treated
4. In-plant records including container labels information, waste tracking data, manifests and generator waste profiles

Released materials will be identified by inspection of containers and their labels, inventory records, shipping manifests, or by consulting with MWF operations personnel.

If the proper identification cannot be made by using available information, it can be obtained by sampling and analysis. Mixed Waste Operational Procedure (MWOP) 719 is a general sampling and analysis plan that may be used to quantify the extent of contamination and the extent of clean-up. Samples will be taken for chemical analysis in the unlikely event that the chemicals of concern and their concentrations cannot be identified from existing records.

The EC, with the assistance of the ERG, will attempt to identify the character, exact source, amount, and areal extent of the release. The initial identification method may include visual inspection, if possible, of the material and location of the release.

For liquid spills and releases, the EC, with the ERG, will attempt to identify the character, exact source, amount, and areal distribution of the hazardous material. Released materials will be identified by

inspection of containers and their labels, sampling and analysis, inventory records, shipping manifests, or by consulting with MWF operations personnel.

G.4.3.1 Sampling and Analysis

If the proper identification cannot be made using available information, it can be obtained by sampling. Procedures and equipment used in the sampling and identification of dangerous materials are described in the Waste Analysis Plan (Attachment CC). Samples will be taken for chemical analysis by the on-site laboratory or by a certified off-site laboratory in the unlikely event that the chemicals of concern and their concentrations cannot be identified from existing records.

**G.4.4 Hazard Assessment and Report**

360(2)(c) and (d)

The selection of appropriate response actions will depend on the consideration and assessment of the following factors:

1. The severity and nature of the incident (i.e., fire, explosion, or material release)
2. The potential for severe consequences; what is the location of the incident and to what extent might other areas become involved; are persons off-site in danger; will surrounding property be damaged or contaminated; is there a threat to surface or groundwater?
3. The current weather conditions; temperature, wind direction and velocity and how response activities might be affected.

The above factors will also be used to assess the need for evacuation.

G.4.4.1 Hazard Categorization

Hazard assessment criteria and a hazard category for an incident allow effective communication between persons involved in the incident (person-on-the-scene, ERG members and outside emergency response agencies). The criteria also provide a basis for an assessment of the hazards to human health and the environment. Emergency circumstances at the MWF will be categorized as Class A, B, C, or D. The guidelines for determining the class of an incident are listed in Table 2. These guidelines are not strict rules and hence they do not mandate or limit the actions of the emergency responders.

The selection of appropriate response actions will depend on the consideration and assessment of the following factors:

1. The severity and nature of the incident (i.e., fire, explosion, or material release).
2. The potential for severe consequences
3. The location of the incident
4. To what extent might other areas become involved
5. Are persons offsite in danger
6. Will surrounding property be damaged or contaminated.
7. Is there a threat to surface or groundwater.
8. The current weather conditions (temperature, wind direction, and velocity) and how these parameters will affect response activities.

**G.4.5 Prevention of Recurrence or Spread of Fires, Explosions, or Releases**

360(2)(f) and (g), 630(2), 640(7) 264.56(e) and (f)

G.4.5.1 Preventative Procedures

Procedures to ensure that fires, explosions, or releases do not occur, re-occur, or spread to other dangerous waste at the MWF are provided in Section G.5.

G.4.5.2 Monitoring

Inspection of equipment for leaks, pressure build-up, gas generation or ruptures in valves, pipes and other equipment will be performed as described in Section G.4.1.6. Inspections and monitoring will follow procedures described in Section F (Procedures to Prevent Hazards) and Attachment ~~19EE~~, the Facility Inspection Plan.

**G.4.6 Post-Emergency Actions**

360(2)(h),(i),(j), and (k); 640(7)

G.4.6.1 Area Decontamination and Clean-Up Levels

Immediately after a release is under control, clean-up actions will commence. The ERG will ensure that:

1. all clean-up personnel are issued necessary respiratory and personal protective equipment including pocket radiation dosimeters.
2. the impacted area is monitored for dangerous vapors and radiation levels and the extent of release of hazardous materials is determined.
3. corrosive spills are neutralized (pH adjustment);
4. reactive materials are chemically treated;
5. contents from leaking containers are transferred or the container and contents are overpacked;
6. solid surfaces impacted by released material are decontaminated (e.g., exterior surfaces of intact containers, equipment, floors, containment systems etc.);
7. contaminated soil and any contaminated porous materials that cannot be decontaminated is disposed;
8. recovered materials are sampled and placed in containers for classification and determination of proper disposal technique;
9. decontaminated surfaces are sampled to determine adequacy of cleanup.
10. cleanup is to background or non-detect levels or levels established based on standard risk assessment procedures and/or criteria.

G.4.6.2 Separation of Incompatible Wastes

Released material and contaminated debris will be managed in a manner similar to that for incoming wastes to the MWF. These are checked for compatibility before they are placed into containers, so that incompatible wastes are not in the same container. The containers are placed in storage areas appropriate for their compatibility class and in accordance with the MWF operating procedures. They remain in storage until analyses provide the necessary information to guide their final treatment/disposal.

G.4.6.3 Personnel Decontamination

Emergency showers/eye bath equipment are placed in various locations near various processes throughout the MWF facility. ~~There is one decontamination shower located at the access control point in Building 17.~~

**Comment [BN3]:** PermaFix is removing this shower based on a redundancy of equipment in the MWF and radiological regulatory requirements.

Decontamination is performed if it can be done without interfering with essential life saving techniques. If an individual has been exposed to a highly toxic or corrosive material that could cause immediate and irreversible injury or loss of life, the individual must be cleansed immediately. The steps taken to cleanse personnel impacted by a chemical release are as follows:

1. Any personnel exposed to chemicals shall have the area affected subjected to an immediate water flush for 15 minutes in a safety shower. Personnel shall remove any and all clothing that may be contaminated. The cleansing process shall take place at the nearest emergency safety shower/eye bath in the area. If personnel require decontamination in addition to the immediate cleansing described above, the person will be taken to the decontamination shower located at the access control point in Building 17.
2. Clothing considered contaminated by chemicals must be treated or disposed of in accordance with RCRA requirements. If immediate transportation to an outside medical facility is necessary, the medical staff will remove contaminated clothing from the individual(s). No employee is to remove clothing from the process or change room that are considered contaminated without approval from both health physics staff and compliance department staff.

G.4.6.4 Equipment Decontamination and Replacement

Equipment decontamination and replacement facilitates the return to normal operations and enables the ERG to be ready to respond in the event of another incident. To establish readiness, the EC ensures the following actions are taken:

1. All equipment used during an emergency response is decontaminated, or if not practical to do so, disposed of and replaced.
2. Methods of decontamination are, but not limited to, steam cleaning, air purge, and chemical neutralization.
3. Decontaminated equipment is checked for proper operation before storage.
4. Depleted consumable materials such as neutralizing and absorbent materials will be restocked.
5. Fire extinguishers will be recharged or replaced.
6. Self-contained breathing apparatus will be cleaned and breathing air cylinders will be refilled.
7. Protective clothing is cleaned or disposed of and restocked, etc.

The MWF is ready to resume process operations only when all emergency equipment has been restored.

G.4.6.5 Incident Termination

The objective of response actions is to terminate an incident quickly with minimal adverse effects to human health, environment and plant equipment. Table 3 lists the criteria for terminating each type of incident for which this Contingency Plan was activated. Response operations are also needed to prevent a secondary incident. When an incident has been brought under control and its threat to human health or the environment has been removed, the EC initiates the procedures described in this section to return the MWF to normal operation.

These procedures include inspecting for:

1. the absence of leaks, cracks, or other damage to the containment system,
2. absence of toxic vapor generation,

3. proper isolation and containment of residual waste materials and debris,
4. adequate cleanup of residual waste materials, and
5. affected areas and process equipment functioning.

One of the more important operations during incident termination is monitoring personnel and equipment for hazardous material contamination. Individual pocket dosimeters are read frequently during the emergency response and dosimeter readings documented before the individual leaves the affected area. Film or thermoluminescent dosimeters (TLD) badges will be analyzed promptly. Whole body scans, and/or bioassays are performed if necessitated by information concerning the released material or the results of air samples.

A final release survey is conducted on all involved equipment and the affected area. Monitoring may include area survey of external radiation, direct frisk of the affected area, and analyses of vegetation samples and soil samples within the affected area and downwind.

After a catastrophic incident, a written plan for collecting these samples will be proposed to Ecology, WDOH, and EPA for approval within five (5) calendar days after the incident. This plan details the areas to be sampled and samples to be collected. With approval of WDOH, routine environmental air samples and TLDs will be expeditiously analyzed in lieu of routine change-out time. Non-routine sampling techniques are also considered (e.g., ventilation air filters may be analyzed to produce airborne contaminant concentrations).

Restarting process operations after an incident will be in accordance with established procedures for recovery from off-normal events. A recovery plan is needed if further risk can be posed to personnel, the environment or the MWF, or if physical evidence needs to be preserved. If a recovery plan is required, it must be approved by EC. Restart of operations must follow the approved recovery plan. Specific steps to treat and/or store the released material and contaminated debris are decided jointly by the EC and RSO.

For emergencies that do not activate the Contingency Plan, the EC is responsible for ensuring that adequate conditions are restored before operations are resumed. If emergency response procedures were undertaken, and the emergency phase is complete, a special recovery organization is appointed at the discretion of the EC to restore conditions to normal. The makeup of this organization depends upon the experience of the individuals involved as well as extent of the damage and its effects.

**G.4.6.6 Plan Review and Amendment**

This Plan is subject to review and amendment if:

1. Execution of actions specified in the Plan fail to protect personnel and the environment in an emergency,
2. The MWF permit is revised,
3. The MWF design, construction, operation or maintenance procedures change; or if other circumstances develop that increase the potential for fires, explosions, or releases of dangerous waste or dangerous waste constituents, or change the responses necessary in an emergency,
4. The list of Emergency Coordinators changes, or
5. The list of emergency equipment changes.

The amended section of the Contingency Plan is reviewed by the affected regulatory agencies. Changes in the list of Emergency Coordinators or emergency equipment are considered to be

permit modifications. Other changes are implemented with full consultation with all cognizant agencies or emergency response authorities.

Copies of the current and approved Contingency Plan will be distributed to local, state, and federal agencies, outside emergency response organizations, and to selected MWF personnel responsible for the Plan's implementation.

**G.4.7 Final Notification to Authorities**

For any incident that requires implementing the Contingency Plan, the time, date, and details will be recorded in the operating record. In addition, depending on the nature of the incident, the following reports must be made:

1. Telephone call to Ecology: Report to Ecology immediately, but in no case longer than within 24 hours of knowledge, of any spill and leak to the environment of hazardous materials.
2. Telephone call to the NRC: Notify the NRC if the emergency response involves a release to the environment in any 24-hour period greater than the reportable quantities of release listed in 40 CFR § 302. The notification number provided from the NRC will be recorded.
3. Written report to Ecology: Submit written report within 15 days that contains the information described below. A report shall also be submitted to Ecology in the event a shipment is denied acceptance to the MWF.
4. Written report to the NRC: If the NRC was contacted and the emergency response involves a transportation issue, submit a written report as required by 49 CFR § 171.16
5. The Contingency Plan implementation report: Complete the Contingency Plan implementation report within seven days of implementation of the Plan. A copy of this report wills be sent submitted to the Regional Administrator in accordance with 40 CFR 264.56.

Each written report includes the following:

1. Name, address, and telephone number of the owner or operator;
2. Name, address, and telephone number of the MWF;
3. Date, time, and type of incident (e.g., fire, explosion);
4. Name and quantity of material(s) involved;
5. The extent of injuries, if any;
6. An assessment of actual or potential hazards to human health or the environment, as applicable;
7. Estimated quantity and disposition of recovered material that resulted from the incident;
8. Cause of incident; and
9. Description of corrective action taken to prevent reoccurrence of the incident.

For emergencies involving leaks or spills from the tank systems, a report will be submitted within 30 days of detection of such release with the following elements, in accordance with 40 CFR 264.196(d)(3):

1. Likely route of migration of the release;
2. Characteristics of the surrounding soil (soil composition, geology, hydrogeology, and climate);
3. Results of any monitoring or sampling conducted in connection with the release (if available);
4. Proximity to down-gradient drinking water, surface water, and populated areas; and
5. Description of response actions taken or planned.

For emergencies involving the denial of a shipment and the inability to return the shipment to the generator, Ecology will be notified by the EC and a report filed within 30 days.

**G.5 PREVENTION OF RECURRENCE OR SPREAD OF FIRES, EXPLOSIONS OR RELEASES**

The recurrence or spread of fires, explosions, spills and releases is minimized through personnel training, record keeping, routine inspections and incorporating engineering design and operational controls. Secondary containment in the buildings decreases the potential for any liquid and solid release from reaching navigable or ground water. Gas releases are generally contained and treated by the MWF's ventilation and carbon filtration systems.

**G.5.1 Recordkeeping**

The EC designates a member of the ERG to record events during an incident. These records are kept and retained by the EC and placed in the operating record. Records vital to operations and rebuilding shall be adequately secured from loss. Key records are duplicated and placed in protected vault storage facilities for safe keeping.

To assist in the understanding of the cause of an incident and therefore minimize its reoccurrence, any incident that results in the activation of the Incident Command System (ICS) will be investigated and the results of the investigation documented in an incident report. The report shall be forwarded within 15 days of the incident to WDOH and Ecology and copies of the report shall be maintained at the MWF by the EC.

The report shall contain, at a minimum, the time and date of the incident, the probable cause, determination or calculations of internal and external dangerous material and/or radiation exposure received by individuals, estimates of the release of dangerous and/or radioactive material, personnel involved in emergency response operations, decontamination operations, and corrective actions initiated as a result of the incident investigation.

**G.5.2 Drills and Exercises**

Drills and exercises to improve emergency preparedness are discussed during meetings. These meetings are attended by plant operators, emergency responders, and/or the five ERG team members. Representatives of outside emergency response organizations may be invited to participate in these meetings.

The purpose of these drills and exercises is to ensure that:

1. evacuation of personnel, when necessary, will be conducted in an orderly manner,
2. emergency response actions are functional, and
3. coordination with outside emergency responders is effective.

All exercises as well as actual emergencies are critiqued for response and learning opportunities. A copy of the exercise critique is sent to the EC. Exercises may be "table top", drill, or field exercises. A summary of these exercises follows:

Table Top Exercise:

The table top is an exercise that takes place in a control room, or meeting room setting. The table top exercise is designed to generate a discussion of the emergency plans, procedures, policies and resources and reviews what actions are taken in certain situations. This exercise may be a set of

questions asked to an operator, engineer, or management personnel regarding their duties during gas releases, fires, bomb threats, or other unplanned events.

Drill Exercise:

This exercise usually follows a few weeks or months after a table top exercise. The drill is a supervised activity that tests, develops or maintains skills in a single emergency response function (i.e., communications, gas release, evacuation, medical emergencies). The drill normally involves actual field response. A drill exercise may be announced or unannounced.

Field Exercise:

This exercise practices all or most of the basic functions of the response system simultaneously. This exercise requires personnel to go through the motions of what they would do if there were an emergency. Field exercises take time to plan and conduct. Field exercises can be announced. If they are announced, the learning phase is done at the critique after the drill.

**G.5.3 Operational Procedures**

G.5.3.1 Tank and Container Failures

Releases from tanks will be contained and if repairs cannot be made immediately (within 24 hours) and there is a risk of further releases that could impact human health or the environment, the tank will be taken out of service and emptied. Failed containers will be overpacked and placed in the reject container storage area for return to the generator or for reprocessing.

G.5.3.2 Responding to GASVIT™ Equipment Failures

The following is a summary of actions to be implemented by operators to prevent the development of a hazardous situation in the event of failure of equipment in the GASVIT™ system:

G.5.3.2.1 Refractory Failure

A breach in the refractory could result in an uncontrolled glass leak. A breach in the refractory will be indicated by glass leakage from the sides or bottom of the process chamber, or if the breach occurs behind one of the cooling panels, by exceptionally high exit water temperature for the affected panel.

