

The Dow Chemical Company
Pittsburg, CA Plant
EPA ID CAD 076528678

RCRA Hazardous Waste Facility Permit
Application
Block 560 Drum Storage Area

Prepared for

The Dow Chemical Company

901 Loveridge Road
Pittsburg, CA 94565

January 2016



CH2M HILL, Inc.
155 Grand Avenue
Suite 800
Oakland, CA 94612

Contents

Acronyms and Abbreviations	v
A General Information Requirements	A-1
B Facility Description	B-1
B-1 General Description	B-1
B-2 Topographic Map	B-1
B-3 Facility Location Information	B-2
B-3a Seismic Requirements	B-2
B-3b Flood Plain Requirements	B-2
B-4 Traffic Patterns	B-2
C Waste Characteristics	C-1
C-1 Chemical and Physical Analysis	C-1
C-1a Containerized Wastes	C-1
C-1b Waste in Tank Systems	C-1
C-1c Wastes Incinerated and Wastes Used in Performance Tests	C-1
C-2 Waste Analysis Plan	C-4
C-3 Waste Analysis for Land Disposal Restrictions	C-4
C-3a Waste Analysis	C-4
C-3b Records Kept Available for Agency Review	C-5
C-3c Storage of Restricted Wastes	C-5
D Process Information - Containers	D-1
D-1 Containers	D-1
D-1a Description of Containers	D-1
D-1b Container Management Practices	D-1
D-1c Secondary Containment System Design and Operation	D-2
D-1d Containers with Free Liquids	D-3
D-1e Containers without Free Liquids	D-3
E Procedures to Prevent Hazards	E-1
E-1 Security	E-1
E-1a Waiver	E-1
E-1b Security Procedures and Equipment	E-1
E-2 Inspection Schedule	E-1
E-2a General Inspection Requirements	E-2
E-2b Specific Process Inspection Requirements	E-2
E-3 Documentation of Preparedness and Prevention Requirements	E-2
E-3a Equipment Requirements	E-2
E-3b Aisle Space Requirement	E-3
E-3c E-3c Documentation of Arrangements with Local Emergency Response Organizations	E-3
E-4 Prevention Procedures, Structures, and Equipment	E-4
E-4a Unloading Procedures	E-4
E-4b Runoff	E-4
E-4c Water Supplies	E-4
E-4d Equipment and Power Failure	E-4
E-4e Personnel Protection Procedures and Equipment	E-5

CONTENTS

E-4f	Procedures to Minimize Releases to the Atmosphere	E-5
E-5	Prevention of Reaction of Ignitable, Reactive, and Incompatible Waste	E-5
E-5a	Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Wastes ...	E-5
E-5b	General Precautions for Handling Ignitable or Reactive Waste and Mixing of Incompatible Waste	E-6
E-5c	Management of Ignitable or Reactive Wastes in Containers	E-6
E-5d	Management of Incompatible Wastes in Containers	E-6
F	Contingency Plan	F-1
F-1	Contingency Plan	F-1
F-2	Emergency Coordinators	F-1
F-3	Implementation	F-1
F-4	Emergency Actions	F-1
F-4a	Notification	F-1
F-4b	Identification of Hazardous Materials	F-1
F-4c	Assessment	F-2
F-4d	Control Procedures	F-2
F-4e	Prevention of Recurrence of Spread of Fires, Explosions, or Releases	F-2
F-4f	Storage, Treatment, and Disposal of Released Materials	F-2
F-4g	Incompatible Waste	F-2
F-4h	Post-emergency Equipment Management	F-2
F-4i	Container Spills and Leakage	F-3
F-5	Emergency Equipment	F-3
F-6	Arrangements with Local Authorities	F-4
F-7	Evacuation Plan for Facility Personnel	F-4
F-8	Required Report Procedures for Recordkeeping and Reporting to Federal Authority ...	F-5
F-9	Location and Distribution of CCP	F-5
G	Personnel Training	G-1
G-1	Outline of Introductory and Continuing Training Programs	G-1
G-1a	Job Title/Job Description	G-1
G-1b	Description of How Training will be Designed to Meet Actual Job Tasks	G-1
G-1c	Training Director	G-1
G-1d	Relevance of Training to Job Position	G-1
G-1e	Training for Emergency Response	G-1
G-2	Maintenance of Training Records/Copy of Personnel Training Documents	G-2
H	Closure and Closure Financial Requirements	H-1
H-1	Closure Plan	H-1
H-1a	Closure Performance Standard	H-1
H-1b	Time and Activities Required for Partial Closure and Final Closure Activities ...	H-1
H-1c	Maximum Waste Inventory	H-2
H-1d	Schedule for Closure	H-2
H-1e	Closure Procedures	H-3
H-2	Post-closure Plans	H-4
H-3	Notices Required for Closure	H-4
H-4	Closure Cost Estimate	H-4
H-5	Closure Financial Assurance	H-4
H-6	Post-closure Cost Estimate	H-4
H-7	Post-closure Financial Assurance	H-4
H-8	Liability Requirements	H-4

I	Solid Waste Management Units.....	I-1
	I-1 Characterize the Solid Waste Management Unit	I-1
	I-2 Releases	I-1
J	Other Federal Laws.....	J-1
K	Part B Certification	K-1
L	Air Emission Standards for Containers, Tanks, and Surface Impoundments.....	L-1
M	Waste Minimization Certification	M-1

Tables

C-1	Waste Stream Descriptions.....	C-2
G-1	Personnel Training for Hazardous Waste Management Employees – Not a Waste Handler.....	G-2
G-2	Personnel Training for Hazardous Waste Management Employees –Waste Handler	G-3
G-3	Personnel Training for Hazardous Waste Management Employees –Unit Waste Manager.....	G-4
G-4	Personnel Training for Hazardous Waste Management Employees –Site Waste Coordinator...	G-5
G-5	Personnel Training for Hazardous Waste Management Employees –Site Waste Manager.....	G-7
H-1	Closure Cost Estimate	H-5

Appendices

A	Part A Form
B	Facility Maps
C	Waste Analysis Plan
D	Container Specification
E	Drum Storage Drawings, Coating Specification, and Engineer Certification
F	Inspection Procedure/Form
G	Consolidated Contingency Plan
H	Inspection Schedule
I	Compatibility Procedure for Waste Drums
J	Financial Assurance and Insurance Documents
K	Annual Waste Minimization Certification

Acronyms and Abbreviations

bgs	below ground surface
CCCFPD	Contra Costa County Fire Protection District
CCP	Consolidated Contingency Plan
CCR	California Code of Regulations
CFR	Code of Federal Regulations
DOT	Department of Transportation
DTSC	Department of Toxic Substances Control
LDR	land disposal restrictions
NPDES	National Pollutant Discharge Elimination System
OES	Office of Emergency Services
RCRA	Resource Conservation and Recovery Act
RFA	RCRA facility assessment
RWQCB	California Regional Water Quality Control Board
SR	State Route
SWMU	solid waste management unit
USEPA	United States Environmental Protection Agency
WDR	Waste Discharge Requirement

General Information Requirements

Appendix A presents the Part A application form (Form 8023) including photographs of the Block 560 Drum Storage Area.

Appendix B presents a topographic map (Map 1) that:

- Extends 1 mile beyond the property boundaries of the facility.
- Shows the facility property boundary and each of its intake and discharge structures.
- Shows each hazardous waste transfer, treatment, storage, or disposal facility.
- Shows each well where fluids from the facility are injected underground.
- Shows wells, springs, other surface water bodies, and drinking water wells known to the applicant within 0.25 mile of the facility property boundary.

Appendix B also includes a second map (Map 2) that presents the general facility layout, including:

- Property boundaries.
- Hazardous waste transfer, treatment, storage, or disposal facilities.
- Areas of past storage, treatment, or disposal.
- Shows each well where fluids from the facility are injected underground.
- Shows wells, springs, other surface water bodies, and drinking water wells known to the applicant within 0.25 mile of the facility property boundary.

Note that this map is also used to satisfy the map requirements of Part B of the application (22 California Code of Regulations [CCR] 66270.14(b)(18)).

Facility Description

B-1 General Description

The Dow Pittsburg site is located at the north end of Loveridge Road in Pittsburg, California. It occupies approximately 513 acres and is bounded by the New York Slough on the north, the Pittsburg-Antioch Highway on the south, Loveridge Road and USS-Posco Industries on the west, and wetlands, the Contra Costa Canal, and the Delta Diablo facility on the east. The site operates 24-hours per day, seven days per week and employs approximately 350 workers and 250 contractors. The site has its own hazardous materials, fire, medical and security personnel and resources capable of responding to site emergencies. The site manufactures products for agricultural operations, pest control services, and personal care.

The Resource Conservation and Recovery Act (RCRA) hazardous waste facilities operating at this site include the Block 560 Drum Storage Area and two permitted industrial furnaces. The industrial furnaces are regulated under a separate RCRA permit (Permit Number 01-NC-08) and treat waste generated onsite. Drummed hazardous waste generated in the various operating units is either shipped offsite to permitted treatment, storage, and disposal facilities within 90 days or is transferred to the Block 560 Drum Storage Area if Dow needs to store the material onsite for a period greater than 90 days.

B-2 Topographic Map

A topographic map is presented in Appendix B (Map 2). It provides:

- Map scale and date.
- 100-year floodplain area.
- Surface waters including intermittent streams.
- Surrounding land uses. The facility is zoned for heavy industry. Surrounding land use near the facility is industrial.
- Wind rose (i.e., prevailing wind-speed and direction).
- Orientation of the map (north arrow).
- Legal boundaries of the hazardous waste management facility site.
- Access control (fences, gates).
- Injection and withdrawal wells both onsite and offsite.. Note: data on offsite wells are no longer available through the California Department of Water Resources.
- Buildings; transfer, treatment, storage or disposal operations; or other structures (recreation areas, run-off control systems, access and internal roads, storm, sanitary and process sewerage systems, loading and unloading areas, fire control facilities, etc.).
- Barriers for drainage or flood control.
- Location of operational units within the hazardous waste management facility site.

B-3 Facility Location Information

B-3a Seismic Requirements

The facility is located in Pittsburg, California. There is no mapped or other visible evidence of active or potentially-active faults on the site within 3,000 feet of the drum storage facility. The potentially active Antioch Fault, located approximately two miles east of the site, is the closest mapped active or potentially active fault nearest the Dow Pittsburg Plant.

B-3b Flood Plain Requirements

As shown on Map 2, the drum storage facility is not located within the 100-year flood plain.

B-4 Traffic Patterns

Truck traffic volumes along State Route (SR) 4 in the Dow Pittsburg Plant area constitute approximately 5 percent of the total traffic volumes (based on data provided by Caltrans). This equates to 1,000 trucks per day along Loveridge Road¹ and approximately 5,550 trucks along SR 4 in the Loveridge Road area.²

Traffic associated with transporting hazardous waste containers is minor in comparison to normal flow of industrial traffic not related to waste management and has a minimal impact on public thoroughfares. Onsite traffic associated with hazardous waste storage consists of drummed waste being moved via forklift from process units to accumulation areas. The forklift traffic associated with the 560 Block RCRA storage area are estimated to be less than 1% of the total, or about 5 trips per year (at a maximum). Waste drums are manifested for offsite disposal and are transported in a single truck trailer by a licensed hazardous waste hauler. Hazardous waste drum shipments from the 560 Block RCRA storage area account for 1 to 5 truck trips per year.

There are four locked or controlled access gates for vehicular traffic, two of which are normally used. The access gates are manned whenever unlocked and in use. There are also gates, normally closed and locked, that are opened to allow entry by railroad trains for onsite pickups, deliveries, or rail switching. Traffic is also controlled by speed limits and stop signs throughout the plant. Most intersections in heavily-trafficked areas have stop signs for four directions. The plant speed limit is 15 mph.

Road surfaces are predominately asphalt concrete. They were designed to meet AASHTO Standard HS-20-44. The roads are designed for trucks with loads of 8,000 pounds for the tractor and 32,000 pounds for each trailer axle. The load-bearing capacity is sufficient to safely handle heavy truck traffic.

¹ *State Route 4 (East) Widening Project, Loveridge Road to State Route 160, Negative Declaration/Initial Study/Final Environmental Assessment* (Caltrans, August 2005)

² 2013 All Traffic Volumes on CSHS (<http://traffic-counts.dot.ca.gov/2013all/Route2-4.html>)

Waste Characteristics

This section addresses the characterization of the hazardous wastes that are stored at the Block 560 Drum Storage Area. Section C-1 describes the chemical and physical characteristics of the hazardous wastes stored. Section C-2 addresses the requirements of the Waste Analysis Plan specified in 22 CCR 66264.13 and has been prepared using the general provisions contained within the United States Environmental Protection Agency (USEPA) guidance document: *Waste Analysis at Facilities That Generate, Treat, Store, and Dispose of Hazardous Wastes - Final, A Guidance Manual*, EPA 530-R-12-001, Office of Solid Waste and Emergency Response (5303P).³ Section C-3 contains information regarding compliance with the land disposal restrictions (LDRs) contained in 22 CCR, Division 4.5, Chapter 18.

C-1 Chemical and Physical Analysis

C-1a Containerized Wastes

The Chemical and Physical Analysis information was developed by the use of the Dow Waste Characterization Process, and is located in the Waste Analysis Plan (Appendix C). Characterization information for hazardous waste streams that could potentially be stored in the Block 560 Drum Storage Area is presented in Table C-1. Most of the waste consists of organic solids that will be incinerated. These wastes are placed in 25-gallon Dak-Paks (see Appendix D for specifications). Dow waste handlers select drums that are compatible with the waste stored as described in Section D. All drums are Department of Transportation (DOT) approved.

The Block 560 Drum Storage Area is located approximately 760 feet from the property line. Therefore, all containers of waste, including containers of ignitable waste, are stored at least 50 feet from the property line. No reactive wastes are stored in the Block 560 Drum Storage Area.

Small quantities of reactive wastes may be generated by the research laboratory. The laboratory deactivates vials and flasks of potentially-reactive materials before they are containerized in lab packs. This activity is performed pursuant to the requirements of the California Health and Safety Code, Section (HSC) 25200.3.1 and, therefore, does not need to be permitted by DTSC.

C-1b Waste in Tank Systems

Dow stores hazardous waste in tanks T-12, T-501B and T-502A that are associated with two industrial furnaces that are regulated under a separate Part B Permit. The remainder of the hazardous waste tanks at the facility accumulate hazardous waste for less than 90 days; therefore, these tanks do not need to be permitted by DTSC.

C-1c Wastes Incinerated and Wastes Used in Performance Tests

Hazardous wastes are treated in two industrial furnaces onsite. These industrial furnaces are regulated under a separate Part B Permit.

³ USEPA, April 2015: <http://www2.epa.gov/sites/production/files/2015-04/documents/tsdf-wap-guide-final.pdf>

Table C-1. Waste Stream Descriptions

Waste Category Description	Constituents	RCRA Waste Codes	CA Waste Codes	Compatibility Code	Composition
Chlorinated Pyridines, liquid and solids Source description: - sample drains - equipment drains - maintenance preparation - other	Chlor-pyridines Arsenic Barium Cadmium Chromium Lead Mercury Selenium CCI4 HCB HCBD HCE C2Cl4	D004 D005 D006 D007 D008 D009 D010 D019 D032 D033 D034 D039	741 751	1	Chlorinated Pyridines 40-100% Absorbent, debris 0-50 % Hexachloroethane 0-2.0% Hexachlorobenzene 0-2.0% Carbon Tetrachloride 0-4.0% Metals 0-2.0%
Trench Solids	CCI4 HCB HCBD HCE C2Cl4 TCE	D019 D032 D033 D034 D039 D040	751 352	1	Dirt 0-25% Debris 0-20% Absorbent 0-40% Chlorinated Solvents 0-15%
Paint waste from maintenance activities, liquid and solids	MEK MECL2	D001 D035 F005 F002	212	1	Methyl Ethyl Ketone 60-80% Methylene Chloride 5-10% Paint Solids 15-30% Absorbent 0-50%
Discarded Chlorinated Products from Miscellaneous sources, liquid and solids	MeCl2 1,3-DCP C2Cl4 CCI4 111-TCA TCE	U080 U084 U210 U211 U226 U228	211	1	Chlorinated Solvents 50-100% Absorbents 0-50%

Table C-1. Waste Stream Descriptions

Waste Category Description	Constituents	RCRA Waste Codes	CA Waste Codes	Compatibility Code	Composition	
Organic Lab Waste and Debris, liquid and solids	Acetone MeCl ₂ Acetonitrile Hexane MeOH CCl ₄ C ₂ Cl ₄ HCB HCE Glycols Chlor-pyridines	D001 F002 F003 D019 D039 D032 D034	551 751 741	1	Acetone Acetonitrile Hexane Chlorinated Solvents Glycols Chlorinated Pyridines Debris	0-5% 0-1% 0-2% 40-60% 0-15% 0-15% 0-10%
Corrosive Lab waste, basic, liquid	KOH NaOH NH ₄ OH	D002	551	2	Potassium hydroxide Sodium Hydroxide Ammonium Hydroxide Water	0-5% 5-15% 5-10% 40-70%
Corrosive Lab waste, Acidic, liquid	HCl H ₂ SO ₄	D002	551	3	Hydrochloric Acid Sulfuric Acid Water	5-10% 5-10% 80-90%
Chlorinated organics/solvents, liquids and solids	MeCl ₂ 1,3-DCP C ₂ Cl ₄ CCL ₄ CHCl ₃ 1,2-DCE HCB HCBUT HCE TCE Chloro-pyridines	F002 D039 D019 D022 D028 D032 D033 D034 D040	741 751	1	Chlorinated Solvents Chlorinated pyridines Absorbent	50-100% 0-20% 0-30%
Chlorinated/Fluorinated Pyridines liquid and solids	Chloro- Fluoro pyridines	NA	741 751	1	Chlorofluoro pyridines Absorbent	0-100% 0-50%
Halopyridines, liquid and solids	Chloro-Fluoro pyridines HF	NA	741	4	Chlorofluoro pyridines Hydrogen Fluoride Absorbent	50-100% 0-10% 0-40%

Table C-1. Waste Stream Descriptions

Waste Category Description	Constituents	RCRA Waste Codes	CA Waste Codes	Compatibility Code	Composition
Spent Carbon, solids	CCL4 CHCl3 MeCl2 TCE Fluoride Chlorine	D019 D022 F002 D040	211 751 352 351 181	1	Chlorinated Solvents 5-10% Carbon 80-90% Fluoride 0-2.5% Chlorine 0-2.5%
Distillation Liquids	Arsenic Cadmium Chromium Lead Mercury Selenium CCl4 CHCl3 HCB HCBuT HCE C2Cl4 TCE	D004 D006 D007 D008 D009 D010 D019 D022 D032 D033 D034 D039 D040	741	1	Metals 0-5% Chlorinated Solvents 95-100%
Contaminated Clothing, Filter bags and Debris	CCl4 HCB HCE C2Cl4 MeCl2 TCE Chloro-pyridines	D019 D032 D034 D039 F002 D040	551 751 352 512	1	Contaminated Clothing 60-80% Filter bags 0-5% Debris 0-5% Chlorinated Solvents 0-5% Chlorinated Pyridines 0-5%
Contaminated Oil and Debris, liquid and solids	C2Cl4 MeCl2	D039 F002	221 352 351	1	Contaminated Oil 50-100% Debris 0-50% Absorbent 0-49% Chlorinated Solvents 0-1%
Asbestos containing waste, solids	Asbestos	NA	181	1	Asbestos 100 %

Table C-1. Waste Stream Descriptions

Waste Category Description	Constituents	RCRA Waste Codes	CA Waste Codes	Compatibility Code	Composition
Paint chips contaminated with Chromium, solids	Chromium	D007	352	1	Sandblast Sand 70-80% Paint Chips 10-20% Debris 9-18% Metals 1-2%
Contaminated Brick, solids	MeCl ₂	F002	181	1	Contaminated Brick 80-100% Debris 0-15% Methylene Chloride 0-5 %
Waste Dowtherm Liquid and solids	Biphenyl Phenyl Ethers Diphenyl Oxide Diphenyl Phenols	NA	352 351	1	Biphenyl Phenyl Ethers 40-60% Diphenyl Oxide 30-50% Diphenyl Phenols 0-10% Absorbent 0-50%
Miscellaneous Lab Waste Liquid and solids	Nitrapyrin Glycols Diphenyl Oxide - (Dowtherm)	NA	343	1	Nitrapyrin 40-50% Glycols 0-1% Diphenyl Oxide 0-1% Water 5-10% Absorbents 20-30%
Sample Port Flush Out – 55 Gallon Drum	1,1,1 Trichloroethane Hydrochloric Acid Chlorinated Pyridine	F001 D002	791	1	1,1,1 Trichloroethane 1-5% Hydrochloric Acid 0-1% Chlorinated Pyridine 90-95% Water 0-1%

Notes:

¹ Compatibility Codes:

- 1 Organic and inorganic compounds, liquid and solids
- 2 Basic liquid and solids
- 3 Acidic liquid and solids
- 4 Halopyridines containing hydrogen fluoride, liquid and solids

NA = Not applicable

C-2 Waste Analysis Plan

Dow follows a written Waste Analysis Plan that describes the procedures to obtain a detailed chemical and physical analysis of a representative sample of the waste in order to store the waste and arrange for offsite disposal. A copy of the Waste Analysis Plan is presented in Appendix C.

Hazardous wastes are characterized using knowledge of the processes generating them supplemented with waste analysis, when needed, and do not vary substantially unless there are physical or chemical process changes. When a new waste is generated, or Dow process staff or waste handlers believe that the composition of an existing hazardous waste stream has changed, plant personnel work with the site waste coordinator or site waste manager to characterize the waste and evaluate the appropriate methods of treatment and disposal. Thereafter, the waste characterization is repeated whenever Dow has reason to believe that the process or operation generating the waste has changed or an offsite transportation, storage, and disposal facility requests an update. Wastes are assessed annually to confirm that the existing characterization is valid.

Waste analyses are performed by a state-approved commercial laboratory. The parameters of analysis are determined based on knowledge of the chemicals and chemical processes that generated the waste, regulatory requirements and considerations of safe handling of the waste. The methods of analyses used are those in the USEPA document SW-846, *Test Methods for Evaluating Solid Waste*. Use of these analytical methods meets the requirements of Chapter 6.5, Division 20, California Health and Safety Code. Waste sampling methods for containers are those described in SW-846 Chapter 9; and USEPA 600/2-80-018 *Samplers and Sampling Procedures for Hazardous Waste Streams* (1980). Sampling depends on the physical characteristics of the material.

Wastes are identified, labeled, and handled to prevent mixing of incompatible wastes and to ensure that the waste is compatible with the storage container or disposal method. As a chemical manufacturing facility, Dow has chemists or engineers at each plant who have detailed knowledge of the chemistry and properties of the materials produced and handled. Waste handlers, in consultation with the Unit Waste Manager and Dow chemists and engineers from the production unit generating the waste, determine what chemicals are incompatible with a given waste. Guidance documents such as USEPA-600/2-80-076 *A Method for Determining Hazardous Wastes Compatibility* will also be used to determine waste compatibility. A summary chemical compatibility chart from this document is included in the Waste Analysis Plan (Appendix C). Drum labels include a chemical compatibility code number so that waste handlers can readily identify and segregate incompatible materials. Codes for waste streams stored at the Block 560 Drum Storage Area are shown in Table C-1.

C-3 Waste Analysis for Land Disposal Restrictions

Dow uses knowledge of its hazardous wastes to determine if the wastes meet the applicable Land Disposal Restriction (LDR) treatment standards specified in 22 CCR, Division 4.5, Chapter 18, Articles 4 and 11. Dow prepares applicable notices and certifications, as specified in 22 CCR 66268.7, to accompany the manifests of hazardous waste sent to offsite hazardous waste treatment, storage, and disposal units.

C-3a Waste Analysis

The Waste Analysis Plan described in Section C-2 and waste profiles generated for each hazardous waste stream provide sufficient information to assess whether the waste stream satisfies the requirements for land disposal.

Dow typically determines if a waste is restricted based on generator knowledge of the waste. Dow maintains onsite supporting documentation upon which this conclusion was based. For each waste stream, Dow determines:

- Applicable USEPA hazardous waste codes.
- The presence of regulated hazardous constituents in listed wastes.
- The presence of underlying hazardous constituents for wastes subject to Universal Treatment Standards under 22 CCR 66268.48.
- The presence of underlying hazardous constituents for soils managed under the alternative soil treatment standards.
- Whether the waste is a wastewater or non-wastewater.
- The relevant treatment standards specified at 22 CCR 66268.40.

In some cases, Dow supplements generator knowledge with analytical data. Sampling and analytical approaches are as described in the Waste Analysis Plan.

C-3b Records Kept Available for Agency Review

Dow prepares generator notices to accompany hazardous waste shipments offsite. Notices for hazardous waste shipments (except labpack shipments) contain:

- USEPA hazardous waste codes and manifest numbers.
- For F002 and F003 wastes, a list of constituents to be monitored.
- The treatability group and subcategory, if applicable.
- Any available waste analysis data.

Notices for waste meeting treatment standards also contain a signed certification statement indicating that the waste meets the required treatment standards. Notices for labpack shipments contain USEPA hazardous waste codes and manifest numbers and a labpack shipment certification statement. The generator notices are filed with the manifests.

Special LDR recordkeeping requirements for treatment facilities and land disposal facilities do not apply to Dow because Dow only treats hazardous wastes generated onsite.

C-3c Storage of Restricted Wastes

Dow does not store waste subject to LDR at the Block 560 Drum Storage Area for more than 1 year, therefore this section is not applicable.

Process Information - Containers

D-1 Containers

This section describes how Dow meets the regulations pertaining to this storage of hazardous waste in the Block 560 Drum Storage Area. The Block 560 Drum Storage Area consists of two adjacent coated concrete pads. Each pad has dimensions of approximately 39 feet by 20 feet, with a 6-inch concrete curb on the perimeter. The Drum Storage Area is designed and operated to store a maximum of 6,000 gallons of waste.

D-1a Description of Containers

DOT-specification, high-density polyethylene, open-top, 25-gallon drums with secure lids are used to accumulate, store, and ship solid hazardous waste for direct incineration. This is the container type used for most drummed wastes. The maximum capacity of these drums in the 560 Block drum storage area is 240 drums (see Appendix E, Figure E-1). DOT-approved, high-density polyethylene, closed-top, 55-gallon drums with secure bungs are used to accumulate, store, and ship liquid hazardous waste. Liquid wastes are generally treated in the onsite Halogen Acid Furnaces operating under a separate Part B Permit or shipped offsite for recycling, treatment, or disposal. The maximum capacity of these drums in the 560 Block drum storage area is 109 drums (see Appendix E, Figure E-2).

DOT-specification, plastic, open-top, 14- to 25-gallon drums with secure lids are generally used to over pack laboratory waste for disposal in lab packs. The lab packs may contain small glass bottles and vials of various shapes, various metal containers with screw and friction lids, one-gallon plastic jugs with screw caps, and plastic jars and bottles with screw lids. Only compatible materials are lab-packed within a single outer (secondary) container. The 14- to 25-gallon plastic drum is filled with absorbent, sufficient to absorb potential leakage from the inner containers. Generally, three or fewer 1-gallon containers will be overpacked in the 14-gallon plastic drums, and six or fewer 1-gallon containers will be overpacked in the 25-gallon plastic drums. The maximum capacity of these drums in the 560 Block drum storage area is 240 drums.

DOT-specification, steel or polyethylene, open-top, 55-gallon drums with secure lids may also be used. When used for labpacks, no inner container of greater volume than 5 gallons is placed in the drum, and the drum is filled with absorbent. Incompatible materials are not lab-packed in the same outer container. The maximum capacity of these drums in the 560 Block drum storage area is 109 drums.

DOT-specification salvage drums (85-gallon drums) are used, as required, for secondary containment of drums that have been damaged. The maximum capacity of these drums in the 560 Block drum storage area is 58 drums.

D-1b Container Management Practices

Dow waste handlers select, label, and fill the drums according to written procedures. Drums are labeled in a manner consistent with requirements of Title 40 Code of Federal Regulations (CFR) Part 264, and 22 CCR, Division 4.5, Chapter 12. Wastes from laboratory facilities are managed in compliance with California Health and Safety Code Section 25200.3.1 and are lab-packed following written procedures. Proper tools are used to open and close bung- and open-top drums to prevent damaging drums. Leaking drums are overpacked or emptied into drums in good condition. Containers of ignitable or reactive waste are stored 50 feet from the property line. Drums are closed before transporting them to the storage area.

Hazardous waste containers are transported from the point of waste generation to the drum consolidation warehouse in the 500 Building by forklift or truck. Palletized containers of hazardous waste are moved into the Block 560 Drum Storage Area via concrete ramps that are integrated into the storage area secondary containment. The ramps allow forklifts to safely enter and exit the contained areas. These ramps have a 5:1 slope. Please refer to Figure E-1 or E-2 in Appendix E for a plot plan of the RCRA Drum Storage Area at the 560 Block.

The two bermed sections in the Block 560 Drum Storage Area are used to separate incompatible materials. The most common incompatibles encountered at this facility are acids and bases or acids and organics, which would release heat and/or gases if mixed. Identification of acids and bases is accomplished by process engineering knowledge and pH measurements. Identification of incompatibility is made by process engineering knowledge, pH measurement, observation of a second liquid phase, and gas chromatography/flame ionization detector analysis of the organic waste. Waste handling procedures and information on the waste tags attached to drums prevent incompatible wastes from being stored in the same section.

Aisle space of at least 3 feet is maintained between rows of pallets in the drum storage areas. Maintaining aisle space allows ample room for drum inspections and access for personnel with emergency and fire equipment. Because drums are not stacked in the Block 560 Drum Storage Area, aisle height is not applicable. Lids on drums of solid waste and bungs on containers of liquid waste are maintained closed.

D-1c Secondary Containment System Design and Operation

The drum storage area secondary containment system has the following features:

- A coated reinforced concrete base underlying the containers that is free of cracks or gaps. The coating, CIM 1000, is compatible with the waste stored (except for limited resistance to some hazardous waste containing organic liquids) and sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed. The coating specifications are presented in Appendix E. If containerized organic liquid waste is stored in the Block 560 Drum Storage Area, it is stored in containment pallets that are compatible with the containerized waste.
- Sloping of the base of each bermed section of the Block 560 Drum Storage Area to a sump where liquids resulting from leaks, spills, or precipitation can be removed.
- Placement of the drums on pallets to protect them from contact with accumulated liquids.
- Containment capacity for precipitation from a 24-hour, 25-year storm (3.39 inches)⁴ plus 10 percent of the aggregate volume of all containers.
- Berms around the containment area perimeter serve both to contain leaks and to prevent run-on into the containment system.

Appendix E presents a written statement by an independent, qualified professional engineer, registered in California, that indicates that the containment system is suitably designed to achieve the requirements of 22 CCR 66264.175. It also includes a plot plan and profile drawings of the Block 560 Drum Storage Area and containment capacity calculations.

Spilled or leaked waste and rainwater falling within the bermed area will collect in the sumps and will be removed within sufficient time to prevent overflow of the sumps. Spilled or leaked wastes will be transferred into drums and handled as hazardous waste.

⁴ National Weather Service's Precipitation Frequency Data Server (PFDS): <http://hdsc.nws.noaa.gov/hdsc/pfds/>

Accumulated rainwater from the sump will be visually inspected for sheen or odor before manual transfer to a process water tank at the Chloronolysis plant. If the rainwater has a sheen or an odor is detected, the accumulated rainwater will be handled as a hazardous waste. If the rainwater has come in contact with a spilled listed waste, the rainwater will be managed as that listed waste.

D-1d Containers with Free Liquids

As discussed in Section C, Dow may store hazardous waste with free liquids in the Block 560 Drum Storage Area. This area is designed and operated to meet secondary containment requirements for container storage of hazardous waste containing free liquids. Because the secondary containment coating may have limited resistance to some hazardous waste containing organic liquids, when such waste is stored in the Drum Storage Area, it is placed in containment pallets that are constructed of material compatible with the waste stored and that provide the required secondary containment for the material stored and rainwater from a 25-year 24-hour storm. See Section D-1a for a description of containers that will be used to handle liquid hazardous waste streams.

D-1e Containers without Free Liquids

See Section D-1a for a description of open top containers that includes the number and type of drums that will be used to handle solid hazardous waste streams. Routine testing for the presence of free liquids in solid hazardous waste is performed prior to the transport of drums into the Block 560 Drum Storage Area.

Procedures to Prevent Hazards

E-1 Security

E-1a Waiver

As described in this section, Dow meets the security procedures and equipment specified in 22 CCR 66264.14 for preventing unknowing entry and minimizing the possibility for the unauthorized entry of persons or livestock onto the facility. Therefore, no waiver from security requirements is requested.

E-1b Security Procedures and Equipment

E-1b(1) 24-hour Surveillance System

Security for the Block 560 Drum Storage Area is provided at the facility level. The main entry gate to the facility is attended continuously. Appropriate areas of the perimeter fence are lighted during the hours of darkness. The fence is internally patrolled by security guards 24 hours/day. In a few locations, the fence is equipped with motion detectors and surveillance cameras. There is no specific surveillance for the storage area.

E-1b(1)(a) Barrier

The Dow Pittsburg manufacturing site, including the Block 560 Drum Storage Area, is surrounded by 8-foot chain-link fence topped with barbed wire.

E-1b(1)(b) Means to Control Entry

Means to control entry to the Block 560 Drum Storage Area is provided at the facility level. There are four access gates for vehicular traffic, two of which are normally used. There are also access gates for railroad trains, normally closed and locked, that are opened for onsite pickups, deliveries, or rail switching by security personnel. All gates are closed and locked when not in use. Unmanned auxiliary gates are opened only when attended or remotely opened with telephone communication under TV surveillance. Thus only Dow employees, Dow contractors, and site visitors accompanied by Dow staff have access to the Block 560 Drum Storage Area.

E-1b(1)(c) Warning Signs

The Block 560 drum storage area fence has signs indicating that the area contains hazardous waste. The signs are 18 inches by 24 inches with lettering in 1-inch block, legible from 25 feet. The warning signs are English and Spanish with the following statement:

“Caution! Hazardous Waste Area! Unauthorized Persons Keep Out!” and, “¡Cuidado! Zona De Residuos Peligrosos. Prohibida La Entrada A Personas No Autorizadas.”

E-2 Inspection Schedule

This section describes Dow’s inspection program for monitoring equipment, safety emergency equipment, communication and alarm systems, decontamination equipment, security devices, and operating and structural equipment.

The inspection form/checklist related to the Block 560 Drum Storage Area is maintained at the Environmental Health & Safety (EHS) Department in the 464 Building and is included in this Part B application as Appendix F. The frequency of inspection has been selected to enable Dow to identify and correct problems before the environment or human health could be harmed.

E-2a General Inspection Requirements

Inspections of the Block 560 Drum Storage Area are performed per the applicable provisions of inspection requirements for containers (22 CCR 66264.174) and the applicable provisions of air pollutant emission controls for containers, Level 1 (22 CCR 66264.1086). All drummed hazardous wastes in storage are visually inspected once per week for leaking drums, deteriorating drums, adequate labeling, date of accumulation, and any other apparent problems. If any container is found to be in poor condition or leaking, its contents are immediately transferred to another container, or the container is placed in an overpacked drum as appropriate. Any spill is cleaned up immediately, following the procedures described in the Consolidated Contingency Plan (Appendix G). At least weekly, Dow inspects the Block 560 Drum Storage Area for condition of the containers, accumulation of hazardous waste or rainwater on the pad or in the sumps, and for integrity of the pad, berms, ramps, and sump, and deterioration or damage to the coating.

In addition to inspecting drums and drum storage containment area, Dow also inspects:

- Safety and emergency equipment.
- Operating and structural equipment (sump pump and piping).

Dow maintains the inspection schedule at the EHS Department. The inspection schedule is presented in Appendix H. The schedule is based on regulatory requirements and on the rate of deterioration of the structures and equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or any operator error goes undetected between inspections.

Dow will establish a schedule for remedying any deterioration or malfunction of equipment. Dow records inspections on the inspection form and keeps these records for at least 3 years from the date of inspection. These records include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

Dow personnel performing inspections have the authority to remedy problems that may present a hazard to health, safety, or the environment, including the authority to take immediate steps to divert staff from routine functions to resolve the problem. All staff working with hazardous wastes are trained in emergency spill response, leak containment, and fire response procedures (see Section G). They have the authority to implement the contingency plan if necessary. Any action taken will be fully documented from cause to solution. Documentation will be retained in the facility files (operating record).

E-2b Specific Process Inspection Requirements

As stated above, the Block 560 Drum Storage Area is inspected weekly in compliance with 22 CCR 66264.174.

E-3 Documentation of Preparedness and Prevention Requirements

E-3a Equipment Requirements

The subsections below describe Dow's compliance with the preparedness and prevention requirements of 22 CCR Section 66264.32.

E-3a(1) Internal Communication

Communications equipment includes personal equipment such as cell phones and radios and plant-wide systems including public address systems, telephone systems, alarm systems, and air horns. Telephones in the plant can be used for internal and external communications.

E-3a(2) External Communication

Telephones in the facility can be used for internal and external communications. A two-frequency radio can also be used to contact the Contra Costa County Fire District (CCCFPD).

E-3a(3) Emergency Equipment

The facility has extensive emergency response equipment. All employees are aware of the location and operation methods for equipment pertinent to their jobs. A general list of the equipment items and their locations is given in Appendix G-1 of the Consolidated Contingency Plan (Appendix G).

E-3a(4) Fire Control Systems

A fire extinguisher is located at the Block 560 Drum Storage Area for dealing with small fires. Fire extinguishers are inspected monthly and recharged annually.

E-3a(5) Testing and Maintenance of Equipment

The monitoring, safety, and emergency equipment, security devices, and operating and structural equipment important to hazardous waste management are inspected by operating unit personnel either daily, weekly, or monthly. All emergency communication equipment and alarms are tested weekly. Fire extinguishers are inspected monthly and recharged annually. Eyewashes and safety showers are inspected and tested weekly; other safety equipment is inspected monthly.

E-3a(6) Access to Communication or Alarm System

All employees involved in transporting hazardous waste have access to either an internal alarm or a communications system and are trained in spill notification procedures and response procedures.

E-3b Aisle Space Requirement

Dow maintains a minimum of 3 feet between rows of pallets in the drum storage areas. This aisle space allows access for drum inspections and for personnel with emergency and fire equipment. As the drum storage area is outdoors, aisle height is not applicable.

E-3c Documentation of Arrangements with Local Emergency Response Organizations

Dow documents arrangements with local emergency response organizations described below through maintenance of attendance rosters at annual table top exercises and emergency drills as described in Section F-6.

E-3c(1) Police/Fire Department

Dow has working agreements with the CCCFPD and the Antioch and Pittsburg police departments to provide emergency assistance. Members of the CCCFPD routinely tour the Dow facilities, attend drills at Dow training grounds, and have been provided with hydrant locations and descriptions of various products and chemicals in the facility. Dow has arranged for mutual exchange training with CCCFPD, which takes place periodically.

SECTION E: PROCEDURES TO PREVENT HAZARDS

E-3c(2) Emergency Response Teams

Dow internal security and fire protection force provides first responder capability. CCCFPD is used as backup. If it becomes necessary to implement the Contingency Plan, the Contra Costa County Office of Emergency Services (OES) is contacted. The OES is aware of Emergency Plan procedures and lines of responsibility. Dow has arrangements with offsite contractors, (Hydrochem, Clean Harbors) for assistance in an emergency situation.

E-3c(3) Local Hospitals

Dow has an agreement with Sutter Delta Medical Center, located at 3901 Lone Tree Way in Antioch, to provide emergency medical care.

E-3c(4) Document Agreement Refusal

No emergency service providers have refused agreement to respond or provide services to Dow Pittsburg emergencies.

E-4 Prevention Procedures, Structures, and Equipment

E-4a Unloading Procedures

A combination of Dow workers and contract support personnel transport drums from the Drum Consolidation Warehouse to the Block 560 Drum Storage Area by forklift, drum dolly, or flatbed truck. Forklifts are available onsite for the routine drum unloading and handling. Concrete ramps form part of the secondary containment berms around the Block 560 Drum Storage Area. The ramps provide access over berms and allow forklifts to safely enter and exit the container areas. These ramps have a 5:1 slope. Potential loading and unloading hazards at the 560 Block Drum Storage Area include:

- Damage to drums by forklift forks.
- Forklift overturning due to unbalanced load or overloading.
- Spills during loading or unloading.

These potential hazards are mitigated by use of written procedures, operator training, and regular forklift inspection and maintenance. Procedural mitigation measures include speed restrictions, strapping of the pallet to the forklift, no double stacking of drums on pallets, and confirmation that bungs and lids are securely closed before drums are moved. Operators are trained in spill response and spill cleanup material and equipment is maintained at the drum storage area.

E-4b Runoff

The berms around the drum storage area prevent surface drainage from running into the drum storage area. The containment system is designed with sufficient volume to prevent any accumulated liquids (spills or rainfall) from leaving the containment area.

E-4c Water Supplies

The containment system prevents releases of hazardous waste from leaking drums from entering either groundwater or surface water. Dow applies drum handling practices during transfer of drums into and out of the drum storage area to prevent releases of hazardous wastes.

E-4d Equipment and Power Failure

The drum storage area does not require power to maintain safe storage of hazardous waste containers.

E-4e Personnel Protection Procedures and Equipment

All employees who handle hazardous wastes use cartridge-type respirators or canister or supplied air respirators for more complete protection. Respirators are required when handling toxic or volatile liquids, including organics or concentrated acidic or caustic solutions. Waste handlers are trained when and how to replace filters and decontaminate equipment. Each operating area has nearby self-contained breathing apparatus, eye washes, and showers. Dow personnel who handle hazardous waste are required to wear protective clothing such as disposable coveralls, hard hats, safety glasses or goggles, gloves, and boots. They are trained in the use and maintenance of this equipment before handling wastes.

Production of hazardous gases, mists, and vapors is prevented by both chemical and physical means. Chemically incompatible or reactive materials are not blended and are not stored within the same bermed area. Transfer pumps are air-driven diaphragm pumps that ensure that the liquid will not become aspirated to create a mist or vapor. Once placed in drums, wastes are not transferred or repacked unless the drum is damaged and must be emptied or overpacked. Transfers to vacuum trucks are done through tight fittings to minimize the production of gases, mists, or vapors.

All equipment that becomes contaminated or needs repairs, preventative maintenance, or removal from service is cleaned with high-pressure water and an appropriate cleaning agent and may be steam-cleaned before such action is taken.

E-4f Procedures to Minimize Releases to the Atmosphere

As described in Section L, Dow personnel keep drums closed at all times except during actual waste transfer to minimize releases to the atmosphere. Personal protective gear used by employees is described in Section E-4e.

E-5 Prevention of Reaction of Ignitable, Reactive, and Incompatible Waste

E-5a Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Wastes

Operational procedures for minimizing fire or explosion include:

- Not generating explosive wastes at this site.
- Storing flammable waste in bermed areas separate from hazardous wastes that are characterized as oxidizers, reactive, or otherwise incompatible.
- Keeping drums closed at all times except during actual waste transfer.
- Maintaining ample free space around flammable waste storage areas as required by fire codes.
- Using explosion-proof, UL-approved electrical outlets, switches, pumps, etc. in all hazardous waste facilities and operations.
- Keeping waste away from open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (electrical, static, or mechanical), spontaneous ignition (e.g., from heat-producing chemical reactions), and radiant heat.
- Prohibiting smoking on the plant site.

E-5b General Precautions for Handling Ignitable or Reactive Waste and Mixing of Incompatible Waste

As a chemical manufacturing facility, Dow Chemical has chemists or engineers at each plant who have detailed knowledge of the chemistry and properties of the materials produced and handled. The chemists can determine which chemicals are incompatible with a given waste. Guidance documents such as USEPA-600/2-80-076 *A Method for Determining Hazardous Wastes Compatibility* will also be used to determine waste compatibility. A summary chemical compatibility chart from this document is included as Figure 3-5 in the Waste Analysis Plan (Appendix C).

Incompatible wastes are not placed in the same container, nor will a waste be placed in a container that contains residues of an incompatible material.

The Block 560 Drum Storage Area provides adequate secondary containment. Drum labels include a chemical compatibility code number so that waste handlers can readily identify and segregate incompatible materials. Codes for waste streams stored at the Block 560 Drum Storage Area are shown in Section C, Table C-1.

These precautions prevent reactions that would:

- Generate extreme heat or pressure, fire or explosions, or violent reactions.
- Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to pose a risk of fire or explosions.
- Damage the structural integrity of the device or facility.
- Threaten human health or the environment.

E-5c Management of Ignitable or Reactive Wastes in Containers

Small quantities of reactive wastes may be generated by the research laboratory. The laboratory deactivates vials and flasks of potentially-reactive materials before they are placed in labpacks. No reactive or ignitable waste is stored within 50 feet of the site property line.

E-5d Management of Incompatible Wastes in Containers

As described above, incompatible wastes are not placed in the same container, nor will a waste be placed in a container that contains residues of an incompatible material. Drum labels include a chemical compatibility code number so that waste handlers can readily identify and segregate incompatible materials. Codes for waste streams stored at the Block 560 Drum Storage Area are shown in Section C, Table C-1.

A compatibility procedure has been created for personnel who manage waste drums that will be put into the Block 560 Drum Storage Area. This procedure is located in Appendix I.

Contingency Plan

F-1 Contingency Plan

Dow has prepared a Consolidated Contingency Plan (CCP) following the National Response Team Guidance published in the Federal Register (Federal Register, Volume 61, Number 109, p 28642). Dow's CCP implements contingency planning requirements of several state and federal regulations including the applicable hazardous waste contingency planning requirements of 22 CCR, Division 4.5, Chapter 14, Article 4. The CCP includes tables cross referencing applicable contingency planning requirements with CCP sections.

The CCP is intended to familiarize all affected parties with the organizational structure and procedures used by Dow to effectively control emergency situations related to hazardous materials, including hazardous wastes. A complete copy of the CCP is included in this Part B Application as Appendix G.

F-2 Emergency Coordinators

The CCP identifies the primary and backup emergency coordinators; a list can be found in Appendix G, page 59 of the CCP. These employees will either be on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures involving hazardous waste incidents. These emergency coordinators are familiar with all aspects of the Dow CCP, all operations and activities at the facility, the location and characteristics of wastes handled, the location of all records within the facility, and the facility layout. In addition, the emergency coordinator has the authority to commit the resources needed to carry out the contingency plan.

F-3 Implementation

Dow's CCP describes the actions that facility personnel shall take in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.

F-4 Emergency Actions

The CCP describes the responsibilities and actions of the Emergency Coordinators in the event of an emergency.

F-4a Notification

The CCP describes various types of emergency situations, the actions that the Emergency Coordinator takes to alert facility staff to such emergencies, and the actions taken to notify appropriate federal, state, and local agencies.

F-4b Identification of Hazardous Materials

The Emergency Coordinator is responsible for directing staff to identify any release of waste by defining the source of the release, the chemical released, the approximate volume of the release, and the aerial extent of the release. The Emergency Coordinator will use available information including waste characterization data, consultation with facility chemists, observation or review of facility records or manifests, and, if necessary, chemical analysis.

F-4c Assessment

The Emergency Coordinator will assess the direct and indirect health effects of the materials released, using available information including generator knowledge and standard reference books (e.g., I. Sax, *Dangerous Properties of Industrial Materials*). The assessment will consider whether the incident affects or may affect human health or the environment outside the facility.

F-4d Control Procedures

The CCP describes the actions Dow personnel take to respond to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

F-4e Prevention of Recurrence of Spread of Fires, Explosions, or Releases

As described in the CCP, in the event of an emergency, the Emergency Coordinator will take reasonable measures to the extent that is safely possible to prevent fires, explosions, and releases from occurring, recurring, or spreading to other operations at the facility. These measures include stopping processes and operations, collecting and containing released waste, and removing or isolating containers, where applicable.

The recurrence of an incident will be prevented by careful examination of the cause of the accident. Changes and repairs will be made in equipment, procedures, personnel deployment, and processes as necessary. The CCP will be re-examined and modified to reflect changes made as a result of the incident.

If operations were stopped and, particularly, if emergency shutdown procedures were used, all equipment will be carefully examined for soundness, leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment before putting them back in service. Systems will be carefully monitored for leaks and improper operating settings during startup.

F-4f Storage, Treatment, and Disposal of Released Materials

After an emergency, recovered waste and contaminated soil and surface water will be handled appropriately. All waste and contaminated soil will be placed in properly-contained and labeled containers. Disposal of these wastes will be in accordance with local, state, and federal regulations.

F-4g Incompatible Waste

The Emergency Coordinator will verify that the contaminated area is cleaned before wastes that are incompatible with those involved in the emergency are handled in the drum storage area. Recovered waste and contaminated soil and surface water will be assessed for compatibility and handled appropriately. Incompatible wastes will not be placed in the same drum or stored together.

F-4h Post-emergency Equipment Management

The Emergency Coordinator will instruct personnel to thoroughly decontaminate and clean any reusable emergency response equipment immediately after use and inspect it to confirm its suitability for reuse. Non-reusable equipment will be containerized and disposed of appropriately. Decontamination equipment includes water-rinsing systems, a truck wash facility, pumps, storage drums, and tanks for collection of contaminated liquids.

F-4h(1) Notification of Federal, State, and Local Authorities before Resuming Operations

Dow will notify the Department of Toxic Substances Control (DTSC) and appropriate state and local authorities that cleanup procedures are completed and emergency equipment has been decontaminated and inspected before operations are resumed.

The Plant Manager or designee will, within 15 days of the occurrence of an incident, submit a written report to the DTSC including:

- Name, address, and telephone number of owner.
- Name, address, and telephone number of facility.
- Date, time, and type of incident.
- Name and quantity of materials involved.
- Extent of injuries, if any.
- Assessment of actually potential health or environmental hazards.
- Estimated quantity and disposition of recovered material resulting from the incident.

F-4i Container Spills and Leakage

If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, Dow will transfer the hazardous waste to a container that is in good condition.

Leakage of liquid waste within the bermed area will be controlled using absorbents. Absorbed liquids will be placed in labeled drums. Bags of absorbent are stored by each area where a spill may occur and in the central warehouse. The containment pad will be pressure washed, if appropriate, and the rinsate collected, characterized, and managed in accordance with applicable regulations and requirements.

F-5 Emergency Equipment

The Pittsburg plant has extensive emergency response equipment. All employees are aware of the location and operation of equipment pertinent to their jobs. A general list of the equipment items and their locations is given in Appendix G-1 to the CCP (Appendix G).

F-5a(1) Fire Extinguishing Systems

Dow maintains a fire-fighting department and fire-fighting equipment, including fire extinguishers, deluge systems, sprinkler systems, monitored automatic nozzles, fire protection water system, emergency generator, and pumps for fire water.

F-5a(2) Spill Control Equipment

Spill control equipment includes an extensive system of protective barriers, drains and sumps, numerous trucks and vehicles, earthen and other materials used in forming temporary containment barriers, absorbent and pumping systems, and extensive protective clothing and respiratory gear. Bags of appropriate absorbent are stored by each area where a spill may occur.

F-5a(3) Communications Equipment

Communications equipment includes personal equipment such as cell phones and radios and plant-wide systems including public address systems, telephone systems, alarm systems, and air horns. Telephones in the plant can be used for internal and external communications. A two-frequency radio is used to maintain contact with CCCFPD.

SECTION F: CONTINGENCY PLAN

F-5a(4) Alarm Systems

Alarm systems include plant-wide fire alarm systems, emergency phone line (to the main gate), air horns, and gas release air horns (which alarm at the main gate).

F-5a(5) Decontamination Equipment

Decontamination equipment includes water-rinsing systems, pumps, storage drums, and tanks for collection of contaminated liquids.

F-5a(6) First-aid Equipment

Safety showers and eye baths are located near areas where the possibility of accidental exposure could occur. Safety showers and eye baths are inspected and flushed at least once per week, and records of the inspection are kept in the unit library for at least 3 years.

F-6 Arrangements with Local Authorities

Dow has arrangements with the Antioch and Pittsburg police departments and Sutter Delta Medical Center to provide emergency assistance and care. Further, CCCFPD is used as backup to the Dow internal security and fire protection force. Members of CCCFPD have toured the Dow facilities; attended drills at Dow training grounds; and received information on hydrant locations and descriptions of various products and chemicals in the facility. Dow has established mutual exchange training with CCCFPD, which takes place periodically. Dow conducts annual table-top emergency exercises and onsite emergency drills with various emergency response service providers in attendance. Attendees include:

- Pittsburg Police Department
- Antioch Police Department
- Sutter/Delta Memorial Hospital
- CCCFPD

Other agencies are often in attendance including the US Coast Guard, Contra Costa County Health Services Department, Contra Costa County Office of Emergency Services, and the DTSC. Dow maintains records of drills and attendance rosters onsite.

If it becomes necessary to implement the Contingency Plan, the Contra Costa County OES is contacted. The OES is aware of Emergency Plan procedures and lines of responsibility. Onsite and offsite emergency response contractors (for example, vacuum truck operations) may be contacted for assistance in an emergency situation.

F-7 Evacuation Plan for Facility Personnel

The CCP describes procedures for evacuation of the facility. There are specific areas throughout the plant site that have been designated for assembly of plant personnel in the event that evacuation of a particular process unit is required. Signs are posted in these areas for easy identification. Evacuation notification begins with announcement over the plant-wide public address system and radio alert monitors. This is followed by prepared messages given over the emergency telephone system. Specific routes to be used and other pertinent information are provided by Plant Security. In the event the entire site must be evacuated, the Dow main entry gate constitutes the primary evacuation route. However, two gates to the west and one each to the east and south could be used as alternate evacuation routes in the event the main entry gate is inaccessible. Dow reviews evacuation routes and procedures with its employees periodically.

Evacuation from the RCRA hazardous waste storage areas because of a release of hazardous waste is extremely unlikely. The escape routes from the RCRA drum storage area in the event of a spill or gas

release are to go out any gate and then go south to the rally point identified in the CCP. This route is based on prevailing wind direction and the location of the hazardous waste units in relation to the production units.

F-8 Required Report Procedures for Recordkeeping and Reporting to Federal Authority

The Plant Manager or designee will include a brief report in facility files (operating record) describing any incident requiring use of the CCP. The incident will be identified by date; time; and details of resolution, including materials involved, type of incident, responding emergency response groups, any injuries, and cleanup details.

As described in Section F-4(h)(1), within 15 days after the incident, the Plant Manager or designee will submit a report to the DTSC including:

- Name, address, and telephone number of owner.
- Name, address, and telephone number of facility.
- Date, time, and type of incident.
- Name and quantity of materials involved.
- Extent of injuries, if any.
- Assessment of actual or potential health or environmental hazards.
- Estimated quantity and disposition of recovered material resulting from the incident.

F-9 Location and Distribution of CCP

A copy of the Dow Pittsburg CCP is kept at the Plant Emergency Services and Security Office (which is staffed 24 hours per day), and in the EH&S Department in the 464 Building.

Copies of the CCP have been distributed to the Antioch Police Department, the CCCFPD, local hospitals, the Inter-Refinery Fire Prevention Group, and the Contra Costa County OES. Additionally, all Emergency Coordinators are provided with copies of the CCP.

Personnel Training

G-1 Outline of Introductory and Continuing Training Programs

The employee training program for hazardous waste management at the Pittsburg facility is conducted in a manner consistent with the requirements of RCRA, and 22 CCR. Training programs provide instruction using operational procedure manuals, slide presentations, question-and-answer discussions, classroom exercises, and computer-based training. Training is done using specific topic modules. Some modules are used plant-wide and others are unit-specific. On-the-job training continues with supervised training in techniques and procedures specific to each employment position.

G-1a Job Title/Job Description

Documentation includes:

- Job title.
- Name of employee filling the job.
- Written description of job responsibilities
- Written descriptions of the type and frequency of required training provided to each employee.
- The use of signed rosters to record employee training.

G-1b Description of How Training will be Designed to Meet Actual Job Tasks

The training program is reviewed by the Site Waste Manager and other hazardous waste management personnel annually to confirm that it is designed to meet actual hazardous waste management tasks at the Dow facility. Training is administered by persons trained in safety procedures, emergency response procedures, and hazardous waste management procedures.

G-1c Training Director

The hazardous waste training program is directed by the Site Waste Manager, who has received extensive hazardous waste and emergency response training and has broad hazardous waste program management experience. The training received by the Site Waste Manager, identified in Table G-5, enables the Site Waste Manager to verify that Dow staff involved in hazardous waste management receive training appropriate for their positions as specified in 22 CCR 66264.16. The Site Waste Manager periodically reviews and updates (as appropriate) the hazardous waste management training modules.

G-1d Relevance of Training to Job Position

Dow provides training relevant to each employee's job position and responsibilities. Tables G-1 through G-5 present general categories of employees relative to their hazardous waste responsibilities, the corresponding job positions that fall into each category, and the training associated with each category. Waste handler initial training includes an overview of hazardous waste requirements for both RCRA and DTSC, plus discussion of Dow's procedures for waste handling.

G-1e Training for Emergency Response

As summarized in Tables G-1 through G-5, Dow provides emergency response training to its employees. Emergency response training is also described in Section III.5 of the CCP (Appendix G). The training is

relevant to each employee's job position and responsibilities. Employees receive annual refresher training on emergency procedures.

G-2 Maintenance of Training Records/Copy of Personnel Training Documents

Facility personnel complete training within 6 months of date of employment or change of duties. Until training is completed, new facility personnel work only in directly-supervised positions.

Dow documents employee training and job experience by the use of a computer-based training data management system. Training content for various job classifications are described in Tables G-1 through G-5.

Training records for current personnel are maintained until closure of the facility. Training records for former employees are maintained for 3 years past their termination date. Personnel training records will accompany personnel transferred within the same company.

Table G-1. Personnel Training for Hazardous Waste Management Employees – Not a Waste Handler

Waste Handling Responsibilities	Type of Required Training	Frequency of Training
No waste handling responsibilities	None	NA
Job-specific activities related to hazardous waste management (such as scheduling or recordkeeping)	Training related to job requirements	Annually
No emergency response requirements for an incident involving hazardous waste other than escape	Emergency evacuation training as part of Plant/Site Consolidated Contingency Plan.	Annually

Notes:

Examples of job titles in this classification are Plant Supervision, Site Staff Personnel, Office Professionals, and Plant Support Engineers. In general, this classification of worker does not generate waste and is not directly responsible for container management activities.

Note that personnel in this classification may have some specific responsibilities related to hazardous waste management other than those directly associated with handling waste (e.g., waste shipment scheduler or office professional with responsibilities for paperwork related to hazardous waste). Training requirements related to these job specific activities will be identified at a department level.

Table G-3. Personnel Training for Hazardous Waste Management Employees –Unit Waste Manager

Waste Handling Responsibilities	Type of Required Training	Frequency of Training
Responsibilities for Waste Generation and Container Management: <ul style="list-style-type: none"> • Labeling containers (may include use of Waste Tracking System at USER Level) • Drum Storage Area inspection • Waste drum filling • Waste drum handling 	Waste Generation and Container Management Training: <ul style="list-style-type: none"> • Waste Drum selection • Waste Drum labeling • Waste Drum filling • Waste Drum Storage Area inspection 	Annually
Responsible for weekly container inventory inspection for department (using Barcode System)	Bar Code Inventory Training (related to job requirements and maintaining site consistency)	Initially and after system updates
Qualified to create Barcode Label Reprints for Department	Waste Tracking System Training at User Waste Manager Level.	Initially and after system updates
Unit Contact for waste characterization information	<ul style="list-style-type: none"> • Chemical Hazard Information • Reactive Chemicals Training 	Every 3 years Annually
Responsibilities for: using, inspecting, repairing, and replacing Unit emergency response and monitoring equipment related to hazardous waste	Training related to job req. associated with required equipment referenced in Department or Site Emergency Plans or Site Consolidated Contingency Plan (e.g., Fire Extinguishers, Safety Showers, SCBA, Waste Spill Kits)	Annually
Responsibilities include: emergency response related to an incident involving hazardous waste	Emergency response training related to specific responsibilities as part of Plant/Site Emergency Plan. Training to meet the requirements of 8 CCR Section 5192(p).	Annually

Note:

An example of a Unit Waste Manager is plant personnel with responsibilities for Unit hazardous waste management activities. In general, this classification of worker directly manages Unit hazardous waste management activities including generation of waste and container and tank management and inspection activities.

Table G-4. Personnel Training for Hazardous Waste Management Employees –Site Waste Coordinator

Waste Handling Responsibilities	Type of Required Training	Frequency of training
Waste Generation and Container Management Responsibilities: <ul style="list-style-type: none"> • Labeling containers • Drum Storage Area Inspection • Waste drum filling • Waste drum handling 	Container Management Training: <ul style="list-style-type: none"> • Waste Drum selection • Waste Drum labeling • Waste Drum filling • Waste Drum Storage Area inspection 	Annually
Container Collection Responsibilities: <ul style="list-style-type: none"> • Waste drum inspection at plant site prior to collection • Waste drum collect from plant to main warehouse • Warehouse management activities • Waste drum shipment preparation activities 	Warehouse Management Training: <ul style="list-style-type: none"> • Waste drum truck loading • 1 year RCRA storage area • PCB storage area • Waste drum strapping and stacking 	Annually
Waste Tracking System Responsibilities: <ul style="list-style-type: none"> • Plant activities • Site drum inventory activities • Waste drum shipping. • Waste characterization 	Waste tracking system training for management level, including: <ul style="list-style-type: none"> • Department information • Inventory tracking • Shipment tracking • Label creation • Hazardous waste manifests 	Initially and after system updates, manifests are annually
Responsibilities for: Using inspecting, repairing and replacing Unit emergency response and monitoring equipment related to hazardous waste	Training related to job requirements associated with required equipment referenced in Department or Site Emergency Plans or Site Consolidated Contingency Plan (e.g., Fire Extinguishers, Safety Showers, SCBA, Waste Spill Kits)	Annually
Emergency Response Responsibilities: (related to an incidents involving hazardous waste)	Emergency response training related to specific responsibilities as part of Plant/Site Emergency Plan and Site Consolidated Contingency Plan. Procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment. Communications and alarm systems. Response to fires or explosions. Response to groundwater contamination incidents and shut-down of operations. Training to meet the requirements of 8 CCR Section 5192(p).	Annually

Table G-4. Personnel Training for Hazardous Waste Management Employees –Site Waste Coordinator

Waste Handling Responsibilities	Type of Required Training	Frequency of training
Supervision of Container Collection: <ul style="list-style-type: none"> • Waste drum inspection at plant site prior to collection, • Waste drum collect from plant to main warehouse, • Warehouse management activities • Waste drum shipment preparation activities 	Warehouse Management Training Facilitator	Annually

Note:

In general, this classification of worker is responsible for site wide hazardous waste management activities including inspection, collection and shipping of waste containers, operation of the RCRA 1 Year Storage Area, operation of the Waste Tracking System, and general Hazardous Waste Warehouse activities.

Table G-5. Personnel Training for Hazardous Waste Management Employees –Site Waste Manager

Waste Handling Responsibilities	Type of Required Training	Frequency of Training
Waste Generation and Container Management Responsibilities <ul style="list-style-type: none"> • Labeling containers • Drum Storage Area Inspection • Waste drum Filling • Waste drum handling 	Container Management Training: <ul style="list-style-type: none"> • Waste Drum selection • Waste Drum Labeling • Waste Drum Filling • Waste Drum Storage Area Inspection 	Annually
Waste Tracking System Responsibilities: <ul style="list-style-type: none"> • Plant activities • Site drum inventory activities • Waste drum shipping • Waste characterization 	Waste tracking system training for management level, including: <ul style="list-style-type: none"> Department information Inventory tracking Shipment tracking Label creation Hazardous waste manifests 	Initially and after system updates, manifests are annually
Responsibilities for Emergency Procedures, Emergency Equipment, and Emergency Systems	Procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment. Communications and alarm systems. Response to fires or explosions. Response to groundwater contamination incidents and shut-down of operations. Training to meet the requirements of 8 CCR Section 5192(p).	Annually

Note:

In general, this classification of worker is responsible for work direction activities for site wide hazardous waste management including inspection, collection and shipping of waste containers, operation of the RCRA 1 Year Storage Area, operation and modification of the Waste Tracking System, and general Hazardous Waste Warehouse activities. Also responsibilities related to instructing plant personnel related to regulatory matters and waste characterization.

Closure and Closure Financial Requirements

H-1 Closure Plan

H-1a Closure Performance Standard

The Block 560 Drum Storage Area will be clean closed. This will accomplish the following closure performance standard objectives:

- Minimizes the need for further maintenance.
- Controls, minimizes, or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated rainfall or run-off, or waste decomposition products to the ground or surface waters or to the atmosphere.
- Complies with the closure requirements of 22 CCR 66264.178.

The final closure plan for the Block 560 Drum Storage Area includes:

- Removal of hazardous wastes containers from the site.
- Cleaning of secondary containment surfaces.
- Analysis of concrete chip samples and soil samples.
- Preparation of a closure report and closure certification.

Because all hazardous wastes and contaminated surface materials will be removed from the site at closure, post-closure maintenance is not anticipated.

H-1b Time and Activities Required for Partial Closure and Final Closure Activities

Per 22 CCR, Division 4.5, Chapter 14, Article 7, Section 66264.112, Paragraph (d)(1), Dow will notify the DTSC in writing at least 45 days prior to the date on which Dow expects to begin closure of the Block 560 Drum Storage Area, unless the DTSC requires a longer period.

H-1b(1) Task 1: Remove and Dispose of Drums

At closure, all hazardous waste and hazardous waste residues will be removed from the containment system and transported and disposed in accordance with federal, state, and local requirements.

H-1b(2) Task 2: Pressure-wash Containment Pad

The containment pad will be decontaminated by pressure washing with water or with appropriate cleaners. If cleaning chemicals are used, cleaning will be followed by rinsing with high-pressure water spray. Wastewater from pressure washing will be captured and containerized for characterization and disposal.

H-1b(3) Task 3: Inspection and Sampling

Containment surfaces will be inspected to confirm that the containment area coating is clean and intact. Chip samples of the coating will be collected at four locations (two in each storage bay) to confirm decontamination. Concrete core samples will be analyzed to demonstrate that concentrations of the constituents of concern have not migrated into the concrete. Two concrete core sample will be taken from each of the two storage bays. Soil borings will be performed at each of the four concrete coring locations. Three soil samples will be collected from each soil boring at approximate depths of six inches, three feet, and six feet under the pad, for a total of 12 soil samples. Sampling holes in the concrete

containment pad will be filled with concrete, grout, or structural epoxy. Chip samples, core samples, and soil samples will be analyzed for the following parameters:

- Chlorinated organics
- Semivolatile organics
- Metals (arsenic, barium, cadmium, lead, mercury, selenium, and chromium)

These parameters were selected based on generator knowledge of the waste stored. All samples will be sealed and labeled at the sampling site. The analytical procedures used will be those in SW-846, *Test Methods for Evaluating Solid Waste* or any equivalent guidelines in use at the time of closure.

The clean closure performance standard for soils will be background for metals, non-detect for organics, or health-based levels approved by DTSC.

H-1b(4) Task 4: Characterization and Disposal of Cleaning Residue

Pressure-wash water will be sampled and analyzed for the following hazardous constituents stored in the area:

- Chlorinated organics
- Semivolatile organics
- Metals (arsenic, barium, cadmium, lead, mercury, selenium, and chromium)

Residues will be characterized and disposed at an appropriate disposal facility in accordance with applicable federal, state, and local requirements based on the characterization results.

H-1b(5) Task 5: Preparation of Closure Report

A closure report will be prepared consisting of a narrative of closure activities and closure documentation. At the conclusion of all closure activities, Dow will submit a certification signed by Dow and stamped by an independent professional engineer registered in California that the facility has been closed in accordance with the specifications in the approved closure plan. The closure report will be submitted to DTSC for approval.

H-1b(6) Amendment to the Closure Plan

This plan will be evaluated and modified in the event of a significant change in operations at the Block 560 Drum Storage Area that would increase the estimated closure costs. A request for modification of the closure plan will be given to the state within 60 days of the date that the operating change goes into effect if the change in operating procedures or facility design does not require a permit modification. Permit modifications reflecting significant changes in the facility operations will be done concurrently with updating the facility closure plan.

H-1c Maximum Waste Inventory

The maximum inventory of wastes at the Block 560 Drum Storage Area is 6,000 gallons.

H-1d Schedule for Closure

There is no anticipated date for closure of the Pittsburg manufacturing or hazardous waste handling operations. Dow has selected the year 2041 for identification of the steps necessary for closure of the RCRA hazardous waste facility in a safe and secure manner as required by RCRA, and 22 CCR.

As the ultimate facility shutdown date approaches, DTSC will be notified by telephone and certified mail 180 days prior to the expected date of closure. If the drum storage area is closed before ultimate facility shutdown, Dow will provide written notice to DTSC at least 45 days prior to completion of closure.

Dow will remove hazardous waste within 90 days of receiving the last shipment of hazardous waste at the drum storage area.

The following schedule gives intervening milestones in the procedures that will allow tracking of the progress of closure.

Week 1	Last container of hazardous waste received.
Week 8	Empty and remove all wastes and waste containers from the drum storage area.
Week 12	Complete decontamination of drum storage containment pad.
Week 16	Complete sampling and analysis and ship cleaning wastes to a disposal facility.
Week 20	Receive copies of manifests from the disposal facility.
Week 26	Submit final closure report and certification to the DTSC.

H-1d(1) Time Allowed for Closure

The proposed closure schedule complies with the requirement to complete closure activities within 180 days after receiving the final volume of hazardous wastes at the drum storage area.

H-1d(2) Extension for Closure Time

Dow will comply with the requirements of 22 CCR 66264.113(b) and (c), if Dow requires an extension for closure time.

H-1e Closure Procedures

H-1e(1) Inventory Removal

Only containerized hazardous waste is stored in the Block 560 Drum Storage Area. Within 90 days of receiving the final volume of waste at the drum storage area, Dow will load the remaining containers of hazardous waste onto trucks operated by licensed hazardous waste haulers for transportation to a permitted hazardous waste treatment storage and disposal facility. Prior to shipment, Dow will confirm that containers comply with DOT requirements and that trucks are placarded in conformance to DOT regulations. Disposition of the waste at the treatment storage and disposal facility will depend on the waste being disposed.

H-1e(2) Disposal or Decontamination of Equipment, Structure, and Soils

As described in Section H-1b, the drum storage area pad will be decontaminated by high-pressure water washing. The wash water will be captured, characterized and disposed in accordance with federal, state, and local requirements. The coated concrete pad will be left in place. Transfer piping used to empty rainwater from the sumps will be removed, characterized, and disposed in accordance with applicable regulations. Dow will characterize any contaminated concrete or soil and dispose of it in accordance with applicable regulations.

H-1e(3) Closure of Containers

This closure plan complies with the requirements of 22 CCR 66264.112(b)(3) and 22 CCR 66264.178, including removing hazardous waste and hazardous waste residues from the containment system; decontaminating remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues; and complying with hazardous waste generator requirements throughout the operating period, unless Dow demonstrates that the solid waste removed from the containment system is not a hazardous waste. The maximum inventory of hazardous waste at the time of closure is presented in Section H-1c.

H-2 Post-closure Plans

The drum storage area is a management unit, not a disposal unit. Therefore post-closure planning requirements are not applicable.

H-3 Notices Required for Closure

As the ultimate facility shutdown date approaches, DTSC will be notified by telephone and certified mail 180 days prior to the expected date of closure. If the drum storage area is closed before ultimate facility shutdown, Dow will provide written notice to DTSC at least 45 days prior to completion of closure.

Dow will submit to the DTSC, by registered mail, a certification that the hazardous waste management unit or facility, as applicable, has been closed in accordance with the approved closure plan within 60 days of completion of final closure. The certification will be signed by Dow's duly-authorized representative and by an independent qualified professional engineer, registered in California. Dow will furnish documentation supporting the independent qualified registered professional engineer's certification to the DTSC upon request. Dow will consider the closure complete when the DTSC releases Dow from the financial assurance requirements for closure.

H-4 Closure Cost Estimate

Estimated costs for sampling and analyses and other closure procedures are itemized in Table H-1. The total estimated cost of closure is \$212,750. This cost estimate assumes that all closure tasks (waste treatment, labor, and transportation) are performed by a third party. The cost estimate is a maximum estimate; it was assumed that the Block 560 Drum Storage Area will be filled to capacity at the time of closure.

The closure plan will be reviewed annually by Dow. The closure cost estimate will be updated according to current cost-of-living adjustment procedures applicable to closure cost estimates, as described in 22 CCR 66264.142.

H-5 Closure Financial Assurance

Financial assurance for closure of the Block 560 Drum Storage Area (\$212,750) is included in the corporate guarantee included in Appendix J.

H-6 Post-closure Cost Estimate

The Block 560 Drum Storage Area is a management unit not a disposal unit. Therefore, the requirement for a post-closure cost estimate is not applicable.

H-7 Post-closure Financial Assurance

The Block 560 Drum Storage Area is a management unit not a disposal unit. Therefore, post-closure financial assurance requirements are not applicable.

H-8 Liability Requirements

Dow maintains liability coverage for sudden accidental occurrences in the amount of at least \$1 million per occurrence, with an annual aggregate of at least \$2 million, exclusive of legal defense costs. Copies of insurance documents are included in Appendix J.

Table H-1. Closure Cost Estimate

Item Description	Unit Cost	No. of Units	Cost
<i>Project Planning, Safety and Management</i>			
Labor	\$120/hour	160 hours	\$19,200
<i>Load Waste and Pressure-Wash Containment Pad</i>			
Labor	\$100/hour	510 hours	\$51,000
Pallets	\$25/pallet	60 pallets	\$1,500
Equipment Rental	\$120/hour	170 hours	\$20,400
<i>Offsite Disposal of Hazardous Waste</i>			
Drum Disposal Cost	\$233/drum	240 drums	\$55,920
Pressure Wash-Water Disposal Cost	\$2.50/gallon	5,000 gallons	\$12,500
<i>Sampling and Analysis</i>			
Geoprobe	\$1,800/day	1 day	\$1,400
Other Equipment & Supplies (rig mob/demob, coring, PID, drum, PPE, soil liners, misc)	\$1950	Lump Sum	\$1950
Labor	\$160/hour	8 hours	\$1,280
Chlorinated organics (EPA Method 8260)	\$465/sample	20 samples	\$9,300
Semivolatile organics (EPA Method 8270)	\$465/sample	20 samples	\$9,300
Metals (arsenic, barium, cadmium, lead, mercury, selenium, and chromium) (EPA Method 6010/7400)	\$170/sample	20 samples	\$3,400
<i>Prepare Closure Report and Certification</i>			
Prepare Closure Report and Certification	\$160/hour	160 hours	\$25,600
Total			\$212,750

Solid Waste Management Units

I-1 Characterize the Solid Waste Management Unit

The California Regional Water Quality Control Board (RWQCB) is the lead agency for corrective action at the Dow facility. Its role includes implementing and enforcing the corrective action requirements of 22 CCR, Division 4.5, Chapter 14, Article 6.

In 1986, the USEPA prepared a RCRA facility assessment (RFA) report that identified 25 Solid Waste Management Units (SWMUs) at the Dow Pittsburg facility. The descriptions, actions required, and status of these SWMUs are summarized in Table 4 of the RWQCB Order R2-2002-0007. Available information on the SWMUs—including locations, type of unit, general dimensional and structural information, and operational history including dates of operation, types of waste managed, and known releases—are summarized in the RFA.

In June 1987, the RWQCB issued WDR Order No. 87-064 requiring Dow to characterize the areas of potential concern identified in the RFA report and, if necessary, evaluate alternatives for remediation. In response, Dow has submitted various reports addressing RWQCB requirements for SWMU investigations and closures. Much of the work is summarized in a 12-volume *Remedial Feasibility Investigation and Corrective Action Program* report submitted in December 1988. Dow's March 1995 *Corrective Measures Study Report* presents various alternatives for closing SWMUs and for monitoring and maintenance of closed SWMUs.

In 1998, the RWQCB adopted WDR Order No. 98-059 addressing closure and maintenance of three of the 25 identified SWMUs. The SWMUs addressed in WDR Order No. 98-059 include the Class III Northeast Landfill, which is currently active, the Hexachlorobenzene Trench, which has since been closed, and the Former Outfall Pond, which has also been closed. Requirements in WDR Order No. 98-059 pertaining to these SWMUs have been satisfied.

In 2002, the RWQCB adopted two orders: Order No. R2-2002-0007 regulates the operation, closure, post-closure maintenance, and monitoring of 25 SWMUs and rescinded WDR Order No. 98-059; and Order No. R2-2002-0014 establishes site cleanup requirements for the remediation of volatile organic compounds and semivolatile organic compounds in groundwater at the Dow site.

I-2 Releases

As noted in RWQCB Order No. R2-2002-0014, organic constituents in groundwater are generally the result of historic deposits to the ground that have occurred throughout the facility during the course of site operations. Their sources generally are not discrete SWMUs. Dow operates an engineered in-situ bioremediation (EISB) system as the primary remedy for cleanup of existing groundwater impacts due to VOC contamination. Monitoring and inspection activities are conducted pursuant to Order No. R2-2002-0007 and Order No. R2-2002-0014. Results are summarized in the semiannual monitoring reports to the RWQCB.

Other Federal Laws

This section addresses compliance with the requirements of the following regulations:

- Wild and Scenic Rivers Act
- National Historic Preservation Act of 1966
- Endangered Species Act
- Coastal Zone Management Act
- Fish and Wildlife Coordination Act

The Block 560 Drum Storage Area is an existing facility for which Dow is renewing the RCRA permit. There are no changes to the facility as a result of this permit renewal, and there are no discharges associated with this hazardous waste unit.

Part B Certification

Certification

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."



Balaji Venkataraman
Site Director, Pittsburg, CA

Date: 12/17/2015

Air Emission Standards for Containers, Tanks, and Surface Impoundments

All containers stored at the Block 560 Drum Storage Area with a capacity greater than 0.1 cubic meters (26 gallons) and less than 0.46 cubic meters (118 gallons) are subject Container Level 1 standards specified in 66264.1086(c)

A container meeting Container Level 1 controls is one of the following:

1. A container that meets the applicable DOT regulations on packaging hazardous materials for transportation including applicable requirements specified in Parts 107, 172, 173, 178, and 180 of 49 CFR.
2. A container equipped with a cover and closure devices that form a continuous barrier over the container openings such that when the cover and closure devices are secured in the closed position there are no visible holes, gaps, or other open spaces into the interior of the container. The cover may be a separate cover installed on the container (e.g., a lid on a drum or a suitably secured tarp on a roll-off box) or may be an integral part of the container structural design (e.g., a "portable tank" or bulk cargo container equipped with a screw-type cap).
3. An open-top container in which an organic-vapor suppressing barrier is placed on or over the hazardous waste in the container such that no hazardous waste is exposed to the atmosphere. One example of such a barrier is application of a suitable organic-vapor suppressing foam.

