

APPENDIX R

EMERGENCY RESPONSE PLANS



BOOK K

BOOK OF PLANS

2003

Revised July 2007

SONOMA COUNTY DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
INTEGRATED WASTE DIVISION

CENTRAL LANDFILL
OPERATIONS HEADQUARTERS
500 MECHAM ROAD
PETALUMA, CA 94952

PLANS

REVISED DATE

BUSINESS PLAN	JUNE 2002
CONTINGENCY PLAN	JUNE 2002
DUSTCONTROL PLAN	DECEMBER 2002
EMERGENCY RESPONSE AND EVACUATION PLAN	JUNE 2002
FIRE PREVENTION PLAN	AUGUST 2002
HAZARD COMMUNICATIO PLAN	FEBRUARY 2003
LOAD CHECKING PROGRAM	MARCH 2006
RESPIRATORY PROTECTION PLAN	JUNE 2002
SPILL PREVENTION, CONTAINMENT, AND COUNTERMEASURE PLAN	MAY 2003 (MAY 2010)

CIWMB OPERATING CRITERIA
CCR TITLE 27

OPERATIONS PLANS FOR CENTRAL DISPOSAL SITE SONOMA COUNTY, CALIFORNIA

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PLANS

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BUSINESS PLAN	JUNE 2002
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SPILL PREVENTION, CONTAINMENT, AND COUNTERMEASURE PLAN	JUNE 2002 (MAY 2010)

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C U P A BUSINESS PLAN

FOR

**CENTRAL DISPOSAL SITE
SONOMA COUNTY, CALIFORNIA**



SONOMA COUNTY

**DEPARTMENT OF TRANSPORTATION
AND
PUBLIC WORKS
INTEGRATED WASTE DIVISION**

Administrative Office
2300 County Center Drive, Suite B 100
Santa Rosa, California 95403
Phone: (707) 565-2231

Operations Headquarters
500 Mecham Road
Petaluma, CA 94952
Phone: (707) 565-7940

JUNE 2002

Management Certification

Name of Facility: Central Disposal Site
Type of Facility: Solid Waste Disposal
Location of Facility: 500 Mecham Road
Petaluma CA 94952
Name and Address of Owner: Sonoma County Department of
Transportation and Public Works
2300 County Center Drive, Suite B 100
Santa Rosa, CA 95403
Name of Manager: Don R. Poindexter, Division Manager,
Engineering and Operations

Management Approval

I hereby certify that full approval is extended by management at a level with authority to commit the necessary resources towards this spill prevention program, and that the provisions will be implemented as described within.

Signature: 

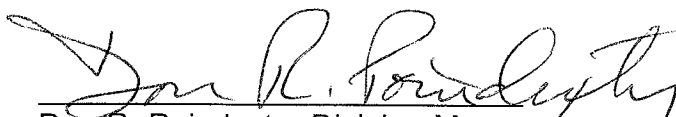
Name: Don R. Poindexter, CE, GE

Title: Division Manager,
Engineering and Operations

Engineer Certification

I certify that the above referenced facility was inspected by County staff in June, 2002 for Countermeasures (SPCC) requirements of Title 40, Federal Code of Regulations, Part 112 (40 CFR 112). This PLAN has been prepared under my direction to reflect current facility conditions as found during the inspection. As such, it is my professional opinion that this SPCC Plan generally represents the facility and meets the requirements of 40 CFR 112 and good engineering practices.

Sonoma County Department of Public Works and Transportation - Integrated Waste Division


Don R. Poindexter, Division Manager,
Engineering and Operations

**UNIFIED PROGRAM CONSOLIDATED FORM
FACILITY INFORMATION
BUSINESS ACTIVITIES**

Page 1 of ____

I. FACILITY IDENTIFICATION

FACILITY ID # <i>(Agency Use Only)</i>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div>	EPA ID # (Hazardous Waste Only) CAD 983597485	1.	2.	
BUSINESS NAME (Same as Facility Name or DBA - Doing Business As)					3.

II. ACTIVITIES DECLARATION

**NOTE: If you check YES to any part of this list,
please submit the Business Owner/Operator Identification page (OES Form 2730).**

Does your facility...	If Yes, please complete these pages of the UPCF...	
A. HAZARDOUS MATERIALS		
Have on site (for any purpose) hazardous materials at or above 55 gallons for liquids, 500 pounds for solids, or 200 cubic feet for compressed gases (include liquids in ASTs and USTs); or the applicable Federal threshold quantity for an extremely hazardous substance specified in 40 CFR Part 355, Appendix A or B; or handle radiological materials in quantities for which an emergency plan is required pursuant to 10 CFR Parts 30, 40 or 70?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO 4	HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION (OES 2731)
B. UNDERGROUND STORAGE TANKS (USTs)		
1. Own or operate underground storage tanks?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO 5	UST FACILITY (Formerly SWRCB Form A)
2. Intend to upgrade existing or install new USTs?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO 6.	UST TANK (one page per tank) (Formerly Form B)
	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO 7	UST FACILITY UST TANK (one per tank) UST INSTALLATION - CERTIFICATE OF COMPLIANCE (one page per tank) (Formerly Form C) UST TANK (closure portion – one page per tank)
C. ABOVE GROUND PETROLEUM STORAGE TANKS (ASTs)		
Own or operate ASTs above these thresholds: ---any tank capacity is greater than 660 gallons, or ---the total capacity for the facility is greater than 1,320 gallons?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO 8	NO FORM REQUIRED TO CUPAs
D. HAZARDOUS WASTE		
1. Generate hazardous waste?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO 9	EPA ID NUMBER – provide at the top of this page
2. Recycle more than 100 kg/month of excluded or exempted recyclable materials (per H&SC §25143.2)?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO 10	RECYCLABLE MATERIALS REPORT (one per recycler)
3. Treat hazardous waste on site?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO 11	ONSITE HAZARDOUS WASTE TREATMENT – FACILITY (Formerly DTSC Forms 1772)
4. Treatment subject to financial assurance requirements (for Permit by Rule and Conditional Authorization)?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO 12	ONSITE HAZARDOUS WASTE TREATMENT – UNIT (one page per unit) (Formerly DTSC Forms 1772 A, B, C, D and L)
5. Consolidate hazardous waste generated at a remote site?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO 13	CERTIFICATION OF FINANCIAL ASSURANCE (Formerly DTSC Form 1232)
6. Need to report the closure/removal of a tank that was classified as hazardous waste and cleaned onsite?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO 14	REMOTE WASTE / CONSOLIDATION SITE ANNUAL NOTIFICATION (Formerly DTSC Form 1196)
		HAZARDOUS WASTE TANK CLOSURE CERTIFICATION (Formerly DTSC Form 1249)
E. LOCAL REQUIREMENTS		

(You may also be required to provide additional information by your CUPA or local agency)

UNIFIED PROGRAM CONSOLIDATED FORM
FACILITY INFORMATION
BUSINESS OWNER/OPERATOR IDENTIFICATION

(2007)
 Page 2 of

I. IDENTIFICATION

FACILITY ID # (Agency Use Only)	1.	BEGINNING DATE	100.	ENDING DATE	101.
BUSINESS NAME (Same as FACILITY NAME)			3.	BUSINESS PHONE	
Central Landfill				(707) 792-0547	
BUSINESS SITE ADDRESS					
500 Mecham Road					
CITY	104.	CA		ZIP CODE	105.
Petaluma				94952	
DUN & BRADSTREET	106.			SIC CODE (4 digit #)	107.
Unknown				5093, 4953	
COUNTY					
Sonoma County					
BUSINESS OPERATOR NAME			109.	BUSINESS OPERATOR PHONE	
West Sonoma County Disposal				1(800) 828-7949 ext.	

II. BUSINESS OWNER

OWNER NAME	111.	OWNER PHONE	112.
County of Sonoma		(707) 527-2231	ext.
OWNER MAILING ADDRESS			
2300 County Center Drive Suite B100			
CITY	114.	STATE	115.
Santa Rosa		Ca	
		ZIP CODE	116.
		94931	

III. ENVIRONMENTAL CONTACT

CONTACT NAME	117.	CONTACT PHONE	118.
Trish Pisenti		(707) 565-7958	ext.
CONTACT MAILING ADDRESS			
500 Mecham Road			
CITY	120.	STATE	121.
Petaluma		Ca	
		ZIP CODE	122.
		94952	

-PRIMARY-

IV. EMERGENCY CONTACTS

-SECONDARY-

NAME	123.	NAME	128.
Trish Pisenti		Bob Simi	
TITLE	124.	TITLE	129.
Operations Manager		Disposal Supervisor	
BUSINESS PHONE	125.	BUSINESS PHONE	130.
(707) 565-7940 ext.		(707) 565-7946 ext.	
24-HOUR PHONE*	126.	24-HOUR PHONE*	131.
(707) 696-9190 ext.		(707) 696-9193 ext.	
PAGER #	127.	PAGER #	132.

ADDITIONAL LOCALLY COLLECTED INFORMATION: 133.

Billing Address: _____
 Property Owner: _____ Phone No.: () _____

Certification: Based on my inquiry of those individuals responsible for obtaining the information, I certify under penalty of law that I have personally examined and am familiar with the information submitted and believe the information is true, accurate, and complete.

SIGNATURE OF OWNER/OPERATOR OR DESIGNATED REPRESENTATIVE	134.	NAME OF DOCUMENT PREPARER	135.
NAME OF SIGNER (print)	136.	TITLE OF SIGNER	137.

* See Instructions on next page.

UNIFIED PROGRAM CONSOLIDATED FORM
HAZARDOUS MATERIALS
HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

(one page per material per building or area)

☐ ADD

☐ DELETE

☒ REVISE

200.

Page ____ of ____

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As)

3.

CENTRAL LANDFILL (CEN_0)

CHEMICAL LOCATION

201.

CHEMICAL LOCATION CONFIDENTIAL EPCRA

202.

VARIOUS LOCATIONS - SEE FIGURE 3

☐ YES ☒ NO

FACILITY ID #

(Agency Use Only)

1.

MAP #

203.

GRID #

204.

II. CHEMICAL INFORMATION

CHEMICAL NAME

205.

TRADE SECRET

☐ Yes ☒ No

206.

PETROLEUM

If Subject to EPCRA, refer to instructions

COMMON NAME

207.

EHS*

☐ Yes ☒ No

208.

WASTE OIL

CAS#

209.

*If EHS is "Yes," all amounts below must be in lbs.

UNKNOWN

FIRE CODE HAZARD CLASSES (Complete if required by local agency)

210.

UNKNOWN

HAZARDOUS MATERIAL
TYPE (Check one item only)

☐ a. PURE

☐ b. MIXTURE

☒ c. WASTE

211.

RADIOACTIVE ☐ Yes ☒ No

CURIES N/A

213.

PHYSICAL STATE
(Check one item only)

☐ a. SOLID

☒ b. LIQUID

☐ c. GAS

214.

LARGEST CONTAINER 1000

215.

FED HAZARD CATEGORIES
(Check all that apply)

☒ a. FIRE

☐ b. REACTIVE

☐ c. PRESSURE RELEASE

☐ d. ACUTE HEALTH

☒ e. CHRONIC HEALTH

216.

AVERAGE DAILY AMOUNT

217.

MAXIMUM DAILY AMOUNT

218.

ANNUAL WASTE AMOUNT

STATE WASTE CODE

220.

55

N/A

33,880

UNKNOWN

UNITS*
(Check one item only)

☒ a. GALLONS

☐ b. CUBIC FEET

☐ c. POUNDS

☐ d. TONS

* If EHS, amount must be in pounds.

221.

DAYS ON SITE
365

222.

STORAGE
CONTAINER

☒ a. ABOVEGROUND TANK

☐ e. PLASTIC/NONMETALLIC DRUM

☐ i. FIBER DRUM

☐ m. GLASS BOTTLE

☐ q. RAIL CAR

☐ b. UNDERGROUND TANK

☐ f. CAN

☐ j. BAG

☐ n. PLASTIC BOTTLE

☐ r. OTHER

☒ c. TANK INSIDE BUILDING

☐ g. CARBOY

☐ k. BOX

☐ o. TOTE BIN

☐ d. STEEL DRUM

☐ h. SILO

☐ l. CYLINDER

☐ p. TANK WAGON

223.

STORAGE PRESSURE

☒ a. AMBIENT

☐ b. ABOVE AMBIENT

☐ c. BELOW AMBIENT

224.

STORAGE TEMPERATURE

☒ a. AMBIENT

☐ b. ABOVE AMBIENT

☐ c. BELOW AMBIENT

☐ d. CRYOGENIC

225.

% WT

HAZARDOUS COMPONENT (For mixture or waste only)

EHS

CAS #

1.

226.

227.

☐ Yes ☐ No

228.

229.

2.

230.

231.

☐ Yes ☐ No

232.

233.

3.

234.

235.

☐ Yes ☐ No

236.

237.

4.

238.

239.

☐ Yes ☐ No

240.

241.

5.

242.

243.

☐ Yes ☐ No

244.

245.

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

246.

ADDITIONAL LOCALLY COLLECTED INFORMATION

DOT Hazard Class: ____

If EPCRA, Please Sign Here.

UNIFIED PROGRAM CONSOLIDATED FORM
HAZARDOUS MATERIALS
HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

(one page per material per building or a.)

☐ ADD

☐ DELETE

☒ REVISE

200.

Page ____ of ____

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3.									
CENTRAL LANDFILL(CEN_1)									
CHEMICAL LOCATION 201.						CHEMICAL LOCATION CONFIDENTIAL EPCRA 202.			
VARIOUS LOCATIONS - SEE FIGURE 3						<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
FACILITY ID # (Agency Use Only)						MAP # 203.		GRID # 204.	

II. CHEMICAL INFORMATION

CHEMICAL NAME 205.				TRADE SECRET <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 206.	
PETROLEUM HYDROCARBON				If Subject to EPCRA, refer to instructions	
COMMON NAME 207.				EHS* <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 208.	
MOTOR OIL					
CAS# 209.				*If EHS is "Yes," all amounts below must be in lbs.	
UNKNOWN					
FIRE CODE HAZARD CLASSES (Complete if required by local agency) 210.					
UNKNOWN					
HAZARDOUS MATERIAL TYPE (Check one item only)		<input checked="" type="checkbox"/> a. PURE <input type="checkbox"/> b. MIXTURE <input type="checkbox"/> c. WASTE 211.		RADIOACTIVE <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 212.	
				CURIES N/A 213.	
PHYSICAL STATE (Check one item only)		<input type="checkbox"/> a. SOLID <input checked="" type="checkbox"/> b. LIQUID <input type="checkbox"/> c. GAS 214.		LARGEST CONTAINER 2500 215.	
FED HAZARD CATEGORIES (Check all that apply)		<input checked="" type="checkbox"/> a. FIRE <input type="checkbox"/> b. REACTIVE <input type="checkbox"/> c. PRESSURE RELEASE <input type="checkbox"/> d. ACUTE HEALTH <input checked="" type="checkbox"/> e. CHRONIC HEALTH 216.			
AVERAGE DAILY AMOUNT 217.		MAXIMUM DAILY AMOUNT 218.		ANNUAL WASTE AMOUNT 219.	
1600		3200		UNKNOWN	
UNITS* (Check one item only)		<input checked="" type="checkbox"/> a. GALLONS <input type="checkbox"/> b. CUBIC FEET <input type="checkbox"/> c. POUNDS <input type="checkbox"/> d. TONS 221.		STATE WASTE CODE 220.	
		* If EHS, amount must be in pounds.		UNKNOWN	
STORAGE CONTAINER					
<input checked="" type="checkbox"/> a. ABOVEGROUND TANK <input type="checkbox"/> e. PLASTIC/NONMETALLIC DRUM <input type="checkbox"/> i. FIBER DRUM <input type="checkbox"/> m. GLASS BOTTLE <input type="checkbox"/> q. RAIL CAR <input type="checkbox"/> b. UNDERGROUND TANK <input type="checkbox"/> f. CAN <input type="checkbox"/> j. BAG <input type="checkbox"/> n. PLASTIC BOTTLE <input type="checkbox"/> r. OTHER <input type="checkbox"/> c. TANK INSIDE BUILDING <input type="checkbox"/> g. CARBOY <input type="checkbox"/> k. BOX <input type="checkbox"/> o. TOTE BIN <input checked="" type="checkbox"/> d. STEEL DRUM <input type="checkbox"/> h. SILO <input type="checkbox"/> l. CYLINDER <input type="checkbox"/> p. TANK WAGON 223.					
STORAGE PRESSURE		<input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT 224.			
STORAGE TEMPERATURE		<input checked="" type="checkbox"/> a. AMBIENT <input type="checkbox"/> b. ABOVE AMBIENT <input type="checkbox"/> c. BELOW AMBIENT <input type="checkbox"/> d. CRYOGENIC 225.			
% WT		HAZARDOUS COMPONENT (For mixture or waste only)		EHS	
1. 226.				<input type="checkbox"/> Yes <input type="checkbox"/> No 228.	
2. 230.				<input type="checkbox"/> Yes <input type="checkbox"/> No 232.	
3. 234.				<input type="checkbox"/> Yes <input type="checkbox"/> No 236.	
4. 238.				<input type="checkbox"/> Yes <input type="checkbox"/> No 240.	
5. 242.				<input type="checkbox"/> Yes <input type="checkbox"/> No 244.	

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

ADDITIONAL LOCALLY COLLECTED INFORMATION 246.

DOT Hazard Class: _____

If EPCRA, Please Sign Here.

UNIFIED PROGRAM CONSOLIDATED FORM
HAZARDOUS MATERIALS
HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

(one page per material per building or area)

☐ ADD

☐ DELETE

☒ REVISE

200.

Page ____ of ____

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As)

3.

CENTRAL LANDFILL (CEN_2)

CHEMICAL LOCATION

201.

CHEMICAL LOCATION CONFIDENTIAL EPCRA

202.

VARIOUS LOCATIONS - SEE FIGURE 3

☐ YES ☒ NO

FACILITY ID #

(Agency Use Only)

MAP #

203.