Response

1. Stop feeding waste
2. Turn off electrode heaters to the affected zone.
3. If glass is leaking:
  - a. Operators working in the vicinity of the leak must wear the following protective equipment: flash suit, face shield, thermal gloves.
  - b. Use water lances to cool the immediate area of the leak and to cool the glass that has spilled outside of the GASVIT.
  - c. After the leak stops, continue to cool the leak point with a small flow of water and/or air in order to keep the glass solidified.
  - d. Once the leak is secured a patch block may be used to repair the leak area.
  - e. Assess the radiological conditions in the vicinity of the leak. If contamination or high radiation is present, contact Health Physics and take further action as directed.

- 4. If glass is not leaking:
  - a. Use air lances to provide additional cooling to the hot spot area.
  - b. If possible, drain glass from the affected zone until level is below the leak point.

**Follow-up Action**

- 1. Inspect the interior of the Process Chamber and determine the reason for the failure.
- 2. Repair or replace any defective refractory sections.
- 3. Institute appropriate corrective action(s) to prevent future failures.

**G.5.3.2.2 — Loss of Process Cooling Water**

Failure of the process cooling system could be caused by loss of both recirculation pumps, loss of water inventory in the storage tank, failure of the chilled water heat exchanger or of the chilled water system itself, or by valve misalignment or other operator error. Loss of process cooling water will be indicated by a flow or supply pressure alarm, a high temperature alarm, or a high outlet temperature on the process cooling return lines.

**Response**

- 1. If the operating process cooling recirculation pump has shut down, start the standby pump.
- 2. If the process cooling recirculation pump is operating properly, check the water level in the storage tank. If tank level is very low, temporarily activate emergency backup cooling until the tank is refilled.
- 3. If problem is due to valve misalignment or other similar conditions, immediately restore the system to normal conditions and reestablish coolant flow using the process cooling recirculation pumps.

**Follow-up Action**

- 1. Long term operation on emergency backup cooling is not permitted. If the problem cannot be resolved within two hours after emergency backup cooling is started, stop waste feed and reduce Process heat input to minimum until normal cooling is restored.

**G.5.3.2.3 — Loss of Chilled Water System**

The chilled water system provides the heat sink for the process cooling system. Failure of this system is indicated by one of the following:

- 1. Temperature increase on the process cooling supply flow.
- 2. General increasing temperature trend in the process cooling storage tank.
- 3. Flow/pressure/temperature alarms from the chilled water recirculation system.

**Response**

- 1. Closely monitor the temperature rise in the process cooling system while repairs are in progress. Because of the amount of water in the process cooling storage tank the temperature ramp should be relatively slow.
- 2. Activate emergency backup cooling if storage tank temperature goes above 150°F.

Follow-up Action

1. Long term operation on emergency backup cooling is not permitted. If the problem cannot be resolved within two hours after backup cooling is started, stop waste feed and reduce process heat input to minimum until normal cooling is restored.

G.5.3.2.4 Loss of Exhaust Flow

The exhaust system extracts the hot combustion gases from the process chamber and maintains a slight negative pressure inside the process chamber. System failure could be caused by failure of exhaust induced draft (ID) fans, failure of building exhaust fans, plugging or blinding of filters. Indicators of failure are:

1. Positive pressure inside the process chamber.
2. Low exhaust flow and/or high dome pressure alarms.
3. Smoke and fumes issuing from the screw feed hopper and other openings into the process chamber.

Response

1. Stop waste feed.
2. If ID fans are off, start the backup ID fan.
3. Investigate the cause of the failure and take action as required.

Follow-up Action

1. If radioactive materials were being processed when exhaust flow was lost, assess the area around the process chamber for possible airborne radioactive contamination.
2. If smoke and combustion products are present, minimize access to the GASVIT™ area until the gases have been dissipated by the building exhaust system.
3. Determine the cause of the ventilation failure and make repairs and/or procedural changes as necessary to minimize future occurrences.

G.5.3.2.5 Loss of Reverse Osmosis (RO) Water Treatment System

The RO water treatment system provides a supply of clean, low conductivity water to the second stage syngas system. It also supplies makeup water to the cooling system, and to the chilled water recirculation system. Failure of this system is indicated by low water level in the RO storage tank.

Response

1. Investigate and determine the cause of the failure. Try to restore normal operation as soon as possible.

Follow-up Action

1. Reduce process chamber heat load to the point where baghouse exit temperature can be maintained below 500°F with the quench water turned off.

G.5.3.2.6 Loss of Potable Water Supply

The City of Richland potable water system is the supply source for the RO water treatment system and also provides backup cooling to the cooling system and exhaust quench tank. Various off-site conditions such as power loss, broken main lines, or

~~scheduled maintenance could lead to an interruption of service. Such an interruption could range from a few hours to several days.~~

~~Response~~

- ~~1. Stop waste processing and reduce propane/natural gas burners to minimum.~~
- ~~2. Switch the emergency quench water supply from city water to RO water.~~
- ~~3. If service interruption will be brief (< 1 hour), continue in standby mode while closely monitoring water level in the RO tank.~~

~~Follow-up Action~~

~~As soon as it becomes apparent that potable water will not be immediately restored, steps must be taken to reduce GASVIT™ heat and conserve the remaining supply of RO water.~~

**G.5.4 Operational Controls In Response To Abnormal Conditions**

When abnormal environmental conditions threaten to trigger an emergency response situation, all non-essential process operations will be shutdown and the MWF will be secured for the duration of the event. The types of extreme natural events and operational controls are as follows:

G.5.4.1 Strong Winds

While strong winds are not expected to damage the MWF, they can present significant difficulties to certain waste handling and process operations. Also, strong winds will increase the chance of dust release and other fugitive emissions. Hence during strong wind conditions (sustained wind speed greater than 40 miles per hour), all outdoor operations will need to be suspended. If the building air purification and exhaust system is adversely impacted, only essential operations indoors protected from the strong winds can continue, unless the EC declares that such operations are hazardous and are to be stopped.

G.5.4.2 Electrical Storms/Power Disruption

The MWF is equipped with three back-up emergency electrical generators with the capacity to support the short term operation of "essential" and "critical" process units. The back-up emergency generators will come on line within ten (10) seconds after loss of electrical power supply. The emergency generators will not support sustained operation of the entire plant. Therefore, if supply of electrical power is interrupted, non-essential processes will be halted, so that the back-up generators capacity can be reserved for the orderly shut-down of essential processes. Upon the shut-down of essential processes, the MWF will be limited to operating critical processes. Essential processes include processing "in progress". Critical processing includes lighting, ventilation, security and environmental protection systems. Normal operations may resume when commercial electrical power is restored.

The 250 kilowatt, 750 kilowatt and 1200 kilowatt diesel generators provides emergency backup power for critical components associated with both the Stabilization and ~~GASVIT™-MWT~~ areas of Building 13 in the event of power outage. Systems supported by the emergency generator for maintenance of safe operating conditions, including treatment of dangerous in-process waste and vent gases, are shown in Table 10. Emergency power requirements, summarized in Table 11, show that the generator is sized to meet the expected load in an emergency situation that results in a power outage.

G.5.4.3 Flooding

The MWF is not located within the 100-year flood plain. Nonetheless, should the MWF be subjected to flooding, the following actions will be taken:

1. All processes will be shut-down in an orderly manner.
2. Receiving of new waste shipments will be suspended.
3. If possible, outgoing shipments will be accelerated.
4. Openings to all process vessels and piping will be closed.
5. Non-emergency responders will be evacuated.

G.5.4.4 Freezing

If freezing of critical process streams has occurred, the potentially affected processes may be shut-down. The procedure described below will be enacted.

1. Identify which valves should be open, including those for safety showers and eye baths.
2. Open the lines enough to allow a flow of only about 1/2 to 1 gallon per minute (GPM)
3. Continue flush until good flow is established.
4. Note that flushes have been started in the log book and the safety shower checklist.
5. Close all flush valves and return to normal operations.
6. Note in the log book when the freeze alert is dropped.

G.5.4.5 Seismic Activities

The MWF is located in an area that has no known seismic features. Hence no response actions are needed nor planned for this type of event.



## G.6 EMERGENCY EQUIPMENT

350(3)(e)

Repositories of emergency response equipment are located in ACB. Typical equipment/supplies include:

1. Spill control equipment (e.g., berm, adsorbent, neutralizing agents, over-pack drums, etc.)
2. Personnel protective clothing, (e.g., gloves, and breathing apparatus, breathing air, etc.)
3. Fire suppression equipment (e.g., fire extinguishers)
4. Communication equipment (e.g., telephones, radios, alarms)

Equipment available at this location is detailed in Table 7 (MWF Emergency Response Equipment Inventory). The locations of additional protective equipment throughout the MWF are shown in Figures 3, 4 and 5. Additional equipment details are as follows:

### G.6.1 Protective Clothing

Protective clothing is generally stored in the Stabilization Area of Building 13, however, emergency response clothing is also stored in the ACB.

### G.6.2 Respiratory Protection Equipment

Air-purifying full-face respirators with appropriate cartridges and/or canisters and three sets of self-contained breathing apparatus (which will only be used by trained personnel) are also stored in the ACB.

### G.6.3 Fire Extinguishers

Table 8 provides a description of the various fire suppressants and usage. Typically, a fire extinguisher is accessible within 50 feet from all points in the waste storage and processing areas of the plant.

~~For fire suppression/prevention when hot molten slag is spilled, fire hoses are equipped with fogging nozzles. Water mist produced from these nozzles is more effective for slag quenching and will use less water.~~

Comment [BN4]: Related to GasVit.

### G.6.4 Spill Response Equipment

Table 7 lists safety and spill response supplies maintained at the site. Table 9 lists the absorbent and chemicals employed for containment and clean-up and Tables 12 and 13 list general purpose decontamination solutions and minimum quantities of decontamination reagents maintained on site.

### G.6.5 Air Survey Instrumentation

Typical air survey equipment available at the MWF may include:

1. Carbon Monoxide (CO) monitors,
2. Oxygen (O<sub>2</sub>) monitors,
3. Hydrogen (H<sub>2</sub>) monitors,
4. Radiation Survey Equipment, and
5. Photo-Ionization Detectors/Flame Ionization Detectors.

### G.6.6 Communications Equipment

Telephones are installed in all buildings housing process operations. Hand-held two-way radios or cell phones are carried by the EC, the EC alternatives and unit supervisors. Hand-held two-way radios or cell phones will be at the Incident Command Post.

### G.6.7 Equipment Maintenance

Employees are trained to use, maintain, repair or replace emergency equipment such as respirators, gloves, goggles, boots, hard hats and similar equipment. Employees are trained to become competent at

all steps in the operation of equipment at their operating unit and the hazardous waste management unit used by that operating unit. All plant operating employees are trained to:

- Locate, operate and state the functions for valves
- Understand the configuration of all tanks and vessels and their internal and external components and explain their functions
- Understand the control and sensing schemes as evidenced by ability to locate, operate, and state the purpose of all transmitters, thermocouples, flow elements, field-mounted indicators, alarms and switches.

Employees are tested on all equipment with a required 100 percent level of performance. ERG is trained in the use of Scott air packs and in first aid. ERG personnel are also trained in maintenance and repair of the above mentioned equipment.

**G.7 COORDINATION AGREEMENTS**  
*350(3)(c), 340(4)*

A complete complement of off-site emergency response support services is available within the Hanford Area and the City of Richland. Memoranda of Understanding describing arrangements with off-site facilities are contained in Appendix B of this Plan.

The following response agencies receive of copies of the Plan:

**G.7.1 Local**

1. Richland Fire Department
2. Kadlec Medical Center
3. Richland Police Department
4. Benton County Emergency Management

**G.7.2 State**

1. Washington Department of Health
2. Washington Department of Ecology
3. Washington Military Department, Emergency Management Division

**G.7.3 Federal**

1. Environmental Protection Agency, Region 10

This page intentionally left blank.

**G.8 EVACUATION PLAN**  
*350(3)(f),355*

The purpose of evacuation is to remove unprotected persons from the affected area so that these persons are not exposed to injurious situations. An evacuation order does not have to be issued before personnel can leave a threatened area. All persons are required to evacuate a threatened area based on his judgment of the situation. Where time and the situation allow, a person may attempt to secure the operations within his control in order to prevent the development of secondary hazards (e.g. chemical spill due to a running pump, fire from an open reagent drum).

An Evacuation Plan is provided in Appendix C.

This page intentionally left blank.

TABLES

This page intentionally left blank.

**Table 2 – Hazard Classification**

<b>Hazard Classification</b>	<b>Description</b>
Class A	A release of material that is expected to have an impact in the immediate area of the release and/or in the surrounding rooms/departments within a building. The release is NOT expected to have an effect, or be measurable or detected, beyond the MWF site fence line.
Class B	A release of material that is expected to have an impact in the immediate area and/or in the surrounding departments/blocks. An odor can be detected at the MWF site fence line. The release is expected to have an effect, or be measurable or detected beyond the site fence line. The release is visible to the responding units and/or the community.
Class C	A release of material that is expected to have an impact in the immediate area and/or in the surrounding blocks/departments and is affecting residents of local communities (e.g. burning eyes, irritated throat, etc.). The release has been confirmed to have an effect outside the MWF site fence line.
Class D	A major release of material that is expected to impact all areas down wind of its path. The release has a significant impact on the local communities and impact areas/communities beyond the boundaries of local communities.

This page intentionally left blank.

**Table 3 – Emergency Conditions and Corresponding Incident Termination Criteria**

Category	Incident	Incident Termination Criteria/Remarks	Typical Primary Responders
Releases	Storage units	Spill/Leak stopped Contaminated materials contained Contaminated surfaces cleaned/removed	Process Operations Group
	Process units	Spill/Leak stopped Contaminated materials contained Contaminated surfaces cleaned/removed Process unit repaired or removed from service	Process Operations Group
	Transportation units, including damaged shipments (e.g., trucks, train, etc.) inside the MWF	Spill/Leak stopped Contaminated materials contained Contaminated surfaces cleaned/removed Transportation unit repaired or removed from service	Process Operations Group
Fire/Explosion	Structure/Wild /Bush	Fire suppressed; structure integrity stabilized or occupancy terminated	Richland Fire Department
	Vehicular	Fire suppressed. Vehicle transported to safe storage	Richland Fire Department
	Storage/ Warehouse	Fire suppressed Spill/Leak stopped Contaminated materials contained Contaminated surfaces cleaned/removed Structure integrity stabilized or occupancy terminated	Richland Fire Department ERG
	Process units	Fire suppressed Spill/Leak stopped Contaminated materials contained Contaminated surfaces cleaned/removed Process unit returned to proper functioning or taken out of service	Richland Fire Department/ ERG/Process Operations Group
	Building housing process units	Fire suppressed Spill/Leak stopped Contaminated materials contained Contaminated surfaces cleaned/removed Process unit returned to proper functioning or taken out of service	Richland Fire Department ERG/ Process Operations Group
Natural Disasters	Strong winds/ Electrical storms	All hazardous materials secured in closed approved storage containers All sources of fugitive emissions from non-thermal treatment area secured Back-up	Process Operations Group and Maintenance

***Perma-Fix NW-R***

***Mixed Waste Facility***

Category	Incident	Incident Termination Criteria/Remarks	Typical Primary Responders
		generator operation established. Non-essential process operations orderly shut-down.	Group
	Freezing (e.g., rupture of piping and vessels, upset to processes)	Spill/Leak stopped Contaminated materials contained Contaminated surfaces cleaned/removed Process unit repaired or removed from service	ERG, Maintenance Group, and Process Operations Group
Personnel Injured	Personnel Injured	Affected personnel transported to an appropriate medical facility for treatment; cause of injury removed to prevent recurrence.	Staff/ Ambulance
Personnel Exposed to Hazardous Materials	Personnel Exposed to Hazardous Materials	Affected personnel delivered to appropriate medical facility for treatment; source of hazardous materials secured to prevent recurrence	Staff/ Ambulance