Dow will use DOT-compliant containers where practicable. If Dow uses a container not meeting applicable DOT requirements, the container will be equipped with covers and closure devices, as applicable to the container, that are composed of suitable materials to minimize exposure of the hazardous waste to the atmosphere and to maintain the equipment integrity, for as long as the container is in service. In selecting the materials of construction and designing the cover and closure devices, Dow will consider:

- Organic vapor permeability.
- Effects of contact with the hazardous waste or its vapor managed in the container.
- Effects of outdoor exposure of the closure device or cover material to wind, moisture, and sunlight.
- Operating practices for which the container is intended to be used.

Whenever a hazardous waste is in a container using Container Level 1 controls, Dow will install all covers and closure devices for the container, as applicable to the container, and secure and maintain each closure device in the closed position, except when adding hazardous waste or other material to the container. Dow will promptly secure the closure devices in the closed position and install the covers, as applicable to the container, when one of the following conditions occurs:

- Upon conclusion of the filling operation.
- When no additional material will be added to the container within 15 minutes.
- When the person performing the loading operation leaving the immediate vicinity of the container.
- When the process generating the material being added to the container is shut down.
- After a sample is taken.
- When discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container.

Dow may open a spring-loaded, pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device that vents to the atmosphere during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the container design specifications. Dow will only use devices that are designed to operate with no detectable organic emissions when the device is secured in the closed position. Dow will set such devices such that they remain in the closed position whenever the internal pressure of the container is within the internal pressure operating range as determined by Dow based on container manufacturer recommendations; applicable regulations; fire protection and prevention codes; standard engineering codes and practices; or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials.

Land disposal restrictions and the Part B permit limit the storage time at the Block 560 Drum Storage Area to 1 year. Therefore, inspection requirements associated with storage of hazardous waste containers for longer than one year are not applicable.

Certain hazardous wastes placed in containers are exempt from Container Level 1 controls as specified in 22 CCR Section 66264.1082(c). Dow will maintain waste characterization documentation supporting waste containers determined to be exempt.

Waste Minimization Certification

A copy of the facility's annual waste minimization certification is presented in Appendix K.

Appendix A

Part A Form

<p>SEND COMPLETED FORM TO: The Appropriate State or Regional Office.</p>	<p>United States Environmental Protection Agency RCRA SUBTITLE C SITE IDENTIFICATION FORM</p>		
<p>1. Reason for Submittal</p> <p>MARK ALL BOX(ES) THAT APPLY</p>	<p>Reason for Submittal:</p> <p><input type="checkbox"/> To provide an Initial Notification (first time submitting site identification information / to obtain an EPA ID number for this location)</p> <p><input type="checkbox"/> To provide a Subsequent Notification (to update site identification information for this location)</p> <p><input type="checkbox"/> As a component of a First RCRA Hazardous Waste Part A Permit Application</p> <p><input type="checkbox"/> As a component of a Revised RCRA Hazardous Waste Part A Permit Application (Amendment # _____)</p> <p><input type="checkbox"/> As a component of the Hazardous Waste Report (If marked, see sub-bullet below)</p> <p><input type="checkbox"/> Site was a TSD facility and/or generator of >1,000 kg of hazardous waste, >1 kg of acute hazardous waste, or >100 kg of acute hazardous waste spill cleanup in one or more months of the report year (or State equivalent LQG regulations)</p>		
<p>2. Site EPA ID Number</p>	<p>EPA ID Number <input type="text"/> <input type="text"/></p>		
<p>3. Site Name</p>	<p>Name: <input type="text"/></p>		
<p>4. Site Location Information</p>	<p>Street Address: <input type="text"/></p>		
	<p>City, Town, or Village: <input type="text"/></p>		<p>County: <input type="text"/></p>
	<p>State: <input type="text"/></p>	<p>Country: <input type="text"/></p>	<p>Zip Code: <input type="text"/></p>
<p>5. Site Land Type</p>	<p><input type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> District <input type="checkbox"/> Federal <input type="checkbox"/> Tribal <input type="checkbox"/> Municipal <input type="checkbox"/> State <input type="checkbox"/> Other</p>		
<p>6. NAICS Code(s) for the Site (at least 5-digit codes)</p>	<p>A. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/></p>	<p>C. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/></p>	
	<p>B. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/></p>	<p>D. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/></p>	
<p>7. Site Mailing Address</p>	<p>Street or P.O. Box: <input type="text"/></p>		
	<p>City, Town, or Village: <input type="text"/></p>		
	<p>State: <input type="text"/></p>	<p>Country: <input type="text"/></p>	<p>Zip Code: <input type="text"/></p>
<p>8. Site Contact Person</p>	<p>First Name: <input type="text"/></p>	<p>MI: <input type="text"/></p>	<p>Last: <input type="text"/></p>
	<p>Title: <input type="text"/></p>		
	<p>Street or P.O. Box: <input type="text"/></p>		
	<p>City, Town or Village: <input type="text"/></p>		
	<p>State: <input type="text"/></p>	<p>Country: <input type="text"/></p>	<p>Zip Code: <input type="text"/></p>
	<p>Email: <input type="text"/></p>		
	<p>Phone: <input type="text"/></p>	<p>Ext.: <input type="text"/></p>	<p>Fax: <input type="text"/></p>
<p>9. Legal Owner and Operator of the Site</p>	<p>A. Name of Site's Legal Owner: <input type="text"/></p>		<p>Date Became Owner: <input type="text"/></p>
	<p>Owner Type: <input type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> District <input type="checkbox"/> Federal <input type="checkbox"/> Tribal <input type="checkbox"/> Municipal <input type="checkbox"/> State <input type="checkbox"/> Other</p>		
	<p>Street or P.O. Box: <input type="text"/></p>		
	<p>City, Town, or Village: <input type="text"/></p>		<p>Phone: <input type="text"/></p>
	<p>State: <input type="text"/></p>	<p>Country: <input type="text"/></p>	<p>Zip Code: <input type="text"/></p>
	<p>B. Name of Site's Operator: <input type="text"/></p>		<p>Date Became Operator: <input type="text"/></p>
	<p>Operator Type: <input type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> District <input type="checkbox"/> Federal <input type="checkbox"/> Tribal <input type="checkbox"/> Municipal <input type="checkbox"/> State <input type="checkbox"/> Other</p>		

10. Type of Regulated Waste Activity (at your site)

Mark "Yes" or "No" for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

A. Hazardous Waste Activities; Complete all parts 1-10.

- Y N **1. Generator of Hazardous Waste**
 If "Yes," mark only one of the following – a, b, or c.
- a. LQG: Generates, in any calendar month, 1,000 kg/mo (2,200 lbs/mo.) or more of hazardous waste; or Generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lbs/mo) of acute hazardous waste; or Generates, in any calendar month, or accumulates at any time, more than 100 kg/mo (220 lbs/mo) of acute hazardous spill cleanup material.
- b. SQG: 100 to 1,000 kg/mo (220 – 2,200 lbs/mo) of non-acute hazardous waste.
- c. CESQG: Less than 100 kg/mo (220 lbs/mo) of non-acute hazardous waste.
- If "Yes" above, indicate other generator activities in 2-10.

- Y N **2. Short-Term Generator** (generate from a short-term or one-time event and not from on-going processes). If "Yes," provide an explanation in the Comments section.
- Y N **3. United States Importer of Hazardous Waste**
- Y N **4. Mixed Waste (hazardous and radioactive) Generator**

- Y N **5. Transporter of Hazardous Waste**
 If "Yes," mark all that apply.
- a. Transporter
- b. Transfer Facility (at your site)
- Y N **6. Treater, Storer, or Disposer of Hazardous Waste** Note: A hazardous waste Part B permit is required for these activities.
- Y N **7. Recycler of Hazardous Waste**
- Y N **8. Exempt Boiler and/or Industrial Furnace**
 If "Yes," mark all that apply.
- a. Small Quantity On-site Burner Exemption
- b. Smelting, Melting, and Refining Furnace Exemption
- Y N **9. Underground Injection Control**
- Y N **10. Receives Hazardous Waste from Off-site**

B. Universal Waste Activities; Complete all parts 1-2.

- Y N **1. Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more) [refer to your State regulations to determine what is regulated]. Indicate types of universal waste managed at your site. If "Yes," mark all that apply.**
- a. Batteries
- b. Pesticides
- c. Mercury containing equipment
- d. Lamps
- e. Other (specify) _____
- f. Other (specify) _____
- g. Other (specify) _____

- Y N **2. Destination Facility for Universal Waste**
 Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities; Complete all parts 1-4.

- Y N **1. Used Oil Transporter**
 If "Yes," mark all that apply.
- a. Transporter
- b. Transfer Facility (at your site)
- Y N **2. Used Oil Processor and/or Re-refiner**
 If "Yes," mark all that apply.
- a. Processor
- b. Re-refiner
- Y N **3. Off-Specification Used Oil Burner**
- Y N **4. Used Oil Fuel Marketer**
 If "Yes," mark all that apply.
- a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
- b. Marketer Who First Claims the Used Oil Meets the Specifications

D. Eligible Academic Entities with Laboratories—Notification for opting into or withdrawing from managing laboratory hazardous wastes pursuant to 40 CFR Part 262 Subpart K

❖ You can ONLY Opt into Subpart K if:

- you are at least one of the following: a college or university; a teaching hospital that is owned by or has a formal affiliation agreement with a college or university; or a non-profit research institute that is owned by or has a formal affiliation agreement with a college or university; AND
- you have checked with your State to determine if 40 CFR Part 262 Subpart K is effective in your state

Y N 1. Opting into or currently operating under 40 CFR Part 262 Subpart K for the management of hazardous wastes in laboratories
See the item-by-item instructions for definitions of types of eligible academic entities. Mark all that apply:

- a. College or University
- b. Teaching Hospital that is owned by or has a formal written affiliation agreement with a college or university
- c. Non-profit Institute that is owned by or has a formal written affiliation agreement with a college or university

Y N 2. Withdrawing from 40 CFR Part 262 Subpart K for the management of hazardous wastes in laboratories

11. Description of Hazardous Waste

A. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g., D001, D003, F007, U112). Use an additional page if more spaces are needed.

B. Waste Codes for State-Regulated (i.e., non-Federal) Hazardous Wastes. Please list the waste codes of the State-Regulated hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed.

12. Notification of Hazardous Secondary Material (HSM) Activity

Y N Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 261.2(a)(2)(ii), 40 CFR 261.4(a)(23), (24), or (25)?

If "Yes," you must fill out the Addendum to the Site Identification Form: Notification for Managing Hazardous Secondary Material.

13. Comments

Multiple empty horizontal lines for providing comments.

14. Certification. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. For the RCRA Hazardous Waste Part A Permit Application, all owner(s) and operator(s) must sign (see 40 CFR 270.10(b) and 270.11).

Signature of legal owner, operator, or an authorized representative	Name and Official Title (type or print)	Date Signed (mm/dd/yyyy)
<i>Balaji Venkataraman</i>	Balaji Venkataraman	12/17/2015
	Pittsburg Site Director	

ADDENDUM TO THE SITE IDENTIFICATION FORM: NOTIFICATION OF HAZARDOUS SECONDARY MATERIAL ACTIVITY



ONLY fill out this form if:

- ❖ You are located in a State that allows you to manage excluded hazardous secondary material (HSM) under 40 CFR 261.2(a)(2)(ii), 261.4(a)(23), (24), or (25) (or state equivalent). See <http://www.epa.gov/epawaste/hazard/dsw/statespf.htm> for a list of eligible states; **AND**
- ❖ You are or will be managing excluded HSM in compliance with 40 CFR 261.2(a)(2)(ii), 261.4(a)(23), (24), or (25) (or state equivalent) or you have stopped managing excluded HSM in compliance with the exclusion(s) and do not expect to manage any amount of excluded HSM under the exclusion(s) for at least one year. Do not include any information regarding your hazardous waste activities in this section.

1. Indicate reason for notification. Include dates where requested.

- Facility will begin managing excluded HSM as of _____ (mm/dd/yyyy).
- Facility is still managing excluded HSM/re-notifying as required by March 1 of each even-numbered year.
- Facility has stopped managing excluded HSM as of _____ (mm/dd/yyyy) and is notifying as required.

2. Description of excluded HSM activity. Please list the appropriate codes and quantities in **short tons** to describe your excluded HSM activity ONLY (do not include any information regarding your hazardous wastes). Use additional pages if more space is needed.

a. Facility code (answer using codes listed in the Code List section of the instructions)	b. Waste code(s) for HSM	c. Estimated short tons of excluded HSM to be managed annually	d. Actual short tons of excluded HSM that was managed during the most recent odd-numbered year	e. Land-based unit code (answer using codes listed in the Code List section of the instructions)

3. Facility has financial assurance pursuant to 40 CFR 261.4(a)(24)(vi). (Financial assurance is required for reclaimers and intermediate facilities managing excluded HSM under 40 CFR 261.4(a)(24) and (25))

Y N Does this facility have financial assurance pursuant to 40 CFR 261.4(a)(24)(vi)?

This page intentionally left blank

7. Process Codes and Design Capacities – Enter information in the Section on Form Page 3

- A. PROCESS CODE** – Enter the code from the list of process codes below that best describes each process to be used at the facility. If more lines are needed, attach a separate sheet of paper with the additional information. For “other” processes (i.e., D99, S99, T04 and X99), describe the process (including its design capacity) in the space provided in Item 8.
- B. PROCESS DESIGN CAPACITY** – For each code entered in Item 7.A; enter the capacity of the process.
1. **AMOUNT** – Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process.
 2. **UNIT OF MEASURE** – For each amount entered in Item 7.B(1), enter the code in Item 7.B(2) from the list of unit of measure codes below that describes the unit of measure used. Select only from the units of measure in this list.
- C. PROCESS TOTAL NUMBER OF UNITS** – Enter the total number of units for each corresponding process code.

Process Code	Process	Appropriate Unit of Measure for Process Design Capacity	Process Code	Process	Appropriate Unit of Measure for Process Design Capacity
Disposal			Treatment (Continued)		
D79	Underground Injection Well Disposal	Gallons; Liters; Gallons Per Day; or Liters Per Day	T81	Cement Kiln	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; BTU Per Hour; Liters Per Hour; Kilograms Per Hour; or Million BTU Per Hour
D80	Landfill	Acre-feet; Hectares-meter; Acres; Cubic Meters; Hectares; Cubic Yards	T82	Lime Kiln	
D81	Land Treatment	Acres or Hectares	T83	Aggregate Kiln	
D82	Ocean Disposal	Gallons Per Day or Liters Per Day	T84	Phosphate Kiln	
D83	Surface Impoundment Disposal	Gallons; Liters; Cubic Meters; or Cubic Yards	T85	Coke Oven	
D99	Other Disposal	Any Unit of Measure Listed Below	T86	Blast Furnace	
Storage			T87	Smelting, Melting, or Refining Furnace	
S01	Container	Gallons; Liters; Cubic Meters; or Cubic Yards	T88	Titanium Dioxide Chloride Oxidation Reactor	
S02	Tank Storage	Gallons; Liters; Cubic Meters; or Cubic Yards	T89	Methane Reforming Furnace	
S03	Waste Pile	Cubic Yards or Cubic Meters	T90	Pulping Liquor Recovery Furnace	
S04	Surface Impoundment	Gallons; Liters; Cubic Meters; or Cubic Yards	T91	Combustion Device Used in the Recovery of Sulfur Values from Spent Sulfuric Acid	
S05	Drip Pad	Gallons; Liters; Cubic Meters; Hectares; or Cubic Yards	T92	Halogen Acid Furnaces	
S06	Containment Building Storage	Cubic Yards or Cubic Meters	T93	Other Industrial Furnaces Listed in 40 CFR 260.10	
S99	Other Storage	Any Unit of Measure Listed Below	T94	Containment Building Treatment	Cubic Yards; Cubic Meters; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; BTU Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; Gallons Per Day; Liters Per Day; Metric Tons Per Hour; or Million BTU Per Hour
Treatment			Miscellaneous (Subpart X)		
T01	Tank Treatment	Gallons Per Day; Liters Per Day	X01	Open Burning/Open Detonation	Any Unit of Measure Listed Below
T02	Surface Impoundment	Gallons Per Day; Liters Per Day	X02	Mechanical Processing	Short Tons Per Hour; Metric Tons Per Hour; Short Tons Per Day; Metric Tons Per Day; Pounds Per Hour; Kilograms Per Hour; Gallons Per Hour; Liters Per Hour; or Gallons Per Day
T03	Incinerator	Short Tons Per Hour; Metric Tons Per Hour; Gallons Per Hour; Liters Per Hour; BTUs Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Gallons Per Day; Metric Tons Per Hour; or Million BTU Per Hour	X03	Thermal Unit	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Short Tons Per Day; BTUs Per Hour; Gallons Per Day; Liters Per Hour; or Million BTU Per Hour
T04	Other Treatment	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Short Tons Per Day; BTUs Per Hour; Gallons Per Day; Liters Per Hour; or Million BTU Per Hour	X04	Geologic Repository	Cubic Yards; Cubic Meters; Acre-feet; Hectare-meter; Gallons; or Liters
T80	Boiler	Gallons; Liters; Gallons Per Hour; Liters Per Hour; BTUs Per Hour; or Million BTU Per Hour	X99	Other Subpart X	Any Unit of Measure Listed Below
Unit of Measure		Unit of Measure Code	Unit of Measure		Unit of Measure Code
Gallons		G	Short Tons Per Hour		D
Gallons Per Hour		E	Short Tons Per Day		N
Gallons Per Day		U	Metric Tons Per Hour		W
Liters		L	Metric Tons Per Day		S
Liters Per Hour		H	Pounds Per Hour		J
Liters Per Day		V	Kilograms Per Hour		X
			Million BTU Per Hour		X
			Cubic Yards		Y
			Cubic Meters		C
			Acres		B
			Acre-feet		A
			Hectares		Q
			Hectare-meter		F
			BTU Per Hour		I

10. Map

Attach to this application a topographical map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all spring, rivers, and other surface water bodies in this map area. See instructions for precise requirements.

11. Facility Drawing

All existing facilities must include a scale drawing of the facility (see instructions for more detail).

12. Photographs

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment, and disposal areas; and sites of future storage, treatment, or disposal areas (see instructions for more detail).

13. Comments



Photo 1 - RCRA Drum Storage Area looking north-east



Photo 2 - RCRA Drum Storage Area looking southwest



Photo 3 - View of west bay and ramp

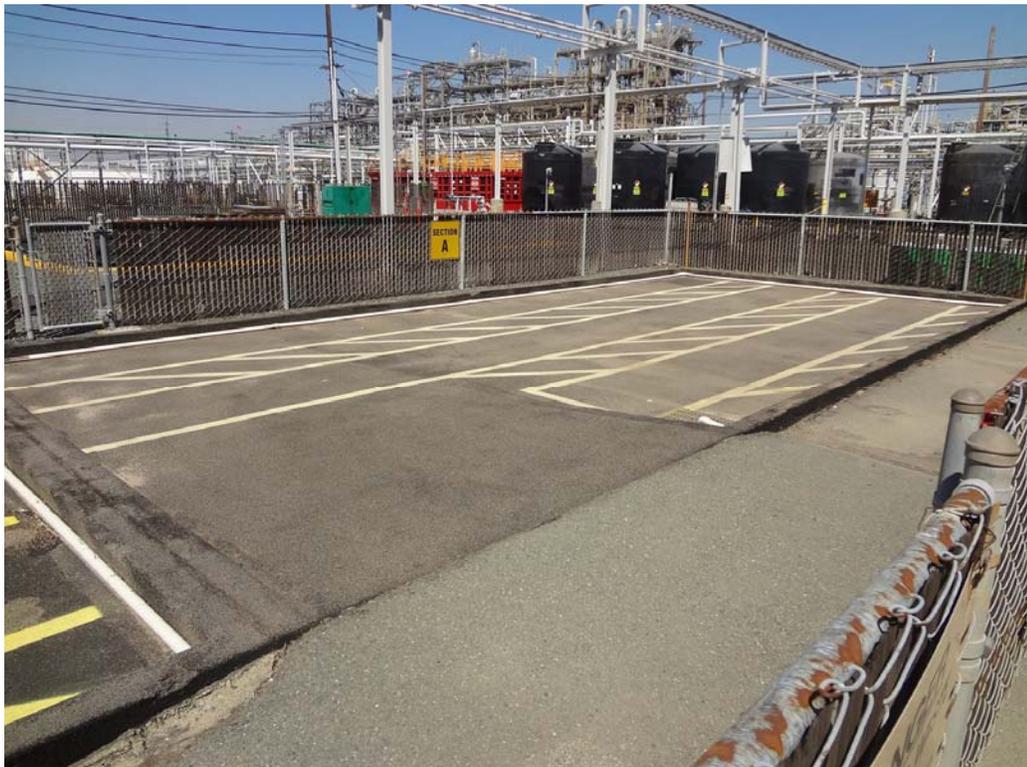


Photo 4 - View of east bay



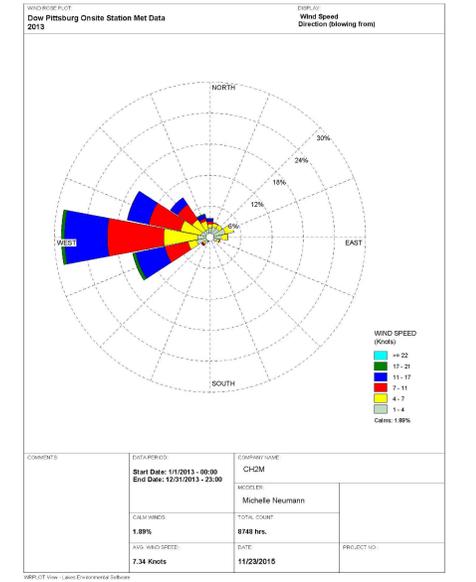
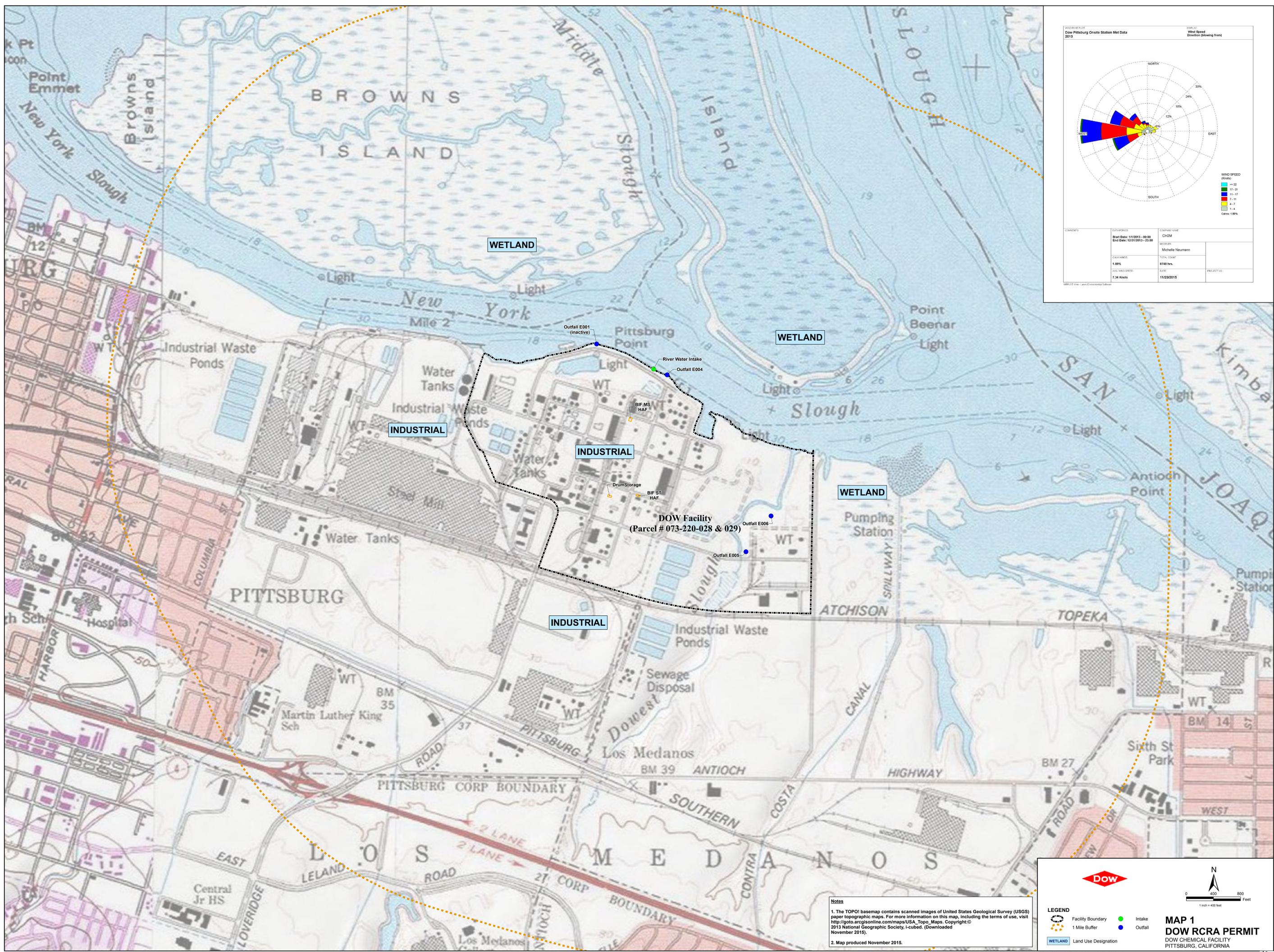
Photo 5 - Close-up of "Danger" sign and entrance gate



Photo 6 - Close-up of spill kit storage and fire extinguisher

Appendix B

Facility Maps



Notes

1. The TOPOI basemap contains scanned images of United States Geological Survey (USGS) paper topographic maps. For more information on this map, including the terms of use, visit http://goto.arcgisonline.com/maps/USA_Topo_Maps. Copyright:© 2013 National Geographic Society, I-cubed. (Downloaded November 2015).

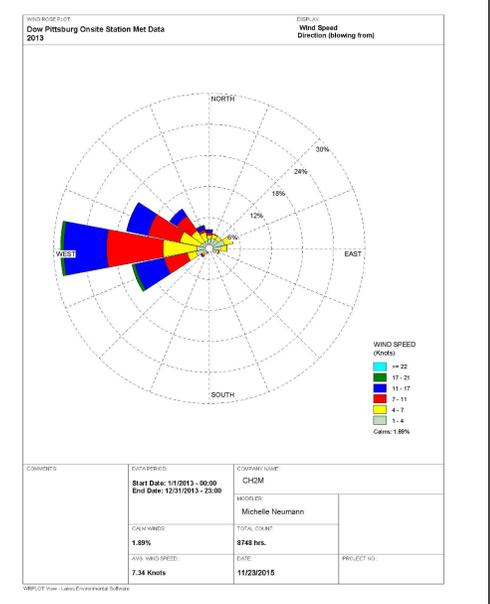
2. Map produced November 2015.

LEGEND

- Facility Boundary
- 1 Mile Buffer
- Land Use Designation
- Intake
- Outfall

MAP 1
DOW RCRA PERMIT
DOW CHEMICAL FACILITY
PITTSBURG, CALIFORNIA

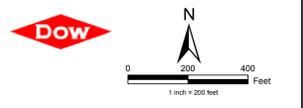
Scale: 1 inch = 400 feet



- LEGEND**
- Facility Boundary
 - Water Body
 - 2 ft. Contour
 - Fences and Gates
 - FEMA 100 year Floodplain
 - 2000 ft. Buffer Around Site
 - Site Cleanup Requirements (SCR) Surface Water Monitoring Location
 - SCR and Perimeter Monitoring Well
 - SCR Monitoring Well
 - WDR and Perimeter Monitoring Well
 - Waste Discharge Requirements (WDR) Monitoring Well
 - Perimeter Monitoring Well
 - Perimeter Piezometer
 - Perimeter and Engineered In-Situ Bioremediation System (EISB) Downgradient Monitoring Well
 - EISB Downgradient Monitoring Well
 - EISB Downgradient Piezometer
 - EISB Bio (Circulation) Well
 - WDR Water Level Monitoring Well
 - WDR Water Level Piezometer
 - WDR Water Level Sump
 - Monitoring Well Former Outfall Pond
 - Engineered Phytoremediation System
 - Extraction Well
 - Sump
 - Piezometer
 - Injection Test Well
 - Bundesen Bay Corrective Action Extraction Wells
 - Intake / Outfall
 - WETLAND Land Use Designation

Notes:

1. Aerial photograph from Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community (Downloaded November 2015)
2. The FEMA 100 year floodplain is a digital representation of FEMA's Flood Insurance Rate Map (FIRM) product. Data provided by FEMA as a digital download service. (Downloaded November 2015)
3. Topographic contour data from DOW
4. FOP contour Data from CH2M HILL August 2004.
5. Well data from CH2M HILL GIS database.
6. Map produced November 2015.



MAP 2
DOW RCRA PERMIT
DOW CHEMICAL FACILITY
PITTSBURG, CALIFORNIA

Appendix C

Waste Analysis Plan

Waste Analysis Plan for Hazardous Waste Operations

Block 560 Drum Storage Area

The Dow Chemical Company
901 Loveridge Road
Pittsburg, CA 94565

January 2016

Contents

Section	Page
Acronyms and Abbreviations	iii
1. Purpose.....	1-1
2. Facility Description.....	2-1
2.1 Site Description	2-1
2.2 Storage Facility Referenced in Permit Documents	2-1
2.3 Process Descriptions	2-1
2.3.1 Chlorinated Pyridines Processes	2-1
2.3.2 Dowicil®	2-1
2.3.3 Nitrapyrin Formulation	2-1
2.3.4 Lontrel® Process.....	2-1
2.3.5 Maintenance Activities	2-2
2.3.6 Manufacturing Services	2-2
2.3.7 Methyl Ester Intermediate Process	2-2
2.3.8 Research Activities	2-2
2.3.9 Sym-Tet HAF	2-2
2.3.10 Terminals Process	2-2
2.3.11 Trifluoro Intermediate Process	2-3
2.3.12 SF Process	2-3
2.3.13 Groundwater Treatment Plant	2-3
2.4 Wastes Handled in the Permitted Drum Storage Area.....	2-3
2.4.1 List of Wastes Handled	2-3
3. Waste Pre-Acceptance and Acceptance Processes.....	3-1
3.1 Overview	3-1
3.2 Waste Characterization and Profiling	3-1
3.3 Waste Labeling.....	3-2
3.4 TSDF Considerations	3-4
3.5 Managing Waste Compatibility	3-4
4. Rejection Policy.....	4-1
5. Discrepancy Policy.....	5-1
6. Sampling Strategies and Frequency	6-1
6.1 General Sampling Requirements	6-1
6.2 Drum Sampling	6-3
7. Analytical Parameters and Test Methods	7-1
8. Quality Assurance/Quality Control	8-1
9. Recordkeeping	9-1
10. Corrective and Preventative Action	10-1
11. References	11-1

Appendixes

- A Waste Characterization Flow Chart
- B Waste Characterization Profile Form
- C Drum Storage Area Compatibility Procedure

Table

2-1 List of Hazardous Wastes 2-3

Figures

3-1 Waste Tracking System Label 3-2

3-2 Handwritten Waste Label 3-3

3-3 Waste Pending Analysis Label..... 3-3

3-4 PCB Waste Label 3-4

3-5 Chemical Compatibility Chart 3-5

6-1 Chain of Custody Form..... 6-2

6-2 Composite Liquid Waste Sampler (Coliwasa) 6-4

6-3 Trier Sampler..... 6-5

6-4 Weighted Bottle Sampler..... 6-6

Acronyms and Abbreviations

BIF	Boiler and industrial furnace
CCR	California Code of Regulations
DOT	U.S. Department of Transportation
DTSC	California Department of Toxic Substances Control
EH&S	Environmental Health and Safety
EPA	U.S. Environmental Protection Agency
GAC	granular activated carbon
GC/FID	gas chromatography–flame ionization detection
GWTP	Groundwater Treatment Plant
HCl	hydrogen chloride
MEI	Methyl Ester Intermediate
MS HAF	Manufacturing Services Halogen Acid Furnace
PCB	polychlorinated biphenyl
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act
TSDf	treatment, storage, or disposal facility
WAP	Waste Analysis Plan
WTS	Waste Tracking System

Purpose

The Dow Chemical Company operates a Drum Storage Area at its Pittsburg, California site under a Resource Conservation and Recovery Act (RCRA) Part B Permit. A Waste Analysis Plan (WAP) is required for permitted hazardous waste activities by California Code Of Regulations (CCR), Title 22, Chapter 14 §66264.13. This plan has been prepared to meet these requirements. It describes Dow's practices for waste sampling, analysis, and characterization as they apply to the permitted Drum Storage Area. It follows the outline presented in the U.S. Environmental Protection Agency's (EPA's) April 2015 guidance document *Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Wastes* (EPA, 2015).

Facility Description

2.1 Site Description

The Dow Pittsburg site is located at the end of Loveridge Road in Pittsburg, California. The site consists of approximately 530 acres, of which about half are undeveloped. The Dow Pittsburg site was originally operated for chemical manufacturing between 1916 and 1939 by the Great Western Electro Chemical Company, which produced chlorinated hydrocarbons and mining chemicals. Dow purchased the plant in 1939, and has since acquired surrounding property that had been used for other industrial purposes.

Formerly chlorine, sodium hydroxide, hydrogen and chlorinated solvents were manufactured at the Dow Pittsburg site. Currently, agricultural chemicals, fumigants, fungicides, and basic inorganic chemicals are produced at this Site. There is a terminals storage and shipping operation where bulk chemicals, such as non-chlorinated solvents and industrial chemicals, are received, stored, and shipped.

2.2 Storage Facility Referenced in Permit Documents

The permitted Drum Storage Area is located in the 560 Block. It is operated under the site hazardous waste permit originally issued in 1996. This storage area is located outdoors in a fenced area and consists of two secondary containment bays to allow the separation of incompatible wastes. The design of the 560 Block area is detailed in the 2015 Part B Permit Renewal application.

2.3 Process Descriptions

2.3.1 Chlorinated Pyridines Processes

A variety of chlorinated pyridine products are produced by the chlorination of picolines in continuous processes. Hydrogen chloride (HCl) gas and carbon tetrachloride are co-products of the chlorination reactions. Wastes from these operations include chlorinated pyridines, chlorinated organics, waste oil, lab wastes, spent solvents, acidic wastes, contaminated protective gear, tank residues, and debris.

2.3.2 Dowicil®

The Dowicil® plant manufactures antimicrobial products by reaction of a chlorinated alkene and an amine in a methylene chloride solvent. Wastes from this operation include chlorinated organics, waste oil, lab wastes, spent solvents, off-specification products, contaminated protective gear, tank residues, and debris.

2.3.3 Nitrapyrin Formulation

The 540 Block process produces the final consumer product known as Instinct™. Instinct is a capsule suspension agricultural product used as a nitrogen stabilizer. Instinct is produced by mixing aromatic hydrocarbons and N-serve® and forming a capsule shell around it. The process also includes creating an aqueous based medium for the capsules. Wastes from these operations include organics, waste oil, lab wastes, contaminated protective gear, tank residues, and debris.

2.3.4 Lontrel® Process

The Lontrel® plant product is an agricultural chemical intermediate used to make a commercial agricultural chemical at another Dow site. Wastes from this operation include chlorinated pyridines,

chlorinated organics, spent solvents, off-specification products, acidic wastes, waste oil, lab wastes, contaminated protective gear, tank residues, and debris.

2.3.5 Maintenance Activities

2.3.5.1 Vehicle Maintenance

Vehicle maintenance for on-road and heavy equipment is performed at the Pittsburg site. Wastes from these activities include waste oil, crushed oil filters, waste antifreeze, spent batteries, spent solvents, contaminated protective gear, and debris.

2.3.5.2 Process Equipment Maintenance

Fabrication and maintenance of process equipment are performed at the Pittsburg site. Wastes from these activities include waste oil, materials from other on site processes, spent solvents, contaminated protective gear, and debris.

2.3.5.3 Contractor Maintenance Activities

Contractor maintenance activities related to the site processes are performed at the Pittsburg site. Wastes from these activities include waste oil, materials from other on site processes, spent solvents, paint wastes, contaminated protective gear, and debris.

2.3.6 Manufacturing Services

Manufacturing Services provides a variety of services for the Pittsburg site. These activities include utilities, process water management, groundwater treatment, process intermediate distillation systems, and operation of the Manufacturing Services Halogen Acid Furnace (MS HAF) unit. Wastes from this operation include chlorinated pyridines, chlorinated organics, spent solvents, off-specification products, acidic wastes, waste oil, lab wastes, contaminated protective gear, tank residues, and debris.

2.3.7 Methyl Ester Intermediate Process

The Methyl Ester Intermediate (MEI) plant product is an agricultural chemical intermediate used to make a commercial agricultural chemical at another Dow site. Wastes from this operation include halogenated pyridines, potassium chloride, potassium fluoride, waste oil, lab wastes, spent solvents, off-specification products, acidic wastes, contaminated protective gear, tank residues, and debris.

2.3.8 Research Activities

Research activities are carried out onsite to support site manufacturing operations. Lab wastes are generated from these activities that include chlorinated pyridine materials, chlorinated organics, materials from other onsite processes, spent solvents, contaminated protective gear, and debris.

2.3.9 Sym-Tet HAF

Chlorinated pyridine wastes are treated by thermal oxidation in the Sym-Tet halogen acid furnace (HAF) process, which is part of the boiler and industrial furnace (BIF) permit issued by the California Department of Toxic Substances Control (DTSC). Product grade hydrochloric acid is produced in this process. Wastes from these operations include chlorinated pyridines, chlorinated organics, waste oil, lab wastes, spent solvents, acidic wastes, contaminated protective gear, tank residues, and debris.

2.3.10 Terminals Process

Terminals are responsible for Dow Pittsburg site product storage tanks and for shipping and receiving facilities associated with these products. Wastes from this operation include off-specification products,

chlorinated pyridines, chlorinated organics, waste oil, lab wastes, spent solvents, acidic wastes, contaminated protective gear, tank residues, and debris.

2.3.11 Trifluoro Intermediate Process

The Trifluoro plant product is an agricultural chemical intermediate used to make a commercial agricultural chemical at another Dow site. Wastes from this operation include halogenated pyridines, chlorinated organics, spent solvents, off-specification products, acidic wastes, fluoride salts, chloride salts, waste oil, lab wastes, contaminated protective gear, tank residues, and debris.

2.3.12 SF Process

The sulfuryl fluoride (SF) process produces a fumigant for dry wood termite control. Wastes from this operation include acidic wastes, basic wastes, fluoride salts, chloride salts, waste oil, lab wastes, chlorinated organics, spent solvents, paint wastes, contaminated protective gear, tank residues, and debris.

2.3.13 Groundwater Treatment Plant

The Groundwater Treatment Plant (GWTP) consists of an air stripper and three granular activated carbon (GAC) beds. The GAC beds are periodically regenerated using steam. The GWTP treats raw groundwater from various locations on the Pittsburg site in support of the corrective action measures established by the Regional Water Quality Control Board. Wastes from this operation include off-specification products, chlorinated pyridines, chlorinated organics, waste oil, lab wastes, spent solvents, acidic wastes, contaminated protective gear, tank residues, and debris. This plant is idle at the present time but could be started back up if needed.

2.4 Wastes Handled in the Permitted Drum Storage Area

2.4.1 List of Wastes Handled

Table 2-1 contains a list of wastes that could potentially be handled in the permitted Drum Storage Area. Each waste category can comprise multiple waste streams, as described further in Section 3.2.

Table 2-1: List of Hazardous Wastes						
<i>Waste Analysis Plan, The Dow Chemical Company, Pittsburg CA</i>						
Waste Category Description	Constituents	RCRA Waste Codes	CA Waste Codes	Compatibility Code	Composition	
Chlorinated Pyridines, liquid and solids Source description: - sample drains - equipment drains - maintenance preparation - other	Chlor-pyridines		741	1	Chlorinated Pyridines	40-100%
	Arsenic	D004	751		Absorbent, debris	0-50 %
	Barium	D005			Hexachloroethane	0-2.0%
	Cadmium	D006			Hexachlorobenzene	0-2.0%
	Chromium	D007			Carbon Tetrachloride	0-4.0%
	Lead	D008			Metals	0-2.0%
	Mercury	D009				
	Selenium	D010				
	CCl4	D019				
	HCB	D032				
	HCBD	D033				
	HCE	D034				
	C2Cl4	D039				

Table 2-1: List of Hazardous Wastes					
<i>Waste Analysis Plan, The Dow Chemical Company, Pittsburg CA</i>					
Waste Category Description	Constituents	RCRA Waste Codes	CA Waste Codes	Compatibility Code	Composition
Trench Solids	CCl4 HCB HCBd HCE C2Cl4 TCE	D019 D032 D033 D034 D039 D040	751 352	1	Dirt 0-25% Debris 0-20% Absorbent 0-40% Chlorinated Solvents 0-15%
Paint waste from maintenance activities, liquid and solids	MEK MECL2	D001 D035 F005 F002	212	1	Methyl Ethyl Ketone 60-80% Methylene Chloride 5-10% Paint Solids 15-30% Absorbent 0-50%
Discarded Chlorinated Products from Miscellaneous sources, liquid and solids	MeCl2 1,3-DCP C2Cl4 CCl4 111-TCA TCE	U080 U084 U210 U211 U226 U228	211	1	Chlorinated Solvents 50-100% Absorbents 0-50%
Organic Lab Waste and Debris, liquid and solids	Acetone MeCl2 Acetonitrile Hexane MeOH CCl4 C2Cl4 HCB HCE Glycols Chlor-pyridines	D001 F002 F003 D019 D039 D032 D034	551 751 741	1	Acetone 0-5% Acetonitrile 0-1% Hexane 0-2% Chlorinated Solvents 40-60% Glycols 0-15% Chlorinated Pyridines 0-15% Debris 0-10%
Corrosive Lab waste, basic, liquid	KOH NaOH NH4OH	D002	551	2	Potassium hydroxide 0-5% Sodium Hydroxide 5-15% Ammonium Hydroxide 5-10% Water 40-70%
Corrosive Lab waste, Acidic, liquid	HCl H2SO4	D002	551	3	Hydrochloric Acid 5-10% Sulfuric Acid 5-10% Water 80-90%
Chlorinated organics/solvents, liquids and solids	MeCl2 1,3-DCP C2Cl4 CCL4 CHCl3 1,2-DCE HCB HCBUT HCE TCE Chloro-pyridines	F002 D039 D019 D022 D028 D032 D033 D034 D040	741 751	1	Chlorinated Solvents 50-100% Chlorinated pyridines 0-20% Absorbent 0-30%
Chlorinated/Fluorinated Pyridines liquid and solids	Chloro- Fluoro pyridines	NA	741 751	1	Chlorofluoro pyridines 0-100% Absorbent 0-50%

Table 2-1: List of Hazardous Wastes						
<i>Waste Analysis Plan, The Dow Chemical Company, Pittsburg CA</i>						
Waste Category Description	Constituents	RCRA Waste Codes	CA Waste Codes	Compatibility Code	Composition	
Halopyridines, liquid and solids	Chloro-Fluoro pyridines HF	NA	741	4	Chlorofluoro pyridines Hydrogen Fluoride Absorbent	50-100% 0-10% 0-40%
Spent Carbon, solids	CCL4 CHCl3 MeCl2 TCE Fluoride Chlorine	D019 D022 F002 D040	211 751 352 351 181	1	Chlorinated Solvents Carbon Fluoride Chlorine	5-10% 80-90% 0-2.5% 0-2.5%
Distillation Liquids	Arsenic Cadmium Chromium Lead Mercury Selenium CCl4 CHCl3 HCB HCBut HCE C2Cl4 TCE	D004 D006 D007 D008 D009 D010 D019 D022 D032 D033 D034 D039 D040	741	1	Metals Chlorinated Solvents	0-5% 95-100%
Contaminated Clothing, Filter bags and Debris	CCl4 HCB HCE C2Cl4 MeCl2 TCE Chloro-pyridines	D019 D032 D034 D039 F002 D040	551 751 352 512	1	Contaminated Clothing Filter bags Debris Chlorinated Solvents Chlorinated Pyridines	60-80% 0-5% 0-5% 0-5% 0-5%
Contaminated Oil and Debris, liquid and solids	C2Cl4 MeCl2	D039 F002	221 352 351	1	Contaminated Oil Debris Absorbent Chlorinated Solvents	50-100% 0-50% 0-49% 0-1%
Asbestos containing waste, solids	Asbestos	NA	181	1	Asbestos	100 %
Paint chips contaminated with Chromium, solids	Chromium	D007	352	1	Sandblast Sand Paint Chips Debris Metals	70-80% 10-20% 9-18% 1-2%
Contaminated Brick, solids	MeCl2	F002	181	1	Contaminated Brick Debris Methylene Chloride	80-100% 0-15% 0-5 %
Waste Dowtherm Liquid and solids	Biphenyl Phenyl Ethers Diphenyl Oxide Diphenyl Phenols	NA	352 351	1	Biphenyl Phenyl Ethers Diphenyl Oxide Diphenyl Phenols Absorbent	40-60% 30-50% 0-10% 0-50%

Table 2-1: List of Hazardous Wastes						
<i>Waste Analysis Plan, The Dow Chemical Company, Pittsburg CA</i>						
Waste Category Description	Constituents	RCRA Waste Codes	CA Waste Codes	Compatibility Code	Composition	
Miscellaneous Lab Waste Liquid and solids	Nitrapyrin Glycols Diphenyl Oxide - (Dowtherm)	NA	343	1	Nitrapyrin Glycols Diphenyl Oxide Water Absorbents	40-50% 0-1% 0-1% 5-10% 20-30%
Sample Port Flush Out – 55 Gallon Drum	1,1,1 Trichloroethane Hydrochloric Acid Chlorinated Pyridine	F001 D002	791	1	1,1,1 Trichloroethane Hydrochloric Acid Chlorinated Pyridine Water	1-5% 0-1% 90-95% 0-1%

Notes:¹ Compatibility Codes:

- 1 Organic and inorganic compounds, liquid and solids
- 2 Basic liquid and solids
- 3 Acidic liquid and solids
- 4 Halopyridines containing hydrogen fluoride, liquid and solids

NA = Not applicable

Waste Pre-Acceptance and Acceptance Processes

3.1 Overview

All hazardous wastes stored at the Block 560 Drum Storage Area are generated on the Dow Pittsburg site; wastes are not received from offsite locations. These wastes come from processes that have been well-researched and operated for many years. Before a hazardous waste is stored at the Block 560 Drum Storage Area, the waste must be matched with an existing waste characterization profile or a new profile must be completed by a representative of the generating plant working with personnel from the site's Environmental Health and Safety (EH&S) Department.

The procedure used to determine if a hazardous waste is suitable for storage at the Block 560 Drum Storage Area includes the following activities:

- Evaluations of regulatory classification requirements
- Determination of Part A and Part B listings
- Determination of materials of construction compatibility
- Consideration of handling precautions
- Identification of chemical and physical properties of interest.

Waste characterization profiles are reviewed whenever process changes would be expected to change the character of the waste. A blank waste characterization form for one of the active treatment, storage or disposal facilities (TSDFs) is attached as Appendix A.

3.2 Waste Characterization and Profiling

At the Pittsburg facility, wastes are reasonably characterized by the process generating them and do not vary substantially without physical or chemical changes in the processes themselves. Manufacturing processes are sampled on a regular basis for quality assurance purposes so the composition of materials contained within the process equipment is well known. Wastes have been divided into the categories shown in Table 2-1. Each category may include multiple similar waste streams. Each waste stream has been characterized based on knowledge of the process generating the waste and additional laboratory analysis if necessary. A waste profile form has been prepared for each waste stream using the format presented in Appendix B, or a similar form. Waste profiles are filed at the EH&S office and are available in Dow's online information management system.

When a recurring waste is generated the staff at the point of generation match the waste with an existing waste profile in the Facility's computer-based information management system. Profiles are organized so that only the profiles for wastes generated at a specific plant or location are available to staff at that plant. When a new waste is generated, plant personnel work with the Site Waste Coordinator or the Site Waste Manager to characterize the waste, develop a waste profile, and evaluate the appropriate methods of treatment and disposal.

Existing waste streams are reviewed and the waste profile is updated whenever process changes or other events occur that would be expected to change the physical or chemical properties of the waste, when changes to regulatory requirements affecting waste classification occur, or when the offsite TSDF requests an update. The flowchart titled Determining the Need to Complete a Waste Characterization

included in Appendix A is used to determine when a waste characterization needs to be completed or updated. The process detailed in the Waste Characterization Flowchart which is included in Appendix B is used to evaluate the regulatory status of each waste and identify any chemical or physical properties of concern. The use of this flowchart insures consistent and accurate results are achieved.

3.3 Waste Labeling

In general, when materials are being placed in containers (drums) at the point of waste generation, the container will be labeled with a description of the contents based on an existing waste characterization profile in order to eliminate the need for subsequent sampling and analysis of individual drums. If the composition of the waste is not already known, the waste will be sampled and analyzed by the methods described in Section 6.

Typically, computer generated labels from the computerized Waste Tracking System (WTS) are used. These labels include all information required by Title 22 and U.S. Department of Transportation (DOT) regulations. An example of a WTS label is shown in Figure 3-1 . Occasionally, a handwritten label must be used for a waste drum. An example of a handwritten label is shown in Figure 3-2.

 DRUM# PITT1511174077  CA code: 010076  LA code: 5027  TX code: 121646  Clean Ha 121646		Dept: CHLP Plant: 1018 Wght: 133 lb Strm: 1018-ALLPUMP	RCRA Hazardous Waste STATE AND FEDERAL LAW PROHIBITS IMPROPER DISPOSAL. IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY OR CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL. PROPER US DOT SHIPPING NAME: NA3077, Hazardous waste, solid, n.o.s. (Carbon Tetrachloride, Hexachlorobenzene), 9, PGIII (ERG#171)
 Comp Code: 1		Properties: Toxic	
EPA codes: 751 D019, D032, D034	Generator: DOW Chemical U.S.A. Information: Foot of Loveridge Road Plant: Pittsburg, CA. 94565 Contact: Jeff Cast		
EPA ID: CH0076528678 NA3077 CA Code: 751 DRUM#: PITT1511174077			
11/17/15 Accumulation Start Date	End Date:	Manifest Number:	

Figure 3-1: Waste Tracking System Label

HAZARDOUS WASTE

The Dow Chemical Company
901 Loveridge Road, Pittsburg, CA 94565
(925) 432-5278

Handle As:

Toxic Flammable Ignitable Reactive Corrosive

Start Date: _____ **End Date:** _____

Constituents / Type No.: _____

Physical State: _____

Department Name: _____

Figure 3-2: Handwritten Waste Label

When an unusual waste is generated for the first time, a "Waste Pending Analysis" label generated by the Waste Tracking System is applied to the drum. An example of a WTS Waste Pending Analysis label is shown in Figure 3-3. This label allows the Environmental Specialist to track the drum and verify that the waste is managed appropriately while the waste characterization process is completed. Once the waste has been characterized, the appropriate label (hazardous or non-hazardous) is applied to the drum.

 DRUM# PITT1511174080  CR code: 000000 LA code:  Comp Code: 1 Reprint TX code:  082615	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;">Waste Pending Analysis</td> </tr> <tr> <td colspan="2" style="text-align: center;">THIS WASTE IS AWAITING ANALYTICAL RESULTS PRIOR TO CHARACTERIZATION. THIS LABEL MUST BE REPLACED WITH THE CORRECT WASTE SHIPPING LABEL BEFORE TREATMENT, DISPOSAL, OR SHIPMENT.</td> </tr> <tr> <td colspan="2">PROPER US DOT SHIPPING NAME: Waste Pending Analysis</td> </tr> <tr> <td>EPA codes:</td> <td>Generator: DOW Chemical U.S.A. Information: Foot of Loveridge Road Plant: Pittsburg, CA, 94565 Contact: Jeff Cast</td> </tr> <tr> <td>EPA ID: CP0076528678</td> <td>CA Code: DRUM: PITT1511174080</td> </tr> <tr> <td style="text-align: center;">11/17/15 Accumulation Start Date</td> <td>End Date: Manifest Number:</td> </tr> </table>	Waste Pending Analysis		THIS WASTE IS AWAITING ANALYTICAL RESULTS PRIOR TO CHARACTERIZATION. THIS LABEL MUST BE REPLACED WITH THE CORRECT WASTE SHIPPING LABEL BEFORE TREATMENT, DISPOSAL, OR SHIPMENT.		PROPER US DOT SHIPPING NAME: Waste Pending Analysis		EPA codes:	Generator: DOW Chemical U.S.A. Information: Foot of Loveridge Road Plant: Pittsburg, CA, 94565 Contact: Jeff Cast	EPA ID: CP0076528678	CA Code: DRUM: PITT1511174080	11/17/15 Accumulation Start Date	End Date: Manifest Number:
Waste Pending Analysis													
THIS WASTE IS AWAITING ANALYTICAL RESULTS PRIOR TO CHARACTERIZATION. THIS LABEL MUST BE REPLACED WITH THE CORRECT WASTE SHIPPING LABEL BEFORE TREATMENT, DISPOSAL, OR SHIPMENT.													
PROPER US DOT SHIPPING NAME: Waste Pending Analysis													
EPA codes:	Generator: DOW Chemical U.S.A. Information: Foot of Loveridge Road Plant: Pittsburg, CA, 94565 Contact: Jeff Cast												
EPA ID: CP0076528678	CA Code: DRUM: PITT1511174080												
11/17/15 Accumulation Start Date	End Date: Manifest Number:												

Figure 3-3: Waste Pending Analysis Label

Figure 3-4 shows an example of an additional label used for containers of polychlorinated biphenyl (PCB) wastes to meet the Toxic Substances Control Act labeling requirements.



Figure 3-4: PCB Waste Label

3.4 TSDF Considerations

A list of approved TSDFs is maintained by the Site Waste Coordinator and the Site Waste Manager based on their ability to provide specific treatment and disposal options. The Environmental Specialist identifies the appropriate treatment or disposal method for the waste and chooses a TSDF based on the properties of the waste and method of treatment or disposal. The waste profile form for the chosen TSDF is then completed and submitted for approval by the TSDF. The waste characterization form used will depend on the TSDF chosen.

Some TSDFs provide analytical and characterization services as well as waste handling services. In this case the Site Waste Coordinator or the Site Waste Manager works with the TSDF representative to ensure their requirements are met. In some cases the TSDF's representative will perform fingerprint analyses (e.g., pH testing) to verify waste profile information at the time of waste pickup.

3.5 Managing Waste Compatibility

Waste are identified and handled to prevent mixing of incompatible wastes and to assure that the waste is compatible with the storage container or disposal method. As a chemical manufacturing facility, Dow has chemists or engineers at each plant who have detailed knowledge of the chemistry and properties of the materials produced and handled.

The trained personnel can determine what chemicals are incompatible with a given waste. Guidance documents such as EPA's *A Method for Determining the Compatibility of Hazardous Wastes* (EPA, 1980a) will also be used to determine waste compatibility. A summary chemical compatibility chart from this document is included as Figure 3-5.

No.	Reactivity Group Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	101	102	103	104	105	106	107								
1	Acids, Mineral, Non-oxidizing																																																	
2	Acids, Mineral, Oxidizing																																																	
3	Acids, Organic																																																	
4	Alcohols and Glycols																																																	
5	Aldehydes																																																	
6	Amides																																																	
7	Amines, Aliphatic and Aromatic																																																	
8	Azo Compounds, Diazo Compounds and Hydrazines																																																	
9	Carbamates																																																	
10	Caustics																																																	
11	Cyanides																																																	
12	Dithiocarbamates																																																	
13	Esters																																																	
14	Ethers																																																	
15	Fluorides, Inorganic																																																	
16	Hydrocarbons, Aromatic																																																	
17	Halogenated Organics																																																	
18	Isocyanates																																																	
19	Ketones																																																	
20	Mercaptans and Other Organic Sulfides																																																	
21	Metals, Alkali and Alkaline Earth, Elemental																																																	
22	Metals, Other Elemental & Alloys as Powders, Vapors, or Sponges																																																	
23	Metals, Other Elemental & Alloys as Sheets, Rods, Drops, etc.																																																	
24	Metals and Metal Compounds, Toxic																																																	
25	Nitriles																																																	
26	Nitriles																																																	
27	Nitro Compounds, Organic																																																	
28	Hydrocarbons, Aliphatic, Unsaturated																																																	
29	Hydrocarbons, Aliphatic, Saturated																																																	
30	Peroxides and Hydroperoxides, Organic																																																	
31	Phenols and Cresols																																																	
32	Organophosphates, Phosphothioates, Phosphodithioates																																																	
33	Sulfides, Inorganic																																																	
34	Epoxydes																																																	
101	Combustible and Flammable Materials, Miscellaneous																																																	
102	Explosives																																																	
103	Polymerizable Compounds																																																	
104	Oxidizing Agents, Strong																																																	
105	Reducing Agents, Strong																																																	
106	Water and Mixtures Containing Water																																																	
107	Water Reactive Substances																																																	

Figure 3-5: Chemical Compatibility Chart

Legend

Code	Consequences
H	Heat Generation
F	Fire
G	Innocuous and non-flammable gas generation
GT	Toxic Gas formation
GF	Flammable Gas formation
E	Explosion
P	Violent Polymerization
S	Solubilization of toxic substance
U	May be hazardous, but Unknown

Incompatibility problems can be broken down into two areas:

- Problems related to small volume wastes such as lab waste streams
- Problems related bulk or drummed streams.

Small containers of waste from research laboratories are over-packed in lab packs for disposal. Incompatible wastes are segregated into separate drums according to the guidelines mentioned above. Sample waste handling tags on the small containers list the wastes contained and identify incompatible wastes.

Drum labels include a chemical compatibility code number so that waste handlers can readily identify and segregate incompatible materials. Codes for waste streams stored at the Block 560 Drum Storage Area are shown in Table 2-1. The procedure for segregating containers using the compatibility codes is presented in Appendix C.

Determination and identification of incompatibility is made by the generating chemist or laboratory technician. In the case of unknown compatibility, the material is either segregated by itself or tested for reactivity and gas generation by reactive chemicals testing methods such as an Accelerating Rate Calorimeter (ARC).

For bulk streams at the Pittsburgh facility, the three main potential incompatibility problem situations involving the most commonly encountered materials are:

- Mixing acids and bases
- Mixing acids and organics
- Mixing concentrated bases and chlorinated organics

Mixing of any of these three combinations of materials under the wrong conditions could result in a release of heat and/or gases.

Identification of acids and bases is accomplished by process engineering knowledge and pH measurements. Acids and hypochlorite solutions are a special case of acids and bases. Identification of this incompatibility is accomplished by process engineering knowledge, pH measurement, and chlorine analysis by iodometric or amperometric titration.

Identification of potential problems related to the mixing some acids and some organics is accomplished by application of by process engineering knowledge, reactive chemicals testing, pH measurement, observation of a second phase, and gas chromatography–flame ionization detection (GC/FID) analysis of the organic.

Concentrated caustic solutions and certain chlorinated hydrocarbons are incompatible due to energetic dehydrohalogenation of the hydrocarbon. Identification of this incompatibility is made by process engineering knowledge, pH measurement, observation of a second phase, and GC/FID analysis of the organic.

Rejection Policy

Because wastes are brought to the Block 560 Drum Storage Area from other areas within the facility and are not received from offsite locations, rejection is typically not an issue. However, a drum would not be transferred to the Block 560 Drum Storage Area under the following circumstances:

- The container was damaged or leaking
- The container was unlabeled or determined to be incorrectly labeled
- An incompatibility issue was identified that could not be addressed by physically separating the container from other wastes within the Drum Storage Area.

Discrepancy Policy

Two types of discrepancies can arise during waste acceptance: discrepancies between the type or quantity of waste described on the hazardous waste manifest and the type or quantity of waste received, and discrepancies between the waste and its profile. Because wastes are brought to the Block 560 Drum Storage Area from other areas within the facility and are not received from offsite locations, manifest discrepancies are not an issue. The waste characterization and profiling process described in Section 3.2 results in the correct profile being selected for a recurring waste, or a new profile being properly completed for a newly generated waste. If EH&S staff have reason to believe that a waste may not be consistent with the assigned profile, or if fingerprinting analysis performed at the time of waste pickup is inconsistent with the profile, the waste will be sampled and analyzed to verify the profile assignment or provide information for developing a new profile. A waste container will not be moved until the suspected discrepancy is resolved.

Sampling Strategies and Frequency

As discussed in Section 3.2, sampling is generally not required for recurring waste streams unless process changes occur. Newly generated wastes and wastes from changed processes are sampled as described in this section, and analyzed as described in Section 7.

6.1 General Sampling Requirements

The sampling methods and equipment used are those described in the EPA publications SW-846, *Test Methods for Evaluation Solid Waste* (EPA, 2014) and *Samplers and Sampling Procedures for Hazardous Waste Streams* (EPA, 1980b).

Samples are drawn from drums and tanks as necessary to identify hazards and to determine the proper method of disposal. In all cases, sampling will be done so as to obtain a representative sample.

Sample containers will be selected that are of sufficient size to allow duplicate analyses, and are made of a material that will not affect the analysis. The sample containers' size or volume are set by the waste type and laboratory requirements. Usually, 1/2 liter to 2 liters of sample is required per analysis. Wide-mouth jars are used with solids and sludges; narrow-mouth bottles are normally used for liquids. A 40-milliliter borosilicate glass vial with a Teflon septum lid is used for samples that will be analyzed for volatile organic compounds. Plastic materials are suitable for most samples. However, EPA 600/2-80-018 suggests that "linear polyethylene offers the best combination of chemical resistance and low cost."

Appropriate preservatives will be added to the sample containers based on the analyses being performed. In some cases pre-preserved containers may be obtained from the laboratory.

Solid wastes that are maintained as liquids at elevated temperatures are sampled into titanium, nickel, and stainless steel flow-through pressure bulbs to allow subsequent re-melting.

Labels and completed chain-of-custody forms are filled out immediately after filling the containers. Figure 6-1 is a sample chain-of-custody form. Sample labels are affixed to dry, clean containers and marked using a waterproof marker, or the completed label can be covered with clear cellophane tape to prevent smearing by water or organic liquids. It is often easier to complete, affix and cover labels before filling the sample containers.

The chain-of-custody form must accompany the samples at all times. Each person who has responsibility and/or physical possession of the samples from the sampler to the laboratory analyst should sign and date the chain-of-custody form. The chemical analyses requested may be on the chain-of-custody form or on a separate chemical analysis request sheet. Labels also include the general constituents for analysis and any sample preservation method used.

Personnel protection must be considered for sampling operations. Respirators, gloves, boots, eye protection, and cloth or Tyvek coveralls should be used for most sampling operations. Specific descriptions are listed on Personal Protective Grids and use of personnel protection equipment depends on the area of the process being sampled and the physical and chemical properties of the material being sampled. Specific requirements are determined by operations personnel based on plant operating procedures prior to any sampling being performed.

Sample holding times will be identified based on the test method being performed. Samples will be turned over to the analytical laboratory as soon as practicable, but in no case will the holding time be exceeded.

6.2 Drum Sampling

Usually material being introduced into drums for storage, disposal, or incineration is of known composition. In cases where analysis of the material is required, the sampling will depend on the physical characteristics of the material as follows.

The procedures for collecting a sample from drums containing free flowing liquids can be Unit-specific and the procedures are held in the operating units.

1. Single phase homogeneous liquids:

Liquids known to be homogeneous will be sampled by simple vacuum assisted (rubber bulb) withdrawal into a thief. A grab sample is taken of wastes that are solid at ambient temperatures when they are poured into the waste storage container from the process container or pipe.

2. Multi-phase liquids or liquids of unknown degree of homogeneity:

The composite liquid waste sampler (coliwasa) (see Figure 6-2) or equivalent thief sampler will be used to obtain samples with the same vertical proportions as in the drum.

3. Wastes that are liquid at elevated temperature only:

Tar-like wastes are sampled by filling a metal pressure vessel. The sampling technique is similar to sampling into a bottle from a sampling port.

4. Granular Solids:

The trier sampler (see Figure 6-3) or equivalent will be used to obtain samples with the same vertical proportions as in the drum.

In addition, a weighted bottle sampler (see Figure 6-4) may be used to obtain samples from larger containers or tanks.

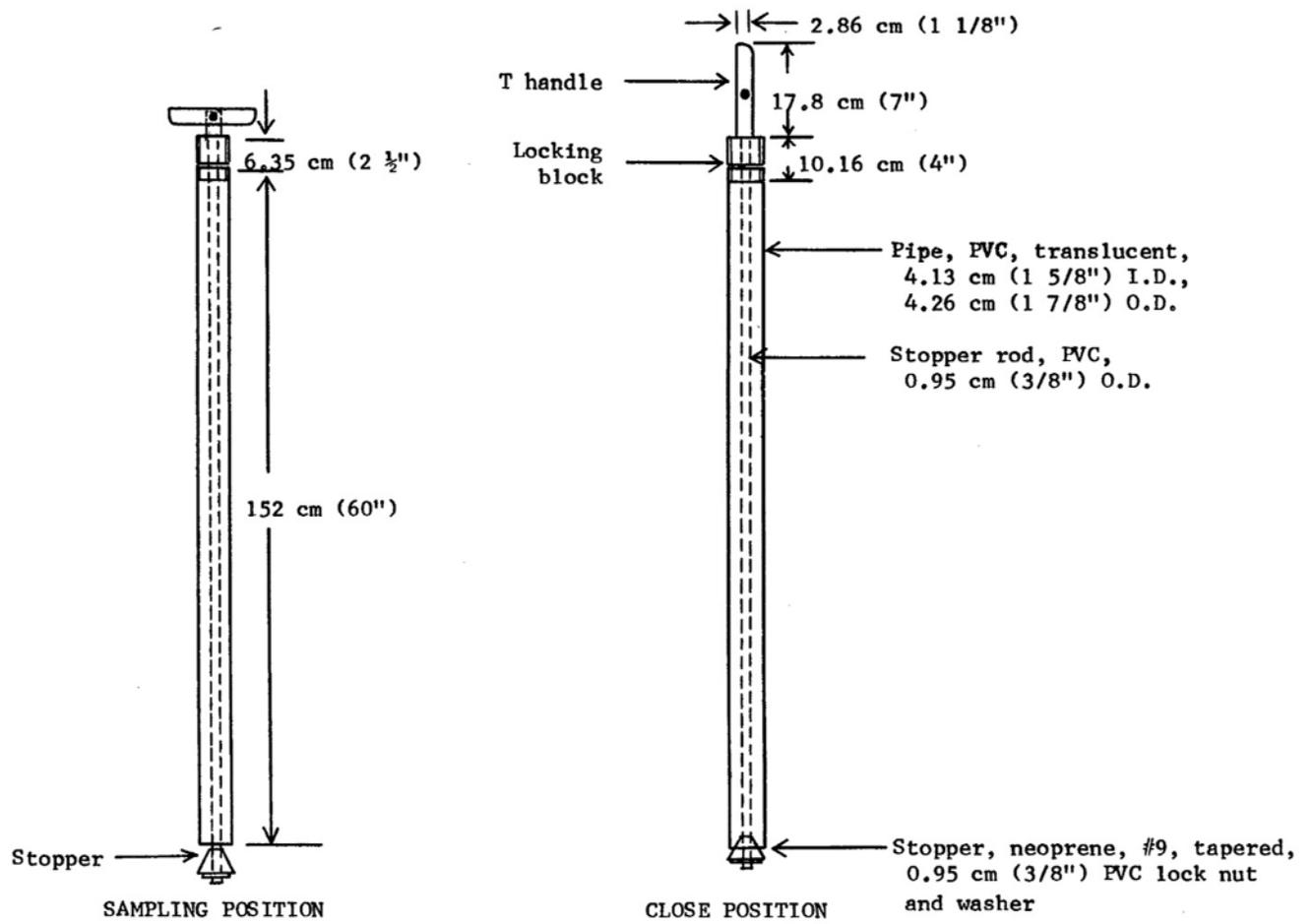


Figure 6-2: Composite Liquid Waste Sampler (Coliwasa)

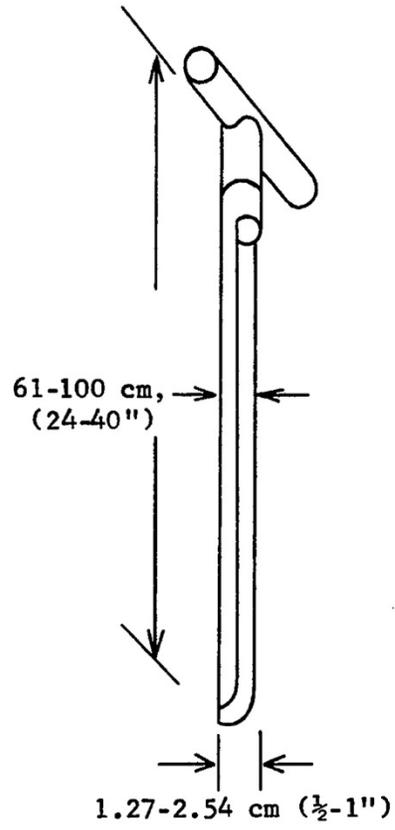
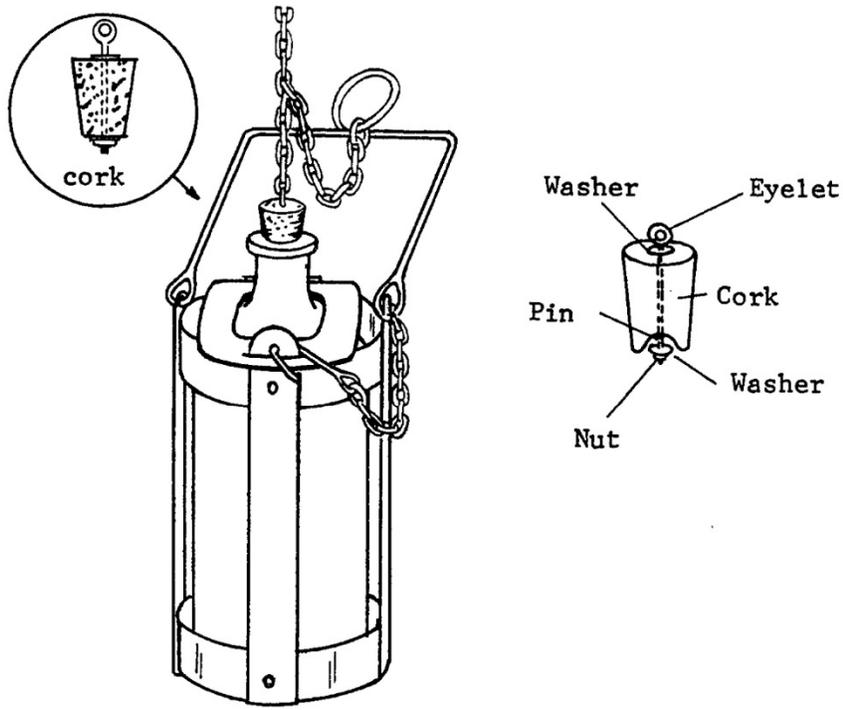


Figure 6-3: Trier Sampler



1000-ml (1-quart) weighted
bottle catcher

Figure 6-4: Weighted Bottle Sampler

Analytical Parameters and Test Methods

Generally, waste analysis is done by a state-approved certified commercial laboratory. In some cases, a disposal or transportation company such as Clean Harbors Environmental Services will be chosen to complete the waste analysis.

The parameters of analysis are determined based on knowledge of the chemicals and chemical processes that generated the waste, regulatory requirements, and considerations of safe handling of the waste. The main parameters considered for analysis are:

- Chlorinated organics, both volatile and nonvolatile
- pH
- Chloride ion
- Fluoride ion

Evaluation of these parameters allows a determination of:

- Compatibility of the waste with the handling methods
- Compatibility of the waste with other wastes
- Compatibility of the waste with the intended disposal methods
- An estimate of concentration ranges of waste constituents

The exact analytical method chosen to evaluate each waste depends on the anticipated contaminants in the waste, its physical state and the presence of compounds that might interfere with a given analytical method. In general, the analytical methods used for waste characterization include but are not limited to the following:

- Gas and liquid chromatography methods with various detectors including flame ionization, thermocouple mass spectroscopy, and ultraviolet are used for organic compounds.
- Specific ion electrodes are used for inorganic halide ion determinations.
- Amperometric and iodometric determinations are used for oxidizing chlorine species.
- Combustion total organic carbon with infrared detection is used to determine organic content in some aqueous streams.
- pH, total alkalinity, and total acidity is determined with potentiometric electrode detection.
- Inductively coupled plasma emission spectroscopy and atomic absorption spectrophotometry are used for determination of metals and combined metal species.
- Sulfate is determined photometrically by barium turbidometry.
- Polarographic methods are used for several specific organic determinations.
- Flash point of any waste mixture will be determined by using the flash point for the major component in the mixture or the lowest in the mixture as listed in the Fire Protection Guide on Hazardous Materials published by the National Fire Protection Association.

The methods of analyses used are those specified in 22 CCR Division 4.5 Chapter 11 and SW-846, Test Methods for Evaluating Solid Waste (EPA, 2014). Use of these analytical methods meets the requirements of Chapter 6.5, Division 20, California Health and Safety Code.

Quality Assurance/Quality Control

Quality assurance (QA) is the process for ensuring that all data and the decisions based on that data are technically sound, statistically valid, and properly documented. Quality control (QC) procedures are the tools employed to measure the degree to which these quality assurance objectives are fulfilled (EPA, 2015). As a chemical manufacturing facility Dow has a robust QA/QC program, many elements of which are applicable to hazardous waste analysis, including the following.

Training. All employees collecting hazardous waste samples are trained in proper sampling techniques. EH&S staff responsible for waste profiling are trained in the regulatory requirements related to waste classification and are familiar with the characteristics of the recurring waste streams generated at the facility.

Chain-of-custody protocols. All waste samples are identified and documented using the labeling and chain-of-custody protocols identified in Section 6.1.

QC samples. Field blanks, trip blanks, equipment blanks, field split samples, and field duplicate samples may be used, as appropriate, at the discretion of the EH&S staff responsible for waste sampling.

Use of state-certified laboratories. Offsite waste analysis is performed by state-certified laboratories that must meet rigorous QA/QC standards to maintain their certification.

Use of laboratory QA/QC data. Laboratory QA/QC data provided with each analytical report are reviewed to verify that the data are suitable for their intended purpose. Indicators that data may not be suitable for making waste classification decisions include:

- Comments that sample was received damaged, improperly preserved, or outside of holding time
- Presence of data qualifiers, such as “J” flagged data indicating that the reported value is estimated
- Level of uncertainty in results based on analysis of duplicate samples or spiked sample recovery makes it uncertain whether the regulatory criterion being evaluated is exceeded

Recordkeeping

Documents and records associated with waste analysis are maintained for a minimum of three years. Hardcopy documents and records are maintained in the Building 464 library. Certain records, such as waste profiles, are also maintained in the Facility's computer-based information management system.

Corrective and Preventative Action

Corrective and preventative action will be taken, as appropriate, if deficiencies in the waste analysis program are identified. Corrective and preventative actions may be identified and implemented by the Site Waste Coordinator, Site Waste Manager, EH&S Delivery Specialist, or the EH&S Responsible Care & Emergence Security Services Leader. Potential deficiencies and corrective and preventative actions are identified below. Identification of potential deficiencies does not indicate that such deficiencies have actually occurred, only that a program is in place to address them if necessary.

Attempted waste management without a waste profile. Plant staff could potentially attempt to manage a newly generated waste without a waste profile. This would be identified by the Site Waste Coordinator or Waste Manager when movement of the waste was attempted beyond the point of generation. The waste profiling process would be initiated at that time. Additional training would be provided to the staff involved to reinforce proper waste management practices.

Incorrect matching of waste with a waste profile. Plant staff could potentially match a recurring waste with the wrong waste profile. This could potentially be identified by the Site Waste Coordinator or Waste Manager when interacting with plant staff, by fingerprint analysis performed at the time of waste pickup, or by waste acceptance analysis at the disposal facility. The waste would be relabeled and re-profiled at the time the discrepancy was discovered. The waste profile selection process would be reviewed to evaluate whether enhancements were necessary. Additional training would be provided to the staff involved to reinforce proper waste management practices.

Incorrect waste profiling. A waste profile could potentially be prepared that did not adequately represent the characteristics or classification of the waste. This could potentially be identified during review of the profile by other EH&S staff, by fingerprint analysis performed at the time of waste pickup, or by waste acceptance analysis at the disposal facility. The waste would be re-profiled at the time the discrepancy was discovered. The waste profiling process would be reviewed to evaluate whether enhancements were necessary, and whether additional training of staff was appropriate.

Improper waste sample collection. Deficiencies in waste sample collection could potentially include use of a sampling method that did not produce a representative sample, use of an incorrect sample container, failure to preserve a sample correctly, and exceeding a holding time. These could potentially be identified during review of sampling information by EH&S staff, by a discrepancy in the waste profile reported by the disposal site, or by discrepancies being identified in a laboratory report. The waste would be resampled and reanalyzed at the time of discovery. Additional training would be provided to the staff involved to reinforce proper sampling procedures.

Inadequate laboratory data. Review of QA/QC data provided by the analytical laboratory could potentially indicate that the data were not sufficient for their intended purpose (e.g., "J" flagged data, spike or duplicate sample results outside of acceptable ranges). This would be discovered by the EH&S staff responsible for reviewing the data. The laboratory would be contacted to discuss the deficiencies and evaluate whether collection and analysis of additional samples could potentially produce more acceptable results.

References

U.S. Environmental Protection Agency (EPA). 1980. A Method for Determining the Compatibility of Hazardous Wastes. EPA-600/2-80-076. April.

EPA. 1980. Samplers and Sampling Procedures for Hazardous Waste Streams. EPA 600/2-80-018. January.

EPA. 2014. Test Methods For Evaluating Solid Waste. SW-846. July.