GRID #

204.

NONE

NONE

II. CHEMICAL INFORMATION

CHEMICAL NAME

205.

TRADE SECRET

☐ Yes ☒ No

206.

UNKNOWN

If Subject to EPCRA, refer to instructions

COMMON NAME

207.

EHS*

☐ Yes ☒ No

208.

HYDRAULIC FLUID

CAS#

209.

*If EHS is "Yes," all amounts below must be in lbs.

UNKNOWN

FIRE CODE HAZARD CLASSES (Complete if required by local agency)

210.

UNKNOWN

HAZARDOUS MATERIAL
TYPE (Check one item only)

☒ a. PURE

☐ b. MIXTURE

☐ c. WASTE

211.

RADIOACTIVE ☐ Yes ☒ No

CURIES N/A

213.

PHYSICAL STATE

(Check one item only)

☐ a. SOLID

☐ b. LIQUID

☐ c. GAS

214.

LARGEST CONTAINER 55

215.

FED HAZARD CATEGORIES
(Check all that apply)

☒ a. FIRE

☐ b. REACTIVE

☐ c. PRESSURE RELEASE

☐ d. ACUTE HEALTH

☒ e. CHRONIC HEALTH

216.

AVERAGE DAILY AMOUNT

217.

MAXIMUM DAILY AMOUNT

218.

ANNUAL WASTE AMOUNT

219.

STATE WASTE CODE

220.

100

200

UNKNOWN

UNKNOWN

UNITS*

(Check one item only)

☒ a. GALLONS

☐ b. CUBIC FEET

☐ c. POUNDS

☐ d. TONS

221.

* If EHS, amount must be in pounds.

DAYS ON SITE
365

222.

STORAGE

CONTAINER

☐ a. ABOVEGROUND TANK

☐ e. PLASTIC/NONMETALLIC DRUM

☐ i. FIBER DRUM

☐ m. GLASS BOTTLE

☐ q. RAIL CAR

☐ b. UNDERGROUND TANK

☐ f. CAN

☐ j. BAG

☐ n. PLASTIC BOTTLE

☐ r. OTHER

☐ c. TANK INSIDE BUILDING

☐ g. CARBOY

☐ k. BOX

☐ o. TOTE BIN

☒ d. STEEL DRUM

☐ h. SILO

☐ l. CYLINDER

☐ p. TANK WAGON

223.

STORAGE PRESSURE

☒ a. AMBIENT

☐ b. ABOVE AMBIENT

☐ c. BELOW AMBIENT

224.

STORAGE TEMPERATURE

☒ a. AMBIENT

☐ b. ABOVE AMBIENT

☐ c. BELOW AMBIENT

☐ d. CRYOGENIC

225.

% WT

HAZARDOUS COMPONENT (For mixture or waste only)

EHS

CAS #

1.

226.

227.

☐ Yes ☐ No

228.

229.

2.

230.

231.

☐ Yes ☐ No

232.

233.

3.

234.

235.

☐ Yes ☐ No

236.

237.

4.

238.

239.

☐ Yes ☐ No

240.

241.

5.

242.

243.

☐ Yes ☐ No

244.

245.

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

ADDITIONAL LOCALLY COLLECTED INFORMATION

246.

DOT Hazard Class: _____

If EPCRA, Please Sign Here.

UNIFIED PROGRAM CONSOLIDATED FORM
HAZARDOUS MATERIALS
HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

(one page per material per building or a.)

☐ ADD

☐ DELETE

☒ REVISE

200.

Page ____ of ____

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As)

3.

CENTRAL LANDFILL (CEN_3)

CHEMICAL LOCATION

201.

CHEMICAL LOCATION CONFIDENTIAL EPCRA

202.

VARIOUS LOCATIONS - SEE FIGURE 3

☐ YES ☒ NO

FACILITY ID #

(Agency Use Only)

MAP #

203.

GRID #

204.

UNKNOWN

UNKNOWN

II. CHEMICAL INFORMATION

CHEMICAL NAME

205.

TRADE SECRET

☐ Yes ☒ No

206.

UNKNOWN

If Subject to EPCRA, refer to instructions

COMMON NAME

207.

EHS*

☐ Yes ☒ No

208.

AUTOMATIC TRANSMISSION FLUID

CAS#

209.

*If EHS is "Yes," all amounts below must be in lbs.

UNKNOWN

FIRE CODE HAZARD CLASSES (Complete if required by local agency)

210.

UNKNOWN

HAZARDOUS MATERIAL
TYPE (Check one item only)

☒ a. PURE

☐ b. MIXTURE

☐ c. WASTE

211.

RADIOACTIVE ☐ Yes ☒ No

CURIES N/A

213.

PHYSICAL STATE
(Check one item only)

☐ a. SOLID

☒ b. LIQUID

☐ c. GAS

214.

LARGEST CONTAINER 55

215.

FED HAZARD CATEGORIES
(Check all that apply)

☒ a. FIRE

☐ b. REACTIVE

☐ c. PRESSURE RELEASE

☐ d. ACUTE HEALTH

☒ e. CHRONIC HEALTH

216.

AVERAGE DAILY AMOUNT

217.

MAXIMUM DAILY AMOUNT

218.

ANNUAL WASTE AMOUNT

219.

STATE WASTE CODE

220.

325

650

UNKNOWN

UNKNOWN

UNITS*

(Check one item only)

☒ a. GALLONS

☐ b. CUBIC FEET

☐ c. POUNDS

☐ d. TONS

* If EHS, amount must be in pounds.

221.

DAYS ON SITE

222.

365

STORAGE

CONTAINER

☐ a. ABOVEGROUND TANK

☐ e. PLASTIC/NONMETALLIC DRUM

☐ i. FIBER DRUM

☐ m. GLASS BOTTLE

☐ q. RAIL CAR

☐ b. UNDERGROUND TANK

☐ f. CAN

☐ j. BAG

☐ n. PLASTIC BOTTLE

☐ r. OTHER

☐ c. TANK INSIDE BUILDING

☐ g. CARBOY

☐ k. BOX

☐ o. TOTE BIN

☒ d. STEEL DRUM

☐ h. SILO

☐ l. CYLINDER

☐ p. TANK WAGON

223.

STORAGE PRESSURE

☒ a. AMBIENT

☐ b. ABOVE AMBIENT

☐ c. BELOW AMBIENT

224.

STORAGE TEMPERATURE

☒ a. AMBIENT

☐ b. ABOVE AMBIENT

☐ c. BELOW AMBIENT

☐ d. CRYOGENIC

225.

% WT

HAZARDOUS COMPONENT (For mixture or waste only)

EHS

CAS #

1.

226.

227.

☐ Yes ☐ No

228.

229.

2.

230.

231.

☐ Yes ☐ No

232.

233.

3.

234.

235.

☐ Yes ☐ No

236.

237.

4.

238.

239.

☐ Yes ☐ No

240.

241.

5.

242.

243.

☐ Yes ☐ No

244.

245.

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

ADDITIONAL LOCALLY COLLECTED INFORMATION

246.

DOT Hazard Class: _____

If EPCRA, Please Sign Here.

**UNIFIED PROGRAM CONSOLIDATED FORM
HAZARDOUS MATERIALS
HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION**

(one page per material per building or area)

<input type="checkbox"/> ADD		<input type="checkbox"/> DELETE		<input checked="" type="checkbox"/> REVISE		200.		Page ____ of ____					
I. FACILITY INFORMATION													
BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As)									3.				
CENTRAL LANDFILL													
CHEMICAL LOCATION						201.	CHEMICAL LOCATION CONFIDENTIAL EPCRA			202.			
SEE MAP							<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO						
FACILITY ID # (Agency Use Only)								MAP #	203.	GRID #	204.		
								NONE		NONE			
II. CHEMICAL INFORMATION													
CHEMICAL NAME						205.	TRADE SECRET				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	206.	
UNKNOWN							If Subject to EPCRA, refer to instructions						
COMMON NAME						207.	EHS*				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	208.	
HYDRAULIC FLUID													
CAS#						209.	*If EHS is "Yes," all amounts below must be in lbs.						
UNKNOWN													
FIRE CODE HAZARD CLASSES (Complete if required by local agency)										210.			
UNKNOWN													
HAZARDOUS MATERIAL TYPE (Check one item only)		<input checked="" type="checkbox"/> a. PURE	<input type="checkbox"/> b. MIXTURE	<input type="checkbox"/> c. WASTE	211.	RADIOACTIVE		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	212.	CURIES N/A		213.	
PHYSICAL STATE (Check one item only)		<input type="checkbox"/> a. SOLID	<input checked="" type="checkbox"/> b. LIQUID	<input type="checkbox"/> c. GAS	214.	LARGEST CONTAINER		55				215.	
FED HAZARD CATEGORIES (Check all that apply)		<input checked="" type="checkbox"/> a. FIRE	<input type="checkbox"/> b. REACTIVE	<input type="checkbox"/> c. PRESSURE RELEASE		<input type="checkbox"/> d. ACUTE HEALTH	<input checked="" type="checkbox"/> e. CHRONIC HEALTH					216.	
AVERAGE DAILY AMOUNT		217.		MAXIMUM DAILY AMOUNT		218.		ANNUAL WASTE AMOUNT		219.		STATE WASTE CODE	220.
J0				600				UNKNOWN				UNKNOWN	
UNITS* (Check one item only)		<input checked="" type="checkbox"/> a. GALLONS	<input type="checkbox"/> b. CUBIC FEET	<input type="checkbox"/> c. POUNDS	<input type="checkbox"/> d. TONS			221.		DAYS ON SITE		222.	
				* If EHS, amount must be in pounds.									
STORAGE CONTAINER		<input type="checkbox"/> a. ABOVEGROUND TANK	<input type="checkbox"/> e. PLASTIC/NONMETALLIC DRUM	<input type="checkbox"/> i. FIBER DRUM	<input type="checkbox"/> m. GLASS BOTTLE	<input type="checkbox"/> q. RAIL CAR							
		<input type="checkbox"/> b. UNDERGROUND TANK	<input type="checkbox"/> f. CAN	<input type="checkbox"/> j. BAG	<input type="checkbox"/> n. PLASTIC BOTTLE	<input type="checkbox"/> r. OTHER							
		<input type="checkbox"/> c. TANK INSIDE BUILDING	<input type="checkbox"/> g. CARBOY	<input type="checkbox"/> k. BOX	<input type="checkbox"/> o. TOTE BIN								
		<input checked="" type="checkbox"/> d. STEEL DRUM	<input type="checkbox"/> h. SILO	<input type="checkbox"/> l. CYLINDER	<input type="checkbox"/> p. TANK WAGON								
STORAGE PRESSURE		<input checked="" type="checkbox"/> a. AMBIENT	<input type="checkbox"/> b. ABOVE AMBIENT	<input type="checkbox"/> c. BELOW AMBIENT								224.	
STORAGE TEMPERATURE		<input checked="" type="checkbox"/> a. AMBIENT	<input type="checkbox"/> b. ABOVE AMBIENT	<input type="checkbox"/> c. BELOW AMBIENT		<input type="checkbox"/> d. CRYOGENIC						225.	
% WT		HAZARDOUS COMPONENT (For mixture or waste only)				EHS		CAS #					
1.	226.					227.	<input type="checkbox"/> Yes <input type="checkbox"/> No	228.			229.		
2.	230.					231.	<input type="checkbox"/> Yes <input type="checkbox"/> No	232.			233.		
3.	234.					235.	<input type="checkbox"/> Yes <input type="checkbox"/> No	236.			237.		
4.	238.					239.	<input type="checkbox"/> Yes <input type="checkbox"/> No	240.			241.		
5.	242.					243.	<input type="checkbox"/> Yes <input type="checkbox"/> No	244.			245.		
If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.													
ADDITIONAL LOCALLY COLLECTED INFORMATION													
DOT Hazard Class: _____													
If EPCRA, Please Sign Here.													

UNIFIED PROGRAM CONSOLIDATED FORM
HAZARDOUS MATERIALS
HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

(one page per material per building or area)

☐ ADD

☐ DELETE

☒ REVISE

200.

Page ____ of ____

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As)

3.

CENTRAL LANDFILL (CEN_5)

CHEMICAL LOCATION

201.

CHEMICAL LOCATION CONFIDENTIAL EPCRA

202.

RECYCLE AREA - SEE FIGURE 3

☐ YES ☒ NO

FACILITY ID #

(Agency Use Only)

1.

MAP #

203.

GRID #

204.

NONE

NONE

II. CHEMICAL INFORMATION

CHEMICAL NAME

205.

TRADE SECRET

☐ Yes ☒ No

206.

SULFURIC ACID

If Subject to EPCRA, refer to instructions

COMMON NAME

207.

EHS*

☐ Yes ☒ No

208.

BATTERY ACID (AS BATTERIES)

CAS#

209.

*If EHS is "Yes," all amounts below must be in lbs.

7664-93-9

FIRE CODE HAZARD CLASSES (Complete if required by local agency)

210.

UNKNOWN

HAZARDOUS MATERIAL
TYPE (Check one item only)

☒ a. PURE

☐ b. MIXTURE

☐ c. WASTE

211.

RADIOACTIVE

☐ Yes ☒ No

CURIES N/A

213.

PHYSICAL STATE
(Check one item only)

☐ a. SOLID

☒ b. LIQUID

☒ c. GAS

214.

LARGEST CONTAINER HOLDS 40 UNITS

215.

FED HAZARD CATEGORIES
(Check all that apply)

☒ a. FIRE

☐ b. REACTIVE

☐ c. PRESSURE RELEASE

☒ d. ACUTE HEALTH

☐ e. CHRONIC HEALTH

216.

AVERAGE DAILY AMOUNT

217.

MAXIMUM DAILY AMOUNT

218.

ANNUAL WASTE AMOUNT

219.

STATE WASTE CODE

220.

400

1585

142,680

UNKNOWN

UNITS*
(Check one item only)

☐ a. GALLONS

☐ b. CUBIC FEET

☒ c. POUNDS

☐ d. TONS

* If EHS, amount must be in pounds.

221.

DAYS ON SITE
365

222.

STORAGE
CONTAINER

☐ a. ABOVEGROUND TANK

☐ e. PLASTIC/NONMETALLIC DRUM

☐ i. FIBER DRUM

☐ m. GLASS BOTTLE

☐ q. RAIL CAR

☐ b. UNDERGROUND TANK

☐ f. CAN

☐ j. BAG

☐ n. PLASTIC BOTTLE

☒ r. OTHER

☐ c. TANK INSIDE BUILDING

☐ g. CARBOY

☐ k. BOX

☐ o. TOTE BIN

☐ d. STEEL DRUM

☐ h. SILO

☐ l. CYLINDER

☐ p. TANK WAGON

223.

STORAGE PRESSURE

☒ a. AMBIENT

☐ b. ABOVE AMBIENT

☐ c. BELOW AMBIENT

224.

STORAGE TEMPERATURE

☒ a. AMBIENT

☐ b. ABOVE AMBIENT

☐ c. BELOW AMBIENT

☐ d. CRYOGENIC

225.

% WT

HAZARDOUS COMPONENT (For mixture or waste only)

EHS

CAS #

1. 226.

227.

☐ Yes ☐ No

228.

229.

2. 230.

231.

☐ Yes ☐ No

232.

233.

3. 234.

235.

☐ Yes ☐ No

236.

237.

4. 238.

239.

☐ Yes ☐ No

240.

241.

5. 242.

243.

☐ Yes ☐ No

244.

245.

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

ADDITIONAL LOCALLY COLLECTED INFORMATION

246.

DOT Hazard Class: _____

If EPCRA, Please Sign Here.