**Table 4 – Volume of Resource Conservation and Recovery Act/ Dangerous Waste Management Act and Polychlorinated Biphenyls (PCB) liquid and solid waste in containers and equipment (tanks and miscellaneous units)<sup>a</sup>**

<u>Mixed Waste Facility Staging/Storage Areas</u>	<u>Maximum Capacity (Solids)</u>	<u>Maximum Capacity (Liquids)</u>
<b>Stabilization Building (STB)</b>		
Containerized Waste Staging (Room 2)	1134 ft <sup>3</sup>	1144 ft <sup>3</sup>
Container Inspection (Room 4)	288 ft <sup>3</sup>	29 ft <sup>3</sup>
Cutting and Shearing (Room 5)	140 ft <sup>3</sup>	
Size Reduction and Screening (Room 6)	557 ft <sup>3</sup>	
Sorting and Stabilization (Room 7)	3600 ft <sup>3</sup>	225 ft <sup>3</sup>
Compaction and Liquid Handling (Room 8)	3600 ft <sup>3</sup>	516 ft <sup>3</sup>
Container Rinsing (Room 9)		184 ft <sup>3</sup>
<b><del>GASVIT™ Mixed Waste Thermal Building (GVMWTH)</del></b>		
<del>Staging-Evaporation System Storage Tanks (Room 1)</del>	<del>1422 ft<sup>3</sup></del>	<del>61-5,855 ft<sup>3</sup></del>
<del>HAZMAT EnclosureEvaporation system sludge tank (Room 41)</del>		<del>54-170 ft<sup>3</sup></del>
Solid Storage (Room 34)	560 ft <sup>3</sup>	

**Comment [BN5]:** Need to recalculate..

<b>Waste Storage Building (WSB)</b>		
Raw Waste Storage (Room 1)	Up to 24,223 cubic feet total for all five (5) areas and shall not exceed 12,000 cubic feet for any one storage area for storage of solids.	644 ft. <sup>3</sup>
Solid Waste Storage - North (Room 2)		
Solid Waste Storage - South (Room 3)		
Covered Storage Pad (Room 4)		1576 ft. <sup>3</sup>
<b>Stabilization Building (STB)</b>		
Bulk Container Staging (Room 3)/Truck Bay		

<sup>a</sup> Total containerized mixed/TSCA-regulated waste storage at the facility shall not exceed 30,886 ft.<sup>3</sup> for solids and ~~4,433~~10,442 ft<sup>3</sup> for liquids.



**Table 5 – Personnel Responsibilities for Incident Alert**

Stage	Person Responsible	Description
1	Person sounding alert	Sound Alarm - One rise and fall of the siren.  Take corrective actions (if it can be done safely), before proceeding to the designated assembly area.  Communicate to EC and supervisor the reason for the alarm.
2	All personnel	Stop all process work. Proceed to the designated assembly area.
3	EC or ERG Designee	Determine the cause of the alarm. If the cause of the emergency condition can not be determined, two persons may re-enter the area to determine the cause. If additional help is needed, additional personnel may re-enter the building. (All personnel must wear protective equipment and enter in pairs).
4	EC or ERG Designee	Call any of the following as required by the situation: <ul style="list-style-type: none"> <li>• Adjacent buildings</li> <li>• Plant supervision</li> </ul>
5	EC or ERG Designee	Take head count using a personnel roster, sign in books and sign out boards
6	EC or ERG Designee	Determine appropriate alert responses including: <ul style="list-style-type: none"> <li>• Shutting off air intakes</li> <li>• Shutting down process(es)</li> <li>• Putting process(es) in safe operating mode</li> <li>• Monitoring the wind direction</li> <li>• Barricading streets</li> <li>• Evacuation</li> <li>• Use of alternate assembly area location</li> </ul>
6	EC	Inform building personnel of reason for alert and response plan.
7	EC	Activate any emergency response procedures required by the emergency.

This page intentionally left blank.

**Table 6 – Procedures To be Used for Assessment of Direct and Indirect Impact of Material Release to Human Health and the Environment**

Human Health Impact	Environmental Impact
<p>1. Identify origin, type (e.g., spill, fire, explosion etc) and characteristics of released material (e.g., constituents, concentrations and released quantity) from operating logs and records, waste manifests, waste analyses, the waste profile in the facility's computer database, and other sources.</p>	<p>1. Identify origin, type (e.g., spill, fire, explosion etc) and characteristics of released material (e.g., constituents, concentrations and released quantity) from operating logs and records, waste manifests, waste analyses, the waste profile in the facility's computer database, and other sources.</p>
<p>2. Determine source and areal extent of released materials based on Emergency Coordinator observations, area video and employee observations.</p>	<p>2. Determine source and areal extent of released materials based on Emergency Coordinator observations and employee observations</p>
<p>3. Establish critical health based parameters and impacts for the material and/or its constituents from Immediately Dangerous to Life or Health (IDLH) and Material Safety Data Sheet (MSDS) data</p>	<p>3. Establish critical environmental parameters relative to interaction with air, soils and water for the material and/or its constituents from the following references:</p> <ol style="list-style-type: none"> <li>1. Solubility in water</li> <li>2. Compatibility with wash down fluids</li> <li>3. Soil Adsorptivity</li> <li>4. Volatility</li> </ol>
<p>4. Establish exposure pathways, short and long-term health impacts and personal protective measures.</p> <ol style="list-style-type: none"> <li>1. For Worker</li> <li>2. For Public</li> </ol>	<p>4. Establish release pathways, short and long-term environmental impacts and environmental protective measures.</p> <ol style="list-style-type: none"> <li>1. On-Site Impact</li> <li>2. Off-Site Impact</li> </ol>
<p>5. If volatiles are released, monitor air concentrations of critical constituents based on the findings in (1) for threshold health based conditions for emergency response.</p>	<p>5. If material has been released outside of the containment area, sample and analyze concentrations of critical constituents based on the findings in (1) to facilitate emergency response.</p>
<p>6. Perform assessment and identify response procedures</p>	<p>6. Perform assessment and identify response procedures</p>

This page intentionally left blank.

Table 7 – Typical MWF Emergency Response Equipment Inventory

Group	Item	Description of Items	No. of Item Groups	Building Location
Alarms, Communications & Power	Emergency alarms	Manual pull box located in each building linked to main alarm system in ACB.	1	STB
			1	WSB
			1	GVB MWTH
			1	ACB
	Audible horn	Gas release air horn located outside Building 2 to provide site wide emergency notification system.	1	ACB
	Smoke detector/alarms	Smoke or heat detector/alarms located in all process areas and each building	9	STB
			8	WSB
			7	MWTH GVB
			5	ACB
	Internal communication equipment	Two-way radios	2	Varies
2				
2				
Mobile phone	The EC will carry or have access to a portable/mobile cellular phone	1	Varies	
Fixed telephones	In addition to telephones in the Access Control Building for the EC and the Guard Room, 5 areas of the facility.	13	STB	
		4	WSB	
		9	MWTH GVB	
		5	ACB	
Emergency generators	Emergency generators supply necessary back-up power to the MWF buildings.	1	MWTH GVB	
		1	STB	
		1	Building 18	
Spill Control & Assessment	Non-thermal spill control equipment	Typical spill control equipment (SCE) is stored with PPE in a dedicated cabinet in each process or storage building. Equipment includes: 1. a 55 gallon drum, 2. a 3 gallon bucket, 3. 55 gallon and 3 gallon plastic bags, 4. 100 feet of portable berms, 5. 2x0.5 HP sump pumps and connected discharge tube, 6. sampling tools, 7. roll 16-mil. plastic, 8. roll duct tape, 9. 5x20 lb bags of clay absorbent and vermiculite earth or other absorbent materials, 10. 2 pairs of gloves, 11. a chemical hazard sign, 12. a hammer, 13. screwdriver, 14. a bung wrench, 15. over-pack drum, 16. a shovel, 17. a brush and 18. a broom	1 1 1	STB WSB MWTH GVB

**Perma-Fix NW-R**

**Mixed Waste Facility**

Group	Item	Description of Items	No. of Item Groups	Building Location
	<del>GASVIT-MWTH</del> spill control equipment	<del>GasVIT-s</del> Spill control equipment is stored in the <del>GasVIT-MWTH building and</del> includes: <ol style="list-style-type: none"> <li>1. Recovery system for <del>slag quench water-liquid DW run-off</del></li> <li>2. <del>Fire-resistant</del> tools for <del>slag liquid/sludge waste</del> containment/recovery, (e.g., <del>refractory/ceramic blocks for berm construction, shovels with metal-handled drum vac, absorbent materials</del>).</li> <li>3. <del>Custom-designed molten slag recovery collection/containment vessel.</del></li> <li>4. <del>Custom-designed portable containment system to prevent secondary release of air-borne particulates.</del></li> </ol>	1	<del>GVB</del> MWTH
Sampling equipment	Sampling equipment	Typical sampling equipment is stored in the analytical lab and includes: <ol style="list-style-type: none"> <li>1. 8-oz glass sampling jars,</li> <li>2. 6-inch brass or stainless-steel soil sampling tubes (2.5-inch diameter),</li> <li>3. 3-inch wide Teflon tape,</li> <li>4. plastic end caps (2 per sample tube),</li> <li>5. self-bonding silicone rubber tape,</li> <li>6. self-sealing plastic bags (pint and quart sizes),</li> <li>7. coolers,</li> <li>8. trash bags,</li> <li>9. Kim wipes,</li> <li>10. frozen ice packs,</li> <li>11. soil auger and extensions,</li> <li>12. stainless-steel spoons,</li> <li>13. shovel,</li> <li>14. composite liquid waste sampler,</li> <li>15. survey stakes,</li> <li>16. survey paint,</li> <li>17. flashlight,</li> <li>18. plastic sheeting,</li> <li>19. tools,</li> <li>20. tape,</li> <li>21. PID,</li> <li>22. measuring tape,</li> <li>23. hand transit,</li> <li>24. field notebook,</li> <li>25. camera <del>and film</del>,</li> <li>26. sample labels,</li> <li>27. chain-of-custody records,</li> </ol>	1	Building 13

***Perma-Fix NW-R***

***Mixed Waste Facility***

Group	Item	Description of Items	No. of Item Groups	Building Location
		28. chain-of-custody seals, 29. task-specific forms, and 30. waterproof pen.		

Table 8 – Fire Suppressants and Usage

Suppressant Name	Fire Type	Fire Class	Description
Ansul® Brand FORAY® dry chemical fire extinguishers or equivalent	For Ordinary and Mixed Combustible Fires	A	A free-flowing, water repellant, non-abrasive yellow-colored monoammonium phosphate based dry chemical. May be used to combat fires in ordinary combustible materials such as wood, cloth, paper, rubber and many plastics as well as fires in flammable liquids, gases and greases and fires involving energized electrical equipment. Particularly of value on combination fires.
Ansul® Brand PURPLE-K® dry chemical fire extinguishers or equivalent	For Flammable Liquids, Gases, and Greases	B	A free-flowing, water repellant, non-abrasive violet-colored potassium bicarbonate based dry chemical. May be used to combat fires in flammable liquids, gases and greases including such fires when involved with energized electrical equipment.
Ansul® Brand SENTRY® HALON 1211 fire extinguishers or equivalent	For Electrical Equipment Fires	C	A colorless, odorless, electrically non-conductive "clean" agent (halon) which discharges as a liquid and flashes to a gas, providing an increased effective fire fighting range. May be used to combat fires in ordinary combustible materials such as wood, cloth, paper, rubber and many plastics as well as fires in flammable liquids, gases and greases and fires involving energized electrical equipment. Particularly of value on fires involved with energized electrical equipment.
Ansul® Brand MET-L-X® dry powder fire extinguishers or equivalent	For Fires Involving Reactive and Flammable Solids	D	A dry powder composed of a salt base plus a polymer for sealing, and other additives to render it free-flowing and cause heat caking (or crusting) that denies burning material oxygen. May be used on sodium, potassium, sodium-potassium alloy, and magnesium fires. In addition, it will control and sometimes extinguish small fires on zirconium and titanium.

This page intentionally left blank.

**Table 9 – Typical Material and Equipment for Release Containment and Cleanup**

<b>Material</b>	<b>Purpose</b>
Diatomaceous earth	To absorb small spills of oils, solvents, aqueous materials. Not used for acids or caustics unless they are first neutralized.
Vermiculite	To absorb small spills of oils, solvents, and aqueous materials. Not used for acids or caustics unless first neutralized.
Absorbent pillows	To dike or dam and absorb spilled materials.
Acid- and base-specific solvent absorbents or neutralizers	Neutralization of identified chemicals.
Calcium hypochlorite	To absorb small spills of pesticides, fungicides, chlorinated phenols, cyanides
Tri-sodium phosphate	To absorb small spills of solvents
Citric acid	To neutralize alkaline spills.
Sodium bicarbonate	To neutralize acid spills.
Performance-based organic decontamination fluid (PODF), such as diesel	To decontaminate areas affected by a PCB spill

This page intentionally left blank.

Table 10 – Systems Supported by the Emergency Generators

Generator	Description
STB	<p>The units in the stabilization portion of Building 13 powered by the STB back-up generator include, but are not limited to, the following:</p> <ol style="list-style-type: none"> <li>1. Heating, Ventilation, and Air Conditioning</li> <li>2. TT-01 (Container Storage)</li> <li>3. TT-02 (Bulk Staging)</li> <li>4. TP-01 (Size Reduction)</li> <li>5. TP-02 (Cutting/Shearing)</li> <li>6. TP-03 (Sorting)</li> <li>7. TP-04 (Liquid Treatment)</li> <li>8. TP-05 (Filter)</li> <li>9. TP-06 (Liquid Holding)</li> <li>10. TP-07 (Compaction)</li> <li>11. TP-08 (Dryer)</li> <li>12. TP-09 (Liquid Consolidation)</li> <li>13. TP-15 (Aerosol Can Puncturing Device)</li> <li>14. TT-01 (Bulk Mixing)</li> <li>15. TT-02 (Solids Mixing)</li> <li>16. TT-03 (In-Container Mixing)</li> <li>17. TT-04 (Polymer Mixing)</li> <li>18. TT-05 (Physical Extraction)</li> <li>19. TT-06 (Container Rinse)</li> </ol> <p>The functions powered by the generator for these units include:</p> <ol style="list-style-type: none"> <li>1. Ventilation Hoods</li> <li>2. Mixers in Tanks (to prevent waste solidification)</li> <li>3. Cooling Water</li> </ol>
<p><del>GVB</del>MWTH H</p>	<p>The units in the <del>gasification/vitrification</del>MWTH portion of Building 13 powered by the <del>GVB</del>MWTH back-up generator include, but are not limited to, the following:</p> <ol style="list-style-type: none"> <li><del>1. Plasma Torch Evaporators</del></li> <li><del>2. Blower Pumps</del></li> <li><del>3. Hydraulic Control System</del></li> <li><del>4. Syngas Converter</del></li> <li><del>5. Scrubber</del></li> <li><del>6. Pumps</del></li> <li><del>7. Feed System</del></li> <li><del>8. Process Chamber</del></li> <li><del>9.1. Monitoring Devices</del></li> </ol> <p>The functions powered by the generator for these units include:</p> <ol style="list-style-type: none"> <li><del>1. Lifting the Torch out of the Process Chamber</del> Evaporator PLC and operation interface panel</li> <li><del>2. Isolating the Process Chamber</del> Building exhaust</li> <li><del>3. Maintaining Syngas Treatment</del></li> </ol>

Comment [BN6]: Change???

Comment [BN7]: Change...

This page intentionally left blank.