EPA. 2015. Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Wastes – Final. EPA-530-R-12-001. April.

Appendix A Waste Characterization Flow Chart

Appendix A

Waste Characterization Process Flowcharts

The attached flowchart titled Determining the Need to Complete a Waste Characterization is used to determine when a waste characterization needs to be completed or updated.

Once it is determined that a waste characterization needs to be done, The Waste Characterization Flowchart is followed to insure accurate results are achieved.

Note: The Waste Characterization Flowchart is structured to simplify use by isolating specific detailed action steps associated with each major characterization activity in sub-flowcharts which act much like a subroutine in a computer program. For example, the detailed steps required to determine if a waste is hazardous due to the characteristic of ignitability are found on page 3 after the end of main flowchart. The user goes to these steps as directed by the comment box on page 1 of the main flowchart as an assistance in answering the question "Is the waste Ignitable by 66261.21?". Having followed the steps in the sub-flowchart, the user returns to the main flowchart and answers the question about Ignitability before moving on to the next step in the main flowchart. The steps that have associated sub-flowcharts to assist the user are indicated by being shadowed.

**Attachment to Waste Characterization
Flowchart**

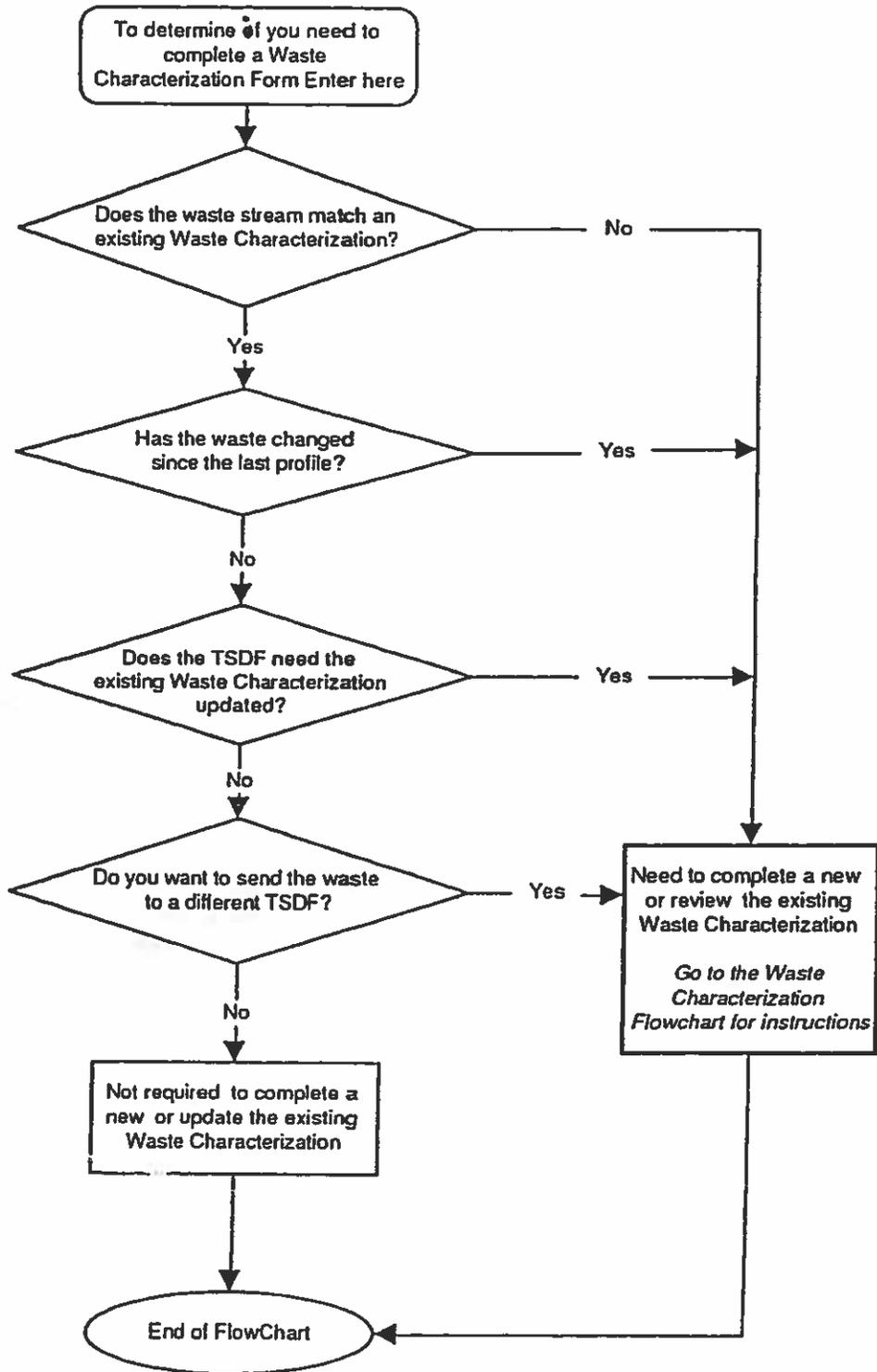
If a waste has been identified as a RCRA Hazardous Waste that contains volatile organic compounds greater than or equal to 500 ppm, Subpart CC of 40 CFR part 264.1080 and Subpart BB of 40 CFR part 264.1050 must be reviewed for applicability.

The RCRA organic air emissions standards (Subpart CC) became effective on December 6, 1996. In addition to containing conditions to ensure compliance with Subparts AA and BB, all permits issued after December 6, 1996, must contain conditions to ensure compliance with Subpart CC. These conditions will be in the EPA Hazardous and Solid Waste Amendments (HSWA) permit until California becomes authorized to implement the Subpart CC regulations.

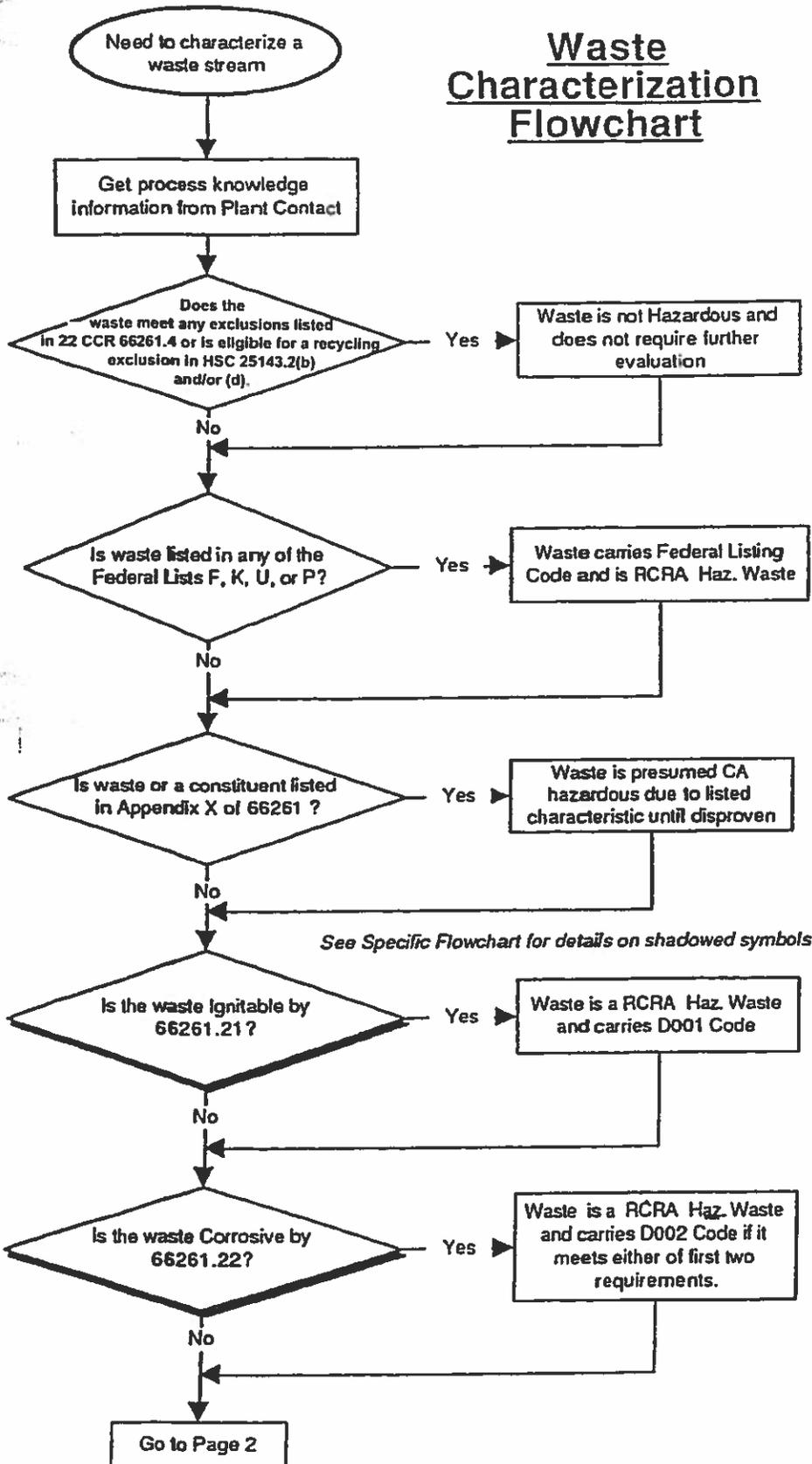
In general, Subpart CC requires air emission controls for tanks, containers, and surface impoundments which manage hazardous wastes containing an average organic concentration greater than or equal to 500 ppmw at the point of waste origination. Specific exemptions to these requirements are outlined in the rule.

For more information about Subparts AA, BB, and CC, refer to the attached U.S. EPA Fact Sheet dated August 1997.

Determining the need to complete a Waste Characterization



Waste Characterization Flowchart



Comments

See "Determining the need to complete a Waste Characterization" Flowchart

Use appropriate waste characterization form for each TSDF being qualified

Note: RCRA exemptions differ from CA exemptions. You need to check Both.

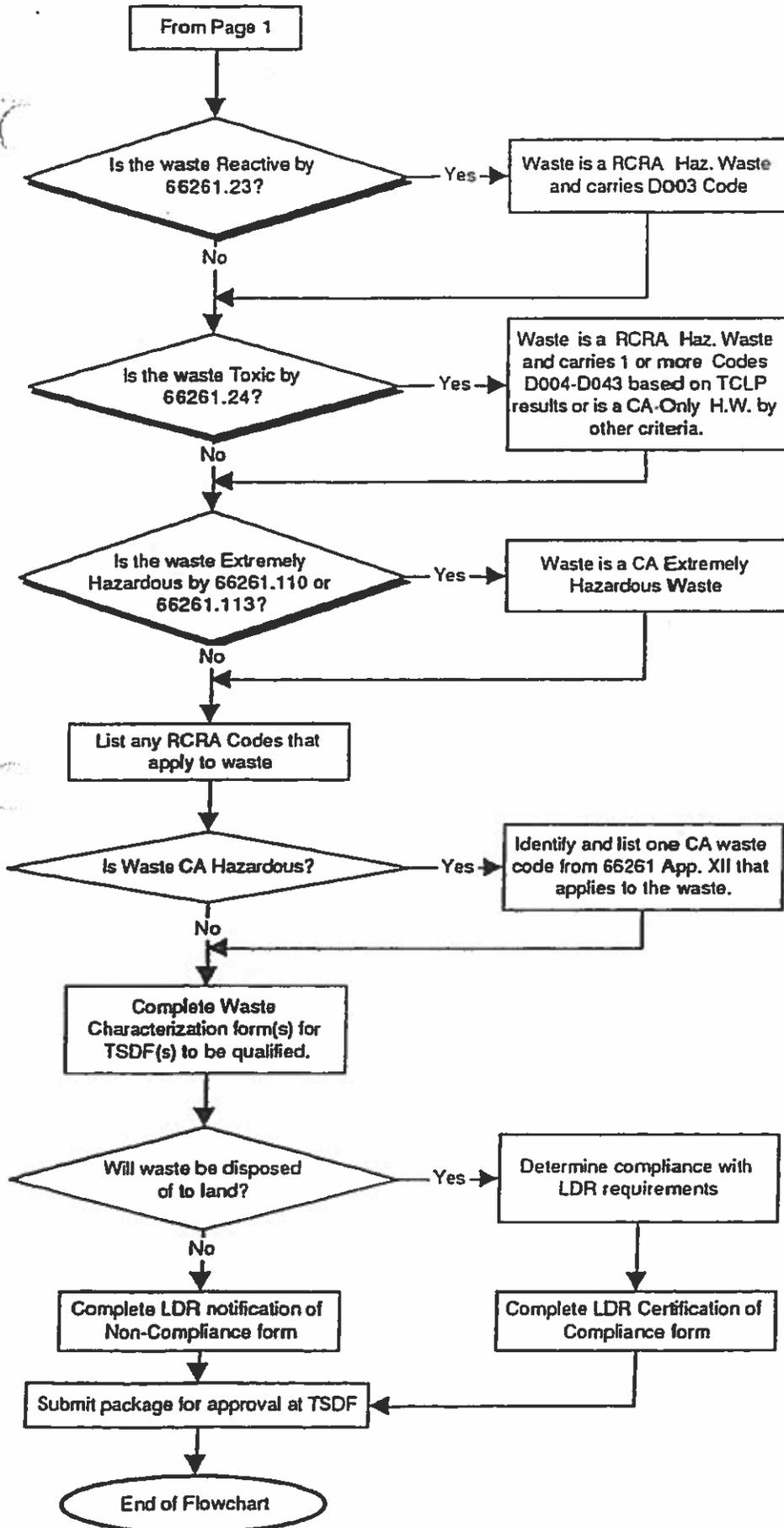
Determine If a Listed Waste
If listed waste, may still need to evaluate characteristics of the waste for LDR purposes

If listed in App. X, need to determine if listed characteristics apply

Determine If Characteristic H.W.
See Page 3. May need to sample waste and run analytical tests to answer some questions

Note that CA requirements go beyond RCRA requirements. See Page 4.

Comments



See Page 5 for requirements.

Note that CA requirements go beyond RCRA requirements for Toxicity Characteristic. See page 6.

Note that CA requirements for Extremely Hazardous Wastes go beyond the RCRA requirements for Acutely Hazardous Wastes (P list). See Page 10

If waste carries NO Federal Waste codes at this point then it is not a RCRA Hazardous Waste.

One of the Restricted CA codes (700 series) must be used if any fit

See CFR 268 for Federal LDR requirements. See Title 22 66268 for CA requirements.

NOTE: See attachment to Waste Characterization Flowchart Dated 1/15/98

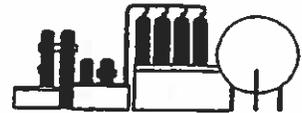


August 1997

U.S. EPA Region 9
RCRA Compliance Assistance Program

FACT SHEET

New Regulations to Control Volatile Organic Air Emissions from Hazardous Waste in Tanks



I. Background

EPA has promulgated a series of regulations to control organic air emissions resulting from the management of hazardous waste. The first regulations promulgated, Part 264 and Part 265 Subpart AA and BB, dealt with organic air emissions from process vents and equipment leaks. Subpart AA and BB regulations were originally only applicable to interim status and permitted hazardous waste treatment, storage, and disposal facilities (TSDFs). The second regulations promulgated, the Subpart CC regulations, include new regulations for organic air emissions from hazardous waste tanks, containers and surface impoundments. Also, EPA has expanded the applicability of Subparts AA and BB to include large quantity generators of hazardous waste. The Subpart AA and BB standards became effective on December 21, 1990. The Subpart CC regulations and the change in applicability of Subparts AA and BB went into effect in all states on December 6, 1996.

II. Applicability

The Subpart CC standards of 40 CFR Part 264 (Permitted Facilities) and Part 265 (Interim Status Facilities) apply to large quantity generators of hazardous waste (≥ 1000 kg/month); as well as, owners and operators of interim status and permitted hazardous waste treatment, storage, or disposal facilities that manage hazardous waste in tanks surface impoundments, or containers subject to 40 CFR Parts 264/265 Subparts I, J, or K.

This includes large quantity hazardous waste generators accumulating hazardous waste in tanks or containers for less than 90 days.

See 40 CFR §264.1080 or §265.1080 to determine if your waste management units are subject to the Subpart CC regulations. See 40 CFR §264.1082 and §265.1083 for a description of hazardous wastes and waste management units that are exempt from the Subpart CC standards.

An owner or operator using the Tank Level 1 Controls must determine the maximum organic vapor pressure for each hazardous waste placed in a tank using the procedures specified in 40 CFR §265.1084(c). The facility must maintain records of the maximum organic vapor pressure including the date and time the samples were collected, the analysis method used, and the analytical results.

All tanks regulated by Subpart CC standards must be inspected. The inspection procedures and requirements vary by type of tank. Records of all inspections regardless of the tank control level must be kept at the facility for a maximum of three years after the date of the inspection. More detailed recordkeeping and inspection requirements are required for floating roof tanks and tanks or enclosures which vent to a control device.

V. Subpart AA and BB Standards

EPA's final rulemaking concerning the Subpart CC rule also amended the Subpart AA and BB rules. Subparts AA and BB now apply to all TSDFs and large quantity generators. The Subpart AA and BB standards of 40 CFR Parts 264 and 265 originally became effective on December 21, 1990 for interim status TSDFs and permitted facilities undergoing permit renewal.

Permitted TSDFs are now required to comply with the Subpart AA and BB air emission standards under Part 265 until the facility's permit is renewed. If the final rulemaking air emission controls required by Subpart AA and BB were not installed prior to the December 6, 1996 effective date, an implementation schedule and an explanation describing why the controls have not yet

been installed must be documented in the facility records.

Subpart AA establishes air emission controls for process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air/steam stripping operations that manage hazardous wastes with organic concentrations of at least 10ppmw. Subpart AA also establishes standards for closed-vent systems and control devices.

Subpart BB establishes air emission controls for equipment leaks. Subpart BB applies to equipment that contains or contacts hazardous wastes with organic concentrations of at least 10 percent by weight. If the equipment contacts hazardous waste less than 300 hours per year or if the equipment is in vacuum service, it is excluded from the Subpart BB standards.

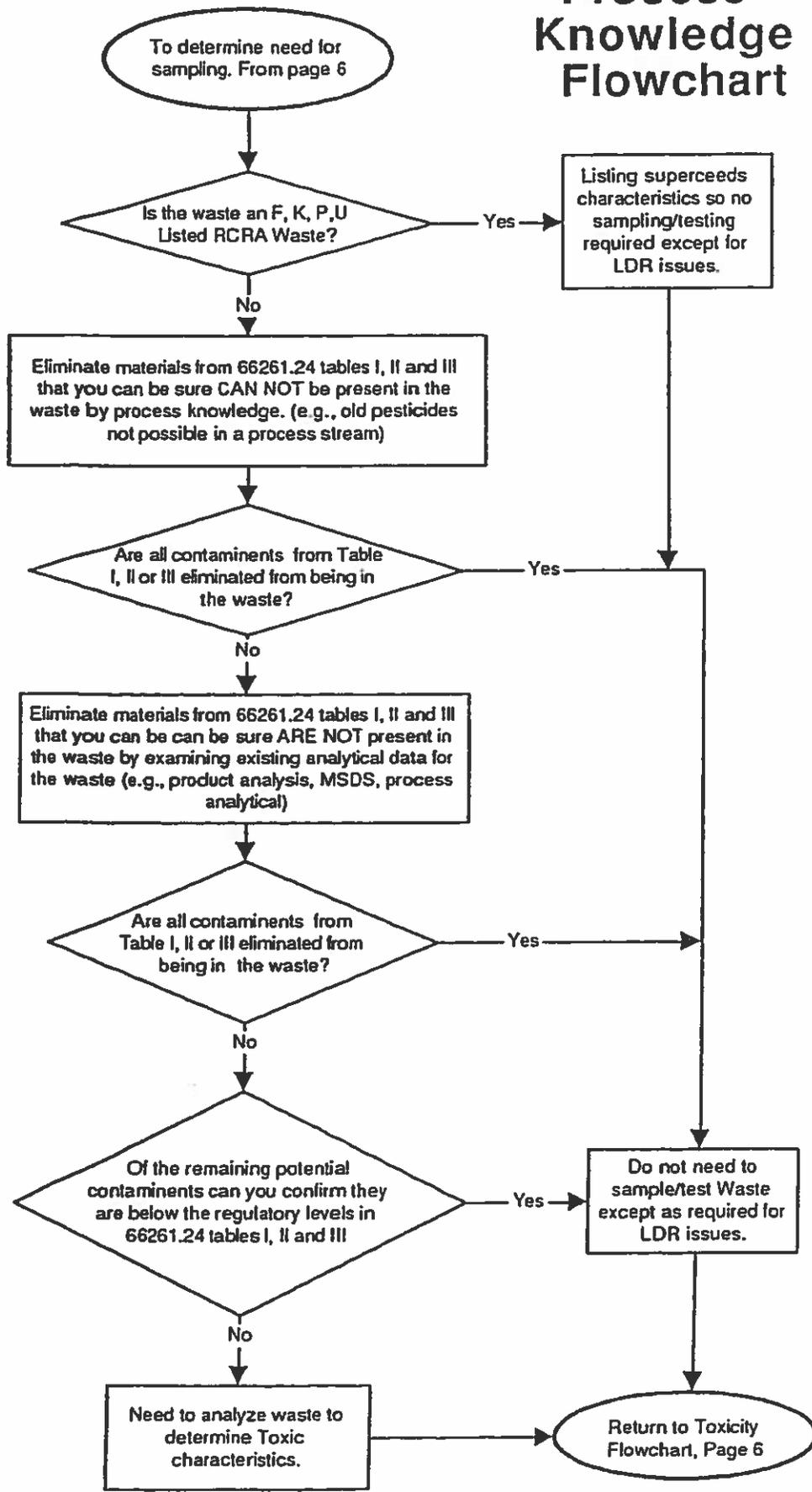
Types of equipment regulated by Subpart BB include:

1. Pumps
2. Compressors
3. Pressure relief devices
4. Sampling connection systems
5. Valves
6. Open-ended lines
7. Flanges
8. Other connectors

Each piece of equipment that is subject to the Subpart BB standards must be marked in such a manner that it can be readily distinguished from other pieces of equipment. The equipment must be monitored and inspected regularly.

Recordkeeping requirements of Subpart BB include equipment identification, equipment description and location, methods of

Process Knowledge Flowchart



Comments

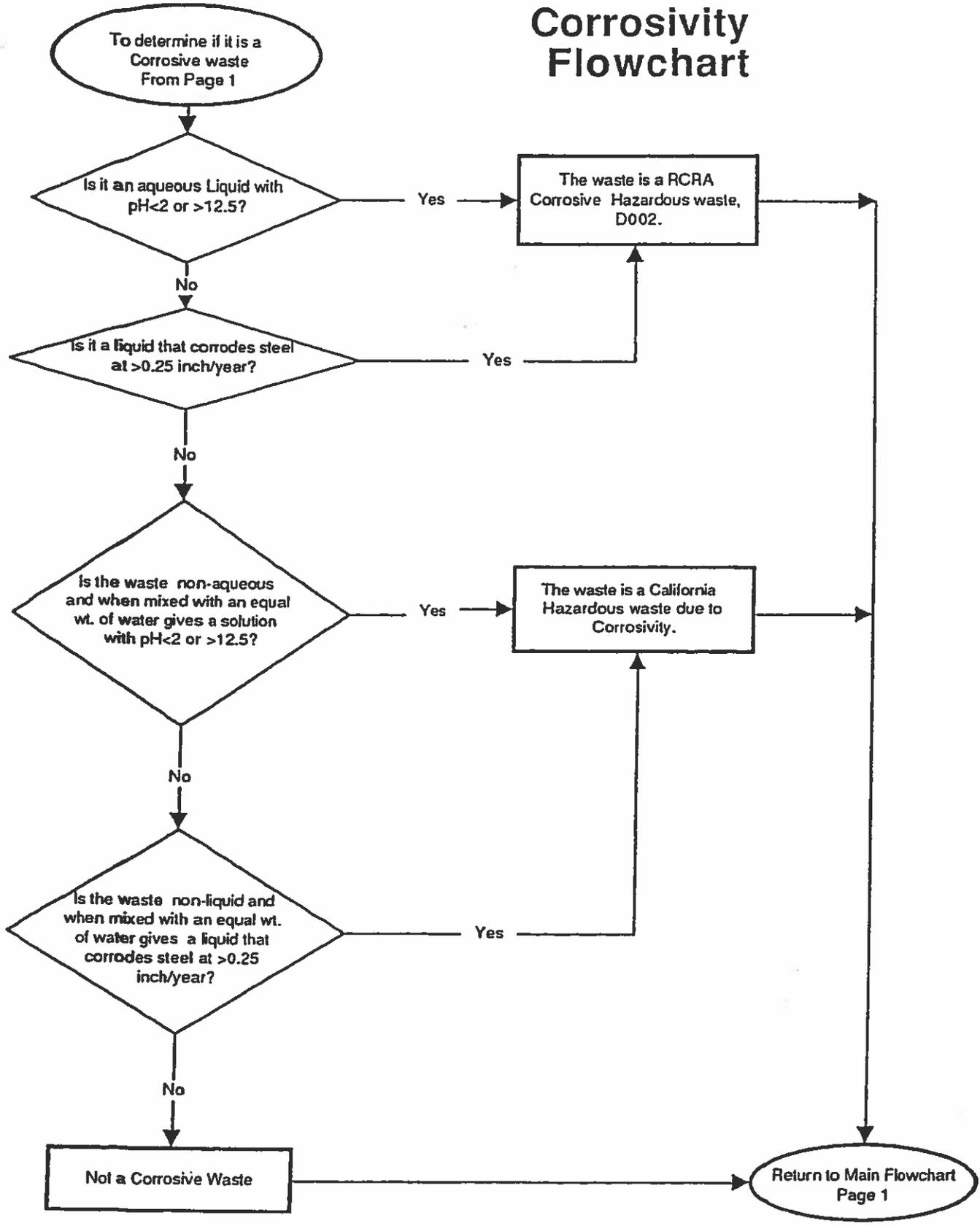
LDR regulations may require some analysis to insure proper disposal. See LDR flowsheet.

Trace metals are not reasonably eliminated in most Process wastes without analysis.

LDR regulations may require some analysis to insure proper disposal. See LDR flowsheet.

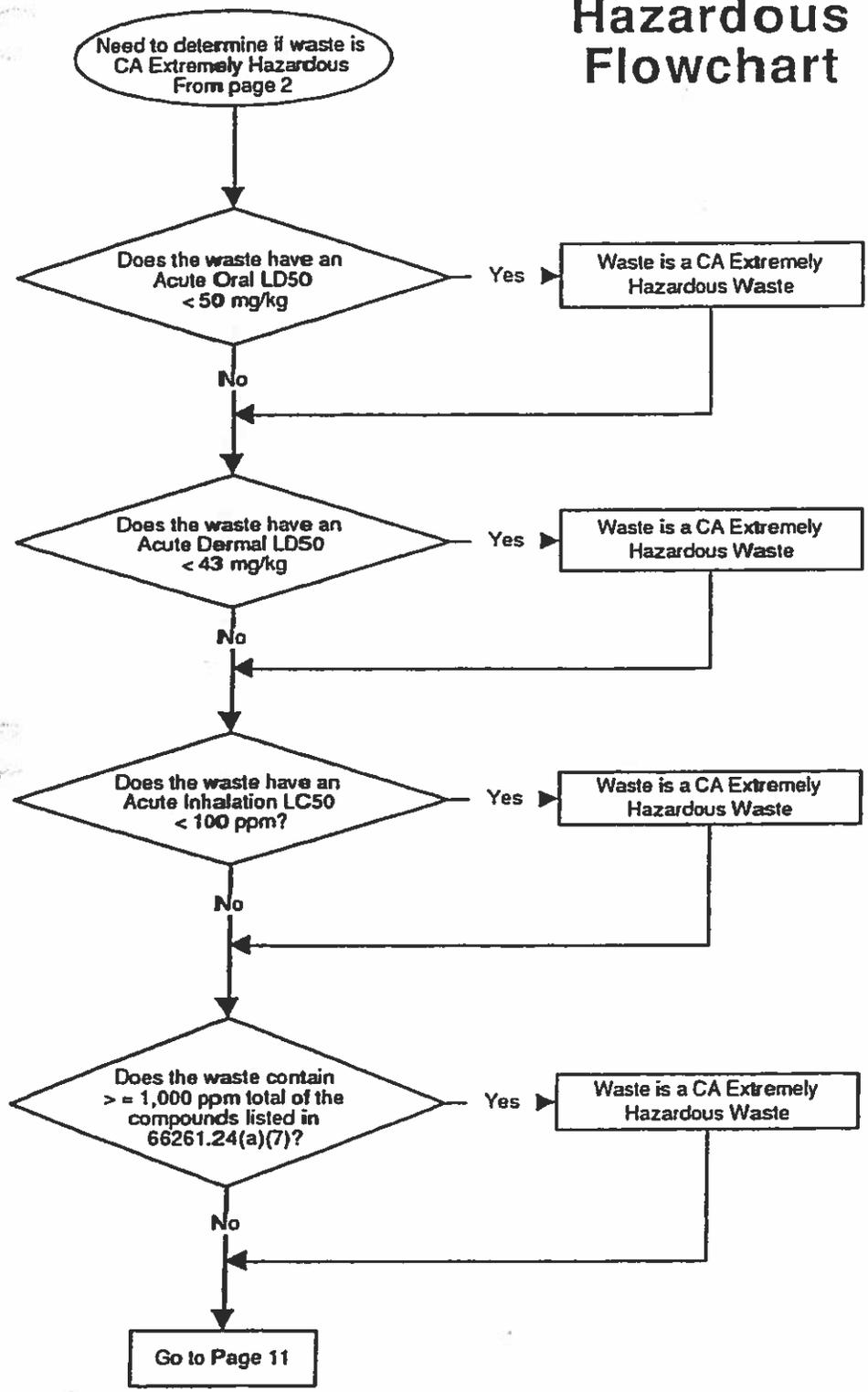
Contaminants requiring analysis have been identified

Corrosivity Flowchart



Extremely Hazardous Flowchart

Comments



Once waste is established as CA Extremely Hazardous, no further analysis is required

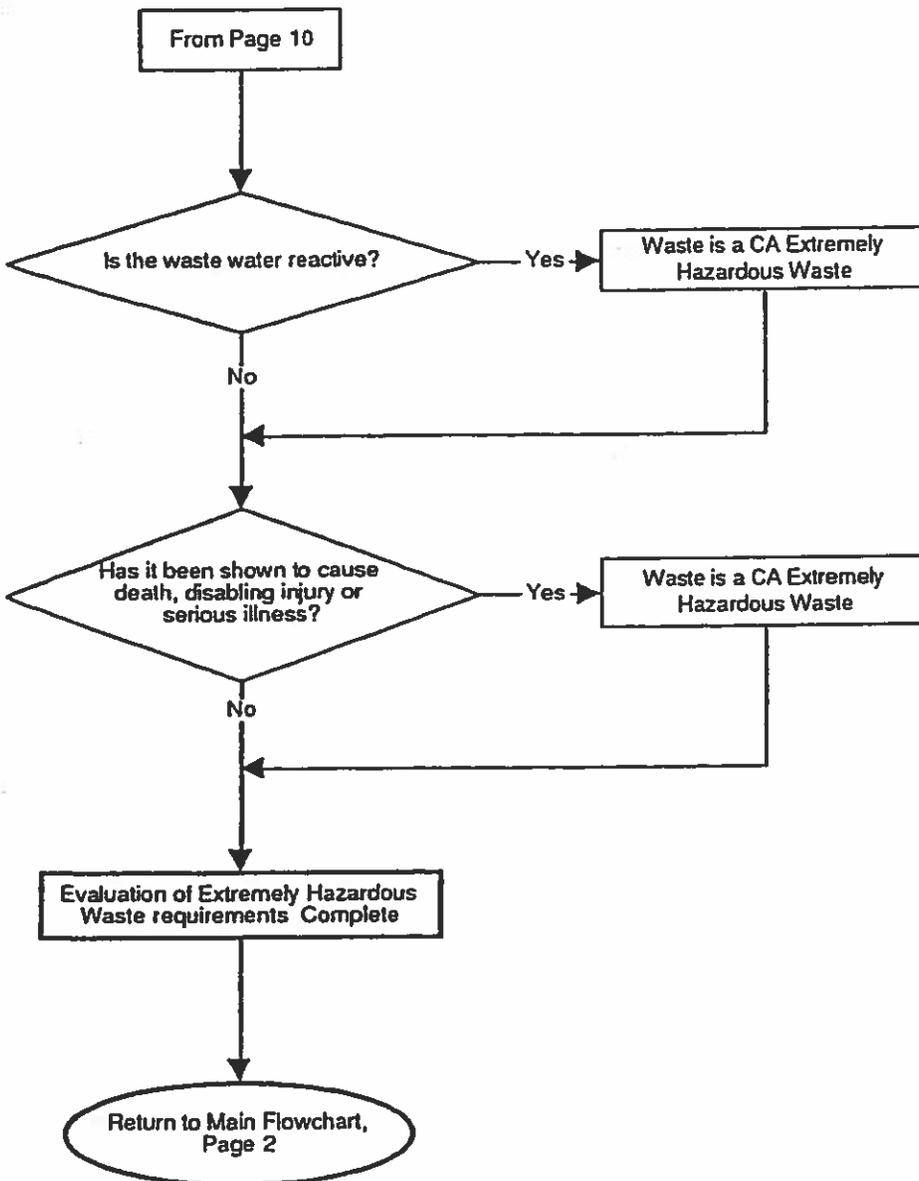
For mixtures, use a concentration weighted average LD50 for comparison

For mixtures, use a concentration weighted average LD50 for comparison

For mixtures, use a concentration weighted average LC50 for comparison

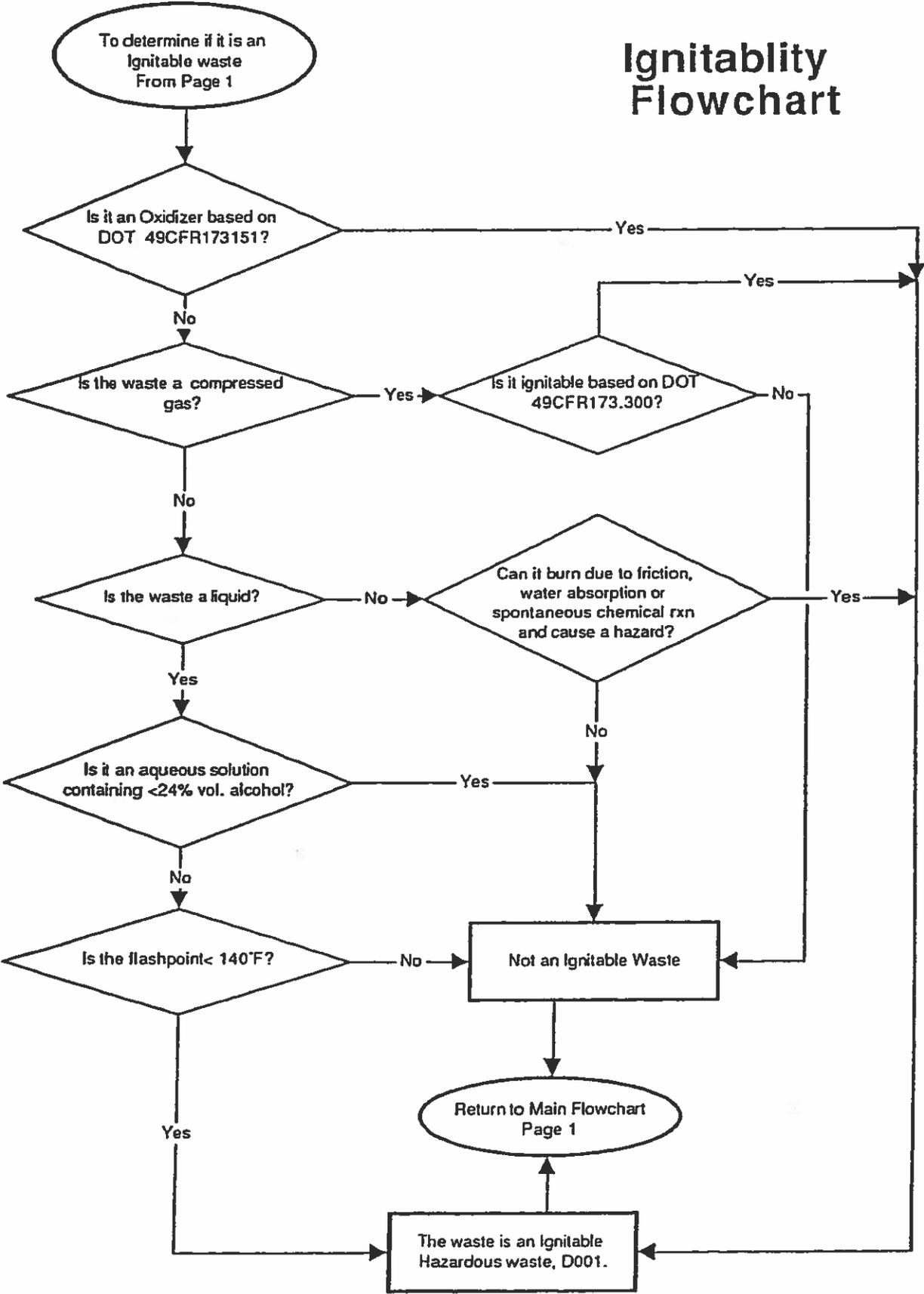
Review list of 16 chemicals which includes Acrylonitrile and Vinyl Chloride.

Comments

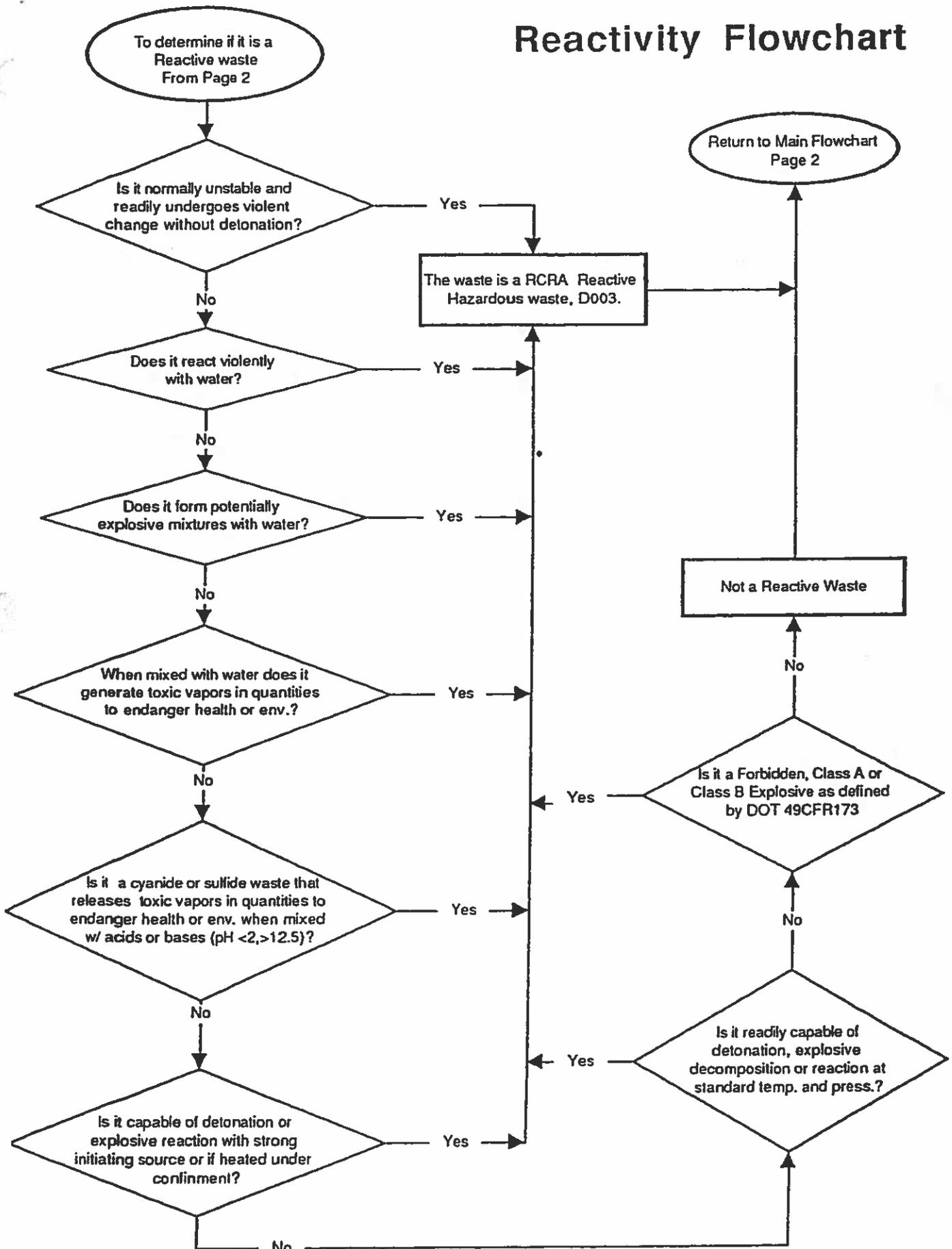


Consider information from experience and testing related to Carcinogenicity, Acute Toxicity, Chronic Toxicity, Bioaccumulative Properties and Persistence in the Environment

Ignitability Flowchart

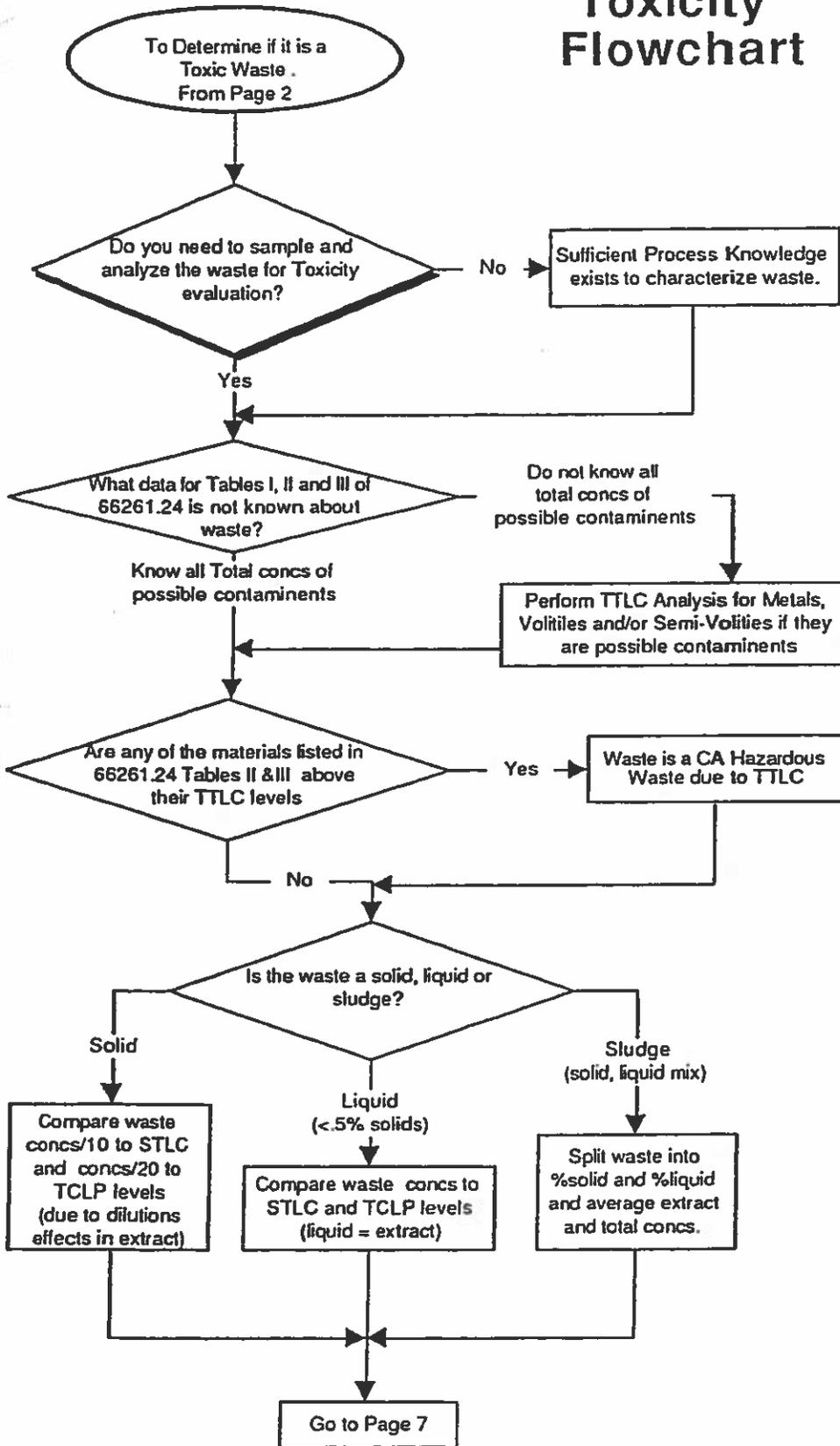


Reactivity Flowchart



Toxicity Flowchart

Comments



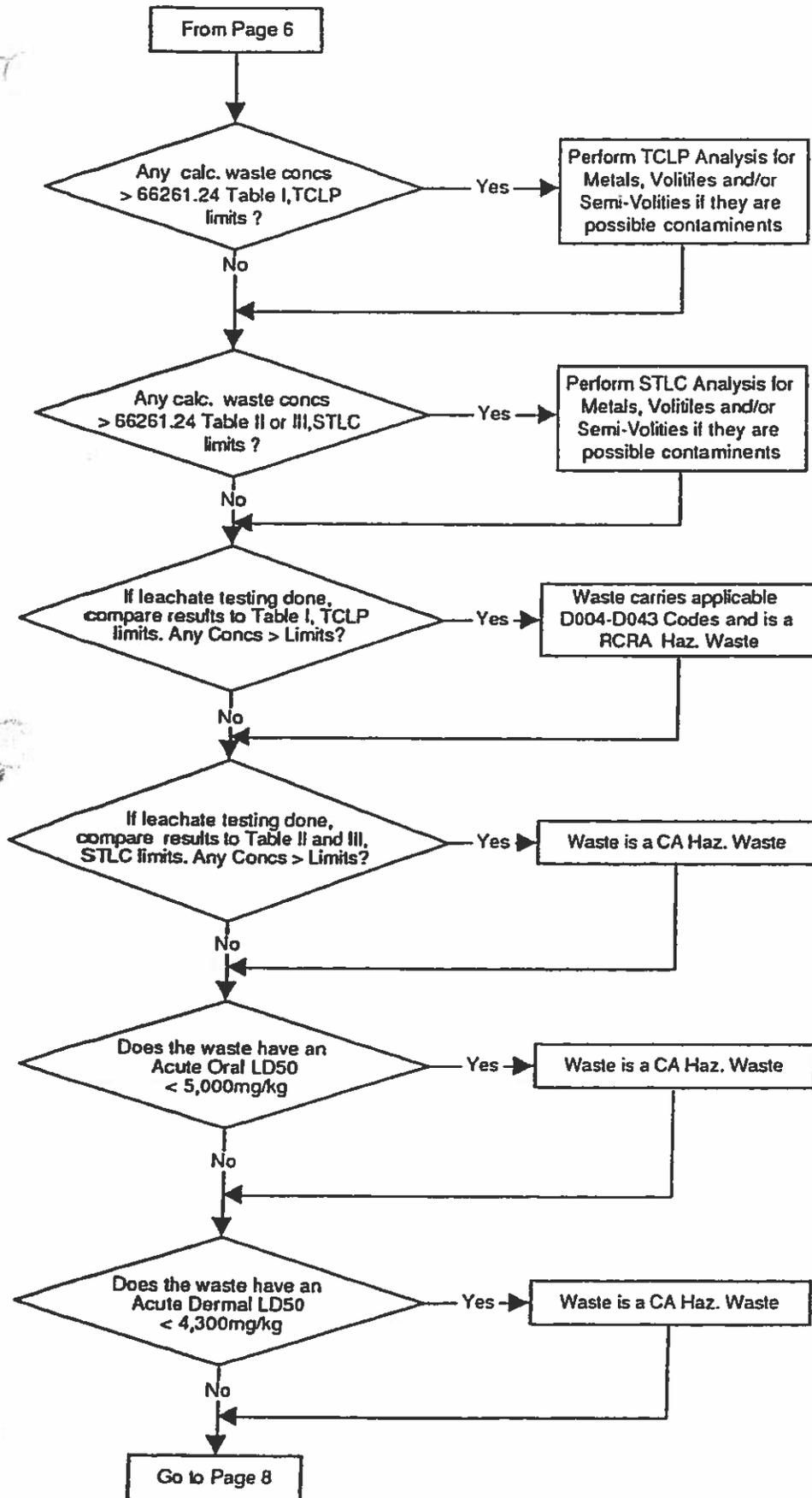
To determine if the waste is toxic, may require testing of samples. Follow the *Process Knowledge* flowchart on Page 9 to determine need. Follow the Toxicity flowchart to minimize the analytical costs.

May choose to do TLC, TCLP and STLC all together if short on time.

Once waste is established as CA Toxic, no further CA only analysis is required

Determine need to do any leachate extraction testing by comparing total concs to leachate limits.

Comments



Determine need to run TCLP test on waste to determine if RCRA Hazardous waste

Determine need to run TCLP test on waste to determine if CA Hazardous waste

Once waste is established as RCRA Toxic, no further analysis is required

Once waste is established as CA Toxic, no further CA only analysis is required

For mixtures, use a concentration weighted average LD50 for comparison

For mixtures, use a concentration weighted average LD50 for comparison

Comments

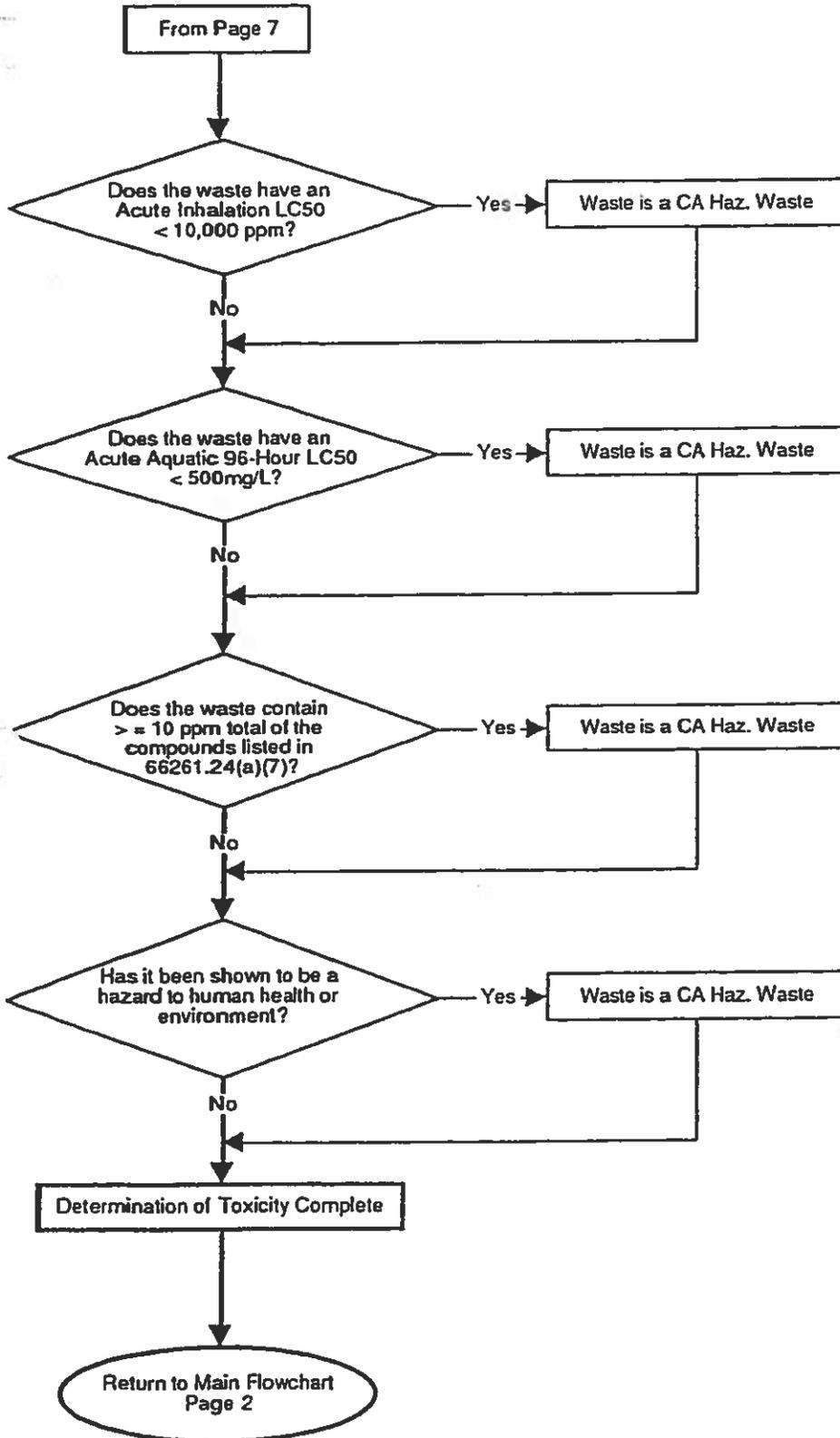
For mixtures, use a concentration weighted average LC50 for comparison

Follow 66261.24(a)(6) 96-Hour Fish Toxicity Test

Review list of 16 chemicals which includes Acrylonitrile and Vinyl Chloride.

Consider information from experience and testing related to Carcinogenicity, Acute Toxicity, Chronic Toxicity, Bioaccumulative Properties and Persistence in the Environment

Must be able to demonstrate evaluation of all required criteria for waste to be Non-Hazardous



Appendix B Waste Characterization Profile Form

THE DOW CHEMICAL COMPANY UNIVERSAL WASTE CHARACTERIZATION

For help, click on the [blue](#) hyperlinks to be forwarded to the appropriate section of the guidance document.

A. GENERATOR INFORMATION.

1. a. Contact Name: _____ b. Dow ID # _____
 c. Contact Building #: _____ d. Telephone #: _____ e. Fax #: _____
2. Waste is from a. Plant Site/Name/OPN: _____
 b. Control Rm. Telephone #: _____ c. Waste pick-up location: _____
3. NEA Cost Center Code(10 digits) _____ 4. Need Date: _____

B. GENERAL INFORMATION.

1. Waste Title (80 char): _____
2. Supply the US DOT Waste Description if the waste will travel on public roads, including UN number. _____
3. a. Describe source of the waste. INCLUDE "where" and "how" waste was generated. STATE what happened to cause the waste, i.e. spill, process upset, tank or sump cleaning. TX, LA.:reference specific tank(s) and function of the tank(s) (255 char)

- b. Does Dow own this waste? Yes No
4. a. Anticipated frequency One-time Routine b. Expected generation rate _____
 c. Quantity currently in inventory _____ d. Storage capacity: _____
5. a. Container category: Packaged Bulk
 b. Specify the type of container to be used to send waste (and the material of construction and capacity if known).

Type of Container	Material of Construction of Container	Capacity of Container

6. What is the primary Determination Method (DM) for this stream ?
 Process Knowledge Analytical, method _____ Other _____

C. RECEIVER INFORMATION.

1. Proposed location that waste will be sent to (Enter 'New' in last column if this is not an update of an existing profile):
 a. Name _____ b. Profile Number _____

GENERATOR/CONTACT PERSON CERTIFICATION
(MUST be a Dow Employee trained in RCRA management)

I certify that, based on process knowledge, laboratory analysis, or my inquiry of those individuals immediately responsible for obtaining this information, the information on this form is true, accurate and complete, I am aware that significant penalties (including the possibility of fine and imprisonment) may be assessed for knowingly causing the improper classification and/or disposal of wastes.

Name: (printed) _____ Master # _____
 Title: _____ Bldg # _____ Telephone # _____
 Signature: (original) _____ Date: _____

Stream Code:

Profile Number:

D. WASTE COMPOSITION

(Please attach applicable Material Safety Data Sheet (MSDS) OR Toxicity Industrial Hygiene Medical and Environmental (T.I.M.E.) Sheet)

- Use specific chemical names. No initials, abbreviations, trade names, generic groups, or acronyms. List all constituents regardless of concentration.
- Specifically list metals, esp. antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium, that appear in ppm levels.
- Indicate if concentrations are Process Knowledge (P) or Analytical (A) in the "P/A" column. If concentrations are analytically determined, list method on this page or in Section G "Additional Information".

1. Check here if this is a lab pack which will use a pack inventory system. Attach a list of all potential components to this characterization (can be an inventory sheet if it is comprehensive or a separate file if more convenient). Each pack, when shipped, must include a positive identification (✓) of each regulated component contained in the lab pack. Add a Lab Pack Certification Form to this packet, available in Section I. For Table A below, use the DR# for lab packs (0336-3288)

2. **Table A:** Waste components in original waste (i.e. "as generated"). List additives (like absorbent) in Table A only if they were part of the waste as the waste was originally generated. Otherwise use Table B. Note that the averages for BOTH Table A and Table B must equal 100%.. Give the TCLP concentration (with units), if known.

Component Name (including contaminants)	Identifier (DR # or CAS #)	Concentration Range with units (wt% or ppm)		Average Conc. with units (wt% or ppm)	P/A	TCLP
		MIN	MAX			
_____	_____	_____	to _____	_____	_____	_____
_____	_____	_____	to _____	_____	_____	_____
_____	_____	_____	to _____	_____	_____	_____
_____	_____	_____	to _____	_____	_____	_____
_____	_____	_____	to _____	_____	_____	_____
_____	_____	_____	to _____	_____	_____	_____
_____	_____	_____	to _____	_____	_____	_____
_____	_____	_____	to _____	_____	_____	_____
_____	_____	_____	to _____	_____	_____	_____

3. **Table B:** List any materials added to the waste (such as absorbent for solidification or lime for neutralization) **not listed above**. Give concentration in material delivered for treatment/disposal (e.g. 30% absorbent means the shipment contains 70% waste defined in Table A, 30% absorbent defined in Table B).

Component Name (including contaminants)	Identifier (DR # or CAS #)	Concentration Range with units (wt% or ppm)		Average Conc. with units (wt% or ppm)	P/A	TCLP
		MIN	MAX			
_____	_____	_____	to _____	_____	_____	_____
_____	_____	_____	to _____	_____	_____	_____
_____	_____	_____	to _____	_____	_____	_____

TOTAL FOR BOTH TABLE A AND TABLE B (Must be 99.5% to 100.5%) _____
 (Simply add additional lines if additional space is required or use the [Composition Continuation Worksheet](#).)

Stream Code:

Profile Number:

D. WASTE COMPOSITION (CONTINUED)

4. **Table C:** Include any component of the waste which has a SARA/CERCLA reportable quantity in the table below. (All of these chemicals must be individually listed in Table A). For packs with variable composition, use the RCRA Waste Number RQs. For chemical and RCRA RQ's, see the [Title III List of Lists](#).

Identifier (DR # or CAS #)	Reportable Quantity (lb)	Identifier (DR # or CAS #)	Reportable Quantity (lb)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

E. PHYSICAL CHARACTERISTICS.

Supply units for all values entered. All values are for waste "as shipped" unless otherwise specified.

- Physical state of waste as generated:
 - Liquid Solid Solids & free liquids Gas (Bottles in packs = "Solid")
 - Temperature assumed for Question a. _____
- Physical state of waste as shipped
 - Single Phase Multi-phase Absorbed/Solidified Liquid Bottles in packs
- Specific properties. Give the average concentrations, the concentration unit, and the Determination Method (P=Process knowledge, A=Analytical). If additional analytical information is available, add it to the end of this form.

Property	Avg.	Unit	DM	Property	Avg.	Unit	DM
a. Ash (particulates)	_____	_____	_____	b. Non-halogenated Organics	_____	_____	_____
c. Total Suspended Solids	_____	_____	_____	d. Halogenated Organics	_____	_____	_____
e. Total Solids	_____	_____	_____	f. Total Organic Carbon (TOC)	_____	_____	_____
g. Halogen Content: F	_____	_____	_____	h. Halogen Content: Cl	_____	_____	_____
i. Halogen Content: Br	_____	_____	_____	j. Halogen Content: I	_____	_____	_____
k. Friable Asbestos	_____	_____	_____	l. Heat of Combustion	_____	_____	_____
m. PCB's (give conc. range as generated): _____							

4. Additional properties required for streams sent to a WWTP. Not Applicable

Property	Daily Avg	Max	Min	Unit	DM
a. Hydraulic load	_____	_____	_____	_____	_____
b. Total Nitrogen	_____	_____	_____	_____	_____
c. Ammonia	_____	_____	_____	_____	_____
d. Temperature	XXXX	_____	XXXX	_____	_____
e. Discharge Pressure	_____	_____	_____	_____	_____
f. Alkalinity	_____	_____	_____	_____	_____
g. pH	_____	_____	_____	_____	_____
h. Salinity (TDS)	_____	_____	_____	_____	_____
i. BOD:TOC ratio	_____	XXXX	XXXX	_____	_____
j. COD:TOC ratio	_____	XXXX	XXXX	_____	_____

- Storage Temperature requirement: Ambient Other _____
 - Shipping Temperature requirement: Ambient Other _____
- If material as shipped is bulk liquid or gas (answer Question 7 "N/A"): Not applicable, must answer Question 7. (Waste must be able to pass through appropriate mesh screen @ shipping temps: MI=18 mesh, LA=20 mesh, TX=3 mesh)
 - Density: _____
 - Flash Point: _____
 - Boiling Point: _____
 - Freezing Point: _____
 - Vapor Pressure: _____ @ (temperature): _____
 - Viscosity: _____ @ (temperature): _____
 - pH: amenable to pH measurement, at least 20% water _____

E. PHYSICAL CHARACTERISTICS (CONTINUED)

h. Material of construction requirements: _____
 i. Possibility of multi-phase layering, describe: _____

7. If material as shipped is a solid (with or without free liquids), liquids in a pack, or an absorbed liquid: Not applicable
 a. Density _____
 b. % free liquid _____ c. Flash point: _____ d. pH: _____
 TX: if absorbed liquid, provide flash point and pH before absorption.

8. Reactive Chemical Properties.
 a. i. Handling indicators.

Y	N		Y	N	Y	N	Y	N			
<input type="checkbox"/>	<input type="checkbox"/>	Flammable	<input type="checkbox"/>	<input type="checkbox"/>	Radioactive	<input type="checkbox"/>	<input type="checkbox"/>	Pyrophoric	<input type="checkbox"/>	<input type="checkbox"/>	Unstable
<input type="checkbox"/>	<input type="checkbox"/>	Water reactive	<input type="checkbox"/>	<input type="checkbox"/>	Acid reactive	<input type="checkbox"/>	<input type="checkbox"/>	Base reactive	<input type="checkbox"/>	<input type="checkbox"/>	Reducer
<input type="checkbox"/>	<input type="checkbox"/>	Heat sensitive	<input type="checkbox"/>	<input type="checkbox"/>	Oxidizer	<input type="checkbox"/>	<input type="checkbox"/>	Corrosive	<input type="checkbox"/>	<input type="checkbox"/>	Refractory Aggressive
<input type="checkbox"/>	<input type="checkbox"/>	Explosive Dust	<input type="checkbox"/>	<input type="checkbox"/>	Air Reactive	<input type="checkbox"/>	<input type="checkbox"/>	Other (Explain)			

 ii. Explain any Yes answers: _____
 b. i. Does the waste contain any chemical listed in the list of Shock Sensitive Wastes? Yes No
 ii. If "Yes," then specify: _____
 c. i. Is this a waste that will decompose or polymerize with heat or pressure release at less than 200°F? Yes No
 ii. Explain "Yes" answer: _____
 d. i. Has Reactive Chemical Testing been performed? Yes No
 ii. If "Yes", explain (exotherm, endotherms, shock sensitivity, etc.), also specify exotherm initiation temperature and include report, if applicable: _____

9. Safety and Exposure Hazard.
 a. i. Safety and Exposure Hazard.

Y	N		Y	N	Y	N		
<input type="checkbox"/>	<input type="checkbox"/>	Sensitizer	<input type="checkbox"/>	<input type="checkbox"/>	Lachrymator	<input type="checkbox"/>	<input type="checkbox"/>	Acute Skin Exposure Hazard
<input type="checkbox"/>	<input type="checkbox"/>	Carcinogenic	<input type="checkbox"/>	<input type="checkbox"/>	Offensive Odor	<input type="checkbox"/>	<input type="checkbox"/>	Acute Vapor Exposure Hazard
<input type="checkbox"/>	<input type="checkbox"/>	Toxic	<input type="checkbox"/>	<input type="checkbox"/>	Irritant			

 ii. Explain any acute hazard: _____

10. Handling and Spill Procedures.
 a. Specify all that apply (not all options available at all sites):

		i. Handling	ii. Spill		i. Handling	ii. Spill
Boots –	Rubber	<input type="checkbox"/>	<input type="checkbox"/>	Face Shield –	<input type="checkbox"/>	<input type="checkbox"/>
Goggles		<input type="checkbox"/>	<input type="checkbox"/>	Respirator – Dust	<input type="checkbox"/>	<input type="checkbox"/>
Gloves	4-H	<input type="checkbox"/>	<input type="checkbox"/>	Half Face cart.	<input type="checkbox"/>	<input type="checkbox"/>
	Nitrile	<input type="checkbox"/>	<input type="checkbox"/>	Full Face cart.	<input type="checkbox"/>	<input type="checkbox"/>
	Rubber	<input type="checkbox"/>	<input type="checkbox"/>	SCBA	<input type="checkbox"/>	<input type="checkbox"/>
Suits	Encapsulated	<input type="checkbox"/>	<input type="checkbox"/>	Air Supply Mask	<input type="checkbox"/>	<input type="checkbox"/>
	Coated Paper	<input type="checkbox"/>	<input type="checkbox"/>	Air Supply Hood	<input type="checkbox"/>	<input type="checkbox"/>
	Rubber	<input type="checkbox"/>	<input type="checkbox"/>	iii. Cartridge Type : _____		

 iv. Others _____

b. Check which of these standard absorbents should be used, and which should not be used for cleaning up spills:

	i. Use	ii. Avoid		i. Use	ii. Avoid		i. Use	ii. Avoid
Zorball	<input type="checkbox"/>	<input type="checkbox"/>	Sand	<input type="checkbox"/>	<input type="checkbox"/>	spun polypropylene	<input type="checkbox"/>	<input type="checkbox"/>
Clay	<input type="checkbox"/>	<input type="checkbox"/>	Vermiculite	<input type="checkbox"/>	<input type="checkbox"/>	Cellulose/Corn cob	<input type="checkbox"/>	<input type="checkbox"/>
Sawdust	<input type="checkbox"/>	<input type="checkbox"/>						

 iii. Additional absorbents to **USE**: _____
 iv. Additional absorbents to **AVOID**: _____

c. How is the waste handled at the manufacturing plant? List any special precautions or procedures: *(attach additional sheet if necessary)* _____
 11. a. Have there been any known problems with treating this waste in the past? Yes No
 b. Explain "Yes" answer: _____

F. REQUIREMENTS UNDER US REGULATIONS

1. a. Is the waste subject to "control" under any Air Rule* listed below? (Indicate 'No' for streams subject to the rule but exempt from control and for streams that do not require control because of pretreatment within the process unit.) If Yes, check the applicable rule: Yes No

***Air Rules:**

- MACT Rules (HON, Epoxy, etc.) or Other Rules where the stream is classified as a Group 1 wastewater stream and thus requiring control.
- OSWRO – waste is to be sent offsite to a TSD facility for treatment with greater than 500 ppm HAPS
- Benzene Waste NESHAP - waste with greater than 10 ppm benzene
- Texas only - Reg. V Industrial Wastewater - waste with > 10,000 ppmv VOC at any flow rate or > 1000 ppm VOC at 2.64 gpm (annual avg.)
- Louisiana only - Limiting VOC Emissions from Industrial Wastewater

- b. If "Yes", treatment of the stream should be combustion unless there is special consultation with a technical Air Specialist in the Regulatory Management Expertise Center. Specify any controls required by the air rule for storage and conveyance of the materials after they are transferred to Environmental Operations:
-

2. Is the waste regulated under any of the following US regulations?

- a. Does the waste contain any of the chemicals listed in 40CFR 68.130, the [EPA's Risk Management Rule](#), on either the Toxic Substances or the Flammable Substances List? Yes No
- If "Yes," please contact the receiving site's Waste Approver to determine if a new submission is required before the waste may be shipped.

G. OTHER APPLICABLE WASTE CHARACTERIZATION REFERENCE NUMBERS

If this waste is disposed of at another disposal site, give the reference number used at that disposal site.

Treatment Site	Reference Number	Status	Last Review Date

H. ADDITIONAL INFORMATION

I. APPENDED WORKSHEETS

In most cases, additional forms are needed. Answer the following questions. For any "Yes" or "Unsure" answers, you must add the appropriate form to the bottom of this waste characterization. To view the forms, click on the "view only" button corresponding to the desired form. To add a form to this characterization, double click on the "Add" button and the form will automatically be added to the end of this file.

If you need extra space for Table A in Section D, Waste Composition.

[view only](#) [Add](#) **Composition Continuation**

Certain State Regulations may apply. Fill out the appropriate form for your disposal state.

[view only](#) [Add](#) ✓ **Michigan Specific Form**

[view only](#) [Add](#) **Texas Specific Form**

[view only](#) [Add](#) **Louisiana Specific Form**

Resource Conservation and Recovery Act (RCRA) Assessment Worksheet:

- a. Is the waste RCRA Hazardous? Unsure Yes No
- b. Is the waste RCRA non-hazardous, but one or more of the components appear on the RCRA F, U, or P lists? Unsure Yes No
- c. Has the waste been treated to remove a characteristic hazardous waste number (i.e. the HWN D001-D043 once applied, but no longer does)? Unsure Yes No

[view only](#) [Add](#) ✓ **RCRA Assessment**

Land Disposal Restriction (LDR) Certification Worksheet is required for all RCRA hazardous wastes and waste residues

- [view only](#) [Add](#) ✓ **LDR Certification Worksheet**
- [view only](#) [Add](#) ✓ **LDR App IV Lab Pack Certification (determined by the LDR Certification Worksheet)**
- [view only](#) [Add](#) ✓ **LDR Attachment 1 (determined by the LDR Certification Worksheet)**
- [view only](#) [Add](#) ✓ **LDR Attachment 2 (determined by the LDR Certification Worksheet)**

Toxic Substance Control Act (TSCA) Assessment Worksheet:

Are the chemicals in the waste subject to a TSCA 5(e) Consent Order or a Significant New Use Rule (SNUR) at the concentration at which they occur in the waste? Unsure Yes No

[view only](#) [Add](#) ✓ **TSCA Assessment**

Please add any custom forms to this packet that will help characterize this waste. To do so, type your form title on the blank below and double click on "Add Your Own" to proceed to the end of this packet.

[Add Your Own](#) **Other:** _____

**THE DOW CHEMICAL COMPANY UNIFIED WASTE CHARACTERIZATION
Michigan-Specific Worksheet**

**** For help, click on the section or list/table and you will hyperlink to the appropriate section of the guidance document or list/table.**

A. STATE WASTE NUMBERS

1. MI ACT 451 PART 111 REGULATED HAZARDOUS WASTE

- a. Is the waste defined in [Michigan S list](#)? Yes () No ()
- b. Is the waste defined in [Michigan K list](#)? Yes () No ()
- c. Is the waste a discarded commercial chemical product, off-spec. species, or a container or spill residue? Yes () No ()
- i. If Yes Is the waste from a RCRA-empty container? Yes () No ()
1. If No - is the waste listed in [Michigan U List](#)? Yes () No ()
- d. Enter all Hazardous Waste Numbers applicable from Questions A.2. a. to A.2.c.:

2. MI ACT 451 PART 121 REGULATED NON-HAZARDOUS WASTE.

- a. Is the waste non-hazardous, does it contain free-flowing liquid, AND will it be transported across any public roads or railways by a non-Dow transporter? (answer "No" if there is at least one RCRA or MI Hazardous Waste Number) Yes () No ()
- b. If "Yes", waste number(s) from [Michigan L List](#) must be listed: _____

B. WASTE TO WASTE WATER TREATMENT PLANT

1. List any chemical listed in [Volatiles of Concern table](#), the lb/day discharged, and any pretreatment.

Chemical	lb/day	Pretreatment
_____	_____	_____
_____	_____	_____

2. List any chemical listed in [Priority Pollutants Table](#)

3. List any chemical listed in [Critical Materials Table](#)

4. List the maximum flow (with units) that will be received during any

a. 60 minutes: _____ b. 24 hours: _____ c. One year: _____

5. Does the waste contain any chemical not previously released to the Midland WWTP? Do not know () Yes () No ()

C. WASTE TO INCINERATORS

1. If packaged waste (e.g. DAK packs): requested maximum container weight (if desired/appropriate): _____

2. Incinerator Permit Requirements.

a. Does the waste contain any chemical greater than the thresholds listed in column 4 or column 6 of [Incinerator Mass Limits Table](#). (Assume 200 lb per pack for this question) Yes () No ()

b. If "Yes", list below (Lab packs should list chemicals and quantities in the [inventory list](#) at the end of WC):

Chemical	Concentration (wt %)	Chemical	Concentration (wt %)
_____	_____	_____	_____
_____	_____	_____	_____

3. Provide [NFPA ratings](#) (LPP 1.5) for all *bulk* liquids: Health _____ Flammability _____ Reactivity _____ Special Hazards _____
In lieu of NFPA ratings, *off site* shippers may provide Hazard Material Identification Numbers: _____

4. If an analytical method was used versus process knowledge for determination of waste constituents, provide information on the sampling method (i.e. grab sample from pump, lot composite, etc). _____

D. WASTE TO LANDFILL

1. a. Is any component of the waste restricted or banned from release to the waste water treatment plant due to aquatic toxicity or biomass inhibition? Do not know () Yes () No ()

b. If "Yes", list restrictions. Include species of fish and corresponding LC50 if known: _____

Stream Code:

Profile Number:

THE DOW CHEMICAL COMPANY UNIVERSAL WASTE CHARACTERIZATION
RCRA Assessment Worksheet

A. RCRA LISTED HAZARDOUS WASTE.

- 1. Is the waste defined in the EPA's F List for RCRA "listed" hazardous wastes from non-specific sources? Yes No
2. Is the waste defined in the EPA's K list for RCRA "listed" hazardous wastes from specific sources? Yes No
3. Is the waste a discarded commercial chemical product, an off-spec. species, a container residue, or a spill residue (If 'No,' the next three questions are 'NA')? Yes No
a. Is the chemical product listed in the EPA's P List for RCRA acutely hazardous wastes? NA Yes No
b. Is the chemical product from a RCRA-empty container (If 'Yes', the next question is 'NA')? NA Yes No
i. If No - is the chemical product listed in the EPA's U List for RCRA toxic hazardous wastes? NA Yes No
4. For any "yes" answers to questions A. 1-3, list each Hazardous Waste Number (HWN) associated with the waste.

- 5. For any waste or chemical which is on ANY of the lists in Questions A.1-3 but the associated Hazardous Waste Number does NOT apply, list the chemical and the reason the code does not apply. See the Solid Waste Expertise Center for assistance.

Table with 3 columns: Waste or Chemical, Identifier (DR # or CAS #), Reason HWN not applicable. Includes several empty rows for data entry.

B. RCRA CHARACTERISTIC HAZARDOUS WASTE.

1. Characteristic: Ignitability.

- a. Liquid flash point:
i. Is the waste a liquid with a flash point <= 140 OF (<= 60 OC)? Yes No
ii. Is the waste an aqueous (> 50% H2O) solution where the flash point is due solely to alcohol and is the alcohol <24% by wt (the 'alcohol exemption')? NA Yes No
iii. Is the 'alcohol exemption' allowed in the treatment facilities' state (For MI, answer 'No'; for LA and TX, answer 'Yes'; other locations, contact the Approver) NA Yes No
iv. Is Question i. 'Yes' and either Question ii. or Question iii. 'No'? (If Question iv. = 'Yes', then 'D001' applies) Yes No
b. Is the waste a containerized compressed gas which has a pressure greater than 40 psia (25 psig) and a flash point <= 140 OF (<= 60 OC)? Yes No
c. Is the waste an oxidizer as defined under DOT 49 CFR 173.151? (e.g., chlorates, permanganates, peroxides or nitrates)? Yes No
d. Is this a non-liquid waste which can, under standard temperature and pressure, cause fire through friction, absorption of moisture, or spontaneous chemical changes? AND is it also a waste which, once ignited, burns so vigorously and persistently that it creates a hazard? (Answer "Yes" only if both are "Yes") Yes No
e. Enter "D001" as the Hazardous Waste Number if any response to Section B.1. above is "Yes":
f. If the Hazardous Waste Number "D001" applies, does the waste contain greater than 10% Total Organic Carbon (TOC)? NA Yes No
IF "YES", THE ORGANICS MUST BE RECOVERED, BURNED, OR POLYMERIZED!