UNIFIED PROGRAM CONSOLIDATED FORM
HAZARDOUS MATERIALS
HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

(one page per material per building or area)

<input type="checkbox"/> ADD		<input type="checkbox"/> DELETE		<input checked="" type="checkbox"/> REVISE		200.		Page of ____	
I. FACILITY INFORMATION									
BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As)								3.	
CENTRAL LANDFILL (CEN_6)									
CHEMICAL LOCATION						201.		CHEMICAL LOCATION CONFIDENTIAL EPCRA	
VARIOUS LOCATIONS - SEE FIGURE 3								<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
FACILITY ID #						MAP #		GRID #	
(Agency Use Only)						NONE		NONE	
II. CHEMICAL INFORMATION									
CHEMICAL NAME						205.		TRADE SECRET	
TPH-D								<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
COMMON NAME						207.		EHS*	
DIESEL FUEL								<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
CAS#						209.		*If EHS is "Yes," all amounts below must be in lbs.	
UNKNOWN									
FIRE CODE HAZARD CLASSES (Complete if required by local agency)									
UNKNOWN									
HAZARDOUS MATERIAL TYPE (Check one item only)		<input checked="" type="checkbox"/> a. PURE		<input type="checkbox"/> b. MIXTURE		<input type="checkbox"/> c. WASTE		211.	
						RADIOACTIVE		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
								212.	
						CURIES		N/A	
								213.	
PHYSICAL STATE (Check one item only)		<input type="checkbox"/> a. SOLID		<input checked="" type="checkbox"/> b. LIQUID		<input type="checkbox"/> c. GAS		214.	
						LARGEST CONTAINER		5000	
								215.	
FED HAZARD CATEGORIES (Check all that apply)		<input checked="" type="checkbox"/> a. FIRE		<input checked="" type="checkbox"/> b. REACTIVE		<input type="checkbox"/> c. PRESSURE RELEASE		<input type="checkbox"/> d. ACUTE HEALTH	
								<input checked="" type="checkbox"/> e. CHRONIC HEALTH	
								216.	
AVERAGE DAILY AMOUNT		217.		MAXIMUM DAILY AMOUNT		218.		ANNUAL WASTE AMOUNT	
10,000				20,000				NONE	
								219.	
								220.	
UNITS* (Check one item only)		<input checked="" type="checkbox"/> a. GALLONS		<input type="checkbox"/> b. CUBIC FEET		<input type="checkbox"/> c. POUNDS		<input type="checkbox"/> d. TONS	
								* If EHS, amount must be in pounds.	
								221.	
STORAGE CONTAINER		<input checked="" type="checkbox"/> a. ABOVEGROUND TANK		<input type="checkbox"/> e. PLASTIC/NONMETALLIC DRUM		<input type="checkbox"/> i. FIBER DRUM		<input type="checkbox"/> m. GLASS BOTTLE	
		<input type="checkbox"/> b. UNDERGROUND TANK		<input type="checkbox"/> f. CAN		<input type="checkbox"/> j. BAG		<input type="checkbox"/> n. PLASTIC BOTTLE	
		<input type="checkbox"/> c. TANK INSIDE BUILDING		<input type="checkbox"/> g. CARBOY		<input type="checkbox"/> k. BOX		<input type="checkbox"/> o. TOTE BIN	
		<input type="checkbox"/> d. STEEL DRUM		<input type="checkbox"/> h. SILO		<input type="checkbox"/> l. CYLINDER		<input checked="" type="checkbox"/> p. TANK WAGON	
								223.	
STORAGE PRESSURE		<input checked="" type="checkbox"/> a. AMBIENT		<input type="checkbox"/> b. ABOVE AMBIENT		<input type="checkbox"/> c. BELOW AMBIENT		224.	
STORAGE TEMPERATURE		<input checked="" type="checkbox"/> a. AMBIENT		<input type="checkbox"/> b. ABOVE AMBIENT		<input type="checkbox"/> c. BELOW AMBIENT		<input type="checkbox"/> d. CRYOGENIC	
								225.	
% WT		HAZARDOUS COMPONENT (For mixture or waste only)				EHS		CAS #	
1.						<input type="checkbox"/> Yes <input type="checkbox"/> No			
								226.	
								227.	
								228.	
								229.	
2.						<input type="checkbox"/> Yes <input type="checkbox"/> No			
								230.	
								231.	
								232.	
								233.	
3.						<input type="checkbox"/> Yes <input type="checkbox"/> No			
								234.	
								235.	
								236.	
								237.	
4.						<input type="checkbox"/> Yes <input type="checkbox"/> No			
								238.	
								239.	
								240.	
								241.	
5.						<input type="checkbox"/> Yes <input type="checkbox"/> No			
								242.	
								243.	
								244.	
								245.	
If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.									
ADDITIONAL LOCALLY COLLECTED INFORMATION									
DOT Hazard Class: _____									
If EPCRA, Please Sign Here.									

UNIFIED PROGRAM CONSOLIDATED FORM
HAZARDOUS MATERIALS
HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

(one page per material per building or a.)

☐ ADD

☐ DELETE

☒ REVISE

200.

Page ____ of ____

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As)

3.

CENTRAL LANDFILL (CEN 7)

CHEMICAL LOCATION

201.

TIPPING BUILDING FLOOR - BLD I

CHEMICAL LOCATION CONFIDENTIAL EPCRA

202.

☐ YES ☒ NO

FACILITY ID #

(Agency Use Only)

1.

MAP #

203.

GRID #

204.

NONE

NONE

II. CHEMICAL INFORMATION

CHEMICAL NAME

205.

METHANE, DICHLORODIFLUORO

TRADE SECRET

☐ Yes ☒ No

206.

If Subject to EPCRA, refer to instructions

COMMON NAME

207.

FREON 12

EHS*

☐ Yes ☒ No

208.

CAS#

209.

75-71-8

*If EHS is "Yes," all amounts below must be in lbs.

FIRE CODE HAZARD CLASSES (Complete if required by local agency)

210.

HAZARDOUS MATERIAL
TYPE (Check one item only)

☒ a. PURE

☐ b. MIXTURE

☐ c. WASTE

211.

RADIOACTIVE

☐ Yes ☒ No

CURIES

213.

PHYSICAL STATE
(Check one item only)

☐ a. SOLID

☐ b. LIQUID

☒ c. GAS

214.

LARGEST CONTAINER UNKNOWN

215.

FED HAZARD CATEGORIES
(Check all that apply)

☐ a. FIRE

☐ b. REACTIVE

☒ c. PRESSURE RELEASE

☒ d. ACUTE HEALTH

☐ e. CHRONIC HEALTH

216.

AVERAGE DAILY AMOUNT

217.

MAXIMUM DAILY AMOUNT

218.

ANNUAL WASTE AMOUNT

219.

STATE WASTE CODE

220.

UNKNOWN

UNKNOWN

UNKNOWN

UNKNOWN

UNITS*

(Check one item only)

☐ a. GALLONS

☐ b. CUBIC FEET

☒ c. POUNDS

☐ d. TONS

* If EHS, amount must be in pounds.

221.

DAYS ON SITE

222.

365

STORAGE

CONTAINER

☐ a. ABOVEGROUND TANK

☐ e. PLASTIC/NONMETALLIC DRUM

☐ i. FIBER DRUM

☐ m. GLASS BOTTLE

☐ q. RAIL CAR

☐ b. UNDERGROUND TANK

☐ f. CAN

☐ j. BAG

☐ n. PLASTIC BOTTLE

☐ r. OTHER

☐ c. TANK INSIDE BUILDING

☐ g. CARBOY

☐ k. BOX

☐ o. TOTE BIN

☐ d. STEEL DRUM

☐ h. SILO

☒ l. CYLINDER

☐ p. TANK WAGON

223.

STORAGE PRESSURE

☐ a. AMBIENT

☐ b. ABOVE AMBIENT

☐ c. BELOW AMBIENT

224.

STORAGE TEMPERATURE

☐ a. AMBIENT

☐ b. ABOVE AMBIENT

☐ c. BELOW AMBIENT

☐ d. CRYOGENIC

225.

% WT

HAZARDOUS COMPONENT (For mixture or waste only)

EHS

CAS #

1.

226.

227.

☐ Yes ☐ No

228.

229.

2.

230.

231.

☐ Yes ☐ No

232.

233.

3.

234.

235.

☐ Yes ☐ No

236.

237.

4.

238.

239.

☐ Yes ☐ No

240.

241.

5.

242.

243.

☐ Yes ☐ No

244.

245.

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

ADDITIONAL LOCALLY COLLECTED INFORMATION

246.

DOT Hazard Class: _____

If EPCRA, Please Sign Here.

**UNIFIED PROGRAM CONSOLIDATED FORM
HAZARDOUS MATERIALS
HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION**

(one page per material per building or area)

☒ ADD

☐ DELETE

☐ REVISE

200.

Page ____ of ____

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA -- Doing Business As)

3.

CENTRAL LANDFILL(CEN 8)

CHEMICAL LOCATION

201.

AREA A - SEE FIGURE 3

CHEMICAL LOCATION CONFIDENTIAL EPCRA

202.

☐ YES ☒ NO

FACILITY ID #

(Agency Use Only)

MAP #

203.

GRID #

204.

NONE

NONE

II. CHEMICAL INFORMATION

CHEMICAL NAME

205.

TPH-G

TRADE SECRET

☐ Yes ☒ No

206.

If Subject to EPCRA, refer to instructions

COMMON NAME

207.

UNLEADED GASOLINE

EHS*

☐ Yes ☒ No

208.

CAS#

209.

UNKNOWN

*If EHS is "Yes," all amounts below must be in lbs.

FIRE CODE HAZARD CLASSES (Complete if required by local agency)

210.

UNKNOWN

HAZARDOUS MATERIAL
TYPE (Check one item only)

☐ a. PURE

☒ b. MIXTURE

☒ c. WASTE

211.

RADIOACTIVE

☐ Yes ☒ No

CURIES N/A

213.

PHYSICAL STATE

(Check one item only)

☐ a. SOLID

☒ b. LIQUID

☐ c. GAS

214.

LARGEST CONTAINER 3000

215.

FED HAZARD CATEGORIES
(Check all that apply)

☒ a. FIRE

☒ b. REACTIVE

☐ c. PRESSURE RELEASE

☐ d. ACUTE HEALTH

☒ e. CHRONIC HEALTH

216.

AVERAGE DAILY AMOUNT

217.

1500

MAXIMUM DAILY AMOUNT

218.

3000

ANNUAL WASTE AMOUNT

219.

NONE

STATE WASTE CODE

220.

UNKNOWN

UNITS*

(Check one item only)

☒ a. GALLONS

☐ b. CUBIC FEET

☐ c. POUNDS

☐ d. TONS

* If EHS, amount must be in pounds.

221.

DAYS ON SITE

222.

365

STORAGE

CONTAINER

☒ a. ABOVEGROUND TANK

☐ c. PLASTIC/NONMETALLIC DRUM

☐ i. FIBER DRUM

☐ m. GLASS BOTTLE

☐ q. RAIL CAR

☐ b. UNDERGROUND TANK

☐ f. CAN

☐ j. BAG

☐ n. PLASTIC BOTTLE

☐ r. OTHER

☐ c. TANK INSIDE BUILDING

☐ g. CARBOY

☐ k. BOX

☐ o. TOTE BIN

☐ d. STEEL DRUM

☐ h. SILO

☐ l. CYLINDER

☐ p. TANK WAGON

223.

STORAGE PRESSURE

☒ a. AMBIENT

☐ b. ABOVE AMBIENT

☐ c. BELOW AMBIENT

224.

STORAGE TEMPERATURE

☒ a. AMBIENT

☐ b. ABOVE AMBIENT

☐ c. BELOW AMBIENT

☐ d. CRYOGENIC

225.

% WT

HAZARDOUS COMPONENT (For mixture or waste only)

EHS

CAS #

1.

226.

227.

☐ Yes ☐ No

228.

229.

2.

230.

231.

☐ Yes ☐ No

232.

233.

3.

234.

235.

☐ Yes ☐ No

236.

237.

4.

238.

239.

☐ Yes ☐ No

240.

241.

5.

242.

243.

☐ Yes ☐ No

244.

245.

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

ADDITIONAL LOCALLY COLLECTED INFORMATION

246.

DOT Hazard Class: _____

If EPCRA, Please Sign Here.

UNIFIED PROGRAM CONSOLIDATED FORM HAZARDOUS MATERIALS HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

(one page per material per building or area)

☒ ADD

☐ DELETE

☐ REVISE

200.

Page ____ of ____

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As)

CENTRAL LANDFILL (CEN_9)

3.

CHEMICAL LOCATION

AREA C - FLEET MAINTENANCE

201.

CHEMICAL LOCATION CONFIDENTIAL EPCRA

☐ YES ☒ NO

202.

FACILITY ID #
(Agency Use Only)

MAP #

203.

GRID #

204.

NONE

NONE

II. CHEMICAL INFORMATION

CHEMICAL NAME

UNKNOWN

205.

TRADE SECRET

☐ Yes ☒ No

206.

If Subject to EPCRA, refer to instructions

COMMON NAME

MINERAL SPIRITS

207.

EHS*

☐ Yes ☒ No

208.

CAS#

UNKNOWN

209.

*If EHS is "Yes," all amounts below must be in lbs.

FIRE CODE HAZARD CLASSES (Complete if required by local agency)

UNKNOWN

210.

HAZARDOUS MATERIAL
TYPE (Check one item only)

☐ a. PURE ☒ b. MIXTURE ☐ c. WASTE

211.

RADIOACTIVE ☐ Yes ☒ No

212.

CURIES N/A

213.

PHYSICAL STATE
(Check one item only)

☐ a. SOLID ☒ b. LIQUID ☐ c. GAS

214.

LARGEST CONTAINER

5

215.

FED HAZARD CATEGORIES
(Check all that apply)

☒ a. FIRE ☐ b. REACTIVE ☐ c. PRESSURE RELEASE ☒ d. ACUTE HEALTH ☐ e. CHRONIC HEALTH

216.

AVERAGE DAILY AMOUNT

217.

35

MAXIMUM DAILY AMOUNT

218.

50

ANNUAL WASTE AMOUNT

219.

NONE

STATE WASTE CODE

220.

UNKNOWN

UNITS*
(Check one item only)

☒ a. GALLONS ☐ b. CUBIC FEET ☐ c. POUNDS ☐ d. TONS

221.

* If EHS, amount must be in pounds.

DAYS ON SITE
365

222.

STORAGE

CONTAINER

☐ a. ABOVEGROUND TANK ☐ e. PLASTIC/NONMETALLIC DRUM ☐ i. FIBER DRUM ☐ m. GLASS BOTTLE ☐ q. RAIL CAR
☐ b. UNDERGROUND TANK ☐ f. CAN ☐ j. BAG ☐ n. PLASTIC BOTTLE ☐ r. OTHER
☐ c. TANK INSIDE BUILDING ☐ g. CARBOY ☐ k. BOX ☐ o. TOTE BIN
☒ d. STEEL DRUM ☐ h. SILO ☐ l. CYLINDER ☐ p. TANK WAGON

223.

STORAGE PRESSURE

☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT

224.

STORAGE TEMPERATURE

☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC

225.

% WT

HAZARDOUS COMPONENT (For mixture or waste only)

EHS

CAS #

1.

226.

227.

☐ Yes ☐ No

228.

229.

2.

230.

231.

☐ Yes ☐ No

232.

233.

3.

234.

235.

☐ Yes ☐ No

236.

237.

4.

238.

239.

☐ Yes ☐ No

240.

241.

5.

242.

243.

☐ Yes ☐ No

244.

245.

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

ADDITIONAL LOCALLY COLLECTED INFORMATION

DOT Hazard Class: _____

246.

If EPCRA, Please Sign Here.

CONTINGENCY PLAN
FOR
CENTRAL DISPOSAL SITE
SONOMA COUNTY, CALIFORNIA



SONOMA COUNTY
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC WORKS
INTEGRATED WASTE DIVISION

Administrative Office
2300 County Center Drive, Suite B 100
Santa Rosa, California 95403
Phone: (707) 565-2231

Operations Headquarters
500 Mecham Road
Petaluma, CA 94952
Phone: (707) 792-0547

JUNE 2002

CONTINGENCY PLAN

CENTRAL DISPOSAL SITE SONOMA COUNTY, CA

JUNE 2002

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FIGURES

FIGURE 1:	Site Vicinity Map
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APPENDIX A:	Emergency Coordinators, Phone Numbers and Agencies
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EXHIBITS

EXHIBIT 1:	Fire Supression System, Public Tipping Facility
EXHIBIT 2:	Smoking Policy, November 1997
EXHIBIT 2a:	Addendum to November 1997 Smoking Policy

CONTINGENCY PLAN

CENTRAL DISPOSAL SITE

JUNE 2002

General Information

The Contingency Plan has been prepared in accordance with Title 40 CFR, Subpart D of Parts 264 and 265, and the California Code of Regulations (CCR) Title 22, Article 20, following the provisions set forth in 40 CFR, Part 109. The principles of the Contingency Plan are meant to establish a criteria by which to minimize damage that might result from an accidental discharge of hazardous material to a receiving waterway in the vicinity of the Central Disposal Site should the primary line of defense, detailed in the SPCC Plan, fail.

The purpose of the Contingency Plan is to reduce the threat to the safety and health to both County employees and residents of the neighboring community and their environment. Therefore, it is important that in the case of an accidental spill or release, the principles of the Contingency Plan are quickly and effectively carried out.

A detailed outline of Central Disposal's owner, operator, facility contacts and facility description are provided in the first several sections of the SPCC Plan, and will not be repeated here.

1.0 EVALUATION OF EMERGENCY POTENTIAL

Several emergency situations that could occur at the facility have been identified and are listed in this section. Although the list is not comprehensive, it does reflect major health and environmental hazards that could arise. Should any of these situations arise, the appropriate provision of the Contingency Plan must be followed.

1.1 OIL AND CHEMICAL STORAGE AREAS

- 1) A spill may occur due to loss of drum integrity or leakage directly from a drum.
- 2) A fire might break out from the ignition of stored chemicals by an electrical source malfunction or electrostatic discharge.
- 3) A spill or fire could result from damaged or overturned drums or other containers during shipping and receiving.
- 4) A release to the air caused by overheating of volatile chemical compounds in containers.
- 5) A release of chemicals to soil or subsurface waters due to improper discharge of water and spilled chemicals from storage areas.
- 6) Chemical spills during transfer operations of drummed or containerized materials.

1.2 FUELING AREAS

- 1) A fuel spill caused by damage to or deterioration of plumbing or fittings.
- 2) A fuel spill due to overfilling equipment tanks.
- 3) A fuel spill due to faulty plumbing or transfer connections at the transport loading/unloading areas.
- 4) A rupture of transport tankers due to inappropriate venting or heating during transport loading/unloading areas.
- 5) A spill due to improper transfer of fuel to an inappropriate area, container, or storage tank.
- 6) A release to the air caused by overheating of volatile compounds in the storage tanks.
- 7) Fire due to static discharge or electrical malfunction.

1.3 WASTE OIL STORAGE AREAS

- 1) Spills during transfer operations.
- 2) Spills resulting from the loss of drum integrity or leakage directly from a drum.
- 3) Fire due to static discharge or electrical malfunction.
- 4) Fire or explosion caused by the violent reaction of inappropriately stored/mixed materials and compounds.

1.4 ROCK EXCAVATION

- 1) Fire due to various causes, including drilling and landfill gas.
- 2) Spills due to leakage of transport fuel or product from trucks or vehicles.
- 3) Explosion or fire from explosives used during blasting.

2.0 ORGANIZATIONAL STRUCTURE AND EMERGENCY COORDINATORS

2.1 ORGANIZATIONAL STRUCTURE

At the present time, there are approximately 68 full time and extra help employees working at the Central Disposal Site, including service personnel and management personnel.

2.2 DEPARTMENTAL RESPONSIBILITIES

Both management and service personnel have certain responsibilities associated with ongoing operations and emergency procedures. Those responsibilities directly relevant to implementing the Contingency Plan are listed below.