**Table 11 – Emergency Generator Load Distribution**

Area	Subsystem Powered by Generator
STB Generator	1. Line 100 2. Line 300 3. Miscellaneous Blowers and Exhaust Units 4. Emergency Lighting
GVB-MWTH Generator	<del>1. Process Chamber</del> <del>2. Scrubber</del> <del>3. Confinement</del> 4.1. <del>Process Building</del> Ventilation 5.2. <del>Service/Instrument Air</del> <del>6. Heat Recovery Boiler</del> <del>7. Process Cooling Water</del> <del>8. Chilled Water</del> 3. Other, Non-System Loads 9.4. <del>Emergency Lighting</del>

This page intentionally left blank.

**Table 12 – Typical General Purpose Decontamination Solutions**

Waste Type	Solution	Directions for Preparation
1. Inorganic acids, metal processing wastes 2. Heavy metals: mercury, lead cadmium etc.	A	To 10 gallons of water, add 4 pounds of sodium carbonate and 4 pounds of trisodium phosphate. Stir until evenly mixed
3. Pesticides, fungicides, chlorinated phenols, and dioxins 4. Cyanides, ammonia and other non-acidic inorganic wastes 5. Polybrominated biphenyls (PBBs)	B	To 10 gallons of water, add 8 pounds of calcium hypochlorite. Stir with plastic stirrer until evenly mixed
6. Solvents and organic compounds such as trichloroethylene, chloroform and toluene 7. Oily, greasy unspecified wastes	C	To 10 gallons of water, add 4 pounds of trisodium phosphate. Stir until evenly mixed
8. Inorganic bases, alkali and caustic waste	D	To 10 gallons of water, add 1 pint of concentrated hydrochloric acid. Stir with a plastic stirrer.
9. PCBs	E	55 gallons of approved performance-based organic decontamination fluid (PODF), such as diesel or kerosene

**Table 13 – Minimum Quantities of Decontamination Reagents Maintained on Site**

**Comment [BN8]:** Verify

Reagent	Minimum Quantity
Sodium carbonate	10 pounds
Trisodium phosphate	20 pounds
Hydrochloric acid	1 gallon
Calcium hypochlorite	20 pounds
PODF	55 gallons

This page intentionally left blank.

**FIGURES**

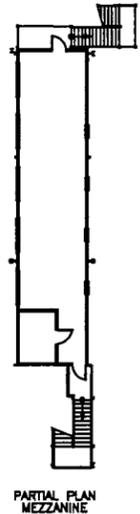
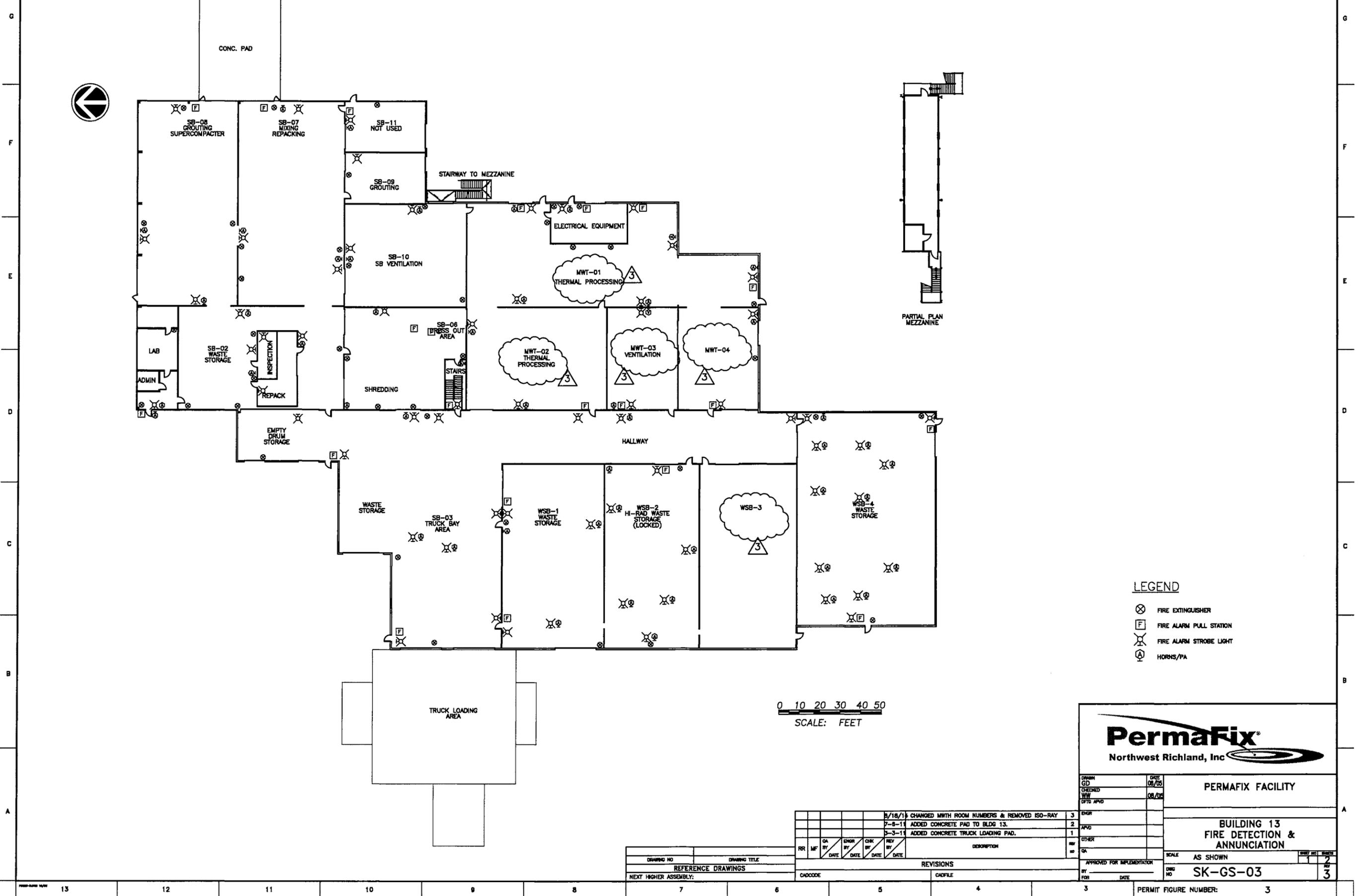
This page intentionally left blank.

Figure 1 (General Location Map) not available in Microsoft Word Format. See paper version of the plan for a copy of this figure.



Figure 2 (Site Layout Map) not available in Microsoft Word Format. See paper version of the plan for a copy of this figure.





**LEGEND**

- ⊗ FIRE EXTINGUISHER
- ⊠ FIRE ALARM PULL STATION
- ⊕ FIRE ALARM STROBE LIGHT
- ⊙ HORNS/PA

0 10 20 30 40 50  
SCALE: FEET

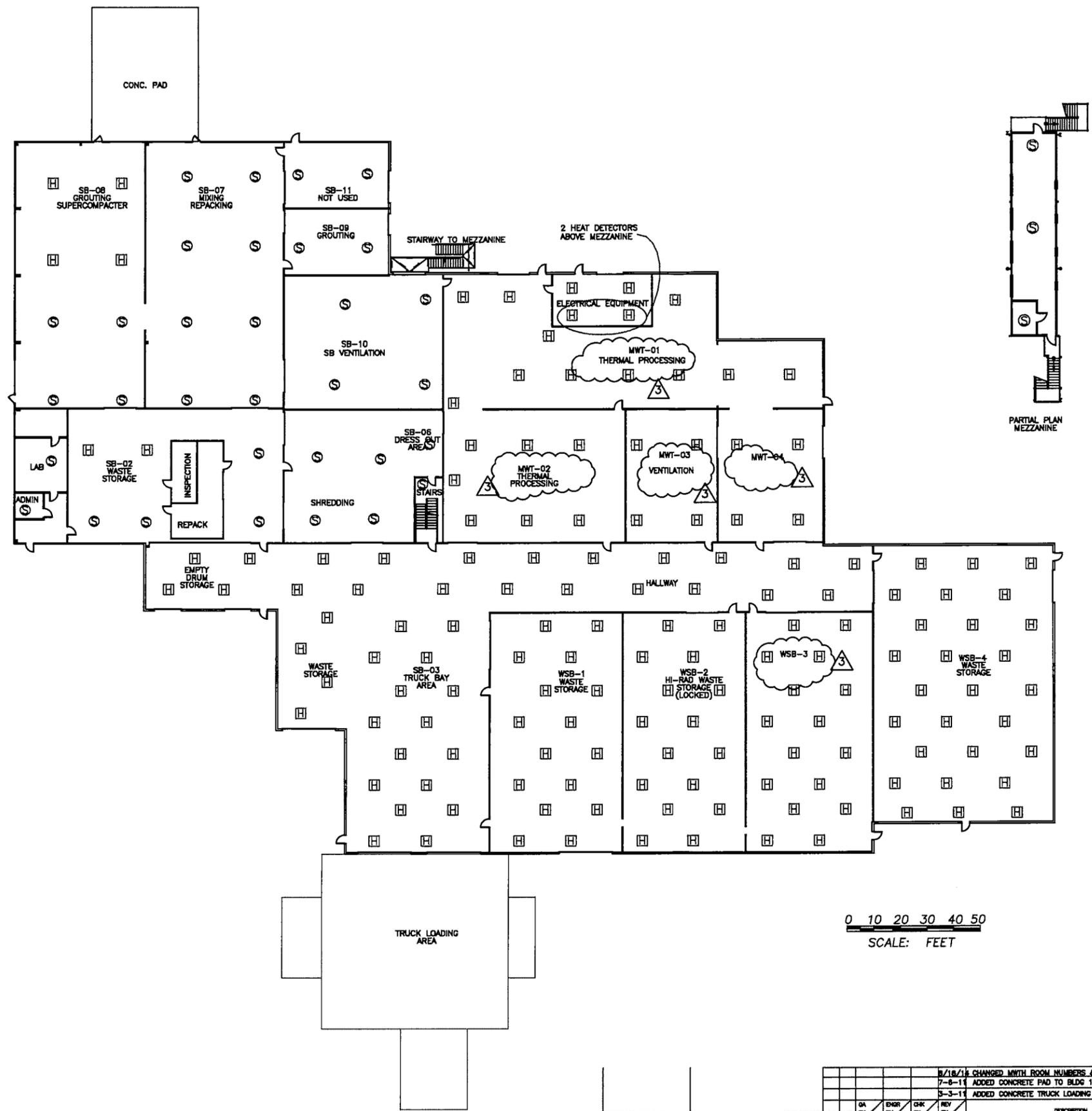


**PermaFix**  
Northwest Richland, Inc.

DRAWING NO. _____		DATE 08/05		<b>PERMAFIX FACILITY</b>	
CHECKED BY _____		DATE 08/05			
<b>BUILDING 13 FIRE DETECTION &amp; ANNUNCIATION</b>				SCALE AS SHOWN	
<b>SK-GS-03</b>				SHEET NO. 3	
PERMIT FIGURE NUMBER: 3					

REV	NO	DATE	DESCRIPTION
3	1	8/18/11	CHANGED MWT ROOM NUMBERS & REMOVED ISO-RAY
2	1	7-8-11	ADDED CONCRETE PAD TO BLDG 13.
1	1	5-3-11	ADDED CONCRETE TRUCK LOADING PAD.

DRAWING NO. _____		DRAWING TITLE _____	
REFERENCE DRAWINGS			
NEXT HIGHER ASSEMBLY: _____			



**LEGEND**

- ⊙ SMOKE DETECTOR
- ⊠ HEAT DETECTOR

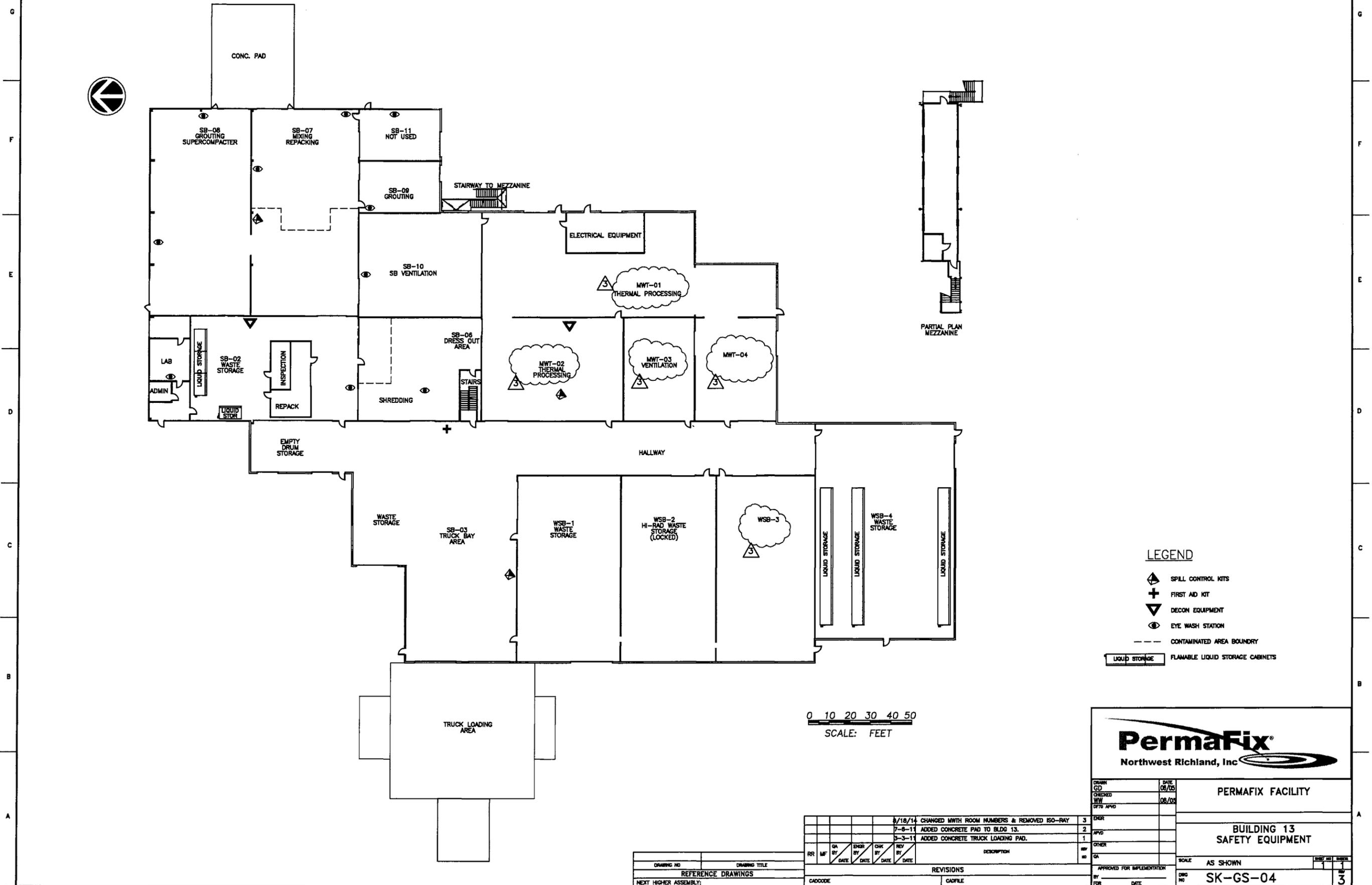
0 10 20 30 40 50  
SCALE: FEET

**PermaFix**  
Northwest Richland, Inc.

DRAWN GD	DATE 06/06	<b>PERMAFIX FACILITY</b>	
CHECKED MHW	DATE 06/05	<b>BUILDING 13 SMOKE DETECTORS</b>	
DTYPE APNO		SCALE: NONE	REVISED 2
APPROVED FOR IMPLEMENTATION BY: [Signature]		DWG NO <b>SK-GS-03</b>	REVISED 3
DATE		PERMIT FIGURE NUMBER: 4	

REV	DATE	DESCRIPTION
3	8/18/11	CHANGED MWT ROOM NUMBERS & REMOVED ISO-RAY
2	7-8-11	ADDED CONCRETE PAD TO BLDG 13.
1	3-3-11	ADDED CONCRETE TRUCK LOADING PAD.