2. Characteristic: Corrosivity.

- a. Is the waste an aqueous solution (>=20% water) with a pH <= 2.0 or >= 12.5? Yes No
b. Is the waste a liquid, and does it corrode steel at a rate of >= 0.25 inches per year? Yes No
c. Enter "D002" as the Hazardous Waste Number if any response to Section B.2., above, is "Yes":

B. RCRA CHARACTERISTIC HAZARDOUS WASTE (continued).3. Characteristic: **Reactivity.**

- a. Is the waste normally unstable, and does it readily undergo violent change without detonating? Yes No
- b. Does the waste react violently with water, form potentially explosive mixtures with water, or if mixed with water form toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment? Yes No
- c. Does the waste contain cyanide and, when exposed to pH conditions between 2.0 and 12.5, generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment? Yes No
- d. Does the waste contain sulfide and, when exposed to pH conditions between 2.0 and 12.5, generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment? Yes No
- e. Is the waste either a) capable of detonation or explosive reactions if subjected to a strong initiating source or if heated under confinement -- for example, nitroglycerine or trinitrotoluene (TNT). OR b) Is the waste capable of detonation or explosive reactions under standard temperature and pressure? Yes No
- f. Enter "D003" as the Hazardous Waste Number if any response to Section B.3., above, is "Yes": _____

4. Characteristic: **Toxicity**

- a. Is the Toxicity Characteristic Leachate Procedure (TCLP) concentration for any chemical greater than or equal to the concentration listed in the EPA's **D list**? Yes No
- b. If you answered 'Yes', list each Hazardous Waste Number: _____

5. Residues from Treating any Characteristic HWN

- a. Has the waste been treated to remove a characteristic hazardous waste number (i.e. the HWN once applied, but no longer does)? Yes No
- b. If you answered 'Yes', list each characteristic HWN which no longer applies. _____

BAN ON INCINERATION

1. If you answer "Yes" to the following question, ban does not apply. Skip remainder of Section C.

- a. Will the **Lab Pack Exemption** be used? If yes, add the Lab Pack Certification to this packet, using macro at bottom of the Main Form. Skip LDR. Yes No

2. If you answer "No" to any of the following questions, ban does not apply. Skip remainder of Section C.

- a. Is the waste intended for incineration? Yes No
- b. Is the waste RCRA hazardous? Yes No
- c. Is the waste less than 1% TOC? Yes No
- d. Is the waste less than 5000 BTU/Lb? Yes No
- e. Does the waste carry any of the Hazardous Waste Numbers listed in the **Incineration Prohibition**? Yes No

3. If you answer "Yes" to any of the following questions, ban does not apply. Document the applicable regulation in question C.3.d. and skip remainder of Section C.

- a. Does the waste contain any organic constituent or cyanide greater than or equal to the concentration listed in Attachment 2 of the LDR Waste Characterization Section, '**Underlying Hazardous Constituent/Universal Treatment Standards**',? Yes No
- b. Is any portion of the waste required to be incinerated under Federal and/or State requirements? This can be determined by reviewing the **LDR Treatment Standards** for any "CMBST" or "INCIN" entries. Yes No
- c. Does the waste consist of organic, debris-like materials (e.g., wood, paper, plastic, or cloth) contaminated with an inorganic metal-bearing hazardous waste? Yes No
- d. List the applicable regulation requiring combustion: _____

4. The waste is banned from incineration. Other disposal methods are required.

D. LAND DISPOSAL RESTRICTIONS REQUIREMENTS

1. For any waste determined to be hazardous or any waste residue from treating a hazardous waste, complete the LDR Worksheet. Return to the Main Form and add LDR to your waste characterization packet.

Stream Code:

Profile Number:

**THE DOW CHEMICAL COMPANY
LDR CERTIFICATION WORKSHEET**

**** For help, click on the [blue](#) hyperlinks to be forwarded to the appropriate section of the guidance document.**

Important:

- **This form must be completed for all RCRA Hazardous Wastes and hazardous waste treatment residues.**
- **Records Retention of three years from the date the waste was last disposed of.**

A. LDR OFF-SITE SHIPMENTS

1. If the waste is to be transported to an off-site facility, complete the following generator information and send the applicable LDR Worksheet Sections and Attachments with the initial shipment of the waste

Name: _____ Phone _____
Company: _____ EPA ID # _____
Address: _____

2. The waste identified on the accompanying _____ (name of State) Hazardous Waste Manifest Number _____ : does/ does not meet the applicable [LDR treatment standards](#).

3. The waste will be shipped to the following treatment, storage, or disposal unit or facility:

- Rotary Kiln Dow Location _____
- Permitted Storage Dow Location _____
- Landfill Dow Location _____
- Other Company _____

Facility Name _____
Location _____

Note: Use the forms provided by the outside company for Waste Characterization and Land Disposal Restriction documentation rather than this LDR Worksheet unless the company does not have available forms.

B. LAB PACKS

1. If the Lab Pack Exemption is to be used, complete the Lab Pack Certification form and send a copy with each shipment of waste. This applies to both on-site and off-site shipments. Other LDR sections do not need to be completed. To add this form to your waste characterization packet, go to the Main Form Section I and double-click the "Add" button for the "LDR App IV Lab Pack Certification"

C. LAND DISPOSAL RESTRICTION NOTIFICATION

This waste is subject to Land disposal Restrictions under 40 CFR 268. Attach Waste Analysis, if available.

1. This waste requires treatment to meet the LDR requirements. *Do not complete Section E.*
 meets the treatment standards or has been treated by the [LDR specified technology](#). (Complete Section E, LDR Certification, in addition to the other sections.)
2. This waste meets the definition of a: Wastewater Non-wastewater.
A wastewater is a waste that contains <1% by weight Total Suspended Solids AND <1% by weight Total Organic Carbon
3. The information applicable to this waste is identified below. Check off at least one of the applicable boxes below. If you do not know which box(es) to check, consult the Approver.
 - a. The waste is not restricted because there is no land disposal (or land disposal of waste treatment residues, e.g., ash).
 - b. The waste is a F001-F005 spent solvent. Complete the LDR Attachment 1 to specify the applicable constituents.
 - c. The waste is F039 multi-source leachate. Complete the LDR Attachment 2 to specify the constituents present in the waste.^a
 - d. The waste is an EPA listed hazardous waste (other than F001-F005, F039) as determined in Section A.4 of the RCRA Assessment Worksheet. Copy the EPA hazardous waste numbers to Section D of this LDR worksheet.
 - e. This is a RCRA hazardous wastewater that is treated in a elementary neutralization system, wastewater treatment system, is discharged through an NPDES outfall, and/or is sent to a Publicly Owned Treatment Works, which are all subject to the Clean Water Act. Subsequent to generation, the wastewater becomes exempt from further RCRA regulation because it is managed as specified at 40 CFR 261.4(a)(2). Copy the EPA hazardous waste numbers from Section A and B of the RCRA Assessment Worksheet to Section D of this LDR worksheet.
 [This is the One-time Notice to File Pursuant to 40 CFR 268.7(a)(7)].
 - f. The waste is characteristically hazardous (D001-D043) as determined in specified in Section B of the RCRA Assessment Worksheet. Copy the EPA hazardous waste numbers to Section D of this LDR worksheet. Complete the LDR Attachment 2 for the Underlying Hazardous Constituents present in the waste.^{a,b} Specify any applicable Subcategories for these characteristic wastes in Section D of this LDR Worksheet. (Refer to [LDR Treatment Standards Table](#))
 - g. The waste is RCRA-hazardous debris that will be or has been treated via alternative treatment technologies. Copy the applicable EPA hazard codes (D,K,F,P,U) associated with the debris to Section D of the LDR worksheet. Attachments 1 and 2 do not need to be filled out. **Contact the Approver before checking this box.**
 - h. This waste is soil contaminated with RCRA-hazardous waste for which the Alternative LDR Treatment Standards for Soil of 40 CFR 268.49 (see [Soil Alternative Concentration Limits](#)) will be used. **Contact the Approver before checking this box.** If the Alternative LDR Treatment Standards for Soil are not going to be used, then treat the contaminated soil as any other RCRA-hazardous waste.

^a LDR Attachment 2 is not required for Freeport on-site generators who send this waste to the B-33 Rotary Kiln Incinerator. For other situations where the waste will be monitored for all constituents, there is no need to specify them. Consult the Approver if you have questions.

^b LDR Attachment 2 is not required for the following Subcategories:

- D001 ignitable wastes that are incinerated or recovered,
- D003 reactive cyanides or sulfides,
- D006 cadmium batteries,
- D008 lead acid batteries,
- D009 high mercury organic wastes, and
- D009 high mercury inorganic wastes.

Appendix C Drum Storage Area Compatibility Procedure

560 Block RCRA Waste Drum Storage Area Compatibility Procedure

Scope The following procedure is to be used by the Site Waste Coordinator or designated personnel whenever Hazardous Waste Drums are to be stored in the 560 Block RCRA Waste Drum Storage Area.

Attributes and Categories

Categories
 Critical Emergency Operating AOP Other _____

Attributes (Operating/Other) (routine means done at least once every 90 days)
 Routine Non-Routine

Hazards and Precautions

The table below lists job hazards associated with completing this procedure and the precautions that should be taken for safety, environmental, and Good Manufacturing Practices before beginning this procedure.

Hazard	Precaution
Chemical Exposure	Make sure drums are clean, bungs are tight and lids secure. Note: In case of a spill refer to Department PPE Grid for protective gear requirements specific to waste drum handling.

Before You Begin Before beginning this procedure reference a copy of the Pittsburgh RCRA Hazardous Waste Permit, Drum Storage Area, Block 560, Table C-1 Waste Stream Description section.

Procedure Follow the steps below to complete the RCRA Storage Waste Drum Compatibility Procedure.

Step	Action
1	Isolate waste drums that need to be moved to the 560 Block RCRA Hazardous Waste Drum Storage Area.
2	Reference a copy of the Pittsburgh RCRA Hazardous Waste Permit, Drum Storage Area, Block 560, Table C-1 Waste Stream Description section to verify that the waste stream is permitted to go into the RCRA storage area.
3	Once verification of the waste stream is made, refer to the Compatibility Code section of Table C-1 and determine the compatibility code number.

Continued on next page

560 Block RCRA Waste Drum Storage Area Compatibility Procedure, Continued

Procedure
(continued)

Step	Action
4	When placing drums in the RCRA storage area note the compatibility code of drums stored in either section to identify proper segregation.
5	Compatibility code numbers 1 and 2 can be stored in the same section
6	Compatibility code numbers 1 and 3 can be stored in the same section
7	Compatibility code numbers 2 and 3 can not be stored in the same section
8	Compatibility code number 4 can not be stored with any other material and must be isolated to one section.

Revision History

The following table lists all changes made to this document.

Date	Revised By	Changes
11/30/2005	Anthony Cobiseno	Document created. Approved by: Greg Dubitsky
8/14/15	A. Cobiseno	Reviewed No Changes Approved by: Jeff Cast

Appendix D

Container Specification

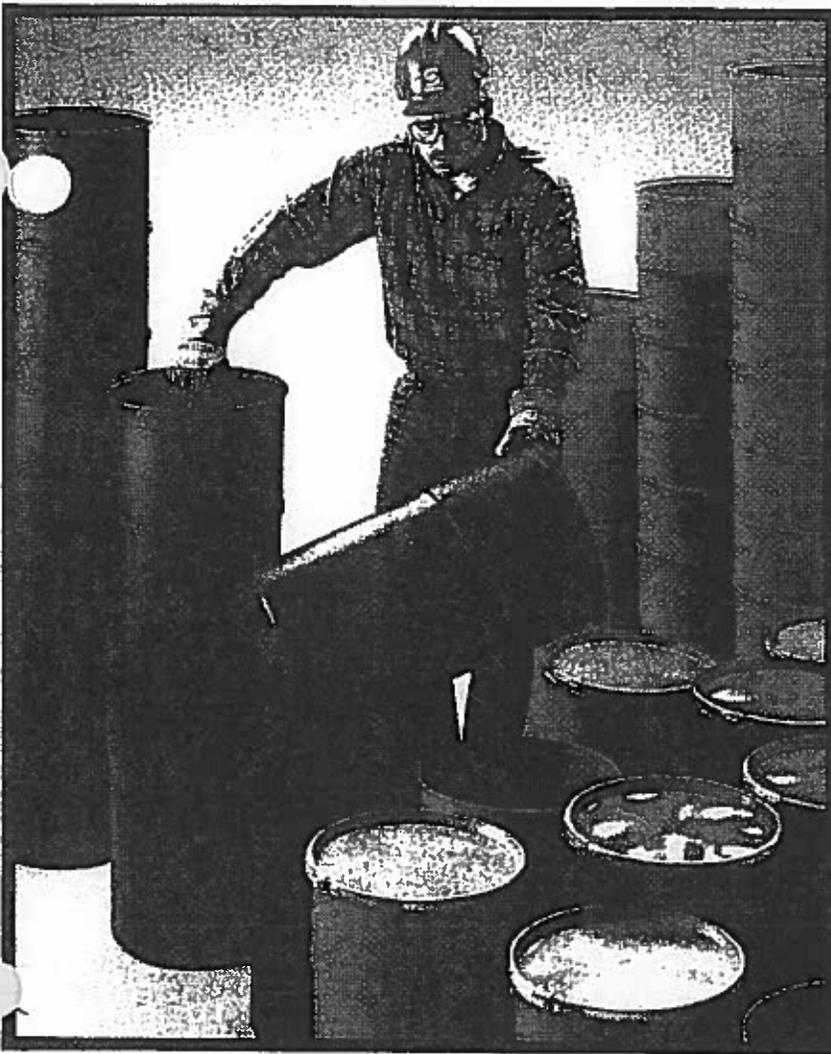
Drums Used for Packaging and Storing of Hazardous Waste

Size (Gallons)	Type of Drum
14	Open head plastic drum
25	Open head plastic drum
55	Open head plastic drum
55	Tight head plastic drum
55	Open head steel drum
55	Tight head steel drum
85	Open head steel drum

OPEN TOP DRUMS

12 Gallon

14 Gallon



Sonoco plastic drums are made from a special high-density, high-molecular-weight polyethylene resin. This material makes the drums extremely strong and rigid yet far lighter than steel drums, allowing easier handling and savings on shipping costs. And plastic drums can be stored outside without rusting, so valuable warehouse space is saved too.

Sonoco is the only supplier with a complete line of open top drums to meet your packaging needs. Drum covers are available with a variety of bung and vent configurations. Open top styles feature lever lock or bolt ring locking bands. All accommodate parrot-beak handling equipment. And since the drums are completely burnable, they minimize "cradle-to-grave" liability and eliminate repacking of waste for incineration.

The 12 and 14 gallon open top drums are ideal for a wide range of regulated and non-regulated packaging applications including industrial and pharmaceutical powders, detergents, photographic, mill and other chemicals, as well as hazardous waste. They can also be used for virtually any food product such as pickles, vitamins, molasses, flavorings, sauces and spices. Plastic drums can be reconditioned and have no inner liner to crack or fracture, eliminating a source of contamination.

Sonoco plastic drums are in full compliance with FDA, U.S. Department of Agriculture specifications and the Drug and Cosmetic Act.

Item	Nominal Capacity	Closing Ring	Shipping Cu. Ft.	Top Diameter	Overall Drum Ht.	Tare Weight	Minimum Wall Tks.	Colors	DOT Approvals	Expected DOT/UN Designations
012	12 gal	SLL, BOLT	2.4	15.0	23.0	6.7	0.090	ALL	E7768	1H2/Y40/S/91/USA/M-
014	14 gal	SLL, BOLT	2.7	15.0	26.0	7.3	0.090	ALL	E7768	1H2/Y40/S/91/USA/M-

COLORS AVAILABLE: Black • Blue • Natural • Orange • Purple • Red • Gray • Green • White

Sonoco
Plastic Drum^{INC.}



1225 Davies Street, Lockport, IL 60411, 815-838-7210



THE DOW CHEMICAL COMPANY
PACKAGE SPECIFICATION

SPEC. NUMBER/DATE : 4216727-08/20/93
DATE SPEC. PRINTED: 03/03/95

PACKAGE SPECIFICATION SUMMARY

DESCRIPTION: SEE PROD LIST:14GAL/VERSENE/WASTE/POP

CONSTRUCTION DOCUMENT NUMBER: 007043 CONST. DATE: 08/20/93

PACKAGE TYPE : PLASTIC DRUM
MATERIAL GROUP: PLASTIC
PACKAGE STYLE: FULL OPEN-HEAD
PACKAGE CHAR :

PACKAGE TYPE CODE : 028
MTL GROUP CODE : 06
PACKAGE STYLE CODE: 017
PACKAGE CHAR CODE :

CONSTRUCTION REVISION REMARK :
ADDED PRODUCT LIST - NO CHANGE TO CONSTRUCTION.
REPLACES SPECIFICATION NUMBER 4216727-06/08/93.

THE INFORMATION IS INTENDED FOR USE BETWEEN DOW AND ITS SUPPLIERS.
WARRANTY OF ANY KIND, EXPRESS, IMPLIED OR OTHERWISE, IS MADE
REGARDING USE OR APPLICATION OF THIS SPECIFICATION BY OTHERS.

GENERAL DESCRIPTION:

PACKAGE TYPE..... PLASTIC DRUM
PACKAGE MATERIAL GROUP.. PLASTIC
PACKAGE STYLE..... FULL OPEN-HEAD
PACKAGE CHARACTERISTICS.
PACKAGE CAPACITY..... 14 GALLON
PACKAGE TARE WEIGHT..... 7.3 LBS. (APPROX.)
PACKAGE EXPORT CUBE..... 2.7 CU. FT.

CONSTRUCTION DETAILS:

MANUFACTURER..... SONOCO PLASTIC DRUM
STYLE..... O-14 - FULL OPEN HEAD, TAPERED DRUM
OUTSIDE DIMENSIONS **... TOP - 14.15" DIA. X 26" HT.
BOTTOM - 13.09" DIA. X 26" HT.

BODY MATERIAL..... HIGH MOLECULAR WEIGHT, HIGH DENSITY
POLYETHYLENE
COLOR..... BLACK
RESIN MANUFACTURERS..... MOBIL ; PHILLIPS PETROLEUM
RESIN NUMBERS..... HYA-024 ; MARLEX HXM TR-570
RESIN REGRIND %..... 25% MAXIMUM
MELT FLOW INDEX 5.5 - 7.5 ; 5.0 (G/10 MIN)
MELTING TEMP. RANGE..... 380 DEGREES TO 420 DEGREES FAHRENHEIT
ESCR (ASTM D-1693, F50). 1000 HRS (MINIMUM)
MINIMUM WALL THICKNESS.. 0.090"
UN EMBOSsing..... UN1H2/Y37/S/YR/USA/MFGR

COVER MATERIAL..... HIGH MOLECULAR WEIGHT, HIGH DENSITY
POLYETHYLENE.
COLOR..... BLACK OR BLUE
RESIN MANUFACTURERS..... CAIN ; PHILLIPS PETROLEUM
RESIN NUMBERS..... 5372 ; 5060
MELTING TEMP. RANGE..... 380 DEGREES TO 420 DEGREES FAHRENHEIT
MELT FLOW INDEX..... 5.0 - 8.0 (G/10 MIN.)

FITTING MANUFACTURER.... RIEKE OR SONOCO PLASTIC DRUM
FITTING DESCRIPTION..... 2" NPT PLUG; OFF-CENTER, ONE MINIMUM
FITTING MATERIAL..... HIGH DENSITY POLYETHYLENE

CONTINUED ON PAGE 2)

CONSTRUCTION DETAILS: (CONTINUED)

PLUG TORQUE..... 20 FT. LBS.
GASKET MATERIAL..... CELLULAR-LATEX EXPANDED FOAM (PREFORMED),
OFF WHITE.
CLOSURE..... 18 GAUGE, EPOXY COATED, STEEL LOCKING
BAND OR BOLT RING.
LIP/HEIGHT/TRIM..... 0.312"/FLAT, SMOOTH AND SQUARE

REMARKS.....

1. MUST BE PALLETIZED IN STACKS AND STRETCHED WRAPPED (48 PER PALLET)
2. NOTIFICATION OF ANY CHANGE TO RESIN OR DRUM PROCESSING MUST BE FORWARDED TO THE DOW PLANT CONTACT AND PACKAGING & DESIGN DEPT. (517-636-1501) FOR TESTING AND APPROVAL.

PERFORMANCE:

- 1) IN ADDITION TO DOT/UN REQUIRED TESTS, THE DRUM MUST SUCCESSFULLY PASS:
 - WARM STACK TEST - SUBJECT THE DRUM TO HIGH TEMPERATURES (90 DEGREES FAHRENHEIT MINIMUM) AND STACK 3 HIGH OVER A 30 DAY PERIOD.
 - COLD IMPACT DROP - FREEZE MATERIAL IN DRUM AND DROP FROM A 6 FT. DROP HEIGHT.

PRODUCT LIST:

<u>PRODUCT NAME</u>	<u>LEVEL 70</u>	<u>LOCATIONS</u>	<u>QAC</u>
VERSENE NA CHELATING AGT	90864	TEXVER	870
MISC. HAZARDOUS WASTE	96589	MID00, TEXMIS PIT, TOR, LUD BYT, LOUMIS	990



PLASTIC DRUM STANDARD PRODUCT DESCRIPTION

Product Specification Number: POX25X-XX-XX-XX-XX-XX		Product Name: O-25			
Regulatory Information: un 1H2/Y75/S (Test Report P215HS) un 1H2/Y75/S (Test Report P268HS)	Bill of Materials: Body: O-25, injection molded high density polyethylene (HDPE) Cover: Plain or with 4" bung, HDPE Lockband: Plastic or steel Sidelever Lockband	Product Illustration: 			
Nominal Capacity: 25.0 U.S. Gallons	Outage: 0.6 U.S. Gallons	Opening I.D.: 19.5 inches	Total Weight: 10.1 lbs.		
Actual Capacity: 25.6 U.S. Gallons	Outage %: 2.4 %	Nominal O.D.: 20.8 inches	Body Weight: 7.2 lbs.		
Export Cubes: 5.79 cu. ft.	Overall Height: 25.8 inches	Taper Height: 12.6 inches	Nesting Height: 10.6 inches		
Min. Blocking Diameter: 17.2 inches	Body Height: 23.3 inches	Min. Wall Thickness: 0.125 inches	Chime Height: N/A inches		
Special Notes:					
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>1) Maximum filling temperature 150 F for all foods and other FDA regulated substances. 160 F for all non-foods and other substances that are not regulated by FDA. When filled at these recommended maximum filling temperatures drums should be allowed to cool to ambient prior to stacking. Drums filled at elevated temperatures should be vented properly to prevent vacuum formation within the drum which can compromise stacking capability.</p> <p>2) Stack 2 high (1+1) maximum with pallets between drums. Maximum top load on bottom drums not to exceed 200 lbs. each. Pallets should be of good quality that provides adequate support for plastic drums.</p> </td> <td style="width: 50%; vertical-align: top;"> <p>3) Handle with parrotbeak, side grabber, and sling.</p> <p>4) Drums are fully nestable without airlocking.</p> <p>5) Recycle symbol embossed on bottom.</p> <p>6) Compatibility with hazardous materials as listed in 49CFR are the responsibility of the filler.</p> <p>7) When using steel lockband total weight is 11.8 lbs.</p> <p>8) Test Report P215HS uses metal lockband and Test Report P268HS uses plastic lockband.</p> </td> </tr> </table>				<p>1) Maximum filling temperature 150 F for all foods and other FDA regulated substances. 160 F for all non-foods and other substances that are not regulated by FDA. When filled at these recommended maximum filling temperatures drums should be allowed to cool to ambient prior to stacking. Drums filled at elevated temperatures should be vented properly to prevent vacuum formation within the drum which can compromise stacking capability.</p> <p>2) Stack 2 high (1+1) maximum with pallets between drums. Maximum top load on bottom drums not to exceed 200 lbs. each. Pallets should be of good quality that provides adequate support for plastic drums.</p>	<p>3) Handle with parrotbeak, side grabber, and sling.</p> <p>4) Drums are fully nestable without airlocking.</p> <p>5) Recycle symbol embossed on bottom.</p> <p>6) Compatibility with hazardous materials as listed in 49CFR are the responsibility of the filler.</p> <p>7) When using steel lockband total weight is 11.8 lbs.</p> <p>8) Test Report P215HS uses metal lockband and Test Report P268HS uses plastic lockband.</p>
<p>1) Maximum filling temperature 150 F for all foods and other FDA regulated substances. 160 F for all non-foods and other substances that are not regulated by FDA. When filled at these recommended maximum filling temperatures drums should be allowed to cool to ambient prior to stacking. Drums filled at elevated temperatures should be vented properly to prevent vacuum formation within the drum which can compromise stacking capability.</p> <p>2) Stack 2 high (1+1) maximum with pallets between drums. Maximum top load on bottom drums not to exceed 200 lbs. each. Pallets should be of good quality that provides adequate support for plastic drums.</p>	<p>3) Handle with parrotbeak, side grabber, and sling.</p> <p>4) Drums are fully nestable without airlocking.</p> <p>5) Recycle symbol embossed on bottom.</p> <p>6) Compatibility with hazardous materials as listed in 49CFR are the responsibility of the filler.</p> <p>7) When using steel lockband total weight is 11.8 lbs.</p> <p>8) Test Report P215HS uses metal lockband and Test Report P268HS uses plastic lockband.</p>				
<p>Data, dimensions, and information provided on this document are considered as nominal values for general purpose use in evaluating this product for customer's application. These are not considered as manufacturing specifications. It is the responsibility of the customer or filler to select the appropriate packaging for use or resale, based on all information at their disposal, including specific application, regulatory compliance, product compatibility, transport, storage, and material handling requirements. Regulatory compliance for remanufacture, repair, or reuse of packaging is the responsibility of the reconditioner, customer and filler. Refer to appropriate regulations for packaging filling, transport, and storage requirements with your specific product.</p> <p>WE HEREBY DISCLAIM AND EXCLUDE ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.</p>					

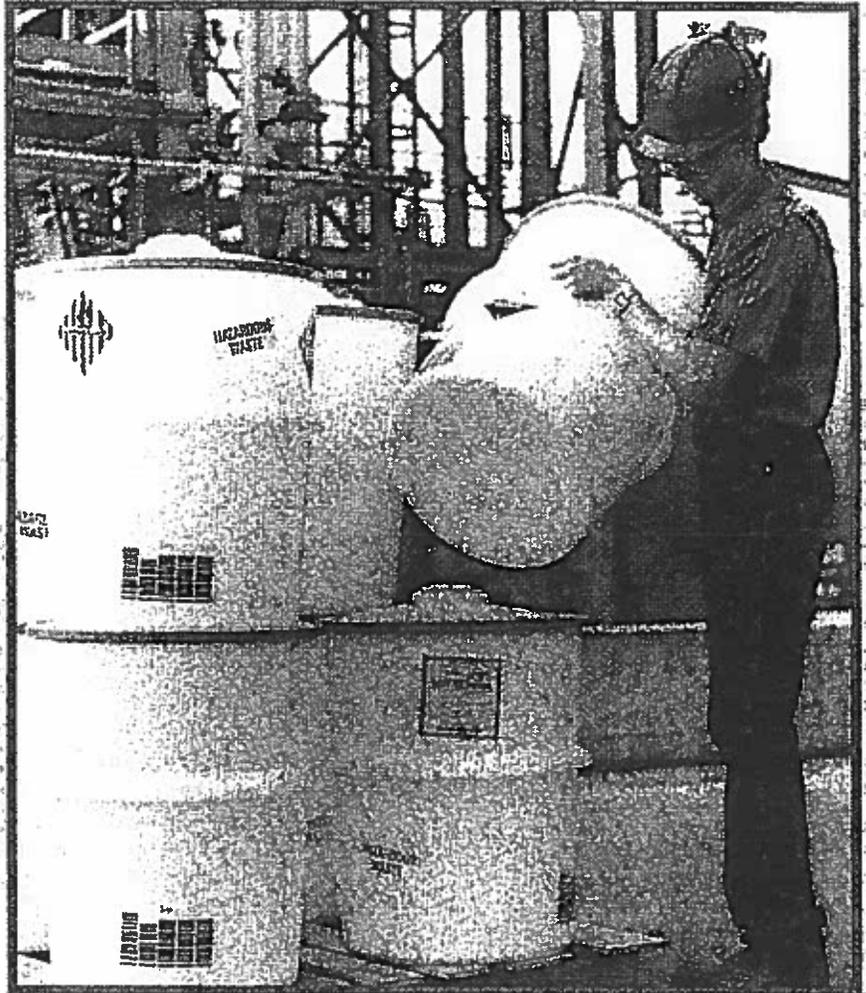
Revision 4 : January 2010

Greif, Inc.
425 Winter Road
Delaware, Ohio 43015
Phone (740) 549 6000
www.greif.com

Introducing the

DAK-PAK™

**25 GALLON OPEN-TOP
HAZARDOUS WASTE CONTAINER**



Sonoco's new DAK-PAK plastic drum offers an innovative solution to the growing disposal problems of hazardous and medical wastes.

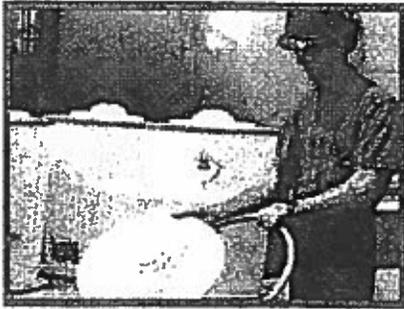
With landfill sites becoming a growing environmental liability, the DAK-PAK offers many advantages over steel and fibre drums. Easier to handle, they provide

excellent chemical and weather resistance and are fully burnable in today's incinerator systems.

Designed to support a safe, clean environment, they establish a new standard of performance in the handling, storage, and transportation of hazardous wastes.

 **Sonoco**
Plastic Drum

TOUGHER THAN STEEL



Molded from a special high-density, high molecular weight polyethylene, these drums provide superior stack strength, impact and environmental stress-crack resistance.

Unlike steel drums, they won't chip, crack, or flake when exposed to

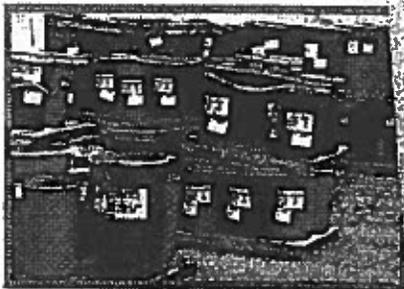
harsh chemicals or hazardous waste. Naturally, they won't corrode or rust like steel or deteriorate like fibre drums when stored outside. And with no repacking required before incineration, disposal costs may be reduced by as much as 50 percent.

SAFER FOR THE ENVIRONMENT

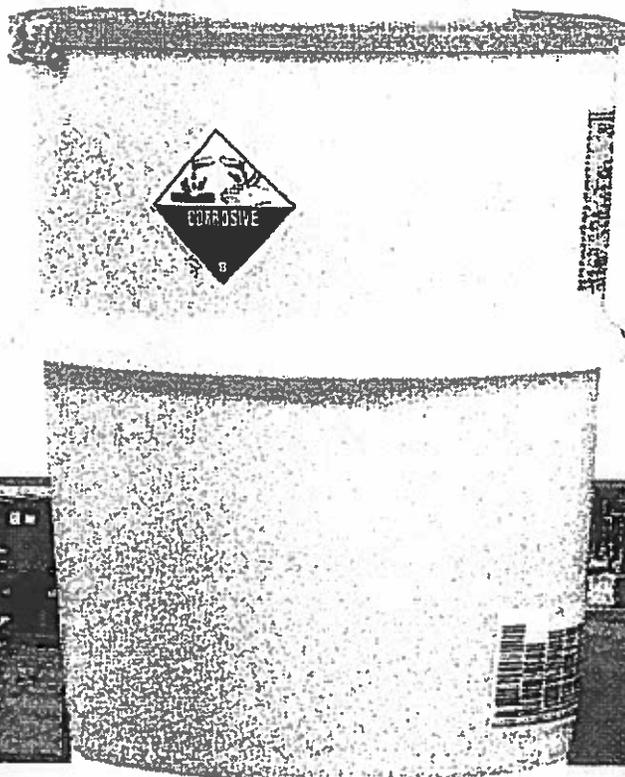
For transporting and disposal of chemical, medical, and hazardous waste, the DAK-PAK offers a new measure of environmental safety. The resiliency and elasticity of molded polyethylene minimizes denting and loss of contents should an accidental impact occur. A strong HDPE cover and steel locking band ensures a secure closure, while

a 4" top bung permits easy inspection, sampling, and testing. For positive identification, cover recesses protect a dedicated label area. By

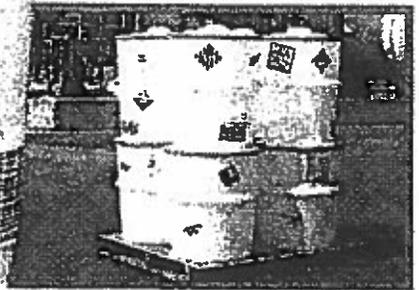
sparing people and the environment from the dangers of hazardous exposure, the workplace enjoys a more confident level of safety while reducing risks of future liabilities.



Existing drums posed difficult inspection and stackability problems for safely transporting hazardous waste.

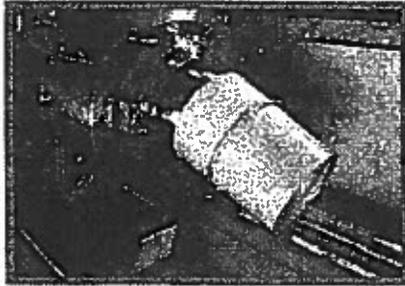


The DAK-PAK offers a new commitment to hazardous waste reduction and environmental protection.



The DAK-PAK'S resiliency will minimize the risk of exposure to people and the environment.

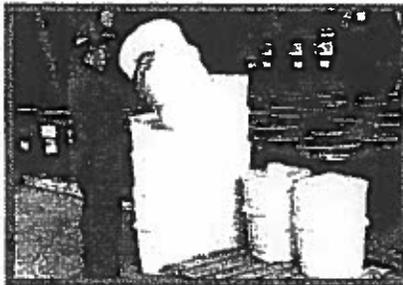
THE DAK-PAK STORY



Husky's 900 (1000 U.S.) ton injection machine achieved a maximum part weight variation of ± 2 g (.07 oz.) on a 3410 g (120.3 oz.) shot.

After struggling for years to find a plastic drum that would safely transport and ease disposal of hazardous waste, a major chemical company worked with Sonoco Plastic Drum to design an innovative drum with specific performance requirements. When it became apparent that injection molding was a more viable production process than conventional blow-molding, Sonoco began talking with Husky Injection Molding Systems Ltd. about an integrated injection machine with molds for

both the drum and cover. Guided by Sonoco's Total Quality System which assures product quality and system repeatability, Husky applied computerized flow modelling techniques to determine the optimal mold configuration and injection speeds. The final container provided by Sonoco meets performance, handling, and transportation requirements and is now being adopted for hazardous waste shipments and disposal.



EASY TO HANDLE

At 11 lb., the DAK-PAK is much lighter than steel drums to save both handling and freight charges.

Inbound drums can be nested to conserve truck, plant and warehouse space and can be easily separated by hand prior to filling. Filled, or outbound, drums are stackable with a tiered bottom-to-top interlock feature.

The molded-in side-wall ring lets your existing forklift, parrot-beak, or chain-hoist do their jobs. And the low center of gravity and non-slip bottom skirt provide maximum stability on pallets and conveyors.

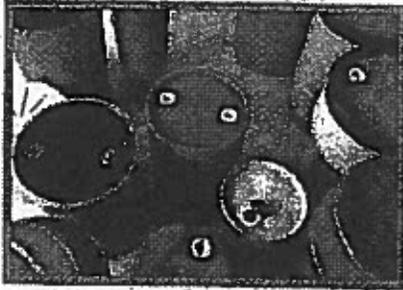
With less weight, lower costs, and more room, you'll have fewer headaches. And that's always easy to handle.

The handling ring strengthens the sidewall and allows the drums to be moved by conventional forklift trucks.

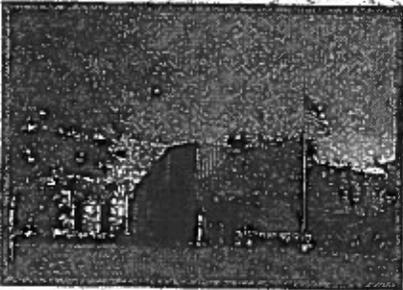
SPECIFICATIONS

Material:	High Density, High Molecular Weight Polyethylene (HDHMWPE)	Tare Weight:	11 lb. (5.0 kg)
Closing Ring:	18 gauge epoxy coated steel with bolt ring or optional side lever lock	Colors Available:	Natural, Black, Red. Other colors available.
Capacity:	25 U.S. Gallons (95 l) Maximum 250 lb. (114 kg)	Special Features:	4" (100 mm) center bung in cover for safe inspection
Diameter:	20 1/2" (52 cm)		Nestable without vacuum locking
Height (With cover):	26" (66 cm)	DOT Status:	Exemption E7768

CUSTOMER SUPPORT



Sonoco has a full range of plastic drums available for many applications. Special drums can be designed for more unique situations.



At Sonoco's premier R&D facility, new designs are subjected to a range of compatibility, climate, and performance tests to assure consistent product quality.



Sonoco can also help improve the productivity of your complete packaging line.

Like all of Sonoco's plastic drums, you are assured that every DAK-PAK drum is manufactured to the highest standards of quality to consistently meet your performance expectations.

With our four U.S. manufacturing operations, Sonoco Plastic Drum also gives you the resources and supply security of one of the world's leading packaging companies.

And because we realize that packaging efficiency goes beyond the package itself, Sonoco can work with you as a partner to streamline your complete packaging line, from drum delivery to filling and handling.

So call or fax us your name and number to set up a free consultation. Sonoco plastic drums can help you handle it.



SONOCO PRODUCTS COMPANY

Sonoco Plastic Drum Inc. 215 Midland Trail,
1225 Davies Street, Mt. Sterling,
Lockport, Illinois 60443 Kentucky 40353
Tel: (815) 838-7210 Tel: (606) 498-6863
Fax: (815) 838-8521 Fax: (606) 498-2958

9280 Baythorne Drive, 100 Alex St., Lavonia,
Houston, Texas 77041 Georgia 30553
Tel: (713) 462-0073 Tel: (404) 356-3400
Fax: (713) 462-0413 Fax: (404) 356-3401

DAK-PAK is a Trademark of Sonoco Plastic Drum Inc.

NOVEMBER 1990

PRINTED IN CANADA

THE DOW CHEMICAL COMPANY
PACKAGE SPECIFICATION

SPEC. NUMBER/DATE : 4206454-09/01/93
DATE SPEC. PRINTED: 03/03/95

PACKAGE SPECIFICATION SUMMARY

DESCRIPTION: MISC/HAZ WASTE/25GAL/DAKPAK/POP

CONSTRUCTION DOCUMENT NUMBER: 005931 CONST. DATE: 09/01/93

PACKAGE TYPE : PLASTIC DRUM
MATERIAL GROUP: PLASTIC
PACKAGE STYLE: FULL OPEN-HEAD
PACKAGE CHAR : LOCKING BAND

PACKAGE TYPE CODE : 028
MTL GROUP CODE : 06
PACKAGE STYLE CODE: 017
PACKAGE CHAR CODE : 008

CONSTRUCTION REVISION REMARK :
REMOVED PLUG INFORMATION - REPLACES SPEC # 4206454-8/16/93.

THIS INFORMATION IS INTENDED FOR USE BETWEEN DOW AND ITS SUPPLIERS.
NO WARRANTY OF ANY KIND, EXPRESS, IMPLIED OR OTHERWISE, IS MADE
REGARDING USE OR APPLICATION OF THIS SPECIFICATION BY OTHERS.

GENERAL DESCRIPTION:

PACKAGE TYPE..... PLASTIC DRUM
PACKAGE MATERIAL GROUP.. PLASTIC
PACKAGE STYLE..... FULL OPEN-HEAD
PACKAGE CHARACTERISTICS. LOCKING BAND
PACKAGE CAPACITY..... 25 GAL/250 LBS.(MAX)
PACKAGE TARE WEIGHT..... 11 LBS. (APPROX)
PACKAGE EXPORT CUBE..... 5.2 CU. FT.

CONSTRUCTION DETAILS:

MANUFACTURER..... SONOCO PLASTIC DRUM
MANUFAC. DESIGNATION.... 0-25 (DAK-PAK)
OUTSIDE DIMENSIONS..... 20-1/2" DIA. X 26" HIGH
BODY MATERIAL..... COPOLYMER HIGH DENSITY POLYETHYLENE
RESIN MANUFACTURER..... OXYCHEM
RESIN NUMBER..... M4621
BODY COLOR..... NATURAL
RESIN REGRIND %..... NONE
MELT INDEX..... 2.1 G/10 MIN.
DENSITY..... 0.946 G/CC
ESCR..... 1000 HRS (MIN)
MINIMUM WALL THICKNESS.. 0.090"
UN EMBOSsing..... UN1H2/Y125/S/YR/USA/MFGR
CANADIAN REGISTRATION #. CAN/M4148 2-516
LOCKING BAND..... 18 GA. EPOXY COATED STEEL LEVER LOCK
OR BOLT RING (THORTON SPECIAL)
DRUM OPENINGS..... NONE
COVER MATERIAL..... COPOLYMER HIGH DENSITY POLYETHYLENE
RESIN MANUFACTURER..... OXYCHEM
RESIN NUMBER..... M4621
COVER COLOR..... RED FOR MEDICAL WASTE, AND NATURAL FOR
ALL OTHER MATERIALS.
COVER GASKET MATERIAL... CHEM-CAST 611
CAP SEAL..... NONE
REFERENCE DOCUMENTS..... J-4440 SONOCO PLASTIC DRUM DRAWING,
DATED 10/23/90. (DRAWING IS ON FILE IN
PACKAGING & DESIGN, 2020 BLDG)
REMARKS.....

CONSTRUCTION DETAILS: (CONTINUED)

1. DRUMS ARE FULLY NESTABLE AND CAN BE EASILY SEPARATED WITHOUT EQUIPMENT.
2. FOR USE OF HAZARDOUS MATERIAL LOADINGS COMPLYING WITH THE DOT CFR 49 (HM-181), UN AND CANADIAN REGULATIONS.
3. MAXIMUM STACKING IS 4 DRUMS HIGH.
4. THE COVERS AND BOTTOMS OF THE DRUMS INTERLOCK, MAKING THEM STACKABLE; CAN BE STACKED 2 HIGH, 8 PER PALLET UTILIZING A PALLET CAP (PLYWOOD).
5. DRUMS ARE TO BE NESTED AND STRETCH WRAPPED, 48 PER PALLET, WHEN SHIPPED DIRECTLY FROM SONOCO.

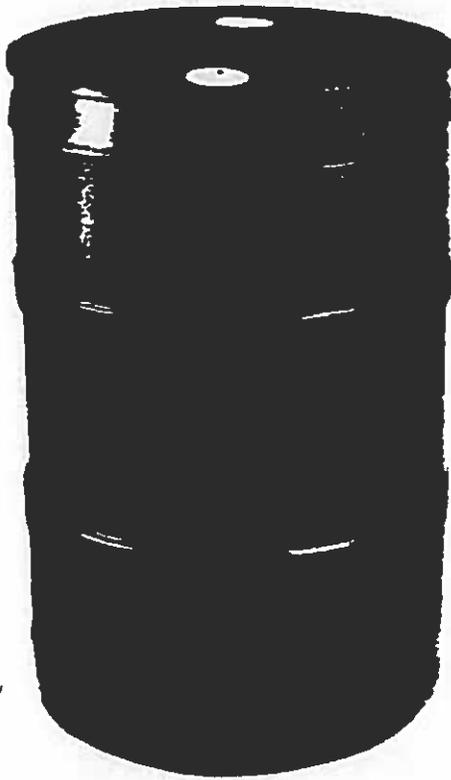
PERFORMANCE:

REFERENCE DOCUMENTS..... 49 CFR (HM181); UN RECOMMENDATIONS ON THE
TRANSPORT OF DANGEROUS GOODS.
PERFORM. REQUIREMENTS... MUST MEET UN/DOT REGULATORY REQUIREMENTS.



PLASTI-DRUM CORP.

1225 DAVIES STREET • LOCKPORT, ILLINOIS 60441 • (815) 838-7210



PR-55

Rated..... 55 gal.
Weight 26 lbs.
Openings ... 2-2" Buttress

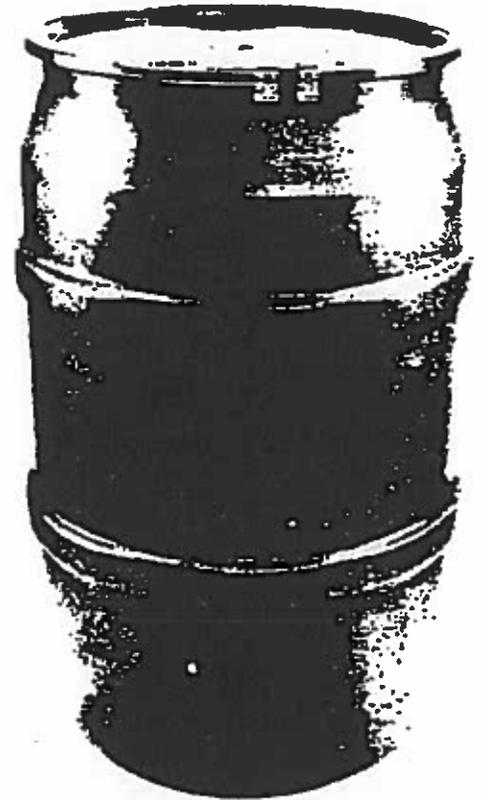
DOT E 6800



PR-30

Rated..... 30 gal.
Weight 16 lbs.
Openings ... 2-2" Buttress

DOT 34



OS-55

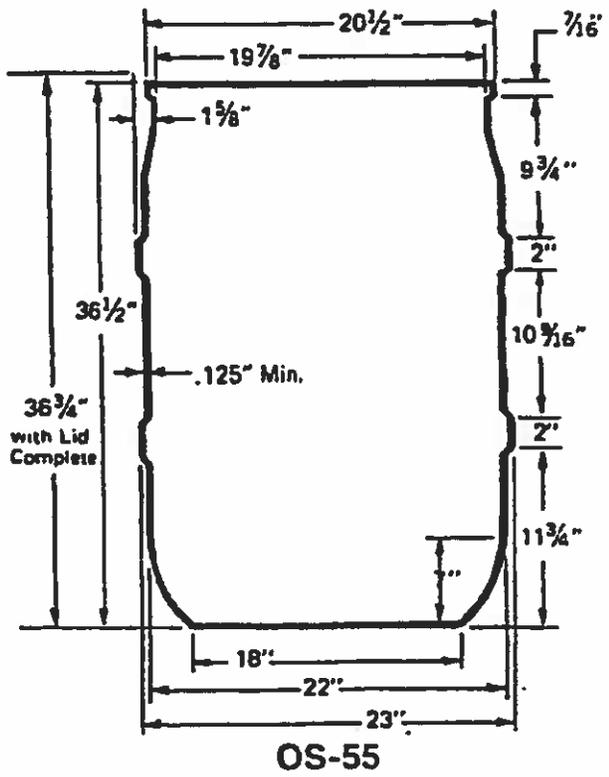
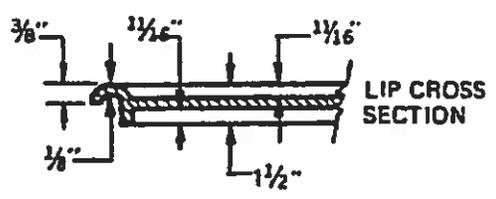
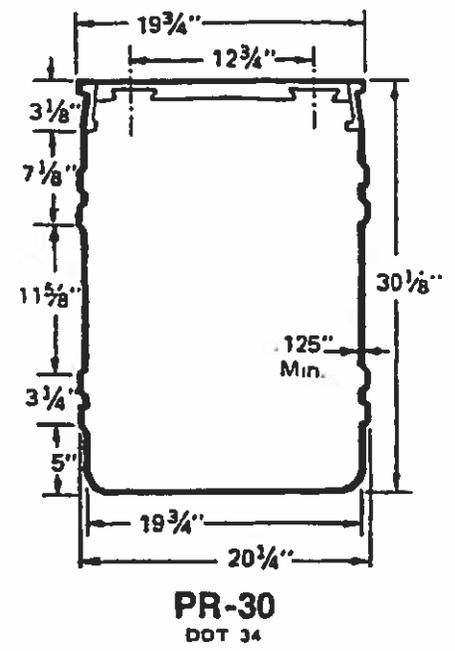
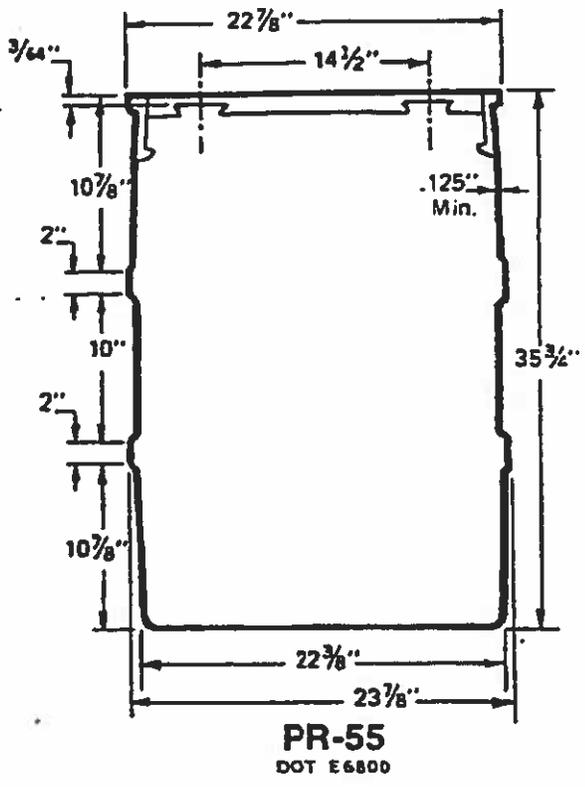
Rated..... 55 gal.
Weight 21 lbs.
Openings ... 2-2" Buttress

DOT E 7708

- Standard colors – all containers Blue, Black, White or Natural.
- Containers are made of one piece rigid, tough, high molecular weight polyethylene. They are lightweight, will not dent, crack, rust or corrode. Material withstands below zero cold to +170°F. and has U/V inhibitor to withstand sunlight.
- Most chemicals and foods can be shipped free from contamination and protected from foreign odors or taste.
- All polyethylene ring can be color coded for product identification on special order.
- Easy handling and stacking with the all polyethylene ring.
- Polyethylene used in the manufacture of all containers is approved by the United States Department of Agriculture and complies with the Federal Food, Drug and Cosmetic Act.

Manufacturers of Quality Plastic Containers

DOT E 6500 DOT SPEC 34 DOT E 7760



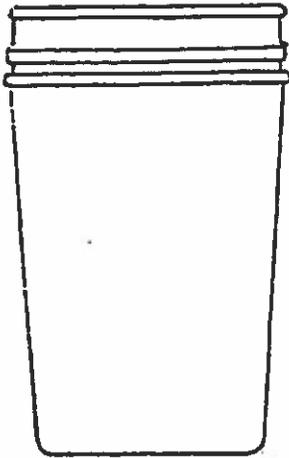
PR-55 stacks four high
PR-30 stacks four high
OS-55 stacks two high

- STRAIGHT SIDED
- SHIP FOUR ACROSS IN TRAILER
- REDUCED FREIGHT COSTS
- MAINTENANCE FREE
- EASY HANDLING
- RECONDITIONABLE
- ENERGY EFFICIENT



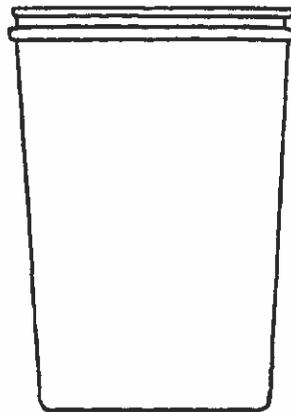
PLASTI-DRUM CORP.
1225 DAVIES STREET • LOCKPORT, ILLINOIS 60441
(815) 838-7210

OPEN-TOP POLYETHYLENE SHIPPING CONTAINERS



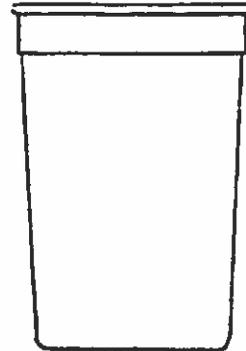
0-55

Rated 55 gal.
Weight 24 lbs.
Height 38 3/4"
Width 23 1/4"



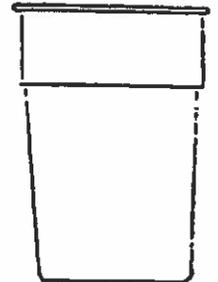
0-45

Rated 40 gal.
Weight 21 lbs.
Height 34 3/4"
Width 23 3/4"



0-30

Rated 30 gal.
Weight 15 lbs.
Height 30 1/4"
Width 21 1/4"



0-14

Rated 14 gal.
Weight 5 lbs.
Height 23 1/2"
Width 15 1/2"

- LOW COST
- MADE TO WITHSTAND ROUGH HANDLING
- TAMPER PROOF SEAL AVAILABLE
- SHIPPED FROM INVENTORY

NESTS WHEN
NOT IN USE
SAVES
STORAGE SPACE



- Standard colors — all containers Blue or Black. Names or messages can be embossed on top or side wall of container. All open-top containers are nestable.
- Containers are made of one-piece, rigid, tough, polyethylene. They are lightweight, will not dent, crack, rust or corrode. No liner is needed. Material withstands below zero cold to +170° F. and has U / V inhibitor to withstand sunlight.
- Most chemicals and foods can be shipped free from contamination and protected from foreign odors or taste.
- Low-cost containers can be furnished in any color for easy identification or coding on special order.
- Polyethylene used in the manufacture of all containers is approved by the UNITED STATES DEPARTMENT OF AGRICULTURE and complies with the FEDERAL FOOD, DRUG and COSMETIC Act sec. 121-2501 dated February 19, 1966.

PLASTI-DRUM CORP
1225 DAVIES, LOCKPORT, IL. 60441

THE RESIN: 5701

THE REASON: Knock resistance

No telling where Chemplex high molecular weight polyethylene will turn up these days. In re-usable containers from 2 to 82 gallons. In gas tanks for cars, rec vehicles, lawn mowers. In sporting products, road barriers—wherever hard knocks prevail. Coming soon: more noteworthy HMW resins. To get the news as soon as it breaks, alert your Chemplex representative. Chemplex Company, Rolling Meadows, IL 60008.

A pleasure to process. 5701 is a model of good behavior on blow molding equipment. Parisons of 20 to 30 lbs. and 5-ft. length are extruded with little draw-down or sag. Compared to other HMW resins, it has higher, more controlled shear sensitivity and a lower melt temperature that saves energy.

Closed-head 30 and 55-gal. drums are products of Plasti-Drum Corp., Lockport, IL.



A drum for its time. 30-gal. drum blow molded of Chemplex® high molecular weight polyethylene 5701 meets strict DOT and OSHA standards. It's lighter than steel, tougher than fibre, won't dent, split, rust, corrode, impart taste or odor.

No white collar worker, this drum thrives on tough duty and severe environments. Extruded and welded collar—also of HMW 5701—offers gripping edge for drum handling equipment, also shields bungs.

Polyethylene power! The highest molecular weight of any Chemplex resin, 5701 contributes tremendous impact strength, stacking strength and stress crack resistance.



CHEMPLEX

New ideas whose time has arrived



PLASTI-DRUM CORP.

1225 DAVIES STREET • LOCKPORT, ILLINOIS 60441 • (815) 838-7210

In accordance to the regulations and procedures required by the Department of Transportation, Hazardous Materials Regulations Branch, the following materials and materials classifications are authorized under D.O.T. E-6800, Spec. 34:

1. Flammable liquid, N.O.S., flash point 73° F. and above. 49 CFR 173.119(a), (b).
2. Combustables, specifically identified, flash point 100° F. and above. 49 CFR 173.118a.
3. Corrosive liquids, N.O.S., 49 CFR 173.245(a)(26).
4. Corrosive solids, N.O.S. 49 CFR 173.245 (a)(27).
5. Class B poisons, E-6800 3(c).
6. Organic peroxides, E-6800 3e, f(1), 4.
7. Oxidizers, E-6800 1, 3(a).

Specific commodities identified and authorized under Spec. 34 or tested in accordance to D.O.T. required standards, are as follows:

- Alkaline corrosive liquids, N.O.S., 49 CFR 173.249(a)(1).
- Alkaline caustic liquids, N.O.S., 49 CFR 173.249(a)(1).
- Alkaline corrosive battery fluids, 49 CFR 173.249(a)(1).
- Acetic acid, 49 CFR 173.245.
- Amyl acetate, flammable liquid, CFR 173.119.
- Benzene phosphorus dichloride, CFR 173.250a (a)(1).
- Benzene phosphorus thiodichloride, 49 CFR 173.250a (a)(1).
- Butyl alcohol, alcohol, N.O.S. (flammable liquid), 49 CFR 173.125.
- Butyl acetate, flammable liquid, 49 CFR 173.119.
- Chloropicrin and mixtures of chloropicrin containing no compressed gas or poisonous liquid; Class A. 49 CFR 173.357 (b).

Package Material Specification

Material ID: 00050288 **Date:** 03-03-1997
Spec Code: 900-003323 **Page:** 1 of 2
Spec Name: Drum Plastic
Use: 25gal 5.2 cu ft HDPE OH Untr Natural

Revision: More Detail. New
Style: Open-head, blow-molded drum with lever locking band or bolt ring.
Material: Body: OxyChem M5350
Cover: OxyChem m5350
Vendor: Sonoco Plastic Drum- Vendor part number: O-25 (DAK-PAK, Jr.)
Color: Natural
Diameter: Nominal O.D.: 20.8
Opening I.D.: 19.5in. +/- 0.5in oval
Height: Overall: 25.8in. +/- 0.25in.
Body: 23.3in. +/- 0.25in.
Minimum Wall Thickness: 0.125 in. Sufficient minimum thickness to comply with current transportation regulations.
Capacity: Nominal Capacity: 25 US Gallons
Actual Capacity: 25.6 US Gallons
Outage: 0.6 US Gallons, 2.4%
Treatment: None
Tare Weight: 11 lb. Min.
Locking Band: 18 gauge epoxy coated steel side lever locking band or bolt ring (Thorton Special). Cover gasket is Chem-Cast 611.
Export Cube: 6.64 cu. ft.

Approved 03-03-1997 by **Mike Bishoff**

Package Material Specification**Material ID:** 00050288**Date:** 03-03-1997**Spec Code:** 900-003323**Page:** 2 of 2**Spec Name:** Drum Plastic**Use:** 25gal 5.2 cu ft HDPE OH Untr Natural**Closure:** Cover Resin: Copolymer HDPE ; Oxychem M5350
Color: Red for Medical Waste, and natural for all other materials.**Marking:** Print or emboss UN 1H2/Y125/S/YR/USA/MFR and Canadian Registration
CAN/M4148 2-516**Note:** Must be palletized in nested stacks for 25 drums/pallet and stretch wrapped
on the pallet with 25 lock rings and 25 drum covers.

Pallet size 40"x40" or 42"x42".

Drums to be received with the inside free of dirt, dust, foreign material,
objectionable odor, or residue.

Mold #: M40

Approved 03-03-1997 by Mike Bishoff

Package Material Specification

Material ID: 00063226 **Date:** 11-15-2001
Spec Code: 900-004296 **Page:** 1 of 3
Spec Name: Drum Metal
Use: 55 gal 208.2L 1.1mm TH Phen Tri-S **Supersedes:** 900-003676

Revision: Change torque values to match the manufacture's recommended torque.

Style: 55 gal. tight-head 100% phenolic lined drum

Material: 1.32mm (all) - Class I clean, dry cold rolled carbon steel or phosphatized steel: body, head, and bottom.
(18 gauge)

Minimum Steel Thickness: Head: 1.09mm (0.0429 in.)
Bottom and Body: 1.09mm (0.0429in.)

Steel Hardness: Body: 40-55 Rockwell B
Parts: 40-55 Rockwell B

ALTERNATIVE: 1.2mm nominal steel can be used in place of 1.1mm steel. The minimum for 1.2mm is 1.11mm (0.0437in.). Emboss must show change.

Diameter (O.D.): O.D. Over Hoop: 23-7/16 +/- 1/32 in. (595mm -to- 596mm)
I.D.: 22-1/2 in. +/- 1/16 in. (572mm +/- 1.59mm)

Height (O.D.): 34-9/16 in. +/- 3/16 in. (878mm +/- 5mm)

Capacity: Rated: 55 gal. (208.2L)
-Maximum Capacity (rated+5%) 57.75 gal. (218.6L)
-Minimum Capacity (rated+4%) 57.2 gal. (216.5L)

Construction: Round Triple-seam chimes with seam dope Unichem Sealer No. 007. Dewey & Almy L-595 can be used as an alternative however Unichem 007 is preferred. Welded side seam. Top head to be oriented to have the 2 in. opening above the side seam weld

Rolling Hoops: Two, swaged
Depth: 7/16 in.

Interior: Bottom, top and head to be lined with two spray coats of 100% phenolic lining (Minimum Thickness: 0,7 MIL) (High Solids): Morton Sterilkote 48, KNS L-5X, Valspar HXG 0008 or approved alternate.

Package Material Specification

Material ID: 00063226 **Date:** 11-15-2001
Spec Code: 900-004296 **Page:** 2 of 3
Spec Name: Drum Metal
Use: 55 gal 208.2L 1.1mm TH Phen Tri-S **Supersedes:** 900-003676

Exterior: Head, body and bottom to be painted Pantone 541 Blue.

Tare Weight: Min: 42.8 lb. (19.4 kg)

Export Cube: 10.409 cu. ft. (Tweed's Accurate)

Flanges: Manufacturer - Tri-Sure
Material - 3/4 in. and 2 in. pressed steel, plated and lined (Phenolic)
Flange Gasket - Buna or EPDM

Plugs: Manufacuter - Tri-Sure
Material - Pressed steel, plated and lined Phenolic
Plug Gasket - Irradiated polyethylene
Manuf. Torque - Apply 3/4 in. plug using 20 ft-lb of torque and apply 3/4 in. cap seal. 2 in. plug hand tightened by drum manufacturer (no cap seal).
Filler Torque - Spot check 3/4 in. plug. Re-apply 3/4 in. cap seal when required. Torque 2 in. plug using 30 ft-lb of torque. Apply 2 in. cap seal.
Paint 3/4 in. plug

Cap Seals: 3/4" cap seal (spec# 900-005249) and 2" cap seal (spec# 900-005250) are required. Tri-Sure steel (white) Tab-Seal with side gasket and black Dow AgroSciences logo.

Approved 11-15-2001 by Neil Broughton

Package Material Specification

Material ID:	00063226	Date:	11-15-2001
Spec Code:	900-004296	Page:	3 of 3
Spec Name:	Drum Metal		
Use:	55 gal 208.2L 1.1mm TH Phen Tri-S	Supersedes:	900-003676

Printing: Print the following in 7/16 in. (12mm) (minimum) legible block lettering in contrasting color (white) on the side of the drum centered opposite the side seam weld:

900-004296

u

-1A1/Y1.8/300/YR/Country/MFR

n

or

u

-1A1/X1.5/300/YR/Country/MFR

n

Labeling and ink-jet printing require prior approval.

Marking: Emboss UN1A1/Y1.8/300/YR or UN1A1/X1.5/300/YR on the bottom of the drum. Manufacturer and country code optional. Nominal thickness mark showing the thickness of the body is required. If the head or the bottom is thinner than the body, then all three nominal thickness marks are required (top head/body/bottom head).

Note: Drums to be received with the inside free of dirt, dust, foreign material, objectionable odor, or residue.

Approved 11-15-2001 by Neil Broughton

Package Material Specification

Material ID: 00063227 **Date:** 09-01-2011
Spec Code: 900-014165 **Page:** 1 of 3
Spec Name: Drum Metal
Use: 55Gal. (208.2L), 1.2/1.1/1.2, TH, ModPhen, Tri-Sure **Supersedes:** 900-004295
12-18-2007

Revision: Add requirement for UN Certification with Micro-matic valve.

Style: Tight head, ISO dimensioned, lined drum

Material: 1.2/1.1/1.2 (mm) - CR1 commercial quality clean, dry cold rolled carbon steel

Minimum Steel Thickness for 1.2 mm = 1.11 mm
1.1 mm = 1.01 mm

Diameter (O.D.): 585 mm (23 in) +0/-3mm (0.12 in) maximum

Height (O.D.): 882 mm (34.7 in) +/- 5.0 mm (0.19 in)

Capacity: Rated: 55 gal. (208.2L)
Maximum Capacity: 57.2 gal (216.5L)

Construction: Triple (round seam)
Approved Seam Compounds: Darex (Grace, Dewey & Almy), Hasol, Universal Chemicals and Coatings, Foreco, Sealflex and Elastomers.

Welded side seam.
Top head oriented with the 2 in. opening above the side seam weld.

Rolling Hoops: Two, "W" Style
585 mm (23 in) +0/-3 mm (0.12 in) maximum diameter
Spaced equally on the height of the drum

Interior: Body, top and bottom head to be lined with two spray coats of modified phenolic lining (Minimum Thickness: 0.7 MIL) (high solids), Morton Sterilkote 15 M ; KNS L-15 (Brown); Valspar EHR 0005. Alternates to be approved by Dow AgroSciences.

Approved 09-01-2011 by Michael Meyer

Package Material Specification

Material ID: 00063227 **Date:** 09-01-2011
Spec Code: 900-014165 **Page:** 2 of 3
Spec Name: Drum Metal
Use: 55Gal. (208.2L), 1.2/1.1/1.2, TH, **Supersedes:** 900-004295
ModPhen, Tri-Sure 12-18-2007

Exterior: Head, body and bottom to be painted RAL 5010 Blue.

Tare Weight: 45.2 lbs

Export Cube: 10.62 cu. ft.

Flanges: Manufacturer - Tri-Sure
2 in. and 3/4 in. pressed steel, zinc plated and lined (Modified Phenolic).
Flange Gasket - EPDM

Plugs: Manufacturer - Tri-Sure
Material - Pressed steel, zinc plated and lined (Modified Phenolic)
Plug Gasket - Irradiated polyethylene

Manuf. Torque - Apply 3/4 in. plug using 15 ft-lb of torque and apply 3/4 in. cap seal. 2 in. plug hand tightened by drum manufacturer (no cap seal).

Filler Torque - Spot check 3/4 in. plug and re-apply 3/4 in. cap seal when required.

Torque 2 in. plug using 20 ft-lb of torque. Apply 2 in. cap seal.

Cap Seals: 3/4" cap seal (spec# 900-005249) and 2" cap seal (spec# 900-005250) are required. Tri-Sure steel (white) Tab-Seal with side gasket and black Dow AgroSciences logo.

Printing: Print the following in 7/16 in. (12mm) (minimum) legible block lettering in contrasting color on the drum side, centered opposite the side seam weld:

900-014165

UN1A1/X1.8/300/YR/Country/MFR

Labeling and ink-jet printing require prior approval.

Approved 09-01-2011 by Michael Meyer

Package Material Specification

Material ID:	00063227	Date:	09-01-2011
Spec Code:	900-014165	Page:	3 of 3
Spec Name:	Drum Metal		
Use:	55Gal. (208.2L), 1.2/1.1/1.2, TH, ModPhen, Tri-Sure	Supersedes:	900-004295 12-18-2007

Marking: Emboss the following onto the bottom head:
1.2/1.1/1.2 and UN1A1/X1.8/300/YR/USA/MFG

This drum must meet the above performance requirement with a Micro Matic drum valve installed in the 2 in. bung.

A copy of the UN test certification for this design shall be available upon request.

Note: Drums to be received with the inside free of dirt, dust, foreign material, objectionable odor, or residue.

Approved 09-01-2011 by Michael Meyer

Package Material Specification

Material ID:	00063228	Date:	10-10-2014
Spec Code:	900-022454	Page:	1 of 4
Spec Name:	Drum Metal		
Use:	55Gal 208.2L 1.4/1.1mm OH Epoxy-Phen	Supersedes:	900-003678 900-004298

Revision: Updated UN cert number and added drawing. Removed Tri-Sure reference from item name as the drum is an open head and does not have bung closures. Added seaming compound reference.

Style: 55 gal. full-open head epoxy-phenolic lined drum.

Drum is dual marked for United Nations Certification for both Liquids (PGII) and Solids (PGI).

Material: (1.4/1.1/1.1) : 1.1mm body and bottom, 1.4mm head - Class I clean, dry cold rolled carbon steel, or phosphatized steel.
(16/18 gauge)

Minimum Steel Thickness: Head: 1.28mm (0.0504 in.)
Bottom and Body: 1.09mm (0.0429 in.)

Steel Hardness: Body: 40-55 Rockwell B
Parts: 40-55 Rockwell B

ALTERNATIVE: 1.2mm nominal steel can be used in place of 1.1mm steel. The minimum for 1.2mm is 1.11mm (0.0437 in.) Emboss must show change.

Diameter (O.D.): O.D. Over Top Bold Ring: 23-27/32 +/- 1/32in. (604.838mm -to- 606.425mm)
O.D. Over Hoop: 23-19/32 +/- 1/32in. (58.488mm -to- 600.075mm)
I.D. : 22-1/2 in. +/- 1/16 in. (572mm +/- 1.59mm)

Height (O.D.): 34-1/2 in. +/- 1/8 in. (876mm +/- 3.175mm)

Capacity: Rated: 55 gal. (208.2L)
-Maximum Capacity (rated+5%) 57.75 gal. (218.6L)
-Minimum Capacity (rated+4%) 57.2 gal. (216.5L)

Approved 10-10-2014 by Paul Ouillette

Package Material Specification

Material ID:	00063228	Date:	10-10-2014
Spec Code:	900-022454	Page:	2 of 4
Spec Name:	Drum Metal		
Use:	55Gal 208.2L 1.4/1.1mm OH Epoxy-Phen	Supersedes:	900-003678 900-004298

Construction: Round Triple-seam chimes with seam dope Unichem Sealer No. 007. Dewey & Almy L-595 can be used as an alternative however Unichem 007 is preferred. Welded side seam. Grace Darex L14K Seaming Compound or comparable material determined by manufacturer and approved by DAS. Top head is fully removable.

Rolling Hoops: Three, swaged (3 in. from top lip)
Depth: 7/16 in.

Closure: 2.4mm (12 gauge) forged lug ring with 5/8 in. (4 in. long) bolt and nut cross drilled for tamper proof seal.

Cover: 1.4 mm cover with tubular white neoprene gasket or white EPDM gasket. (FDA approved materials)

Interior: Body, top and bottom head to be lined with two spray coats modified epoxy-phenolic lining (Minimum Thickness: 0.7 MIL) (high solids); Morton Sterilkote 46; KNS L-35 (Buff); Valspar EHD 0040 or approved alternative.

Exterior: Head, body, and bottom to be painted Pantone 541 Blue.

Tare Weight: 49.9 lbs. (22.634 kg)

Export Cube: 11.667 cu. ft. (Tweed's Accurate)

Flanges: None

Plugs: None

Approved 10-10-2014 by Paul Ouillette

Package Material Specification

Material ID:	00063228	Date:	10-10-2014
Spec Code:	900-022454	Page:	3 of 4
Spec Name:	Drum Metal		
Use:	55Gal 208.2L 1.4/1.1mm OH Epoxy-Phen	Supersedes:	900-003678 900-004298

Printing: Print the following in 7/16 in. (12mm) (minimum) legible block lettering in contrasting color (white) on the drum side centered opposite the side seam weld:
900-022454

1A2/Y1.8/150
AND
1A2/X423/S

Labeling and ink-jet printing require prior approval.

Marking: Emboss 1A2/Y1.8/150 AND 1A2/X423/S
on the bottom of the drum.

Emboss option should correspond to printed option. Manufacturer and country code optional. Nominal thickness mark showing the thickness of the body is required. If the head or the bottom is thinner than the body, then all three nominal thickness marks are required (top head/body/botton head).

Note: Drums to be received with the inside free of dirt, dust, foreign material, objectionable odor, or residue.

Approved 10-10-2014 by Paul Ouillette

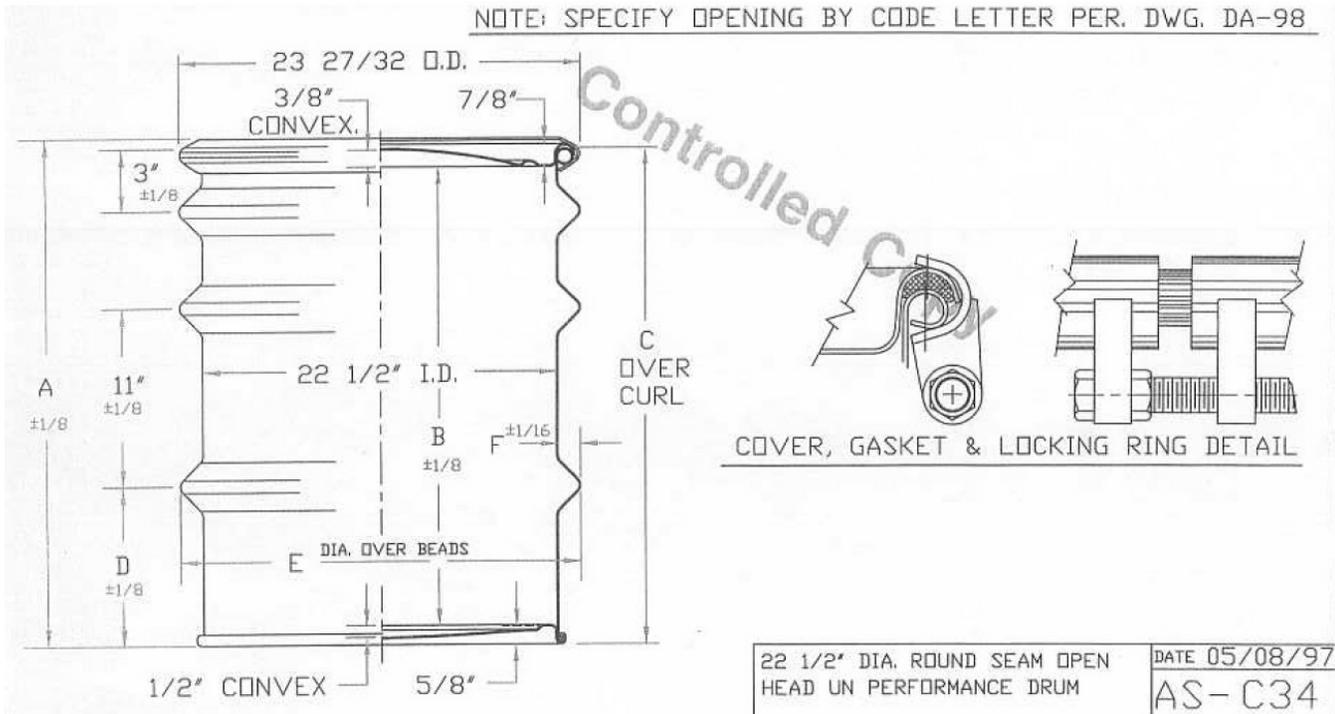
Package Material Specification

Material ID: 00063228
 Spec Code: 900-022454
 Spec Name: Drum Metal
 Use: 55Gal 208.2L 1.4/1.1mm OH Epoxy-Phen

Date: 10-10-2014
 Page: 4 of 4
 Supersedes: 900-003678
 900-004298

Drum Diagram:

ASSEMBLY CODE NUMBER	ACT. CAP. GAL.	DIMENSIONS						MINIMUM WEIGHT (GA./mm)	CUBIC CONTENT		PLANT VARIATION				REMARKS	
		A	B	C	D	E	F		INT.	OCEAN CUBE	CHI	WAR	CAN	FLO		
55GAL C34	57.6	34 1/2	32 3/4	34 3/16	11 11/16	23 19/32	1 1/2	FOR DRUM WEIGHTS SEE DRUM REFERENCE BOOK	7.70	11.667	1	1	1	1		



Approved 10-10-2014 by Paul Ouillette

Package Material Specification

Material ID: 00150392 **Date:** 04-12-2000
Spec Code: 900-007126 **Page:** 2 of 2
Spec Name: Drum Plastic
Use: 25gal 5.2 cu ft HDPE OH Untr Green **Supersedes:** none

Closure: Cover Resin: Copolymer HDPE ; Oxychem M5350
Color: Green

Marking: Print or emboss UN 1H2/Y125/S/YR/USA/MFR and Canadian Registration
CAN/M4148 2-516

Note: Must be palletized in nested stacks for 25 drums/pallet and stretch wrapped
on the pallet with 25 lock rings and 25 drum covers.

Pallet size 40"x40" or 42"x42".

Drums to be received with the inside free of dirt, dust, foreign material,
objectionable odor, or residue.

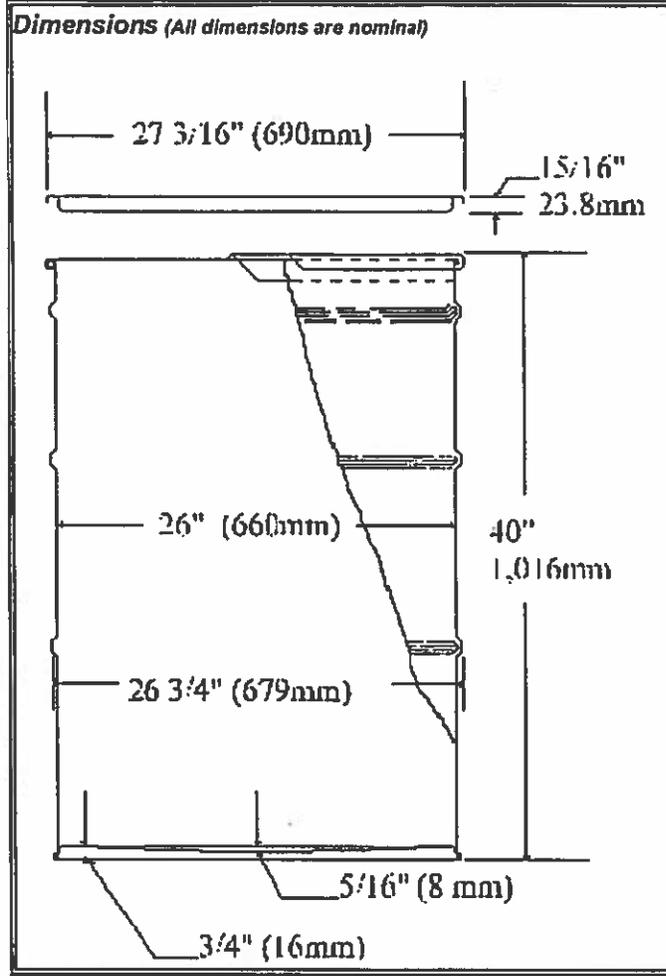
Approved 04-12-2000 by Stephanie Wahl



Customer Service
7:30 AM - 4:30 PM PT
800.406.9377
E-mail | Home

>Home| > CMS | > About us | >Place Order | > News | >Services | >Resource Center | > DSCP | > ISO Systems

85 Gallon Openhead Steel Drum (322 Liter)



- Product Features**
- UN Performance Rated
 - All Coatings Available
 - All Black with White Head
 - Superior Stacking Strength
 - Ultimate Fire Protection
 - Designated Overpack Container

Technical

It is the responsibility of the package/shipper, not the container manufacturer, to determine the proper package specification for each loading. The shipper may request a certificate of conformance from the manufacturer to demonstrate that each container conforms with the performance testing provisions in 49 CFR Section 178.600.