2.2.1 All personnel must:

- ✓ Be thoroughly trained and familiar with emergency response measures, emergency alarms, environmental upset reporting procedures, and evacuation.
- ✓ Be familiar with fire, medical, and other safety and environmental response procedures.
- ✓ Immediately report suspected environmental or safety violations to management.
- ✓ Perform routine maintenance and housekeeping tasks as required.

2.2.2 Management/Supervisory personnel must:

- ✓ Designate appropriate personnel to implement the Contingency Plan, including Emergency Coordinators for each shift.
- ✓ Routinely inspect vessels, containers, vents, plumbing, and other equipment for integrity and wear.
- ✓ Ensure that employees periodically review the Contingency Plan and that they feel competent to take the necessary action in the event of an emergency.
- ✓ Conduct meetings, training, and provide resources for developing spill response procedures and other environmental monitoring and spill cleanup.
- ✓ Periodically inspect and perform preventative maintenance on the interior and exterior of storage tanks.
- ✓ In an emergency, notify the Department of Emergency Services as well as the appropriate local, state and federal agencies. A comprehensive list of Emergency Coordinators, Phone Numbers and Agencies can be found in Appendix A.
- ✓ Ensure that tasks and responsibilities described herein are carried out in a safe and environmentally sound manner.

In the wake of an emergency, such as a fire, an explosion, or a release that threatens human health, the environment, or property outside the facility, Emergency Coordinators are to complete and submit a Spill Response Notification Form (Appendix B) to federal, state, and local agencies.

2.2.3 Service personnel must:

- ✓ Faithfully and accurately follow all operation procedures, including the procedures of this Contingency Plan.
- ✓ Immediately report safety problems to management personnel.
- ✓ Maintain good housekeeping practices in the process and storage areas.
- ✓ Report to management any equipment conditions that might result in environmental degradation.
- ✓ Perform preventative maintenance according to manufacturing specifications.
- ✓ Perform daily walk around inspections of tankers, tractors, and trailers for equipment wear and deterioration before commencing operations. In particular, valves, hoses, and pumps must be maintained in a safe and usable condition. Note and report any and all items in need of repair.
- ✓ Use drip pans or buckets or adsorbent material underneath fittings, couplings, and manifolds when transferring raw materials.
- ✓ Maintain safety and protective gear.
- ✓ Wear appropriate protective gear when transferring or handling raw materials.

2.3 DESIGNATED EMERGENCY COORDINATORS

Specific site personnel have been designated by management to act as Emergency Coordinators in case of a spill, fire, or other emergency at this facility. It is the job of the Emergency Coordinators to aid service personnel or to act directly by initiating contact with the Department of Emergency Services (DES) and dialing **911**. Once DES has arrived on site they will assume responsibility for coordinating the different emergency service agencies. A list of Emergency Coordinators has been compiled and has been included as Appendix A.

It is the responsibility of service personnel to contact the Emergency Coordinator in the event of an environmental or other emergency, as well as to implement the appropriate portions of the Contingency Plan.

In the event of an emergency, the Emergency Coordinator, or alternate is responsible for implementing the facilities Contingency Plan and for notifying emergency response authorities. In addition, regulations *require* that an Emergency Coordinator *always* be available, either on-site or on call and be able to reach the facility quickly in order to carry out the contingency plan. (40 CFR 264.55 and 40 CFR 265.55).

3.0 IMPLEMENTATION

3.1 IMPLEMENTATION REQUIREMENTS

In the case of an emergency that threatens human safety or health of the environment, the Emergency Coordinator or alternate will implement the emergency response portion of this plan. In order to assist the Emergency Coordinator in his or her decision to implement the plan, the following criteria have been set up. If there is indecision whether or not to set the plan in motion because, for example, the degree of the emergency seems uncertain, the plan should be implemented until it is obvious that no emergency exists. It is better to err on the side of safety.

3.1.1 Spills

3.1.1.1 Implementation Criteria

Any of the following conditions require implementation of the plan.

- ✓ The spill could present a fire or explosion hazard.
- ✓ The spill could release toxic fumes or liquids.
- ✓ The spill cannot be readily contained on impervious surfaces.
- ✓ The spill cannot be readily contained on impervious surfaces, and presents a significant potential for present or future contamination of surface water or groundwater.
- ✓ The spill cannot be contained on County property.
- ✓ A spill of fuel or other material originating at the Landfill occurs on some site other than County property.
- ✓ The spill results in visible sheen of oil or other petroleum products on a receiving waterway.

For spills not meeting any of the above criteria, the decision to implement the Contingency Plan should be based on the following criteria:

- ✓ Quantity of materials spilled.
- ✓ Hazardous nature of materials spilled.
- ✓ Environmental, health and safety considerations of the particular area in which the spill occurred.

3.1.1.2 Agency Notification Requirements

In the event of a spill, various local, state and federal agencies will need to be notified. In California, state requirements mirror those of the federal government and require notification to the Department of Health Services (Appendix A) of spills in excess of the reportable quantity (RQ). The following is a synopsis of current requirements as set forth in 40 CFR, Part 302. Some of the chemicals found at Central that are subject to these requirements are listed along with their respective federal reportable quantities. If the amount of the spill in any 24-hour period exceeds the RQ listed, the spill must be reported immediately to the California Department of Health Services office at the telephone numbers listed in section 3.4, Table 3.4.1 of this plan.

Table 3.1.1: Materials and Reporting Quantities

Spilled Material	Reportable Quantity	
	Pounds	Approximate Gallons
Gasoline	100	18
Diesel Fuel	100	17
Methylene Chloride	1000	100
Acetone	10	760
Motor Oil	400	>55 ¹
Hydraulic Fluid	400	>55
Transmission Fluid	400	>55
Ethylene glycol	500	>55

Since additional, unlisted materials might be stored on County property, and because other factors will apply to these reporting requirements, County management should consult relevant sections of 40 CFR, Part 302 whether or not they need to report a specific spill event.

In addition, Section 304 of the Emergency Planning and community Right-to-Know Act of 1986 (EPCRA) requires that releases in excess of the reportable quantities that migrate beyond the facility boundaries must be reported to the state and local emergency response agencies. Such notification must be made immediately by telephone, radio, or in person. Telephone numbers for this and other agencies are listed in Appendix A of the "Plans Book" located in the main office. The notification must include the name, address, and EPA number (CAD 983 597 477) of the facility, the chemical name or identity of any substance involved in the release, an estimate of the quantities involved, the time and duration of the release, the media to which the release occurred, and any known or anticipated chronic or acute health risks associated with the released substance.

As soon as practicable following the release (maximum of fifteen days), a written follow up notice must be made to the state and local emergency response agencies. The follow up notice must include the information provided in the original verbal notification, as well as a description of actions taken to respond to and contain the release.

¹ As specified by the Department Of Emergency Services.

3.1.2 Fires

Any fire at the facility is cause for implementing the Contingency Plan. In the event of a fire in the Public Tipping Facility or in the fill, set guidelines apply and are included in the Emergency Response and Evacuation Plan. In addition, specialized emergency assistance should be summoned if any of the following conditions exists:

- ✓ If the fire releases toxic vapors or smoke from burning product or raw material.
- ✓ If there is a reasonable expectation that the fire will spread such that it presents a potential source of ignition for other hazardous materials.
- ✓ If the fire and fumes could spread to an off site location.
- ✓ If fire fighting procedures could lead to contamination of surface water or groundwater, or could generate contaminated runoff that could migrate to an off site location.

3.1.3 Explosion

Any explosion occurring (excluding planned blasting activities during rock excavation operations) at the Central Disposal Site is cause for implementing this plan. In addition, either of the following conditions are reason for implementing the plan:

- ✓ An imminent threat of explosion that may exist for any reason (an explosion could threaten human life or property, ignite hazardous materials or waste, or result in direct release of toxic material).
- ✓ An uncontrolled reaction at the facility leading, for example, to a fire or breach of a container.

3.1.4 Other Releases or Emergencies

The following miscellaneous conditions require implementing the contingency plan:

- ✓ The unregulated release of toxic vapors or fumes.
- ✓ Collapse or threats of collapse of fuel or chemical storage, or handling equipment due to earthquake, flood, windstorm, or other natural phenomenon.
- ✓ Any other condition that in the opinion of the Emergency Coordinator may present a significant threat to human health and safety, or the environment.

3.2 GENERAL EMERGENCY RESPONSE PROCEDURES

The following general procedures are applicable in all areas of the Central Disposal Site. Additional, more specific response procedures for particular types of emergencies are presented in Section 3.4. Since each person has different responsibilities, it is important that all employees be well versed in reporting emergencies and initiating portions of this Contingency Plan. Because employee and community safety is the primary concern, any situation that may be perceived as hazardous should be immediately reported to the appropriate supervisory staff or Emergency Coordinator.

3.2.1 Detection

A hazardous situation may be detected in a number of ways. This list is not intended to be exhaustive but is designed, rather, to reflect the types of circumstances that may lead an employee to evaluate the potential for emergency action.

- ✓ Unusual odors.
- ✓ Visible indications of leaks or spills.
- ✓ Abnormal heat generation, vibrations or sounds in storage or mixing tanks.
- ✓ The unexpected presence of smoke or fumes.
- ✓ Unexplained power outages.
- ✓ Visible, non-routine steam plumes from tank vents.
- ✓ Activation of any fail safe protective device or alarm.
- ✓ Substantial or rapid leakage from any tank or vault.
- ✓ The presence of smoke or visible fumes.
- ✓ Any other unusual condition that cannot be readily ascribed to normal operations.

3.2.2 Immediate Action

Once it has been determined that emergency action is necessary, the Contingency Plan should be set in motion; the following immediate steps should be taken:

- ✓ Notify co-workers to clear the area.
- ✓ Report to a supervisor immediately (any employee may declare an emergency and notify supervisors of the situation). To report a potentially hazardous condition, proceed to the office. Describe the nature and location of the problem to a supervisor or Emergency Coordinator.
- ✓ Evacuate the immediate area. If it is deemed necessary, the Emergency Coordinator or a designee should signal a general evacuation over the facility radio and phone system. **Evacuate Immediately!** Do not stop for belongings or continue working.
- ✓ The Emergency Coordinator should disseminate information, report conditions to management, and summon environmental or emergency assistance. If evacuation is necessary, the evacuation procedure found in the Emergency Response and Evacuation Plan should be followed. The designated evacuation routes shown in Figure 5 are to be included as a fundamental portion of the employee orientation training at the Central Disposal Site.

3.3 SPECIFIC EMERGENCY RESPONSE PROCEDURES

3.3.1 Hazardous Material Spills

At all times, there must be at least one employee either 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. The Emergency Coordinator must be thoroughly familiar with all aspects of the facility's Contingency Plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all plans and records within the facility, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the Contingency Plan.

In the case of a chemical spill it is the responsibility of the Site Supervisor, who will act as the Emergency Coordinator to notify emergency services and to communicate to management the size and scope of the emergency. If the primary Emergency Coordinator is not available the responsibility falls to an Alternate.

If the Emergency Coordinator determines that the facility has had a release, fire, or explosion that could threaten human health, or the environment, outside the facility, he must report his findings as follows:

(1) If the Emergency Coordinator's assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities. The Emergency Coordinator must be available to help appropriate officials decide whether local areas should be evacuated; and

(2) The Emergency Coordinator must immediately notify either the government official designated as the on-scene coordinator for that geographical area, (in the applicable regional contingency plan under part 1510 of this title) or the National Response Center (see Emergency Coordinators, Phone Numbers and Agencies, Appendix A).

Ordinarily, service employees are limited to first responder actions, such as detection, securing and denying access to the area and notifying the Emergency Coordinator. County employees should limit their response to defensive actions that will not compromise the safety of either themselves or other employees. The job of containing the release should be left to trained technicians and specialists. Cleanup will be performed by specially trained contractors. It is appropriate to contract cleanup specialists for any spill smaller than fifty-five gallons that has been determined to present a special hazard and cannot be safely handled by County employees or an uncontained spill consisting of more than fifty-five gallons of material, unless otherwise directed by the Emergency Coordinator

THE SAFETY OF ALL THE EMPLOYEES IS OF THE UTMOST CONSIDERATION. NO SPILL RESPONSE OR CLEANUP SHOULD BE ATTEMPTED OUTSIDE THE PURVIEW OF THE EMPLOYEE'S TRAINING AND WITHOUT THE USE OF PROPER SAFETY AND PROTECTIVE EQUIPMENT.

Additionally, no person should attempt to perform cleanup procedures without having been previously trained in the proper handling of spilled chemicals and their chemical, physical, and toxicological hazards.

3.3.1.1 General Procedures for Spill Cleanup

The following general procedure is meant for the cleanup of spills in any area.

- ✓ Notify the Emergency Coordinator or Alternate immediately
- ✓ If appropriate, sound alarms.
- ✓ Clear the immediate vicinity of the spill and make certain that employees are available to stand guard to prevent the exposure or contamination of people who unwittingly enter the spill site.
- ✓ Identify the spilled material and determine the amount of the spill.
- ✓ Obtain personal protective equipment and appropriate spill cleanup material.
- ✓ If not trained in spill response and chemical safety procedures, do not attempt cleanup.
- ✓ Begin containment procedures by blocking drains, catch basins, or other sources of discharge.
- ✓ Evacuate the facility if there is a possibility that personnel could become trapped.

In the case of an ignitable material spill use a combustible gas meter to detect the presence of volatile vapors, such as methane gas (gas detection are available in the main office). Obtain emergency fire extinguishers and bring them to the spill area. Extinguish, disconnect or shut down any possible ignition sources in the area. However, be careful not to shut down equipment when the process of shutting down might produce an arc that could ignite the spilled material.

Beginning at the edges of the spill, control the material by forming a barricade or a dike. Any absorbent material including diatomaceous earth, vermiculite, sand, dirt or other materials is suitable. Many of these materials are available in the spill kits, located throughout the facility.

After the material has been adequately contained (to the point where further spread of the spill has been halted) additional absorbent may be added to the material to sufficiently absorb the remainder of the spill. The direct recovery of spilled material, by pumping to a holding tank, may also be attempted if the quantities of spilled material are large enough.

Sweep, shovel, or squeegee absorbed material into dustpans or other suitable collection devices and place into approved 17-H ring top drums for disposal. Materials may alternatively be placed into double lined plastic bags prior to drumming. All containers should be labeled with their contents, as well as the name of a person who may be contacted for additional information regarding the material inside. Bags should be placed in drums and all drums should be stored in a secure area.

Note that absorbed materials maintain their hazardous properties. Ignitable material may still be ignitable after being absorbed and should be protected from sources of ignition. Caustics remain corrosive, and absorbed phenol must continue to be regarded as toxic. Following cleanup of the bulk of the spill, the spill area should be further cleaned using mops, brooms, or other cleanup equipment. Following a secondary cleanup with damp mops or other suitable procedures, all depleted cleanup materials should be noted and restocked to prevent depletion of cleanup material supplies.

Additional cleanup may be required to meet state or federal standards, depending on the nature and extent of the event. This effort may require soil excavation and chemical testing of the spill site. The standard of cleanup applied to cleanup of contaminated soil and other media depends on the specific substances involved in the contamination.

3.3.2 Fire Response

Fire constitutes a major potential hazard at the Central Disposal Site due to the large amount of combustible materials and flammable products on the site. The following general procedures should be followed in the event of a fire at the facility:

- 1) Upon detection of a fire immediately notify the Emergency Coordinator or your supervisor. Information should include your name, your location, the nature and extent of the fire, and any injuries that may have occurred.
- 2) The Emergency Coordinator or Site Supervisor should immediately evaluate the situation and, if visible flames exist, initiate orderly evacuation of the facility. The evacuation procedures described in section 3.3 should be followed.
- 3) The Emergency Coordinator or Site Supervisor should notify the fire department. He should use his judgment whether or not deal with the fire using site personnel or to wait for the fire department to arrive. Either way, the Site Supervisor should emphasize concern for the protection of employees and community safety when determining a course of action.
- 4) The Site Supervisor and first responders should stand by to assist emergency response teams and conduct orderly and safe evacuations of the public and nonessential personnel. The Emergency Coordinator will direct emergency vehicles, provide information regarding the nature of the fire and ignited components, and prepare an incident report of the incident.
- 5) Following a response by the local fire department, the Emergency Coordinator should evaluate potential environmental contamination due to runoff of contaminated fire fighting water. The Emergency Coordinator should take precautions to prevent contamination of personnel and off site migration of contaminated water.
- 6) Evacuation of the facilities may be warranted in the event of a chemical fire or emission of large amounts of smoke and toxic fumes. Evacuees should be directed to upwind areas to prevent exposure to toxic fumes or smoke. The fire department should be called to arrange for evacuations of downwind residents or industrial sites.
- 7) IN THE EVENT OF A CHEMICAL FIRE, BE ON THE LOOKOUT FOR EXPLOSIONS AND/OR TOXIC FUMES. NO COUNTY PERSONNEL ARE TO RESPOND TO CHEMICAL FIRES WITHOUT PREVIOUS TRAINING IN CHEMICAL HAZARDS, FIRE FIGHTING TECHNIQUES, AND PERSONAL PROTECTIVE GEAR APPLICATION. FIRE FIGHTING ACTIVITIES ARE RESTRICTED TO TRAINED FIRE FIGHTING PROFESSIONALS.

3.3.2.1 Fire In The Fill

Should a fire occur in the fill, employees are to implement the Emergency Response and Evacuation Plan.

3.3.2.2 Fire On The Tipping Floor

In the event of a fire in the Public Tipping Facility, employees are to implement the Emergency Response and Evacuation Plan.

3.3.3 Explosion Response

Explosions may occur at any site around the facility where combustible gasses or vapors have achieved concentrations between the upper and lower explosive limits. These concentrations are most likely to occur in chemical storage areas. Explosions in chemical storage areas present significant risk of environmental contamination due to released chemicals from these facilities.

In all cases of explosion, notification of the local fire department is required. Response to explosions by County employees should be restricted to evacuation and reporting measures. The Emergency Coordinator should ensure that reporting requirements have been met and that the fire and police departments have been adequately notified. Response to explosive events at the facility must be directed by qualified professionals and should be restricted to cooperating with and assisting the responding agencies.