DRAWING NO	DRAWING TITLE
REFERENCE DRAWINGS	
NEXT HIGHER ASSEMBLY:	



**LEGEND**

- SPILL CONTROL KITS
- FIRST AID KIT
- DECON EQUIPMENT
- EYE WASH STATION
- CONTAMINATED AREA BOUNDARY
- FLAMABLE LIQUID STORAGE CABINETS

0 10 20 30 40 50  
SCALE: FEET



DRWN	GD	DATE	06/05	PERMAFIX FACILITY	
CHECKED	WW	DATE	06/05		
DATE	APVD				
APVD				BUILDING 13 SAFETY EQUIPMENT	
OTHER					
APPROVED FOR IMPLEMENTATION				SCALE	AS SHOWN
BY				DRW NO	SK-GS-04
DATE				SHEET NO	3

REV	NO	DATE	DESCRIPTION	BY
8/18/14			CHANGED MWT ROOM NUMBERS & REMOVED ISO-RAY	3
7-8-11			ADDED CONCRETE PAD TO BLDG 13.	2
5-3-11			ADDED CONCRETE TRUCK LOADING PAD.	1

RR	MF	GA	ENGR	CHK	REV	DATE	DATE	DATE	DATE	DESCRIPTION

DRAWING NO	DRAWING TITLE	CADCODE	CADFILE
	REFERENCE DRAWINGS		
	NEXT HIGHER ASSEMBLY:		

Figure 3 (Building 13 Fire Detection and Annunciation) not available in Microsoft Word Format. See paper version of the plan for a copy of this figure.

Figure 4 (Building 13 Smoke Detectors) not available in Microsoft Word Format. See paper version of the plan for a copy of this figure.

Figure 5 (Building 13 Safety Equipment) not available in Microsoft Word Format. See paper version of the plan for a copy of this figure.

Figure 6 (Site Assembly Areas for Evacuation) not available in Microsoft Word Format. See paper version of the plan for a copy of this figure.

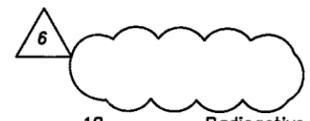
**NOTES:**

- VERTICAL DATUM = NORTH 1/4 CORNER SECTION 22 PER CITY OF RICHLAND.
- HORIZONTAL DATUM = CITY OF RICHLAND.



**# BUILDINGS:**

- |               |   |
|---------------|---|
| 1             | LL Non-Thermal Processing<br>60'x90'                            |
| Bldg 1 ROOM 8 | Non-Thermal Processing  |
| 2             | LL Non-Thermal Processing<br>60'x150'; 25'x60' Ventilation Room |
| 3             | Warehouse<br>36'x48'  |
| 4             | Radioactive Material Storage<br>40'x75'                         |
| 5             | Maintenance Shop<br>40'x60'                                     |
| 6             | Clean Release/HP Lab<br>30'x80'                                 |
| 7             | Offices<br>28'x60'  |
| 8             | LL Thermal Processing<br>140'x115'; Ext. 78'x91'                |

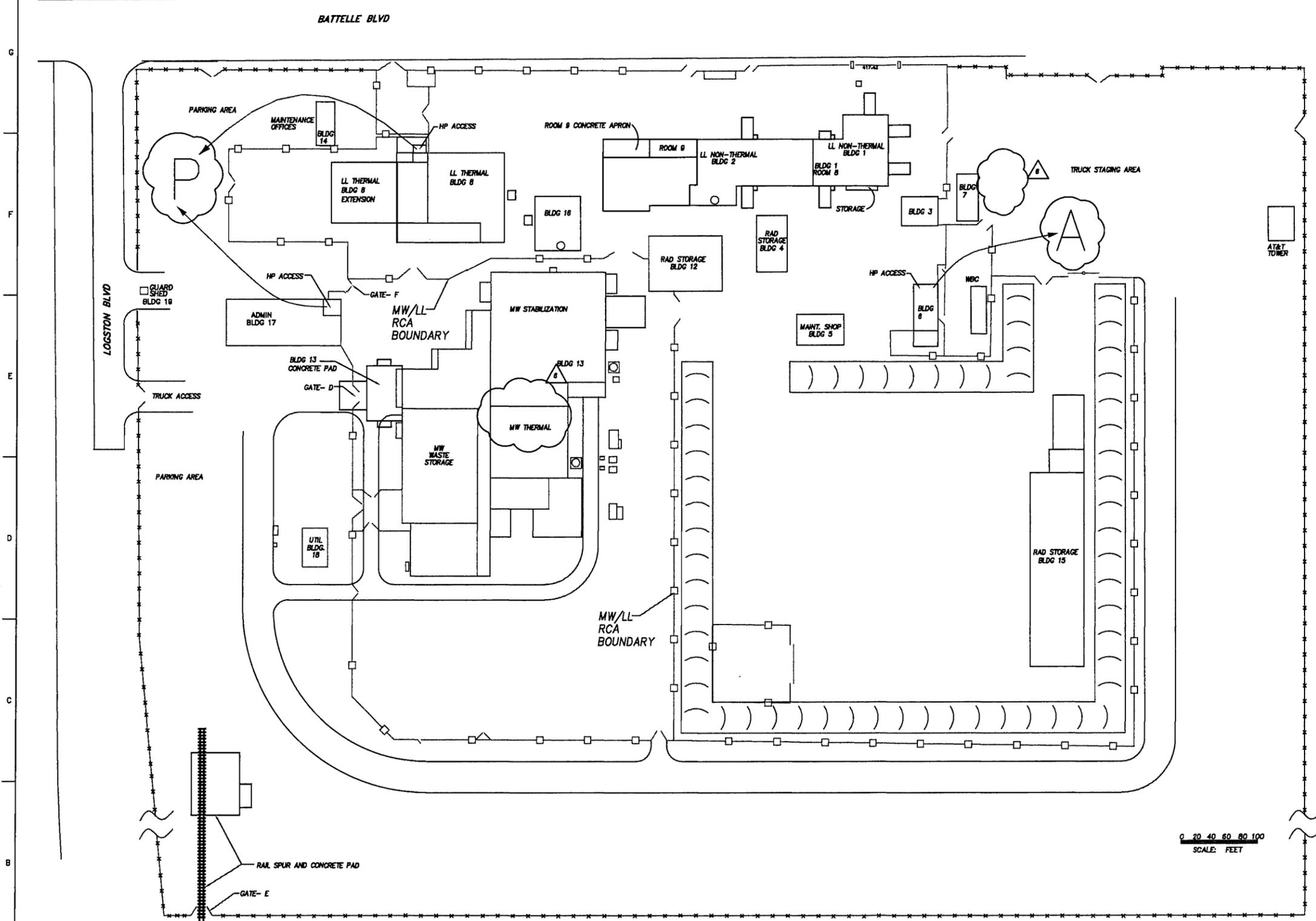


- |        |  |
|--------|--|
| 12     | Radioactive Material Storage<br>70'x96'    |
| 13     | Mixed Waste Processing<br>Irregular        |
| 14     | Offices<br>24'x68'                         |
| 15     | Radioactive Material Storage<br>70'x250'   |
| 16     | Thermal Ventilation/Rad Testing<br>60'x70' |
| 17     | Administration Building<br>60'x150'        |
| 18     | Mixed Waste Utilities<br>25'x50'           |
| 19     | Guard Shed<br>18'x10'                      |
| ROOM 9 | LLNT                                       |

**LEGEND**

- = RCA BOUNDARY
- X—X—X—X— = PROPERTY BOUNDARY

0 20 40 60 80 100  
SCALE: FEET



PRIMARY ASSEMBLY AREA



SECONDARY ASSEMBLY AREA

REV	DATE	REV'D BY	DESCRIPTION	REFERENCES	REV	DATE	REV'D BY	DESCRIPTION	REFERENCES
6	09-26-13	S. NORTON	REMOVED BLDG. 10, CHANGED GASVIT TO THERMAL, ADDED MWTH/MWNT DIVISION LINE						
5	12-13-11	S. NORTON	REMOVED BLDG. 9 AND REVISED FENCELINE. CHANGED BLDG 2 ANNEX TO ROOM 9. CHANGED BLDG. 1 ANNEX TO ROOM 8, VENTILATION ROOM IS NOW STORAGE.		2	02-21-11	S. NORTON	ADDED RAIL SPUR AND CONCRETE PAD. ADDED GATE "E" AT SOUTH FENCELINE ON RAIL SPUR. ADDED BUILDING 13 YARD PAD. REVISED FENCELINE FROM BUILDING 17 TO GATE "D".	
4	07-06-11	S. NORTON	REVISED FENCLINE BY BUILDING 12. ADDED SLAB AT BLDG 13. ADDED ANNEX TO BLDG 2. ADDED CONCRETE SLABS AROUND BLDGS 1, 2, AND BLDG 2 ANNEX. REMOVED RCA FENCE ALONG EAST SIDE OF BLDG. 13 TO FENCE. ADDED MW/LL RCA BOUNDARY CALLOUT.		1	11-08-10	S. NORTON	ADDED GATE DESIGNATION 'D' & 'F' AND REVISED FENCELINE @ GATE 'F' REMOVED BLDG 11 & CAL TRLR	PECOS DWG SK-GS-05 REV.0
3	02-22-11	S. NORTON	REVISED FENCLINE BY BUILDING 12.						

**PermaFix**  
Northwest Richland, Inc.

PERMAFIX NORTHWEST RICHLAND, INC.  
2025 BATTLE BLVD.  
RICHLAND, WA

MIXED WASTE FACILITY  
SITE ASSEMBLY AREAS  
FOR EVACUATION

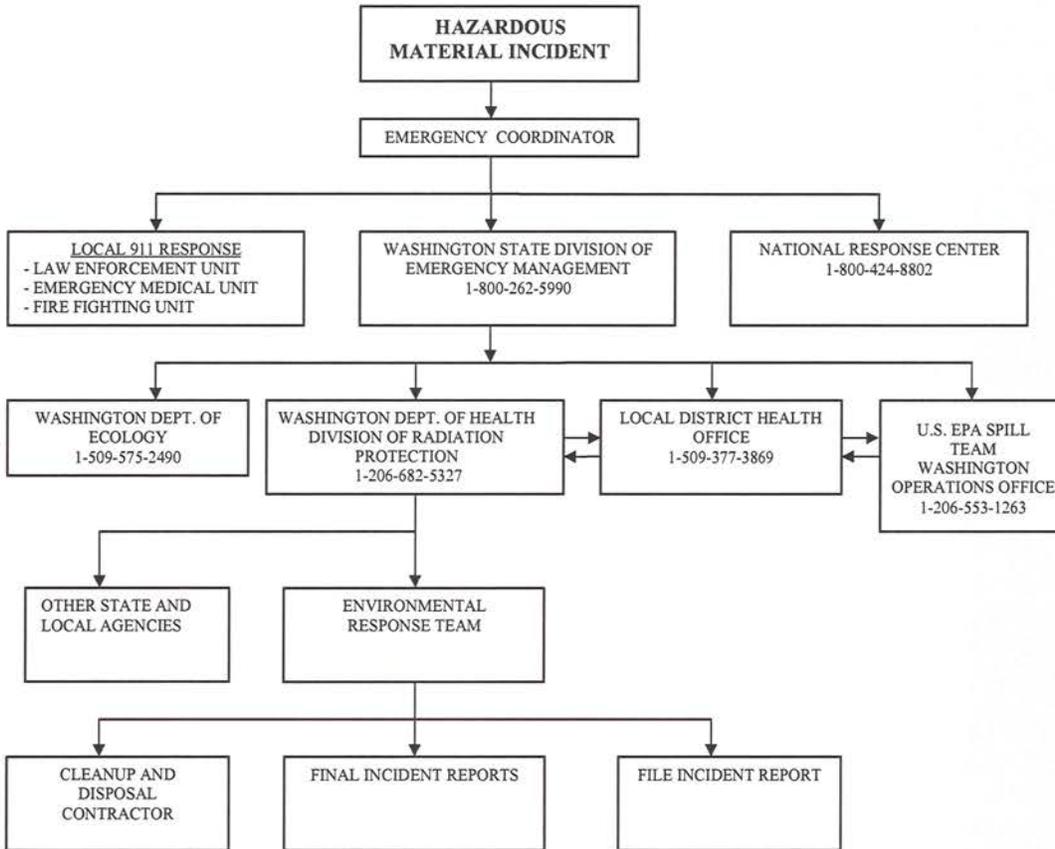
DATE: 08/05  
DRAWN: [ ]  
ENGR: [ ]  
QA: [ ]

SCALE: AS SHOWN    SHT: 1 OF 1  
DRAWING NO. SK-GS-05    REV 6

PERMIT FIGURE NUMBER: 6

Figure 7

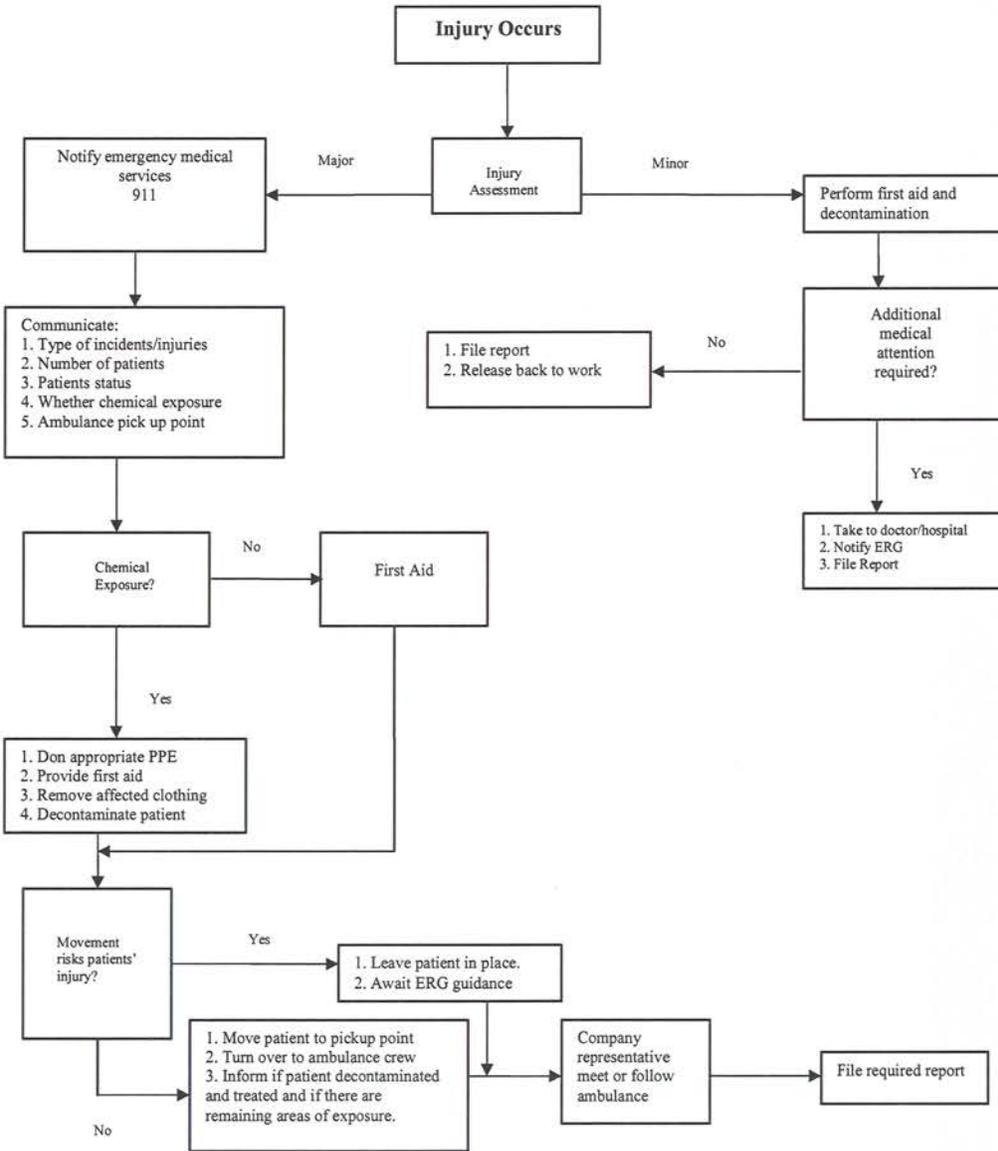
OVERVIEW OF HAZARDOUS MATERIAL INCIDENT NOTIFICATION



This page intentionally left blank.