Item	Construction	Weight (nominal)	UN Certificate	UN Rating Liquid	UN Rating Solid
8501	1.4/1.4/1.4	78 lbs			UN 1A2/X435/S

Myers Container Corporation
© Copyright, 1998 - 2006
All rights reserved

Customer Service
800.406.9377
E-mail | Home

Myers Container Corporation

UN Testing Laboratory
900 Brookside Drive
Richmond, CA 94801

UN Test Summary
Non-Bulk Steel Packagings

As required by
49 CFR 178

8501

3/17/05

Design Qualification

1092

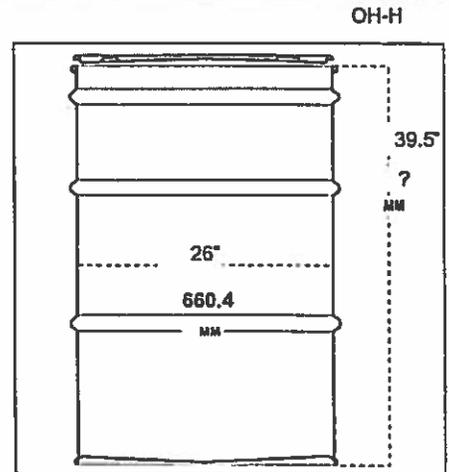
Test Date

UNUM#

Design Number

Style 1A2
Condition NEW
Capacity 321.7 liters 85.0 gal
Overflow 333.1 liters 88 gal
Tare 35.4 kg 78 lbs
Height 1003.3 mm 39.5" in
Diameter 660.4 mm 26" in
Steel-Head 1.4 mm
Steel-Body 1.4 mm
Steel-Bottom 1.4 mm
Special Construction DOT 7-A compliant with 4 mil bag, UNUM 389. Salvage Drum for UN Lab testing requires a 3/4" Rieke. Salvage Drum Leakproofness @ 29 kPa.

End Seam DOUBLE
Side Seam WELDED
Swedges 3
Head Fittings Test With 3/4" Fitting
Body Fittings
Fitting Gasket
Covers
Gasket High Density Cord Rd
Gasket Diameter 7/16"
Ring Gage 12
Closure Ring V-BACK
Bolt Size & Torque 5/8" X 4" @ 60



Drop Test - Liquid (§178.603)

Six samples are filled to >= 98% capacity with water. Each sample is dropped from the indicated height onto a solid surface using various attitudes. Drums are vented after each drop. Weakest Part: Tight-heads, second drop is flat on side seam. Open-heads second drop diagonal on head.

Sample	Attitude	Result
1	Chime Diagonal	No Leak
2	Chime Diagonal	No Leak
3	Chime Diagonal	No Leak
4	Weakest Part *	No Leak
5	Weakest Part *	No Leak
6	Weakest Part *	No Leak

Meters

Leakproofness Test - Liquid (§178.604)

Three samples, with all closures in place, are subjected to the following internal pressure and restrained under water for a minimum of five minutes.

Sample	Result
1	No Leak
2	No Leak
3	No Leak

20 kPa

Hydrostatic Pressure Test - Liquid (§178.605)

Three samples are filled to >= 98% capacity with water and subjected to the following internal hydraulic pressure for five minutes.

Sample	Result
1	No Leak
2	No Leak
3	No Leak

kPa

Stacking Test - Liquid (§178.606)

Three samples are filled to >= 98% capacity with water and subjected to a force applied to the top surface of the drum for 24 hours equal to the total weight of identical packages which might be stacked on it during transport. Minimum stack height is 3 m.

Sample	Result
1	No Deformation
2	No Deformation
3	No Deformation

Kilograms

Drop Test - Solid (§178.603)

Six samples are filled to 95% capacity with a small grain lading. Each sample is dropped from the indicated height onto a solid surface using various attitudes.

Packing Group I
1.8 Meters
435

Packing Group II
1.2 Meters

Packing Group III
.8 Meters

Gross Mass - Kilograms Indicated Above

Net Mass - Kilograms = Gross Mass less Tare Weight

Sample	Attitude	Result	Sample	Attitude	Result	Sample	Attitude	Result
1	Chime Diagonal	No Leak	1	Chime Diagonal	No Leak	1	Chime Diagonal	No Leak
2	Chime Diagonal	No Leak	2	Chime Diagonal	No Leak	2	Chime Diagonal	No Leak
3	Chime Diagonal	No Leak	3	Chime Diagonal	No Leak	3	Chime Diagonal	No Leak
4	Closure Diagonal	No Leak	4	Closure Diagonal	No Leak	4	Closure Diagonal	No Leak
5	Closure Diagonal	No Leak	5	Closure Diagonal	No Leak	5	Closure Diagonal	No Leak
6	Closure Diagonal	No Leak	6	Closure Diagonal	No Leak	6	Closure Diagonal	No Leak

Stacking Test - Solid (§178.606)

Three samples are filled to 95% capacity with a small grain lading and subjected to a force applied to the top surface of the drum for 24 hours equal to the total weight of identical packages which might be stacked on it during transport. Minimum stack height is 3 m.

Sample	Result
1	No Deformation
2	No Deformation
3	No Deformation

1297.3 Kilograms

Liquid Rating

Solid Rating

UN 1A2/X435/S

Vibration Standard - (§178.608)

This packaging is capable of withstanding, without rupture or leakage, the vibration test outlined in this section.

General Requirements - (§173.24, §173.24a, §178,601)

This packaging complies with the general requirements for packagings and packages.

Package Assembly Instructions -

For correct package assembly see assembly instructions provided with your order, or visit our website at www.myerscontainer.com and click on UN Assembly Instructions. All drums were assembled for testing as specified in the current version of the Drum Assembly Instructions

Manufacturing Location: Myers Container Corporation - 8435 NE Killingsworth Street, Portland, OR 97220
(R)Conditioning Location: (R -Prefix on Design Number)

Test Type

Date:

UN Testing Lab Coordinator - Dana Zanone

DESIGN QUALIFICATION

3/17/05



Ultra-Overpack Plus 95

95 GALLON SALVAGE DRUM Packaging Limitations and Closure Instructions

Designed to Meet 49CFR173.3(C): Salvage Drum Regulations

It is the shipper's responsibility to package and ship this packaging in accordance with prevailing applicable transportation regulations.

LIMITATIONS:

1. The Ultra-Overpack Plus is approved as a single trip salvage drum.
2. Lid closure for transportation can only be performed once.
3. Gross package weight of the Overpack Plus and lid is not to exceed 760 lbs. (345 Kilograms).
NOTE: The tare weight of Ultra-Overpack Plus and lid is approximately 48 lbs.
4. Do not fill container above the bottom of the thread.
5. The Ultra-Overpack Plus is not approved for air transport.
6. No free liquids are to be transported. This Ultra-Overpack Plus has been qualified to ship solids only. Use a loose fill absorbent to fill any void areas and absorb any free liquid.
7. Always check the Chemical Compatibility of the material in the Ultra-Overpack Plus. (Contact UltraTech for a Chemical Compatibility Guide.)

CLOSURE INSTRUCTIONS:

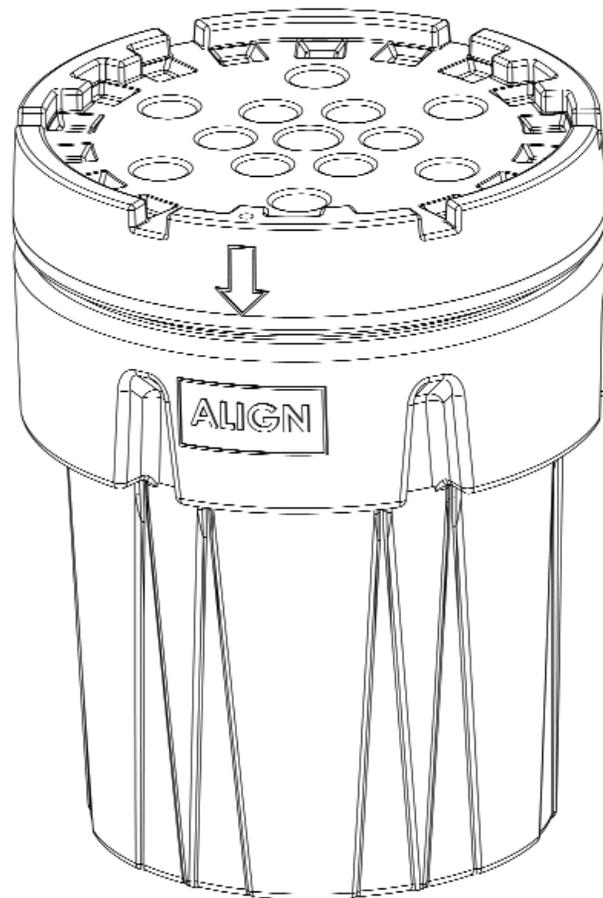
1. Place contents into the Ultra-Overpack Plus. Make sure top sealing edge of the Ultra-Overpack Plus is free from debris, cuts or gouges.
2. Place lid onto the Ultra-Overpack Plus and twist the lid in a clockwise direction (approximately 2 complete revolutions) until the lid is "hand tightened."
3. Continue tightening the lid (additional torque may be required) until the arrow on the side of the lid matches up with the alignment bar on the side of the Ultra-Overpack Plus (see picture). NOTE: Additional torque may require the use of a long 2" x 4" board, rebar or a shovel handle. The board, rebar or handle can be placed between the slots on the lid to allow sufficient torque to tighten the arrow to the alignment bar. Silicone lubricant can be sprayed on the gasket to allow tightening the lid without the use of a substrate.

Note: Occasionally temperature and operating conditions can affect tolerances of the Ultra-Overpack Plus 95. If you are unable to tighten the lid so that the Arrow on the lid is aligned within the "Alignment Bar" on the drum, please tighten the lid as far as possible and allow the Ultra-Overpack Plus 95 to sit for 1-2 hours. Then tighten the lid further. The delay allows the gasket to reset and allow further tightening. This can be repeated until the Arrow is within the Alignment Bar.

CAUTION: DO NOT SHIP THE ULTRA-OVERPACK PLUS UNTIL THE ARROW MATCHES UP WITH SOME PORTION OF THE ALIGNMENT BAR.

If you have any questions regarding the packaging limitations or closure instructions please contact UltraTech:

CALL 800.353.1611 • PH 904.292.1611 • info@spillcontainment.com • www.SpillContainment.com



UN MARKING:

1H2\X345\S\09\USA\M5904



(609) 259-8900
 (609) 259-3575 (fax)
 nj_sales@mcmaster.com
 Text 58926

UN-Compliant Plastic Drums



Standard
Closed Head

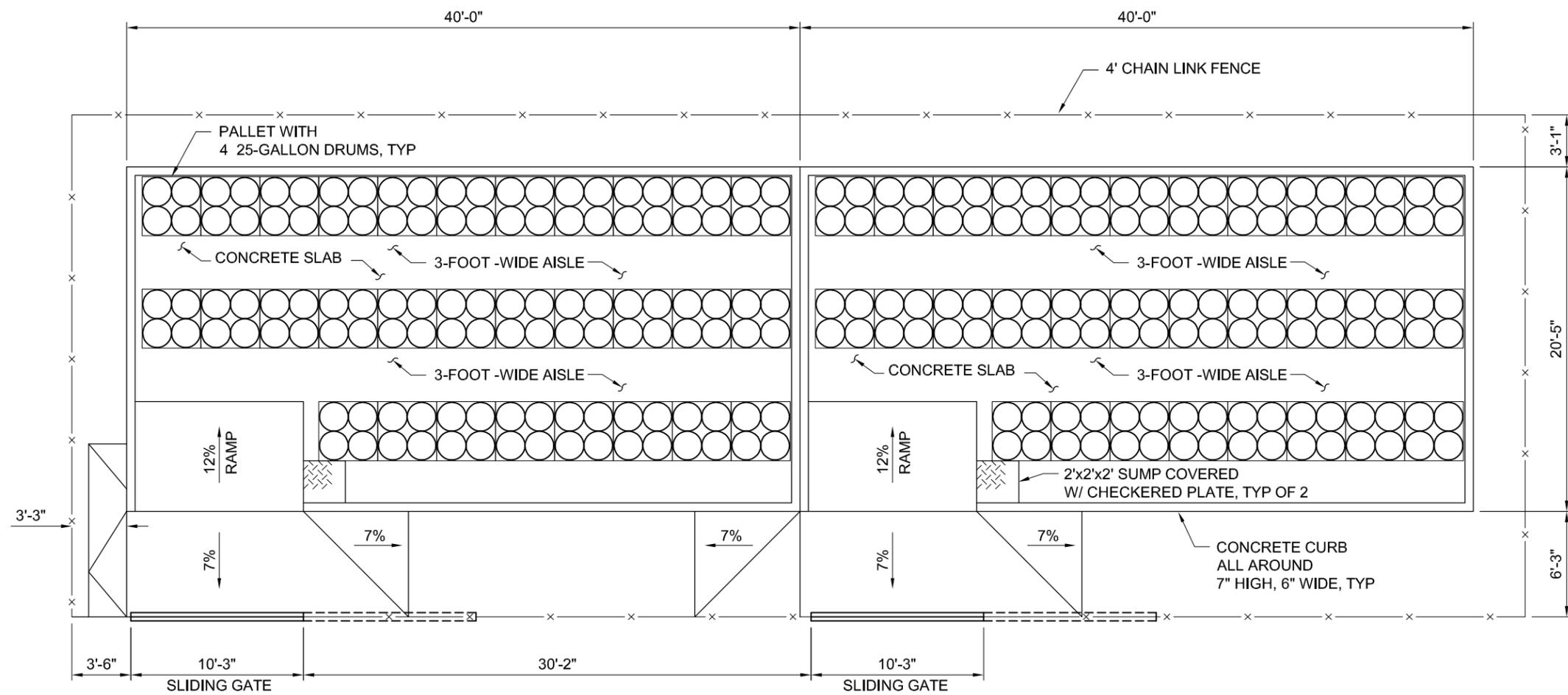
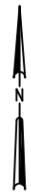
Choose these UN-compliant drums for shipping hazardous materials. All drums have two openings with polypropylene plugs, unless otherwise specified. All are made of FDA-compliant resins, except the black models. Max. temperature is 160°F.

Note: In hot-fill applications, allow contents to cool to ambient temperature before stacking.

Cap., gal.	Top OD	O'all Ht.	Wall Thickness	Top Openings, Thread Size (Qty.)	Specifications Met	Available Colors	Each
Closed-Head Drums							
Standard							
55	23 5/16"	34 13/16"	1/8"	2" NPS (1), 2" Buttress (1)	UN1H1/Y1.9/150	Black, Blue, Translucent White	43235T5 \$73.45
<div style="border: 1px solid gray; padding: 5px;"> <p>Product Detail</p> <p>UN-Compliant Plastic Drum, Closed-Head, 55 Gallon, 2 Openings</p> <p>Color</p> <p><input type="radio"/> Translucent White</p> <p><input type="checkbox"/> Each</p> <p>In stock</p> </div>							
30	19 1/2"	29 5/8"	1/8"	2" NPS (1), 2" Buttress (1)	UN1H1/Y1.9/150	Black, Blue, Translucent White	43235T8 61.74

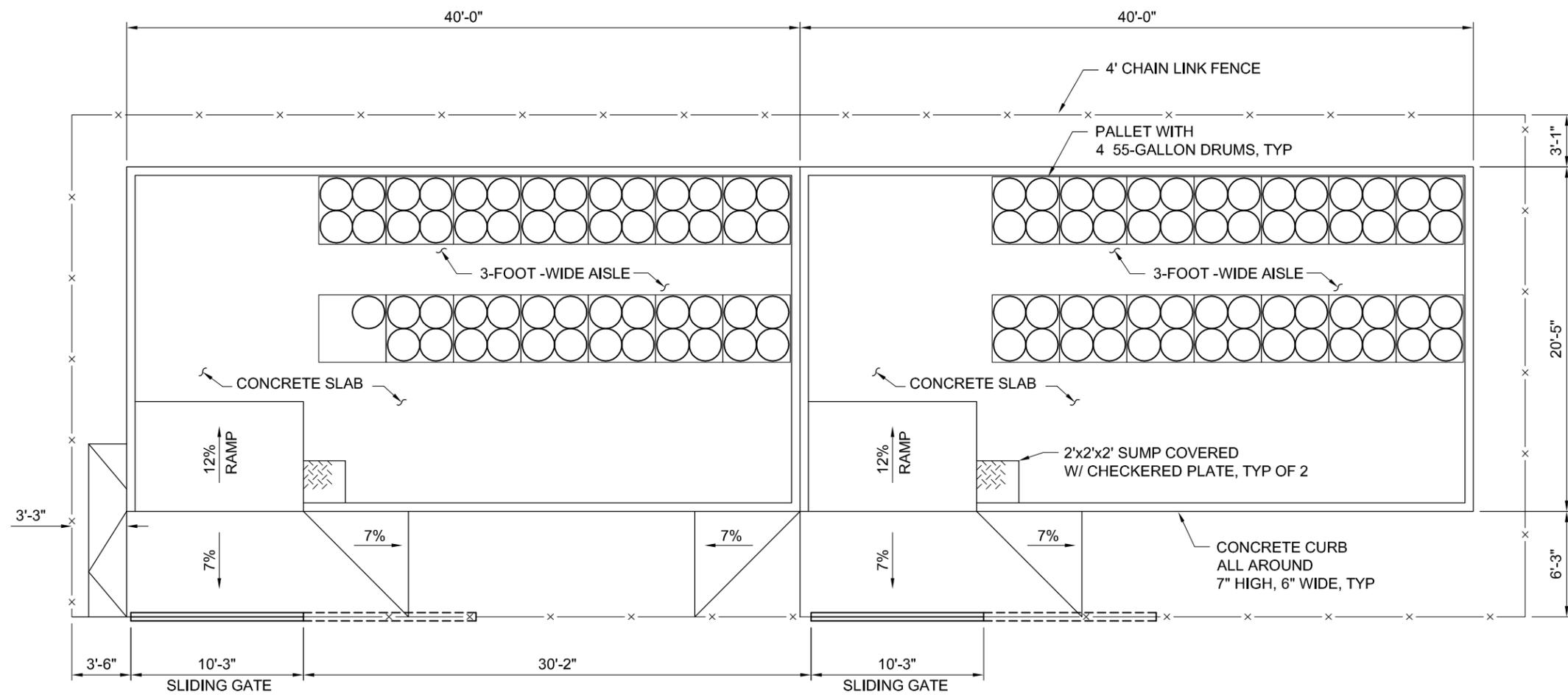
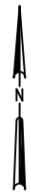
UN-Compliant Plastic Drums

Appendix E
Drum Storage Drawings, Coating
Specification, and Engineer
Certification



PLOT PLAN
SCALE: 1/8"=1'-0"

FIGURE E-1
BLOCK 560 DRUM STORAGE AREA
EXAMPLE LAYOUT- 25-GALLON DRUMS



PLOT PLAN
SCALE: 1/8"=1'-0"

FIGURE E-2
BLOCK 560 DRUM STORAGE AREA
EXAMPLE LAYOUT- 55-GALLON DRUMS

SAFETY DATA SHEET

1. Identification

Product identifier **CIM 1000 Premix**
Other means of identification Not available.
Recommended use Waterproofing, chemical containment, secondary containment
Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name	CIM INDUSTRIES INC	
Address	A CHASE CORPORATION COMPANY 6900 NELMS STREET HOUSTON, TX 77061 United States	
Telephone	General Assistance	800 543-3458
E-mail	info@chasecorp.com	
Emergency phone number	Chemtrec (US - 24 hrs)	800 424-9300
	Chemtrec (INTL - 24 hrs)	703-527-3887

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 3
Health hazards	Germ cell mutagenicity	Category 1B
	Carcinogenicity	Category 1B
	Specific target organ toxicity, repeated exposure	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 3
	Hazardous to the aquatic environment, long-term hazard	Category 3
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement Flammable liquid and vapor. May cause genetic defects. May cause cancer. Causes damage to organs through prolonged or repeated exposure. Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If exposed or concerned: Get medical advice/attention. In case of fire: Use appropriate media to extinguish.

Storage

Store in a well-ventilated place. Keep cool. Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

Supplemental information

89.12% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 89.11% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Asphalt		8052-42-4	40 - < 50
Distillates (petroleum), Hydrotreated Light		64742-47-8	5 - < 10
Stoddard solvent		8052-41-3	1 - < 3
Carbon black		1333-86-4	1 - < 3
Other components below reportable levels			40 - < 50

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation

Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact

Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists.

Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.

Ingestion

Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Irritation of eyes and mucous membranes. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

General information

Take off all contaminated clothing immediately. IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media

Water fog. Foam. Carbon dioxide (CO₂). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire-fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to a salvage tank or other suitable container for recovery or safe disposal. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not breathe mist or vapor. Avoid prolonged exposure. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices. Avoid release to the environment. Do not empty into drains.
--------------------------------------	---

For additional information on equipment bonding and grounding, refer to the Canadian Electrical Code in Canada, (CSA C22.1), or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity" or National Fire Protection Association (NFPA) 70, "National Electrical Code".

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Avoid spark promoters. Eliminate sources of ignition. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Refrigeration recommended. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection**Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value
Carbon black (CAS 1333-86-4)	PEL	3.5 mg/m ³
Stoddard solvent (CAS 8052-41-3)	PEL	2900 mg/m ³ 500 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Asphalt (CAS 8052-42-4)	TWA	0.5 mg/m ³	Inhalable fraction.
Carbon black (CAS 1333-86-4)	TWA	3 mg/m ³	Inhalable fraction.
Stoddard solvent (CAS 8052-41-3)	TWA	100 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Asphalt (CAS 8052-42-4)	Ceiling	5 mg/m ³	Fume.
Carbon black (CAS 1333-86-4)	TWA	0.1 mg/m ³	
Distillates (petroleum), Hydrotreated Light (CAS 64742-47-8)	TWA	100 mg/m ³	
Stoddard solvent (CAS 8052-41-3)	Ceiling	1800 mg/m ³	
	TWA	350 mg/m ³	

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection**Hand protection**

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties**Appearance****Physical state**

Liquid.

Form

Liquid.

Color

Black.

Odor

Mild. Hydrocarbon-like.

Odor threshold

Not available.

pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	347 °F (175 °C) estimated
Flash point	101.0 °F (38.3 °C)
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	0.7 % estimated
Flammability limit - upper (%)	5 % estimated
Explosive limit - lower (%)	0.7 % estimated
Explosive limit - upper (%)	5 % estimated
Vapor pressure	3 mm Hg estimated
Vapor density	4.9
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	410 °F (210 °C) estimated
Decomposition temperature	Not available.
Viscosity	3500 - 6500 cP
Other information	
Density	0.90 g/cm ³
Flammability class	Flammable IB estimated
VOC (Weight %)	0.8 - 0.98 g/l

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Expected to be a low ingestion hazard.
Inhalation	Prolonged inhalation may be harmful. May cause damage to organs through prolonged or repeated exposure by inhalation.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.

Symptoms related to the physical, chemical and toxicological characteristics Irritation of eyes and mucous membranes.

Information on toxicological effects

Acute toxicity

Components	Species	Test Results
Carbon black (CAS 1333-86-4)		
Acute		
<i>Oral</i>		
LD50	Rat	> 8000 mg/kg
* Estimates for product may be based on additional component data not shown.		
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.	
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.	
Respiratory or skin sensitization		
Respiratory sensitization	Not available.	
Skin sensitization	This product is not expected to cause skin sensitization.	
Germ cell mutagenicity	May cause genetic defects.	
Carcinogenicity	May cause cancer.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Asphalt (CAS 8052-42-4)		2B Possibly carcinogenic to humans.
Carbon black (CAS 1333-86-4)		2B Possibly carcinogenic to humans.
Stoddard solvent (CAS 8052-41-3)		3 Not classifiable as to carcinogenicity to humans.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		
Not listed.		
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.	
Specific target organ toxicity - single exposure	Not classified.	
Specific target organ toxicity - repeated exposure	Causes damage to organs through prolonged or repeated exposure.	
Aspiration hazard	Not available.	
Chronic effects	Prolonged inhalation may be harmful. Causes damage to organs through prolonged or repeated exposure.	

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

Product	Species	Test Results
CIM 1000 Premix (CAS Mixture)		
Aquatic		
Fish	LC50	Fish
		40.576 mg/l, 96 hours estimated
Components	Species	Test Results
Distillates (petroleum), Hydrotreated Light (CAS 64742-47-8)		
Aquatic		
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)
		2.9 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential Not available.

Partition coefficient n-octanol / water (log Kow)

Stoddard solvent 3.16 - 7.15

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT	Not regulated as dangerous goods. Reclassified as non-hazardous for DOT Transportation per 49 CFR 173.150 (f).
IATA	
UN number	UN1139
UN proper shipping name	Coating solution (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	III
Environmental hazards	No.
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.
IMDG	
UN number	UN1139
UN proper shipping name	COATING SOLUTION (includes surface treatments or coatings used for industrial purposes such as vehicle under-coating, drum or barrel lining)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-E*
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	This substance/mixture is not intended to be transported in bulk.
IATA; IMDG	



15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

One or more components are not listed on TSCA.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Asphalt (CAS 8052-42-4)

Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - No

Delayed Hazard - Yes

Fire Hazard - Yes

Pressure Hazard - No

Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations

Fumes of asphalt are listed by California Prop 65. As supplied and applied the CIM product will not exhibit asphalt fumes. Carbon black is listed due to its respirable nature in powder form. As supplied and applied the carbon black is bound within the CIM matrix and is not expected to be in a respirable form.

US. Massachusetts RTK - Substance List

Asphalt (CAS 8052-42-4)

Carbon black (CAS 1333-86-4)

Distillates (petroleum), Hydrotreated Light (CAS 64742-47-8)

Stoddard solvent (CAS 8052-41-3)

US. New Jersey Worker and Community Right-to-Know Act

Asphalt (CAS 8052-42-4)

Carbon black (CAS 1333-86-4)

Distillates (petroleum), Hydrotreated Light (CAS 64742-47-8)

Stoddard solvent (CAS 8052-41-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Asphalt (CAS 8052-42-4)

Carbon black (CAS 1333-86-4)

Distillates (petroleum), Hydrotreated Light (CAS 64742-47-8)

Stoddard solvent (CAS 8052-41-3)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

Fumes of asphalt are listed by California Prop 65. As supplied and applied the CIM product will not exhibit asphalt fumes. Carbon black is listed due to its respirable nature in powder form. As supplied and applied the carbon black is bound within the CIM matrix and is not expected to be in a respirable form. WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Asphalt (CAS 8052-42-4)

Listed: January 1, 1990

Carbon black (CAS 1333-86-4)

Listed: February 21, 2003

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	05-19-2015
Revision date	05-27-2015
Version #	02
HMIS® ratings	Health: 1* Flammability: 3 Physical hazard: 0
NFPA ratings	Health: 0 Flammability: 3 Instability: 0

Disclaimer The information offered in this data sheet is designed only as guidance for the safe use, storage and handling of the product. This information is correct to the best of our knowledge and belief at the date of publication, however, no guarantee is made to its accuracy. This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. This material is intended for industrial use only. No warranty, expressed or implied is made.

CIM 1000

HIGH PERFORMANCE COATINGS AND LININGS

OVERVIEW

DESCRIPTION CIM 1000 is a liquid applied urethane coating that cures in hours to form a tough elastomeric coating that adheres to most substrates, forming a chemical and abrasion resistant barrier for waterproofing, corrosion protection, and containment of water and most aqueous chemicals.

ADVANTAGES CIM 1000 has over 30 years of proven performance in demanding environments. It remains flexible and resilient and provides exceptional service in a broad range of applications.

- Ideal for coating concrete.
- Forms a tough elastomeric liner able to bridge cracks.
- Tested to ANSI 118.10-199, "Standard Specification for Load Bearing, Bonded, Waterproof Membrane for Thin-Set Ceramic Tile and Dimension Stone Installation".
- Impervious to water and most aqueous chemicals, providing a long lasting tank and pond liner.
- Asphalt extended urethane formula provides superior wear and weatherability for parking decks and containment areas.
- Adheres to and bridges between common construction materials such as concrete, steel and other metals, asphalt pavement, glass, wood, and most coatings.
- Environmentally sound, complying with the toughest VOC regulations.
- Can be repaired when damaged.
- Excellent abrasion resistance for severe wear applications.
- UV stable.
- Liquid, two-component urethane can be applied to complex shapes, multiple penetrations or to most geotextiles.

SURFACE PREPARATION

GENERAL: Substrates must be **clean and dry** with no oils, grease or loose debris. CIM Bonding Agent is recommended on all non-porous substrates. Perform adhesion tests to confirm adequacy of surface preparation. See C.I.M. Industries' specific substrate Instruction Guide for specific guidelines.

CONCRETE: ICRI-CSP 4-6 surface profile exposing aggregate. Concrete must exhibit minimum 3,000 psi compressive strength and be free of release agents and curing compounds. The substrate must be clean and dry (see CIM Instruction Guide IG-2), and free of contaminants.

STEEL: Minimum 3 mil profile.
Immersion service – SSPC-SP10 / NACE No. 2 Near White Blast.
Non-Immersion service – SSPC-SP6 / NACE No. 3 Commercial Blast.
Use CIM Bonding Agent for greater adhesion.

OTHER METALS: SSPC-SP1 solvent clean and abrasive blast to roughen and degloss the surface. Use CIM Bonding Agent for greater adhesion.

GLASS: Thoroughly clean. CIM Bonding Agent must be used for increased adhesion. For immersion service roughen the surface.

WOOD: Substrate must be clean, dry and free of surface contamination.

PREVIOUS COATINGS AND LININGS: CIM 1000 may be applied over some existing coatings and linings and achieve acceptable performance. CIM Bonding Agent is recommended for greater adhesion. Finished system results vary due to a variety of project specific factors, including the service conditions to which the system is exposed. Therefore, C.I.M. Industries does not accept responsibility for determining the suitability of an existing coating and lining as a substrate for CIM products. Owner shall perform adhesion tests on any existing coating or lining to determine suitability.

EARTH: Use CIM Scrim.

COLOR CIM 1000 is initially shiny black, turning dull over 3 to 6 months when exposed to direct sunlight. For a colored or reflecting surface finish, see C.I.M Industries' Instruction Guide, "Topcoats" (IG-7) for further instructions.

SOLIDS BY VOLUME 88% (1413 dry mils x sq. ft./gal.)

VOC 92 g/l (0.76 lb./gal.). CIM 1000 complies with the toughest VOC regulations.



CIM 1000

HIGH PERFORMANCE COATINGS AND LININGS

All information presented in this publication is believed to be accurate, but it is not to be construed as a guarantee of minimum performance. Test performance results are obtained in a controlled laboratory environment using procedures that may not represent actual operating environments.

TYPICAL PROPERTIES

Abrasion Resistance—Wt. Loss, Taber Abraser CS-17 Wheel 1000 gr./1000 rev. ASTM D4060	1.2 mg. Loss	Liner Performance Crack Bridging 10 cycles @ -15°F After heat aging	greater than 1/8" greater than 1/4"
Adhesion to Concrete (dry) Elcometer	350 psi	Liner Weight (60 mil wet film thickness)	31 lbs./100 sq. ft.
Deflection Temperature ASTM D648	below -60°F	Mix Ratio Weight Volume	7:1 9:1
Density (Approx.) Premix Activator Mixed & Cured	8.0 lbs./gal. 10.1 lbs./gal. 8.3 lbs./gal.	Mullen Burst Strength ASTM D751, 50 mil	150 psi
Elastomeric Waterproofing ASTM C836 ASTM C957	exceeds all criteria exceeds all criteria	Permeability to Water Vapor ASTM E96 Method E, 100°F, 100 mil sheet	0.03 perms
Extension to Break ASTM D412	400%	Recovery from 100% extension: after 5 minutes after 24 hours	98% 100%
Flammability ASTM D2859 UL790	pass/combustible substrate Class A ¹	Salt Spray ASTM B117	pass 2000 hrs.
Flooring and Shower Lining UPC/IBC ANSI 118.10	Pass	Service Temperature	-60°F to 220°F
Green Roof Membrane/Root Barrier FLL, 2002	Pass	Softening Point, Ring & Ball ASTM D36	>325°F
Hardness, Shore A ASTM D2240 @ 77°F	60	Tear Strength ASTM D624 (Die C)	150 lbs./in.
Jet Fuel Resistance FS SS-S-200D	pass for joints	Tensile Strength ASTM D 412, 100 mil sheet	900 psi
		Weathering ASTM D822	pass 5000 hrs.

¹Contact C.I.M. Industries for details regarding UL fire ratings

CHEMICAL RESISTANCE

CIM 1000 is resistant to a broad range of acids and alkalis. Consult C.I.M. Industries for additional information regarding chemical resistance after reviewing CIM 1000 Chemical Resistance Chart.

**THE INFORMATION PRESENTED IN THIS PUBLICATION IS SUBJECT TO CHANGE WITHOUT NOTICE.
CONTACT C.I.M. INDUSTRIES FOR CURRENT INFORMATION.
www.cimindustries.com**

CIM 1000

HIGH PERFORMANCE COATINGS AND LININGS

GENERAL APPLICATION INFORMATION

FOR PROFESSIONAL USE ONLY.

- PRECAUTIONS** Avoid contamination with water or moisture. Keep all pails and jugs tightly closed until ready for use. All equipment, air supplies, and application substrates must be **ABSOLUTELY DRY**. Do not apply in wet weather or when rain is imminent or when the CIM 1000 or the substrate may become wet within 4 hours after coating. Use caution when applying CIM 1000 in confined spaces. See C.I.M. Industries' Instruction Guide, "Applying CIM Within Confined Spaces" (IG-9).
- TEMPERATURE** Surface should be at least 50°F (10°C) and must be 5°F (3°C) above the dew point. **DO NOT APPLY WHEN THE SUBSTRATE OR AMBIENT TEMPERATURE IS RISING OR COATING IS IN DIRECT SUNLIGHT.** CIM 1000 should be at least 60°F (15°C) when mixed and applied. CIM 1000 may be preheated to facilitate application at low temperatures, but working time will be reduced. See C.I.M. Industries' Instruction Guide "Applying CIM Coatings in Cold Weather" (IG-11).
- EQUIPMENT** Spray equipment requires large diameter hose and air supplied mastic gun or plural component spray equipment. See "Spray Application of CIM" (IG-12) or contact C.I.M. Industries for specific recommendations. Roller, squeegee, and trowel may also be used.
- POT LIFE** About 30 minutes. Working time depends on temperature and method of application. Working time for spray application will be significantly shorter.
- PRIMING** Porous substrates such as wood and concrete may be primed with CIM 61BG Epoxy Primer to minimize outgassing. The maximum recoat window for CIM 61BG Epoxy Primer is 48 hours. See CIM 61BG Epoxy Primer Technical Data Sheet for additional information. Perform adhesion tests to confirm adequacy of adhesion to primer.
- MIXING** **DO NOT THIN. DO NOT HAND MIX.** Begin mixing each pail (4.5 gal.) of CIM 1000 Premix using a power mixer (e.g. ½" drill and an eight inch mud mixer). Do not draw air into the mix. While mixing, slowly add one jug (0.5 gal.) of CIM 1000 Activator to the pail. Once the CIM 1000 Activator has been added, mix thoroughly for **3 FULL MINUTES**. The proportions are premeasured. **DO NOT ESTIMATE.** Mixing Jigs and Timers from C.I.M. Industries help eliminate mixing errors and increase productivity on the job. See C.I.M. Industries' Instruction Guide, "Mixing CIM Premix and Activator" (IG-8).
- APPLICATION** Apply CIM 1000 directly to a clean and dry substrate. Vertical surfaces will require multiple coats. See C.I.M. Industries' specific substrate Instruction Guide for additional guidelines.
- RECOATING** CIM 1000 may be recoated in 1 hour and must be recoated soon after the coating no longer comes off on polyethylene (typically within 4 hours of mixing). If the liner has cured longer than this time, the surface must be severely abraded using surface grinder or other mechanical means, and be free of dust and debris. Use CIM Bonding Agent for better adhesion. For immersion conditions, all coats shall be applied within 4 hours of each other, except at joint lines.
- RECOMMENDED MINIMUM THICKNESS** Recommended minimum thickness of the coating is 60 wet mils. Contact C.I.M. Industries for detailed cure time information. Refer to CIM 1000 Coverage Chart for coverage rates.
- CURING TIME** CIM 1000 may be placed in service within 24 hours for non-aggressive service. Severe service applications may require a cure time of 72 hours or more. Contact C.I.M. Industries for specific recommendations.
- CLEAN-UP** Use mineral spirits for clean-up of uncured material. Spray equipment must be flushed regularly during application to prevent material from setting up in the hose and pump. Cured material is very difficult to remove. Soaking in solvent will soften the material and may assist in its removal.

CONTACT C.I.M. INDUSTRIES FOR SPECIFIC RECOMMENDATIONS AND INSTRUCTION GUIDES.

www.cimindustries.com



CIM 1000

HIGH PERFORMANCE COATINGS AND LININGS

SHIPPING, STORAGE AND SAFETY DATA

WARNING Flammable. Use only in well ventilated areas. Do not store or use near open flame, sparks or hot surfaces. Keep tightly closed. Avoid contact with moisture or water. Keep out of reach of children.

SAFETY INFORMATION This product contains petroleum asphalt, petroleum distillates, amine compounds and/or other chemical ingredients. Adequate health and safety precautions should be observed during the storage, handling, application and curing. Refer to C.I.M. Industries' Material Safety Data Sheets for further details regarding the safe use of this product.

PACKAGING CIM 1000 is available in mixed units of 5 gallons. Each unit consists of a container of premix and a smaller container of activator. Quantities have been premeasured to provide the proper mixing ratio, leaving sufficient room in the premix container to facilitate adequate mixing. **Do not estimate proportions.**

SHIPPING	Premix	Activator
Weights		
5.0 gallon units	40 lb/pail	5.5 lb/jug (33 lb/case of 6)
Properties		
Flash Point	101°F	>400°F
Shipping Name	Coating Solution	Not Regulated
DOT Class	Class 3, UN1139, PG III	Not Regulated
STORAGE		
Temperature	20°F to 110°F	70°F to 95°F
Shelf Life	2 years	6 months
NFPA	Class II	Class III B

WARRANTY & LIMITATION OF SELLER'S LIABILITY

C.I.M. Industries Inc. (C.I.M.) warrants that for a period of five (5) years from the date of shipment to the initial purchaser, the products, when mixed in proper ratios for the proper length of time, (a) will not become brittle or crack and (b) will provide a water barrier. Due to application variables beyond C.I.M.'s control which may affect results, C.I.M. makes no warranty of any kind, expressed or implied, including that of merchantability, other than that the products conform to C.I.M.'s current quality control standards at time of manufacture. If breach of warranty is established, the buyer's exclusive remedy shall be repayment of the purchase price of the non-conforming CIM membrane product or, at C.I.M.'s option, resupply of conforming product to replace the non-conforming product. The buyer expressly waives any claim to additional damages, including consequential damages.

THE INFORMATION PRESENTED IN THIS PUBLICATION IS SUBJECT TO CHANGE WITHOUT NOTICE.

CONTACT C.I.M. INDUSTRIES FOR CURRENT INFORMATION.

FOR PROFESSIONAL USE ONLY.

www.cimindustries.com



23 Elm St., Peterborough, NH 03458
Tel: (800) 543-3458 (603) 924-9481
Fax: (603) 924-9482
Web site: www.cimindustries.com

Printed on
PaperTyger.
Tear Resistant Paper

©CIM 07/10



CIM 1000

HIGH PERFORMANCE COATINGS AND LININGS

Information presented here is believed to be accurate, but it is not to be construed as a guarantee of minimum performance. Test performance results are obtained in a controlled laboratory environment under procedures that may not represent actual operating environments.

CHEMICAL RESISTANCE

The following chart is a general guide to the resistance of CIM 1000 to various types of exposure. Although we believe this information to be reliable, C.I.M. Industries has no control over any particular application, installation, or exposure of CIM 1000; and suitable tests should be carried out by the user.

Where chemical concentrations are listed, the designated rating applies to all concentrations up to and including the concentration indicated.

Except as indicated by a footnote, the maximum service temperature is 140°F (60°C) for continuous service.

Consult C.I.M. Industries for additional information regarding chemical resistance.

Acetic Acid, Glacial	S	Hydrogen Sulfide,	
Acetic Acid, 25%	R2	Vapor Over Sat. Solution	R
Acetic Acid, 10%	R	Methanol	R1
Ammonium Hydroxide, 10%	R2	Nitric Acid, 10%	R2
Biological Oxidation Ponds	R	Nitric Acid, 40%	S
Chlorine,		Outdoor Exposure	R
Saturated Solution in Water	R1	Phosphoric Acid, 10%	R
Citric Acid, 10%	R	Phosphoric Acid, 40%	S
Copper Sulfate (Sat.)	R	Sewage Disposal Plant	
Crude Oil	S	(Act. Sludge Sed. Tanks)	R
Diesel Fuel	S	Sodium Hydroxide, 10%	R
Ethylene Glycol		Sodium Hydroxide, 50%	R1
(Antifreeze Solution)	R1	Sodium Hypochlorite, 15%	R
Ferric Chloride, 42%	R	Soil Burial	R
Hydrochloric Acid, 10%	R2	Sodium Silicate, 34%	R
Hydrofluoric Acid, 10%	R2	Strawberry Juice	R
Hydrogen Sulfide,		Sulfuric Acid, 30% or less	R
Saturated Solution in Water	R	Trisodium Phosphate, 10%	R
		Water, Salt	R
		Wine (for floor protection)	R

Footnote:

- R Suitable for continuous immersion.
- S Suitable for splash and spillage conditions.
- R1 Maximum service temperature limited to 80°F.
- R2 Maximum service temperature limited to 120°F.

THE INFORMATION PRESENTED IN THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE.

CONTACT C.I.M. INDUSTRIES FOR CURRENT INFORMATION.

FOR PROFESSIONAL USE ONLY.



CIM 1000

HIGH PERFORMANCE COATINGS AND LININGS

COVERAGE CHART — MIXED GALLONS

Dry Thickness (mils)	Wet Thickness (mils)	Gal/SF	SF/Gal	Dry Thickness (mils)	Wet Thickness (mils)	Gal/SF	SF/Gal
20	23	0.014	71	18	20	0.012	80
25	28	0.018	57	22	25	0.016	64
30	34	0.021	47	26	30	0.019	53
35	40	0.025	40	31	35	0.022	46
40	45	0.028	35	35	40	0.025	40
45	51	0.032	31	40	45	0.028	36
50	57	0.035	28	44	50	0.031	32
55	62	0.039	26	48	55	0.034	29
60	68	0.042	24	53	60	0.037	27
65	74	0.046	22	57	65	0.041	25
70	79	0.050	20	62	70	0.044	23
75	85	0.053	19	66	75	0.047	21
80	91	0.057	18	70	80	0.050	20
85	96	0.060	17	75	85	0.053	19
90	102	0.064	16	79	90	0.056	18
95	108	0.067	15	84	95	0.059	17
100	114	0.071	14	88	100	0.062	16
105	119	0.074	13	92	105	0.065	15
110	125	0.078	13	97	110	0.069	15
115	131	0.081	12	101	115	0.072	14
120	136	0.085	12	106	120	0.075	13
125	142	0.088	11	110	125	0.078	13

COVERAGE FORMULAS

$$\begin{array}{rcl}
 \text{Gallons Required} = & \frac{\text{Theoretical Wet Film Thickness (Mils)} \times \text{Sq.Ft. To Be Covered}}{1604} & = \frac{\text{Theoretical Dry Film Thickness (Mils)} \times \text{Sq.Ft. To Be Covered}}{1413}
 \end{array}$$

1 MIL = .001 of an inch

CIM Product	Package Size	Actual Mixed Gallons
CIM 1000	5.5 Gallon Pail	5.0 Gallons
CIM 1000 Trowel Grade	5.5 Gallon Pail	4.5 Gallons
CIM 1000 Trowel Grade	1.0 Gallon Can	0.8 Gallons
CIM 1000 Trowel Grade	Dual Cartridges	0.2 Gallons

Coverages are theoretical and do not account for waste, spillage, irregular surfaces, or application technique.

CIM BONDING AGENT

Porous Surface	1 gallon = 300 sq.ft. or .00333 gal/sq.ft.
Non Porous Surface	1 gallon = 600 sq.ft. or .00166 gal/sq.ft.

November 12, 2015

Dow U.S.A.
P.O. Box 1398
Pittsburg, CA 94565

Attention: Mr. Jeff Cast
Subject: Block 560 Drum Storage Area Certification

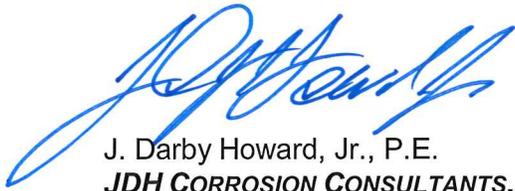
Gentlemen:

Pursuant to your request, I have completed my evaluation of the following storage area:

* Block 560 Drum Storage Area

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations.

Respectfully submitted,


J. Darby Howard, Jr., P.E.
JDH CORROSION CONSULTANTS, INC.
Professional Civil Engineer
California No. C044435



Block 560 RCRA Drum Storage Area

INTRODUCTION

The purpose for this investigation is to assess the viability for continued use of Block 560 Drum Storage Area located at the Dow U.S.A. facility in Pittsburg, Ca. This evaluation was performed in compliance with the Title 22, California Code of Regulations, Article 9, Section 66264.175, and consisted of the following:

1. Visual inspection of the waste drum storage area
2. Capacity and structural integrity assessment

SYSTEM DESCRIPTION

The subject drum storage area consists of two identical bays with dimensions of approximately 19 feet wide by 39 feet long and 6 inches deep. There is a drive-in ramp into each basin and a sump pit. Each basin is constructed out of formed concrete which is lined with a urethane coating system manufactured by C.I.M. Industries, Inc. The CIM 1000 urethane coating system is a liquid applied two-component coating system that reportedly adheres well to concrete and has good abrasion resistance and chemical resistance. The coating system is reportedly impervious to water and most aqueous chemicals and thus performs well as a long lasting liner.

VISUAL INSPECTION

A visual inspection of the waste storage basins was conducted on November 12, 2015 at which time the floors of the basins appeared to be in satisfactory condition. The CIM coating system is black in color and has light colored sand sprinkled on the surface for skid-resistance. There is a grating on top of the sumps and it appears to be in satisfactory condition also. In past years there were numerous bubbles or blisters evident on the floor of the west basin, however this CIM urethane lining system was recently replaced with a new liner and there are no longer any blisters evident in either basin. At the time of our inspection, there were no indications of any wear or degradation to the liner system.

The 6 inch high concrete berms are coated with the same CIM coating system including the drive ramps and the sumps. The east basin berm developed some significant cracks, in previous years, however, those cracks were previously repaired and the repairs still look to be satisfactory today.

There is a 1 ½" Sch. 40 PVC drain pipe in each basin connecting the sump pit to a pumping system. This pumping system includes an in-line ball valve in each drain pipe that is labeled, "VALVE TO REMAIN CLOSED AFTER TRANSFER". The removal of liquid material from the sumps is covered in the RCRA Storage Area Inspection Procedure. This procedure is reportedly only used by authorized personnel. During my inspection of the basins new labels were installed onto the PVC drain pipes in each basin to replace the old faded labels for easier visibility.

CAPACITY AND STRUCTURAL INTEGRITY ASSESSMENT

The structural integrity of the concrete berms for the Block 560 Drum Storage Basins are satisfactory for their intended use at this time based on this visual inspection. Also, based on our review of the secondary containment calculations performed by G. Singh Vij with DOW Chemical dated May 24, 1995 the capacity of the storage basins is also satisfactory for their intended use.

CONCLUSIONS AND RECOMMENDATIONS

1. The capacity, product compatibility and structural adequacy of Block 560 Drum Storage Basins is satisfactory for their intended use of these basins in accordance with the findings contained in this report.
2. A recertification survey should be conducted on these basins in two years. The lining system was recently replaced, and as such it is important to inspect the basins regularly in order to ensure that the lining system continues to remain in satisfactory condition in order to avoid jeopardizing the overall integrity of the storage area containment.

LIMITATIONS

The conclusions and recommendations contained in this report are based on the information provided by Dow personnel and on the site investigation referenced in this report. All services provided herein were performed by persons who are experienced and skilled in conducting these types of assessments and in accordance with the standards of workmanship in this profession. No other warranty, expressed or implied, is provided

Dow U.S.A.
Block 560 Drum Storage Area



Photo No. 1 – Overview of Block 560 RCRA Drum Storage Area. Note new liner and yellow striping throughout the basins.

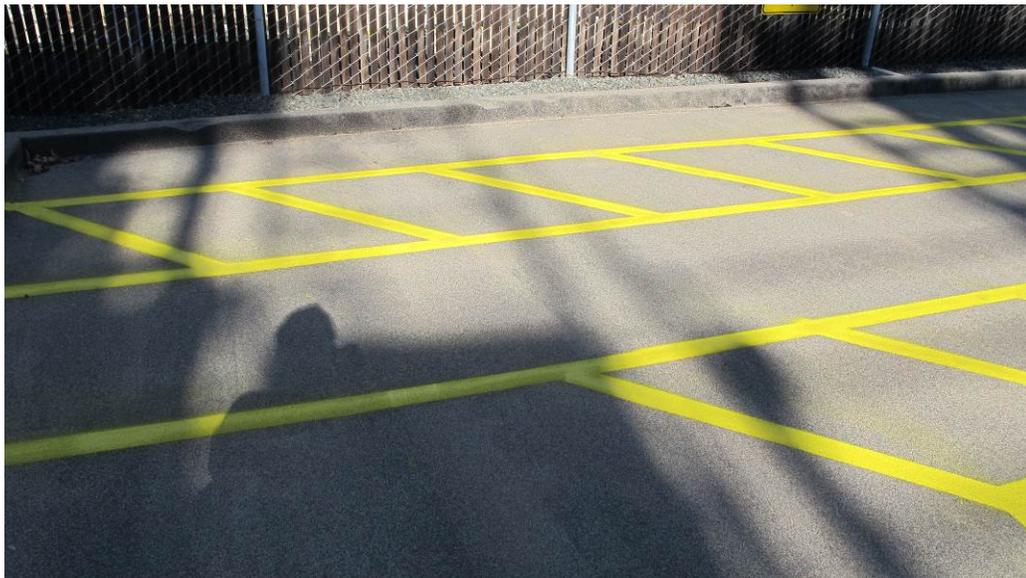


Photo No. 2 – Overview of the west basin which is in satisfactory condition with not blisters evident in the new liner.

Dow U.S.A.
Block 560 Drum Storage Area



Photo No. 3 – Overview of the east basin which is in satisfactory condition with new yellow striping.



Photo No. 4 – Close-up view of the sump in the west basin.

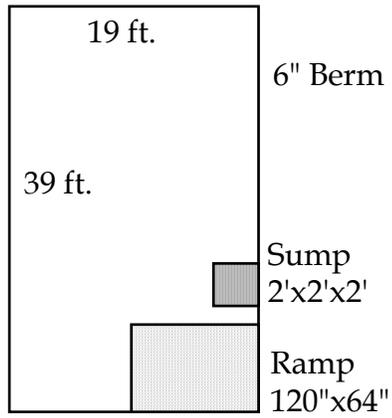


Photo No. 5 –Location where the PVC drain pipes exist the drum storage basins.



Photo No. 6 – Close-up view of the label on top of the PVC drain pipe.

Calculations for RCRA Container Storage Area, 560 Block



Both Bays are identical

$$\text{Sump Vol.} = 2' \times 2' \times 2' = \underline{8 \text{ ft}^3}$$

Evaluate capacity of one bay:

$$\text{Overall Vol.} = 39' \times 129' \times .5' = \underline{370.5 \text{ ft}^3}$$

Net Volume of Containment =

$$\text{Ramp Vol.} = W \times L \times 1/2 \text{ Height} = \\ 120'' \times 64'' \times 6'' \times .5 / (12)^3 = \underline{13.3 \text{ ft}^3}$$

$$370.5 \text{ ft}^3 - 13.3 \text{ ft}^3 + 8 \text{ ft}^3 = \underline{365.2 \text{ ft}^3}$$

Required Containment Volume =

Volume of 25 year, 24 hour rainfall

+

Volume of containment displaced by drums

+

The larger of (10% of total volume of liquid containers or
100% of largest liquid container)

Maximum of 6000 gallons stored in both bays.

$$6000 \text{ gal.} / 55 \text{ gal.} / \text{drums} = \underline{109 - 55 \text{ gal. drums max.}}$$

assume 60 drums (15 pallets of 4 drums each) in one bay

25 year , 24 hour rainfall for site = 3.39" from NOAA Precipitation
Frequency Data Server
(<http://hdsc.nws.noaa.gov/hdsc/pfds/index.html>)
accessed November 23, 2015

$$39' \times 19' \times 3.39'' / 12 \text{ inches/ft} = \underline{209 \text{ ft}^3}$$

Volume displaced by drums = $\pi r^2 h$ (h = height of Berm = 6")
55 gal drum diameter = 23"

$$\text{Displaced Vol./drum} = 3.14 \times (23/2/12)^2 \times .5 \\ = \underline{1.44 \text{ ft}^3/\text{drum}}$$

$$\text{Total Displaced Volume} = 1.44 \text{ ft}^3/\text{drum} \times 60 \text{ drums} \\ = \underline{86.4 \text{ ft}^3}$$

Volume of 10% of total liquid containers =

$$55 \text{ gal/drum} \times 60 \text{ drums} \times 0.10 = 330 \text{ gallons} \\ \text{(this is } > 100\% \text{ of one 55 gal drum)}$$

$$= 330 \text{ gal.} / 7.48 \text{ gal/ft}^3 = \underline{44.1 \text{ ft}^3}$$

Required Containment Volume =

$$209 \text{ ft}^3 + 86.4 \text{ ft}^3 + 44.1 \text{ ft}^3 = \underline{339.5 \text{ ft}^3}$$

Net Volume of Containment	>	Required Containment Volume
365.2 ft ³	>	339.5 ft ³

Appendix F

Inspection Procedure/Form

02E26 – Hazardous Waste Drum Storage Area Inspection Procedure

Scope	This procedure provides instruction for inspecting a Hazardous Waste Drum Storage Area.
Requirements Satisfied	<p>This inspection satisfies the following regulations and requirements:</p> <ul style="list-style-type: none"> • California Code of Regulations, Title 22, §66264.174 <ul style="list-style-type: none"> ○ <i>At least weekly, the owner or operator shall inspect areas used for container storage or transfer, looking for leaking containers and for deterioration of containers and the containment system caused by corrosion or other factors.</i> • CalOSHA Voluntary Protection Program (VPP): <ul style="list-style-type: none"> ○ <i>Work Site Analysis / Routine Inspections</i> <p>This document is intended to complement, not replace the above listed requirements.</p>
CTT Task	This document provides the procedure for completing the following compliance task: 02E26 – Weekly Container Storage Area Inspection
Responsibility	<p>Refer to the Master Task List (MTL) for workgroup responsible for completing this check.</p> <p>Only personnel trained on the Compliance Inspection Checklist System Procedure may complete this check.</p>
Frequency	Weekly: Refer to the Master Task List for the schedule for completion of this check.
Attributes and Categories	<p>Categories</p> <p><input type="checkbox"/> Critical <input type="checkbox"/> Emergency <input type="checkbox"/> Operating <input type="checkbox"/> AOP <input checked="" type="checkbox"/> Other: <u>EH&S Compliance</u></p> <p>Attributes (Operating/Other)</p> <p><input type="checkbox"/> Routine <input checked="" type="checkbox"/> Non-Routine</p>

Continued on next page

02E26 – Hazardous Waste Drum Storage Area Inspection Procedure, Continued

Hazards and Precautions

The table below lists job hazards associated with completing this procedure and the precautions that should be taken for safety, environmental, quality, ergonomics (position, force, duration and repetition), Good Manufacturing Practices, etc. before beginning this procedure. Each hazard is referenced to the step in the procedure in which that hazard is a concern.

Step	Hazard	Precaution
1 – 2	The drums being inspected contain hazardous waste and there is a potential for chemical exposure due to residual chemicals on the outside of the drums.	Wear the appropriate PPE as defined in the department PPE Grid for entering the process area.
<i>If any physical contact or exposure occurs, report and seek medical treatment immediately!</i>		

Consequences of Deviation

The only consequences of deviation associated with this procedure is not being in compliance with the requirements referenced above if the procedure is not completed or followed properly.

Continued on next page

02E26 – Hazardous Waste Drum Storage Area Inspection Procedure, Continued

Inspection Procedure

Follow the criteria below to inspect the hazardous waste drum storage area and the drums located within the area and address any deficiencies identified.

Step	Action	
1	Inspect the drums in the hazardous waste storage area.	
	IF any of the Waste Drums...	THEN take the following action...
	Are older than 60 days.	Contact the department waste coordinator or supervision to begin the process to ship the drum off site.
	Are older than 90 days.	Contact the site Waste Management Group at x5923 to move the drum to the waste shipment warehouse immediately.
	Have dents or leaks.	Replace the drum with a new drum. Contact the site Waste Management Group at x5923 for an overpak drum if necessary.
	Have chemicals or standing water on the sides or tops of the drums.	Clean the outside of drum.
	Have lids or bungs that are open, loose, or missing.	Close / tighten the open, loose or missing lid /bungs or replace drum with a new drum
	Have illegible labels.	Replace the label with a legible label. Contact the site Waste Management Group at x5923 if assistance is needed with labeling
	Have labels that are turned away from the aisle.	Turn the drums so the labels.
	Do not have at least three feet of aisle space between the drums.	Arrange the drums to provide at least three feet of aisle space between drums.

Continued on next page

02E26 – Hazardous Waste Drum Storage Area Inspection Procedure, Continued

Inspection Procedure (continued)

Follow the criteria below to inspect the hazardous waste drum storage area and the drums located within the area and address any deficiencies identified.

Step	Action										
2	<p>Inspect the hazardous waste storage area.</p> <table border="1"> <thead> <tr> <th>IF the Storage Area...</th> <th>THEN take the following action...</th> </tr> </thead> <tbody> <tr> <td>Containment has cracks or gaps.</td> <td>Notify the department waste contact and the EH&S Delivery Hazardous Waste SME.</td> </tr> <tr> <td>Containment has any accumulated precipitation.</td> <td>Pump out the precipitation every 24 hours until no water accumulates.</td> </tr> <tr> <td>Does not have bilingual warning signs in place and clearly visible from all points of access.</td> <td>Locate and hang signs as specified in the hazardous waste drum storage area, or Remove any obstructions that limit the visibility of the signs.</td> </tr> <tr> <td colspan="2">Submit work notifications as needed to correct any deficiencies.</td> </tr> </tbody> </table>	IF the Storage Area...	THEN take the following action...	Containment has cracks or gaps.	Notify the department waste contact and the EH&S Delivery Hazardous Waste SME.	Containment has any accumulated precipitation.	Pump out the precipitation every 24 hours until no water accumulates.	Does not have bilingual warning signs in place and clearly visible from all points of access.	Locate and hang signs as specified in the hazardous waste drum storage area, or Remove any obstructions that limit the visibility of the signs.	Submit work notifications as needed to correct any deficiencies.	
IF the Storage Area...	THEN take the following action...										
Containment has cracks or gaps.	Notify the department waste contact and the EH&S Delivery Hazardous Waste SME.										
Containment has any accumulated precipitation.	Pump out the precipitation every 24 hours until no water accumulates.										
Does not have bilingual warning signs in place and clearly visible from all points of access.	Locate and hang signs as specified in the hazardous waste drum storage area, or Remove any obstructions that limit the visibility of the signs.										
Submit work notifications as needed to correct any deficiencies.											
3	File the complete inspection checklist in the department library and sign off on the MTL task.										

Document Information and History

Introduction This section of the document is used to provide document management information and document history related to the compliance inspection procedure.

MOC Requirements Any changes to this compliance inspection procedure must follow the applicable site MOC process and be approved by the Responsible Care Leader, EH&S Delivery Leader or the appropriate EH&S / ES&S Delivery Specialist.

Document Owner This document is owned by the EH&S Delivery Technician – Waste

Document Creation This document was created by Jeff Cast on 01/25/95 and approved by the Pittsburg Site Waste Team.

Triennial Review This document was last reviewed by the person listed below on the date listed below and was determined to be current and accurate at that time.

Review Date	Reviewer Name	Reviewer Role
01/29/15	Robert Rhode	EH&S Delivery Leader

Approved Document Location The approved version of the electronic original for this document is located at:
\\pbnt03\Pitts_EH_S\Approved\Procedures\Compliance Inspections\Weekly\02E26 Hazardous Waste Drum Storage Area Inspection Procedure.docx

There are no approved hard copy locations of this document.

Related Documents The documents related to this compliance inspection procedure template are listed in the table below:

Document Name	Location
02E26 Hazardous Waste Drum Storage Area Inspection Checklist Template	\\pbnt03\Pitts_EH_S\Approved\Checking & Corrective Action\Checklists\EH&S Compliance Checklist Templates\Weekly\02E26 Hazardous Waste Drum Storage Area Inspection Checklist Template.docx
Pittsburg Site Safety Standard S-330 Repetitive Compliance Tasks	\\pbnt03\Pittsburg\Approved\Management System\Leadership Responsibility\Repetitive Compliance Tasks\S-330 Repetitive Compliance Tasks.docx

Records Retention The records retention for a completed Hazardous Waste Drum Storage Area inspection checklist is three (3) years plus current.

Continued on next page

Document Information and History, Continued

Revision History

The following information documents at least the last three (3) changes to this document, with all the changes and reviews listed for the last five (5) years.

Date	Revised By	Changes
01/22/12	Greg Dubitsky	Triennial review. No changes.
01/29/15	Robert Rhode	Triennial review. Inspection checklist separated from the inspection procedure. Refer to the MOC for details. Approved By: Jeff Cast MOC#: EHS2015010050

RCRA Hazardous Waste Drum Storage Area Inspection Checklist

This checklist is used to document the results of the Hazardous Waste Drum Storage Area inspection. All checklists must be completed according to the Compliance Inspection Checklist System Procedure. All corrective actions must be documented and completed on the compliance inspection checklist.

Checklist Completed By					
Name	Signature	Date	Time		
Storage Area Location	Pass	Fail	Failure Comments and Action Taken (include WO# if applicable)	Repair Date	Repair Date Signature
RCRA 1 Year Permitted Storage Area				_/_/___	
Drum Traffic Record – Record drum traffic information for the RCRA 1 year storage areas as needed in the table below.					
Date In	By Whom	# of Drums	Drum Date	Waste Code	Date Out
RCRA Storage Maintenance – Record information for RCRA 1 year storage area maintenance as needed below.					
CALLS MADE					
Date In	By Whom	# of Drums	Drum Date	Waste Code	Date Out
COMMENTS PERTAINING TO RCRA AREA					
<i>Records Retention: The records retention for this compliance inspection checklist is three (3) years plus current when completed.</i>					

Document Information and History

Introduction This section of the document is used to provide document management information and document history related to the compliance inspection checklist.

Document Owner This document is owned by the EH&S Delivery Tech – Waste

Document Creation This document was created by Robert Rhode on 01/29/15 per MOC# EHS2015010050.

Triennial Review This document was last reviewed by the person listed below on the date listed below and was determined to be current and accurate at that time.

Review Date	Reviewer Name	Reviewer Role
01/29/15	Robert Rhode	EH&S Delivery Leader

Approved Document Location The approved version of the electronic original for this document is located at:
\\pbnt03\Pitts_EH_S\Approved\Checking & Corrective Action\Checklists\500 Warehouse\Weekly checks\Hazardous Waste Drum Storage Area Inspection Checklist – RCRA.docx

There are no approved hard copy locations of this document.

Related Documents The documents related to this compliance inspection procedure template are listed in the table below:

Document Name	Location
02E26 Hazardous Waste Drum Storage Area Inspection Procedure.docx	\\pbnt03\Pitts_EH_S\Approved\Procedures\Compliance Inspections\Weekly\02E26 Hazardous Waste Drum Storage Area Inspection Procedure.docx
Pittsburg Site Safety Standard S-330 Repetitive Compliance Tasks	\\pbnt03\Pittsburg\Approved\Management System\Leadership Responsibility\Repetitive Compliance Tasks\S-330 Repetitive Compliance Tasks.docx
Compliance Inspection Checklist Completion Procedure	\\pbnt03\Pittsburg\Approved\Procedures\Responsible Care\Compliance Inspections\Compliance Inspection Checklist Completion Procedure.docx

Records Retention The records retention for a completed Hazardous Waste Drum Storage inspection checklist is three (3) years plus current.

Continued on next page

Document Information and History, Continued

Revision History

The following information documents at least the last three (3) changes to this document, with all the changes and reviews listed for the last five (5) years.

Date	Revised By	Changes
01/29/15	Robert Rhode	Document created by separating the inspection checklist from the inspection procedure per MOC#: EHS2015010050 Approved By: Jeff Cast MOC#: EHS2015010050

Compliance Inspection Checklist Completion Procedure

Scope	The following procedure provides instructions for properly completing compliance inspection checklists.
Attributes and Categories	<p>Categories</p> <p><input type="checkbox"/> Critical <input type="checkbox"/> Emergency <input type="checkbox"/> Operating <input type="checkbox"/> AOP <input checked="" type="checkbox"/> Other: <u>Administrative</u></p> <p>Attributes (Operating/Other) <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Non-Routine</p>
Hazards and Precautions	<p>There are no apparent hazards associated with completing this procedure.</p> <p>The hazards and precautions associated with completing specific compliance inspection procedures are provided in those documents.</p>
Consequences of Deviation	<p>The only consequences of deviating from the procedures provided in this document are not being compliant with inspection documentation requirements. Deficiencies in the inspection documentation process may result in civil and criminal penalties. Examples of deficiencies in the inspection documentation process are listed here:</p> <ul style="list-style-type: none"> • The compliance task was not completed. • The compliance task was completed but not documented. • The compliance task was performed and documented, but the documentation is incomplete. • The compliance task was performed, documentation was complete, but the documentation was not completed properly.
Training	Inspection checklist procedure training must be completed before a person can complete an inspection checklist.

Continued on next page

Compliance Inspection Checklist Completion Procedure,

Continued

Minimum Requirements

The following table lists the minimum requirements that must be met when completing a compliance inspection checklist.

Requirement
Compliance tasks must be completed by the due date listed in MTL. Any deviations from the listed due date must be noted on the inspection checklist, with a reason for the delay.
Document completion (signature, pass/fail checkmarks) of the compliance task only after the task has been completed. Do not sign off on a task as being completed if it hasn't been done yet.
Use the published / approved inspection procedure and inspection checklist linked to the task in Master Task List (MTL). Do not use Desktop copies.
Use only blue or black ink.
Each individual completing the inspection must sign the inspection checklist. Printed names must be legible. Printed names and signatures must include at least the first initial and last name.
The date and time the inspection was completed must be recorded on the inspection checklist.
If the location is list in not pre-populated, list each piece of equipment inspected, not just the ones that failed the inspection.
Complete the Pass / Fail columns with an 'X', checkmark, or initials. Initials are required if more than one person completes the inspection.
Completed inspection checklists must be returned to the Plant Library for filing.
FAILED INSPECTIONS
The reason for the deficiency and the corrective actions taken to address the deficiency must be documented in the Failure Comment and Action Taken column on the checklist. If a work request is required to correct the deficiency, reference the GEMTS work order number with the reason and corrective action.
Each Repair Date and Repair Date Signature must be signed off individually. The repair can be signed off by the original inspector, next inspector, Activity Coordinator or building owner.

Continued on next page

Compliance Inspection Checklist Completion Procedure,

Continued

Checklist Completion Procedure

Use the procedure below to properly complete an inspection checklist.

Step	Action								
1	Open the Master Task List (MTL) and identify the compliance task due for completion.								
2	Open the compliance task and print BOTH the inspection procedure (first document) and the inspection checklist (second document).								
3	Complete the inspection per the inspection procedure for each piece of equipment or item listed in the inspection checklist. <table border="1"> <thead> <tr> <th>IF ...</th> <th>THEN ...</th> </tr> </thead> <tbody> <tr> <td>The equipment or item meets all of the inspection criteria.</td> <td>Place a check mark (or initials if multiple people are completing the inspection) in the <i>Pass</i> column.</td> </tr> <tr> <td>The equipment or item does NOT meet all of the inspection criteria.</td> <td>Follow the procedure below for a failed inspection.</td> </tr> <tr> <td>The equipment / item could not be inspected by the required date.</td> <td>Follow the procedure below for an incomplete inspection.</td> </tr> </tbody> </table>	IF ...	THEN ...	The equipment or item meets all of the inspection criteria.	Place a check mark (or initials if multiple people are completing the inspection) in the <i>Pass</i> column.	The equipment or item does NOT meet all of the inspection criteria.	Follow the procedure below for a failed inspection.	The equipment / item could not be inspected by the required date.	Follow the procedure below for an incomplete inspection.
IF ...	THEN ...								
The equipment or item meets all of the inspection criteria.	Place a check mark (or initials if multiple people are completing the inspection) in the <i>Pass</i> column.								
The equipment or item does NOT meet all of the inspection criteria.	Follow the procedure below for a failed inspection.								
The equipment / item could not be inspected by the required date.	Follow the procedure below for an incomplete inspection.								
4	Repeat Step 3 until all of the equipment / items listed on the inspection checklist has been inspected.								
<p><i>Note: The remaining steps in this procedure only apply to inspections where all of the equipment or items pass all of the inspection criteria. Refer to the Failed Inspection Procedure or Incomplete Inspection Procedure as appropriate.</i></p>									
5	Sign and print your name and record the date and time in the area provided at the top of the inspection checklist.								
6	Place the completed checklist in the Completed Checklist bin for filing. <i>NOTE: it is the responsibility of the DMA to file all checklists in the appropriate binders. Please do not file your own completed inspection checklists.</i>								
7	Change the task status in MTL to Completed .								

Continued on next page

Compliance Inspection Checklist Completion Procedure,

Continued

Failed Inspection Procedure

Follow the procedure below when an inspection criterion for a compliance task has not been met.

Step	Action						
1	Place a check mark (or initials if multiple people are completing the inspection) in the Fail column.						
2	<p>Correct the deficiency identified during the inspection as specified in the inspection procedure.</p> <table border="1"> <thead> <tr> <th>IF ...</th> <th>THEN ...</th> </tr> </thead> <tbody> <tr> <td>Maintenance resources are needed to correct the deficiency</td> <td>Submit a work request to correct the deficiency.</td> </tr> <tr> <td>The inspection was conducted by an external inspector. <i>Example: Deluge Testing, Crane Inspections, etc.</i></td> <td>Create an EAT event with actions items to address each deficiency or finding in the inspection. Refer to the procedure below for details on how to create the EAT event.</td> </tr> </tbody> </table>	IF ...	THEN ...	Maintenance resources are needed to correct the deficiency	Submit a work request to correct the deficiency.	The inspection was conducted by an external inspector. <i>Example: Deluge Testing, Crane Inspections, etc.</i>	Create an EAT event with actions items to address each deficiency or finding in the inspection. Refer to the procedure below for details on how to create the EAT event.
IF ...	THEN ...						
Maintenance resources are needed to correct the deficiency	Submit a work request to correct the deficiency.						
The inspection was conducted by an external inspector. <i>Example: Deluge Testing, Crane Inspections, etc.</i>	Create an EAT event with actions items to address each deficiency or finding in the inspection. Refer to the procedure below for details on how to create the EAT event.						
3	<p>Document the cause for the failure and the action taken to correct the failure in the Failure Comments and Action Taken column.</p> <p>Reference the GEMTS work request number or EAT event number.</p>						
4	Repeat Steps 1 – 3 for each deficiency identified during the inspection.						
5	Once a deficiency has been corrected, document the completion of the follow up actions by entering the date the deficiency was corrected in the Repair Date column and signature in the Repair Date Signature column.						

Continued on next page

Compliance Inspection Checklist Completion Procedure,

Continued

Failed Inspection Procedure

Follow the procedure below when an inspection criterion for a compliance task has not been met.

Step	Action						
6	<p>Sign and print your name and record the date and time in the area provided at the top of the inspection checklist.</p> <table border="1"> <thead> <tr> <th>IF ...</th> <th>THEN ...</th> </tr> </thead> <tbody> <tr> <td>All of the deficiencies were corrected at the time of the inspection.</td> <td>Place the completed checklist in the Completed Checklist bin in the plant library for filing. Change the task status in MTL to Completed.</td> </tr> <tr> <td>There are deficiencies that could not be corrected at the time of the inspection.</td> <td>Place the completed checklist in the In Process bin in the plant library for follow up. Change the task status in MTL to Completed, check the Resolution Initiated (RI) box, and provide a brief description of the defect in the Gap Found/Further Action field.</td> </tr> </tbody> </table> <p><i>NOTE: it is the responsibility of the DMA to file all checklists in the appropriate binders. Please do not file your own completed inspection checklists.</i></p>	IF ...	THEN ...	All of the deficiencies were corrected at the time of the inspection.	Place the completed checklist in the Completed Checklist bin in the plant library for filing. Change the task status in MTL to Completed .	There are deficiencies that could not be corrected at the time of the inspection.	Place the completed checklist in the In Process bin in the plant library for follow up. Change the task status in MTL to Completed , check the Resolution Initiated (RI) box, and provide a brief description of the defect in the Gap Found/Further Action field.
IF ...	THEN ...						
All of the deficiencies were corrected at the time of the inspection.	Place the completed checklist in the Completed Checklist bin in the plant library for filing. Change the task status in MTL to Completed .						
There are deficiencies that could not be corrected at the time of the inspection.	Place the completed checklist in the In Process bin in the plant library for follow up. Change the task status in MTL to Completed , check the Resolution Initiated (RI) box, and provide a brief description of the defect in the Gap Found/Further Action field.						
7	Monitor the progress of any deficiencies that were not corrected at the time of the inspection to ensure that they are resolved. Document resolution of the deficiencies on the inspection checklist by completing the Repair Date and Repair Date Signature columns as described in Step 5.						
8	Once all the deficiencies that were not corrected at the time of the inspection have been resolved, take the MTL task out of Resolution Initiated (RI) .						

Continued on next page

Compliance Inspection Checklist Completion Procedure,

Continued

Incomplete Inspection Procedure

Follow the procedure below when the compliance task cannot be completed by the required date.

Note: an inspection not completed is considered a failed inspection. Failed inspections (inspection not performed or equipment failed the inspection) must be noted on the inspection checklist.

Step	Action
1	Place a check mark (or initials if multiple people are completing the inspection) in the Fail column.
2	Document the reason for not completing the compliance task in the Failure Comments and Action Taken column.
3	If maintenance resources are needed to complete the compliance task, submit a work request and reference the GEMTS number in the Failure Comments and Action Taken column.
4	Communicate the situation to the Equipment Owner or designee. Indicate when and what will be done to complete the inspection.
5	Once the compliance task has been completed, document the completion of the follow up actions by entering the date the deficiency was corrected in the Repair Date column and signature in the Repair Date Signature column.
6	Once compliance task has been completed and any deficiencies have been corrected, place the completed inspection checklist in the Complete Checklist bin in the plant library.

Continued on next page

Compliance Inspection Checklist Completion Procedure,

Continued

Lost Inspection Checklists

This procedure is used by the person responsible for originally completing the compliance task.

Step	Action						
1	Print a new copy of the inspection checklist.						
2	Complete the Checklist Completed By section (name, signature, date, and time) of the inspection checklist with the date and time the inspection was originally completed.						
3	Complete the rest of the inspection checklist with the results (pass, fail, repair date, etc.) of the inspection.						
4	<p>When the person responsible for completing the inspection specifically recalls completing the inspection, resolve the issue as follows:</p> <table border="1"> <thead> <tr> <th>IF ...</th> <th>THEN ...</th> </tr> </thead> <tbody> <tr> <td> There is documentation that the inspection was completed in another system such as eLogbook or MTL, AND All items passed inspection. </td> <td> Use the following verbiage to document that the original inspection checklist was lost: <i>“This inspection was completed on time as scheduled. All items passed inspection. The original documentation has been lost.”</i> Initial and date the statement with the day the checklist was recreated. </td> </tr> <tr> <td> There is documentation that the inspection was completed in another system such as eLogbook or MTL, AND All items did NOT pass inspection. </td> <td> Repeat the inspection and document the results on the inspection checklist. Use the following verbiage to document that the original inspection checklist was lost: <i>“This inspection was completed on time as scheduled, but not all items passed inspection. The original documentation has been lost. This was redone on [enter current date]”</i> Initial and date the statement with the day the inspection was redone. </td> </tr> </tbody> </table>	IF ...	THEN ...	There is documentation that the inspection was completed in another system such as eLogbook or MTL, AND All items passed inspection.	Use the following verbiage to document that the original inspection checklist was lost: <i>“This inspection was completed on time as scheduled. All items passed inspection. The original documentation has been lost.”</i> Initial and date the statement with the day the checklist was recreated.	There is documentation that the inspection was completed in another system such as eLogbook or MTL, AND All items did NOT pass inspection.	Repeat the inspection and document the results on the inspection checklist. Use the following verbiage to document that the original inspection checklist was lost: <i>“This inspection was completed on time as scheduled, but not all items passed inspection. The original documentation has been lost. This was redone on [enter current date]”</i> Initial and date the statement with the day the inspection was redone.
IF ...	THEN ...						
There is documentation that the inspection was completed in another system such as eLogbook or MTL, AND All items passed inspection.	Use the following verbiage to document that the original inspection checklist was lost: <i>“This inspection was completed on time as scheduled. All items passed inspection. The original documentation has been lost.”</i> Initial and date the statement with the day the checklist was recreated.						
There is documentation that the inspection was completed in another system such as eLogbook or MTL, AND All items did NOT pass inspection.	Repeat the inspection and document the results on the inspection checklist. Use the following verbiage to document that the original inspection checklist was lost: <i>“This inspection was completed on time as scheduled, but not all items passed inspection. The original documentation has been lost. This was redone on [enter current date]”</i> Initial and date the statement with the day the inspection was redone.						

Continued on next page

Compliance Inspection Checklist Completion Procedure,

Continued

Lost Inspection Checklists (continued)

This procedure is used by the person responsible for originally completing the compliance task.