In addition to the responses described in the section of fire response, the Emergency Coordinator should ensure that in case of explosion, an evaluation is made of the structure integrity of the facility in the area of the explosion, including an appraisal of the potential for future collapse of the facility.

DUST CONTROL PLAN
FOR
CENTRAL DISPOSAL SITE
SONOMA COUNTY, CALIFORNIA



SONOMA COUNTY
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC WORKS
INTEGRATED WASTE DIVISION

Administrative Office
2300 County Center Drive, Suite B 100
Santa Rosa, California 95403
Phone: (707) 565-2231

Operations Headquarters
500 Mecham Road
Petaluma, CA 94952
Phone: (707) 565-7940

DECEMBER 2002

DUST CONTROL PLAN

CENTRAL DISPOSAL SITE

DECEMBER 2002

Title 27 in Section 20800 states that *"the operator shall take adequate measures to minimize the creation of dust and prevent safety hazards due to obscured visibility"*. The industrial activities that generate dust are excavation of soil from borrow areas for cover, operations related to the rock extraction, including blasting, grading, and hauling, on-site traffic, and construction on-site.

The County has implemented various Best Management Practices (BMPs) to control dust created by the on-site operations. The previously described BMPs now apply to three construction projects: the Wetlands Mitigation Project, the Operations Improvement Project, and the East Canyon Expansion (Phases I and II, Part 1). The BMPs presently implemented for the various operations and construction projects are described below.

General Disposal Site Operations

1. Prior to opening the facility gates at 7:00 a.m., any dust prone areas are watered down.
2. During normal daily operations, water is sprayed as often as necessary from tanker trucks in areas where dust is created, such as at borrow sites, the dumping apron, wood and yard waste chipping areas, and on unpaved access and haul roads, to control the dust.
3. The County has increased its use of dust palliatives (natural saltbased products) in order to minimize dust on public and operational roads.
4. Operations is phasing out dirt moving and other operations that require dirt moving and removal at higher elevations that tend to be more susceptible to high winds and dust generation.
5. More staff is being trained to operate the three water trucks that the County has on-site in order to maximize dust control activities.
6. The County will increase its use of alternative daily cover, including posi-shell, a spray-on cover, that will greatly reduce earth work and dust generation.

Rock Extraction and Construction Projects

1. Construction areas will be watered as needed to control dust.
2. Water or other dust suppressants will be used on unpaved haul roads.
3. Watering will be done more frequently when wind speeds exceed 15 mph.
4. Dirt and rock stockpiles will be watered or otherwise protected with a dust suppressant.
5. Steps have been taken to educate contractors concerning earth moving activities in the late afternoon when wind speeds are generally higher.
6. Vehicle speeds will be limited to 15 mph on unpaved haul roads.
7. Integrated Waste Division staff will monitor the condition of the main access road and Hammel road, including their intersections with Mechem Road. The pavement will be cleaned by washing or sweeping whenever it is apparent that sufficient soil has been tracked or spilled on the pavement to cause substantial dust.
8. To the extent possible, where applicable, the contractor shall be required to remove all loose dirt and loose overburden material from the blasting area prior to drilling the blast holes.
9. For rock extraction activities, as directed by the County engineer, the contractor shall spray water over blast areas prior to blasting.
10. For rock extraction activities, as directed by the County engineer, the contractor shall avoid conducting a blast when the wind speed on the site exceeds 20 mph.
11. For future contracts involving earth moving activities the County will require contractors to perform better dust control with incentives to ensure that the work is done without generating excessive amounts of dust.

APPENDIX B-13

Dust Control Plan

COUNTY OF SONOMA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC WORKS
575 ADMINISTRATION DRIVE, ROOM 117A
SANTA ROSA, CALIFORNIA 95403

Edward J. Walker, Director



AREA CODE (707)
ROADS 527-2231
TRANSIT 585-7516
REFUSE 527-2231
AIRPORT 524-7243
AIR POLLUTION 433-5911
FAX 527-2620

May 17, 1999

File 50-01-17.10

Mr. Robert T. Hull
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

Re: Transmittal of Dust Control Plan, May 1999
Central Disposal Site, 500 Meham Road, Petaluma, CA
Plant No. 2254

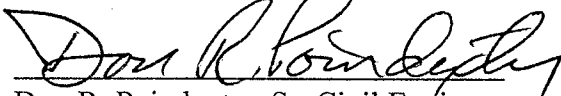
Dear Mr. Hull:

Please find attached the Integrated Waste Division's "Dust Control Plan", dated May 1999, for the referenced site. This document will be reviewed and updated annually and will be amended as needed to incorporate any significant changes that may occur at the Central Disposal Site.

If you have any questions or need additional information, please contact me at (707) 792-4958.

Very truly yours,

EDWARD J. WALKER, DIRECTOR
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS


Don R. Poindexter, Sr. Civil Engineer

Enclosure: SPCCP, Central Landfill Site, May 1999

c: Ed Walker, Ken Wells, Susan Klassen
Sheryl Bratton, w/encl.
Bob Swift, LEA, Sonoma County Environmental Health, w/encl.
Dave Evans, Terri Kinney, RWQCB, w/encl.
Tim Mayer, PRMD - Environmental, w/encl.
Paul Paddock, Will Bakx, Sonoma Compost, w/encl.
Charlie Young, Stony Point Rock Quarry, Inc., w/encl.

**SONOMA COUNTY
DEPARTMENT OF TRANSPORTATION & PUBLIC WORKS
INTEGRATED WASTE DIVISION**

**DUST CONTROL PLAN
CENTRAL DISPOSAL SITE
May 1999**

Title 27 in Section 20800 states that *"the operator shall take adequate measures to minimize the creation of dust and prevent safety hazards due to obscured visibility"*. The industrial activities that generate dust are excavation of soil from borrow areas for cover, operations related to the rock quarry, including blasting, grading, and hauling, on-site traffic, and construction on-site.

The County has implemented various Best Management Practices (BMPs) to control dust created by the on-site operations. Additional BMPs are now implemented to accommodate the Rock Extraction Project at the site. The BMPs presently implemented are described below.

General Disposal Site Operations

1. Prior to opening the facility gates at 7:00 a.m., any dust prone areas are watered down.
2. During normal daily operations, water is sprayed as often as necessary from tanker trucks in areas where dust is created, such as at borrow sites, the dumping apron, wood and yard waste chipping areas, and on unpaved access and haul roads, to control the dust.

Rock Extraction Project

1. Construction areas will be watered as needed to control dust.
2. Water or other dust suppressants will be used on unpaved haul roads.
3. Watering will be done more frequently when wind speeds exceed 15 mph.
4. Dirt and rock stockpiles will be watered or otherwise protected with a dust suppressant.
5. Vehicle speeds will be limited to 15 mph on unpaved haul roads.
6. Integrated Waste Division staff will monitor the condition of the main access road and Hammel road, including their intersections with Mechem Road. The pavement will be cleaned by washing or sweeping whenever it is apparent that sufficient soil has been tracked or spilled on the pavement to cause substantial dust.

DUST CONTROL PLAN

Central Disposal Site

May 1999

Page 2

7. Stony Point Quarry staff will monitor the condition of the quarry entrance and exit, including their intersections with Stony Point Road. The pavement will be cleaned by washing or sweeping whenever it is apparent that sufficient soil has been tracked or spilled on the pavement to cause substantial dust.
8. To the extent possible, the contractor shall be required to remove all loose dirt and loose overburden material from the blasting area prior to drilling the blast holes.
9. As directed by the County engineer, the contractor shall spray water over blast areas prior to blasting.
10. As directed by the County engineer, the contractor shall avoid conducting a blast when the wind speed on the site exceeds 20 mph.

EMERGENCY RESPONSE AND EVACUATION PLAN

FOR

**CENTRAL DISPOSAL SITE
SONOMA COUNTY, CALIFORNIA**



SONOMA COUNTY DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS INTEGRATED WASTE DIVISION

Administrative Office
2300 County Center Drive, Suite B 100
Santa Rosa, California 95403
Phone: (707) 565-2231

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Phone: (707) 792-0547

JUNE 2002

EMERGENCY RESPONSE AND EVACUATION PLAN

CENTRAL DISPOSAL SITE SONOMA COUNTY, CA

JUNE 2002

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EMERGENCY RESPONSE AND EVACUATION PLAN

CENTRAL DISPOSAL SITE

JUNE 2002

1.0 GENERAL INFORMATION

1.1 ASSESSMENT

Evaluate the situation by asking the following questions:

- ✓ What type and how large is the emergency?
- ✓ Are there injuries?
- ✓ If so, can they be assisted by on-site personnel?
- ✓ If there is a fire, can it be controlled by Landfill personnel?
- ✓ Are lives in danger?
- ✓ Is the environment at risk?
- ✓ Is property at risk?

1.2 ALERTING STAFF

In the event of an emergency, such as fire, hazardous material spill, explosion or earthquake the first person on the scene is to alert all other employees by contacting the Emergency Coordinator or nearest supervisor through personal contact, two-way radio or cellular phone. A complete list of Emergency Coordinators and Alternates is available in Appendix A.

1.3 EVACUATION

In case of imminent danger, the procedure for evacuation is as follows:

1. Deny entry to the site and direct employees and public out of the emergency area and to a designated safe location. An Emergency Access Map showing emergency access routes, the location of spill kits, and fire hydrants are shown on Figure 5.
2. Notify the Emergency Coordinator, Alternate or a supervisor.

3. Assess the situation based on the following criteria:

- ✓ What happened and to whom did it happen?
- ✓ When and where did it happen?
- ✓ How did it happen?
- ✓ Is there damage?
- ✓ Is there a need for Emergency Services? Call **911** if necessary.

4. If required:

- ✓ Work with the Contractor's employees to implement the fire plan.
- ✓ Direct the public in their vehicles in a single direction out of the emergency area to the nearest and safest exit.

5. Control evacuation of public vehicles and the entry of emergency vehicles.

6. Document events and the time they occur.

7. Once the incident is under control, complete the Special Occurrence report and final documentation as required.

1.4 REPORTING PROCEDURES

The first person to discover the emergency will call **911** and provide the following information:

- ☎ Name and telephone number of the reporting party.
- ☎ Name and address of business.
- ☎ Time and type of release (e.g., damaged containers, malfunctioning equipment, etc.).
- ☎ Name and quantity of material(s) involved.
- ☎ Extent and number of injuries.
- ☎ Actions taken or being taken to mitigate or reduce emergency.
- ☎ Potential hazards to human health or the environment surrounding the business.

If phones at the Landfill are out of order, find someone with a cellular phone, either an emergency coordinator or supervisor. A comprehensive list of phone numbers is listed in Appendix A.

1.5 SHUTTING DOWN THE FACILITY

Those most familiar with the facility and its equipment are responsible for shutting down the operation, closing doors and exiting through the safest and nearest exit. The appropriate personnel will shut off the main circuit breaker for the building and equipment. Safety equipment is available at the following locations:

- ✓ Fire Extinguishers: Administration Building, adjacent to each exit; all cashiers' booths; all County vehicles; operator's break room, fueling area and; the storage area ("bone yard").
- ✓ First aid kits: Administration Building, all cashiers' booths; all County vehicles; and operator's break room.
- ✓ Telephones: Administration office; all cashiers' booths. In addition, all Emergency Coordinators and Alternates as well as all supervisors carry cellular phones;
- ✓ Electric Panel: Administration office storage room and mud room;
- ✓ Gas Shut-Off: There is no gas service at Central or any of the transfer stations.
- ✓ Shutting Down The Landfill: In the event of a catastrophic emergency, refer to the Emergency Numbers listed in Appendix A.

1.6 CHAIN OF COMMAND

In the event of an emergency, notify the Primary Contact or and alternate in the order that they appear. Continue down the list until someone has been contacted. A complete list of Emergency Coordinators and Alternates is presented at the beginning of this document under "Emergency Coordinators, Phone Numbers and Agencies."

2.0 FIRES

2.1 IN THE EVENT OF A FIRE

2.1.1 Structure Fires

1. Alert all employees in the area by getting their attention.
2. Evacuate all personnel from buildings.

3. Close all doors and windows **ONLY IF IT IS SAFE TO DO SO.**
4. Call **911** and give the information contained in Section 1.4
5. Make sure driveways have been cleared of vehicles so emergency vehicles can have clear access. Make sure gates are open and not locked.
6. If a fire becomes too large, **EVACUATE THE AREA OR BUILDING!** Be sure to close all doors and windows behind you **IF YOU CAN DO SO SAFELY.**

2.1.2 Fire in the Fill

Central Disposal Site is operated such that the potential for fire in the fill area is kept to minimum. Operating procedures include thoroughly compacting effuse, applying daily cover of either soil or other approved material to cover completely each day's cell, maintaining comprehensive load checks to prevent the disposal of smoldering or burning materials and continuing employee training for early fire recognition. The Central Disposal Site has developed the following fire control plan to be used in the event of a fire.

1. Stay upwind of the fire and smoke, isolate the fire from the rest of the waste and move it to a safe area.

NOTE: *Never drive heavy equipment onto burning material.*

NOTE: *Do NOT approach a **fuel fire** without the approval of the fire department.*

2. Call in the water truck to wet down the fire and an area ten (10) feet in diameter around the fire. Notify the Emergency Coordinator or alternate.

NOTE: *Do NOT wet down a **fuel fire**. It could spread the fire.*

3. Make sure that all unauthorized people are evacuated from the area. Remove all vehicles and flammable materials **WHEN IT IS SAFE TO DO SO.**

NOTE: *Clear the area if there is any danger of an explosion*

4. Have the scraper haul in dirt and the bulldozer spread the dirt to cover the fire. Once the fire is completely covered, wet the cover.
5. If the above actions fail to extinguish the fire, or if the fire appears to be spreading, call **911**.

NOTE: *Notify the surrounding landowners if there is a possibility the fire might spread beyond the landfill.*

6. Once the incident is under control, fill out an Incident Report Form and follow-up documentation.

2.1.3 Fire in the Tipping Building

1. Evacuate the public, all non-essential personnel, and all non-essential vehicles and equipment from the building.
2. Use the heavy equipment to isolate burning debris.
3. **Do NOT pull burning debris outside the footprint of the tipping building.**
4. Have someone call **911** for Emergency Services.
5. If it is safe to do so, use the emergency fire extinguishers and emergency fire hoses, located in the tipping building, to extinguish the fire. See Operations Area Site Map, Figure 3B, for the location of fire extinguishers.
6. If the fire poses a threat to human health and safety, wait for emergency services to respond.

2.2 CONTAINING A SMALL FIRE

1. Identify the material that is burning.
2. Retrieve the correct extinguisher for the material.

3. Remove the locking devise.
4. Aim at the base of the flame and release the extinguishing material.

2.3 TYPES OF FIRE EXTINGUISHERS

BC-CO₂ – Dry Chemical and Carbon Dioxide: for use on computers and electronic equipment. BC extinguishers are NOT for ordinary combustibles.

ABC: for ordinary combustibles, flammable liquids and electrical fires. ABC extinguishers can harm electrical equipment.

2.4 TIPS FOR A SAFE RESPONSE

1. Do not panic!
2. Do not use the telephone unnecessarily - keep the lines of communication open for emergency communications only.
3. Know the location of fire hydrants, extinguishers, spill kits and emergency first aid kits (see Figures 3A and 3B).

3.0 EARTHQUAKES

3.1 DURING AN EARTHQUAKE

1. When an earthquake strikes, remain calm. Move under a desk or similarly sturdy structure, such as a doorway.
2. Stay away from windows and glass shelves.
3. Move quickly away from unstable structures, such as bookshelves or equipment. If you're on a stairway, drop to your knees or sit down and hold onto the railings.
4. Evacuate after the earthquake stops; use the nearest clear exit. When evacuating the landfill be careful not to touch any wires; they could be carrying high voltage. Help evacuate any injured employees or visitors.
5. Extinguish all smoking materials. If there is a gas leak, lighted materials could cause an explosion.

3.2 AFTER AN EARTHQUAKE

- ✓ Do not smoke.
 - ✓ If there is structural damage, shut off gas lines.
-
- ✓ Assist in fire fighting if asked by your emergency coordinator, supervisor or emergency services personnel to do so.
-
- ✓ Look for injured people – help clear debris and care for the injured.
 - ✓ **AVOID ELECTROCUTION!** Watch for downed wires.
 - ✓ Do not use electricity.

Aftershocks are sometimes more dangerous than the initial quake because people resume their business and are not prepared for aftershocks. Be mindful of the likelihood of aftershocks.

3.3 PROTECTING YOURSELF IN THE EVENT OF AN EARTHQUAKE

1. Know of at least two additional exits out of each building in case the primary exit is blocked by fallen debris or fire.
2. Know the location of first aid kits and fire extinguishers (see Figures 3A and 3B)
3. Know the locations of the gas and water shut-off valve, as well as the main electrical panel.
4. If the phone lines are dead, locate a cell phone and call **911** – all Emergency Coordinators, their Alternates and supervisors carry them.

4.0 HAZARDOUS MATERIALS SPILL

4.1 NOTIFICATION INSTRUCTIONS

In the event of a hazardous materials spill that clearly presents a danger to people, call **911** then have everyone in the building or area evacuate and follow the general procedures for fire. In addition, notify the Operations Manager and at least one Emergency Coordinator or supervisor.

By calling Emergency Dispatch (**911**) for spill related emergencies your information should automatically be transferred to all relevant authorities. However, to avoid

possible fines the party responsible for the spill should make sure the agencies listed in Appendix A have been notified.

IN THE EVENT OF A HAZMAT RELEASE, YOU ARE NOT REQUIRED TO IMMEDIATELY REPORT AN INCIDENT IF THERE IS A REASONABLE BELIEF THAT THE RELEASE OR THREATENED RELEASE POSES NO SIGNIFICANT PRESENT OR POTENTIAL HAZARD TO HUMAN HEALTH AND SAFETY, THE ENVIRONMENT, OR PROPERTY. HOWEVER, DUE TO THE BROAD DEFINITION OF "REPORTABLE RELEASE" AND IN ORDER TO AVOID POTENTIAL PENALTIES, IT IS ALWAYS GOOD POLICY TO REPORT THE SPILL.