Figure 8

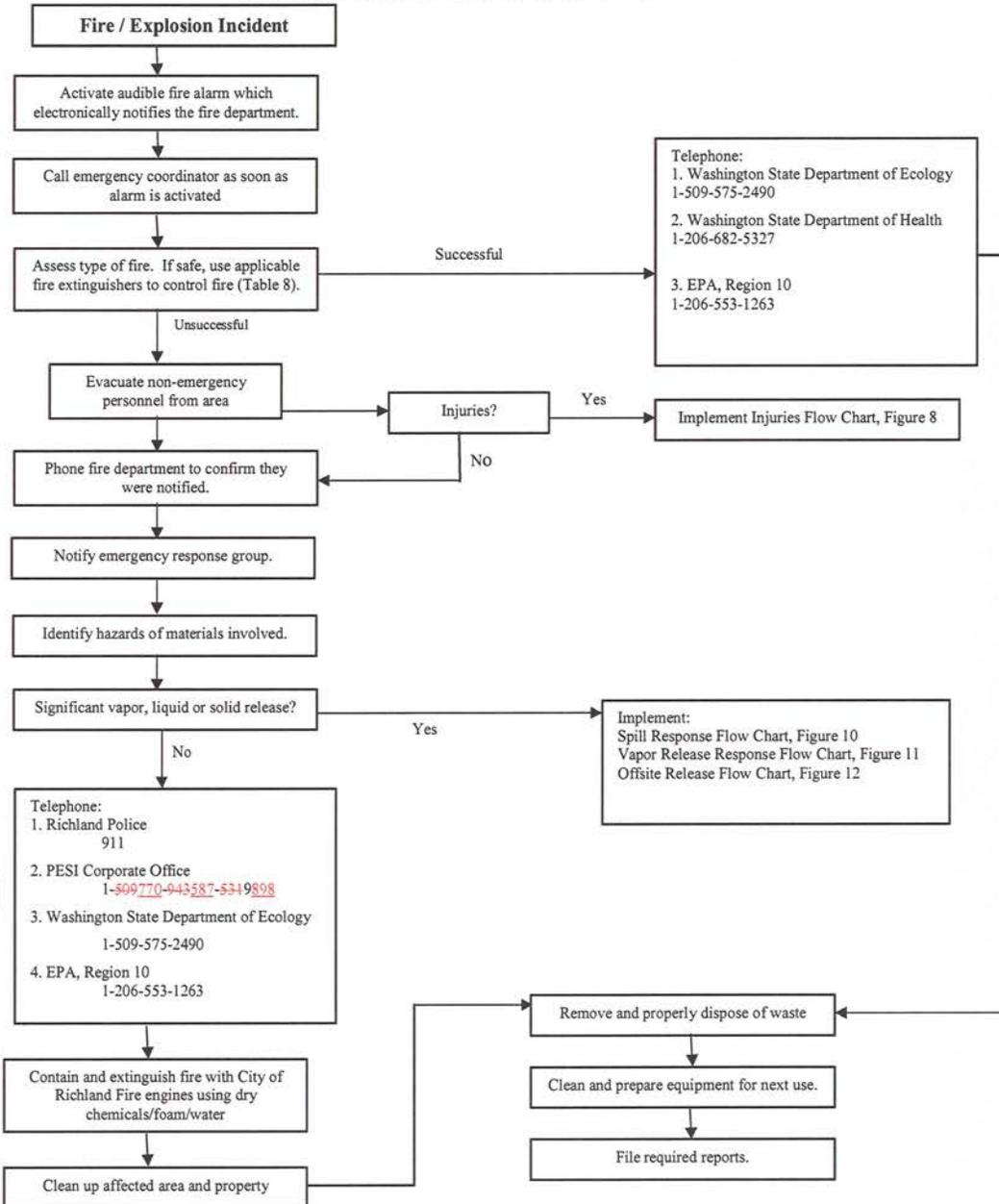
INJURY RESPONSE FLOW CHART



This page intentionally left blank.

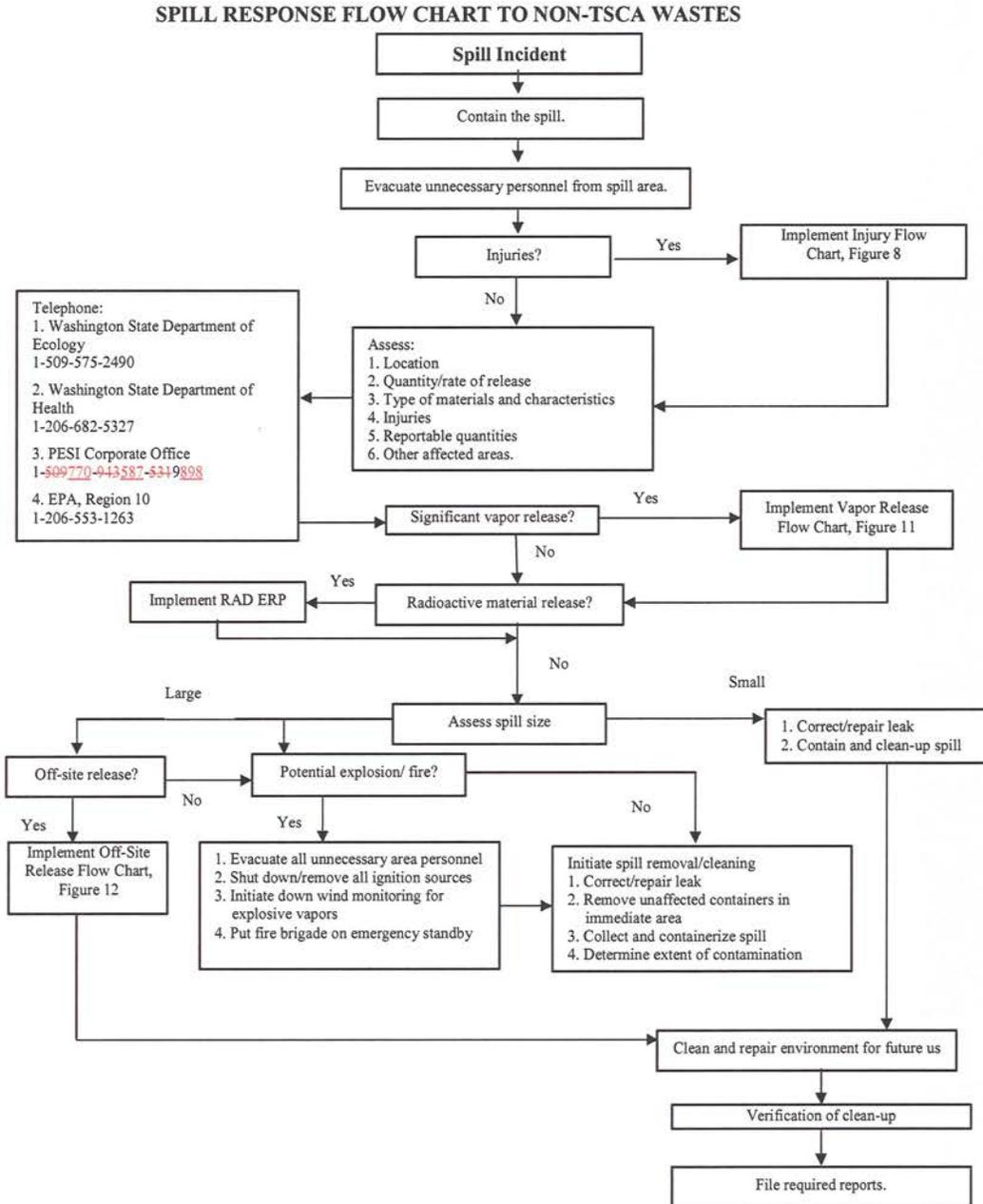
Figure 9

FIRE / EXPLOSION RESPONSE FLOW CHART



This page intentionally left blank.

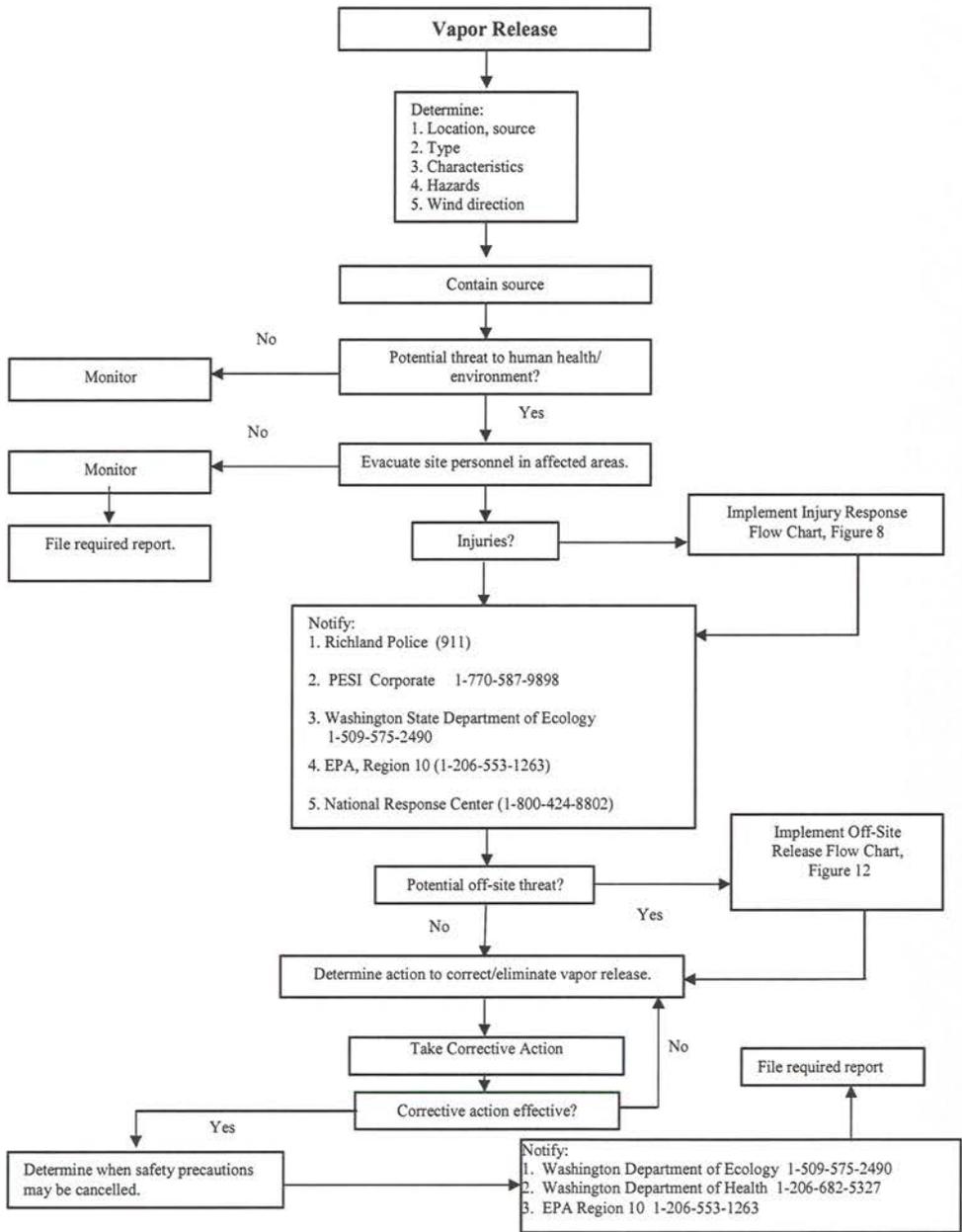
Figure 10



This page intentionally left blank.

Figure 11

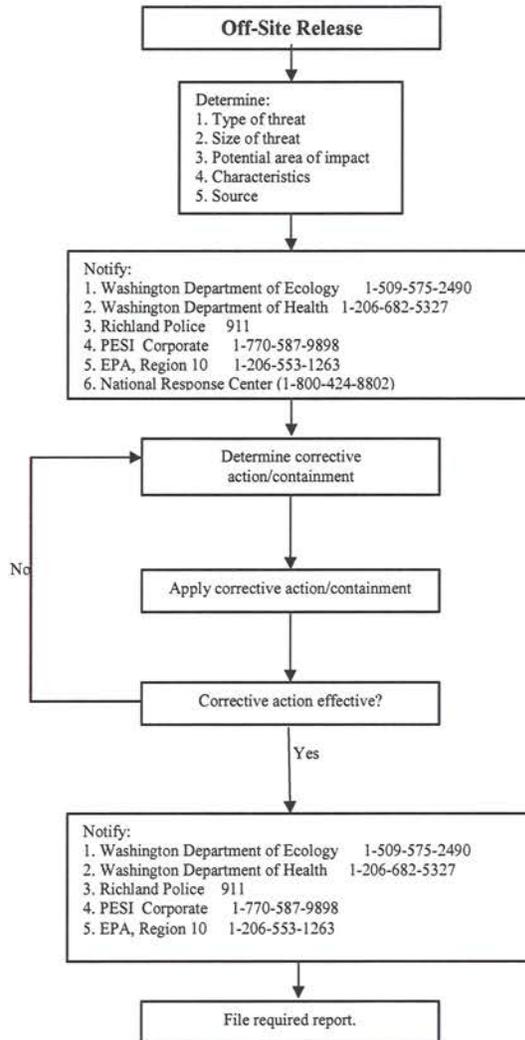
VAPOR RELEASE RESPONSE FLOW CHART



This page intentionally left blank.