Step	Action								
5	<p>When the status of the original inspection is unknown, resolve the issue as follows:</p> <table border="1"> <thead> <tr> <th>IF ...</th> <th>THEN ...</th> </tr> </thead> <tbody> <tr> <td> <p>The subsequent inspection has already been completed, AND</p> <p>The person responsible has a reason for why the completed checklist is missing.</p> <p><i>Note: 'subsequent' refers to the next scheduled inspection (i.e. the March inspection if the missing inspection is for February).</i></p> </td> <td> <p>Use the following verbiage to document that the original inspection documentation was lost.</p> <p><i>This inspection was not completed as scheduled for [enter date] due to [fill in the reason]. The subsequent inspection has already been completed.</i></p> <p>Initial and date the statement with the day the missing inspection documentation was created.</p> </td> </tr> <tr> <td> <p>The subsequent inspection has already been completed, AND</p> <p>The person responsible does NOT know why the completed checklist is missing.</p> </td> <td> <p>Use the following verbiage to document that the original inspection documentation was lost.</p> <p><i>This inspection was not completed as scheduled for [enter date]. The subsequent inspection has already been completed.</i></p> <p>Initial and date the statement with the day the missing inspection documentation was created.</p> </td> </tr> <tr> <td> <p>The subsequent inspection has NOT been completed.</p> </td> <td> <p>Repeat the inspection and document the results on the inspection checklist.</p> <p>Use the following verbiage to document that the original inspection checklist was lost:</p> <p><i>"This inspection was completed on [enter date] to satisfy the inspection that was due on [enter original due date]."</i></p> <p>If the reason for the missing documentation is known then add the following additional verbiage:</p> <p><i>The original inspection was not completed as scheduled due to [fill in reason].</i></p> <p>Initial and date the statement with the day the inspection was redone.</p> </td> </tr> </tbody> </table>	IF ...	THEN ...	<p>The subsequent inspection has already been completed, AND</p> <p>The person responsible has a reason for why the completed checklist is missing.</p> <p><i>Note: 'subsequent' refers to the next scheduled inspection (i.e. the March inspection if the missing inspection is for February).</i></p>	<p>Use the following verbiage to document that the original inspection documentation was lost.</p> <p><i>This inspection was not completed as scheduled for [enter date] due to [fill in the reason]. The subsequent inspection has already been completed.</i></p> <p>Initial and date the statement with the day the missing inspection documentation was created.</p>	<p>The subsequent inspection has already been completed, AND</p> <p>The person responsible does NOT know why the completed checklist is missing.</p>	<p>Use the following verbiage to document that the original inspection documentation was lost.</p> <p><i>This inspection was not completed as scheduled for [enter date]. The subsequent inspection has already been completed.</i></p> <p>Initial and date the statement with the day the missing inspection documentation was created.</p>	<p>The subsequent inspection has NOT been completed.</p>	<p>Repeat the inspection and document the results on the inspection checklist.</p> <p>Use the following verbiage to document that the original inspection checklist was lost:</p> <p><i>"This inspection was completed on [enter date] to satisfy the inspection that was due on [enter original due date]."</i></p> <p>If the reason for the missing documentation is known then add the following additional verbiage:</p> <p><i>The original inspection was not completed as scheduled due to [fill in reason].</i></p> <p>Initial and date the statement with the day the inspection was redone.</p>
IF ...	THEN ...								
<p>The subsequent inspection has already been completed, AND</p> <p>The person responsible has a reason for why the completed checklist is missing.</p> <p><i>Note: 'subsequent' refers to the next scheduled inspection (i.e. the March inspection if the missing inspection is for February).</i></p>	<p>Use the following verbiage to document that the original inspection documentation was lost.</p> <p><i>This inspection was not completed as scheduled for [enter date] due to [fill in the reason]. The subsequent inspection has already been completed.</i></p> <p>Initial and date the statement with the day the missing inspection documentation was created.</p>								
<p>The subsequent inspection has already been completed, AND</p> <p>The person responsible does NOT know why the completed checklist is missing.</p>	<p>Use the following verbiage to document that the original inspection documentation was lost.</p> <p><i>This inspection was not completed as scheduled for [enter date]. The subsequent inspection has already been completed.</i></p> <p>Initial and date the statement with the day the missing inspection documentation was created.</p>								
<p>The subsequent inspection has NOT been completed.</p>	<p>Repeat the inspection and document the results on the inspection checklist.</p> <p>Use the following verbiage to document that the original inspection checklist was lost:</p> <p><i>"This inspection was completed on [enter date] to satisfy the inspection that was due on [enter original due date]."</i></p> <p>If the reason for the missing documentation is known then add the following additional verbiage:</p> <p><i>The original inspection was not completed as scheduled due to [fill in reason].</i></p> <p>Initial and date the statement with the day the inspection was redone.</p>								

Continued on next page

Compliance Inspection Checklist Completion Procedure,

Continued

**Lost Inspection
Checklists**
(continued)

This procedure is used by the person responsible for originally completing the compliance task.

Step	Action
6	Have the Production / Resource Leader sign and date the reconstituted inspection checklist to acknowledge the status of the missing inspection checklist.
7	Place reconstituted inspection checklist in the Completed Checklist bin or In Progress bin in the Plant Library as appropriate. <i>NOTE: it is the responsibility of the DMA to file all checklists in the appropriate binders. Please do not file your own completed inspection checklists.</i>

Continued on next page

Compliance Inspection Checklist Completion Procedure,

Continued

Creating an EAT

Follow the procedure below to create an EAT event for a compliance task.

Step	Action
1	From the Event and Action Tool (EAT) main menu, click on the <i>Create a New Event Record</i> button.
2	Select your facility from the dropdown list and click on the <i>Create New Event</i> button.
3	In the Event Date field, enter the date the compliance task was completed. The Investigation Start Date should be the same as the Event Date.
4	In the Team Leader UID field, enter the user ID of the Production / Resource Leader for the department where the compliance task was completed.
5	In the Event Summary field enter the following: <i>[Compliance Task] Inspection Deficiencies and Recommendations</i> <ul style="list-style-type: none"> <i>[Compliance Task]</i> is name of the inspection (i.e. Deluge Inspection, Crane Inspection, etc.). Example: Deluge Inspection Deficiencies and Recommendations
6	In the Event Description field enter the following: <i>Action items to correct deficiencies and address recommendations from the [Frequency] [Compliance Task] inspection completed by [Contractor or Vendor].</i> <ul style="list-style-type: none"> <i>[Frequency]</i> is the frequency of the inspection (i.e. Annual, Quarterly, etc.) <i>[Compliance Task]</i> is name of the inspection (i.e. Deluge Inspection, Crane Inspection, etc.) <i>[Contractor or Vendor]</i> is the name of the company that completed the inspection (i.e. Hagemeyer, Crane Works, etc.). Example: Action items to correct deficiencies and address recommendations from the annual Deluge inspection completed by Hagemeyer.
7	Check the <i>Planned Event</i> checkbox, not the <i>Unplanned Event</i> checkbox.
8	Under <i>Event Type</i> , check the <i>Assessment</i> checkbox.
9	Click on the <i>Submit/Save</i> button.
10	Enter the corrective actions with assigned action owners and target due dates.

Example Checklist

The following is an example of a completed Fire Extinguisher Inspection Checklist. Note that since two people completed the checklist, both of them signed the signature line and initialed the pass / fail column instead of checking it.

Fire Extinguisher Inspection Checklist

This checklist is used to document the results of the monthly fire extinguisher inspection. All checklists must be completed according to the Compliance Inspection Checklist System Procedure. All corrective actions must be documented and completed on the compliance inspection checklist.

Checklist Completed By					
Name	Signature	Date	Time		
S. Compliance	<i>S. Compliance</i>	05/25/11	10:00 AM		
Johnny Toast	<i>Johnny Toast</i>	05/25/11	10:00 AM		
Location	Pass	Fail	Failure Comments and Action Taken (include WO# if applicable)	Repair Date	Repair Date Signature
Permit Desk	SC			__/__/__	
GF Near P-173A		JT	Missing – contacted ES&S	05/25/11	<i>Johnny Toast</i>
2 nd Symtet East Stairway		JT	Seal Broken – contacted ES&S	__/__/__	
Entry Hall	JT			__/__/__	
Lab East Wall		SC	Handle Broken on Fire Extinguisher Case. EMTS# 923421	06/15/11	<i>Sally Compliance</i>
Lab West Wall	SC			__/__/__	
				__/__/__	
<i>Records Retention: The records retention for this compliance inspection checklist is one (1) year plus current when completed.</i>					

Document Information and History

Introduction The document information and history for the Compliance Inspection Checklist Completion Procedure is provided in this section.

Document Owner This document is jointly owned by the EH&S Delivery Leader on behalf of the EH&S Department and the Site ODMS Leader on behalf of the ODMS Group.

Document Creation This document was created by Ivan Elizondo on 12/12/11 per MOC#: SMS2011100001.

Document Review Frequency and Approval This document is to be reviewed: Every 3 Years.
This document was last reviewed / approved by the person and on the date listed below and was determined to be current and accurate.
Only the latest reviewer and date are captured in this block. Previous reviews are captured in the revision history block.

Review Date	Reviewer Name	Reviewer Role
05/19/14	Robert Rhode	EH&S Delivery Leader

Approved Location The electronic original of this document is located at:

<\\pbnt03\Pittsburg\Approved\Procedures\Responsible Care\Compliance Inspections\Compliance Inspection Checklist Completion Procedure.docx>

Related Documents The documents related to the Compliance Inspection Checklist Completion Procedure are:

Document Name	File Location
Compliance Inspection Checklists System Procedure	\\pbnt03\Pittsburg\Approved\Management System\Leadership Responsibility\Repetitive Compliance Tasks\Compliance Inspection Checklists System Procedure.docx
Pittsburg Site Safety Standard S-330 Repetitive Compliance Tasks	\\pbnt03\Pittsburg\Approved\Management System\Leadership Responsibility\Repetitive Compliance Tasks\S-330 Repetitive Compliance Tasks.docx
Compliance Inspection Checklist DMS Procedure	\\pbnt03\Pittsburg\Approved\Procedures\Responsible Care\Compliance Inspections\Compliance Inspection Checklist DMS Procedure.docx
Compliance Inspection Procedure Template	\\pbnt03\Pittsburg\Approved\Procedures\Templates\Compliance Inspection Procedure Template.docx
Compliance Inspection Checklist Template	\\pbnt03\Pittsburg\Approved\Procedures\Templates\Compliance Inspection Checklist Template.docx

Continued on next page

Document Information and History, Continued

Revision History

The following information documents at least the last three (3) changes to this document, with all the changes and reviews listed for the last five (5) years.

Date	Revised By	Changes
12/12/11	Ivan Elizondo	Creation of document based on old compliance inspection process and improved 2010-2011 compliance inspection process. Reviewed by Bob Rhode, Suzanne Baxter and Ivan Elizondo Approved By: Alan Ichikawa MOC # SMS2011100001
05/19/14	Robert Rhode	DMC/DMA activities removed. EAT requirements for inspections conducted by external resources. Refer to the MOC for details. Approved By: Dale Backlund MOC#: RC2014040002

Appendix G

Consolidated Contingency Plan

Dow Chemical
Pittsburg, California Site
Consolidated Contingency Plan

February 2015

Section I Plan Introduction

Overview

Introduction

The following section provides the purpose and scope of the Dow Chemical Pittsburg, California site consolidated contingency plan.

In this section

Following is a list of topics in this section:

Topic	See page
1. Purpose and Scope of Plan Coverage	3 - 5
2. Table of Contents	6 - 8
3. Current Revision Date	8
4. General Facility Identification Information	8 - 9

I.1 Purpose and Scope of Plan Coverage

Purpose	<p>The purpose of the Dow Chemical Pittsburg, California site Consolidated Contingency Plan is to assist personnel in minimizing personal injury, environmental exposure, property damage, and business interruption resulting from emergencies that could originate on site or affect the site. For efficiency and effectiveness the plan also consolidates the multiple emergency response plans required by various agencies into one standardized and functional plan format that incorporates all of the required information.</p> <hr/>
Scope	<p>The scope of the Dow Chemical Pittsburg, California site Consolidated Contingency Plan is to identify specific types of emergencies that could originate on site or affect the site and describe the plans, procedures, and resources utilized by the site during an emergency of these types.</p> <p>As an integral part of Dow’s overall safety and loss prevention program, the Pittsburg site maintains an up-to-date Consolidated Contingency Plan and site emergency procedures which apply to all personnel (Dow and Non-Dow) working for Dow at the location and are coordinated with existing local community emergency plans and procedures.</p> <p><u>Test frequency:</u> The site consolidated contingency plan is tested at least annually.</p> <hr/>
Unit Emergency Plans	<p>Each unit (plant, department or major occupied building) has an established unit emergency plan and emergency procedures for responding to emergencies that may occur within their unit or that could affect personnel or operations in their unit.</p> <p><u>Contents:</u> These plans describe processes and procedures used for responding to various types of incidents, and contain identified assembly areas, Sheltering areas, and escape routes.</p> <p><u>Implementation:</u> A unit may implement its contingency plan and emergency procedures as it deems necessary or as directed by Emergency Services and Security (ES&S) personnel or site management.</p> <hr/>

I.1 Purpose and Scope of Plan Coverage, continued

**Applicable Hazards
and Events**

This Dow Chemical Pittsburg, California site Consolidated Contingency Plan is applicable to the following hazards:

- Fire
 - Explosion
 - Chemical release
 - Uncontrolled chemical reactions
 - Earthquake
 - Utility loss
 - Bomb threat
 - Workplace stoppage and/or violence
 - Severe weather
 - Medical emergency
 - Civil disturbance
 - Transportation emergency
 - Radiation emergency
 - Terrorist threat
 - Theft of TIH material
-

I.1 Purpose and Scope of Plan Coverage, continued

Contingency Planning Requirements

The following contingency planning requirements are addressed in this plan.

Regulation	Function
USCFR Title 49, Part 130	Oil Spill Prevention and Response Plans
USCFR Title 33, Part 154	Facilities Transferring Oil or HazMat in Bulk. <u>Note:</u> Oil provisions not applicable to this site. Hazardous materials provisions have not been finalized to date.
CCR, Title 19, Section 2731	Emergency response plans and procedures
CCR, Title 26, Section 22-66265.50 - 22-66265.56	Contingency plan
CCR, Title 8, Section 3220	Emergency Action Plan
CCR Title 8, Section 5189	Process Safety Management of Acutely Hazardous Materials
USCFR Title 29, Part 1910.119	Process Safety Management of Highly Hazardous Chemicals
CCR Title 8, Section 5192	Hazardous Waste Operations and Emergency Response (HAZWOPER)
CCR Title 17US 10 CFR Title 20	Radiation emergency procedures
USCFR Title 40, Part 68.90-95	Chemical Accident Prevention Provisions: Emergency Response
CCR Title 19, Division 2, Chapter 4, Subchapter 2	California Accidental Release Prevention Program (CalARP)

I.2 Table of Contents

Table of Contents	This section lists the format of the Dow Chemical Pittsburg, California site Consolidated Contingency Plan.
--------------------------	---

Section I - Plan Introduction	2
1. Purpose and Scope of Plan Coverage	3
2. Table of Contents	6
3. Current Revision Date	8
4. General Facility Identification Information	8
Section II – Core Plan	10
1. Discovery	11
a. Release Detection Devices and Initial Actions	11
2. Initial Response	12
a. Internal and External Notification of Incidents	12
b. Establishment of a Response Management System	14
c. Preliminary Assessment of Situation	15
d. Development of Incident Action Plan	15
e. Implementation of Tactical Plan	15
f. Mobilization of Resources	16
3. Sustained Actions	18
a. Prolonged Response and Recovery Actions	20
4. Termination and Follow-up Actions	23
a. Demobilization and Incident Critique	24
Section III – Annexes	26
1. Facility and Locality Information	27
a. Facility Maps	28
b. Facility Description	29
2. Notification	33
a. Internal	33
b. Community	34
c. Local, State and Federal Agency	39
3. Response Management System	43
a. General	44
i. Emergency Response Organization Chart	45
ii. Response Team Job Descriptions	46
iii. Information Flow Description	64
iv. Unified Command Description	64
v. Field Level and EOC Level Coordination	64
b. Command	64
i. Incident Commander	65

I.2 Table of Contents (continued)

Section III – Annexes (continued)	65
1. Response Management System (continued).....	65
c. Operations.....	65
i. Operational Response Objectives.....	65
ii. Discharge or Release Control.....	66
iii. Assessment and Monitoring	66
iv. Containment	66
v. Recovery	67
vi. Decontamination	67
vii. Non-Responder Medical Needs including Information on Ambulances and Hospitals	67
d. Planning	68
i. Hazard Assessment	68
a. Hazard Identification	68
b. Vulnerability Analysis	68
c. Prioritization of Potential Risks	68
d. Planning Scenarios (credible cases).....	68
ii. Protection and Mitigation Procedures	68
a. Administrative and Operational Controls	68
b. Mitigation Procedures.....	68
c. Natural Resources Recovery.....	69
iii. Coordination with Natural Resource Trustees	69
iv. Waste Management	69
v. Logistics	69
a. Medical Needs for Responders	69
b. Site Security and Traffic Control.....	69
c. Communications (Internal and External Resources)	69
d. Transportation (Air, Land, Water).....	69
e. Personnel Support (e.g. Meals, Lodging, Equipment).....	69
f. Equipment Maintenance and Support.....	69
vi. Finance/Administration.....	70
a. Resource List	70
b. Personnel Management.....	70
c. Response Equipment	70
d. Support Equipment	70
e. Contracting	70
2. Incident Documentation	71
a. Post-incident Investigation	71
b. Incident History	71
3. Training and Exercises	72
4. Response Critique, Plan Review and Modification Process	81
5. Prevention.....	83

I.2 Table of Contents (continued)

Section III – Annexes (continued)	84
6. Regulatory Compliance and Cross Reference Matrices	84
Section IV – Reference Documents	91
1. List of documents referenced in plan	91

I.3 Current Revision Date

Revision Date	The Dow Chemical Pittsburg, California site Consolidated Contingency Plan is reviewed and updated annually. The plan was last reviewed and updated in February 2015.
----------------------	--

I.4 General Facility Identification Information

Facility Name	Dow Chemical, Pittsburg, California site
Owner/Operator	The Dow Chemical Company (925) 432-5000 (925) 432-5997 Fax
Facility Physical Address	901 Loveridge Road Pittsburg, California Contra Costa County
Facility Mailing Address	901 Loveridge Road Pittsburg, California 94565-2811 Correspondence contact: Scott Etzel, 464 Bldg.
Key Contact	Emergency Dispatch Center, 484 Bldg. (925) 432-5278

I.4 General Facility Identification Information, continued

Physical Area

The industrial part of the site consists of approximately 450 acres about half of which are undeveloped. In addition, Dow owns 200 acres of land, which have been restored as wetlands preserve and wildlife habitat; and another 350 acres of open fields to the south and east of the facility.

The industrial part of the site is located to the East of Loveridge Road and North of the Burlington Northern/Santa Fe Railroad right-of-way. The industrial property is joined by a network of paved private roads and private rail track, and is protected by security fencing around the perimeter of the property.

Facility Operations

The Pittsburg facility operates 24-hours per day, seven days per week and employs approximately 355 workers plus about 250 contractors. The facility has its own fire, medical and security personnel trained to respond to emergencies. The Pittsburg facility develops and produces products for agricultural operations, pest control services, and personal care. The Pittsburg site is also the location of a bulk chemical storage terminal for the distribution of Dow-produced chemicals into the West coast marketplace.

The Pittsburg facility is an integrated operation. Basic raw materials are received by truck, rail tank cars and marine vessels. In addition, there is a solar installation on site for generation of some of the site's power.

A number of operating units integrate the use of chemicals, steam, and electric power to manufacture various products including; crop protection, agricultural and commercial chemicals, and intermediates used in agricultural production, and commercial fumigants used in eradicating dry wood termites.

Several waste types are generated at the Pittsburg site. Some wastewater and waste chemicals are stored in tanks prior to recycling or treatment on site or treatment or disposal off site. Drums are filled in several work areas, stored for short periods (less than 90 days) in accumulation areas, and transferred to a hazardous waste drum storage area if the storage period will be greater than 90 days. All waste drums are shipped off site for recycle, treatment or disposal. The manufacturing areas include tanks, reaction vessels, piping, and associated controls.

The hazardous waste areas at this facility include: Hazardous waste storage in tanks and containers, two industrial furnaces, and packaging and storage areas. Together these handle several listed and characteristic hazardous wastes.

Section II Core Plan

Overview

Introduction

The following section provides the core plan of the Dow Chemical Pittsburg, California site consolidated contingency plan.

In this section

Following is a list of topics in this section:

Topic	See page
1. Discovery	11
2. Initial Response	12 - 17
3. Sustained Actions	18 - 22
4. Termination and Follow-up Actions	23 - 25

II.1 Discovery

Introduction	There are several ways that releases of oil or hazardous materials can be discovered on site. This section describes the more prevalent ways.
Recognition	Recognition of an incident can often be made through one's personal senses including eyesight, hearing, and smell. Recognition can also be made by release detection equipment.
Release Detection Equipment	There are several types of release detection equipment utilized on site. Examples include: leak monitoring devices, tank level gauges, flow totalizers, system/flow shut-off devices, gas emission monitoring devices, high/low pressure sensors, and high/low temperature sensors. The specific types of release detection equipment used in a process are determined based, in part, on the physical and chemical properties of the substances involved.
Process alarms	Release detection equipment is often interconnected to process alarms that provide audible and/or visual signals of undesired conditions. Process areas are often designed to allow for human activation of process alarms based on human detection of a release.
Initial Action	<p>Human detection: Upon detection of an odor, observation of a spill, or other detection method, personnel will assess the problem and take appropriate initial action(s). The operator will notify site Emergency Services and Security (ES&S) if a reportable incident has occurred, or if additional resources are needed to respond to the incident.</p> <p>Process alarms: Upon discovery of an incident from a process alarm from one or more release detection devices, the operator responsible for the area will check process information via control room computers and instrumentation and/or field observations to assess the problem and take appropriate action. The operator will notify site Emergency Services and Security (ES&S) if a reportable incident has occurred, or if additional resources are needed to respond to the incident.</p>
Basic Assessment	Basic assessment information sought once an incident is recognized includes; Start time, size of incident, materials and/or people involved, type of incident, location of incident, and potential effects or consequences.

II.2 Initial Response

Internal Notification

Initial alert and notification of incidents can be made via a number of communications methods including a site-wide telephone system (office and control room phones), process area phones, two-way radios, perimeter signs and flashing lights, and bypass telephones.

Notification ES&S that an incident is or has occurred may be accomplished by various means including:

Telephone: Dialing the emergency phone number (ext. 2222, 432-5278 from a cell phone) that connects the caller with the ES&S Dispatcher at the Main Gate. This is a dedicated telephone line with a priority ring indicating that an incident has occurred. In addition, there are three bypass telephones on site: Medical, ES&S Main Gate, and the Dow EOC. These bypass telephones are inactive under normal circumstances and automatically become active (e.g. generate a dial tone) when power to the primary site telephone system is lost. The bypass telephones are connected directly to the telephone lines and do not go through the site telephone network system.

Fire alarms: Manual pull fire alarm boxes and sprinkler or deluge flow alarms located throughout the site send an automated alarm to the ES&S Main Gate alerting the on duty dispatcher of an incident or potential incidents.

Emergency radio channel: The site maintains a short-wave, two-way radio system and several associated radios. One channel on this system serves as the site emergency alert radio channel and is used by the on duty dispatcher to make site-wide emergency alert and notification announcements. Another channel on this system serves as a plant-wide channel and is used by plant operators to contact the on duty dispatcher in an emergency and is continuously monitored by the on duty dispatcher at the ES&S Main Gate. Personnel may utilize this system for example when in the field taking measurements or samples. The ES&S Incident Commander and Dow EOC personnel have two channel two-way radios on this system. One channel is dedicated to ES&S operations-related communications. Another channel is used for Dow EOC communications. Process areas have access to additional frequencies for intra-process communications, and for alert and notification of ES&S personnel of incidents or other matters.

Gas Release Horns: Gas release horns are located in each process area. These horns are usually powered by compressed air flow and may be sounded to alert personnel in the affected area and adjacent areas of a gas release or other incident. Activation of a gas release horn also sends an alarm to the ES&S Main Gate alerting the on duty dispatcher of an incident and location.

Safety Showers and Eye Baths: Safety showers and eye baths are located throughout the site in areas where hazardous operations and/or chemicals are used. They are usually installed such that activation of a safety shower and/or eye bath sends an alarm to the process area control room and the ES&S Main Gate alerting the on duty personnel of an incident and location.

II.2 Initial Response, continued

External Notification

External alert and notification of incidents can be made via a number of means including the Community Warning System (CWS), Dow River Siren, and telephone notifications.

Community Warning System (CWS): The CWS includes safety sirens, agency notifications, media messaging, and automated activation of the Telephone Emergency Notification System (TENS) and National Weather Service (NWS) radios. The CWS can be used to alert the community of an industrial incident that may or is likely to affect the community.

Dow River Siren: Dow maintains a safety siren and public address system on the waterfront of the Pittsburg site. This system can be activated to alert and notify persons on or near the waterways adjacent to the site of an industrial incident that may or is likely to affect them.

Telephone and radio notifications: Dow maintains direct external telephone lines, radios, and systems that can be used to alert and notify nearby agencies and industrial neighbors of an industrial incident that may or is likely to affect them.

Restricted Access to Site: Dow maintains the ability to close the pedestrian turnstiles, Main (vehicle) Gate, and Truck Gate A (“Truck in gate”) to the site and activate a flashing light above the gates to alert and notify incoming persons of an industrial incident that may or is likely to affect them.

Additional Information

Additional and more detailed information on these systems and processes for utilizing them can be found in the annexes to this plan.

II.2 Initial Response, continued

Response Management System	The following information describes the processes used on site to establish a response management system for purposes of responding to an incident originating or affecting the site.
Incident Command System (ICS)	Dow utilizes the Incident Command System (ICS) to manage the response to incidents. ICS provides a standardized chain of command utilized by agencies and industry in California. Upon notification of an incident, Dow initiates an Incident Command System to such a degree as dictated by the size and complexity of the incident.
Incident Commander	<p>The Dow ES&S Incident Commander (IC) serves as the initial Incident Commander and remains in this capacity until either a Pittsburg Police Officer or a CCFPD (Contra Costa Fire) Captain or Battalion Chief arrives on site. Upon arrival at the entry point, a Dow representative will indicate the incident site on the plant street map and escort the police officer and/or Contra Costa Fire Engine Company(s) to the IC indicated by flashing red/green lights. Once briefed, the police officer and/or Captain or Battalion Chief work side-by-side with the Dow ES&S Incident Commander to form a Unified Command.</p> <p>The Dow ES&S Incident Commander or Unified Command (once police and/or Contra-Costa Fire arrive on site) establishes the locations of staging, operations, and the Command Post. They also determine zones of contamination, and provide direction to all responders.</p>
Chain of Command	In large-scale and/or protracted incidents, a Command Post may be established separate from Operations. In these situations, a Dow management representative will replace the ES&S Incident Commander as a part of the Unified Command. Command of the overall response to the incident is then transferred to the new Command Post and the original Command Post reverts to Operations (Ops) only.
Plant Operations Personnel	Operations personnel in the plant with the incident provide initial response efforts aimed to stop the incident and minimize any effects. Upon activation of an Incident Command System on site, operations personnel report to the Dow ES&S Incident Commander who serves as the initial Dow Incident Commander unless and until a Command Post is established separate from Operations, at which point the ES&S Incident Commander becomes the Operations branch leader.
Non-essential Personnel	All non-essential personnel in the incident area will report to their designated assembly area and either shelter-in-place (if the area is a designated Shelter-In-Place location), or leave the assembly area and evacuate or relocate to a designated Shelter-In-Place location per instructions from the building or area safety warden.
Additional Information	Additional and more detailed information on the response management system and process for utilizing it can be found in the annexes to this plan as well as the reference documents.

II.2 Initial Response, continued

Preliminary Assessment

Incident Command will make a preliminary assessment (also known as a size up) of the situation, including;

- Determine the magnitude (or scope) of the hazard(s)
- Classification of the incident by type and, if appropriate, CWS level
- Identify impact and threats to people, property or the environment (both on site and off-site)

Incident Action Plan

Incident Command (or Operations) will make a preliminary determination of objectives, priorities and resources needed to sufficiently mitigate the incident and effects. This information becomes the basis of the Incident Action Plan.

Tactical Plan

Incident Command (or Operations) will determine a tactical plan to achieve the objectives and priorities once established. The tactical plan will also address zones of isolation, personnel accountability, and decontamination as needed or appropriate to the incident.

Additional Information

Additional and more detailed information on these processes can be found in the annexes to this plan.

II.2 Initial Response, continued

Mobilization of Resources	This section describes the process for mobilization of internal and external to Dow resources in response to an incident originating or affecting the site.
Internal Resources	In addition to an on-site Emergency Services and Security (ES&S) group, Dow also maintains specially trained plant operators, a site fire brigade, confined space rescue capabilities, hazardous materials emergency response team, Emergency Operations Center (EOC) and team, and other specialized response capabilities. Mobilization of these resources is initiated by a determination of the ES&S Incident Commander (Dow Incident Commander) based on the circumstances of the event or incident.
External Resources	Dow maintains various coordination arrangements and working relationships with local emergency response authorities and groups for providing assistance in the event of an incident at Dow.
Police	Police assistance is provided during incidents that have or may affect areas around the Dow site. The Pittsburg and Antioch police departments are informed of Dow emergency plans and have participated in Dow's annual community drills.
Contra Costa Fire Protection District (Contra Costa Fire)	<p>Dow has a working relationship with the Contra Costa Fire Protection District (Con-Fire) to provide back-up assistance in the event of a process fire on site, to provide primary fire fighting capability for interior structure fires involving buildings on site, and to provide back-up assistance in the event of an incident involving Confined Space Rescue or elevated work rescue.</p> <p><u>Note:</u> The PetroChem Mutual Aid Organization (PMAO) is also available for additional resources to the Dow fire protection personnel in the event of a major, large scale fire.</p>
Contra Costa County Health Services	In the event of an activation of the Community Warning System (CWS), Contra Costa County Health Services is one of the agencies alerted. They will respond via initial telephone call-back and by physical response to Dow by the Hazardous Materials Incident Response Team (IR Team) if appropriate or requested.
Medical	The Dow Pittsburg site has its own medical facilities, but also has an agreement with a local contract occupational medicine provider to provide physicians and consulting services to the site.
Local Hospitals	<p>Local hospitals and staff have been made aware of Dow Chemical's Pittsburg, CA site chemicals and hazard potential. Patients requiring emergency care will be decontaminated and transported to one or more of the following hospitals.</p> <ul style="list-style-type: none">▪ John Muir Medical Center - Concord Campus▪ John Muir Medical Center - Walnut Creek Campus▪ Sutter-Delta Medical Center (Antioch)▪ Kaiser Permanente – Antioch Medical Center

II.2 Initial Response, continued

Mobilization of Resources	Continued
American Medical Response (AMR)	American Medical Response (AMR) personnel have been made aware of Dow Chemical's Pittsburg, CA site chemicals and hazard potential. AMR has agreed to provide ambulance service to Dow in the event of an emergency on site involving injury or injuries. AMR requires patients to be decontaminated prior to treatment and/or transport. AMR is dispatched through Con-Fire (CC Fire Protection District).
Helicopter Medical Transport Service	<p><u>Purpose:</u> Helicopter medical transport service is used for the transportation of seriously injured or trauma case victims to the county's trauma center which is located at John Muir Medical Center in Walnut Creek. CALSTAR (California Shock/Trauma Air Rescue) and REACH are the primary helicopter medical transport services available to Dow.</p> <p><u>Awareness:</u> Both CAL-STAR and REACH personnel (helicopters are staffed by a pilot and two trauma nurses) have been made aware of Dow Chemical's Pittsburg, CA site chemicals and hazard potential. CAL-STAR and REACH have agreed to provide helicopter ambulance service to Dow in the event of an emergency on site involving injury or injuries resulting in life-threatening trauma.</p> <p><u>Dispatching:</u> Helicopter medical transport service is dispatched through Con-Fire dispatch offices. CAL-STAR and REACH have helicopters based in Concord.</p>
Petro-Chem Mutual Aid Organization (PMAO)	<p>The Petro-Chemical Mutual Aid Organization (PMAO) is an emergency response cooperative of oil, chemical and related companies. PMAO operates as a sub-committee of the CCC CAER Group, Inc. (Contra Costa County Community Awareness and Emergency Response Group)</p> <p>The primary purpose of the PMAO is to provide assistance (material and equipment) to any member requiring aid during an emergency situation.</p> <p><u>Note:</u> In addition, PMAO maintains a Mutual Aid Plan and discusses fire experiences, fire protection and fire prevention information at monthly meetings. Dow is a current member of PMAO.</p>
Marine spill response	<p>Dow's Pittsburg, California site is not required to maintain marine spill response capabilities at this time, primarily due to the lack of oil or oily substance transfers.</p> <p>In the event of a release impacting adjacent waterways, Dow would contract with local marine spill response providers for spill response capabilities specific to the chemicals that Dow transfers at the site marine dock.</p>

II.3 Sustained Actions

Sustained Actions	This section describes the process and resources for transition and support of a response management system from the initial emergency stage to the sustained action stage where more prolonged mitigation and recovery actions are necessary.
Dow Resources to Support Sustained Actions	<p>Dow has implemented several resources to support sustained actions in response to an incident originating or affecting the site. These include an Emergency Operations Center (EOC), a Staging Officer (Staging), a Command Post (Command), a CWS Operator (CWS), a Public Information Officer (PIO), a Safety Officer, Technical Specialists (Tech Specs), building or area Wardens, Downwind Monitoring capabilities, an on-call EH&S Compliance role, and numerous other on and off-site technical resources.</p> <p>Additional and more detailed information on these roles and resources can be found in the annexes and reference documents to this plan.</p>
Unified Command	Once the Dow EOC is activated and established, Dow management personnel are sent to establish a staging area and an Incident Command Post (Command). These are usually different than any staging and/or Incident Command Posts established by the ES&S Incident Commander as a part of the initial Incident Command structure. The new Incident Command Post is staffed with Unified Command representatives from Dow, CCFPD (Contra Costa Fire), and Pittsburg Police. Other agency and Dow resources may be a part of the Command Post and report to the Unified Command representatives. Once the new Incident Command Post is up and running, control of the overall incident is transferred to the new Command Post and the initial Command Post reverts to Operations.
Impact Assessment	Unified Command along with the Dow EOC in a support role will work with local emergency services organizations to conduct initial identification and assessment of adverse impacts to neighbors and sensitive environmental areas resulting from an incident at Dow.
Recovery Actions	Unified Command along with the Dow EOC in a support role will work with local emergency services agencies and organizations to assist neighbors with initial recovery actions and with initial recovery actions for sensitive environmental areas including cleaning and decontamination of affected areas, resumption of traffic flow on roadways, workers returning to work, and return to normal business activities.

Continued on next page

II.3 Sustained Actions, continued

Sheltering-in-Place, Mobilization, and Evacuation of Non-Responding Site Workers

The Command Post (CP) works with Operations and the Dow EOC to address non-responder worker safety including sheltering-in-place, mobilization, and evacuation procedures. This section describes the processes for each of these actions.

Topic	See page
Sheltering – In – Place (SIP) of personnel	20
Mobilization of personnel	20
Evacuation of personnel and/or community people	20 - 21
Emergency Lighting	21
Safe Distances and Places of Refuge	22

Sheltering – In – Place (SIP) of personnel

In the event of a gas release on site, workers are instructed to report to the designated assembly areas for the location that they are at. Many of these designated areas are located indoors of buildings that can have the building air circulation systems turned off in order to provide temporary shelter from any gas clouds in or traveling through the area. Workers are instructed and trained to Shelter-In-Place (SIP) in identified locations until the release is secure, or they are instructed to evacuate the immediate area or relocate to an approved Shelter-In-Place location (if the designated assembly area is not an approved Shelter-In-Place location), or their area warden determines that it is safe for them to work in an area not affected by the release,.

Mobilization of personnel

In the event of a gas horn sounding on site, workers are instructed to report to designated assembly areas for the location that they are at. On duty ES&S dispatch personnel will also make a site public address announcement of the incident and its location.

Should a designated assembly area be located outdoors, workers are instructed and trained to move up or cross-wind of the release to report to a safe assembly area or designated sheltering location and/or to move out of or away from the area of the release.

Non-responding workers are instructed and trained to utilize designated evacuation routes in the event that an order is made to evacuate an area or the site. Primary and alternate evacuation routes from the site have been established in the event of a major, site-wide emergency where an evacuation from the site is determined to be appropriate.

II.3 Sustained Actions, continued

Evacuation Notification

Evacuation notification begins with announcement over the site-wide public address system and radio alert monitors. This is followed by prepared messages given over the emergency telephone system. Information such as wind speed and direction are provided by ES&S.

Evacuation Routes

The evacuation routes for the Pittsburg site as a whole are as follows: the far east gate, the far west gate, the Truck Out Gate (Gate B) and the main gate. Determination of which route(s) to use is made dependant on several factors including the location of the incident and the current wind conditions.

Evacuation routes are usually to the east or south because the predominant wind direction is from the west or northwest. Each block or building has designated primary and alternative escape routes although the escape route may vary depending on wind direction. Employees are trained in the various evacuation routes and procedures and are provided non-emergency opportunities (through drills and exercises) to practice use of them.

Note: In the event the entire site must be evacuated, the Dow main gate (exit side) constitutes the primary evacuation route.

Alternates: Two gates to the west and one each to the east and south can be used as alternate evacuation routes in the event the main entry gate is inaccessible.

II.3 Sustained Actions, continued

Evacuation Procedures

Each plant or area on the Pittsburg site maintains procedures for evacuation of non-responding workers from that plant or area. In addition, a site procedure exists for evacuation of non-responding workers from the site (Assembly-Evacuation Emergency Procedure), and for operating the alarmed exit gates (Emergency Evacuation Exit Gate Procedure).

Plant/Area procedures contain evacuation routes for each plant and/or building, and assembly areas for each building/plant. The site evacuation procedure contains evacuation routes for the site, and steps for accounting of workers.

Plant/Process Shut Downs and Start-ups

In the very unlikely event that several or all plants/processes need to be shut down, a procedure exists for sequentially doing this safely while addressing loss prevention issues.

Plant startups after a site-wide emergency, such as an earthquake, will be sequenced based on repair of damage, and availability of utilities, raw materials and people resources. A procedure exists for sequentially doing this safely while addressing loss prevention issues.

Community People Movement

In the event that the incident results in the need to mobilize people in the surrounding community, the Unified Incident Command Post (Command) works with Operations and the Dow EOC, City of Antioch EOC, City of Pittsburg EOC, and CCC OES EOC (whichever are applicable) to address mobilization, evacuation or shelter-in-place procedures for the affected areas of the surrounding community.

Additional Information

Additional and more detailed information on these procedures can be found in the annexes to this plan.

Back-up Electrical Power

This section describes the provisions made on site for emergency lighting. The site maintains the ability to receive electrical power from two different external electrical sources. In the event of loss of electrical power from the primary source to the site, back-up electrical power can be used to power emergency lighting.

Emergency Lighting

Most areas on site are equipped with emergency lights that have battery back-up power.

Buildings

Within a building, emergency lighting will light your exit if the power fails. Hallways and office areas are usually lit well enough to permit one to navigate to the nearest exit.

Outdoors

Outdoor lighting that is connected to battery back-up and/or emergency electrical generators is sufficient to allow for safe movement within the plants and on most areas of the site.

Standby Electrical Generators

Several standby electrical generators are located on site. These generators activate upon loss of normal power and can supply electrical power to a designated process or area in order to help maintain emergency lighting and critical operating systems. These are in addition to the back-up electrical power to the site.

II.3 Sustained Actions, continued

Safe Distances & Places of Refuge

This section describes appropriate distances taken in both avoiding and response to an emergency, along with designated places where refuge can be taken.

Safe distances

Should an evacuation be determined to be appropriate (as opposed to shelter in place protection), the Operations and Command will determine the appropriate initial isolation and protective action distances for the materials involved and based on the meteorological conditions utilizing information such as dispersion modeling data, downwind monitoring data, Dow EOC input, and/or the Department of Transportation Emergency Response Guidebook.

Places of refuge

Should an order be given to "shelter in place", all personnel should gather at their nearest designated indoor Shelter-In-Place (SIP) area.

Note: For the location of each plant/areas designated assembly areas and SIP areas, refer to the plant/area emergency plans, procedures and training materials.

Determination: Should an evacuation be determined to be appropriate (as opposed to shelter in place protection, for example) Unified Command will determine the appropriate assembly areas based on the initial isolation and protective action distances for the materials involved and the meteorological conditions utilizing dispersion modeling data, downwind monitoring data, Dow EOC input, and/or the Department of Transportation Emergency Response Guidebook.

Assembly areas: On-site assembly areas are specified in each unit's emergency/contingency plans. Off-site assembly areas (if needed), will be designated by Incident Command.

Shelter-In-Place (SIP) areas: On-site Shelter-In-Place (SIP) areas are specified in each unit's emergency/contingency plans.

II.4 Termination and Follow-up Actions

Terminating the Incident	Unified Command works with Operations, EOC, and the county health department to determine when the incident can be declared “ALL CLEAR” and for terminating the response associated with the incident.
Recovery Operations	<p>Site leadership or designates will work with local agencies and business groups (such as the Dow Community Advisory Panel, Chambers of Commerce, CC CAER, etc.) once the “All Clear” has been issued to conduct outreach to Dow neighbors for purposes of obtaining impact information offering assistance with recovery activities..</p> <p>Dow will also work with local cities, the county, and community organizations to prepare detailed impact assessments of neighbors and sensitive environmental areas (such as wetlands and delta islands) for use in recovery planning and assistance.</p> <p>Impact information includes human suffering, property and environmental damage, and business interruption.</p>
Release of Response Equipment and Personnel	Response equipment and personnel are evaluated by Operations to determination if decontamination is necessary. If decontamination is determined to be necessary, appropriate policies are followed before release of equipment and/or personnel to Staging.
Decontamination responsibilities	Any decontamination of equipment at the scene is the responsibility of unit personnel. Any disposal of contaminated clothing is also the responsibility of unit personnel in conjunction with the waste disposal guidelines of Pittsburg Site.
Equipment decontamination	<p>Equipment that has been designated to leave the block is decontaminated using the plant/area decontamination procedures.</p> <p><u>Responsibilities:</u> The decontamination of equipment at the scene of an incident is the responsibility of plant/area personnel.</p> <p><u>Methods:</u> Methods of decontamination include, but are not limited to:</p> <ul style="list-style-type: none">• steam cleaning,• air purge, and• chemical neutralization. <p><u>Emergency equipment:</u> All emergency equipment used during an emergency response shall be cleaned and re-fit for its intended use before operations are resumed.</p>

**Decontamination of
Clothing and
Personal Protective
Equipment (PPE)**

The majority of workers working in the manufacturing processes wear dedicated work clothes during day to day process operations.

Clothing: Any clothing considered to be contaminated with chemicals is washed in the unit's laundry area, site laundry facility, or disposed according to waste regulations and Dow's waste disposal requirements.

Change rooms: Employee's that work with hazardous chemicals have change rooms divided into work clothes area and street clothes area. After removing work clothes and showering, he/she enters the street clothes side.

Important: No employee is to remove clothing from the process or change room that is considered contaminated unless it is for purposes of disposal.

II.4 Termination and Follow-up Actions (continued)

Disposal Considerations	Equipment including Personal Protective Equipment (PPE) contaminated by chemicals that are leaving an emergency scene (hot zone) must be decontaminated. Equipment which will not be decontaminated and solvents used in decontamination must be disposed of in a manner consistent with applicable waste disposal regulations and Dow's waste disposal requirements. <u>Reuse:</u> All equipment is decontaminated and determined by the owner to be fit for use prior to reuse.
Response critique	Each incident which causes the Dow Chemical Pittsburg, CA site emergency / contingency plan to be activated will result in an incident investigation of which a component will be a critique of the response to the incident. Response teams may also conduct a critique of their role in the response and the overall response.
Changes to Site Consolidated Contingency Plan	Upon completion of incident investigations and critiques of major site incidents, the site consolidated contingency plan will be reviewed to see if any changes are necessary.
Follow up	Corrective actions determined as part of the incident investigation to be necessary will be documented and incorporated into a corrective action database for follow-up.
Post-incident Agency notification: Initial	The Department of Toxic Substance Control (DTSC), and appropriate State and local authorities, shall be notified that compliance with the criteria listed below are met before operations are resumed in the affected area(s) of a hazardous waste emergency. No waste that may be incompatible with the released material is transferred, treated, stored, or disposed of until cleanup procedures are completed. <u>Emergency equipment:</u> All emergency equipment used during the emergency response is cleaned and fit for its intended use before operations are resumed
Record of Incident	A note of the time, date and details which may include materials involved, type of incident, responding emergency response groups, injuries, and clean-up details of any incident that requires implementing the site consolidated contingency plan will be made by the ES&S Incident Commander (Incident Commander) on shift during the incident. These reports are maintained as a part of the overall site operating record.

Section III Annexes

Overview

Introduction

The following section provides the annexes to the Dow Chemical Pittsburg, California site consolidated contingency plan.

In this section

Following is a list of topics in this section:

Topic	See page
1. Facility and Locality Information	27 - 32
2. Notification	33 - 42
3. Response Management System	43 - 70
4. Incident Documentation	71
5. Training and Exercises	72 - 81
6. Response Critique, Plan Review and Modification Process	82
7. Prevention	83
8. Regulatory Compliance and Cross Reference Matrices	84

III.1 Facility and Locality Information

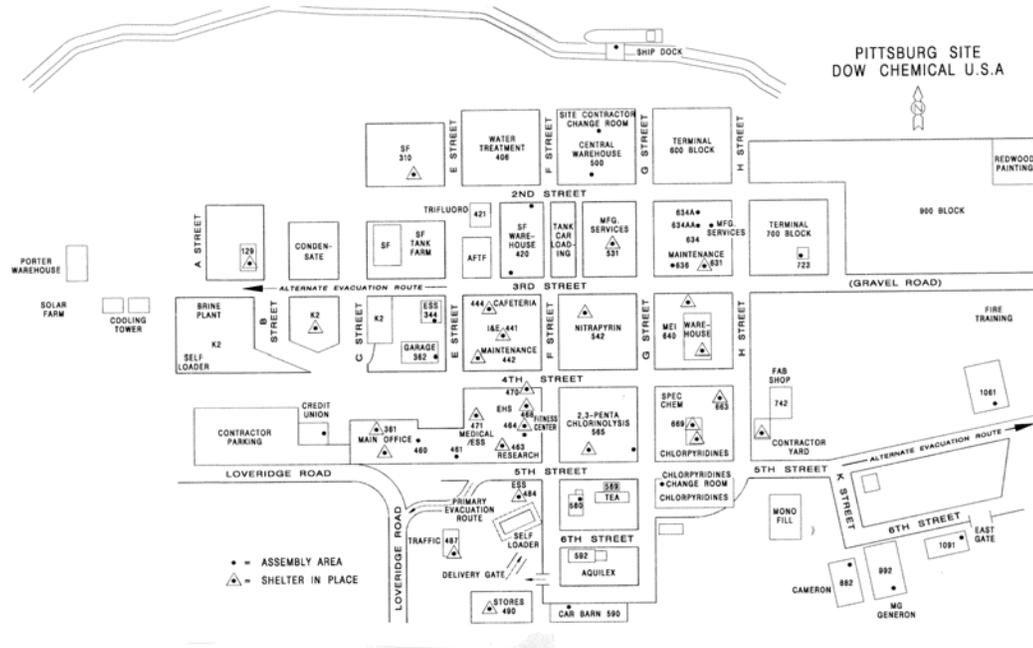
Maps

This section contains maps, which may facilitate identification of the location of the incident, routes to and from the affected areas, and resources which may be of value in response to the incident.

Topic	See page
1. Site map (detailing plants/areas and access/evacuation routes)	28
2. Site Description	29 - 32

III.1 Facility and Locality Information (continued)

Site map (detailing plants/areas and access routes)



III.1 Facility and Locality Information, continued

Site Description	The Dow Pittsburg site is located at the North end of Loveridge Road in Pittsburg, California. The site receives, stores and uses the following substances regulated under the Federal Environmental Protection Agency Risk Management Program (RMP), and the California Accidental Release Prevention (CalARP) Program at or above the applicable threshold quantities and/or concentrations: anhydrous and aqueous ammonia, chlorine, hydrogen fluoride, and sulfur dioxide. The site also produces, stores and uses hydrogen chloride in quantities which are regulated under the Federal Environmental Protection Agency Risk Management Program (RMP) and the California Accidental Release Prevention (CalARP) Program. Several chemical manufacturing processes are located on site that use and/or produce the substances listed above. These processes are described in this section.
K2 Pure Solutions	K2 Pure Solutions owns and operates a chlor-alkali plant on the Dow Chemical Pittsburg, California site. Dow Chemical provides support to K2 Pure Solutions (“K2”) in the event of an emergency at the K2 facility. This support includes establishing an initial Incident Command, agency alerting and initial notification (when required), medical first response (first aid and basic life support), limited defensive exterior process firefighting, and limited defensive vapor mitigation using water spray streams. Once an outside agency arrives (Contra Costa Fire and/or Pittsburg Police) the incident administration will be turned over to the lead agency and Dow will become a resource to that agency. In the event of an emergency involving both Dow and K2, the Dow response priority will be to any life safety (medical) emergency and then to the Dow facility.
310 Block Processes and Associated Operations	The 310 Block Processes and associated operations produce sulfuryl fluoride which is sold in cylinders as an agricultural product and used for the eradication of termites, and chemical intermediates for later conversion to agricultural herbicides at other sites outside of Contra Costa County. Sulfuryl fluoride is produced by reacting hydrogen fluoride, sulfur dioxide and chlorine. Hydrogen fluoride is also used in the manufacture of the chemical intermediates in the associated operations adjacent to the 310 block. Hydrogen chloride co-product is produced in the 310 Block processes and associated operations and converted into aqueous < 30% hydrochloric acid.

**520 Block Processes
and Associated
Operations**

The 520 Block operations control center serves as the control center for a number of blocks on site. These blocks (140, 220, 340, 400, Block and 600 and 620 Block) are briefly described below. The 520 block also contains a Halogenated Acid Furnace (or HAF) unit that treats process vent streams from other blocks on site. The 520 Block operators also operate the site chlorine distribution pipeline.

The 600 Block process treats a water stream from the river that is used to charge the site fire-water Systems (deluge and hydrants), This stream is also used in several plants on site.

In the 340 block the water treatment process uses Canal Water and consists of a series of filtration steps as the primary purification mechanisms. This filtered water provides water for use in individual processes.

The 140 block and 220 block and 400 block are used for water treatment operations to prepare water for recycle or discharge to the POTW.

The 620 block contains an Auxiliary boiler that provides supplemental steam or the entire site steam demand depending on the site needs. Anhydrous ammonia is used to treat exhaust gases from the boiler combustion system.

III.1 Facility and Locality Information, continued

**540 Block Process
and Associated
Operations**

The 540 block process produces the final consumer product known as Instinct™. Instinct is a capsule suspension agricultural product used as a nitrogen stabilizer. Instinct is produced by mixing aromatic hydrocarbons and N-serve® and forming a capsule shell around it. The process also includes creating an aqueous based medium for the capsules. The final product is shipped by railcar for packaging off-site.

**560 Block Processes
and Associated
Operations**

The 560 Block process reacts chlorine with organic chemicals to produce a non-regulated chemical intermediate for later conversion to an agricultural herbicide. The 560 Block process consists of a series of reactors, a stripping column to remove reaction co-products, and a distillation train to purify the product.

**640 Block Processes
and Associated
Operations**

The 640 Block process involves the reaction of aqueous ammonia with chemical feed stocks to produce a chemical intermediate for later conversion to an agricultural herbicide. Aqueous ammonia (approximately 27 percent ammonia) is received by tank truck and unloaded into a storage tank in the 640 Block. The aqueous ammonia is metered from the storage tank into a reactor where the ammonia reacts with organic chemical intermediates to form another intermediate product that is subsequently converted to the desired end product. Operation and control of the 640 Block process is maintained utilizing Dow's latest computer process control technology.

**660 Block Processes
and Associated
Operations**

The 660 Block contains several non-RMP regulated processes including the ST HAF, Lontrel and Dowicil plants as well as two chemical refiners (or purification processes). Collectively these are commonly referred to as Specialty Chemicals or Spec Chem. The ST HAF is a Halogenated Acid Furnace unit that treats process streams from other processes in the block. Raw materials used in these processes include methylene chloride and dichloropropene. The products from each of these processes are not classified as RMP or CalARP regulated chemicals. Operation and control of these processes is maintained utilizing Dow's latest computer process control technology.

III.1 Facility and Locality Information, continued

660 Block Processes and Associated Operations

The 660 Block contains three primary regulated processes that manufacture finished and intermediate products for agricultural applications. The intermediate products are converted/formulated into finished agricultural products within this facility or at other Dow locations.

(continued)

In the "A" process, chemical raw materials are reacted with both fresh and recycle chlorine in the Stage One reaction. This material then goes to Separation One where most of the chlorine, hydrogen chloride, and other "lights" are separated from the process stream. The remaining process stream is then fed in series into Stage Two and Stage Three reactions where the material is reacted with additional recycle chlorine. From the last reactor the material is fed into Separation Two, where any remaining chlorine and hydrogen chloride are removed and sent back to Separation One. The remaining process stream, containing no RMP or CalARP regulated chemicals, is sent for further purification in distillation columns. The chlorine and hydrogen chloride from Separation One are separated in a distillation column; the chlorine is recycled back to the reactor systems and the hydrogen chloride is either sent to storage tanks or forwarded on to the 520 Block for purification and conversion into saleable products.

In the "B" process, chemical raw materials are reacted with fresh chlorine in the Stage One reaction. This material then goes to Separation One where most of the chlorine, hydrogen chloride, and other "lights" are separated from the process stream. The remaining process stream is then fed in series into Stage Two and Stage Three reactions where the material reacts with additional chlorine. A side stream from the first Stage Three feed tank is fed into Separation Two, where any remaining chlorine and hydrogen chloride are removed and sent back to Separation One. Several non-RMP and non-CalARP regulated chemical recycle streams from both "A" and "B" processes are fed into Stage Four/Five reactions along with chlorine. The material from Stage Three/Four/Five reactions are all sent to Separation Three, where all the remaining RMP and CalARP regulated chemicals are removed. The remaining process steam, containing no RMP or CalARP regulated chemicals, is sent for further purification in distillation columns. The chlorine and hydrogen chloride from Separations One/Three are separated in a distillation column; the chlorine is recycled back to the Stage Three/Four reactor systems and the hydrogen chloride is forwarded to the 520 Block for purification and conversion into products.

Chlorine rail tank car off-loading and vaporization processes are also integrated into the 660 Block. Chlorine storage is limited to small tanks and tank car inventory to reduce the risk of an environmental incident. These processes are only used if the on-site chlorine supplier is unable to provide the required flow into the site chlorine pipeline distribution system. Chlorine is unloaded from two rail tank car spots in the 680 Block by adding nitrogen to the vapor space of the rail car, forcing the liquid out of the rail car's two dip pipes and into the chlorine surge tank. Only one rail tank car is unloaded at a time. Chlorine is transferred from the rail car into a surge tank. The pressure is maintained by padding the tank with nitrogen if necessary. All nozzles are top penetrations. The surge tank feeds the vaporizer that supplies chlorine vapor to other site users.

Site Logistics

The Site Logistics department coordinates and performs rail tank car and tank truck loading and unloading operations for several of the manufacturing plants on site as well as the bulk storage and transfer facility on site. Site Logistics also coordinates and performs warehousing operations for several of the warehouses on site.

III.1 Facility and Locality Information, continued

Site Description

Continued

Vulnerable Resources

Vulnerable resources which may be impacted by an incident include:

On site: Chemical processes, buildings, utility distribution systems, TIH (Toxic Inhalation Hazard) materials, and adjacent wetlands.

Off site: Wetlands, roadways, waterways, rail transportation lines, and municipal and industrial utilities.

Vulnerable Populations

Vulnerable populations which may be impacted by an incident include:

On site: Site workers, visitors and leaseholder tenants.

Off site: People in adjacent downwind areas of the site that are determined to be within an affected area based on the size and duration of the release and the prevailing wind speed and direction and other meteorological conditions at the time of the incident.

III.2 Notification

On-site Emergency Alerting This table describes the processes in place to effectively alert personnel to the various emergencies/contingencies which could reasonably be expected to occur at the Dow Chemical Pittsburg, CA site.

Alerts The table below describes action taken in response to various horn alarm signals.

SELECT TONE HORN SURVEY - STANDARDIZED ARRANGEMENT									
UNIT	Slow Whoop (Plant clearing)	Yeow (Safety shower)	Yelp (Fire/Critical Alm)	Wail	Hi-Lo	Beep	Stutter	Horn	Westmin Chime
560 Block		safety shower			plant alarm	plant alarm		plant alarm	
660 Block	process clearing	safety shower	fire/Cl2 monitor			plant alarm	plant alarm	plant alarm	
520 Block		safety shower	fire/Cl2 monitor				plant alarm	plant alarm	phone notific.
620 Steam plant	plant alert	safety shower fire/ smoke			steam/ inst. cabin alarm	utility/ aux system	elect. distribut .	plant alarm	
310 Block		safety shower	Vikane monitor				plant alarm	plant alarm	
460 Block		safety shower					phone notific.	plant alarm	
540 Block		safety shower	LEL monitor					plant alarm	
600/700 Block		safety shower			plant alarm			plant alarm	
640 Block	process clearing	safety shower	fire alarm		plant alarm			plant alarm	

III.2 Notification (continued)

Exceptions

The following exceptions are in addition to the previous table.

640 Block: FIRE alarm is an audible bell and the smoke detector is an audible beep.

520 Block: Plant alarm is used for FIRE and Chlorine monitors.

460/470 Blocks: Research FIRE and smoke detectors are audible bells.

Note: Unit Specific Emergency/contingency plans specify the alerting procedures used by the unit in the event of an emergency.

Main Gate notification

Dow's Main Gate (484 Building) serves as the dispatch and communications center for Emergency Services and Security (ES&S). Workers reporting emergencies can notify the Main Gate by dialing 2222 on a site telephone (or 432-5278 from a cell phone). Calls made on this line are routed directly to the ES&S Dispatcher on shift.

The caller should give their name, location, a description of the emergency, the phone number they are calling from and the assistance needed. The caller should stay on the line until all the necessary information is given to the departments answering the call.

Note: Notification to the Main Gate can also be made on the plant-wide radiochannel.

III.2 Notification, continued

**Internal and
External
Notifications**

The ES&S Incident Commander (Dow Incident Commander) has the overall responsibility for contacting emergency response assistance. The initial response by ES&S and other response personnel upon notification of an incident is as follows:

Stage	Description
1	The ES&S Main Gate Dispatcher notifies the entire site of the incident in progress using the site-wide public address system and gives a brief description including any appropriate warnings such as wind speed and prevailing wind direction.
2	ES&S personnel respond to within a safe distance of the incident scene if it is safe to do so.
3	The ES&S Incident Commander classifies the incident. Note: If the incident involves a hazardous substance release, fire, smoke, explosion, or five or more odor complaints, the incident classification may include a Community Warning System Level 0, Level 1, Level 2, or Level 3 determination.
4	The ES&S Incident Commander determines if activation of the Community Warning System (CWS) is appropriate, and if it is, instructs ES&S Dispatch (Main Gate) activate the Community Warning System (CWS) for a specific Level of event/incident.
5	The ES&S Incident Commander determines if additional Dow coordination support is necessary, and if it is, instructs ES&S Dispatch (Main Gate) to contact the Site Coordinator, EHS Compliance On-Call (COC), Public Relations, and/or Dow Emergency Operations Center (EOC) personnel. Note: Site Coordinator, COC, Public Relations and/or EOC personnel can be contacted either by the site public address system, telephone, emergency pager, or at home if the incident occurs at times other than normal working hours.

III.2 Notification, continued

**Internal and
External
Notifications**

Continued

Stage	Description
6	<p>The ES&S Incident Commander determines if a 911 telephone notification is appropriate and, if it is, instructs ES&S Dispatch (Main Gate) to make the call.</p> <p>Note: Notification of 911 includes notification of local law enforcement (Pittsburg Police).</p>
7	<p>The ES&S Incident Commander determines if telephone notification of Contra Costa Fire Protection District (Con-Fire) and/or Antioch Police is/are appropriate and, if it is, instructs ES&S Dispatch (Main Gate) to make the call.</p> <p>Note: Dow maintains a direct line to/from both the Contra Costa Fire Protection District (Con-Fire) and Antioch Police.</p>
8	<p>The ES&S Incident Commander determines if PetroChem Mutual Aid Group or other response resources are needed and, if they are, instructs ES&S Dispatch (Main Gate) to contact them and activate a response.</p>
9	<p>If Dow does not receive a call back from Contra Costa Health Services (CCHS) during a CWS notification, the ES&S dispatcher will telephone 925.335.3232 and alert them of the incident.</p>

III.2 Notification, continued

Incident classification

Incidents are classified by the ES&S Incident Commander in accordance with local standardized classification levels are described in the following table.

Note: The incident classification levels correspond to the Community Warning System (CWS) incident classification levels.

Category	Description
<p>Level 0 Event</p>	<p>Easily contained and controlled by plant personnel is informational only, on-site only, no offsite consequences, not detectable offsite and is categorized by any of the following:</p> <ol style="list-style-type: none"> 1. Safety Supervisor, or equivalent, is placed on alert due to a release or threatened release resulting from an emergency situation, including, but not limited to, emergency shutdowns or major unit start-ups. 2. Uncontained liquid spill. (for petroleum material, the spill is more than three 55-gallon drums-165 gallons- and does not meet any of requirements for notification listed in levels 1-3.) 3. Three (3) or more unconfirmed odor complaints within an hour. 4. Vapor release that is not expected to pose an immediate threat to the health and safety of people in the affected area. The release is more than an instantaneous or a “puff.”
<p>Level 1 incident</p>	<p>On-site, possible off-site, no health impact expected and categorized by any of the following:</p> <ol style="list-style-type: none"> 1. Confirmed (3 or more odor complaints within one hour and substantiated by plant personnel as an on-site problem) off-site odor from facility. 2. Fire/smoke which requires a response from workers outside the immediate area, but not visible off-site. 3. Excess flaring (flaring that occurs when the conditions are not normal and because of the flame could raise concerns from the community). 4. Spill or release incident that meets an RQ (Reportable Quantity) requirement and does not meet any of the requirements of Level 2 or 3. 5. Fire/smoke/plume (other than steam) visible from an off-site location (does not include fire training exercises).

III.2 Notification, continued

Incident
classification

Continued

Category	Description
Level 2 incident	<p>Off-site impact with possible health impact and categorized by any of the following:</p> <ol style="list-style-type: none"> 1. Off-site impact where eye, skin, nose and/or respiratory irritation may be possible for individuals with respiratory sensitivities. 2. Explosion with noise/pressure wave impact off-site. 3. Fire/smoke/plume (other than steam) leaving or expected to leave the site.
Level 3 Incident	<p>Offsite impact and categorized by any of the following;</p> <ol style="list-style-type: none"> 1. Off-site impact that may cause eye, skin, nose and/or respiratory irritation to the general population. 2. Fire, explosion, heat, or smoke with an off-site impact. Example: On a process unit/storage tank where mutual aid is requested to mitigate the event and the fire will last longer than 15 minutes. 3. Hazardous material or fire incident where the incident commander or unified command, through consultation with the Hazardous Material Incident Response Team, requests that sirens should be sounded.

III.2 Notification, continued

Incident Notification	For activation of the Community Warning System (CWS), the following agencies and Dow contacts are made to notify them of the incident:
Level 0 Event	Activation of the Community Warning System (CWS) by Dow for a Level 0 event includes notification of: <ul style="list-style-type: none">• Contra Costa County Health Services Department
Level 1 Incident	Activation of the Community Warning System (CWS) by Dow for a Level 1 incident includes notification of: <ul style="list-style-type: none">• Contra Costa County Health Services Department• Contra Costa Fire Protection District• 911 Sheriffs Dispatch (includes notification of Pittsburg Police)• CCC Emergency Services Department (CCCOES)• Antioch Police <p><u>Additional notification:</u> Depending on the type of incident and severity, the following response resources may also be notified:</p> <ul style="list-style-type: none">• Contra Costa County Office of Emergency Services• EH&S Compliance On-Call representative• California Emergency Management Agency• National Response Center• United States Coast Guard• California Highway Patrol

Continued on next page

III.2 Notification, continued

**Incident
Notification to
Local Agencies**

Continued.

Level 2 Incident

Activation of the Community Warning System (CWS) by Dow for a Level 2 incident includes notification of:

- Contra Costa County Health Services Department
- Contra Costa Fire Protection District
- 911 Sheriffs Dispatch (includes notification of Pittsburg Police)
- CCC Emergency Services Department (CCCOES)
- Antioch Police
- Bay Area Air Quality Management District (BAAQMD)

Additional notification: Depending on the type of incident and severity, the following response resources may also be notified:

- Contra Costa County Office of Emergency Services
 - EH&S Compliance On-Call representative
 - California Emergency Management Agency
 - National Response Center
 - United States Coast Guard
 - California Highway Patrol
 - Process Leader (of unit involved)
 - Down wind monitoring personnel
 - Dow Emergency Operations Center (EOC) personnel
 - Public Information Officer (PIO)
 - Petrochem Mutual Aid Organization (PMAO)
-

Continued on next page

III.2 Notification, continued

**Incident
Notification to
Local Agencies**

Continued.

Level 3 Incident

Activation of the Community Warning System (CWS) by Dow for a Level 3 incident includes notification of:

- Contra Costa County Health Services Department
- Contra Costa Fire Protection District
- 911 Sheriffs Dispatch (includes notification of Pittsburg Police)
- CCC Emergency Services Department (CCCOES)
- Antioch Police

Additional notification: Depending on the type of incident and severity, the following response resources may also be notified:

- EH&S Compliance On-Call representative
- Contra Costa County Office of Emergency Services
- California Emergency Management Agency
- National Response Center
- United States Coast Guard
- Bay Area Air Quality Management District (BAAQMD)
- California Highway Patrol
- Process Leader (of unit involved)
- Down wind monitoring personnel
- Dow Emergency Operations Center (EOC) personnel
- Public Information Officer (PIO)
- Petrochem Mutual Aid Organization (PMAO)

III.2 Notification, continued

CWS Activation Information

Information to be included in an activation of the CWS considered when communicating to local, state and/or federal officials includes:

- Type of incident (e.g. fire, release, etc.),
 - Material and quantity (to the extent known),
 - Current meteorological conditions (i.e. wind speed and direction)
 - Current condition of facility,
 - Extent of injuries, if any,
 - Possible hazards to human health, or the environment outside of the facility.
-

III.3 Response Management System

Overview

This section describes the response management system for responding to incidents on site. See also Section II of the core plan (Initial Response) for additional information.

In this section

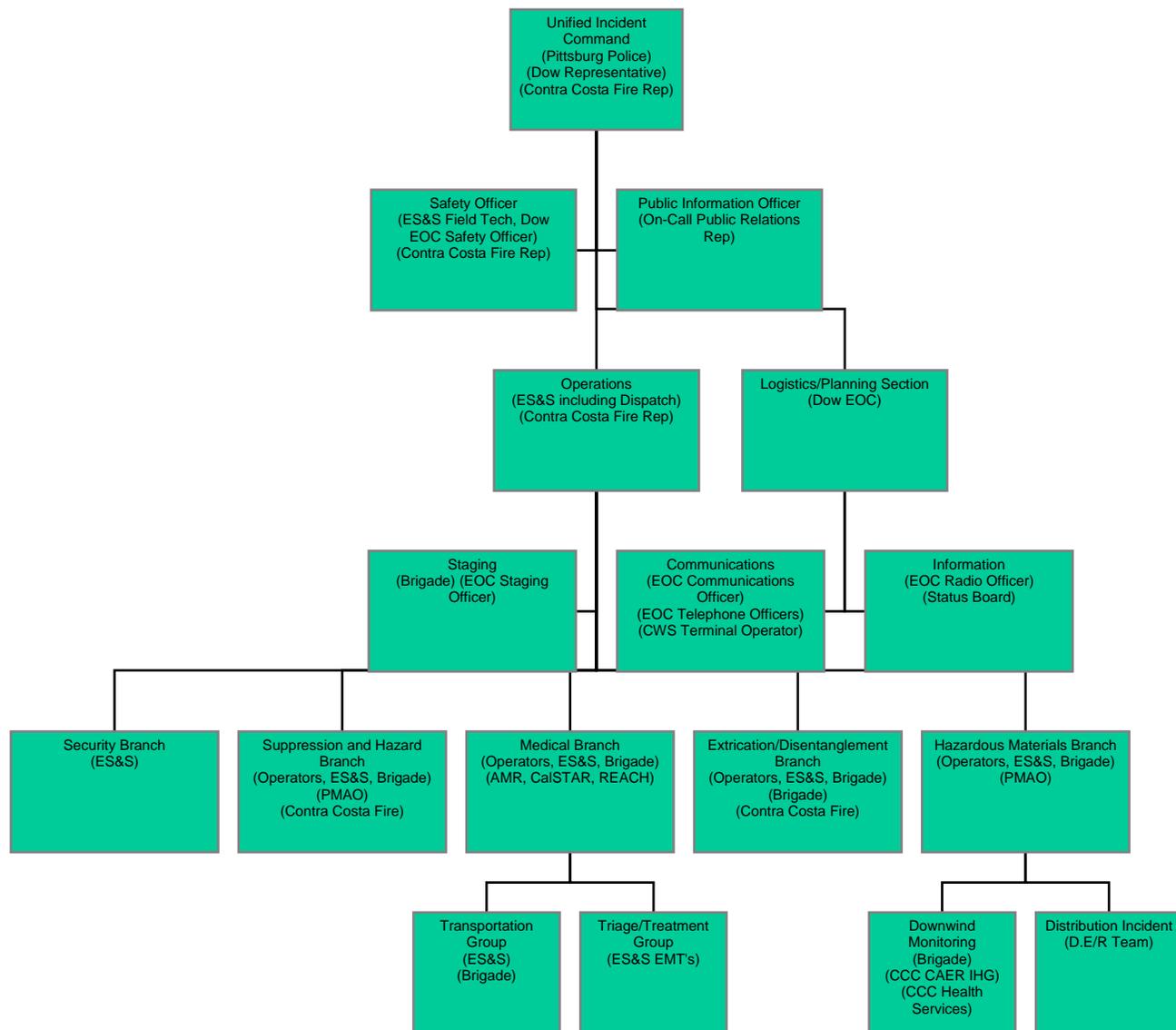
Following is a list of topics in this section:

Topic	See page
Response Organization Chart	45
Response Team Job Descriptions	46 - 63
Information Flow Description	64
Unified Command Description	64
Field Level and EOC Coordination	64
Command Description	64
Operations Description	65
Planning Description	67 - 68

III.3 Response Management System

Overview	This section describes the response management system for responding to incidents on site. See also Section II of the core plan (Initial Response) for additional information.
-----------------	--

Response Organization Chart	The response organization chart for a Level 3 incident originating and/or impacting the site and where a Command Post is established in addition to Operations is as follows:
------------------------------------	---



III.3 Response Management System

Emergency Personnel	This section describes the roles of various personnel on site in an emergency, their lines of authority, and how communication is achieved during an emergency.
Training	Personnel serving in these roles are trained as specified in Annex 5.
Employees	Each employee is at least familiar with the locations of and their role in the site and applicable unit plan and know assembly areas, Shelter-In-Place (SIP) locations, evacuation routes and off-block assembly points.

In this section Following is a list of topics in this section:

Topic	See page
Operators	46
Fire Brigade	46
Specialist Responders	48
Medical Staff	48
Downwind Monitoring	49
Dow Emergency Operations Center (EOC)	49 - 50
Unified Command - Dow	51
Public Information Officer	51
Safety Officer	51
Technical Specialist	51
Wardens – Immediate Response Leaders	51
Site Coordinator	52 - 54
ES&S Incident Commander	55 - 57
Emergency Services and Security (ES&S)	58 - 59
Distribution Emergency Response (D. E/R)	60
Additional Roles and Responsibilities	61 - 70

III.3 Response Management System, continued

Operators All operators receive basic training for personal safety and industrial hygiene and process safety. They are qualified to handle specific situations at their work site and know the location of assembly areas, Shelter-In-Place (SIP) locations, escape routes, off-block assembly areas, and emergency equipment.

Operator Response The proper response of operations personnel will depend upon the type of emergency. Operators should listen to and follow the directions of the Warden. In the absence of the Warden or Alternate, listen to the building speakers for directions.

Some operators receive additional training so as to be able to respond to emergencies in order to protect personnel, mitigate the release, and/or support the overall response.

Fire (Emergency) Brigade The site Emergency Brigade consists of Dow employees who respond to site emergencies to assist the ES&S group. This group is also known as the Fire Brigade.

Response Upon notification the Emergency Brigade will respond to an emergency as follows:

Stage	Description
1	Respond to the firehouse and radio the Incident Commander (I/C) with a headcount.
2	Don turnouts, grab hazmat PPE bag and await instructions from I/C.
3	Respond to staging with equipment as specified by I/C.

Roles The fire brigade may be used in one or more of the following roles, depending on their training level and familiarity of the equipment.

- Driver of Engine 1 & 2
- Driver of Rescue 1
- Engineer of fire engines
- Fire fighter
- Confined Space Rescue technician
- Elevated Work Rescue technician
- Crowd control with Safety Officer
- Driver of HazMat van
- Decontamination
- Hazmat entry team (using level A, B, C or D PPE)
- Back-up (support) team
- Vapor suppression/mitigation
- Assist with medical emergencies

III.3 Response Management System, continued

Specialist Responders	Specialist responders consist primarily of operations, maintenance and service personnel who are trained and knowledgeable in initial emergency response for their normal work area.
------------------------------	--

Emergency duties	Specialist responders may respond and perform one or more of the following duties during an emergency:
-------------------------	--

- Isolate the area
 - Alert and notify others in the immediate area
 - Alert and notify Dow ES&S Dispatch (Main Gate)
 - Put out small fires
 - Perform initial isolation and containment of hazardous materials releases (wearing Level A, B, C or D PPE)
 - Perform initial actions in support of confined space rescue which may include extrication of victims using hoists or other rescue means from outside of the confined space.
 - Perform initial actions in support of elevated work rescue which may include lowering of elevated work victims using lowering devices or assemblies from a safe position.
 - Assist with emergency decontamination of victims exposed to hazardous substances (provided that they wear Level A, B, C or D PPE).
-

Medical staff	Medical staff includes a Dow physician (located in Michigan), part-time on-site contract physicians and a registered nurse (during regular business hours).
----------------------	---

Scope	The Medical staff will provide information and assistance as needed to cope with potential or actual personal injury and/or acute exposure of people to chemicals.
--------------	--

Injuries: During emergencies with injuries, the Incident Commander (or their designated safety officer) notifies site medical personnel for information and assistance. The Incident Commander (or their designated safety officer) shall provide the information to the scene of the emergency except when communications between medical personnel are necessary.

Role

Medical staff during their working hours are to provide:

- appropriate medical care for individuals injured on the plant site including triage, acute treatment, transfer to other facilities,
 - accurate information regarding identification number and severity of injuries, and disposition of those injured to the ES&S Incident Commander, and
 - support to Human Resources, Community Outreach, Site Coordinator and plant supervisor regarding communication with family members of those seriously or fatally injured, and any health effect information needed for response to the emergency or communication with outside agencies.
 - consultation with outside medical care services and facilities (e.g., ambulances, hospital, burn unit) when necessary.
-

III.3 Response Management System, continued

Downwind Monitoring

The following process is used by Brigade personnel to respond to emergency situations for purposes of conducting downwind monitoring:

Stage	Description
1	When a chemical release occurs and ES&S activates the site brigade, ES&S may direct one or more brigade members to perform downwind monitoring. ES&S will inform the brigade of the plant involved, wind direction/speed and chemical if known.
2	Once the chemical is known, one or more brigade members may be asked to respond down wind, reporting any visual evidence of a release.
3	At the fence perimeter, the brigade members will sample the air using Drager tubes and report findings to the ES&S Incident Commander.

Dow Emergency Operations Center (EOC)

For incidents that are larger and/or more significant in scope or that transition from initial emergency stages to a sustained action stage, the Dow Emergency Operations Center (Dow EOC) is established and staffed by site management personnel.

Dow EOC Function

The Dow EOC is set up at the ES&S Incident Commander and/or Site Coordinator's request. The Dow EOC is a designated room located in the site Administration Building. The function of EOC is to serve as the Dow center for planning, logistics and finance of the incident, and to support the various communication links between outside assistance and the incident site and between Dow, the press, and the regulatory agencies.