4.2 MINOR SPILLS

There are cases when, due to inaccessibility, a spill cannot be cleaned up. In those situations only properly trained personnel should attempt cleanup. If there is any question of the chemical characteristics of a spilled material, cleanup should be left to trained professionals.

Before attempting to clean a minor spill, first identify the chemical, then choose the appropriate cleanup procedure. The amount of material may not be as important as the chemical make-up of the spill.

Be sure to use the proper personal protective equipment, such as gloves, safety glasses, boots, apron, etc... If clothing is contaminated, it should be removed immediately, avoiding contact with skin and eyes.

4.2.1 Cleaning Up Minor Non-Toxic Liquid Spills

In order to prevent a minor spill from spreading, it must first be contained.

- ✓ Prevent entry and evacuate the immediate area.
- ✓ Know the locations and contents of each spill kit.
- ✓ Know the use and content of each spill kit and how it is used.
- ✓ Be familiar with the locations of dirt stockpiles.
- ✓ Use absorbent material or spill socks to build a berm around the spill.
- ✓ Use absorbent material to soak-up the spilled material.
- ✓ If the spilled material migrates toward a drainage inlet, use dirt stockpiles and heavy equipment, if necessary, to build berms around the inlet. **IT IS VERY IMPORTANT TO PREVENT SPILLED MATERIAL FROM ENTERING THE STORM WATER DRAINAGE SYSTEM!**
- ✓ Place absorbed material in an appropriate container and label the container as to the content using the appropriate Materials Safety Data Sheet (MSDS)
- ✓ If tools or other objects near the spill have been contaminated, clean them and dispose of the residual material in the same manner.

Use the MSDS in conjunction with the *Emergency Response Guidebook* as a guide when cleaning up small spills. **Large spills or spills with unknown or dangerous chemical characteristics should always be left to properly trained, skilled HazMat technicians. However, it is still important to isolate the spill if possible.**

4.2.2 Cleaning Up Minor Non-Toxic Solid Spills

IF IT IS SAFE TO DO SO, minor solid spills should be cleaned up using brooms, shovels, dust pans and similarly appropriate equipment, then returned to the original container, if the container is not damaged. If the material is not to be used and returned to its container, dispose of it in an appropriate container and send to an appropriate facility.

5.0 EXPLOSIONS

5.1 Explosions Due To Landfill Gasses, Chemical Vapors or Chemical Spills

In the case of an explosion resulting from landfill gasses, chemical vapors or chemical refer to Sections 3.1.3 and 3.3.3 of the *Contingency Plan*.

5.2 Explosion due to quarry blasting

In the case of an explosion due to quarry blasting refer to Section 3.2 of the *Hazard Communication Plan*.

FIRE PREVENTION PLAN

FOR

**CENTRAL DISPOSAL SITE
SONOMA COUNTY, CALIFORNIA**



**SONOMA COUNTY
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC WORKS
INTEGRATED WASTE DIVISION**

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JUNE 2002

FIRE PREVENTION PLAN

CENTRAL DISPOSAL SITE

June 2002

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FIGURE 3B:	OPERATIONS AREA SITE MAP

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APPENDIX B:	Fire Suppression Plan
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LIST OF EXHIBITS

EXHIBIT 2:	Smoking Policy, Memorandum of November 1997
EXHIBIT 2a:	Smoking Policy, Memorandum of February 27 1998

FIRE PREVENTION PLAN

CENTRAL DISPOSAL SITE

August 2002

100.0 FACILITY OVERVIEW

101.0 INTRODUCTION

The Central Disposal Site is a Class III solid waste disposal site managed by the Integrated Waste Division of Sonoma County's Department of Transportation and Public Works and is on land owned by the County of Sonoma. The Landfill consists of two separate permitted areas; the 1971 permitted area and the East Canyon permitted area. The County has operated the landfill since opening in 1971. The County recently opened a new section of landfill operations known as East Canyon Expansion. East Canyon is located within the same 398.5 acre property as the 1971 operation.

The facility is operated in strict accordance with the requirements of Operating Permit Number 49-AA-0001 for Facilities Receiving Solid Waste. The permit was issued by the California Integrated Waste Management Board (CIWMB) on June 27, 2000. There is also a composting facility operating under a Standardized Compost Permit #49-AA-0260, issued by the CIWMB on November 1, 2001.

102.0 SITE LOCATION

The Central Disposal Site is located in south Sonoma County at 500 Mecham Road in Petaluma, California. The site is accessible from U.S. Hwy 101, approximately 2 miles north of the city of Petaluma and ½ mile south of the city of Cotati. Primary routes of access to the site are U.S. Highway 101, located ½ mile to the east and Stony Point Road, which runs parallel to U.S. 101. From the south, take the Railroad Avenue exit off U.S. 101 to Stony Point Road and go north. From the north take the HWY 116 exit, west to Stony Point Road and go south (see Site Vicinity Map, Figure 1).

103.0 SITE PLAN DESCRIPTION

The Central Disposal Site consists of 398.5 acres of contiguous land (see Figure 2). Land use activities include solid waste disposal and landfill, a solid waste public tipping facility, household hazardous waste facility, recycle/reuse facility, heavy equipment maintenance, and an engineering and operations office. Water for the site is supplied by a 242 foot deep well pumping approximately 65,000 gallons of water per day during the dry season (June through October).

The water is stored in a series of tanks; one 50,000-gallon wooden tank and two 100,000-gallon bolted steel tanks located at the top of the hill in the northeast corner of the property.

There are 11 standard type fire hydrants and 13 wharf type hydrants throughout the site.

104.0 OPERATING HOURS

The Central Disposal Site is open seven days per week, 359 days per year. The site is open to the public and commercial operations between 7:00 A.M. and 4:00 P.M. The site is closed New Year's Day, Easter, Labor Day, Independence Day, Thanksgiving, and Christmas.

200.0 ELEMENTS OF THE PLAN

201.0 POTENTIAL FIRE HAZARDS

201.1 Landfill Gas

The landfill portion of the site generates methane gas, a bi-product of the decomposition of landfill solid waste. Given the proper conditions, or if not properly handled, landfill gas (LFG) could cause a fire in a well or in the collection system. If allowed to migrate to the surface of the landfill, LFG could ignite at the surface of the landfill if a proper ignition source existed and if LFG were present in concentrated amounts.

201.2 Active Landfill

Active cells of the landfill represent a potential source of fire. Fire could result from a "hot load" brought in by a customer. A fire could also start as the result of any number of materials, such as liquids, gasses, spontaneously combustible materials, caustic or reactive chemical, or a combination of individually benign chemicals. These materials usually fall under the category of Hazardous Material and are strictly forbidden in the landfill. Occasionally, however, these materials do make their way into the landfill.

201.3 Tipping Floor "Hot Loads"

The new public tipping facility consists of approximately 43,000 square feet of concrete tipping floor, and is approximately 35 feet from floor to ceiling. Self-haul vehicles are directed to one of eighteen curbed stalls where they dump their loads on the tipping floor. Debris is then pushed by rubber-wheeled, diesel powered loaders to waiting transfer trucks. The facility is open to both the public and commercial haulers.

The building is equipped with a wet fire suppression system consisting of a grid work of Model A, heat-activated sprinklers, based on a design plan density of 0.20 GPM/square foot. A plan of the fire suppression system has been included as Exhibit 1 at the back of the PLANS BOOK.

In addition, seven wharf type hydrants and several hand held extinguishers have been located throughout the new operations area.

One potential fire hazard on the tipping floor is "hot loads" brought in by either public or commercial vehicles. These are loads of waste that are already burning or smoldering at a very low rate of burn. Once the load is dumped on the floor and oxygen is introduced, the waste begins to burn.

Another potential fire hazard on the tipping floor is from flammable materials, such as solvents, fuels and other oil based products that are brought in with customers' loads.

201.4 Composting Facility

Yard debris, tree stumps and wood waste are diverted from the landfill, chipped and placed in windrows for decomposition. Piles of dry material, that generates heat in the decomposition process can pose a potential fire hazard.

201.5 Diesel Fuel

The County owns and maintains several diesel fuel tanks to support its operations at the site. A complete list of the tanks, locations, volumes and potential hazards is available in the *Spill Prevention, Containment and Countermeasure Plan*, June 2002. The plan includes a number of tanks independently owned and maintained by sub-contractors (see Site Facilities Map and Site Operations Map, Figure 3A and 3B).

201.6 Vegetation

The inactive sections of the landfill are covered with grass and vegetation as part of the erosion control for the Site. In the dry months, however, the vegetation represents a source of combustible material.

202.0 PROPER HANDLING

202.1 Landfill Gas

Landfill gas (LFG) is gathered through a series of vertical and horizontal High Density Polyethylene (HDPE) collectors. The LFG is collected in a central header and burned in the generation plant and/or enclosed land flare. To

prevent gas from migrating to the surface, the entire collection system is under the influence of a vacuum created by two large blowers that are located adjacent to the flare. The blowers pull the gas into the system then push the gas forward into the generation plant where it is burned off in accordance with the Permit To Operate for Plant #2254, issued by the Bay Area Air Quality Management District on February 27, 2001.

202.2 Active Landfill

Underground fires within the refuse/cover soil matrix are possible through improper management of the landfill and gas system operation. The landfill generates methane gas (a potentially explosive gas) as a result of the decomposition of the organic materials buried in the landfill. Under normal conditions, the refuse mass is anaerobic (absent of oxygen). Cover soil (or approved alternative daily cover) is placed over the exposed refuse and compacted in place to varying degrees depending on whether the cover is daily or intermediate cover. The cover soils help seal off the landfill surface to prevent oxygen from infiltrating into the refuse under the influence of the vacuum placed in the fill from the landfill gas control system. The landfill gas control system, consisting of a network of vertical extraction wells and subsurface horizontal collectors operating under vacuum, must be adjusted on a regular basis at each point of collection so that methane is removed from the fill and no oxygen is drawn into the fill. The temperature of the gas is monitored at each point of collection (well head) during routine system balancing. Should the temperature exceed 120°F, there is a potential for an underground fire.

202.3 Tipping Floor

In order to reduce the potential of fire on the tipping floor County staff are not allowed to accept any waste, solid or liquid, that might pose a fire hazard. In addition, there is a mandatory load-check program for both public and commercial loads. Public loads are checked daily and commercial loads are checked at least twice per week.

Once the load is dumped on the tipping floor County personnel are trained to look for signs of smoldering. In addition, they are trained to seek out and pull illicit material from the piles of debris before it is pushed off the floor and into transfer trucks. All such material is then placed in Department Of Transportation (DOT) approved HazMat lockers, located safely off to one side of the tipping floor.

202.4 Composting Facility

Yard waste and clean lumber is placed in mounds prior to grinding. Once the material is ground into chips it is set in windrows for the duration of the

composting process. Marketable compost and mulch is then moved off site as soon as possible.

202.5 Diesel Fuel

Diesel fuel for refueling County's and contractors' heavy equipment is stored in a number of locations throughout the Site. County owned tanks are constructed using double-walled, self-contained design. A contractor's tank may or may not be designed with double walled construction. If the tank does not have double wall construction it is kept safely behind a engineered containment berm, designed to hold 110% of the capacity of the largest tank. All tanks are numbered and have the appropriate DOT labels.

202.6 Vegetation

Vegetation control is performed in areas where public exposure is greatest. The greatest concern is the landfill proper where migrating LFG might make its way to the surface, exacerbating a vegetation fire. However, this is unlikely because the LFG collection system is under negative pressure, preventing LFG migration. Also, the landfill is off limits to all but County employees and sub-contractors. Vegetation in areas of high public exposure, for example, along the main entrance and adjacent to roadways is controlled by grazing cattle and manually removing it before the onset of summer.

203.0 POTENTIAL IGNITION SOURCES

203.1 Landfill Gas

Potential sources of ignition are open flames and lightning strikes. However, this is very unlikely since what little LFG might migrate to the surface would not be present in concentrations great enough to exceed 50,000 PPM, the lower explosive limit (LEL), which is the lowest concentration necessary for ignition to occur at standard temperature and pressure.

203.2 Active Landfill

Potential ignition sources in an active area of the landfill are smoldering material brought in a customer's load, illicit hazardous material that might reach an auto-ignition point and open flame.

203.3 Tipping Floor

Potential ignition sources on the tipping floor are smoldering material brought in a customer's load, illicit hazardous material that might reach an auto-ignition point and open flame.

203.4 Composting Facility

Ignition source for the compost and mulch is an open flame. Water is added to the composted material to keep the moisture content between 45% and 50%.

203.5 Diesel Fuel

Ignition sources for diesel fuel are is open flame, such as a lighted match or a fire on the tipping floor. There is a strict "no-smoking" policy within the limits of the landfill portion of the site, in County vehicles or County buildings (see Appendices C₁ and C₂).

203.6 Vegetation

Ignition sources for vegetation at the landfill would be an open flame or lightening strike. There is a strict "no-smoking" for certain parts of the site. There are few storms in northern California that produce lightening strikes.

204.0 TYPES OF FIRE PROTECTION EQUIPMENT

204.1 Landfill Gas

The LFG land flare is equipped with flow meters and automatic alarm systems. If the flare should shut down for any reason, including system failures due to fire the system automatically dials an alarm. The alarm calls a serial of numbers until someone on the list answers the alarm. There is also a standard type fire hydrant located near the flare and LFG collection system.

204.2 Active Landfill

Heavy equipment is the most effective means of fighting a fire in the active portion of the landfill. At any time there are two CAT D-9 bulldozers, one CAT 836 compactor-dozer, two CAT 637 earth movers (22 cubic yards) and one 3,000-gallon water truck. In the case of fire in the active portion of the landfill the equipment would be used to isolate the fire and smother it with dirt.

204.3 Tipping Floor

The building is equipped with a wet fire suppression system consisting of a grid work of Model A, heat-activated sprinklers, based on a design plan density of 0.20 GPM/square foot.

In addition, seven wharf type hydrants and several hand held extinguishers have been located throughout the new operations area.

204.4 Composting Facility

There is one CAT loader that would be used to isolate a fire in the compost area. In addition, there are three standard fire hydrants and two wharf type hydrants in the vicinity of the compost processing and windrow areas.

204.5 Diesel Fuel

There are several diesel tanks located throughout the Central Disposal Site (see Spill Prevention Containment and Countermeasure Plan). All County vehicles and heavy equipment are equipped with fire extinguishers.

204.6 Vegetation

In the event of a vegetation fire on inactive portions of the landfill heavy equipment and water trucks would be used to isolate and control a fire until the fire department arrived. Refuse Operations maintains two water trucks, with capacities of 3,000 and 3,500 gallons. Both trucks are parked full during the off hours to provide additional capacity.

300.0 HOUSEKEEPING

301.0 Smoking Policy

Smoking is prohibited on the landfill surface, with the exception of several designated areas for the operations staff and on-site contractors. Refuse Safety Bulletins #505 (November 20, 1990) and #506 (March 13, 1991), and February 27, 1998 memorandum from the Operations and Engineering Division Manager formalize the policies regarding smoking at the Central Landfill.

302.0 Solid Waste on Tipping Floor

The tipping floor and loading bays are cleaned of litter and loose material on a daily basis and the entrance and exit to the site is cleaned at a frequency prohibiting off-site migration of waste material.

303.0 Combustible Material

Litter and other combustible materials are picked up from the area surrounding the transfer station on a daily basis or whenever it is considered necessary.

400.0 TRAINING

The County is initiating an annual training program to include basic first responder training for fire and other emergency responses. The training will be specifically designed for fighting fires at the transfer facility and landfill. In addition to fire fighting techniques, training will include emergency procedures for dealing with hazardous material spills. Participants will include both fire fighting personnel from the local station and County employees that are involved with day-to-day operations at the site.

Records will be kept of the type of training each person received and the date of the last training session. A complete training schedule is included in the Injury and Illness Prevention Plan-SB198.

500.0 MAINTENANCE OF FIRE SUPPRESSION SYSTEMS AND EQUIPMENT

The fire suppression system is inspected quarterly by Grinnell Fire Protection Systems. Maintenance of the system is contracted on an as needed basis through the same company.

Rancho Adobe Fire Protection District



100 Main Street
P.O. Box 1029
Penngrove, California 94951

Telephone: (707) 795-6011
Fax: (707) 795-5177

August 25, 1999

Mr. Alex Sebastian
County of Sonoma
Department of Transportation & Public Works
575 Administration Dr., Room 117A
Santa Rosa, CA 95403

Re: Fire Plan, Central Landfill East Canyon Expansion

Dear Mr. Sebastian:

I have reviewed the Fire Prevention Plan dated August 13, 1999, for the expansion of the Central Landfill East Canyon at 500 Mechem Road. At this time I am in concurrence with your plan for the above referenced project.

If you have any questions, please call me at 795-5455 or Voice Mail at 765-8653, ext. 5#.

Respectfully,

A handwritten signature in cursive script that reads "Fred Bechtold".

Fred Bechtold
Battalion Chief

COUNTY OF SONOMA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC WORKS
575 ADMINISTRATION DRIVE, ROOM 117A
SANTA ROSA, CALIFORNIA 95403

Edward J. Walker, Director



AREA CODE (707)
ROADS 527-2231
TRANSIT 585-7516
REFUSE 527-2231
AIRPORT 524-7243
AIR POLLUTION 433-5911
FAX 527-2620

August 13, 1999

Fred Bechtold
Fire Marshal
Rancho Adobe Fire Protection District
P.O. Box 1029
Penngrove, CA 94951-1029

Re: Fire Prevention Plan for the Central Landfill, 500 Mecham Road, Petaluma, CA 94952

Dear Mr. Bechtold:

Please find attached a Fire Prevention Plan for the Central Landfill for your review and concurrence. The permitting agencies for the East Canyon Expansion Project require your concurrence with the plan prior to issuing permits for the project. We would appreciate a reply at your earliest convenience.