Figure 12

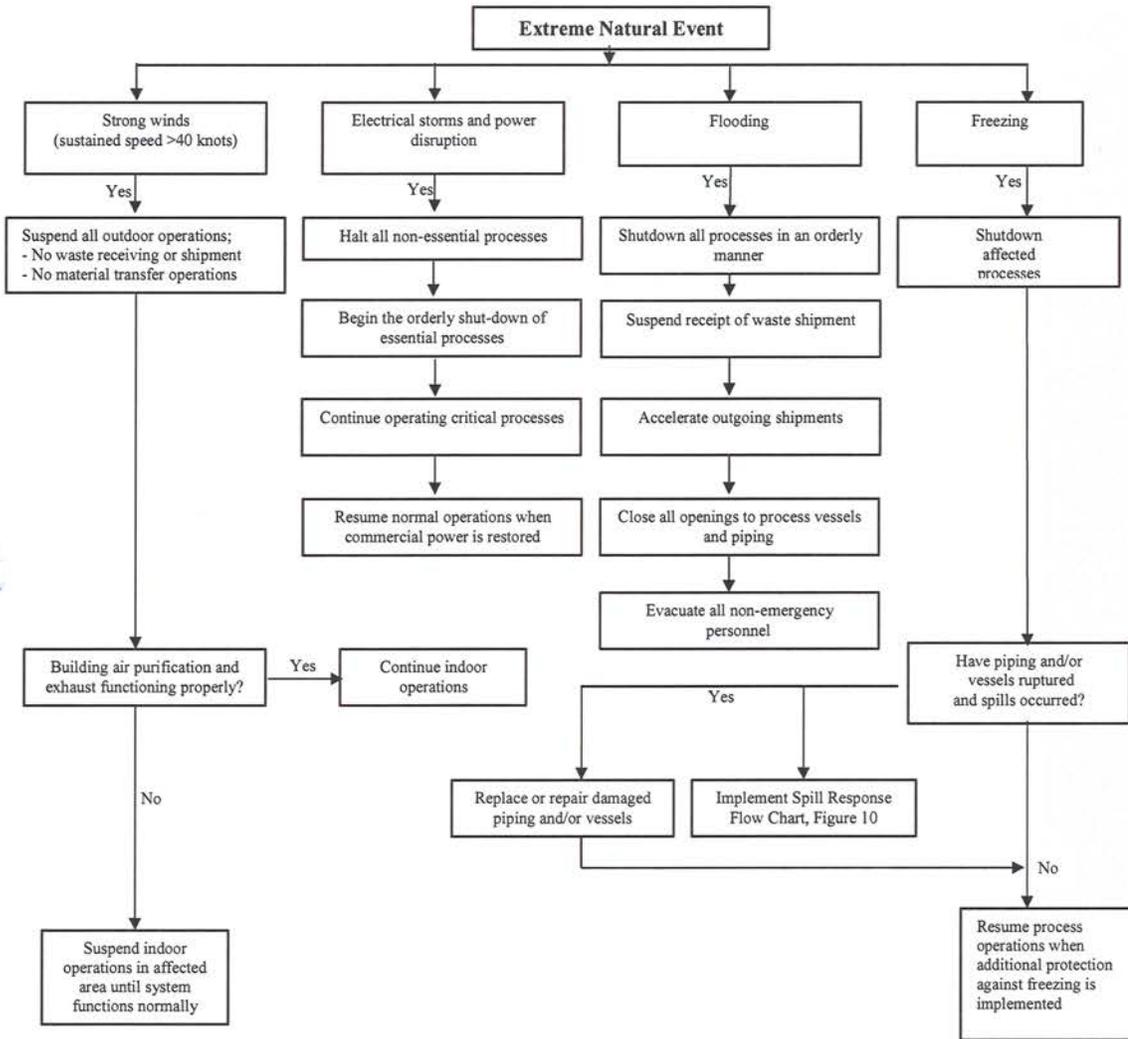
OFF-SITE RELEASE FLOW CHART



This page intentionally left blank.

Figure 13

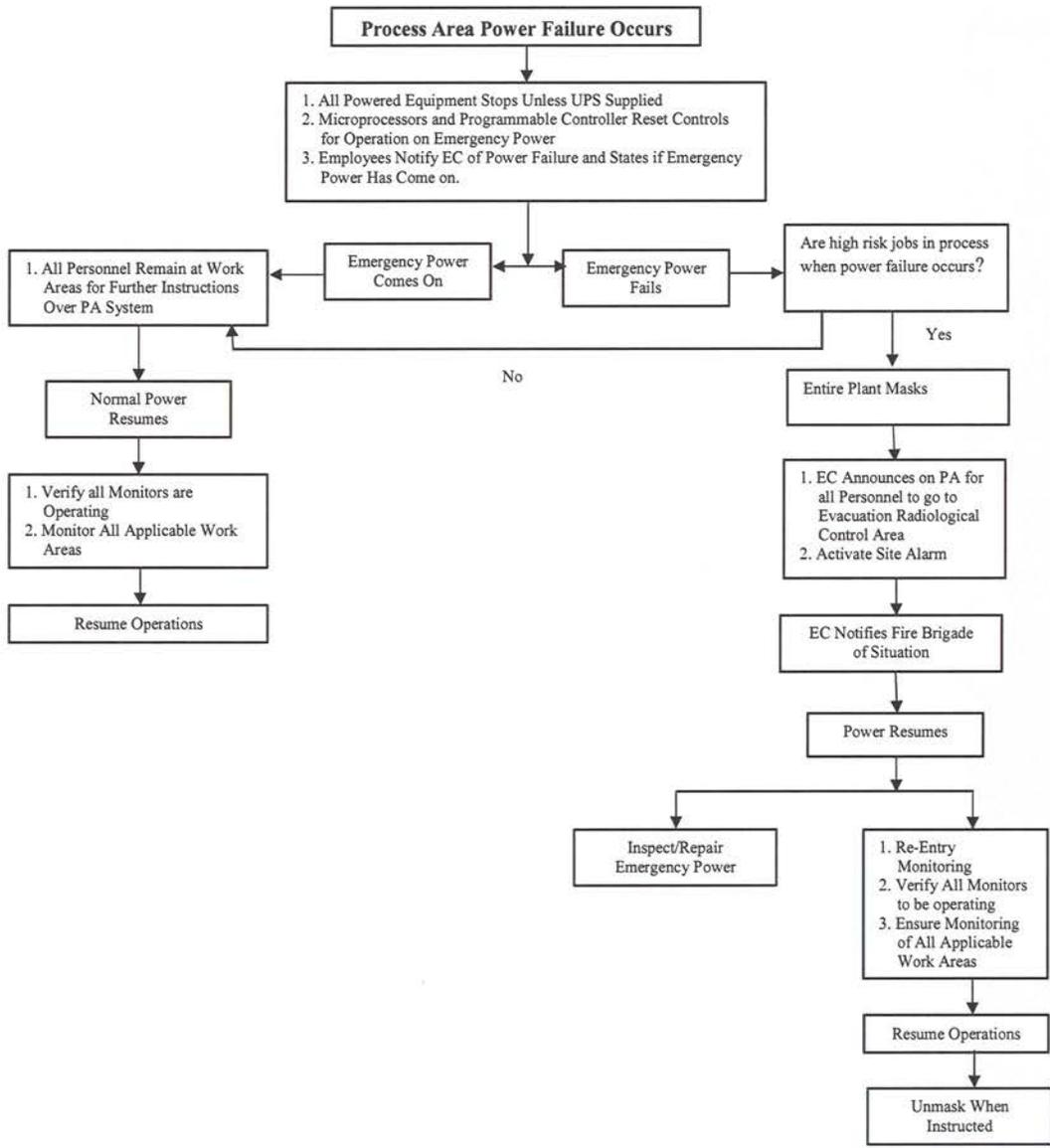
EXTREME NATURAL EVENT RESPONSE FLOW CHART



This page intentionally left blank.

Figure 14

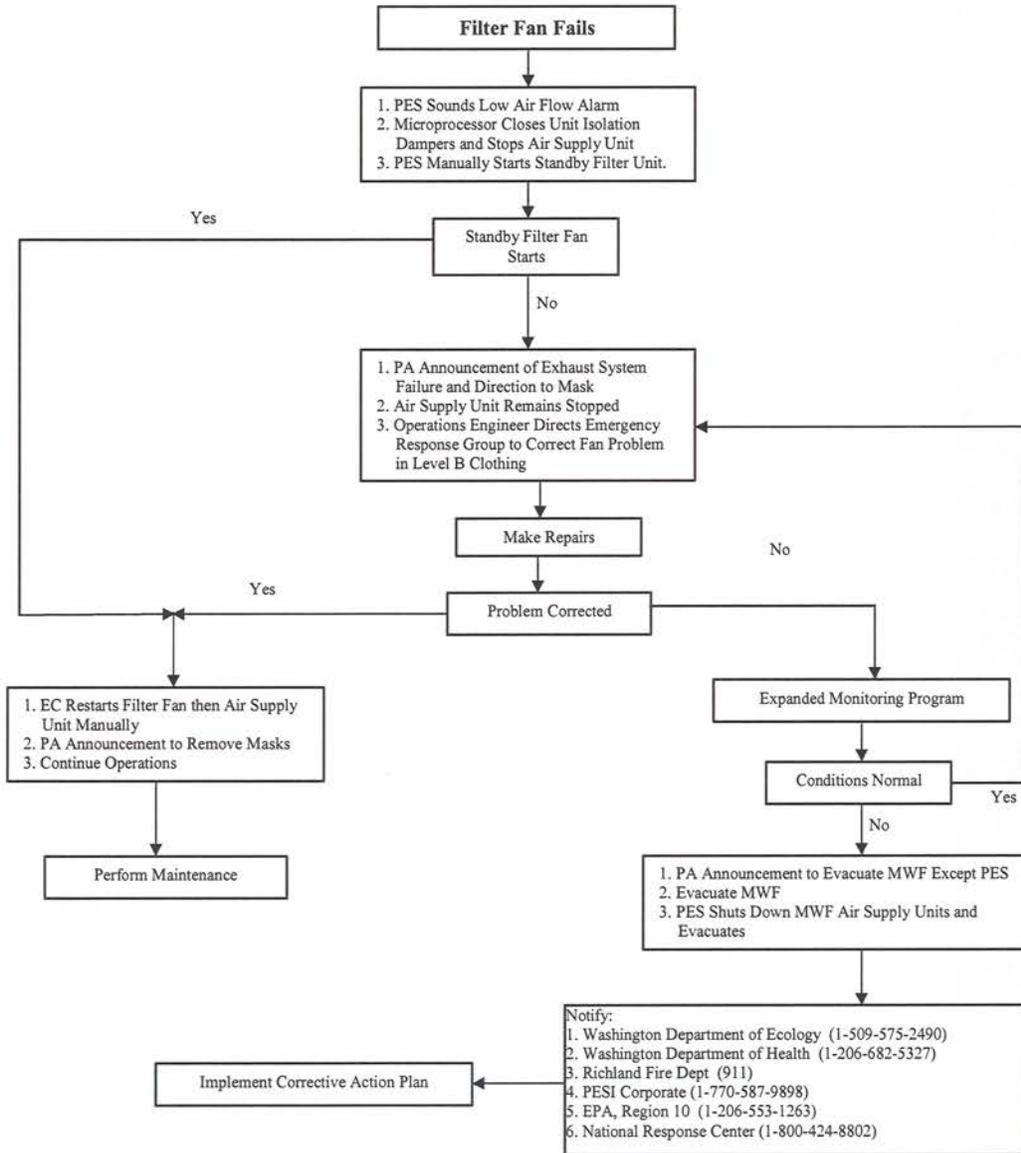
POWER FAILURE FLOW CHART



This page intentionally left blank.

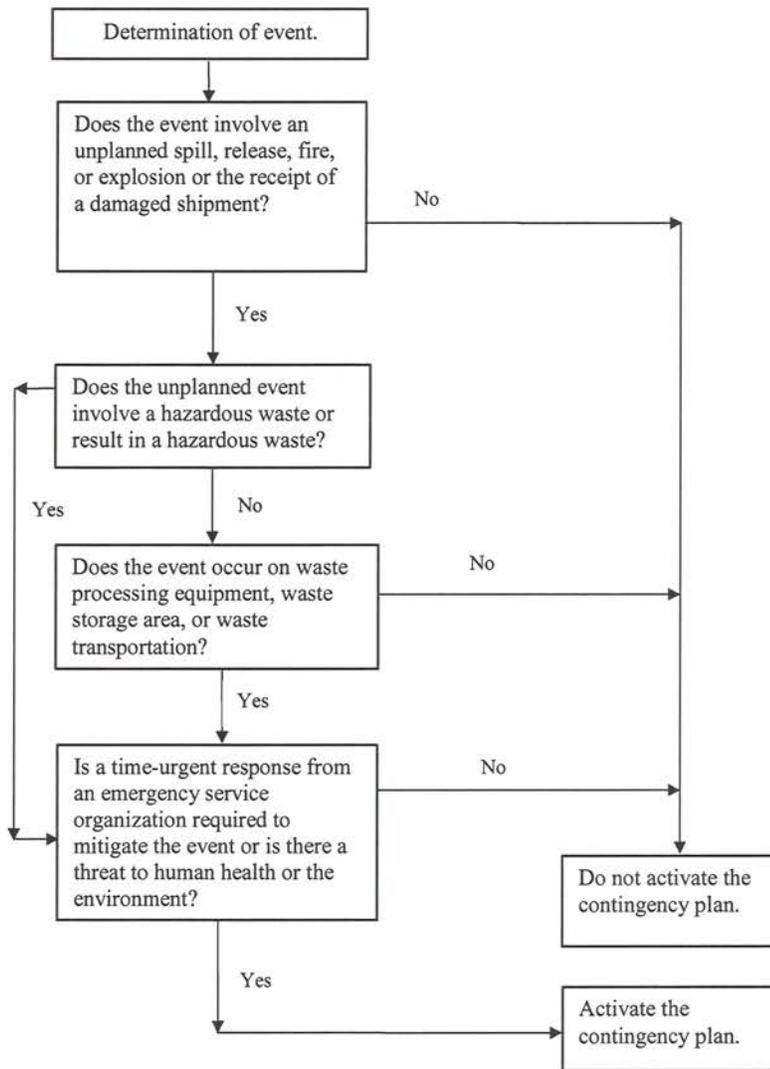
Figure 15

FILTER FAN FAILURE FLOW CHART



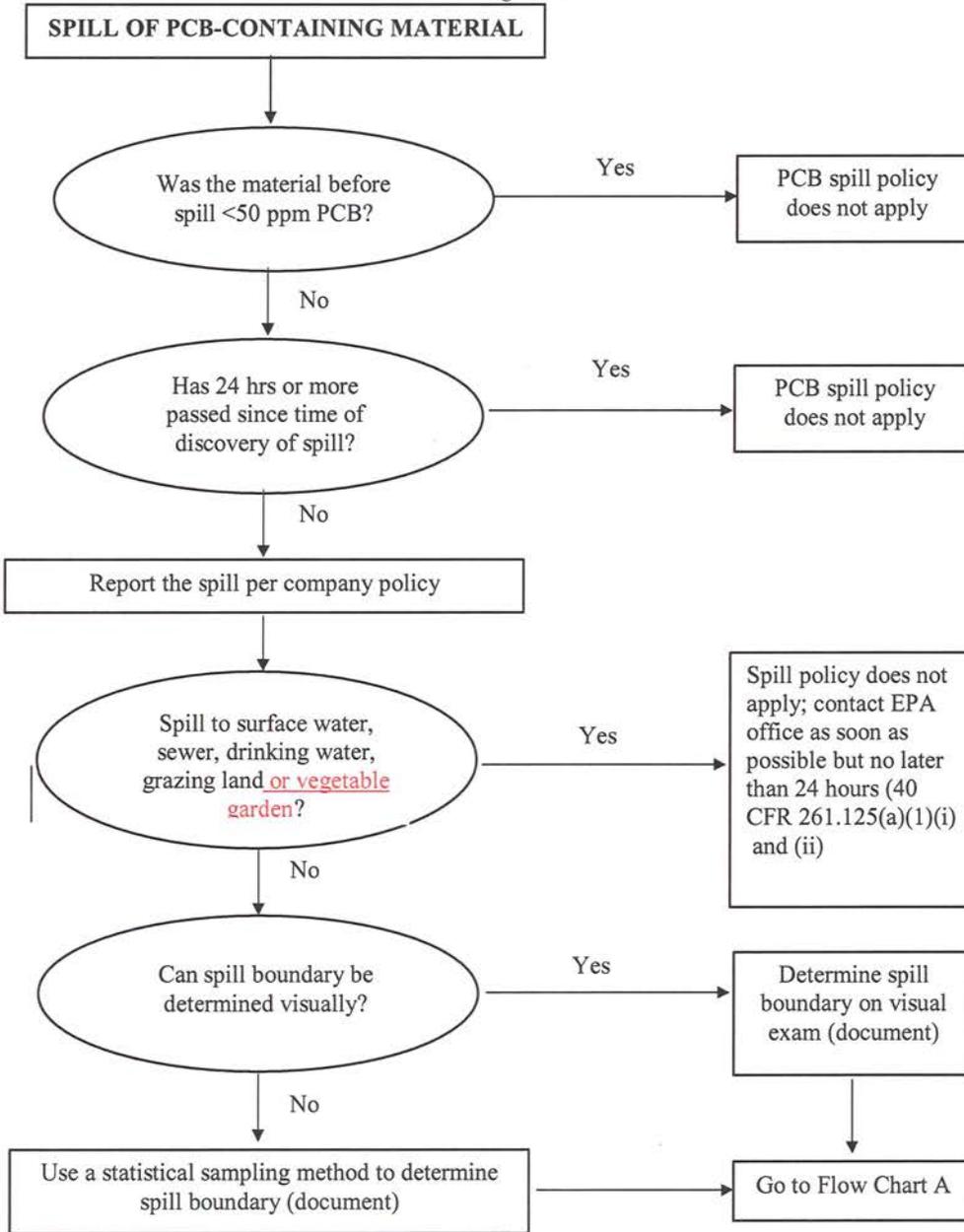
This page intentionally left blank.