The Dow EOC coordinates with EOC's from City of Pittsburg, Contra Costa County, City of Antioch, and the State of California if and when they are activated specific to each incident. Designated Dow EOC assembly areas are as follows;

- Primary: 490 building conference room
- Alternate 1: 461 Building Administration conference room.
- Alternate 2: 1091 Building (East parking lot)
- Alternate 3: Contractor Parking Lot West of credit union

III.3 Response Management System, continued

Dow EOC notification	<p>Upon receipt of an emergency requiring Dow Emergency Operations Center activation, the Main Gate will notify the members of the Dow EOC by the following:</p> <ul style="list-style-type: none">• Day hours - P.A. announcement and blue flashing light on tower by garage.• After hours - Automated telephone/pager notification system <p><u>Press briefing room</u>: During major emergencies, Dow will work with Unified Command to determine the need to establish a media center for use in delivering public information and conducting media briefings, and will work with Unified Command to establish one if appropriate to do so.</p>
Dow EOC Manager	<p>The first person entering the Dow EOC will be in charge of EOC operations and responsible for obtaining and directing EOC Staff. The first person entering the EOC is the EOC Manager unless relieved by another EOC Team member.</p>
EOC officers	<p>The EOC officers consist of Dow Pittsburg site managers and day support personnel. The first people to reach EOC assume the available positions and immediately implement the appropriate EOC procedures--manager, dispersion, mapping, etc. Other trained personnel are on standby in the EOC area and provide assistance and supplies to EOC as required. EOC equipment is checked monthly.</p>
Setting up Dow EOC	<p>The Dow EOC can be set up during day shifts or off shifts because the Main Gate, which receives the first call from an incident site, is staffed 24 hours per day, every day. The on-call Site Coordinator or ES&S Incident Commander can call for activation of the EOC. At least one site coordinator is on call at all times and carries a pager and portable telephone. The EOC Manager Checklist is a guide to the major tasks required to set up EOC. The checklist and summary sheets are kept at the EOC</p>
EOC Phone Officer	<p>The EOC Phone Officer is responsible for overseeing the staffing and operation of both the EOC Call Center and the Phonebank if the decision is made to activate same.</p> <p>The duties of the EOC Phone Officer include:</p> <ul style="list-style-type: none">▪ In consultation with EOC Manager decide if Call Center and Phonebank are needed.▪ Staff Call Center phones▪ Provide support to EOC Call Center operators▪ Activate/support Phonebank▪ Record greeting on x7000▪ Act as a call director to direct incoming calls to appropriate planning personnel. <p><u>Note</u>: There are two outgoing/incoming lines and one line dedicated to outgoing calls only at EOC.</p>

III.3 Response Management System, continued

Unified Command - Dow	A Dow Unified Commander will be assigned by the EOC Manager or their designate. The Dow Unified Commander serves as the Dow representative in Unified Command at the Command Post.
Liaison Officer	A Liaison Officer will be assigned by the EOC Manager or their designate. The Liaison Officer will serve as the Dow representative to non-Command agency representatives at the Command Post.
Public Information Officer (PIO)	The Public Information Officer (PIO) works as a spokesperson during an incident when the media is present. The Public Information Officer will work closely with the Dow Emergency Operations Center (Dow EOC) and the Command Post (CP).
Site Safety Officer	After hours and on weekends (and in the first few minutes of any site emergency) the ES&S Incident Commander or Technician will assume the role of site safety officer until relieved or the incident is declared over. The EOC Safety Officer will assume the site safety officer role in the event that the Dow EOC is activated. ES&S will provide an assistant safety officer role at operations.
Technical Specialist	The Technical Specialist is located at Operations in direct contact with Operations to provide communication between Operations, Unified Command, and the EOC. The Technical Specialist obtains and conveys information on the nature and status of the incident to the EOC, conveys technical information on the materials involved in the emergency to Operations, and assists Operations in obtaining requested support through the EOC.
Wardens (Immediate Response Leaders)	Wardens are responsible for communication, assembly and headcount with and of the personnel in their areas in an emergency situation involving their building or area.
Duties	The Wardens are one of the primary focal points between the incident site and Incident Command. The Wardens must ensure the safety of all the personnel in the building, section of a building, or work area, at the time of the emergency by taking some specific actions, or ensuring that response actions are completed. These actions depend on the nature of the emergency.
Site Coordinator	The <u>site coordinator</u> is the first manager notified when management support is needed
Dow EOC activation	The Site Coordinator can, by himself or in conjunction with the ES&S Incident Commander, activate the Dow Emergency Operations Center (Dow EOC). Once the Dow EOC has been activated, the site coordinator will go to the EOC to assist with staffing of EOC roles.
Schedule	The site coordinator typically serves for one week on a rotating basis (Tuesday to Tuesday). A schedule is issued once a year and updated as necessary to reflect change. The ES&S Incident Commander will be kept informed of the site coordinator's location if response time is greater than one hour.

Continued on next page

III.3 Response Management System, continued

Site Coordinator	Continued
Substitution	The site coordinator will provide, by mutual agreement, a substitution from the other site coordinators if he/she must leave the area. The ES&S Incident Commander will be notified of the change when substitutions are made.
Reporting	The site coordinator must be on site within one hour after being contacted. The site coordinator should report to the ES&S Incident Commander before going to the Dow EOC. The ES&S Incident Commander will update the site coordinator with all known information concerning the incident.
Contact failure	If the site coordinator cannot be contacted during an emergency or if the emergency occurs in the site coordinator's area and he/she requests a back-up, Main Gate contacts the next scheduled site coordinator until a back-up is identified.
Training requirements	The site coordinators will complete an annual refresher training course consisting of roles and responsibilities, Incident Command System (ICS), radio and phone communications, Dow EOC equipment and resources.
Qualifications	Site coordinators are usually: <ul style="list-style-type: none">• Experienced Dow/Pittsburg leaders – Leadership skills• General knowledge of chemical information and hazards by process area• General knowledge of site emergency procedures and Dow policies• Competency in the use of the Incident Command System (ICS) for site emergencies

Continued on next page

III.3 Response Management System, continued

During an emergency the site coordinator will perform the following duties unless and until an EOC Manager is established:

- Determine what the extent of the problem is and that appropriate counter measures are being taken.
 - Assure that the people at the scene of the emergency have the manpower and equipment needed to address the situation.
 - Verify that the units affected by the incident have put their emergency plan into effect.
 - Verify that adjacent plant personnel are informed of the situation.
 - Determine if there are injured personnel and, if so, the extent of injuries and where the personnel have been taken for treatment.
 - Determine what plant shut downs are necessary and assure execution.
 - Communicate status, activity and plans to the Site Manager, or if the Site Manager is unavailable, their designee.
 - In the event of injuries or death, the site coordinator will ensure that the workers supervision is notified so that they can make family notifications.
 - Ensure that all news media releases are issued from the Public Information Officer (PIO).
-

**Responsibilities:
Personnel
assignment**

The Site Coordinator is responsible for assisting ES&S with an assessment of the need for personnel to respond and serve in the areas of:

- Public Information Officer (e.g. Community Relations)
- Agency notifications (e.g. EHS Compliance on-call)
- Security and fire protection
- On Scene Plant/Department Contact

and for assisting ES&S (if needed) with contacting personnel to serve in these roles should primary contacts not have responded.

Continued on next page

III.3 Response Management System, continued

Site Coordinator

Continued

**Responsibilities:
Off-site impact**

When there is off-site impact, the Site Coordinator is responsible for confirming that the following have been accomplished (unless and until an EOC Manager is established):

- Pittsburg Police requested to set up Incident Command Post.
- Dow and Community Warning System (CWS) safety sirens have been activated.
- Antioch Police have been notified.
- Working with Red Cross through the Incident Commander, confirm housing is available to the public displaced by the emergency.
- Health Dept. has been notified.
- Other agencies as needed.

Property damage: If there is damage to off-site property, see that maintenance and construction groups are in place to address problems. Also, that phone numbers are communicated to the community so that damage reports can be made to Dow.

Hospital care: If hospital care is necessary for employees, contractors or first responders injured responding to an incident on site, make arrangements to review medical care costs. Arrange for housing and food for family members as required.

Multiple casualties: In a multi-casualty incident, appoint one person to track injured. Information will be released only after the Emergency Operations Center has given approval and emergency contact has been notified.

III.3 Response Management System, continued

ES&S Incident Commander	The Dow ES&S Incident Commander will be considered the authority in all operational aspects of the emergency and will coordinate the operational response with the plants and Contra Costa Fire Protection District Operations Battalion Chief.
Response Objectives and Plans	Operations response objectives and plans will be formed at the Unified Operations Post by Dow's ES&S Incident Commander (in radio communication with the Dow EOC) along with representatives of Pittsburg Police and the Fire Protection District.
Responsibilities: General	<p>ES&S provides the first line of defense for all emergencies. Therefore, the ES&S Incident Commander for the Pittsburg site assumes first responsibility as emergency coordinator and directs the efforts of all other emergency response groups.</p> <p><u>Large emergencies:</u> If the emergency is sufficiently large to require assistance to respond to press inquiries or to notify the surrounding community, the site coordinator will be contacted to assist in these efforts. However, the ES&S Incident Commander is responsible for mobilizing the appropriate ES&S personnel and equipment and for contacting outside emergency response groups if additional assistance is needed.</p> <p><u>Emergency Coordinator:</u> In the event of an emergency involving or generating hazardous waste where the site Contingency Plan is invoked, the Hazardous Waste Emergency Coordinator will serve as required by Title 22 66264.52 reporting to the ES&S Incident Commander as a Hazardous Waste Emergency Coordinator Specialist Employee.</p>
Responsibilities: Specific	<p>The list below outlines the specific responsibilities of the ES&S Incident Commander and his/her staff at the Main Gate.</p> <ul style="list-style-type: none">• Answer the internal emergency response telephone, 2222 and the Distribution emergency response telephone 925/432-5555• Receive full information on each emergency from the person reporting the emergency. For Distribution emergency response try to ascertain if caller from off site can identify seven-digit shipping instruction number (bill of lading).• Pass on full information immediately to ES&S, contact the Site Coordinator, and initiate Dow EOC if necessary.• Direct resources to respond to the emergency as required by the incident (fire, explosion, gas release, spill, confined space rescue, elevated work rescue, etc.).• If the incident involves a serious medical emergency or questions regarding medical information, the ES&S Incident Commander should contact the Dow doctor via Midland security at 989/636-4400 and pass on all available information to the doctor on call.• Establish incident command post, supervise emergency response activities, coordinate with off site emergency response groups and give updated information to the Dow EOC Communications Officer.• Function as the designated Emergency Coordinator for hazardous waste related emergencies as required by 66264.52.

Continued on next page

III.3 Response Management System, continued

ES&S Incident Commander

Continued

Contacts

The ES&S Incident Commander has the overall responsibility for contacting the assigned on-call Site Coordinator either by the on-site "Hot Line" Public Address (PA) system, telephone, emergency pager, or at home if the incident occurs at times other than normal working hours.

Off-site notification: Should the incident require off-site alerts/evacuation the ES&S Incident Commander (via Communications Center personnel) will activate the Community Warning System (CWS) and request outside emergency assistance as needed including the implementation of the Incident Command Post. A follow-up call is made to County Health Services by the Compliance On-Call as soon as events allow time to do so.

PMAO: At the ES&S Incident Commander's request, Main Gate personnel will also alert/request aid from the PetroChem Mutual Aid Organization (PMAO).

Others: The ES&S Incident Commander is responsible for notifying the on-call EHS Compliance representative who is responsible for notifying other affected regulatory agencies (BAAQMD, DHS, EPA, RWQCB, etc).

Qualifications

Incident Commanders: The ES&S Incident Commanders who act as Incident Commanders are the Incident Commanders of the ES&S group which includes the site fire response personnel trained in security, response to fires, spills, and explosions at a chemical manufacturing plant.

Justification: The ES&S Incident Commander is the designated Incident Commander because there is an Incident Commander on site 24/7/365. The Site Coordinators are day support personnel who are on site 8 hours/day, 5 days/week or about 28 percent of the time. Dow believes that it is important to have someone with the knowledge and authority to commit resources on site at the time of an emergency rather than on call.

Experience: The ES&S Incident Commander is familiar with the types and characteristics of the products manufactured at the Dow Pittsburg Plant.

Training: They also receive training in environmental laws and regulations, emergency response equipment and procedures and first aid.

III.3 Response Management System, continued

**ES&S Incident
Commanders and
Hazardous Waste
Emergency
Coordinator
Specialists**

The ES&S Incident Commander is the lead Dow emergency responder in an emergency on site. A list of all available ES&S Incident Commanders and their respective phone numbers is provided as follows.

Note: In the event of an emergency involving or generating hazardous waste where the site Contingency Plan is invoked, one or both of the Hazardous Waste Emergency Coordinators listed below will serve as a Hazardous Waste Emergency Coordinator Specialist reporting to the ES&S Incident Commander.

Name	Plant Phone	Home Phone	Home Address
Butch Combs, Jr	432-5276	550-3824	2618 Torrey Pines Dr. Brentwood, CA
Mike Gillespie	432-5276	432-9818	820 W. 17 th Street Pittsburg, CA
Brent Johnson	432-5276	949-6479	308 Pantano Circle Pacheco, CA
Rick Spaulding	432-5276	240-7773	297 Honeysuckle Court Brentwood, CA
Mark Ayers (alternate)	432-5042	625-3240	3819 Pato Lane Oakley, CA
Hazardous Waste Emergency Coordinator Specialist	Plant Phone	Home Phone	Home Address
Jeff Cast	432-5177	754-7279	927 Burwood Way Antioch, CA
Anthony Cobiseno (alternate)	432-5595	754-1718	2329 London Court Antioch, CA

III.3 Response Management System, continued

Emergency Services and Security (ES&S) Under the direction of the ES&S Incident Commander, the ES&S group will perform their duties during an emergency. During the off hours (4:30 p.m. to 7:00 a.m.) additional personnel may be called in to assist in performing the following duties.

Responsibilities: Communications

ES&S will perform the following duties:

- Staff Main Gate and coordinate communications.
 - Ensure the site has been alerted via the hot line PA system, monitors, and pagers.
 - Confirm that the on-call site coordinator has been called, and the applicable call list have been activated. The call out lists will be kept on the Telephone Emergency Notification System at the Main Gate and updated by the ES&S or their designee.
 - Dispatch emergency equipment as required by personnel responding to the incident (vehicles, foam, Rescue Van, etc.)
 - Activate the Dow Emergency Operations Center (Dow EOC) when appropriate or requested by the Site Coordinator to do so.
 - If appropriate, activate the Community Warning System (CWS) and Dow CAER siren to inform agency and community persons of an incident.
 - Call out additional off-duty ES&S and Fire Brigade personnel as required.
 - Call out additional off-duty Dow EOC, EH&S, and downwind monitoring personnel as required.
 - Contact American Medical Response (AMR) via Contra Costa Fire if additional medical help is needed.
 - Provide emergency status information within the site via the hot line PA/monitors approximately every 15 minutes and to neighbors via the telephone.
 - Confirm that the Site Coordinator has contacted the Site Manager.
 - Keep Antioch and Pittsburg Police Department radio dispatchers informed about the emergency conditions.
-

Continued on next page

III.3 Response Management System (continued)

Emergency Services and Security (ES&S) Continued

Responsibilities: Additional

In addition to communication responsibilities, the ES&S will also:

- Direct regulatory agencies to the Compliance on-call person.
 - Direct press/news media personnel to the Dow Public Information Officer (PIO).
 - Activate each gate's emergency flashers and control personnel entering the site.
 - Establish road blocks and traffic control measures on the site, and assist Pittsburg Police with questions regarding same in the community.
 - Receive and record incident information and assure the Site Coordinator is advised.
-

Responsibilities: Fire

ES&S is responsible for the following during a fire:

- Activating the site Fire Brigade, if needed.
 - Confirm that the Compliance on-call and Manufacturing Services has been notified. Manufacturing Services needs to plan for excess water.
 - If necessary, call Contra Costa Fire and/or Petro Chem Mutual Aid for additional fire fighting equipment.
-

Responsibilities: Chemical release

ES&S is responsible for the following during a chemical release:

- Utilize the Community Warning System (CWS) terminal at the Main Gate to notify local agencies, activate the safety siren, alert the media, and activate the Telephone Emergency Notification System (TENS) when needed.
 - Activate the Dow CAER Siren located by the river, when needed.
 - Activate the brigade to conduct downwind monitoring to measure perimeter concentrations data with portable monitors.
-

Responsibilities: Medical Emergencies

In the event of an emergency on-site involving personal injury or injuries, ES&S personnel will perform initial stabilization in preparation for advanced medical treatment. ES&S (Security and Emergency Services) has EMT certified staff that are available 24 hours per day, 7 days a week. More serious injuries are transported to Medical during normal working hours and to local hospitals after hours.

**Responsibilities:
Confined Space
Rescue or Elevated
Work Rescue**

ES&S is responsible for the following during a Confined Space or Elevated Work Rescue:

- Making a site announcement to stop all other Confined Space Entries and Critical Elevated Work until further notice.
- Activating the site Fire Brigade, if needed.
- Request support from Contra Costa Fire, if needed.
- Performing rescue operations

III.3 Response Management System (continued)

Distribution Emergency Response (D. E/R)

**Distribution
Emergency
Response (D. E/R)
System**

Dow Chemical has in place a Distribution Emergency Response (D. E/R) system company wide to respond to transportation incidents involving Dow products and materials. This system also provides response to incidents involving chlorine under The Chlorine Institute CHLORine Emergency Program (CHLOREP). There are D. E/R teams at several locations in North America. The Pittsburg, California site maintains a D.E/R team which is capable of responding to transportation incidents involving both Dow products and raw materials and to incidents involving chlorine.

**Notification of
Incidents**

The primary means of notification to the site of incidents is by telephone. The site Distribution Emergency Response emergency telephone number is 925/432-5555 and is staffed 24/7/365.

**Distribution
Emergency
Response Team**

The site maintains a Distribution Emergency Response Team comprised of individuals who are trained and authorized to respond to off-site transportation incidents. The team reports to an incident-specific D. E/R coordinator during a response and to the team coordinator at other times.

The incident-specific D. E/R Coordinator is responsible for the initial telephone response to the incident notification party and for fielding a response team should a response to the incident scene be warranted.

The D. E/R Team is responsible for responding to the incident scene under the direction of the incident-specific D. E/R Coordinator should a response be warranted and providing assistance up to an including actual mitigation of the emergency.

**Knowledgeable
Plant Contacts
(KPC's)**

The site maintains Knowledgeable Plant Contacts (KPC's) for most units. KPC's are comprised of individuals who are knowledgeable in the technical aspects of products and materials used and produced on site and are trained and authorized to respond to off-site transportation incidents. The KPC reports to the on-call D. E/R coordinator during a response and to their unit supervisor at other times.

The KPC is responsible for responding to the incident (in person or by telephone assistance) under the direction of the on-call D. E/R Coordinator should a response be warranted and providing technical assistance to support the mitigation of the incident.

III.3 Response Management System, continued

Additional Roles & Responsibilities

Some of the additional roles staffed in a site-wide emergency include:

Staging Officer

This role is resourced from the Dow EOC and reports to one of the designated staging areas to control and record resources responding to Dow prior to moving them up to operations.

In an emergency at the Dow Chemical Pittsburg, California site, the ES&S Incident Commander determines the location of Dow Staging, the Incident Command Post, and operations based on safety and logistics considerations. The following areas have been predetermined;

- **Staging:** The area for emergency response equipment and personnel to report to upon arrival to the Dow Chemical Pittsburg, California site is called “Dow Staging”. Predetermined locations for Dow staging are as follows:
 - Primary: The parking lot immediately in front of (to the West of) the 490 Building (Stores Services)
 - Alternate 1: Parking lot East of 1091 Building (Training Center)
 - Alternate 2: Contractor Parking Lot West of credit union
-

CWS Operator

This role is resourced from the Dow EOC and reports to the Main Gate to assist the ES&S Dispatcher in activating and/or using the CWS terminal.

Compliance On Call (COC) coordinator

In the event of an incident or emergency where additional agency notification or reporting is required, the ES&S Incident Commander may have dispatch page the Compliance-On-Call (COC representative). Upon receiving a page, the COC representative telephones the Main Gate and receives incident information necessary to make agency notifications..

III.3 Response Management System, continued

Additional Roles & Responsibilities

Continued

COC Responsibilities

The EH&S Compliance On-Call Coordinator will assume the following responsibilities:

- Establish contact with the ES&S Incident Commander who serves as the initial Incident Command.
 - Through communications with the affected facilities and the Dow EOC, determine the quantities of chemical released, including products of incomplete combustion.
 - Ensure that appropriate federal, state, and county agencies have received proper notification.
 - Advise the ES&S Incident Commander and plant personnel in containing liquid spills that enter the site's water ways.
 - Notify the appropriate personnel so that compliance with OSHA, Cal-OSHA, DTSC, and Hazwoper regulations are followed during clean up activity.
-

Stormwater System Isolation

Manufacturing Services personnel may be asked to block in the site storm water detention area in the event of a spill that threatens waterways.

III.3 Response Management System, continued

Additional Roles & Responsibilities

Continued

Site security and Control

Security at the Dow Chemical Pittsburg, CA site is achieved through a number of various administrative and engineering controls including:

Parts	Function
Badges	Dow employees and contractors are required to wear picture identification at all times when they are on site.
Fences	The industrial portion of the Dow Chemical Pittsburg, CA site is surrounded by a continuous security fence which is gated or equipped with locked turnstiles at entry/exit points. Gates are either locked, equipped with secure identification (ID) badge access, or staffed by ES&S personnel.
Cameras	Video cameras are located at various points in and around the industrial portion of the Dow Chemical Pittsburg, CA site. ES&S personnel monitor the video display of these cameras in order to detect unusual activities which might impact the site.
ES&S Personnel	ES&S personnel make periodic rounds to various portions of the Dow Chemical Pittsburg, CA site in order to detect unusual activities which might impact the site.
Employees	Dow employees are trained to observe company policies with respect to security at the Dow Chemical Pittsburg, CA site.
Security Vulnerability Assessments	Dow sites periodically are subject to internal assessments of security programs in order to determine if any vulnerability exists and to assist in determining what measures are appropriate to address them.

Control of access/Egress to/from site

Access to/from the Dow Chemical Pittsburg, CA site is controlled through a number of various administrative and engineering controls including:

- Limiting routes of entry/exit to the site through gated access.
- Exit gates that alarm and alert security in the event of opening
- Requiring picture identification for entry
- Enforcing a visitor policy which requires a Dow employee accompany a visitor while on site.

III.3 Response Management System, continued

Information Flow Description

Methods: The methods of information flow during an incident include: radios, telephones, public address system, Community Warning System (CWS), status boards, and standardized ICS forms.

Directions: The directions of information flow are generally to and from the various contact points or locations of the response management system.

Contact Points: The various contact points or locations of the response management system include staging, operations, ES&S Main Gate (dispatch), command, and the Dow EOC. The Command Post and CWS are the primary means of contact with off-site response resources.

Unified Command Description

The Dow ES&S Incident Commander serves as the initial Dow Incident Commander and remains in this capacity until Pittsburg Police and/or a CCFPD (Contra Costa Fire) Captain or Battalion Chief arrives on site.

Upon arrival at the entry point and once briefed, the Police Officer and/or Captain or Battalion Chief works side-by-side with the Dow ES&S Incident Commander to form a Unified Command.

Once the Dow Unified Command (UC) representative activates a Command Post with a representative from the Pittsburg Police or Contra Costa Fire; the ES&S Incident Commander is relieved of the command role, but continues to function as the Dow representative to Operations.

Field Level and EOC Level Coordination

Coordination between Operations and the Dow EOC are effectively maintained by having the Technical Specialist (Tech Spec) role resourced from the Dow EOC and report to Operations. The Tech Spec then relays communications between the two response management system locations.

Command Description

Anticipated command for a site-wide emergency at Dow that is or could impact the community includes representatives from Dow (Dow UC)), Contra Costa Fire Protection District (Con-Fire), and Pittsburg Police (PPD). Additional command staff includes a Safety Officer that provides overall safety emphasis to the response management and operations systems, and representatives from any responding agencies.

Command Post: The location of the Command Post for command of the overall incident response is.

- Primary: 490 Building (Stores Services) conference room
 - Alternate 1: 1091 Building East parking lot
 - Alternate 2: Contractor Parking Lot West of credit union
-

III.3 Response Management System, continued

**Operations
Description**

Operations for a site-wide emergency at Dow that is or could impact the community is usually coordinated between the operating plant personnel involved in the incident and ES&S field personnel (Dow Incident Commander and Dow Emergency Responder). Operations is responsible for discharge or release control, containment, decontamination, and recovery operations for the plant and process(es) involved.

The ES&S Incident Commander (Dow Incident Commander) is responsible for coordinating with the Con-fire representative to develop and implement operations response objectives including alert and notification of responders and affected personnel, damage assessment and monitoring, site recovery, and non-responder medical needs including medical assistance and information on ambulances and hospitals.

**Operational
Response
Objectives**

Initial response objectives for operations include alert and notification of responders and affected personnel. Overall objectives are to protect human life, the environment and property. Incident-specific objectives may be one or more of the following;

EMERGENCY CONDITION LEVELS Demonstrate the ability to understand, use, and monitor emergency condition levels through the appropriate implementation of emergency functions and activities corresponding to emergency condition levels. The three standard levels are potential emergency condition, limited emergency condition, and full emergency condition.

STAFF MOBILIZATION AND 24-HOUR OPERATIONS Demonstrate the ability to fully alert, mobilize, and activate personnel for emergency response and maintain operations over a 24 -hour period.

DIRECTION AND CONTROL Demonstrate the ability to direct, coordinate, and control emergency activities.

SUPPLEMENTARY ASSISTANCE Demonstrate the ability to identify the need for and request emergency assistance from Federal and other support agencies.

COMMUNICATIONS Demonstrate the ability to effectively communicate with all appropriate emergency response locations, organizations, and personnel.

FACILITIES, EQUIPMENT AND DISPLAYS Demonstrate the adequacy of facilities, equipment, displays, and other materials to support emergency operations.

ALERT AND NOTIFICATION Demonstrate the ability to alert the public of a hazardous materials emergency and begin dissemination of instructional messages in a timely manner.

EMERGENCY PUBLIC INFORMATION Demonstrate the capability of coordinating and disseminating accurate information regarding a hazardous materials incident to the media and the public in a timely a manner.

III.3 Response Management System, continued

**Operational
Response
Objectives**

(continued)

POPULATION PROTECTIVE ACTION Demonstrate the ability to make and implement appropriate protective action decisions based upon projected risk to the public.

EMERGENCY WORKER DECONTAMINATION Demonstrate the ability to monitor and control emergency worker contamination, and the adequacy of procedures for waste disposal and equipment and vehicle decontamination.

TRAFFIC AND ACCESS CONTROL Demonstrate the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas.

POPULATION CONTAMINATION CONTROL Demonstrate the ability to monitor and control hazardous materials contamination of the public through an appropriate registration, contamination screening, and decontamination process.

RELOCATION CENTERS Demonstrate the adequacy of procedures, facilities, equipment, and personnel for the congregate care of evacuees. If appropriate, demonstrate the adequacy of procedures for the registration, contamination screening, and decontamination of evacuees.

MEDICAL SERVICES - TRANSPORTATION AND FACILITIES Demonstrate the adequacy of personnel, procedures, equipment, and vehicles for transporting contaminated and/or injured individuals, and the adequacy of medical personnel and facilities to support the operation.

REENTRY AND RECOVERY Demonstrate the ability to determine and implement appropriate measures for controlled reentry and recovery.

**Discharge or
Release Control**

Operational procedures, computer controls and plant engineering design help to prevent discharge or releases of substances. Equipment specific relief devices and set points, as well as inspection and maintenance of relief device equipment also help to prevent discharge or releases of substances.

**Assessment and
Monitoring**

Fixed monitors and alarms, portable detection instruments, as well as operator and emergency responder assessment and monitoring of the process and area assist in determination of emergency conditions and response measure effectiveness.

Containment

Engineered containment structures such as dikes, berms, double walls, etc. and devices such as vent headers assist in release containment and recovery actions.

III.3 Response Management System, continued

Recovery

Efforts to recover after an emergency include operations determination of and implementation of appropriate measures to return to normal operations, recover , reuse, recycle or dispose of released substances. Responder physiological recovery, and replenishment of response resources are additional considerations.

Decontamination

Operations are responsible for determination of need for and ensuring decontamination of victims, responders, affected area, and equipment that may be contaminated during an emergency.

**Non-Responder
Medical Needs
including
information on
Ambulances and
Hospitals**

Operations and Unified Command are responsible for identification and ensuring victim care, notification of victim's employer or emergency contact, agency medical needs, as well as worker and community medical needs.

**Planning
Description**

Most of the planning functions described in the Incident Command System are resourced by the Dow EOC personnel. EOC personnel are trained and experienced in the National Incident Management System (NIMS). In addition, EOC personnel meet regularly to conduct drills and exercises, train on new and existing roles, plans and procedures, learn site hazard assessment data (hazard identification, vulnerability analysis, prioritization of potential risks, planning scenarios (credible cases), develop/update protection procedures for site personnel.

In the event of a site emergency where the EOC is activated, EOC personnel focus on strategic issues specific to the emergency scenario which may include:

- confirmation of emergency classification and changes to the classification
- response staff mobilization and replenishment
- review of direction, coordination and control of the overall response effort
- identification and support of request for additional assistance
- effective communicate with all appropriate emergency response locations, organizations, and personnel
- adequacy of facilities, equipment, displays, and other materials to support emergency operations.
- ability to alert the public of a hazardous materials emergency and dissemination of instructional messages in a timely manner
- coordinating and disseminating accurate information to the media and the public in a timely a manner
- make and implement appropriate protective action decisions based upon projected risk to the public

III.3 Response Management System, continued

**Planning
Description**

(Continued)

- monitor and control emergency worker contamination, and the adequacy of procedures for waste disposal and equipment and vehicle decontamination.
- control evacuation traffic flow and to control access to evacuated and sheltered areas.
- monitor and control hazardous materials contamination of the public through an appropriate registration, contamination screening, and decontamination process.
- adequacy of procedures, facilities, equipment, and personnel for the congregate care of evacuees. If appropriate, demonstrate the adequacy of procedures for the registration, contamination screening, and decontamination of evacuees.
- adequacy of personnel, procedures, equipment, and vehicles for transporting contaminated and/or injured individuals, and the adequacy of medical personnel and facilities to support the operation.
- Support to Unified Command and agencies for their assessment of adverse impacts to neighbors and/or sensitive environmental areas.
- ability to determine and implement appropriate measures for controlled reentry and recovery (of operations internal to site, neighbors, and sensitive environmental areas).
- financial issues associated with the incident and/or response such as neighbor and sensitive environmental area impacts and recovery costs. Costs associated with the acquisition of resources (i.e. personnel and equipment) for the response are handled on an incident specific basis.
- any internal labor costs associated with the response are managed through the existing payroll system. Contract costs (labor, equipment and/or materials) are addressed through purchase orders, pro-cards, or contracts depending on the specifics of the resources needing to be procured.

Hazard Assessment

Dow utilizes a number of methods and processes for hazard assessment including;

- Hazard Identification tools and methods
- Vulnerability analysis processes
- Prioritization of potential risks
- Development and review of various planning (credible) emergency scenarios

**Protection and
Mitigation
Procedures**

Dow also has a number of procedures for protection from and mitigation of emergencies including;

- Administrative procedures,
 - Operating procedures
 - Emergency response procedures that address mitigation, release containment and control, fire control, etc specific to the type of emergency
-

**Coordination with
Natural Resource
Trustees**

Dow has procedures and processes in place to alert and notify natural resource agencies (trustees) of emergencies that meet agency notification criteria, as well as provisions for accommodating natural resource agency representatives at Unified Command. Dow also has resources to work with agencies to help ensure natural resources recovery in the event that an emergency adversely impacts natural resources.

Waste Management

Dow personnel utilize existing procedures and processes to ensure that any wastes generated during an emergency are properly characterized, contained, labeled, stored in a secure area, and inspected routinely prior to disposition.

Dow personnel also utilize existing procedures and processes to ensure that any wastes already on site in the event of an emergency are properly cared for whether or not they are affected by the emergency.

Logistics

Most of the logistics functions described in the Incident Command System are managed by the Dow EOC and site emergency response personnel. EOC and site emergency response personnel are trained and experienced in the National Incident Management System (NIMS).

Some of the logistics considerations in a site emergency may include;

- Medical needs for responders such as Pre-entry/post-entry medical monitoring, Standby medical assistance for entry into IDLH atmospheres, and Post-exposure monitoring
 - Site security during the emergency
 - Traffic control during the emergency including restricting non-response traffic in and around affected area, escorting responders to/from staging and operations, and facilitating evacuation traffic from area if needed.
 - Communications (Internal and External Resources) including public address (PA) systems, alert monitors, Community Warning System (CWS), ring down (direct line) telephones, and Public Information Officers (PIO's)
 - Obtaining response equipment and resources such as medical, fire, haz/mat, decontamination, bomb squads, rescue teams and supplies, cranes and rigging, breathing air equipment, etc
 - Contracting resources and equipment as needed to assist with: Containment, cleanup, waste recovery and disposal, heavy lifting, material transfer, re-railing, etc
 - Transportation (Air, Land, Water) including Helispots, response routes (primary and alternate), and waterway and dock access
 - Personnel support such as meals, temporary lodging, sanitation facilities and drinking water
 - Emergency equipment maintenance and support such as refueling and support technicians
-

Finance/Administration

Most of the finance and administration functions described in the Incident Command System are managed by the Dow EOC and site emergency response personnel. EOC and site emergency response personnel are trained and experienced in the National Incident Management System (NIMS).

Some of the finance and administration considerations in a site emergency may include;

- Establish and maintain an incident-specific emergency resources listing that addresses;

Personnel: Operators, responders, management, etc

Supplies: Consumables, raw materials, etc

Materials: Absorbents, adsorbents, neutralization substances, firefighting foams, etc

Equipment: Lighting, sanitation, etc

- Establish and maintain an incident-specific operational period staffing plan
- Assisting logistics with payment arrangements for contracting resources and equipment as needed.

III.4 Incident Documentation

Follow-up

Incidents are investigated by a multi-disciplinary team utilizing root cause analysis techniques. Investigations are conducted in coordination with agencies upon reasonable request. Incident investigation reports are generated and maintained in accordance with company records retention policies.

Accident History

Dow has compiled a five-year accident history for all accidental releases from regulated processes that resulted in deaths, injuries, or significant property damage on site, or known offsite deaths, injuries, evacuations, sheltering in place, property damage, or environmental damage (as specified in the CalARP and RMP regulations). The five-year accident history allows the Dow to dialog with the community on factors causing or contributing to accidental releases, the onsite and offsite impacts of accidental releases, and the procedural and technological changes made to minimize the likelihood that these accidental releases will not occur again. The intent of this information exchange is to create an informed community while also documenting that accidental releases are investigated and concrete changes are made to protect against reoccurrence. Dow expends significant resources towards prevention of accidental releases. Due to Dow's stringent release prevention policies, the number of accidental releases has been reduced to a minimum.

Personnel at Dow review all incident investigation reports in order to identify accidental releases of regulated substances that resulted in deaths, injuries, or significant property damage onsite, or known offsite deaths, injuries, evacuations, sheltering in place, property damage, or environmental damage. No offsite deaths, injuries, property damage, or environmental damage have occurred as a result of any incidents to date. General types of changes made to prevent reoccurrence of incidents include re-training, replacement of equipment, and increased inspections. Data regarding these incidents and the resulting procedural and technological changes are also provided in the Five-Year Accident History data elements of the RMP.

III.5 Training and Exercises

General Emergency Training

Introduction	Training for emergencies is conducted for both new and experienced employees.
New employees	<p>New employees or employees assigned to a new position receive training in emergency/contingency procedures within 6 months of the date of their employment or assignment to a new position.</p> <p><u>Note:</u> No employee works in an unsupervised position prior to completion of the required training.</p>
Experienced employees	Employees are required to complete emergency response training annually. Training includes the following topics; emergency procedures, site and unit emergency plans, and site emergency policies and practices.
Delivery	Both introductory and continuing training programs may include on-line computer based training modules, classroom instruction utilizing operational procedure manuals, slide/movie presentations, question and answer discussions, and classroom exercises.
Administration	<p>The training programs are administered by personnel trained in general hazardous chemical and waste management procedures, emergency response procedures, industrial hygiene and safety procedures, as well as personnel knowledgeable in specific procedures for the particular employment positions.</p> <p>On-the-job training is conducted by Dow personnel with extensive experience with the specific techniques and procedures performed on each job.</p>
Content	<p>Training is done using specific topic modules. Some modules are used site-wide and others are unit-specific. On-the-job training continues with supervised training in techniques and procedures specific to each employment position.</p> <p>The training program includes;</p> <ul style="list-style-type: none">• a review of the unit-specific emergency/contingency plan,• an overview of hazardous waste requirements (RCRA and DTSC requirements) and CERCLA/SARA requirements, and• a review of the unit-specific procedures to be followed in an emergency/contingency.
Procedures	All employees whose jobs include hazardous chemical or waste handling are given instruction in the overall guidelines for waste handling, disposal, and record keeping as outlined by the remaining sections below.

III.5 Training and Exercises

General Emergency Training (continued)

Field tests (specific to wastes)	The need for training for field test performance is minimal at this facility, as all hazardous wastes are produced on site from known chemical processes. Consequently, the contents of all waste streams are known. Employees whose jobs include hazardous waste handling are instructed on how to sample each waste stream annually or after any significant changes in the chemical processes, and to have the samples analyzed by an outside laboratory. Each operating unit samples product as necessary for product quality assurance.
---	--

Unit Specific Emergency Training

Introduction	In addition to general emergency training, all operations personnel are trained on the proper responses to emergencies that could occur within their specific unit.
Emergency procedures, equipment, and systems	Employees at each unit are instructed in their role in the Pittsburg site emergency-contingency plan and the emergency/contingency plan for their operating unit. Training covers the site and plant-wide procedures for major emergencies, general chemical and waste management training, and training specific to operation of the hazardous waste management unit or operating unit associated with their work. Employees receive classroom instruction and participate in routine exercises and drills of the emergency procedures.
Operating parameters	Employees are instructed in the system operating parameters, the results of deviating from the operating parameters, and the appropriate steps to be taken in the event an emergency is indicated (alarms to sound, supervisor to contact).

III.5 Training and Exercises (continued)

Unit Specific Emergency Training (continued)

Emergency equipment

Employees are trained in use, maintenance and repair or replacement of emergency equipment such as respirators, gloves, goggles, boots, hard hats and similar equipment. Employees undergo process familiarization training in order 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 in the following areas:

Valves: Location, operation and the functions for all valves

Tanks & Vessels: Understand the design of all tanks and vessels and their internal and external components and explain their functions

Instrument and Electrical (I&E) equipment: 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

Testing: Employees are tested on all equipment.

Respirators: ES&S and other site emergency response teams are trained in the use of Scott air packs and in first aid. ES&S personnel are also trained in minor maintenance and repair of above mentioned equipment.

Automatic waste-feed cutoff systems

Operations employees are instructed in the functioning of all control loops at the operating unit and will therefore fully understand the mechanisms for automatic or manual waste-feed cutoff.

Communications or alarm systems

Employees are instructed in the proper use of the extensive communications network including operation of radios, beeper page systems, telephones, loud speaker systems, various audible alarm and horn systems, and community safety sirens available in their operating unit, adjacent operating units, on site and in the community.

Continued on next page

III.5 Training and Exercises (continued)

Unit Specific Emergency Training, Continued

Fires & explosions Employees are instructed in the proper response to fires or explosions. In the event that the incident is of a minor nature with minimal threat of injury, potential loss of life, or harm to the environment, the employees are instructed in procedures and equipment appropriate to the area and type of incident in order to effectively resolve the situation. In the event that the incident is of a more significant nature (i.e. may pose a more significant threat of injury, potential loss of life, or harm to the environment, the employees are instructed to work with site emergency response personnel to resolve the situation.

Fire water nozzles: Employees are also instructed in the functioning of monitored fire water nozzles that are automatically activated by fire and sprinkler and deluge systems that automatically deploy water suppression to an area.

Major incidents In the case of a major incident, employees are instructed to set emergency procedures in motion. The first person who observes the incident reports it to ES&S via the main gate and to the local supervisor or Warden).

Note: Report may be made by warning horns, emergency radio channel, dialing the emergency phone number, or activating pull fire alarms and sprinkler flow alarms.

Training: All employees are trained to shelter in place or in rapid, safe evacuation procedures. In addition to initial training in emergency procedures, each operating unit is required to conduct regular drills and exercises.

Soil and surface water contamination

As with fire and explosion emergencies, employees are instructed to evaluate incidents for their impact to soils and surface waters.

Minor incidents: Employee shall notify Warden and ES&S Incident Commander, obtain support and resolve the emergency, (i.e., block in site drains, clean up the spill, etc)

Major incidents: Employee shall activate plant or area procedures that address contamination of soils and surface waters during and decontamination after the incident

Training: Employees receive initial training, periodic refresher training, and regular guidance on requirements for protection of the environment.

III.5 Training and Exercises (continued)

Unit Specific Emergency Training, Continued

Shutdown of operation

The response to shutdowns depends on the type of shutdown: normal vs. Emergency.

Normal shutdown: Employees are trained and thoroughly tested on the operating procedures pertinent to the hazardous waste management unit or operating units associated with their work. Employees are trained in normal shutdown procedures within 6 months of first employment, and re-trained yearly. All operators on shift have the authority to shutdown processes, especially if unsafe process conditions exist.

Emergency shutdown: Employees will be instructed by the Warden or senior plant operator if emergency shutdown is necessary in any process area. The Warden is fully trained and will run mock-tests at least once a year.

Site-wide shutdowns: Certain emergencies such as a major earthquake may result in the need to shut down multiple or all of the units on site.

Continued on next page

III.5 Training and Exercises (continued)

Unit Specific Emergency Training, Continued

Accident prevention

Employees are instructed in appropriate accident prevention methods including:

- thorough knowledge of operating systems and indicators of potential problems,
- Process Hazards Analysis (PHA) process and results of PHA's,
- safe conduct in the facility,
- proper use of equipment and vehicles,
- understanding of chemical properties and incompatibilities of waste materials,
- understanding of proposed handling procedures, and
- proper use of PPE (Personal Protective Equipment).

Respiratory protection

Ample respiratory protection equipment is available for all employees.

Training: Employees are instructed in the proper use of all equipment including mouth-bit respirators, half-face respirators and Scott® brand air packs.

Fit-testing: Employees who regularly use respirators are fit-tested annually unless specified otherwise.

Confined Space Entry and Elevated Work procedures

Applicable CAL-OSHA regulatory requirements, Dow Corporate requirements, and NIOSH procedures for confined space entry and elevated work are followed.

III.5 Training and Exercises (continued)

Job Title Specific Training

Introduction	Basic training for all technical personnel is virtually the same. Technical personnel receive training in emergency response (including fire and hazardous substance release), fire safety, respirator use, chemical safety, hazardous wastes, and environmental requirements. Support personnel (e.g., administrative or secretarial) receive training in personal safety and evacuation.
Frequency	All employees who handle hazardous chemicals or waste receive initial job-specific training on an initial report to work basis, and introductory training within 6 months of employment. Re-training is required, usually on an annual to at most a triennial basis.
Technical training	In addition to the basic training described above, technical personnel receive on-the-job training specific to their processing unit and job position.
Hazard specific	Training related to job specific Hazardous Waste activities are covered in detail by the Site's Hazardous Waste training program.
Operators	Process operators are trained in safe process operation as well as responding to emergencies involving one or more processes in their plants.
Immediate Response Leaders	Each plant has one Immediate Response Leader (IRL) on shift during plant operations. IRL's are typically more experienced, senior operators and are charged with leading operators and support personnel in the plant-specific response to an incident.
Industrial Fire Brigade	Industrial Fire Brigade members attend petrochemical process firefighter training at, Texas Engineering Extension Service (TEEX) Brayton Fire Training Field in College Station, Texas, or other recognized fire fighter training schools as well as specialized, Dow provided, training on site (including confined space rescue, elevated work rescue, and hazardous substance release response).
Site Emergency Teams	Site emergency team members receive general and specialized emergency response training as well as specialized, Dow provided, training on site (including hazardous substance release response).

III.5 Training and Exercises (continued)

Training Implementation

Policies

Facility personnel complete training within 6 months of date of employment or change of duties. Until training is completed, new facility personnel work only in directly supervised positions.

Retraining: Facility personnel participate in re-training as a condition of continued employment in a particular capacity. Dow Training, Safety and Personnel staff annually review Dow Safety and Training Procedures.

Documentation

Records required for each position include:

- job title
 - name of employee filling the job
 - a written description of job qualifications (e.g., skills, experience, education) and job duties.
-

Training records

Written descriptions of the amount and type of training provided to each employee are maintained. The date of first training and of periodic re-training is recorded as well.

Current personnel: Training records for current personnel are maintained until closure of the facility.

Former employees: Training records for former employees are maintained for at least 3 years past their termination date

III.5 Training and Exercises (continued)

Drills & Exercises

Introduction

In addition to the annual testing, other drills and exercises are utilized at the site and plant levels to ensure preparedness. There are four main types of exercises that can be conducted:

- Orientation Seminars or meetings,
- Table top exercises,
- functional exercises, and
- Full-scale exercises or drills (announced or unannounced).

Documentation: Documentation of whom participated, positive parts of the exercise and opportunities for improvement are recorded. The opportunities for improvement are listed on an action register and cleared as soon as possible.

Orientation Seminar

An orientation seminar is utilized to acquaint personnel and groups who might work together in an incident with each other, and to review the scenario, scope and objectives for a particular drill or exercise plan.

Table top exercise

A table top exercise is primarily a learning exercise that takes place in a control room, or meeting room setting. The table top generates a discussion of the emergency/contingency plans, procedures, policies and resources. This exercise reviews what actions are taken in certain situations.

Description: This type of exercise may be a set of questions asked to an operator, engineer, or management level personnel of their duties during gas releases, earthquake, fires, bomb threats or other unplanned events. This type of exercise may last 15 minutes to one hour. The learning phase of this exercise is usually done as the exercise progresses. A critique is conducted at the termination of the exercise.

Functional exercise

This type of exercise usually follows a few weeks or months after the table top exercise. A functional 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 it were an actual emergency. Functional exercises take time to plan and conduct, this type of exercise is usually more realistic. Functional exercises are usually announced in advance. The learning phase is usually done as the exercise progresses. A critique is conducted at the termination of the exercise.

Full-scale exercise of drill

This type of exercise usually follows a few weeks or months after the field 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).

Description: The drill normally involves actual field response as in a real situation. This type of exercise may be announced or unannounced, a checklist of proper response may be used or a written critique made after the drill to share with all observers and key participants.

III.5 Training and Exercises (continued)

Drills & Exercises (continued)

Critiques

A critique is conducted after each exercise and serious event. The critique is the time to review what went well and identify the opportunities the site and/or department have ahead of them. The critique should be kept on a positive level, list all the positives, and then the opportunities to improve while the details are fresh in mind.

**Site Emergency
Planning Specialist**

The site Emergency Planning Specialists role in the drill and exercise program is to;

- Coordinate the drill and exercise program for the site
 - Ensure that units conduct regular drills and exercises
 - Coordinate the follow-up program for drill and exercise learning value recommendations on site
-

**ES&S
responsibilities**

The ES&S Group's role in the exercise program is to:

- be available for plant personnel planning an exercise,
 - participate in planning the exercise if requested by the area,
 - participate as an exercise observer or responder if requested by the area,
 - participate in the critique, if requested by the area,
-

**Plant's
responsibilities**

Each plant/area is expected to conduct regular drills and exercises. These may be in the form of a tabletop exercise, field exercises, or drills.

Observers: The plant conducting the exercise will provide observers who may also act as safety personnel to stop an employee from hurting themselves, equipment, or fellow workers. These observers should be located in key positions to prevent injury or damage to equipment, they should wear red or orange vest which can be obtained from the ES&S Group.

Focus: Exercises conducted should focus on the area's process, and area's emergency/contingency plan. If an exercise is conducted with two departments, observers from other departments should be present to observe their people and to critique their response.

Critiques: All exercises as well as actual emergencies are critiqued for response and learning opportunities. Copies of critiques from past exercises are kept on file in the plant or area.

III.6 Response Critique, Plan Review and Modification Process

Response Critique	Responses to incidents are critiqued by the response groups including; ES&S and Dow EOC personnel.
--------------------------	--

Plan Review and Modification Process	The Dow Chemical Pittsburg, CA site emergency/contingency plan is reviewed and revised upon significant changes in the nature of Dow operations or changes in emergency coordinator personnel. Beyond these reviews, the plan is reviewed and updated annually, if and when any deficiencies are noted by an audit, or if the plan fails in an emergency.
---	---

The plan is audited by several agencies on a regular basis including; county health, CA DOHS-DTSC, BAAQMD, and the CA DOHS-Radiologic Branch.

III.7 Prevention

Prevention Programs

Dow has in force a number of programs that prevent or are intended to assist in prevention of emergencies. These include:

1. Written operating procedures,
 2. Process safety information documentation,
 3. Training in recognition and prevention of emergencies,
 4. Preventive maintenance programs
 5. On-site security systems and personnel (24-7-365),
 6. Equipment inspection and testing,
 7. Employee participation program,
 8. Lockout/tagout program,
 9. Inventory management programs,
 10. Near miss reporting,
 11. Incident investigation process,
 12. Project reviews,
 13. Safe work permits,
 14. Hot work permits,
 15. Management of Change (MOC),
 16. Process reviews and audits,
 17. Contractor safety program,
 18. Waste reduction programs, and
 19. Reactive Chemical/Process Hazard Analysis reviews.
-

Facility and Equipment Emergency Prevention Measures

1. Alarm systems on critical equipment,
2. Automated valves (fail in safe mode),
3. Remote monitored cameras,
4. Mechanical integrity inspections and reviews,
5. Perimeter of facility gated and fenced,
6. Dikes or other containment measures for liquid spills

III.8 Regulatory Compliance

**Regulatory
Compliance**

Compliance with regulatory requirements is as specified in Section I.1 of this plan.

Section IV

Reference Documents

Overview

Introduction

The following section provides a listing of some of the reference documents to the Dow Chemical Pittsburg, California site consolidated contingency plan.

In this section

Following is a list of topics in this section:

Topic	See page
1. Reference documents	91

III.2 Reference Documents

Introduction

The following section provides a listing of some of the reference documents to the Dow Chemical Pittsburg, California site consolidated contingency plan.

Reference Documents

- Site Emergency Procedures
 - Site Emergency Response Pre-Plan
 - Emergency Operations Center (EOC) manual
 - EH&S Compliance On-Call (COC) binder
 - Public Relations On-Call (PIO) manual
 - ES&S Emergency Procedures (including elevated work rescue procedure)
 - ES&S Pre-plans (including Confined Space Rescue Plans)
 - Plant/Area specific emergency-contingency plans
 - Plant/Area specific emergency procedures
 - Distribution Emergency Response Plan
 - Site Coordinator Manual
 - Pittsburg Operations Avian Flu Pandemic Response Crisis Management Plan
-

Pittsburg Site Consolidated Contingency Plan Revision History

Revision History

The following table lists all changes made to this document.

Date	Revised By	Changes
2/24/03	Scott Etzel	<p>Document revised as follows;</p> <ul style="list-style-type: none"> • Revised name of contract doctor to Gregg Sorensen. • Revised wording regarding employee drill frequency on the various evacuation routes and procedures • Removed references to designated off-site assembly areas • Removed references to ESS Daily Reports. • Removed references to 2222 ringing at locations other than the Main Gate. • Updated incident classifications to match current requirements • Revised references to Manufacturing Services to be Manufacturing and Site Services (MSS). • Replaced references to Dow Emergency Planning Center (EPC) with Dow Emergency Operations Center (EOC). • Revised wording to reflect that missing personnel should be reported to ES&S versus the Building Wardens. • Added names (Butch Combs and Brenda Gamblin) to list of Crew Leaders. • Revised telephone number for Butch Combs to x5681. • Revised wording to reflect that units on site are required to perform drills on a quarterly timetable. • Unit 1 (C-1) revised to be a Chevy Blazer. • Replaced T-12 by T-3. • Added Rescue 1 (R-1). • Removed references to 30 min SCBAs in ES&S with 60 min. SCBA's. <p>Created this revision history document to record changes to plan document.</p> <p>Approved by: Danae Lui MOC #: 12850</p>

Continued on next page
Page 1 of 12

Pittsburg Site Consolidated Contingency Plan Revision History, continued

Revision History

Continued

Date	Revised By	Changes
2/20/2004	Scott Etzel	<p>Document revised as follows;</p> <ul style="list-style-type: none"> • Removed internal emergency telephone numbers • Replaced ESS Crew Leader terminology with ESS Incident Commander • Removed Sutter-Delta Hospital from list of hospitals used • Removed information for Dr. Sorenson • Removed references to Clean Bay Marine Spill Cooperative • Added name and arrow for Far West Gate to site map • Updated list of addressee's for various CWS activation levels to reflect current system programming • Directed wardens to contact incident-specific safety officer in order to report assembly area headcount (vs ESS Main Gate) <p>Approved by: Danae Lui MOC #: 12850</p>
2/21/2005	Scott Etzel	<p>Document revised as follows;</p> <ul style="list-style-type: none"> • Contact information updated • Removed references to MSRC/Clean Bay marine spill emergency response • Updated distribution list information for CWS (to match current system programming) • Updated accident history information to eliminate specific accident information, and to refer reader to RMP documents. • Miscellaneous minor wording and update changes, <p>Approved by: Danae Lui MOC #: 12850</p>

Continued on next page

Pittsburg Site Consolidated Contingency Plan Revision History, continued

Revision History

Continued

Date	Revised By	Changes
9/27/05	Scott Etzel	<p>Document revised as follows;</p> <ul style="list-style-type: none"> • Added additional wording to Evacuation Procedures section (page 20) as follows; (Assembly-Evacuation Emergency Procedure), and for operating the alarmed exit gates (Emergency Evacuation Exit Gate Procedure). • Replaced existing site map with map currently contained in Emergency Evacuation Exit Gate Procedure (page 26) • Deleted Ron Bovert and Skip Davidson from list of designated ESS Crew Leaders, and removed “alternate” designator from Butch Combs, Jr and Brenda Gamblin (Page 66) • Revised wording of Control of Access to Site section (page 72) to Control of Access/Egress to/from Site. Also, added statement to section that; Armed exit gates that alarm and alert security in the event of opening. <p>Approved by: Danae Lui, Mark Ayers MOC #: 14052</p>
2/17/2006	Scott Etzel	<p>Document revised as follows;</p> <ul style="list-style-type: none"> • Document and review dates updated • Deleted Radiation Safety Team from list of internal resources (page 16) • Eliminated “volunteer” from Site Fire (Emergency) Brigade description (page 46) • <p>Approved by: Danae Lui MOC #: N/A (Level 1)</p>

Continued on next page

Pittsburg Site Consolidated Contingency Plan Revision History, continued

Revision History

Continued

Date	Revised By	Changes
2/14/2007	Scott Etzel	<p>Document revised as follows;</p> <ul style="list-style-type: none"> • Added that plan is reviewed and updated annually, and the month and year of last review and update • Renamed local hospitals • Change Crisis Response Leader role name to Incident Response Leader • Renamed ESS Crew Leader as ESS Incident Commander • Renamed Hazardous Waste Emergency Coordinator to Hazardous Waste Emergency Coordinator Specialist • Clarified reporting process for Hazardous Waste Emergency Coordinator Specialist reporting to ESS Incident Commander in an emergency involving or generating hazardous wastes • Deleted references to on-call D.E/R Coordinator role • Added additional information to Response Management System section for Operations and Planning sections. • Added acrylonitrile to site and 540 block descriptions. • Revised concentration of hydrochloric acid solution in 310 block description from 36 % to 30 % • Revised nurse hours description from part-time to regular business hours. • Deleted word salaried from worker description in EOC and Site Coordinator roles. <p>Approved by: Danae Lui MOC #: N/A (level 1)</p>

Continued on next page

Pittsburg Site Consolidated Contingency Plan Revision History, continued

Revision History

Continued

Date	Revised By	Changes
2/25/2008	Scott Etzel	<p>Document revised as follows;</p> <ul style="list-style-type: none"> • Added theft of TIH (Toxic Inhalation Hazard) Material to plan as vulnerable resource. • Added new hospital and revised name of existing hospital • Added new paragraphs in Sustained Actions section for Impact Assessment and Recovery Actions • Added new paragraphs in Termination and Follow-up Actions for Recovery Operations • Added that Sulfuryl fluoride is sold in cylinders • Replaced MIDAS term with SAFER term • Removed statement of 10 years or more experience from Site Coordinator description • Added language to Response Management System section Planning Description to include support role for neighbor and environmental impact assessment and recovery operations <p>Approved by: Dale Backlund 2/25/08 MOC #: N/A Level (1) changes</p>
11/06/2008	Scott Etzel	<p>Document revised as follows;</p> <ul style="list-style-type: none"> • Removed Steve Camitz from list of due to his retirement. <p>Approved by: Dale Backlund MOC #: N/A Level (1) change</p>

Continued on next page

Pittsburg Site Consolidated Contingency Plan Revision History, continued

Revision History

Continued

Date	Revised By	Changes
2/25/2009	Scott Etzel	<p>Document revised as follows;</p> <ul style="list-style-type: none"> • Removed references to Latex process, products, raw materials, and safety equipment • Added reference to solar generating process • Added phone number for Main Gate contact for cell phone callers • Switched Antioch Police and CCC Office of Emergency Services in priority of agencies notified by Community Warning System (CWS) • Replaced Boost with Sprint/Nextel (type of phone used by Tech Spec) • Added Brent Johnson to list of Incident Commanders • Updated home phone number for Anthony Cobiseno <p>Approved by: Dale Backlund MOC #: RC-2009020001</p>
8/26/09	Scott Etzel	<p>Revised to reflect new site-wide process for area safety wardens to make a data based decision in the event of an emergency assembly of workers to release them back to work (normal operations) when it is safe to do so.</p> <p>Approved by: Scott Etzel MOC #: RC2009080001</p>

1/22/10	Scott Etzel	<p>Revised as follows:</p> <ul style="list-style-type: none">• Changed EOC/UC role names to reflect ISC names (MOC RC2009080002)• Removed EOC/UC and warden duties and role steps from plan document (they are already in plan reference documents).• Updated references to M/S conducting downwind monitoring to reflect brigade performing this task. (MOC P520-2009110009) <p>Approved by: Dale Backlund MOC #: (see above)</p>
---------	-------------	--

2/28/2011	Scott Etzel	<p>Revised as follows:</p> <ul style="list-style-type: none"> • Revised fax number of plan primary contact • Added anhydrous ammonia as chemical • Removed references to Calpine Pittsburg Power Plant • Added new 490 building Unified Command and EOC locations (as primary response locations) • Clarified Shelter-In-Place (SIP) areas as designated (versus generic use of term) • Added CC Fire as back-up resource for Confined Space Rescue • Added Confined Space Rescue Technician to Brigade roles • Deleted role steps for EOC/UC roles (duplicated information already contained in EOC Manual which is an appendix to plan document) • Continued to updated references to conducting downwind monitoring to reflect brigade performing this task. • Deleted references to Dow legal as part of EOC personnel. • Misc minor technical and wording changes (i.e. ESS to ES&S, EOC Commander to EOC Manager, etc.). <p>Approved by: Dale Backlund MOC #: Various including: RC2009110001, P520-2009110009),</p>
-----------	-------------	--

2/27/2012	Scott Etzel	<p>Revised as follows:</p> <ul style="list-style-type: none"> • Page 8: Updated date of most recent revision • Page 14: Added Shelter-In-Place (SIP) term and use (see also pages 19, • Page 16: Added Contra Costa County Health Services (CCCHS) as external resource and that they are contacted via Community Warning System (CWS). • Page 28: Replaced site map with more updated version • Page 29: Added description for K2 Pure Solutions plant • Page 30: Added description for 540 block process • Page 31: Added description for Site Logistics • Page 33: Added select tone horn info for 540 block into table • Page 36: Added step to telephone Contra Costa Health Services (CCHS) if Dow does not receive a call back from them after a CWS incident notification, and to alert them of the incident. • Pages 39-41: Added CCC Emergency Services Department (CCCOES) as agency notified in a CWS activation • Page 45: Updated ICS org chart • Page 47: Added Hazmat entry team (using level A, B, C or D PPE) to role for Fire Brigade • Page 57: Updated home address for ES&S Incident Commander Butch Combs, Jr • Page 78: Revised location of brigade fire training. Also, added hazardous substance release response as training topic for Site Emergency Teams. • Page 85: Added section IV (Reference Documents) • Removes blank pages including 55, 59, 60, 62, and 63
-----------	-------------	--

Continued on next page

Pittsburg Site Consolidated Contingency Plan Revision History, continued

Revision History

Continued

Date	Revised By	Changes
2/27/2012	Scott Etzel	<p>Continued from previous page;</p> <ul style="list-style-type: none"> • Consolidated Response Management System role descriptions that were one per page or that had excess white space into less pages (eliminate excess white space). Examples include PIO, Safety Officer, Tech Spec, and pages 89 and 96 • Fixed formatting issues, including section borders that extended into section title blocks. Ex on page 15 <p>Approved by: MOC #: RC2011110017</p>
7/16/2012	Scott Etzel	<p>Document revised to provide additional information specific to Confined Space Rescue and Elevated Work Rescue operations (see pages 16, 47, 48, 56, 61, 79, 80, and 87).</p> <p>Approved by: Dale Backlund</p> <p>MOC #: 20120500007</p>

2/27/2013	Scott Etzel	<p>Document revised as follows;</p> <ul style="list-style-type: none"> • Added Transportation Emergency as hazard, and reference document (pages 4, , 87) • Updated regulatory reference for radiation emergency procedures (page 5) • Updated description of site radio system and emergency channels (page 12, 34) • Deleted exception to alert notification description specific to 560 block (page 34) • Changed Hazardous Waste Emergency Coordinator Specialist listing and contact information from Greg Dubitsky to Jeff Cast (page 58) • Removed reference to blue flashing light previously used with EOC activations (page 60) • Removed reference to CHEMNET program (page 62) • Revised Compliance On-Call role description to remove reference to radio and use (page 63) • Update location of fire school training (page 80) <p>Approved by: Dale Backlund</p> <p>MOC #: N/A (Level 1)</p>
-----------	-------------	--

12/24/2013	Scott Etzel	<p>2014 annual review. Document revised as follows;</p> <ul style="list-style-type: none"> • Updated ES&S Crew Leaders list (removed Gamblin, added Spaulding) • Updated CWS levels • Changed references from SEMS to NIMS • Added to reference documents list (Site Coordinator manual, site Pandemic Plan) <p>Approved by: Dale Backlund</p> <p>MOC Number: RC2014020009</p>
1/28/2015	Scott Etzel	<p>Annual review. Document revised as follows.</p> <p>Approved by:</p> <p>MOC Number: RC2015010008</p>

Site Emergency Response Equipment-RCRA Permitted Drum Facility

Site Emergency Response Equipment-RCRA Permitted Drum Facility

Per California Title 22, Division 4.5, Chapter 14, This document contains descriptions, capabilities, and locations of the various equipment which may assist the site and unit response personnel in the event of an emergency at RCRA permitted drum storage area located at The Dow Chemical Company Pittsburg, California site.

Specific wording of the regulation is;

Title 22, Division 4.5, Chapter 14, Article 4, Section 66264.52, (e)

(e) The plan shall include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list shall be kept up to date. In addition, the plan shall include the location and a physical description of each item on the list, and a brief outline of its capabilities.

Note: "Facility" as used above should be read as the permitted drum storage area, not the entire manufacturing facility.

Communications Equipment (General information)

Communications equipment includes personal issue equipment such as pagers, radios and cellular telephones, area-specific equipment such as alert monitors, paging systems, building and/or plant-specific public address (P/A) systems, as well as site-wide systems including P/A systems, telephone systems, alarm systems, and air horns. Telephones within the site can be used for internal and external communications.

Radios

Dedicated privately licensed and operated central radio system and associated portable two-way radios monitored by a Dow central dispatcher role staffed 24-7-365. Utilized by ES&S to receive alerts and notifications from plants/areas as wells as to make announcements over the site-wide Public Address (P/A) system.

Community Warning System (CWS)

A system of sirens (and other public notification components) for alerting neighbors adjacent to plant sites throughout the county. The CWS siren is located on the South side of the site. The sirens can be activated by the county or the business in the event of an emergency. This system is to alert neighbors of a major incident at the site which is or may impact the nearby community. The sirens are intended to alert neighbors to go indoors, shelter in place, and await further instructions from the business or the local authorities.

Telephone Emergency Notification System (TENS)

A telephone notification system to alert neighbors of a major incident at the site within the county which is or may impact the nearby community. The TENS is another part of the CWS and may be activated by CCC Health Services Department.

Dow's CAER siren

A pole mounted electrical siren to be used for alerting neighboring industries adjacent to the plant site in the event of a Level 3 incident at Dow. The siren is located on the North side of the plant, near the marine dock. The siren can be activated at the ES&S Main Gate. The siren is intended to alert Dow's neighbors to go indoors, shelter in place, and await further instructions from Dow or the local authorities. The Pittsburg Police and County Health Department are contacted whenever the siren is activated due to an incident.

Continued on next page

Site Emergency Response Equipment-RCRA Permitted Drum Facility, *Continued*

Fire water protection system Consists of 2 UL listed and FM approved Diesel pumps; a looped fire main; wet pipe automatic sprinkler systems; deluge systems; monitor nozzles and fire hydrants designed and installed in accordance with UFC and NFPA codes. The system draws water directly from the San Joaquin River.

Emergency Vehicles Fire engines equipped with firewater pumps, hoses and fittings.
Truck which functions as IC and/or Op’s Command Post during an emergency.
Trucks equipped with various emergency response equipment including Personal Protective Equipment (PPE) for responders, Self-Contained Breathing Apparatus (SCBA’s), emergency medical supplies and equipment, water monitors, hoses, hazmat foam, fire suppressants, leak containment, leak mitigation, air monitoring, personnel decontamination, and confined space rescue.

Fire suppressants Hand held type portable or mounted fire extinguishers containing Ansul® Brand PURPLE-K® dry chemical media.

A free-flowing, water repellent, non-abrasive violet-colored **potassium bicarbonate based dry chemical**. May be used to combat fires in flammable liquids, gases and greases (Class B) including such fires when involved with energized electrical equipment (Class C).

Note: One 30 lb. fire extinguisher is located adjacent to RCRA permitted hazardous waste drum storage area.

Safety Shower/Eye Bath Stations Fixed location plumbed safety showers and eye baths located throughout the site. Most of these showers and eye baths are connected to a computerized alarm system which alarms in the local control room and at the Dow site central dispatch station (main gate) when the safety shower or eye bath is operated. Any safety shower alarm is responded to by plant personnel and ES&S Emergency Response Personnel.

Spill Response Kit One spill response kit located in the RCRA permitted drum storage area. Spill response kits contain as a minimum: Broom (for sweeping up solidified spills), shovel (for spreading adsorbent and cleaning up spills), dry absorbent (for solidifying liquid spills), empty drum (for containing solidified spill cleanup), impervious suit of material compatible with chemicals handled (to protect body from chemical exposure), impervious gloves of material compatible with chemicals handled (to protect hands and wrists from chemical exposure).

Revision History The following table lists all changes made to this document.

Date	Revised By	Changes
11/20/2015	Scott Etzel	Document created. Approved by: MOC #:

Appendix H

Inspection Schedule

DOW CHEMICAL PITTSBURG SITE EMERGENCY EQUIPMENT INSPECTION SCHEDULE

<i>TITLE</i>	
DAILY	
	<90 Day Oil Tank Inspections
	<90 Day Tank Inspections
	Waste Oil Container Inspection
WEEKLY	
	Gas Horn Test
	Emergency Radio Check
	Process Clearing Alarm Check
	Emergency Generator Check
	Safety Shower/Eyebath
	Fire Water Diesel Pump Inspection Procedure
	Waste Drum Inventory Check
	Drum Storage Area Inspection
MONTHLY	
	Escape Pack/SCBA Check
	Deluge System Supervisory Air Inspection Procedure
	Fire Water Valve Position Inspection Procedure
	Fire Water Valve Lubrication and Operation Check
	Breathing Air Quality Alarm Check
	Fire Door
	Fire Extinguisher
	Hazardous Waste Spill Kit
	Emergency Lighting
QUARTERLY	
	Security Alarms
	Smoke Detector Transmitter Test
	Deluge System Alarm & Drain Test Procedure
	Fire Water Valve Position Test Procedure
	Sprinkler System Drain Test Procedure
	Fire Water Underground Valve Position Test Procedure
	Breathing Air Quality Check
	Oxygen and Combustible gas analyzers

DOW CHEMICAL PITTSBURG SITE EMERGENCY EQUIPMENT INSPECTION SCHEDULE

<i>TITLE</i>	
SEMI-ANNUALLY	
	Fire Hydrant and Monitor Nozzle Inspection Procedure
ANNUAL INSPECTIONS	
	Fire hose inspection
	Fire water pump certification test
	Building Ventilation Check
	Fire Extinguisher recharge
	Level A Suit Pressure Test
	Emergency Lighting (1.5 hr) test
	Smoke Detectors
	Foam test
	Deluge System Full Flow Trip Test Procedure
	Fire Hydrant and Monitor Nozzle Lubrication Procedure
	Fire Hydrant Flush and Lubrication
	Fire Water Valve Lubrication and Operation Test Procedure
	Dry Pipe Sprinkler Inspection
	Fire Water Underground Valve Operation Test Procedure
	Electrical Protective Equipment Continuity Inspection
	Electrical Protective Equipment Visual Inspection
	Fire alarm pull boxes
	Fire prevention inspections
	Fire Engine certification test
	Annual CEM tests
	T-12 Permitted Tank Inspection
	Horizontal Life Lines

DOW CHEMICAL PITTSBURG SITE EMERGENCY EQUIPMENT INSPECTION SCHEDULE

<i>TITLE</i>	
2 YEAR INSPECTIONS	
	SCBA Breathing Air Mask & Regulator test
3 YEAR INSPECTIONS	
	SCBA (Alumin. Wrapped Bottles) Rebuild & Hydro.
5 YEAR INSPECTIONS	
	Fire main flow test
	SCBA (Steel Bottles) Rebuild & hydrotest
EVENT DRIVEN INSPECTIONS	
	Air Cylinder Static Test (8 Yr or 10 Yr)

SITE APPLICABLE TASKS

Level	Site Name	Identifier	Frequency Name	Task Description
Site	Pittsburg	S0006	Annual	Emergency Procedures and Unit Emergency Plan paper copies shall be updated in plant paper library
Site	Pittsburg	S0005	Annual	Emergency Procedures and Unit Emergency Plan shall be published into Library Services (electronic)
Site	Pittsburg	S0007	Annual	Critical Procedures shall be published into Library Services (electronic)
Site	Pittsburg	S0008	Annual	Critical Procedures paper copies shall be updated in plant paper library
Global	Pittsburg	7E109	Annual	Submit annual Tier I (and Tier II, if required) Inventory report.
Global	Pittsburg	07T19	Annual	Review any process or material changes for agreement with information in Drug Master File.
Global	Pittsburg	7E110	Annual	Submit annual Toxic Release Inventory report (EPA Form R).
Site	Pittsburg	S0011	Annual	Electrical Insulating Rubber Mats, Blankets and Sleeves Testing
Global	Pittsburg	E0552	Weekly	OLD MACT - Subpart SS: Check continuous records of parameter monitoring data on a weekly basis to ensure that the data are being recorded and archived properly. (Recommended task)
Global	Pittsburg	E0615	Daily	OLD MACT - Subpart SS: Calculate daily average values of each continuously monitored parameter from data or each operating day and retain it for 5 years. Note: Carbon adsorbers have a different requirement
Global	Pittsburg	E0643	Semi-Annual	OLD MACT - Starting July 31, 2007, submit the Subpart EEEE Compliance Report on January 31 and July 31 of each year. Submit the semi-annual periodic report for SS&M activities along with the Subpart EEEE Compliance Report.
Global	Pittsburg	E0647	Annual	OLD MACT - Annually calculate the total actual annual facility-level organic liquid loading volume based on a 3-year rolling average.
Global	Pittsburg	E0635	Monthly	OLD MACT - Subpart H Option: In phase III, calculate the percentage of leaking pumps. Ensure that the leak rate in a group of processes stays below the greater of either 10% or three pumps, based on a 6-month rolling average
Global	Pittsburg	E0640	Quarterly	OLD MACT - Subpart H Option: Plant sites with > 250 valves in regulated material service, monitor all valves quarterly if process unit has > 1% leaking valves but less than 2 percent leaking valves.
Global	Pittsburg	E0150	Annual	Calibrate control device monitoring equipment on an annual basis.
Global	Pittsburg	E0156	Annual	Conduct visual inspection on closed vent systems.
Global	Pittsburg	E0132	Semi-Annual	Submit Subpart MMM Periodic Report for Equipment Leaks along with the Periodic Report for the other emission points.
Global	Pittsburg	E0181	Semi-Annual	Submit a Notification of Process Change as needed.
Site	Pittsburg	S0025	Annual	Review Injury and Illness Prevention Program (IIPP)
Global	Pittsburg	E0308	Three Year	Conduct Waste HAZMAT Handling
Global	Pittsburg	E0310	Three Year	Confirm training management system is in place for conducting Non-bulk Hazmat Handling Training
Global	Pittsburg	A0009	Three Year	Confirm that the plant has on-file the OSHA PSM/EPA RMP Audit Certification Forms provided by the Process Safety and/or Lead Auditor following the EH&S Integrated audits. Two forms must be on-file -one for each of the past two EH&S Integrated Audits.
Global	Pittsburg	E0314	Three Year	Confirm training management system is in place for conducting Bulk Container Loading and Unloading Training
Global	Pittsburg	E0315	Three Year	Confirm training management system is in place for conducting Hazmat Transportation General Security Awareness Training
Global	Pittsburg	E0316	Three Year	Confirm training management system is in place for conducting Hazmat Transportation In-Depth Security Awareness Training
Site	Pittsburg	S0026	Annual	Review list of who is approved to access secure areas, and update the list to reflect current approvals.
Global	Pittsburg	07A25a	Quarterly	Conduct quarterly Crane Inspection
Site	Pittsburg	S0027	Quarterly	Motor Control Center (MCC) Visual Inspection
Global	Pittsburg	E0317	Two Year	Confirm training mgmt system is in place for conducting DOT Sample & Non-Bulk HAZMAT Handling training for individuals that fill, load, & ship non-bulk packagings of haz materials via air including security & those who prepare shipping documentation
Global	Pittsburg	E0318	Three Year	Confirm training mgmt system is in place for DOT Sample & Non-Bulk HAZMAT Handling training for individuals that fill, load, & ship non-bulk packagings of haz materials via marine including security & those who prepare shipping documentation
Site	Pittsburg	S0001	Semi-Annual	Haz/Mat E/R PPE Inspection
Global	Pittsburg	07G32	Annual	Have you received your copy of financial assurance document submitted to agency from Dow Financial Assurance Coordinator in Legal Department (Michele Osmun)? If not, contact Dow Legal Dept.
Site	Pittsburg	S0035	Monthly	Medical Supplies Inspection
Site	Pittsburg	S0036	Annual	Inspect Portable Safety Rails

SITE APPLICABLE TASKS

Level	Site Name	Identifier	Frequency Name	Task Description
Global	Pittsburg	E1138	Weekly	Check continuous records of parameter monitoring data on a weekly basis to ensure that the data are being recorded and archived properly. (Recommended task)
Global	Pittsburg	E1139	Weekly	For flow indicators on bypass lines, check the hourly records of whether the flow indicator was operating and whether a diversion was detected at any time during the hour.
Global	Pittsburg	E1140	Weekly	For flares, check the hourly records of whether the monitor is continuously operating and whether the flare flame or at least one pilot flame is continuously present.
Global	Pittsburg	E1141	Weekly	If complying with the CMAS alternative standard using a noncombustion control device to control emissions from dense gas systems, and you are opting to monitoring system flow rate, check hourly flow rate records on a weekly basis.
Global	Pittsburg	E1142	Daily	You may measure pH or caustic strength at least once per day for any halogen scrubber within a CMPU subject to Subpart VVVVVV.
Global	Pittsburg	E1143	Daily	1 TPY Alternative - For a control device with total inlet HAP emissions less than 1 tpy, you must measure and record the parameter(s) at least once per averaging period (i.e., daily or block) instead of continuous monitoring.
Global	Pittsburg	E1144	Daily	If using the alternative standard, and continuous emissions monitoring systems (CEMS), check the zero (low-level) and high-level calibration drifts at least once daily in accordance with the written procedure in the performance evaluation plan.
Global	Pittsburg	E1145	Daily	Calculate daily average values of each continuously monitored parameter from data or each operating day and retain it for 5 years. Note: Carbon adsorbers have a different requirement.
Global	Pittsburg	E1147	Monthly	If your current estimate is that emissions from batch process vents from a CMPU are less than 10,000 pounds per year (lb/yr), then you must keep a record of the number of batches of each process operated per month.
Global	Pittsburg	E1148	Monthly	As an alternative to determining the HAP emissions for batch process vents, you may elect to demonstrate that the amount of organic HAP used in the process is less than 10,000 lb/yr. You must keep monthly records of the organic HAP usage.
Global	Pittsburg	E1149	Monthly	If the total uncontrolled metal HAP emissions from a CMPU subject to Subpart VVVVVV are < 400 lb/yr, then keep monthly records of either the number of batches operated per month (batch vents) or the process operating hours (continuous vents).
Global	Pittsburg	E1150	Monthly	For bypass lines with a car-seal or a lock-and-key type configuration, perform monthly visual inspection of seal/closure mechanism to verify that valve is maintained in non-diverting position and vent stream is not diverted through the bypass line.
Global	Pittsburg	E1151	Quarterly	Conduct quarterly inspections of process vessels and equipment in organic HAP service or metal HAP service to determine that they are sound and free of leaks. This includes CVS associated with storage vessels routed to a non-flare control device.
Global	Pittsburg	E1152	Quarterly	For small heat exchange systems with a cooling water flow rate less than 8,000 gal/min, conduct inspections to check for evidence of hydrocarbons in the cooling water at least once per quarter.
Global	Pittsburg	E1154	Quarterly	For storage tanks using the vapor balancing alternative, quarterly monitor the pressure relief valve on the storage tank via Part 60 Method 21, when the device is in detectable organic vapor service.
Global	Pittsburg	E1155	Quarterly	For new sources using a baghouse to control metal HAP emissions, you may adjust the sensitivity of the bag leak detection system once per quarter to account for seasonal effects, including temperature and humidity. Follow monitoring plan.
Global	Pittsburg	E1156	Semi-Annual	Submit semiannual compliance reports for Subpart VVVVVV and the referenced subparts.
Global	Pittsburg	E1157	Annual	Affected storage tanks using Vapor Balancing Alternative - Update the vapor tightness test certification records for Dow-owned tank trucks, railcars, and barges.
Global	Pittsburg	E1158	Annual	CMAS- Subpart WW Option: External Floating Roof (EFR) Tank - Perform a seal gap inspection on the secondary seal.
Global	Pittsburg	E1159	Annual	CMAS - Subpart WW Option: Internal Floating Roof (IFR) Tank - Perform an inspection on the top of the tank.
Global	Pittsburg	E1160	Annual	Conduct annual visual inspection on all hard-piped closed vent systems and conduct annual monitoring via Method 21 on all ductwork closed vent systems used to route emissions from storage tanks and process vents to a control device.