Thank you for your consideration.

Respectfully submitted,

EDWARD J. WALKER, DIRECTOR
DEPARTMENT OF TRANSPORTATION
AND PUBLIC WORKS

Alex Sebastian
Civil Engineer

c: Susan Klassen
Don Poindexter

FIRE PREVENTION PLAN

CENTRAL LANDFILL

August 13, 1999

Prevention:

Fire prevention at the Central Landfill consists of procedures and fixed facilities which together provide for reasonable prevention against the risk of fire.

Vegetation Control:

The 120-acre landfill is located on a 392-acre parcel. The majority of the grasslands along the perimeter of the landfill property are cross fenced and cattle are grazed to reduce the risk of grassland fire. In certain areas which don't lend themselves to grazing, annual disking of the grass is performed during the early summer. Other areas are mowed. The landfill property is bordered by paved roadways along the east and south sides.

Water System:

The Central Landfill water system consists of the following:

- Two water production wells located near the corner of Mecham and Stony Point Roads
- One 50,000 gallon wooden water tank
- Two 100,000 gallon bolted steel water tanks (one existing, the second is under contract for construction for late 1999.
- Water main connecting production wells to storage tanks, and water distribution system connecting water tanks to various points of delivery.
- 11 standard fire hydrants
- 6 wharf hydrants
- Fire sprinkler system for methane power plant
- Telemetry system activating the well pump remotely and providing remote tank storage level indication on the Refuse Headquarters building.

Water trucks:

Refuse Operations maintains two water trucks, with capacities of 3,000 and 3,500 gallons. Both trucks are parked full during the off hours to provide additional capacity.

Fire Extinguisher Training:

Mandatory training is provided to all landfill and transfer station employees on the use of fire extinguishers and their limitations.

Smoking Policy and No Smoking Zone:

For a variety of reasons, not the least of which is related to fire hazards, smoking is prohibited on the landfill surface, with the exception of several designated areas for the operations staff and on-site contractors. Refuse Safety Bulletins #505 (November 20, 1990) and #506 (March 13, 1991), and February 27, 1998 memorandum from the Operations and Engineering Division Manager formalize the policies regarding smoking at the Central Landfill see Appendix D.

Landfill (Underground) Fire Prevention:

Underground fires within the refuse/cover soil matrix are possible through improper management of the landfill and gas system operation. The landfill generates methane gas (a potentially explosive gas) during decomposition of the organic materials buried in the landfill. Under normal conditions, the refuse mass is anaerobic (absent of oxygen). Cover soil (or approved alternative daily cover) is placed over the exposed refuse and compacted in place to varying degrees depending of whether the cover is daily or intermediate cover. The cover soils help seal off the landfill surface to prevent oxygen from infiltrating into the refuse under the influence of the vacuum placed in the fill from the landfill gas control system. The gas system control system, consisting of a network of vertical extraction wells and subsurface horizontal collectors operating under vacuum, must be adjusted on a regular basis at each point of collection so that methane is removed from the fill and no oxygen is drawn into the fill. The temperature of the gas is monitored at each point of collection (well head) during routine system balancing. Should the temperature exceed 120°F the potential for underground fire exists.

On-Site Operations Which Require Fire Hydrants:

Two operations, each being conducted by outside contractors, require use of use of hydrants in

the vicinity of the operation. These include the wood grinding and wood chip stockpile area, and the green waste composting and storage area. Water mains and hydrants are maintained adjacent these operations and are relocated as these operations are occasionally relocated on the landfill footprint.

Development of the East Canyon:

The refuse burial and cover operation is expected to move into the East Canyon in the near future once all permitting is secured. Other on-site activities such as wood grinding and composting, which have required fire hydrants related to the operations, will remain in the currently active area. The refuse burial operation itself does not require fire hydrants. Nevertheless, one existing hydrant located in the parking lot of the Refuse Headquarters building, sits at the head of the East Canyon. At least one additional hydrant will be located at the head of the East Canyon, in conjunction with development of the future Public Tipping Building and the relocated Recycle town.

The Heavy Equipment Fleet Maintenance Building will be relocated within the East Canyon. A 5,000 gallon water tank has been located adjacent to the future maintenance building and will be provided with a hydrant prior to occupancy.

Emergency Response to Fires:

The Integrated Waste Division of the Department of Transportation and Public Works prepared the following document, Spill Prevention, Control and Countermeasure Plan, and Contingency Plan, May 1999. This plan addresses the coordinated response to fire related emergencies. The portions of this plan related to fires are included as Appendix A to this report.

Emergency Access Map:

A map showing the emergency access roads, fire hydrants, water tanks, ponds, and contacts and phone numbers for on-site contractors is included as Appendix B.

APPENDIX A

The following sections have been reproduced verbatim from the Spill Prevention, Control and Countermeasure Plan, and Contingency Plan, Integrated Waste Division, Department of Transportation and Public Works, May 1999.

3.0 EMERGENCY RESPONSE CONTINGENCY PLAN

3.1.2 Fires

Any fire at the facility is cause for the implementation of the Contingency Plan. In the event of fire at the area of waste disposal, set guidelines apply and are included as Appendix C. In addition, specialized emergency assistance should be summoned if any of the following conditions exists:

- ☐ If the fire releases toxic vapors or smoke from burning product or raw material;
- ☐ If a reasonably anticipated spread of the fire presents the potential for ignition of chemicals or hazardous substances;
- ☐ If the fire and fumes could spread to an off site location;
- ☐ If fire fighting procedures could lead to contamination of surface water or groundwater, or could generate contaminated runoff that could migrate to an off site location.

3.1.3 Explosion

Any explosion occurring (excluding planned blasting activities during quarry operations) at the Landfill is cause for implementation of this plan. In addition, any of the following conditions require implementation of the plan:

- ☐ An imminent threat of explosion that may exist for any reason (an explosion could threaten human life or property, ignite hazardous materials or waste, or result in direct release of toxic material);
- ☐ An uncontrolled reaction at the facility, leading, e.g., to a fire or breach of a container.

3.3 Evacuation Plan

In order to provide for a safe and orderly evacuation, the following plan has been developed. Evacuation routes and a designated assembly area have been prominently posted throughout the facility. All employees are trained in the execution of these plans, which include evacuating sub-contractors and the public. In the event of an evacuation, all employees are instructed to proceed by the shortest safe route to office parking area or Hammel road gate. No escape routes should lead through the vicinity of the emergency, if alternate routes are available. If the release of vapors or fumes is possible, up wind escape routes should be chosen.

Following the evacuation notification, all employees must proceed in an orderly fashion to the nearest safe exit and go immediately to the assembly area. The evacuation alarm (Operators have hand held air horns) may be sounded by any Emergency Coordinator, foreman, or supervisory staff, or when these persons are unavailable, by any employee based on his or her judgement of imminent risk or danger. Should wind conditions dictate moving the assembly area, the emergency coordinator or supervisor will select an alternate location.

It is the responsibility of all supervisors to make certain that all employees under their supervision have left the building and operations area, and that they report to the assembly area. Supervisors should take a head count to confirm the presence of all employees in the assembly area. Supervisors and/or Emergency Coordinators should then sweep the facility, if possible, to make sure all employees and the public have exited or to account for any employees not found in the assembly area. Supervisors and/or Emergency Coordinators should assist civil or contract authorities in the evaluation of the emergency and should be responsible for orderly re-entry of all employees following the all clear notification. It is the responsibility of the Emergency Coordinator to prepare an incident report following any evacuation from any site at the facility. In the event of an imminent major emergency, nearby residents should be notified by the Emergency Coordinator and evacuated, if necessary.

3.4 EMERGENCY PHONE NUMBERS

The following is a list of pertinent emergency phone numbers that can be used to facilitate implementation of this contingency plan.

Emergency Coordinators

Mr. Julio Carrasco
(707) 792-0775 (home)
(707) 792-4954 (work)
(707) 325-1782 (pager)

Mr. Jon Steward
(707) 545-9750 (home)
(707) 792-4955 (work)
(707) 323-9657 (pager)

Mr. Bob Simi
(707) 545-5390 (home)
(707) 792-4956 (work)
(707) 329-4157 (pager)
(707) 696-9193 (cell)

Mr. Fred Esposti
(707) 838-8357 (home)
(707) 792-4966 (work)
(707) 325-8677 (pager)
(707) 953-3608 (cell)

Emergency Services

Police/Fire/Ambulance 911

Neighboring Facilities

Garbage Reincarnation	795-3660
Sonoma Compost	664-9113
Michigan Co-Generation	664-1077
Empire Waste	794-0842
Stony Point Quarry	795-1775

3.5.2 Fire Response

Fire constitutes a major potential hazard at the Central Disposal Site due to the large amount of combustible materials and flammable products on the site. The following general procedures should be followed in the event of a fire at the facility:

Upon detection of a fire immediately notify the Emergency Coordinator or your supervisor. Information should include your name, your location, the nature and extent of the fire, and any injuries that may have occurred.

The Emergency Coordinator or supervisor should immediately evaluate the situation and, if visible flames exist, initiate orderly evacuation of the facility. The evacuation procedures described in section 3.3 should be followed.

If flames are not visible and the fire is restricted to odor and smoke, evacuation may not be warranted.

The supervisor or Emergency Coordinator should notify the fire department. The supervisor or Emergency Coordinator should use his or her judgement in immediately extinguishing the fire using local hand held extinguishers, evacuating the facility, and summoning assistance either from the local fire department or from an in-house personnel, and should emphasize concern for protection of employee and community safety as primary factors in determining a course of action.

Supervisory and emergency personnel should stand by to assist emergency response teams. The Emergency Coordinator should direct emergency vehicles, provide information regarding the nature of the fire and ignited components, and prepare an incident report on the occurrence. The Emergency Coordinator should also ensure that orderly evacuations have been completed and that all personnel are accounted for and should ascertain that any injuries have received appropriate emergency attention.

Following a response by the local fire department, the Emergency Coordinator should evaluate potential environmental contamination due to runoff of contaminated fire fighting water. The Emergency Coordinator should take precautions to prevent contamination of personnel and off site migration of contaminated water. When the fire has been successfully extinguished, the Emergency Coordinator should direct cleanup of the area and initiate an investigation into the cause of the blaze.

IN THE EVENT OF A CHEMICAL FIRE, THE POTENTIAL FOR EXPLOSIVE AND GENERATION OF TOXIC FUMES OR VAPORS IS HIGH. NO COUNTY PERSONNEL ARE TO RESPOND TO CHEMICAL FIRES WITHOUT PREVIOUS TRAINING IN CHEMICAL HAZARDS, FIRE FIGHTING TECHNIQUES, AND PERSONAL PROTECTIVE GEAR APPLICATION. IN ALL CASES OF CHEMICAL FIRE, PERSONAL PROTECTIVE GEAR MUST BE PUT ON BEFORE BEGINNING FIRE FIGHTING OPERATIONS. FIRE FIGHTING ACTIVITIES ARE RESTRICTED TO A TRAINED FIRE BRIGADE OR TO TRAINED FIRE FIGHTING PROFESSIONALS.

Evacuation of the facilities may be warranted in the event of a chemical fire or emission of large amounts of smoke and toxic fumes, which may result from any fire at the facility. Evacuees should be directed to upwind areas to prevent exposure to toxic fumes or smoke. The fire department should be called to arrange for evacuations of downwind residents or industrial sites.

3.5.3 Fire in the Fill

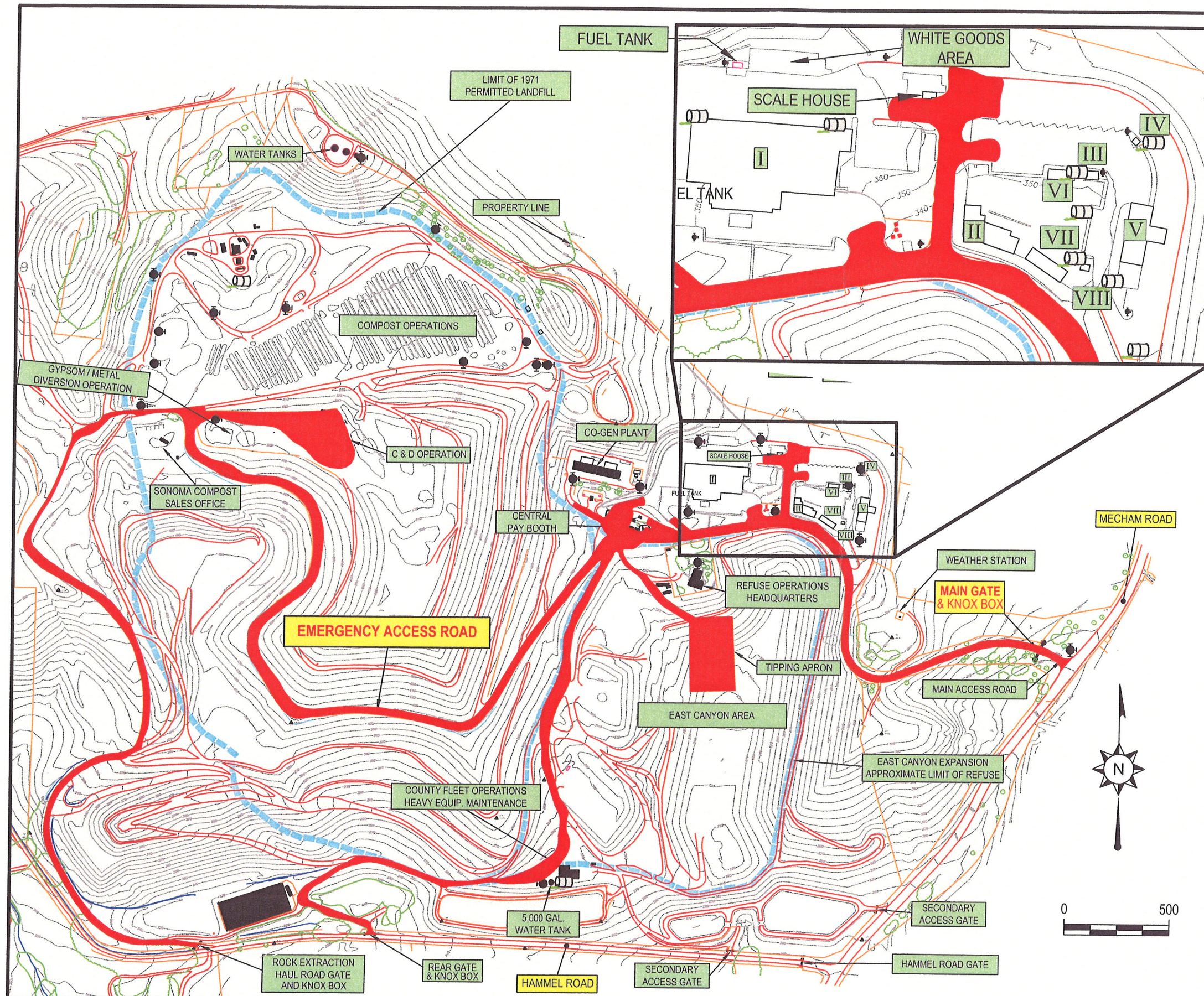
Should a fire occur in the fill, employees are to implement the guidelines included in Appendix C.

3.5.4 Explosion Response

Explosions may occur at any site around the facility where combustible gasses or vapors have achieved concentrations between the upper and lower explosive limits. These concentrations are most likely to occur in chemical storage areas. Explosions in chemical storage areas present significant risk of environmental contamination due to released chemicals from these facilities.

In all cases of explosion, notification of the local fire department is required. Response to explosions by County employees should be restricted to evacuation and reporting measures. The Emergency Coordinator should ensure that reporting requirements have been met and that the fire and police departments have been adequately notified. Response to explosive events at the facility must be directed by qualified professionals and should be restricted to cooperating with and assisting the responding agencies.

In addition to the responses described in the section of fire response, the Emergency Coordinator should ensure that in case of explosion, an evaluation is made of the structure integrity of the facility in the area of the explosion, including an appraisal of the potential for future collapse of the facility.



EMERGENCY CONTACT LIST

For Immediate Emergency

Call 9-1-1

Central Landfill - Office

500 Mecham Road

Petaluma, CA 94952

(707) 565-7940

Name	Mobile Radio	Cell Phone
Bob Simi	122	(707) 696-9193
Fred Esposti	121	(707) 953-3608
John DeStefano	123	(707) 479-2974
Tamara Danzart	120	(707) 9696-9192
Don Poindexter	86	(707) 696-9190
Heavy Equipment	127	

EMERGENCY ACCESS ROAD

ONE WAY

LEGEND

Standard Fire Hydrant

Wharf Hydrant

Spill Kit

Gate

Public Tipping Building

Storage Building

Reuse Recycling Office

Attendants Botth

Household Hazardous Waste Building

Material Storage Building

Material Storage Building

Oil Recycling Building



EMERGENCY ACCESS MAP



Central Landfill Site
Sonoma County, California

FIGURE

5

May 2005


**PROCEDURES FOR FIGHTING A FIRE
(FIRE IN THE PIT OR ON SITE)**

1. ISOLATE FIRE/BURNING WASTE FROM ALL OTHER WASTE
2. MOVE FIRE/BURNING WASTE TO A SAFE AREA
3. CALL IN THE WATER TRUCK
4. WET ALL OF THE FIRE/BURNING WASTE AND AREA FOR
APPROXIMATELY TEN FEET (10') AROUND THE FIRE/BURNING WASTE
5. GET THE SCRAPER TO HAUL IN DIRT
6. USE CAT TO COVER FIRE/BURNING WASTE WITH DIRT
7. WET DOWN DIRT
8. AS A LAST RESORT, IF FIRE/BURNING WASTE WON'T GO OUT OR WAS
TO SPREAD CALL THE FIRE DEPARTMENT

APPENDIX "D"

SONOMA COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
Integrated Waste Division
500 Mecham Road, Petaluma, California 94952
Telephone (707) 792-0547 Fax (707) 792-0416

MEMORANDUM

DATE: February 27, 1998
TO: All Integrated Waste Division Employees
FROM: Susan Klassen, Operations and Engineering Division Manager 
SUBJECT: Follow-up to November 7, 1997, Memo on Smoking Policy

After discussing the implementation of the Smoking Policy with employees at the landfill and researching the Refuse Operations files for previous policy related to this subject, I have reached the following conclusions:

Smoking in any County owned vehicle including the heavy equipment has been against Division and Department policy since 1994. Further, it has been the policy at the Landfill, to not smoke in the heavy equipment per Safety Bulletin 505 dated November 20, 1990 and to not smoke within the landfill area per Safety Bulletin 506 dated March 13, 1991.