Figure 16  
ACTIVATION OF THE CONTINGENCY PLAN

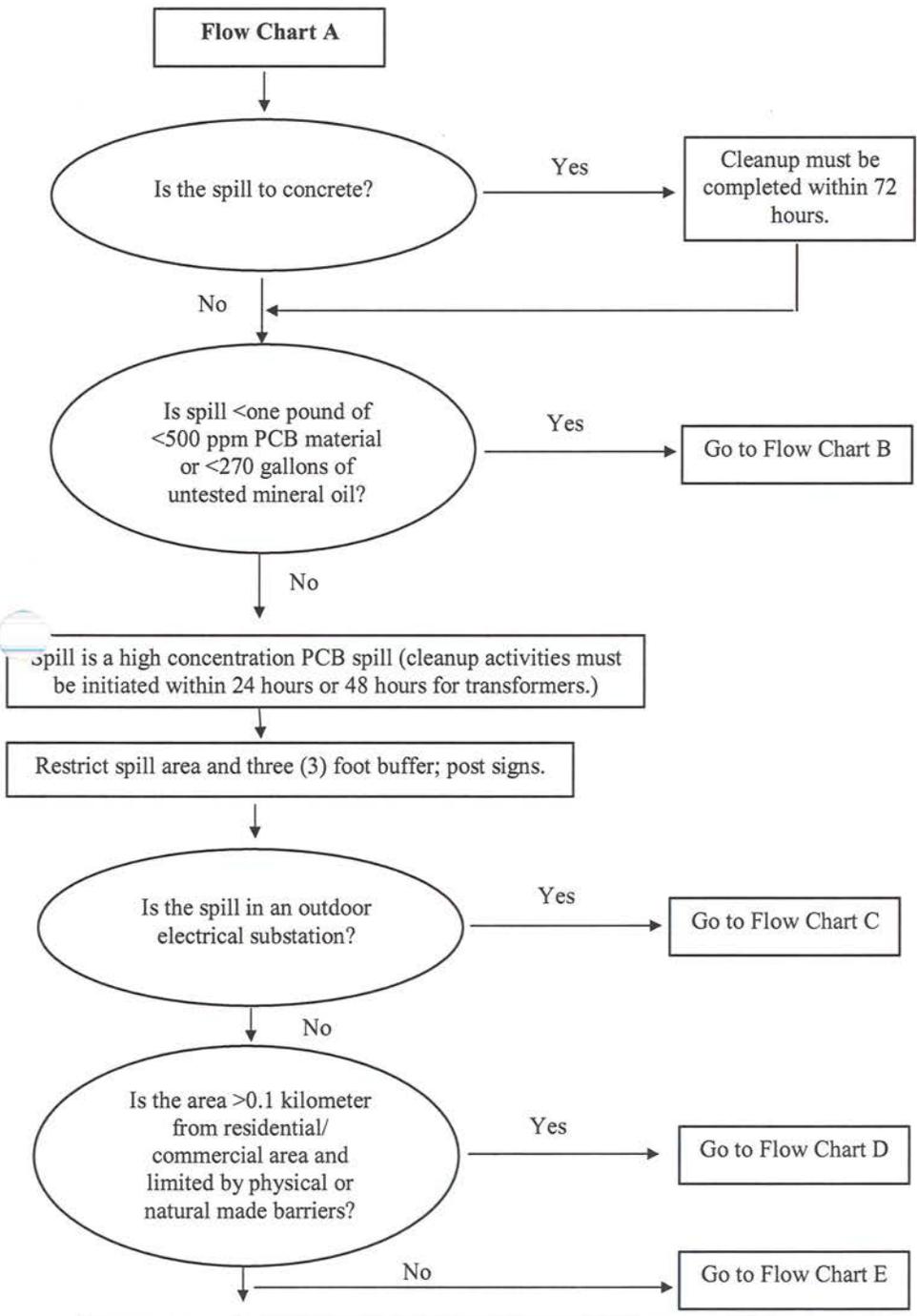


This page intentionally left blank.

Figure 17



This page intentionally left blank.



This page intentionally left blank.

**Flow Chart B**

Spill is low concentration PCB spill (spill cleanup must be completed within 48 hours.)

Is spill to a solid surface?

Yes

Double wash/rinse surface (40 CFR 761.123 and one (1) foot buffer per requirements.)

Go to Flow Chart F

No

Is spill to a soil?

Yes

Double wash/rinse surface (40 CFR 761.123 and one (1) foot buffer per requirements.)

Go to Flow Chart F

No

Spill Cleanup Policy does not apply

**Flow Chart C**

Clean spill to meet:  
Solid Surfaces  $100\mu\text{mg}/100\text{cm}^2$   
Soils  $<25\text{ ppm}$  or  $50\text{ ppm}$  if posted

Perform post-cleanup sampling per 40 CFR 761.130

Go to Flow Chart F

This page intentionally left blank.

**Perma-Fix NW-R**

**Mixed Waste Facility**

**Flow Chart D**

**Flow Chart E**

Area is a restricted access area

Area is a restricted access area

Clean spill to meet:  
 High contact solid surfaces: 10µg/100 cm<sup>2</sup>  
 Low contact indoor impervious surfaces:  
 10µg/100 cm<sup>2</sup>  
 Low contact indoor non-pervious surfaces:  
 10µg/100 cm<sup>2</sup>, or 10010µg/100 cm<sup>2</sup> with encapsulation  
 Low contact outdoor: 100µg/100 cm<sup>2</sup>  
 Soils: ≤25 ppm may be left

Clean spill to meet:  
 Indoor solid surfaces: 10µg/100 cm<sup>2</sup>  
 Indoor vaults and low contact impervious surfaces: 10µg/100 cm<sup>2</sup>  
 Low contact indoor non-pervious surfaces:  
 10µg/100 cm<sup>2</sup>  
 Low contact outdoor non-pervious solid surfaces: 10µg/100 cm<sup>2</sup>, or 10010µg/100 cm<sup>2</sup> with encapsulation  
 Soils: ≤100 ppm may be left provided that soil is excavated to minimum depth of 10 inches. The excavated soil will be replaced with <1 ppm soil and the site is restored.

Perform post-cleanup sampling per 40 CFR 761.130

*Perform post-cleanup sampling per 40-CFR 761.130*

Go to Flow Chart F

*Go to Flow Chart F*

**Flow Chart F**

Certify cleanup. Place certification in unit records and maintain for five (5) years.  
 40 CFR 761.125(b)(3)

Document. Maintain for five (5) years.

- a. Source of spill
- b. Date and time of spill
- c. The date and time cleanup was complete or terminated (note any delay in cleanup).
- d. Brief description of the spill location
- e. Pre-cleanup sampling data used to establish spill boundaries if required.
- f. Brief description of the solid surfaces cleaned and of the double wash/rinse method used.
- g. Approximate depth of soil and the amount of soil removed.
- h. For high concentration spills, post-cleanup verification sampling data.

This page intentionally left blank.

APPENDICES

This page intentionally left blank.

**APPENDIX A**

**Contingency Plan Distributions and Locations**

This page intentionally left blank.

The MWF Contingency Plan and Amendments will be distributed to:

Richland Fire Department  
Kadlec Medical Center Benton County  
Richland Police Department  
Benton County Emergency Management  
Washington Department of Health  
Washington Department of Ecology  
Environmental Protection Agency, Region 10  
Washington Military Department, Emergency Management Division

This page intentionally left blank.

**APPENDIX B**

**Coordination Agreements**

This page intentionally left blank.

**Coordination Agreements**

Nuclear facilities and support services, privately owned or in government-owned facilities, are available within the Hanford Area and the city of Richland. Section G.7 of this Contingency Plan lists the various response agencies available to the MWF in an emergency response situation. Memoranda of Understanding ~~describing~~ arrangements with off-site facilities ~~will be obtained within 90 days of facility start-up and will be contained~~ are located in Appendix B of the Contingency Plan.

This page intentionally left blank.

APPENDIX C  
EVACUATION PLAN

This page intentionally left blank.

**C.1 INTRODUCTION**

Whenever an evacuation is necessary, the Emergency Coordinator (EC) will activate the Incident Command System (ICS) from the Incident Command Post and will direct all evacuation operations. Based on the circumstance, the EC may order one of three evacuation protocols:

1. Abandon facility
2. General evacuation, or
3. Selective evacuation.

**C.2 ABANDON FACILITY**

In the absence of situation-specific directions, the following evacuation actions are followed.

1. Under the most extreme circumstance, the EC may judge that the facility poses serious and imminent danger to the personnel present. In this case, he/she issues an order for all personnel including those responsible for emergency response to immediately abandon the facility. Such order will be given via the public address system and by activating a siren.
2. If such an order is issued and depending upon wind direction, all personnel shall quickly proceed to the upwind Emergency Response Assembly Area adjacent (see Figure C-1) and prepare to drive away in an orderly fashion. The EC will designate a traffic control officer. All personnel shall obey the directions of the traffic control officer.

All personnel shall proceed to a location far removed from the MWF and identified by the EC where a head-count will be conducted.

**C.3 GENERAL EVACUATION**

For General Evacuation, the EC or his/her delegate will announce specific instructions for evacuation.

1. All facility personnel will follow the evacuation order and immediately proceed to the designated assembly area. Unless otherwise instructed, the assembly area for non-emergency-response personnel is the facility's Emergency Response Assembly Area, adjacent to the Access Control Building. The ~~assemble-assembly~~ area for emergency-responders is the Incident Command Post.
2. The RSO, or designee, will conduct a head-count of facility personnel, visitors, and contractors who have assembled at the assembly area. A list of unaccounted persons will be reported to the EC.
3. Upon completion of the head-count of non-emergency-response personnel, these personnel remain in the Emergency Response Assembly Area until further directions. Personnel will refrain from loitering on any roadways.
4. The EC will determine whether the situation warrants that non-emergency-response personnel depart the facility. If instructed, these non-emergency-response personnel will depart from the facility in an orderly fashion. The EC or designee provides traffic control. Roadways remain open to emergency vehicle traffic at all times during the emergency.

5. If the EC or designee determines that certain facility areas are safe for re-entry, the RSO will be notified. Re-entry into the facility is permitted after clearance is given.

6. An evacuation is considered terminated if:

- 7. all non-emergency-response personnel and their vehicles have left the facility, or,
- 8. accessibility to all areas have been restored to pre-incident conditions.

Formatted: Bulleted + Level: 3 + Aligned at: 1.25" + Indent at: 1.5"

9. 7. Post-evacuation actions are in accordance with specifications in the Contingency Plan.

Formatted: No bullets or numbering

**C.4 SELECTIVE EVACUATION**

Execution of a selective evacuation will follow these steps:

1. The EC or designee will direct that audible and visual alarms be sounded.
2. The EC or designee will announce specific instructions for evacuation.
3. Entrances to the evacuated areas will be barricaded to prevent unauthorized re-entry.

**C.5 ADJACENT AREA EVACUATION**

If the EC determines that the incident may threaten human health or the environment outside of the facility, the EC will:

1. Report his findings to the appropriate local authorities. The local officials are responsible for determining whether the adjacent areas need to be evacuated. If evacuation is ordered, it will be executed by the local authorities.
2. Notify the National Response Center (1-800-424-8802)

These communications may contain, as a minimum, the following information:

1. Caller's name and telephone number (if MWF is notified by off-site personnel);
2. Name and address of facility;
3. Nature of incident (fire, explosion, etc.);
4. Time and location of incident;
5. Name and quantity of material involved, if known;
6. Extent of injuries, if any;
7. Possible hazards to human health or the environment outside of the facility.

**C.6 ACCESS AND EVACUATION ROUTES**

Evacuation routes are shown on Figure C-1. Staff should evacuate at right angles to the wind direction following the preplanned route and destination. Figure C-2 also shows a wind rose for the region.

The EC will be notified when the group reaches the preplanned destination.

**C.7 EMERGENCY LIGHTING**

Within a building, emergency lighting illuminates exits if the power fails. Hallways and office areas are lit well enough to permit one to navigate to the nearest exit. Outside emergency lighting allows for safe movement within the plant.

**C.8 AREA AND PERSONNEL SURVEYS**

Air sampler(s) will be deployed and run at the assembly areas. The air samplers will allow for monitoring of individual exposures to airborne contaminants.

1. If the circumstances allow for an orderly exit from the restricted area, a radiation protection technician equipped with appropriate radioactivity survey instruments will be stationed at the exit of restricted area (e.g., the access control point in the ACB). He will assist in the radioactivity survey of all personnel.
2. If the circumstances do not allow for an orderly exit, radioactivity survey of personnel will be performed at the assembly areas.
3. Pocket dosimeters of individuals who have been in the affected areas during the incident shall be monitored for radiation exposure.
4. Search and rescue of unaccounted persons will be conducted, under the direction of the EC.

**C.9 SEARCH FOR MISSING PERSONNEL**

If there are personnel unaccounted for during an emergency, it may be necessary to initiate a search. The following should be considered prior to initiating the search:

1. Nature of the emergency.
2. Availability of back-up personnel.
3. Availability of emergency response / PPE equipment.

The guidance below should be followed for locating missing persons.

1. Sweep searches will ONLY be done by two person teams (buddy system)
2. Both members of the team must stay within contact of each other. This contact may be by hand signals, verbal (non-radio), or any means that allow them to recognize and assist their partner if they are disabled
3. Sweep search teams must consider wearing/carrying a self contained breathing apparatus (SCBA) which will be dependent on the type of emergency.
4. Sweep search teams must carry a two-way radio.
5. Sweep search teams must create and communicate a search plan of the Area with the EC.
6. Sweep search teams must:
  - a. Look in areas where missing person(s) were last seen.
  - b. Look in areas known to be affected by the emergency.
  - c. Survey structures/block perimeters (general grounds search).

**C.10 DIRECTIONS TO THE HOSPITAL**

The Kadlec Medical Center Emergency Department has provisions for treatment of radiologically contaminated patients. The directions to the hospital from the MWF are as follows:

Starting at 2025 Battelle Boulevard

1. Go west to Kingsgate Drive.
2. Turn left on Kingsgate Drive.
3. Go south for 1.3 miles.
4. Turn left on State Route 240.
5. Go east for 2 miles.
6. Turn right on Jadwin/Stevens
7. Go south for 1.4 miles.
8. Turn right on Williams Boulevard.
9. Go west.
10. Turn left on Goethals Drive.
11. Go south for 0.4 miles.

***Perma-Fix NW-R***

***Mixed Waste Facility***

- 12. Turn right on Swift Boulevard
- 13. Head west for 0.1 mile.

Total travel time is approximately 15 minutes

Figure C-1 (Evacuation Routes) not available in Microsoft Word Format. See paper version of the plan for a copy of this figure.

Figure C-2 (Wind Rose) not available in Microsoft Word Format. See paper version of the plan for a copy of this figure.

**APPENDIX D  
CERTIFICATION STATEMENT**

This page intentionally left blank.

**CERTIFICATION OF EMERGENCY COORDINATOR AUTHORITY**

This certification fulfills the emergency coordinator requirements of WAC 173-303-360(1) for Perma-Fix Northwest Richland, Inc.'s Part B permit for the Mixed Waste Facility in Richland. As the Vice President and General Manager, I have the authority to certify on behalf of the corporation.

"I certify that the Primary Emergency Coordinator or alternate is authorized to commit the necessary resources to carry out the contingency plan in the event of an emergency."

Perma-Fix Northwest Richland, Inc.

\_\_\_\_\_  
Richard Grondin  
Vice President and General Manager

\_\_\_\_\_  
Date

This page intentionally left blank.