SITE APPLICABLE TASKS

Level	Site Name	Identifier	Frequency Name	Task Description
Global	Pittsburg	E1161	Annual	If complying with the alternative recordkeeping procedures, annually verify the proper functioning of the monitoring system, including its ability to comply with the alternative recordkeeping requirements. This option is not recommended by RAEC.
Global	Pittsburg	E1162	Annual	Calibrate all continuous parameter monitoring systems according to mfg specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately. ORS recommends annually.
Global	Pittsburg	E1163	Annual	Monitor / inspect closed vent system components that have been designated as unsafe-to-inspect. Inspect the equipment as frequently as practicable during safe-to-inspect times, but not more frequently than annually.
Global	Pittsburg	E1164	Annual	If complying with the CMAS alternative standard using a noncombustion control device to control emissions from dense gas systems, calibrate the flowrate monitoring device annually. This is an alternative to correcting for supplemental gases.
Global	Pittsburg	E1165	Annual	As an alternative to monitoring inlet and outlet temperature on a catalytic incinerator, monitor inlet temperature and check activity level of catalyst at least every 12 months. Take corrective action as needed.
Global	Pittsburg	E1166	Five Year	CMAS - Subpart WW Option: External Floating Roof (EFR) Tank - Perform a seal gap inspection once every 5 years on the primary seal.
Global	Pittsburg	E1167	Five Year	CMAS - Subpart WW Option: Internal Floating Roof (IFR) Tank - As an alternative to the annual and 10 year inspection requirements for IFR tanks, internal floating roofs with two rim seals may be visually inspected every 5 years.
Global	Pittsburg	E1168	Five Year	Monitor / Inspect closed vent system components that have been designated as difficult-to-inspect.
Global	Pittsburg	E1169	Five Year	If complying with the CMAS alternative standard using a noncombustion control device to control emissions from dense gas systems, recalculate the system flowrate setpoint once every 5 yrs. This is an alternative to correcting for supplemental gases.
Global	Pittsburg	E1170	Ten Year	CMAS - Subpart WW Option: Floating roof tanks (both EFR and IFR) must be visually inspected every 10 years or each time the storage vessel is emptied and degassed, whichever occurs first.
Global	Pittsburg	E1171	Monthly	As an alternative to determining the metal HAP emissions, you may elect to demonstrate that the amount of total metal HAP used in the process unit is less than 400 lb/yr. Keep monthly records of the metal HAP usage.
Global	Pittsburg	E1173	Daily	If complying with the alternative standard using a noncombustion control device to control dense gas systems emissions, and using the option to monitor system flow rate, calculate the average of all values measured during each 24-hour operating day.
Global	Pittsburg	E1172	Two Year	Batch Vents - If you use a biofilter to meet either the 85% reduction requirement or outlet concentration requirement for batch process vents, you must conduct a repeat performance test within 2 years following the previous performance test.
Site	Pittsburg	S0038	Annual	Review PPE Risk Assessment/PPE Grid Annually
Site	Pittsburg	S0043	Annual	Shelter in Place Inspection - Annual
Global	Pittsburg	C0068	Five Year	LPP 10.3.6OM3: (5 year flow test) All fire water supply systems shall be performance tested to ensure the system can deliver the maximum firewater demand (flow, pressure). The performance test shall be documented. (See procedure for 5 year tests)
Site	Pittsburg	S0047	Annual	Shelter in Place Inspection (Annual)
Global	Pittsburg	C0100	Annual	Emergency procedures must be reviewed annually
Global	Pittsburg	E1153	Quarterly	For each heat exchange system with a cooling water flow rate $\geq 8,000$ gal/min): Monitor cooling water in heat exchange systems quarterly
Site	Pittsburg	S0050	Annual	Review and Update Facility P&IDs - Process Safety Requirement
Site	Pittsburg	S0044	Quarterly	Escape-Only Respirator Inspection
Site	Pittsburg	S0046	Annual	Cycle Preventative Maintenance
Global	Pittsburg	C0076	Annual	LPP 10.9.5.OM3: (Deluge systems) Main Drain Test and alarm testing shall be performed annually and recorded. (See LPP 10.16)
Global	Pittsburg	E0340	Annual	Review Waste Minimization Plan Annually
Global	Pittsburg	USA38	Annual	Verify that plant data for TSCA Chemical Data Reporting Rule report has been submitted to TSCA SME by end of 1Q.
Site	Pittsburg	S0052	Monthly	Isolation Procedure and Red Tag Master Certification
Global	Pittsburg	C0116	Semi-Annual	Test valve supervisory switch

SITE APPLICABLE TASKS

Level	Site Name	Identifier	Frequency Name	Task Description
Global	Pittsburg	C0115	Quarterly	Conduct Operate Plant Immediate Response drills to handle Immediate Response situations.
Global	Pittsburg	07C30	Two Year	Conduct Management of Change Self-Assessment
Global	Pittsburg	C0120	Semi-Annual	Inspect valve supervisory switch
Global	Pittsburg	C0125	Five Year	Test--Loop test
Global	Pittsburg	C0124	Annual	Maintenance--Valve lubrication/operation
Global	Pittsburg	C0117	Monthly	Monthly Deluge Water Spray Systems Inspection
Global	Pittsburg	A0033	Annual	Testing rubber insulating blankets and matting
Global	Pittsburg	07B16	Annual	Review facility personal exposure monitoring program annually
Global	Pittsburg	A0031	Semi-Annual	Testing rubber insulating gloves
Global	Pittsburg	C0106	Annual	Inspect portable building, considered to be unoccupied to ensure that they are unoccupied. If there is a desk, table, or chair, remove them to ensure the building is not occupied. See LPP 12.8 for definitions
Global	Pittsburg	C0102	Annual	SSIS 20M3: Self Assessments against the requirements of this standard shall be conducted annually
Global	Pittsburg	C0101	Semi-Annual	SSIS 20M1: Each safety impairment valve that is secured with a seal must be visually inspected semi annually to verify that the impairment valve is in the safe position and the seal is still in place and in good condition.
Global	Pittsburg	E0969	Three Year	Processes shall be in place to ensure that employees who are involved in offering Dangerous Goods for shipment are trained per applicable government requirements
Global	Pittsburg	C0110	Annual	Update Local Pandemic Plan once per calendar year.
Global	Pittsburg	A0044	Annual	Conduct a self-assessment of Hydroblasting tasks against Standard requirements by observing a job in-progress in the field.
Global	Pittsburg	A0038	Three Year	Certify Electrical Skilled Persons
Global	Pittsburg	C0099	Semi-Annual	LPP 10.16.3M1r: (Semi-Annual) Complete Inspection of fire water monitor nozzles and hydrants.
Global	Pittsburg	B0011	Two Year	Conduct employee audiograms every two years
Global	Pittsburg	O6508	Annual	Organization Leaders must certify that the procedures used in their organization are current: i) emergency and critical procedures every twelve months, ii) operating procedures as required by applicable government requirements
Global	Pittsburg	B0010	Three Year	Confirm training management system is in place for conducting repeat Hearing Conservation training for workers with an exposure to noise in excess of 85 dB(A) 8 hr TWA (3dB doubling rate) every three years
Global	Pittsburg	C0111	Annual	Confirm that people leaders have updated Critical to Operations personnel determinations (Roletrak) as requested by Human Resources.
Global	Pittsburg	B0005	Five Year	Conduct area noise monitoring in all areas where the potential exists for noise greater than 85 dBA
Global	Pittsburg	10C03	Three Year	Conduct Global Mechanical Integrity Safety Standard (GMISS) - Self Assessment
Global	Pittsburg	B0017	Annual	Review the Quality Assurance documentation of the Breathing Air System
Global	Pittsburg	C0113	Annual	Confirm training management system is in place for Pandemic Response Crisis Management (PRCM) for employees and independent contractors as part of annual emergency response scenario training.
Global	Pittsburg	10A02	Three Year	Confirm training management system is in place for re-training for Personnel Issuing a Safe Work Permit (WGL requirement #6)
Global	Pittsburg	07A26	Quarterly	Inspect and test hydroblasting hoses.
Global	Pittsburg	10C15	Three Year	7.7.2.OM4: The integrity of nitrogen distribution systems shall be inspected and documented. The integrity inspection is to primarily look for cross ties or non-approved connections that could result in back flow contamination
Global	Pittsburg	10A10	Three Year	Confirm training management system is in place for re-training for Personnel Issuing a Safe Work Permit for Hot Work
Global	Pittsburg	O6504	Annual	Critical Procedures must be reviewed at least: a) every year, or b) prior to use (for procedures used less frequently than every year)
Global	Pittsburg	10A03	Three Year	Confirm training management system is in place for re-training for Authorized Procedure Users (WGL requirement #7)
Global	Pittsburg	07A42	Annual	Review the list of Hot Work Area Classifications for the Facility / Work Group.
Global	Pittsburg	10A12	Three Year	Confirm training management system is in place for re-training for Personnel Issuing a Safe Work Permit for Hydroblasting or Pressure Washing
Global	Pittsburg	C0040	Five Year	1.8.2.OM1: The facility owner shall ensure that the LOPA study (including studies that supersede or support the LOPA) is reviewed and revalidated at least every five years.
Global	Pittsburg	10A09	Three Year	Confirm training management system is in place for re-training for Rescue Team Members

SITE APPLICABLE TASKS

Level	Site Name	Identifier	Frequency Name	Task Description
Global	Pittsburg	C0041	Annual	LPP 9.2.7OM1: Fixed oxygen monitors that are not part of a direct process shall be maintained and calibrated (tested) in accordance with Dow's Best Practices or the manufacturer's recommendations, if these don't exist. (At least Annually)
Global	Pittsburg	10A08	Three Year	Confirm training management system is in place for re-training for people who approve Confined Space Entry Permits.
Global	Pittsburg	E0305	Monthly	Report Company Employees Hours worked to GIRD
Global	Pittsburg	C0035	Semi-Annual	LPP 9.1.3OM1 Fire Detectors shall be visually inspected semiannually to ensure that there are no changes that would affect performance
Global	Pittsburg	07A39	Three Year	Review the Facility and ensure that any space that is a Confined Space that is not easily recognizable as a Confined Space is labeled at each access point.
Global	Pittsburg	C0039	Five Year	LPP 15.4.7.OM1: Reviews and Audits of the Safety Instrumented Systems shall be done at least every 5 years
Global	Pittsburg	O6505	Three Year	Confirm training management system is in place for the retraining of personnel performing critical tasks: a) every three years, or b) prior to use (for tasks performed less frequently than every year)
Global	Pittsburg	C0008	Annual	3.6.3.OM3: All grounding and bonding cables and connections for static electricity control shall be visually inspected. (Inspection : for corrosion, intact cable strands, clamps / connector spring tension and contact point connections).
Global	Pittsburg	SA001	Annual	Update Self-Assessment Plan
Global	Pittsburg	C0012	Three Year	7.8.2.OM1: The integrity of utility air systems shall be inspected and documented. The integrity inspection is to primarily look for cross ties or non-approved connections that could result in back flow contamination.
Global	Pittsburg	C0016	Three Year	7.10.2.OM1: The integrity of cooling water systems is to be inspected and documented. The integrity inspection is to primarily look for cross ties or non-approved connections that could result in back flow contamination.
Global	Pittsburg	C0038	Three Year	Confirm training management system is in place for LPP 15.4.5.OM2: The facility operators shall be trained every 3 years on the function and operation of the SIS's in their area. See LPP15.4.5.OM2 for required training content
Global	Pittsburg	C0020	Three Year	7.11.2.OM1: The integrity of utility condensate piping and distribution systems is to be inspected and documented. The integrity inspection is to primarily look for cross ties or non-approved connections that could result in back flow contamination.
Global	Pittsburg	C0017	Three Year	7.10.2.OM1: The integrity of fire water systems is to be inspected and documented. The integrity inspection is to primarily look for cross ties or non-approved connections that could result in back flow contamination.
Global	Pittsburg	C0025	Semi-Annual	12.1.2.OM1: To assure the operational performance of the pressurization system, inspect and if needed replace inlet air filters and inspect dampers, if used.
Global	Pittsburg	C0065	Annual	LPP 10.2.6.OM1: (Annual Inspection items) An operating test of an entire fire pump installation shall be conducted and recorded directly after installation and thereafter annually by the owner. (See procedure for scope of annual maintenance tests)
Global	Pittsburg	C0091	Weekly	LPP 10.8.5.OM2: (Wet Pipe - Weekly Items) The inspection, testing and maintenance of sprinkler systems shall be carried out and documented according to LPP 10.16 (NFPA 25 Chapter 5 reference). (See procedure for scope of weekly tests)
Global	Pittsburg	O6503	Annual	Confirm training management system is in place for the retraining of personnel on relevant emergency procedures at least every 12 months
Global	Pittsburg	C0037	Annual	LPP 9.1.3OM3 Fire Detectors shall be maintained in accordance with company EMETLs or in the absence of company EMETLs in accordance with the manufacturer's instructions.
Global	Pittsburg	C0028	Semi-Annual	12.7.5.OM1: To assure the operational performance of the building pressurization system, inspect and if needed replace inlet air filters and inspect dampers, if used. Repair as needed.
Global	Pittsburg	C0004	Three Year	Confirm training management system is in place for assessing and documenting proficiency of all personnel who perform MOC roles at least every three years
Global	Pittsburg	C0005	Annual	2.4.5.OM1: Process drainage systems designed to remove fire protection water must be kept clear of all debris and shall be inspected and tested under maximum flow conditions.
Global	Pittsburg	C0024	Annual	12.1.2.OM1: Functionally check the pressurization monitor and loss of pressurization alarms. Also, verify that when the building or room door is opened that an outward increased air velocity exists. Repair as needed.
Global	Pittsburg	C0014	Three Year	7.9.2.OM1: The integrity of potable water systems is to be inspected and documented. The integrity inspection is to primarily look for cross ties or non-approved connections that could result in back flow contamination.

SITE APPLICABLE TASKS

Level	Site Name	Identifier	Frequency Name	Task Description
Global	Pittsburg	C0015	Three Year	7.10.2.OM1: The integrity of process water systems is to be inspected and documented. The integrity inspection is to primarily look for cross ties or non-approved connections that could result in back flow contamination.
Global	Pittsburg	C0094	Five Year	LPP 10.8.5.OM2: (Wet Pipe - Five Year Items)The inspection, testing and maintenance of sprinkler systems shall be carried out and documented according to LPP 10.16 (NFPA 25 Chapter 5 reference). (See procedure for scope of five year tests)
Global	Pittsburg	C0013	Three Year	7.8.2.OM1: The integrity of breathing air distribution systems shall be inspected and documented. The integrity inspection is to primarily look for cross ties or non-approved connections that could result in back flow contamination.
Global	Pittsburg	C0023	Annual	12.1.2.OM1: To assure the operational performance of the pressurization system, inspect the door seals and if applicable, windows, to assure that the building or room is tight and not having extensive air losses. Repair as needed.
Global	Pittsburg	C0030	Annual	15.2.3.3.OM1: Components of BPCS Interlocks shall be periodically functionally inspected and tested. See Global Instrument Integrity Manual (GIIM) Appendix A Table A2 for component types requiring annual Functional Check.
Global	Pittsburg	C0055	Five Year	LPP 10.14.3.OM1: (Five Year) Testing for fluid curtains shall be done according to the requirements mentioned in LPP 10.9.5OM3 and 5OM4 for deluge systems. (See procedure for scope of five year tests)
Global	Pittsburg	C0031	Annual	15.2.3.3.OM2: Components of BPCS Control Loops shall be periodically visually inspected and tested. See Global Instrument Integrity Manual (GIIM) Appendix A Table A2 for component types requiring 3-Year Visual Inspection.
Global	Pittsburg	C0021	Three Year	7.12.2.OM1: The integrity of utility natural gas piping and distribution systems is to be inspected and documented. The integrity inspection is to primarily look for cross ties or non-approved connections that could result in back flow contamination.
Global	Pittsburg	C0053	Quarterly	LPP 10.14.3.OM1: (Quarterly) Testing for fluid curtains shall be done according to the requirements mentioned in LPP 10.9.5OM3 and 5OM4 for deluge systems. (See procedure for scope of quarterly tests)
Global	Pittsburg	C0029	Seven Year	13.1.2.OM2: Conduct a Burner Management Audit.
Global	Pittsburg	C0054	Annual	LPP 10.14.3.OM1: (Annual) Testing for fluid curtains shall be done according to the requirements mentioned in LPP 10.9.5OM3 and 5OM4 for deluge systems. (See procedure for scope of annual tests)
Global	Pittsburg	C0019	Three Year	7.11.2.OM1: The integrity of utility steam piping and distribution systems is to be inspected and documented. The integrity inspection is to primarily look for cross ties or non-approved connections that could result in back flow contamination.
Global	Pittsburg	C0052	Weekly	LPP 10.14.3.OM1: (Weekly) Testing for fluid curtains shall be done according to the requirements mentioned in LPP 10.9.5OM3 and 5OM4 for deluge systems. (See procedure for scope of weekly tests)
Global	Pittsburg	A0020	Three Year	Inspect self-retracting lifelines
Global	Pittsburg	C0061	Weekly	LPP 10.2.6.OM1: (Weekly items) An operating test of an entire fire pump installation shall be conducted and recorded directly after installation and thereafter weekly by the owner. (See procedure for scope of weekly tests)
Global	Pittsburg	C0075	Annual	LPP 10.8.5.OM3: (Wet pipe) Main Drain Test and alarm testing shall be performed annually and recorded. (See LPP 10.16)
Global	Pittsburg	B0029	Annual	Ensure individually-assigned mouth bit escape respirators are inspected as current and in operable condition
Global	Pittsburg	C0096	Three Year	Confirm training mgmt system is in place for reviewing plant Fire Protection Strategy with ops personnel so they understand the intention of the passive & active fire protection systems in the process area & how to activate them in case of a fire
Global	Pittsburg	C0080	Weekly	LPP 10.9.5.OM3: (Weekly items) The inspection, testing and maintenance of deluge systems shall be carried out according to LPP 10.16 (NFPA 25 Chapters 10 and 14). (See procedure for scope of weekly tests)
Global	Pittsburg	C0095	Three Year	LPP10.1.3.OM1: Review plant Fire Protection Strategy with the local emergency services provider to assure coordination of responsibilities between the plant fire protection systems and the fire fighting capabilities of the emergency services provider
Global	Pittsburg	C0062	Monthly	LPP 10.2.6.OM1: (Monthly items) An operating test of an entire fire pump installation shall be conducted and recorded directly after installation and thereafter monthly by the owner. (See procedure for scope of monthly tests)
Global	Pittsburg	C0093	Annual	LPP 10.8.5.OM2: (Wet Pipe - Annual Items) The inspection, testing and maintenance of sprinkler systems shall be carried out and documented according to LPP 10.16 (NFPA 25 Chapter 5 reference). (See procedure for scope of annual tests)
Global	Pittsburg	C0063	Quarterly	LPP 10.2.6.OM1: (Quarterly items) An operating test of an entire fire pump installation shall be conducted and recorded directly after installation and thereafter quarterly by the owner. (See procedure for scope of quarterly tests)

SITE APPLICABLE TASKS

Level	Site Name	Identifier	Frequency Name	Task Description
Global	Pittsburg	C0083	Five Year	LPP 10.9.5.OM3: (5 year items) The inspection, testing and maintenance of deluge systems shall be carried out according to LPP 10.16 (NFPA 25 Chapters 10 and 14). (See procedure for scope of five year tests)
Global	Pittsburg	7E107	Annual	Annual Global Emissions Inventory Report
Global	Pittsburg	C0098	Annual	LPP 10.16.3M1r: (Annual) Complete Inspection, testing and maintenance activities for fire water monitor nozzles and hydrants.
Global	Pittsburg	A0040	Three Year	Certify Electrical Instructed Persons
Global	Pittsburg	10C13	Three Year	Review Nitrogen supplier practices to assure continuous safe operation every three years
Global	Pittsburg	07A27	Quarterly	Inspect hydroblasting pumping equipment.
Global	Pittsburg	O6501	Three Year	Operating procedures must be reviewed at least every 3 years
Global	Pittsburg	C0036	Annual	LPP 9.1.3OM2: Fire Detectors shall be functionally tested on a frequency based on the manufacturer's recommendations and the results of these tests, but shall not exceed one year.
Global	Pittsburg	C0003	Five Year	Confirm training management system is in place for conducting refresher training for Global Mechanical Integrity Standard (GMISS)
Global	Pittsburg	C0026	Annual	12.7.5.OM1: To assure the operational performance of the building pressurization system, inspect the enclosure door seals and if applicable, windows, to assure that the enclosure is tight and not having extensive air losses.
Global	Pittsburg	C0057	Monthly	LPP 10.18.2.OM3: (Monthly items) Routine inspections shall be made for any damage to fire doors, frames, latching mechanism, cables, weights, rails, etc., or any obstructions that would prevent the fire door from functioning.
Global	Pittsburg	C0066	Five Year	LPP 10.2.6.OM1: (5 year items) An operating test of an entire fire pump installation shall be conducted and recorded directly after installation and every 5 years thereafter by the owner. (See procedure for scope of five year tests)
Global	Pittsburg	C0092	Quarterly	LPP 10.8.5.OM2: (Wet Pipe - Quarterly Items) The inspection, testing and maintenance of sprinkler systems shall be carried out and documented according to LPP 10.16 (NFPA 25 Chapter 5 reference). (See procedure for scope of quarterly tests)
Global	Pittsburg	C0079	Three Year	LPP 10.8.5.OM6: Every three years the inspector's test connection in wet pipe sprinkler systems shall be opened to full flow trip the system.
Global	Pittsburg	A0016	Three Year	Inspect fixed ladders and ladder cages
Global	Pittsburg	07B18	Annual	Review facility laboratory standard program annually
Global	Pittsburg	17E04	Ten Year	Conduct Integrity Testing of Oil Tanks, supports & foundations per SPCC
Global	Pittsburg	07H01	Annual	Confirm training management system is in place for Spill Prevention Control and Countermeasure - Detailed SPCC Plan Training specific to plant/department
Global	Pittsburg	10E02	Five Year	Review/Update SPCC Plan
Global	Pittsburg	O6510	Annual	Emergency plans shall be reviewed, updated, and field tested at least annually
Global	Pittsburg	E0976	Annual	Conduct global rail switching Policy & Best Practices self-assessment (every 3 yrs if performed with the assistance of a representative from another facility, i.e. cross-site assessment)
Global	Pittsburg	C0009	Five Year	3.8.2.OM1: All Plants (Category I facilities) shall conduct an Electrical Safety and Reliability Audit (ESRA) in accordance with Electrical EMETL G7A-0060-00.
Global	Pittsburg	C0033	Annual	3.1.3.OM1: Review the area electrical classification documentation. The signed and dated master EACD drawing that is posted in the control room shall be considered as a document of record reflecting the last review date.
Global	Pittsburg	C0010	Four Year	3.8.2.OM1: All Plants (Category II & III facilities) shall conduct an Electrical Safety and Reliability Audit (ESRA) in accordance with Electrical EMETL G7A-0060-00.
Global	Pittsburg	E0224	Annual	Submit a Title V Compliance Certification Report
Global	Pittsburg	E0776	Daily	Perform the system audit of the carbon monoxide and oxygen continuous emission monitors (hazardous waste halogen acid furnaces)
Global	Pittsburg	E0794	Annual	Review and update the Continuous Monitoring System Performance Evaluation Plan (CMSPEP) based on review of data from the carbon monoxide and oxygen continuous emission monitors (hazardous waste halogen acid furnaces)
Global	Pittsburg	E0806	Annual	Confirm training management system is in place for passing the refresher test for operator training and certification (control room operators) for hazardous waste halogen acid furnaces
Global	Pittsburg	2F20h	Monthly	Calculate the percentage of leaking pumps in Phase III to confirm that the 6-month average stays below the QIP triggers.
Global	Pittsburg	3F30b	Quarterly	Conduct calibration precision test on VOC instrument detector.
Global	Pittsburg	6F18d	Annual	Monitor valves and calculate % leakers for equipment in G/V or LL OHAP service.

SITE APPLICABLE TASKS

Level	Site Name	Identifier	Frequency Name	Task Description
Global	Pittsburg	A0008	Three Year	Confirm training management system is in place for conducting Fork Lift Operating Training including operator evaluation
Global	Pittsburg	A0036	Two Year	Testing Fiberglass Reinforced Plastic live-line tools (US Only)
Global	Pittsburg	B0006	Annual	Conduct employee audiograms annually
Global	Pittsburg	B0027	Quarterly	Send radiation dosimeters to dosimetry provider for analysis
Global	Pittsburg	E0131	Semi-Annual	Submit Subpart MMM Periodic Report for process vents, storage vessels, wastewater, heat exchange systems and equipment leaks.
Global	Pittsburg	E0227	Five Year	Submit a Title V Permit Renewal at least 6 months before the deadline
Global	Pittsburg	E0791	Quarterly	Perform the absolute calibration audit (ACA is the same as Calibration Error test) for carbon monoxide and oxygen continuous emission monitors (hazardous waste halogen acid furnaces)
Global	Pittsburg	E0979	Quarterly	40 CFR Appendix F to Part 60 - Quality Assurance Procedures Procedure 1. Quality Assurance Requirements for Gas Continuous Emission Monitoring Systems Used for Compliance Determination"
Global	Pittsburg	E1050	Monthly	Demonstrate that the average monthly throughput is less than the 10,000 gallons or the 100,000-gallon threshold, as applicable
Global	Pittsburg	17F3a	Hourly	Create hourly records of whether flow was detected for flow indicators in closed vent systems installed at entrance to any bypass line that could divert vent steam away from control device into atmosphere.
Global	Pittsburg	1F01b	Daily	Calibrate leak detection instrument
Global	Pittsburg	2F22b	Monthly	Ensure that each open-ended valve or line is equipped with cap, blind flange, plug, or second valve.
Global	Pittsburg	9F03a	Four Year	Monitor connectors one time every 4 years if on a biennial leak detection and repair program and the percent leak rate is < 0.5 percent.
Global	Pittsburg	A0004	Annual	Confirm training management system is in place for re-training for Facility Representatives (06.04) (USA)
Global	Pittsburg	B0042	Monthly	Conduct respirator (airline breathing air) performance check and equipment inspection per manufacturer's instructions
Global	Pittsburg	C0108	Annual	Confirm training management systems is in place for fire extinguisher education for employees (annually).
Global	Pittsburg	E0575	Monthly	Conduct monthly Rope Inspections
Global	Pittsburg	E0797	Annual	Review and update the Operations and Maintenance Plan (OMP) for hazardous waste halogen acid furnaces
Global	Pittsburg	E0800	Annual	Perform the relative accuracy test audit (RATA) for carbon monoxide and oxygen continuous emission monitors (hazardous waste halogen acid furnaces)
Global	Pittsburg	E0813	Semi-Annual	Submit semi-annual report for excessive emissions, SSM events, CMS performance, and summary (hazardous waste halogen acid furnaces)
Global	Pittsburg	E0980	Five Year	NPDES Permit Renewal
Global	Pittsburg	2F20a	Monthly	Monitor valves and calculate the % leakers if leak rate is >2% during Phase III and no QIP program is implemented
Global	Pittsburg	2F22a	Monthly	Monitor valves and calculate the % leakers if leak rate is >2% during Phase III and no QIP program is implemented
Global	Pittsburg	2F22h	Monthly	Calculate the percentage of leaking pumps in Phase III to confirm that the 6-month average stays below the QIP triggers.
Global	Pittsburg	3F30f	Quarterly	Monitor cooling water in heat exchange systems quarterly after the first 6 months of monitoring.
Global	Pittsburg	6F18k	Annual	Conduct visual inspection on closed vent systems and vapor collection systems.
Global	Pittsburg	9F03b	Four Year	Calculate % of leaking connectors to determine frequency of monitoring for programs where leak rate is less than 0.5%
Global	Pittsburg	02B02	Weekly	Perform Self-Contained breathing apparatus (SCBA) Check Weekly
Global	Pittsburg	05G03	Quarterly	Monitor hazardous waste valves in G/V or LL service quarterly after 2 successive months of no leaks per RCRA BB (unless monitoring on a monthly, semi-annual, or annual frequency).
Global	Pittsburg	07B01	Annual	Perform visual evaluation to assess and document the condition of asbestos materials
Global	Pittsburg	07B03	Annual	Conduct fit testing on all users of tight-fitting respirators annually
Global	Pittsburg	07E87	Annual	Perform BIF Calibration Drift Test
Global	Pittsburg	07G09	Annual	Monitor valves designated for "no detectable emissions".
Global	Pittsburg	01F3c	Daily	Review recorded values for monitored parameters on Control/Recovery devices and calculate daily average, if required.
Global	Pittsburg	02E24	Weekly	Perform BIF Automatic Waste Feed Test

SITE APPLICABLE TASKS

Level	Site Name	Identifier	Frequency Name	Task Description
Global	Pittsburg	05E25	Quarterly	Perform BIF CEM Calibration Error Test
Global	Pittsburg	07E88	Annual	Perform BIF Response Time Test
Global	Pittsburg	07G19	Annual	Submit PCB (polychlorinated biphenyls) Disposal Report
Global	Pittsburg	07G31	Annual	Calculate % leaking valves for G/V and LL valves monitored on an annual basis. (Alternative Valve Standard - Options 1 and 2)
Global	Pittsburg	07T17	Annual	Review GMP for FCC materials
Global	Pittsburg	01E20	Daily	Daily Tank Inspection (Permitted and I/S)
Global	Pittsburg	01F3b	Daily	Calibrate leak detection instrument
Global	Pittsburg	07B04	Annual	Perform calibration of radiation survey meters
Global	Pittsburg	07G11	Annual	Monitor hazardous waste valves in G/V/LL service on an annual basis per RCRA BB if the percentage of valves leaking is equal to or less than 2 percent during the annual performance test. (Alternative Valve Standard - Option 1).
Global	Pittsburg	07T11	Annual	Review cGMP for products sold as Active Pharmaceutical Ingredients.
Global	Pittsburg	03G05	Monthly	Monitor valves in G/V or LL service monthly for 2 consecutive months (unless monitoring on a quarterly, semi-annual, or annual frequency).
Global	Pittsburg	05F32	Quarterly	Plant sites with > 250 valves, Phases I / II - Monitor all valves quarterly. Phase III - calculate valve percent leak rate and determine if plant can skip to semi-ann. or ann. monitoring or whether QIP or monthly monit. needs to be implemented.
Global	Pittsburg	05F34	Quarterly	Plant sites with > 250 valves, Phases I / II - Monitor all valves quarterly. Phase III - calculate valve percent leak rate and determine if plant can skip to semi-ann. or ann. monitoring or whether QIP or monthly monit. needs to be implemented.
Global	Pittsburg	05G04	Quarterly	If using the valve altern. Option 1 (skip option) & the leak rate is > 2%, revert to monthly monitoring. After 2 successive months, if the % of valves leaking is < to 2 %, monitor quarterly. Notification is req'd.
Global	Pittsburg	06B02	Semi-Annual	Perform radioactive sealed source shutter operability test
Global	Pittsburg	06G03	Semi-Annual	Submit report on effectiveness of RCRA Corrective Action Program
Global	Pittsburg	07B24	Annual	Notify employees of their rights to access their medical and exposure records annually
Global	Pittsburg	07B34	Annual	Confirm training management system is in place for checking currency of respiratory protection training for all users
Global	Pittsburg	07T13	Annual	Review GMP for materials subject to FDA food contact requirements
Global	Pittsburg	E0225	Semi-Annual	Submit a Title V Deviation Report
Global	Pittsburg	E0356	Annual	Confirm training management system is in place for conducting training as required by TSCA Consent Order or Significant New Use Rule (SNUR) for applicable compounds
Global	Pittsburg	E0770	Daily	Perform the calibration check for carbon monoxide and oxygen continuous emission monitors (hazardous waste halogen acid furnaces)
Global	Pittsburg	E0779	Daily	Inspect the hazardous waste halogen acid furnace (same as the RCRA inspection requirement)
Global	Pittsburg	E0805	Annual	Confirm training management system is in place for conducting/receiving refresher training for operator training and certification (control room operators) for hazardous waste halogen acid furnaces
Global	Pittsburg	E0816	Five Year	Conduct the comprehensive performance test (test plan submittal, CMS performance evaluation test, test date notification, conduct the test, submit the test results, new NOC) for hazardous waste halogen acid furnaces
Global	Pittsburg	E0821	Semi-Annual	Maintenance record for combustion unit used for a vent on Level 2 tank (RCRA Subpart CC)
Global	Pittsburg	E0974	Monthly	Review chemical list for new chemicals brought on site within the last 30 days and/or any status change that may be relevant to emergency planning for Hazardous or EHS chemicals. Submit notification to LEPC, SERC, & Fire Dept within 30 days
Global	Pittsburg	6F18e	Annual	Perform compliance demonstration for those compressors designated to read less than 500 ppm above background.
Global	Pittsburg	7F77b	Two Year	Calculate the percentage of leaking connectors. Monitor all connectors in G/V or LL service once every 2 years if the leak rate is < 0.5%. If monitoring on a quadrennial basis, go back to biennial monitoring if leak rate is > 0.5% but < 1%.
Global	Pittsburg	A0007	Annual	Conduct Isolation of Energy Sources Self Assessment
Global	Pittsburg	E0341	Annual	Certify Waste Minimization Plan Annually -can be facility/site-wide certification
Global	Pittsburg	E0704	Monthly	Conduct monthly Crane inspection
Global	Pittsburg	2F20e	Monthly	Monitor agitators in G/V/LL service.
Global	Pittsburg	2F22d	Monthly	Monitor pumps in LL service.

SITE APPLICABLE TASKS

Level	Site Name	Identifier	Frequency Name	Task Description
Global	Pittsburg	2F22e	Monthly	Monitor agitators in G/V/LL service.
Global	Pittsburg	3F28b	Quarterly	Conduct calibration precision test on VOC instrument detector.
Global	Pittsburg	5F28b	Semi-Annual	Submit HON Periodic Report, Subpart H
Global	Pittsburg	B0012	Ten Year	Perform radioactive contamination wipe testing of sealed sources in storage
Global	Pittsburg	E0226	Annual	Pay fees for funding the Title V Permit Program
Global	Pittsburg	E0617	Semi-Annual	Submit semi-annual report for subpart NNNNN, including Summary report, Periodic SSM, Excessive Emissions and CMS Performance. If needed, submit copy of revised LDAR plan, CMS plan and planned & anticipated maint. of control device for storage tanks.
Global	Pittsburg	E0773	Daily	Document and track the cumulative manual adjustment to calibration of the carbon monoxide and oxygen continuous emission monitors (hazardous waste halogen acid furnaces)
Global	Pittsburg	E0785	Weekly	Test the automatic waste feed cutoff (AWFCO) system (unless documented justification for a monthly test) for hazardous waste halogen acid furnaces
Global	Pittsburg	E0825	Semi-Annual	Maintenance record for carbon bed used for a vent on Level 2 tank (RCRA Subpart CC)
Global	Pittsburg	1F01g	Five Year	Monitor closed vent system or vapor collection system components that have been designated as "difficult to inspect".
Global	Pittsburg	5F30b	Semi-Annual	Submit Subpart H Periodic Report for P&R I
Global	Pittsburg	6F16c	Annual	Perform compliance demonstration for those compressors designated to read less than 500 ppm above background.
Global	Pittsburg	6F16h	Annual	Calculate % leaking connectors for determining monitoring frequency.
Global	Pittsburg	A0003	Annual	Confirm training management system is in place for re-training for all people that have the potential to possibly operate an isolating device (06.01). (USA)
Global	Pittsburg	B0023	Annual	Determine if the performance of the audiometer is within the tolerances permitted by the American Standard Specification for Audiometers
Global	Pittsburg	T0003	Four Year	Verify that plant data for TSCA Chemical Data Reporting Rule report has been reviewed and submitted to TSCA SME (Final Submission Due Date: 09-30-2016, suggest 90 day lead time)
Global	Pittsburg	E1121	Five Year	For any portable fuel container that complies with the requirement in Subpart CCCCC to have a gasketed seal by meeting the requirements of 40 CFR 59 Subpart F - Replace the portable fuel container no later than 5 years after the date of purchase.
Global	Pittsburg	01G04	Daily	Calibrate monitoring instruments per RCRA BB
Global	Pittsburg	07G02	Annual	Confirm training management system is in place for conducting RCRA Training
Global	Pittsburg	07G29	Annual	Visually inspect hard-piped closed vent systems and closed vent system in vacuum service.
Global	Pittsburg	01E19	Daily	Tank Inspection (<90 Day)
Global	Pittsburg	03G01	Monthly	Monitor hazardous waste pumps in LL service per RCRA BB
Global	Pittsburg	07B45	Annual	Confirm training management system is in place for conducting repeat Hearing Conservation training for workers with an exposure to noise in excess of 85 dB(A) 8 hr TWA (3dB doubling rate) annually
Global	Pittsburg	07G07	Annual	Monitor pumps designated for "no detectable emissions".
Global	Pittsburg	07G18	Annual	Review Contingency Plan and Job Description
Global	Pittsburg	E0580	Annual	Submit TTB annual alcohol usage report. This report details the amount of alcohol used between July 1st of the previous year through June 30th of current year. The annual report is due each July 15th
Global	Pittsburg	E0824	Daily	Inspection of operation parameter readings for carbon bed used for vent on Level 2 tank (RCRA Subpart CC)
Global	Pittsburg	5F30a	Semi-Annual	Submit P&R I Periodic Report, Subpart U.
Global	Pittsburg	5F30c	Semi-Annual	Monitor G/V and LL valves in OHAP service once every 2 quarters if the leak rate is < 1% but > 0.5% in Phase III
Global	Pittsburg	6F16b	Annual	Monitor valves and calculate % leakers for equipment in G/V or LL OHAP service.
Global	Pittsburg	6F16i	Annual	Conduct visual inspection on closed vent systems and vapor collection systems.
Global	Pittsburg	6F18f	Annual	Monitor components designated as "difficult to monitor".
Global	Pittsburg	A0012	Three Year	Contact appropriate EH&S Audit Scheduler to confirm facility is entered into AEC Planning & Scheduling Toolkit and is scheduled to receive an EH&S Integrated Audit (which meets OSHA PSM & EPA RMP audit requirements) on a 3 year frequency.
Global	Pittsburg	A0041	Annual	Work group to conduct self assessments to ensure conformance with the confined space entry assessment requirements.
Global	Pittsburg	A0045	Three Year	Confirm training management system is in place for the retraining of personnel involved in operating a process to assure that the employee understands and adheres to the current operating procedures of the process

SITE APPLICABLE TASKS

Level	Site Name	Identifier	Frequency Name	Task Description
Global	Pittsburg	E0705	Daily	Conduct daily Crane Inspection
Global	Pittsburg	E0859	Annual	Inspection of roof on Level 2 tank that vents to a control device (RCRA Subpart CC)
Global	Pittsburg	E0860	Annual	Level 1 tank inspection for unsafe-to-inspect components (RCRA Subpart CC)
Global	Pittsburg	2F20d	Monthly	Monitor pumps in LL service.
Global	Pittsburg	6F16d	Annual	Monitor components designated as "difficult to monitor".
Global	Pittsburg	6F16g	Annual	Monitor all connectors in G/V/or LL OHAP service.
Global	Pittsburg	6F18j	Annual	Calculate % leaking connectors for determining monitoring frequency for intital leak rate or programs where leak rate is greater than 0.5%
Global	Pittsburg	T0001	Three Year	Confirm training management system is in place for TSCA 8(c) Training
Global	Pittsburg	03A03	Annual	Conduct annual Overhead Crane Inspection
Global	Pittsburg	05B04	Quarterly	Perform radioactive sealed sources inventory at site
Global	Pittsburg	05G09	Quarterly	Perform leak detection instrument calibration precision test
Global	Pittsburg	06G08	Semi-Annual	Perform percent leaking valve calculation for hazardous waste valves in G/V and LL valves monitored on a semi-annual basis (Alternative Standard - Option 2)
Global	Pittsburg	07E10	Annual	Monitor closed vent & flanges in VOL storage
Global	Pittsburg	07E89	Annual	Perform BIF CEM Relative Accuracy Test
Global	Pittsburg	07G10	Annual	Monitor valves designated as "difficult to monitor".
Global	Pittsburg	09G01	Two Year	Submit Biennial RCRA Hazardous Waste Report
Global	Pittsburg	01E22	Daily	Daily Insp/Follow up of BIF equipment
Global	Pittsburg	02F16	Weekly	Visually inspect pumps in LL service and agitators in G/V or LL service.
Global	Pittsburg	06B06	Semi-Annual	Perform radioactive contamination wipe testing of beta-, gamma-, and neutron-emitting sealed sources
Global	Pittsburg	07E96	Annual	Demonstrate that the hazardous waste received by your container was generated with <500ppmw volatile organic content (RCRA Subpart CC)
Global	Pittsburg	07G12	Annual	Monitor hazardous waste valves in G/V/LL service on an annual basis per RCRA BB if the percentage of valves leaking is equal to or less than 2 percent after five consecutive quarterly leak detection periods. (Option 2 Alternative Standard).
Global	Pittsburg	07G24	Annual	Submit Groundwater Monitoring Report for Interim status units
Site	Pittsburg	S0048	Quarterly	Inspect shelf-life of stored Respirator cartridges/canisters to assure that shelf-life is not exceeded.
Global	Pittsburg	C0027	Annual	Functionally verify the ventilation system failure alarm if so equipped. Check the ventilation system for conditions that can impair performance, such as corroded louvers, damaged fan blades or belts, damaged duct work, etc. Repair as needed.
Global	Pittsburg	A0048	Three Year	Carry out inspection of Guardrails and Stairs on a regularly basis
Global	Pittsburg	C0002	Annual	Perform maintenance and inspection of fire extinguishers
Global	Pittsburg	C0064	Annual	LPP 10.2.6.OM1: (Annual Flow test) An operating test of an entire fire pump installation shall be conducted and recorded directly after installation and thereafter annually by the owner. (See procedure for scope of annual flow tests)
Site	Pittsburg	S0010	Annual	Inspect and Check Foam Concentrate
Site	Pittsburg	S0031	Daily	Daily Visual Inspection of Valves in Acid Service
Site	Pittsburg	S0030	Weekly	Weekly Visual Inspection of Valves in Acid Service
Site	Pittsburg	S0049	Weekly	Gas Horn and Process Clearing Alarm Check
Site	Pittsburg	S0045	Monthly	Manlifts / Aerial Lifts / Scissor Lifts Checks
Global	Pittsburg	E0574	Semi-Annual	Visually Inspect jacks
Site	Pittsburg	S0029	Annual	Chain Fall Inspection
Global	Pittsburg	07B21	Annual	Perform leak test on level A Hazmat suits annually
Global	Pittsburg	A0029	Annual	Testing and inspection of fixed Ground Fault Circuit Interrupters
Global	Pittsburg	B0048	Two Year	Calibrate Lab Fume Hoods
Global	Pittsburg	07C16	Annual	LPP 8.1.3M10r & LPP 8.2.2M1r - Pressure test and inspect Ship, Barge, Tank Car & Truck Loading/Off Loading Hoses. Non stainless steel hoses shall also be tested to verify electrical resistance.
Global	Pittsburg	C0105	Five Year	LPP 12.2.4.OM3 Building integrity maintenance shall occur at least every five years for shelter-in-place buildings. Records shall be retained per record retention guidelines.

SITE APPLICABLE TASKS

Level	Site Name	Identifier	Frequency Name	Task Description
Global	Pittsburg	CMS01	Quarterly	Report the repetitive compliance task performance metrics
Global	Pittsburg	C0081	Quarterly	LPP 10.9.5.OM3: (Quarterly items) The inspection, testing and maintenance of deluge systems shall be carried out according to LPP 10.16 (NFPA 25 Chapters 10 and 14). (See procedure for scope of quarterly tests)
Global	Pittsburg	C0082	Annual	LPP 10.9.5.OM3: (Annual items) The inspection, testing and maintenance of deluge systems shall be carried out according to LPP 10.16 (NFPA 25 Chapters 10 and 14). (See procedure for scope of annual tests)
Global	Pittsburg	C0112	Two Year	Field test hypothetical exercise for the local PRCM Plan as part of emergency response plan scenario rotation.
Global	Pittsburg	USA54	Monthly	Monthly inspection of portable ladders
Global	Pittsburg	A0015	Three Year	Inspection of grating
Site	Pittsburg	S0034	Annual	Annual Sling Inspection
Site	Pittsburg	S0040	Annual	Flammable Cabinet Inspection
Global	Pittsburg	C0043	Three Year	3.5.2M8r: An up-to-date (not over 3 years old) Safety Electrical One-Line Diagram (SEOLD) shall be posted at a conspicuous location. Electrical EMETL G7Z-0003-00 section 4.2 contains the minimum content requirements for this diagram.
Global	Pittsburg	C0001	Monthly	Inspect fire extinguishers
Site	Pittsburg	S0051	Monthly	Emergency Standby Engine / Generator Inspection
Site	Pittsburg	S0062	Monthly	RCRA Spill Kit Inspection
Global	Pittsburg	O2E26	Weekly	Weekly Container Storage Area Inspection
Site	Pittsburg	S0063	Annual	Annual Safety Shower Inspection
Site	Pittsburg	S0057	Quarterly	Single Walled Sump Inspection
Site	Pittsburg	S0056	Quarterly	Double Contained Sump Inspection
Site	Pittsburg	S0039	Quarterly	Machine Guarding Inspection
Global	Pittsburg	A0001	Annual	Verify that the OSHA Form 300-A Summary Form has been created for the previous year - Annually in January
Global	Pittsburg	A0006	Annual	Post the OSHA 300-A Summary Form from Feb. 1 through April 30 (Annually in January).
Global	Pittsburg	A0002	Annual	Assure that the OSHA 300-A Summary Form has been approved and signed by the appropriate Company official (Annually in January).
Global	Pittsburg	C0011	Annual	7.5.3.OM2: Dike and containment system walls, floors, seals and other features shall be inspected to ensure that materials of construction have not degraded or suffered physical damage.
Site	Pittsburg	S0013	Annual	Electrical Protective Equipment Visual Inspection - Arc Flash Suits
Global	Pittsburg	E0222	Five Year	Submit site Risk Management Plan updates to the EPA
Global	Pittsburg	E0983	Annual	Complete and place in site file a certification that annual Petroleum UST financial assurance has been submitted to authorized agency.
Global	Pittsburg	E0003	Three Year	Inspect Cathodic Protection System
Global	Pittsburg	O2G01	Weekly	Visually inspect HW pumps in LL service (dual mechanical seal and all other pumps).
Global	Pittsburg	B0045	Monthly	Conduct performance check and equipment inspection for self-contained breathing apparatus (SCBA) emergency use respirators
Site	Pittsburg	S0002	Annual	Procedure Use Policy (PUP) Assessment
Site	Pittsburg	S0065	Monthly	Emergency Lighting Inspection (30 seconds)
Site	Pittsburg	S0066	Annual	Emergency Lighting Inspection (90 minutes)
Site	Pittsburg	S0069	Five Year	Process Hazard Analysis - Seismic Assessment
Site	Pittsburg	S0070	Annual	Review Safety Standards Role Assignments
Site	Pittsburg	S0071	Weekly	Waste Drum Inventory
Site	Pittsburg	S0073	Quarterly	Confirm employees PSM certification is current (as applicable).
Site	Pittsburg	S0076	Weekly	Hydrocarbon Tank Inspections
Site	Pittsburg	S0077	Weekly	Waste Oil Container Inspection
Global	Pittsburg	A0019	Three Year	Inspect horizontal lifeline systems
Global	Pittsburg	07B15	Annual	Use either CTT Procedure or Self Assessment (long version not Top 10 check list). If Self Assessment is used ensure the review is documented in the "Document Annual Review & View WEI Score" section of the QEA database.
Global	Pittsburg	07B12	Annual	Use either CTT Procedure or Self Assessment (long version not Top 10 check list).
Global	Pittsburg	07B10	Annual	Use either CTT Procedure or Self Assessment (long version not Top 10 check list). Jurisdictions that require a written program (e.g., US) must ensure that the written program revision history is updated if Self Assessment is selected.

SITE APPLICABLE TASKS

Level	Site Name	Identifier	Frequency Name	Task Description
Global	Pittsburg	07B05	Annual	Use either CTT Procedure or Self Assessment (long version not Top 10 check list). Jurisdictions that require a written program (e.g., US) must ensure that the written program revision history is updated if Self Assessment is selected.
Global	Pittsburg	07B09	Annual	Use either CTT Procedure or Self Assessment (long version not Top 10 check list)
Global	Pittsburg	B0041	Annual	Use either CTT Procedure or Self Assessment (long version not Top 10 check list). Jurisdictions that require a written program (e.g., US) must ensure that the written program revision history is updated if Self Assessment is selected.
Global	Pittsburg	B0024	Annual	Use either CTT Procedure or Self Assessment (long version not Top 10 check list).
Global	Pittsburg	07B33	Annual	Use either CTT Procedure or Self Assessment (long version not Top 10 check list). If Self Assessment is selected ensure the written program revision history is updated.
Global	Pittsburg	07B02	Annual	Use either CTT Procedure or Self Assessment (long version not Top 10 check list). If Self Assessment is selected ensure the written program revision history is updated.
Global	Pittsburg	B0043	Annual	Use either CTT Procedure or Self Assessment (long version not Top 10 check list). If Self Assessment is selected ensure the written program revision history is updated.
Global	Pittsburg	07B08	Annual	Use either CTT Procedure or Self Assessment (long version not Top 10 check list). If Self Assessment is selected ensure the written Hazard Communication Program revision history is updated.
Global	Pittsburg	07G27	Annual	Submit Declaration of previous year's activities, imports, exports per Chemical Weapons Treaty
Global	Pittsburg	07B25	Annual	Use either CTT Procedure or Self Assessment (long version not Top 10 check list). If Self Assessment is selected ensure the written program revision history is updated.
Global	Pittsburg	2F20b	Monthly	Ensure that each open-ended valve or line is equipped with cap, blind flange, plug, or second valve.
Site	Pittsburg	S0064	Annual	Review Plant TSCA Inventory
Site	Pittsburg	S0072	Three Year	Survey employees to determine effectiveness, frequency of, and content of training topics.
Global	Pittsburg	USA171	Semi-Annual	Review site triggers for RMP updates and correction. For example, accident history, change in emergency contact, new chemicals, etc.
Site	Pittsburg	S0028	Weekly	Forklift Inspection - Replace Checklist for Previous Week with Checklist for Upcoming Week
Site	Pittsburg	S0017	Weekly	Conduct Safety Shower/Eye Wash Inspections
Site	Pittsburg	S0018	Weekly	Run HWC MACT Data History DAP tool to collect compliance data and save in designated Approved folder. Once reviewed, request move to Approved folder.
Site	Pittsburg	S0015	Annual	Submit annual RCRA Hazardous Waste Report
Site	Pittsburg	S0016	Annual	Conduct SCBA training for all SCBA users
Site	Pittsburg	S0023	Annual	Re-evaluate and/or analyze feedstreams
Site	Pittsburg	S0021	Weekly	Verify status of 10-in-60 Day AWFCO Event counter log
Site	Pittsburg	S0022	Weekly	Move HWC MACT documents from Unapproved to Approved folders (SSM Event Logs, Investigation Records, Compliance Data, Daily CEMS Data).
Site	Pittsburg	S0019	Monthly	Retrieve CEMS Maintenance Log sheet (for the previous month that just ended) from CEMS shack into control room to file in library records.
Site	Pittsburg	S0020	Annual	Critical Procedures and Other Operating Procedures shall be certified every 12 months
Global	Pittsburg	E0984	Annual	Submit GHG Report to EPA by March 31st of each year.
Global	Pittsburg	E0985	Annual	Review applicability for new units added during the year or for sites just below the threshold limit.
Global	Pittsburg	E1052	Annual	Calculate CO2 emissios by using one of the four calculation methodologies provided in the rule.
Global	Pittsburg	E1053	Annual	Calculate annual CH4 and N2O mass emissions only for units that are required to report CO2 emissions using the calculation methods provided in the rule and for only those fuels that are listed in TableC-2 of the rule.
Global	Pittsburg	E1054	Semi-Annual	Sample and analysis - HHV for Natural Gas
Global	Pittsburg	10A11	Three Year	Confirm training management system is in place for re-training for Personnel Issuing a Safe Work Permit for Line or Equipment Openings
Global	Pittsburg	E0210	Weekly	MON - Subpart SS: For flow indicators on bypass lines, check the hourly records of whether the flow indicator was operating and whether a diversion was detected at any time during the hour. (Recommended task)
Global	Pittsburg	E0212	Daily	MON - Subpart UU Option: Calibrate leak detection instrument. Fugitive monitoring contractor is responsible for this task.
Global	Pittsburg	E0213	Weekly	MON - Subpart UU Option: Visually inspect pumps in LL service and agitators in G/V or LL service.
Global	Pittsburg	E0211	Daily	MON - Subpart UU Option: Check daily sensor on Barrier fluid systems for dual mechanical seal pumps, compressors, and agitators

SITE APPLICABLE TASKS

Level	Site Name	Identifier	Frequency Name	Task Description
Global	Pittsburg	E0357	Monthly	MON - Subpart UU Option: Monitor valves monthly and calculate the % leakers if at least the greater of 2 valves or 2 percent of the valves in a process unit leak.
Global	Pittsburg	E0358	Monthly	MON - Subpart UU Option: Monitor pumps in LL service and agitators in gas/vapor or light liquid service monthly.
Global	Pittsburg	E0362	Quarterly	MON - Subpart UU Option: Plant sites with fewer than 250 valves in regulated material service - monitor quarterly (unless complying with semi-annual, annual, or biennial skipping).
Global	Pittsburg	E0361	Monthly	MON - Subpart UU Option: Calculate the percentage of leaking pumps. Ensure that the leak rate in a group of processes stays below the greater of either 10% or three pumps, based on a 6-month rolling average.
Global	Pittsburg	E0359	Monthly	MON - Subpart SS: For bypass lines with a car-seal or a lock-and-key type configuration, perform monthly visual inspection of seal/closure mechanism to verify that valve is maintained in non-diverting position and vent stream is not diverted.
Global	Pittsburg	E0360	Monthly	MON - Subpart UU Option: Visually inspect pumps in LL service and agitators in G/V and LL service at unmanned plant sites.
Global	Pittsburg	E0363	Quarterly	MON - Subpart UU Option: Plant sites with > 250 valves in regulated material service, monitor all valves quarterly if process unit has > 1% leaking valves but less than the greater of 2 leaking valves or 2 percent leaking valves
Global	Pittsburg	E0364	Quarterly	MON - Subpart UU Option: Conduct calibration precision test on VOC instrument detector. Fugitive monitoring contractor is responsible for this task.
Global	Pittsburg	E0367	Annual	MON - Subpart UU Option: Monitor valves and calculate % leakers for equipment in G/V or LL regulated material service. If valve leak rate is less than 0.5% but greater than or equal to 0.25%, monitor valves annually
Global	Pittsburg	E0365	Semi-Annual	MON - Subpart UU Option: Monitor G/V and LL valves once every 2 quarters if the leak rate is less than 1% but greater than or equal to 0.5%. Calculate the percentage of leaking valves to determine subsequent monitoring frequencies.
Global	Pittsburg	E0366	Semi-Annual	MON - Subpart UU: If choosing to subgroup valves, determine every 6 months if the overall performance of total valves in the applicable process unit or group of process units is less than 2 percent leaking valves. Report in the Compliance Report.
Global	Pittsburg	E0368	Annual	MON - Subpart UU Option: Perform compliance demonstration for those compressors designated to operate with an instrument reading of less than 500 ppm above background.
Global	Pittsburg	E0672	Annual	MON - Subpart UU: Conduct pressure test each process equipment train or supply lines between storage and processing areas that operate in regulated material service. Record dates of each pressure test, the results, and any pressure drop observed.
Global	Pittsburg	E0673	Two Year	MON - Subpart UU: If valve leak rate is < 0.25%, monitor valves once every 2 years. Calculate valve leak rate. Determine if unit can continue with biennial monitoring or whether semi-annual, quarterly, annual or monthly monitoring is required.
Global	Pittsburg	E0370	Annual	MON - Subpart SS: Conduct visual inspection on all hard-piped closed vent systems or annual monitoring on all ductwork closed vent system used to route emissions from any emission point to a control device.
Global	Pittsburg	E0369	Annual	MON - Subpart UU Option: Monitor valves and agitators that have been designated as "difficult to monitor".
Global	Pittsburg	E0674	Five Year	MON - Subpart SS: Monitor / visually inspect closed vent system or vapor collection system components that have been designated as "difficult to inspect".
Global	Pittsburg	E0675	Weekly	MON - Subpart H Option: Visually inspect pumps in LL service and agitators in G/V or LL service.
Global	Pittsburg	E0676	Quarterly	MON - Subpart H: Plant sites with > 250 valves, Phases I / II - Monitor all valves quarterly. Phase III - calculate valve % leak rate and determine if plant can skip to semi-ann. or ann. monitoring or whether QIP or monthly monit. is needed.
Global	Pittsburg	E0678	Daily	MON - Subpart H Option: Calibrate leak detection instrument. Fugitive monitoring contractor is responsible for this task.
Global	Pittsburg	E0680	Monthly	MON - Subpart H Option: Visually inspect seal or closure mechanism of closed vent system to confirm bypass valve is in non-diverting position.
Global	Pittsburg	E0677	Daily	MON - Subpart H Option: Check daily sensor on Barrier fluid systems for DMS pumps, compressors, and agitators
Global	Pittsburg	E0681	Monthly	MON - Subpart H Option: Monitor pumps in LL service and agitators in gas/vapor or light liquid service monthly.
Global	Pittsburg	E0684	Quarterly	MON - Subpart H Option: Plant sites with fewer than 250 valves in OHAP service - monitoring quarterly (unless complying with semi-annual or annual skipping)

SITE APPLICABLE TASKS

Level	Site Name	Identifier	Frequency Name	Task Description
Global	Pittsburg	E0683	Monthly	MON - Subpart H Option: Calculate the percentage of leaking pumps in Phase III to confirm that the 6-month average stays below the QIP triggers.
Global	Pittsburg	E0682	Monthly	MON - Subpart H Option: Visually inspect pumps in LL service and agitators in gas/vapor and light liquid service at unmanned plant sites.
Global	Pittsburg	C0097	Three Year	Confirm training management system is in place for conducting defensive driver (Commentary Drive or equivalent, covering theory and practical drive) re-training every three years, including a refresher on the Operation of Motor Vehicle standard.
Global	Pittsburg	C0022	Semi-Annual	9.2.6.OM2: Calibrate, test, and inspect portable or transportable detection devices (by qualified personnel).
Site	Pittsburg	S0024	Quarterly	Portable Ladder Inspections
Global	Pittsburg	B0028	Two Year	Conduct functional flow test per manufacturers instructions for self-contained breathing apparatus (SCBA) respirators
Site	Pittsburg	S0067	Annual	Process Safety Information - Autodoc
Site	Pittsburg	S0068	Three Year	Process Hazard Analysis - RC/PHA
Global	Pittsburg	E0809	Annual	Calibrate or replace combustor chamber temperature measurement device(s) for hazardous waste halogen acid furnaces
Global	Pittsburg	01E23	Daily	Daily BIF CEM Calibration & System Audit
Site	Pittsburg	S0074	Two Year	CSE Extrtaction Hoist Inspection / Recertification
Site	Pittsburg	S0060	Weekly	Inspect Portable Hazardous Waste Container
Site	Pittsburg	S0203000000107	Annual	Chemical Refrigerator High Temperature Alarm Test
Global	Pittsburg	C0059	Annual	LPP 10.18.2.OM2: (Annual items) Fire doors shall be tested annually to ensure the closing mechanism functions as designed and to inspect the fusible link and replace if necessary. Written documentation of the test and inspection must be maintained.
Site	Pittsburg	S0203000000186	Three Year	Inspect and Test Emergency Block Valves
Site	Pittsburg	S0032	Annual	Inspect and Test Emergency Block Valves
Site	Pittsburg	S0037	Annual	Pipeline Labeling Inspection
Global	Pittsburg	06E18	Annual	Level 1 tank inspection (RCRA Subpart CC)
Global	Pittsburg	07E99	Annual	Monitoring of closed-vent system on Level 2 tank that vents to a control device (RCRA Subpart CC)
Site	Pittsburg	S0203000000189	Semi-Annual	Jack Stand Inspection
Site	Pittsburg	S0078	Daily	Ensure that each open-ended valve or line is equipped with cap, blind flange, plug, or second valve.
Site	Pittsburg	S0058	Daily	Hazardous Waste Oil Tank Inspection
Site	Pittsburg	S0041	Daily	Inspect regulated pumps for visible leaks. Follow leak procedure to fix any leaks found
Site	Pittsburg	S0075	Daily	Hydrocarbon Drum Inspections
Global	Pittsburg	USA51	Semi-Annual	Inspect personal fall protection/prevention equipment

Appendix I

Compatibility Procedure for Waste Drums

560 Block RCRA Waste Drum Storage Area Compatibility Procedure

Scope The following procedure is to be used by the Site Waste Coordinator or designated personnel whenever Hazardous Waste Drums are to be stored in the 560 Block RCRA Waste Drum Storage Area.

**Attributes and
 Categories**

Categories
 Critical Emergency Operating AOP Other _____
 Attributes (Operating/Other) (routine means done at least once every 90 days)
 Routine Non-Routine

**Hazards and
 Precautions**

The table below lists job hazards associated with completing this procedure and the precautions that should be taken for safety, environmental, and Good Manufacturing Practices before beginning this procedure.

Hazard	Precaution
Chemical Exposure	Make sure drums are clean, bungs are tight and lids secure. Note: In case of a spill refer to Department PPE Grid for protective gear requirements specific to waste drum handling.

Before You Begin

Before beginning this procedure reference a copy of the Pittsburgh RCRA Hazardous Waste Permit, Drum Storage Area, Block 560, Table C-1 Waste Stream Description section.

Procedure

Follow the steps below to complete the RCRA Storage Waste Drum Compatibility Procedure.

Step	Action
1	Isolate waste drums that need to be moved to the 560 Block RCRA Hazardous Waste Drum Storage Area.
2	Reference a copy of the Pittsburgh RCRA Hazardous Waste Permit, Drum Storage Area, Block 560, Table C-1 Waste Stream Description section to verify that the waste stream is permitted to go into the RCRA storage area.
3	Once verification of the waste stream is made, refer to the Compatibility Code section of Table C-1 and determine the compatibility code number.

Continued on next page

560 Block RCRA Waste Drum Storage Area Compatibility Procedure, Continued

Procedure
(continued)

Step	Action
4	When placing drums in the RCRA storage area note the compatibility code of drums stored in either section to identify proper segregation.
5	Compatibility code numbers 1 and 2 can be stored in the same section
6	Compatibility code numbers 1 and 3 can be stored in the same section
7	Compatibility code numbers 2 and 3 can not be stored in the same section
8	Compatibility code number 4 can not be stored with any other material and must be isolated to one section.

Revision History

The following table lists all changes made to this document.

Date	Revised By	Changes
11/30/2005	Anthony Cobiseno	Document created. Approved by: Greg Dubitsky
8/14/15	A. Cobiseno	Reviewed No Changes Approved by: Jeff Cast

Appendix J

Financial Assurance and Insurance Documents



The Dow Chemical Company
Midland, Michigan 48674

2030 DOW CENTER
March 20, 2015

Department of Toxic Substances Control
ATTN: Financial Responsibility Section
8800 Cal Center Drive
Sacramento, CA 95826

LETTER FROM CHIEF FINANCIAL OFFICER

Dear Sir or Madam:

I am the Chief Financial Officer of The Dow Chemical Company, 2030 Dow Center, Midland, Michigan 48674. This letter is in support of the use of the financial test to demonstrate financial responsibility for liability coverage and closure and/or postclosure care as specified in California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8.

The firm identified above is the owner or operator of the following facilities/TTUs for which liability coverage for both sudden and nonsudden accidental occurrences is being demonstrated through the financial test specified in California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8, sections 66264.147 and 66265.147:

Amount of coverage demonstrated is \$4,000,000 per occurrence and \$8,000,000 annual aggregate.

<u>EPA ID#</u> <u>REGION 9</u>	<u>NAME/ADDRESS</u>	
CAD076528678	The Dow Chemical Company Pittsburg Plant PO Box 1398 Pittsburg, CA 94565	Both sudden and nonsudden covered
CAD009547050	The Dow Chemical Company Torrance Plant 305 Crenshaw Torrance, CA 90503	Both sudden and nonsudden covered

The firm identified above guarantees, through the guarantee specified in California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8, sections 66264.147 and 66265.147, liability coverage for both sudden and nonsudden accidental occurrences at the following facilities/TTUs owned or operated by the following:

None.

1. The firm identified above is the owner or operator of the following facilities/TTUs for which financial assurance for closure and/or postclosure or liability coverage is demonstrated through the financial test as specified in California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8, section 66264.143, subsection (f), section 66264.145, subsection (f), section 66265.143, subsection (e), and section 66265.145, subsection (e).

The current closure and/or postclosure cost estimates covered by the test are shown for each facility/TTU:

REGION 9

CAD076528678	The Dow Chemical Company Pittsburg Plant PO Box 1398 Pittsburg, CA 94565	Closure = \$3,180,600 Post-Closure = \$5,426,200 Corrective Action = \$68,182,400 Groundwater Treatment Plant Closure = \$175,100
CAD009547050	The Dow Chemical Company Torrance Plant 305 Crenshaw Torrance, CA 90503	Closure = \$471,900

2. The firm identified above guarantees, through the guarantee as specified in California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8, section 66264.143, subsection (f), section 66264.145, subsection (f), section 66265.143, subsection (e), and section 66265.145, subsection (e), the closure and/or postclosure care or liability coverage of the following facilities/TTUs owned or operated by the guaranteed party. The current cost estimates for the closure or postclosure care so guaranteed are shown for each facility/TTU:

None.

3. In States where the U.S. Environmental Protection Agency is not administering the financial requirements of subpart H of 40 CFR parts 264 and 265, this firm as owner, operator or guarantor is demonstrating financial assurance for the closure or postclosure care of the following facilities/TTUs through the use of a financial test equivalent or substantially equivalent to the financial test specified in California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8, section 66264.143, subsection (f), section 66264.145, subsection (f), section 66265.143, subsection (e), and section 66265.145, subsection (e). The current closure and/or postclosure cost estimates covered by such a test are shown for each facility/TTU:

REGION 2

NYD002234763	Hampshire Chemical Corp. 228 East Main Street Waterloo, New York 13165	Corrective Action = \$5,290,600
--------------	--	---------------------------------

REGION 3

PAD002292068	Rohm and Haas Chemicals LLC Route 413 & Old Route 13 PO Box 219 Bristol, PA 19007	Closure = \$480,800
--------------	--	---------------------

REGION 4

GAD045929643	The Dow Chemical Company Dalton Plant 1467 Prosser Drive, SE Dalton, GA 30720	Corrective Action = \$19,456,500
--------------	--	----------------------------------

KYD006390017	Rohm and Haas Chemicals LLC 4300 Camp Ground Road Louisville, KY 40216	Closure = \$2,852,500
MSD008186587 HW885701	Morton International Inc. Rohm and Haas Chemicals LLC 5724 Elder Ferry Road Moss Point, MS 39563	Post-Closure = \$6,886,000 Corrective Action = \$18,163,300
<u>REGION 5</u>		
MID000724724	The Dow Chemical Company MI Division/MI Plant 1261 Building Midland, MI 48674	Closure = \$100,668,500 Post-Closure = \$3,992,800 Corrective Action = \$160,560,000
MID980617435	The Dow Chemical Company MI Division/Salzberg Plant Salzburg & Waldo Roads Midland, MI 48640	Closure = \$2,777,000 Post-Closure = \$11,160,900
OHD039128913	The Dow Chemical Company Hanging Rock Plant Old 52 Highway Ironton, OH 45638	Closure = \$194,200
OHD045566098	Rohm and Haas Chemicals LLC 10 S. Electric & 93 E. Dayton Str. West Alexandria, OH 45301	Corrective Action = \$523,100
<u>REGION 6</u>		
ARD982286874 AFIN: 14-00011	The Dow Chemical Company Albemarle Corp. – West Plant 1550 Highway 371 South Magnolia, AR 71753	Corrective Action = \$15,951,700
LAD008187080 AI #1409	The Dow Chemical Company Louisiana Division PO Box 150 Plaquemine, LA 70764	Closure = \$6,362,400 Post-Closure = \$7,802,300 Corrective Action = \$1,269,000
TXD065096273	Rohm and Haas Texas Inc. 1900 Tidal Road Deer Park, TX 77536	Closure = \$1,228,200
TXD008092793	The Dow Chemical Company Texas Operations B-1226 Freeport, TX 77541	Closure = \$8,364,800 Post-Closure = \$25,010,900 Corrective Action = \$101,916,100
TXD008092793 TCEQ SWR No 30106 CP-50161	The Dow Chemical Company Texas Operations B-1226 Freeport, TX 77541	Closure = \$510,000 (Post-Response Action Care)

TXD00017756 The Dow Chemical Company **Corrective Action = \$4,250,000**
 La Porte Facility
 PO Box 687
 La Porte, TX 77571

4. The firm identified above is the owner or operator of the following facilities/TTUs for which financial assurance for closure or, if a disposal facility, postclosure care, is not demonstrated either to U.S. Environmental Protection Agency or a State through the financial test or any other financial assurance mechanism as specified in California Code of Regulations, title 22, division 4.5, chapters 14 and 15, article 8 or equivalent or substantially equivalent State mechanisms. The current closure and/or postclosure cost estimates not covered by such financial assurance are shown for each facility/TTU:

None.

5. The firm is the owner or operator or guarantor of the following Underground Injection Control facilities for which financial assurance for plugging and abandonment is required under 40 CFR part 144 and is assured through a financial test. The current closure cost estimates as specified in 40 CFR 144.62 are shown for each facility:

REGION 6
ARD982286874 The Dow Chemical Company **Plugging & Abandonment**
 Highway 371 **= \$596,200**
 Magnolia, AR 71753

This firm is required to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on December 31. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended December 31, 2014.

This firm is using Alternative II for Part B.

Part B. Closure or Postclosure Care and Liability Coverage

ALTERNATIVE II

1. Sum of current closure and postclosure cost estimates (Total of all cost estimates shown in the paragraphs of the letter to the Director of the Department of Toxic Substances Control)	\$583,704,000	
2. Amount of annual aggregate liability coverage to be demonstrated	\$8,000,000	
3. Sum of lines 1 and 2	\$591,704,000	
4. Current bond rating of most recent issuance and name of rating service	BBB (S&P)	
5. Date of issuance of bond	September 16, 2014	
6. Date of maturity of bond	October 1, 2024	
*7. Tangible net worth (if any portion of the closure and postclosure cost estimates is included in "total liabilities" on your firm's financial statements, you may add the amount of that portion to this line.)	\$7,156,000,000	
*8. Total assets in the United States (required only if less than 90 percent of firm's assets are located in the United States)	\$32,290,000,000	
	<u>YES</u>	<u>NO</u>
9. Is line 7 at least \$10 Million?	X	
10. Is line 7 at least 6 times line 3?	X	
*11. Are at least 90 percent of the firm's assets located in the United States? If not, complete line 12		X
12. Is line 8 at least 6 times line 3?	X	

I hereby certify that the wording of this letter is identical to the wording as specified in California Code of Regulations, title 22, section 66264.151, subsection (g) and is being executed in accordance with the requirements of California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8.


 Howard I. Ungerleider
 Executive Vice President
 And Chief Financial Officer
 The Dow Chemical Company

March 20, 2015

cc: Dale Backlund, The Dow Chemical Company, 901 Loveridge Road, Pittsburg, CA 94565
 Jeff Cast, The Dow Chemical Company, 901 Loveridge Road, Pittsburg, CA 94565
 Marv Louie, The Dow Chemical Company, 901 Loveridge Road, Pittsburg, CA 94565
 Tina Dittenber, The Dow Chemical Company, 2030 Dow Center, Midland, MI 48674
 Tim King, The Dow Chemical Company, PO Box 8361, South Charleston, WV 25303
 Alec Naugle, California Regional Water Quality Control Board, San Francisco Bay Region,
 1515 Clay Street, Suite 1400, Oakland, CA 94612
 US EPA, Region 9, Regional Administrator, 75 Hawthorne Street, San Francisco, CA 94105

NOTE: Please direct all correspondence related to this letter to Tina Dittenber, 2030 Dow Center, Midland, MI 48674. Phone (989) 636-0762 or Email kkdittenber@dow.com



Deloitte & Touche LLP
Suite 400
3320 Ridgcrest Drive
Midland, MI 48642-5859
USA

Tel: +1 989 631 2370
Fax: +1 989 832 9830
www.deloitte.com

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM ON APPLYING AGREED-UPON PROCEDURES

To the Board of Directors
The Dow Chemical Company
Midland, Michigan

We have performed the procedures included in the California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8, which are agreed to by the California Department of Toxic Substances Control – Financial Responsibility Section and The Dow Chemical Company (“Dow”), solely to assist the specified parties in evaluating Dow’s compliance with the financial test option as of December 31, 2014, included in the accompanying letter dated March 20, 2015 from Mr. Howard I. Ungerleider – Executive Vice President and Chief Financial Officer of Dow (the “Letter”). Management is responsible for Dow’s compliance with those requirements. This agreed-upon procedures engagement was conducted in accordance with attestation standards established by the Public Company Accounting Oversight Board (PCAOB). The sufficiency of these procedures is solely the responsibility of the parties specified in this report. Consequently, we make no representation regarding the sufficiency of the procedures described below either for the purpose for which this report has been requested or for any other purpose.

The procedures that we performed and related findings are as follows:

We recomputed from the audited consolidated financial statements of Dow or analyses prepared by employees of Dow that support the audited consolidated financial statements of Dow as of and for the year ended December 31, 2014, on which we have issued our report dated February 13, 2015, the information included in items 7, 8 and 11 under the caption Alternative II in the Letter referred to above and noted no differences.

We were not engaged to, and did not perform an examination, the objective of which would be the expression of an opinion on the accompanying letter dated March 20, 2015. Accordingly, we do not express such an opinion. Had we performed additional procedures, other matters might have come to our attention that would have been reported to you.

This report is intended solely for the information and use of the board of directors and management of Dow and the specified parties listed in the first paragraph, and is not intended to be and should not be used by anyone other than these specified parties.

Deloitte & Touche LLP

March 20, 2015

LETTER FROM CHIEF FINANCIAL OFFICER

I am the Chief Financial Officer for The Dow Chemical Company with corporate headquarters in Midland, Michigan 46874, having offices located at 901 Loveridge Road, Pittsburg, California 94565.

(Business name, business address, and correspondence address of owner or operator)

This letter is in support of the use of the **Underground Storage Tank Cleanup Fund** to demonstrate financial responsibility for taking corrective action and/or compensating third parties for bodily injury and property damage caused by an unauthorized release of petroleum in the amount of at least \$1,000,000 per occurrence and \$1,000,000 annual aggregate coverage.

(Dollar Amount)

(Dollar Amount)

Underground storage tanks at the following facilities are assured by this letter:

The Dow Chemical Company, Pittsburg Plant, 901 Loveridge Road, Pittsburg, California 94565

(Name and address of each facility for which financial responsibility is being demonstrated.)

1. Amount of annual aggregate coverage being assured by this letter.....	\$ <u>1,000,000</u>
2. Total tangible assets.....	\$ <u>52,396,000,000</u>
3. Total liabilities.....	\$ <u>45,240,000,000</u>
4. Tangible net worth (subtract line 3 from line 2. Line 4 must be at least 10 times line 1).....	\$ <u>7,156,000,000</u>

I hereby certify that the wording of this letter is identical to the wording specified in section 2808.1, subdivision (c)(1), chapter 18, division 3, title 23 of the California Code of Regulations.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Executed at: Midland, Michigan 48674
(Place of Execution)

On: March 20, 2015
(Date)

 
(Signature)

Howard I. Ungerleider
(Printed Name)

Executive Vice President and Chief Financial Officer
(Title)

CERTIFICATION OF FINANCIAL RESPONSIBILITY

The Dow Chemical Company hereby certifies that The Dow Chemical Company is in compliance with the requirements of section 2807, article 3, chapter 18, division 3, title 23, California Code of Regulations.

The mechanisms used to demonstrate financial responsibility as required by section 2807 are as follows:

The Dow Chemical Company
Pittsburg Plant
901 Loveridge Road
Pittsburg, CA 94565

UST Cleanup Fund Letter from CFO
Each Occurrence = \$1,000,000
Annual Aggregate = \$1,000,000
1 Petroleum UST
EPA ID: CAD076528678

This mechanism covers taking corrective action and/or compensating third parties for bodily injury and property damage caused by an unauthorized release of petroleum in the amount of at least \$1,000,000 per occurrence and \$1,000,000 annual aggregate coverage.

The Dow Chemical Company


Howard I. Ungerleider
Executive Vice President
And Chief Financial Officer

March 20, 2015



(Signature of witness or notary)

(Name of witness or notary) **KIMBERLY S. BIRCH**
Notary Public — Michigan
Midland County
My Commission Expires Mar 16, 2019

(Date)

cc: Jeff Cast, The Dow Chemical Company, 901 Loveridge Road, Pittsburg, CA 94565
Tina Dittenber, The Dow Chemical Company, 2030 Dow Center, Midland, MI 48674

Appendix K
Annual Waste Minimization
Certification



2014 2870 0001 8712 0864

The Dow Chemical Company
P.O. Box 1398
Pittsburg, CA 94561
USA

February 23, 2015

Department of Toxic Substances Control
Standardized Permits and Corrective Action Branch
700 Heinz Avenue, Suite 200
Berkeley, CA 94710

ATTN: Branch Chief

Dear Sir or Madam

Enclosed you will find three signed copies of the Waste Minimization Certification for The Dow Chemical Company Pittsburg, CA. Facility (CAD076528678). This submission is being made in accordance with CCR, Title 22, Section 66270.11 and the Facility's Hazardous Waste Permit dated, July 31, 2006.

If you have any questions related to this submission please contact me at (925)432-5177 or Email JDCast@Dow.com.

Sincerely,

Jeff Cast
Environmental Delivery Specialist
The Dow Chemical Company

Waste Minimization Certification

I hereby certify under penalty of law that personnel under my direction and supervision at this facility are undertaking specific steps in accordance with a program in place to minimize the amount and toxicity of hazardous wastes stored at units covered by the Pittsburg Site, RCRA Hazardous Waste Facility Permit to a degree economically practicable and that the method utilized for the treatment, storage, or disposal of hazardous wastes is the practicable method currently available to this facility which minimizes the present and future threat to human health and the environmental. I am aware that there are significant penalties for false certification, including the possibility of fine and imprisonment for flagrant falsifications.

Signature:



Dale Backlund
Responsible Care Leader
The Dow Chemical Company

Date Signed:

2 / 23 / 2015

This certification is repeated annually. Copies of the certification are part of the operating record.