Additionally, the majority of the employees are in favor of enforcement of the no smoking policies already in place, and the safety of all workers will be increased by enforcement of these policies.

Therefore, effective March 15, 1998, there will be a designated smoking area located on the pad area. Employees must use the designated smoking area. There will be no smoking in any County owned vehicle including the heavy equipment effective March 15, 1998. Employees may smoke in areas outside of the landfill foot print (see attached map) as long as they are not in a building or in County owned vehicles or equipment. Employees smoking in the vicinity of the boothies, or the office should make every effort to smoke in an area where smoke will not drift into the buildings. If smokers use good judgement, it should be unnecessary to designate an area near the boothies or the office which smokers must use.

On-site contractors operating within the landfill foot print will be requested to designate specific areas within their operation for their employees. Commercial haulers will be notified that their employees shall cease smoking within the landfill footprint. Employees observing haulers, vendors or public smoking shall request them to cease smoking and explain our smoking policy is for their safety as well as ours.

Employees who feel that they are physically unable to comply with the March 15, 1998 effective date, should see me. I have gathered extensive information on what is available through the various medical insurance plans and other resources for smoking cessation. I will be happy to sit down with those individuals and develop a strategy which works toward their full compliance with the policy no later than May 15, 1998.

Thank you for your cooperation.

Re: 500 al

SONOMA COUNTY
INTEGRATED WASTE DIVISION OPERATIONS
500 Mecham Road, Petaluma, California 94952
Telephone (707) 792-4959 Fax (707) 792-0416

MEMORANDUM

DATE: November 7, 1997

TO: Integrated Waste Division Employees

FROM: Rich Doble, Operations & Engineering Division Manager *RWD*

SUBJECT: Smoking Policy

Please find attached, for your information, a copy of the County's no smoking policy and a departmental directive from Mr. Walker, dated December 17, 1993.

Please be advised this policy includes refuse operations. The definition of a vehicle in regards to the attached policy is any county owned equipment (heavy equipment, support equipment, trucks or cars). This policy will be strictly enforced.

In addition to County policy, State law prohibits smoking within the landfill boundary.

Smoking is permitted; outside the landfill boundary, outside any county-owned building or vehicle and away from any public accessed area. Contact your immediate supervisor if you have questions or for verification of a smoking area.

c. Edward Walker, Director
Darrell King, Risk Management
Ken Wells, Integrated Waste Manager

HAZARD COMMUNICATION PLAN

FOR

**CENTRAL DISPOSAL SITE
SONOMA COUNTY, CALIFORNIA**



SONOMA COUNTY DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS INTEGRATED WASTE DIVISION

Administrative Office
2300 County Center Drive, Suite B 100
Santa Rosa, California 95403
Phone: (707) 565-2231

Operations Headquarters
500 Meham Road
Petaluma, CA 94952
Phone: (707) 792-0547

JUNE 2002

HAZARD COMMUNICATION PLAN

Central Disposal Site

June 2002

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HAZARD COMMUNICATION PLAN

CENTRAL DISPOSAL SITE

June 2002

1.0 GENERAL INFORMATION

1.1 REQUIREMENTS

In order to comply with the standards of the Occupational Safety and Health Administration (OSHA) standards, a Hazard Communication Plan (HCP) has been written and implemented for the employees and staff of the Sonoma County Central Landfill and Transfer Stations. Originals of the HCP are kept on file at the Central Landfill office.

1. The HCP is to be used by all personnel.
2. The program administrator is responsible for ensuring that the plan is current and enforced.
3. A copy of the HCP must be made available to all new employees upon hire. Copies will be provided to any employee upon request.
4. An inventory of hazardous materials is to be reviewed annually and updated as new hazardous materials are introduced into the work place. All hazardous materials must have an MSDS on file and be available for review by any employee of Central Landfill or any of the Transfer Stations.

2.0 MATERIALS SAFETY DATA SHEETS (MSDS)

A complete and thorough MSDS system includes the following:

1. A current, alphabetized master list of all MSDSs in each binder.
2. The chemical name on the container label is identical to that on the MSDS.
3. The chemical and/or common names of all hazardous ingredients appear on the MSDS.

The program administrator is responsible for assuring that all relevant MSDSs are obtained and maintained. Also, she will review incoming MSDSs for any and all significant health and safety information. An inventory of all hazardous

materials at Central will be made annually and be reviewed for completeness. When revised sheets are received, the outdated material will be removed from the binder and kept in a separate folder for three year, then discarded.

When an MSDS has NOT been sent with a shipment, the person(s) receiving the shipment will check the MSDS binder to see if there is an existing copy of the sheet. If not, they are to call the manufacturer and request a copy be sent immediately. They are to continue calling until the MSDS has been received.

Copies of MSDSs for all hazardous materials that employees might be exposed are to be kept by the program administrator in the administration office and are to be readily available to all employees during every work shift. Any employee may ask to review an MSDS binder at any time.

Even though hard copies of MSDSs are available at the administration office, employers may provide employee access to MSDSs through alternative means, such as the Internet, computer data basses, CD-ROM and FAX machines.

1.1 PURCHASES

The person(s) in charge of HazMat purchases must assure that an MSDS is current and on file. If there is not a current MSDS on file he/she must contact the manufacturer of the material and request an MSDS. They are to follow up on the request until an MSDS is received. (MSDS are also available on-line at: <http://siri.uvm.edu/msds/>).

1.2 CONTAINER LABELS

The program administrator is responsible for monitoring all HazMat containers that enter the workplace. In addition, the program administrator will ensure that chemical containers are properly labeled with:

- ✓ Chemical name
- ✓ Hazard warning
- ✓ Personal protection to be worn
- ✓ Name and address of manufacturer, importer, or responsible party

No chemical will be used until properly labeled. If a chemical is to be decanted to a smaller or different container, the new container should bear the same information as the original. Secondary labels can be a copy of the original or a generic label. All secondary labels must list:

- ✓ Chemical name
- ✓ Hazard warning
- ✓ Personal protection to be worn
- ✓ Name and address of manufacturer, importer, or responsible party

For assistance with labeling, contact the supervisor in charge of labeling and MSDSs. It is that supervisor's job to update all MSDSs and labels and to ensure that all containers and pipes containing hazardous materials have been properly labeled. In addition, he or she will inform all employees of the hazards associated with the chemicals contained within containers and pipes at Central.

1.3 STAFF INFORMATION AND TRAINING

The supervisor of each new employee will review the Hazard Communication Plan (HCP) as well as the location of the MSDSs. Every employee will be informed of all hazardous materials that have been introduced into the work place. Also, they will be trained on the safe use of and informed of the hazards of new materials as they are introduced. This will be done primarily through handouts, videos, or verbal training. When appropriate, all employees will attend additional training in order to review the HCP and MSDSs.

Every new employee must receive the following information and training:

- ✓ An overview of the requirements contained in the Hazard Communication Standard, 29 CFR 1910.1200 or 29 CFR 1926.59;
- ✓ Notification of the hazardous materials present in an employee's work place;
- ✓ How to read labels and MSDSs to obtain current information;
- ✓ Both the physical and health effects of the hazardous materials on the inventory list, including the symptoms of overexposure;
- ✓ How to determine if there has been a release of a hazardous material at the work site;
- ✓ Steps to be taken by the program administrator to prevent exposure to the hazardous materials listed on the inventory;
- ✓ Emergency steps to be followed if exposed to a hazardous material; and
- ✓ The location of the MSDS binder and Hazardous Communication Plan.

Hazards associated with each work area and personal protection equipment that must be worn in those areas is defined in the Injury and Illness Prevention Plan. Employees who risk contact with work place hazards will receive information and training, as outlined in the plan, by the program administrator or a supervisor. If an employee has any question concerning the kind of protection he or she will need, the employee should immediately contact his or her supervisor. After attending the training classes, each employee will sign a form to verify that he or she attended the necessary training, that the Hazard Communication Plan was available for review, and that he or she understands its contents.

3.0 NON ROUTINE TASKS

Before attempting any non-routine task, an employee will be advised by his or her supervisor of special precautions to be taken concerning any hazardous materials they might come in contact with. The supervisor will then inform other personnel that might also be exposed. The type of information that would be included is:

- ✓ Specific chemical names;
- ✓ Hazards of the chemicals;
- ✓ Personal protective equipment required;
- ✓ Safety measures to be taken;
- ✓ Emergency procedures; and
- ✓ Measures that have been taken to lessen the hazard, such as ventilation, respirators, and the presence of other employees.

3.1 UNLABELED PIPES

Before starting work in areas where chemicals travel through unlabeled pipes, employees must contact their supervisor for information concerning the following:

- ✓ Chemicals in the pipes
- ✓ Potential hazards
- ✓ Safety precautions to be taken

3.2 BLASTING

Any emergency resulting from blasting at Central Landfill is subject to the procedures outlined in Sections 1 & 2 of the Emergency Response and Evacuation Plan. Since contractors do not store blasting materials on site, there is little probability of coming into direct contact with blasting materials. However, all personnel should be familiar with the blasting signals. They are:

1. WARNING SIGNAL: five minutes prior to blasting, a series of 6 short blasts.
2. BLASTING SIGNAL: one minute prior to blasting, 2 long blasts.
3. ALL CLEAR: Following inspection of blasting area, one prolonged blast.

4.0 OUTSIDE CONTRACTORS

It is the responsibility of the program administrator or supervisors to provide outside contractors with the following information:

- ✓ Hazardous materials they may be exposed to while in the workplace.
- ✓ The hazardous material labeling system that is used, including symbolic and numerical systems.
- ✓ The location of the MSDSs for all hazardous materials used at Central Landfill.
- ✓ The method of distribution and availability of the MSDSs for the Central Landfill site.
- ✓ Precautionary measures to lessen the possibility of exposure.
- ✓ The procedures to follow if they are exposed.

In addition, the program administrator or supervisors are responsible for contacting each contractor prior to a project's start date and determine exactly what hazardous materials the contractor might bring onto the Central Landfill site. If any employee risks contact with the hazardous materials, the program administrator or supervisors must inform the employee of the potential for contact.

LOAD CHECKING PROGRAM

Load Checking Program

Revised: March 2006

County of Sonoma Transportation and Public Works Integrated Waste Division

INTRODUCTION

In recent years, the hazards posed by the intentional and unintentional disposal of hazardous wastes at Class III solid waste facilities have become the subject of increasing concern. The repercussions of careless disposal practices include injuries and illness to transfer station and landfill workers, fires and explosions in collection vehicles and at the transfer stations and landfill, and contamination of air and ground water. For this reason it is imperative that contaminated loads are identified *before* they are accepted. When a contaminated load is identified and rejected by the landfill/transfer station personnel, ***the original producer of the load retains the responsibility of being the generator.***

In response to the hazards posed by indiscriminate disposal of prohibited wastes at solid waste facilities, the California Regional Water Quality Control Board (RWQCB) has included the requirements for a Load Checking Program (Program) in Title 14, Code of California Regulations (CCR), §17409.5. This load-check program, for the Sonoma County Central Disposal Site and its transfer stations, is included as Appendix B-11 of the Joint Technical Document, dated May 2005, for the Central Disposal Site, and can also be found in Appendix 4 of the Transfer / Processing Reports (formerly titled *Report of Station Information*) for all transfer stations.

The intent of the Program is to discourage and prevent the improper disposal of prohibited waste. The load checking program for the County of Sonoma, Disposal Operations, is designed to identify hazardous waste and other ineligible waste and prevent their disposal at the landfill.

1.0 PUBLIC INFORMATION & EDUCATION

One aspect of the Load checking program is to provide information and education to the public. The information will be designed to notify the general public on rules and regulations governing non-acceptable waste. These wastes will be outlined later, but are generally defined as wastes that pose a threat to public health and the environment. The public will be educated through the Sonoma County Waste Management Agency's Recycling Guide, and public service announcements utilizing various forms of media.

Additionally, disposal workers will hand out information, from both Refuse Operations and the Sonoma County Waste Management Agency, containing guidelines for proper

disposal or reuse of household toxic materials. As regulations change the status of these items will be noted by press releases and additional public information.

In January of 2005 the Integrated Waste Division of the Department of Transportation and Public Works opened the Household Toxic Waste Facility. The Facility is located on the property of the Central Disposal Site and adjacent to the Solid Waste Transfer Station at 500 Mecham Road in Petaluma. The facility is currently open to the Public Thursday, Friday and Saturday, 7:30 A.M. to 3:30 P.M. Appointments are not necessary except in the case of small businesses.

In addition to the Household Toxics Facility the County offers Community Toxics Collections and Toxics Rover pick up service. The Community Toxics Collections are weekly events that are held every Tuesday from 4-8 P.M., somewhere in the County (call 795-2025 for locations). The Toxic Rover pick up service will pick up hazardous materials at the public's residence by appointment. There is a small fee for this service that includes disposal cost. For a comprehensive description of these and other recycling programs consult the Sonoma County Recycling Guide.

2.0 DESCRIPTION OF PERMISSIBLE, PROHIBITED AND UNIVERSAL WASTE

This section describes types of waste that can be accepted at the Central Landfill and transfer stations. In addition, the characteristics of different hazardous wastes are described.

2.1 Permissible Waste

The County of Sonoma, Refuse Disposal Operations is allowed to accept the following waste in accordance with its Solid Waste Facility Permits:

- Agricultural
- Compostable Material, such as yard waste
- Construction and Demolition Debris.
- Non-hazardous Solid Waste from Industrial Sources
- Mixed Municipal Solid Waste; and
- Tires

2.2 Prohibited Waste

Prohibited waste includes designated hazardous waste and liquid waste. The following is a listing of prohibited waste to assist personnel in making proper identifications:

- All Liquids (Septic and all liquid waste)

- Asbestos (Friable)
- Auto batteries
- Paint, both water and oil based
- Pesticides
- Antifreeze
- Dead animals
- Gasoline or other Liquid Fuels
- Fluorescent tubes in quantities of 25 or more
- Wood preservatives (Creosote or PCPE's)
- Gas cylinders, unless the valve is completely removed
- Medical waste (often identified by a red bag)
- PCBs (Polychlorinated Biphenyls)
- Mercury
- Oil, petroleum products

Hazardous wastes are defined as those wastes that exhibit any of the criteria set forth in Title 22, CCR, Division 4.5, Chapter 11, Article 1, §66261.3. The *Criteria for Identifying Hazardous Waste* are presented in Article 2, §66261.10 and the *Characteristics of Hazardous Waste*, Article 3, §66261.20 including *Ignitability* (§66261.21), *Corrosivity* (§66261.22), *Reactivity* (§66261.23), and *Toxicity* (§66261.24). In addition, those materials considered hazardous wastes according to the Resource Conservation and Recovery Act (1(RCRA), 42 U.S.C. 6901 et seq. also are considered hazardous wastes under State Law (California Health and Safety Code, Sections 25143.2 and 25159.5).

To help operations personnel perform effective load checking duties, it is important that they understand what constitutes something as hazardous. Wastes are hazardous if they have any of the following properties:

- Toxicity
- Flammability
- Reactivity
- Corrosivity

Examples of hazardous wastes containing these properties are as follows:

2.2.1 Toxic Waste

Poisonous or toxic wastes are hazardous because they can cause illness or death if ingested, inhaled, injected, or absorbed through the skin. Short-term effects can be skin burns or choking. Long-term effects can include damage to internal organs, cancer, and other health problems. The term "toxic" also refers to effects on animals and plants in the environment. Examples



of toxic wastes are:

- Liquids - pesticides and sanitizing chemicals, liquid industrial wastes containing metals and other chemicals such as cyanide or formaldehyde (embalming fluid).
- Gases - chlorine, nitrogen, acetylene; and
- Solids - sludge, waste inks, pesticides, cyanide compounds.

2.2.2 *Flammable Waste*

Flammable materials are hazardous because they ignite easily and burn intensely. They can be liquids, solids, or gases. Examples of ignitable wastes are:

- Liquids - gasoline, paint thinners, strippers, degreasers and solvents, epoxy resin, glues and adhesives, rubber cement, waste ink;
- Gases - acetylene cylinders, hydrogen cylinders, propane and butane, liquefied gas bottles, some aerosol containers; and
- Solids - aluminum phosphate, ammonium nitrate, phosphoric, matches.

How to identify flammable materials:

Industrial Labels: "Flammable," "Ignitable," "Flame Symbol," "Oxidizer."



Types of Material: fuels, solvents, and compressed gases.

2.2.3 *Reactive Waste*

Reactive wastes are unstable or react with other materials to burn, explode, or give off fumes when mixed with water, air, or other materials. Examples are:

- Liquids - some metal plating chemicals like chromic acid, cyanide solutions, water-treatment chemicals for swimming pools;
- Gases - Oxygen; and
- Solids - explosives like dynamite, ammonium nitrate fertilizer, phosphorus, dry swimming pool chemicals, epoxy resins



How to identify reactive wastes: Industrial Labels: "Oxidizer," "Organic Peroxide," "Explosive," "Dangerous," "Blasting Agents," "Reactive"

Words on Labels: “May react with other materials,” “incompatible with ...” “unstable,” “keep away from...”

Types of Wastes: suspicious liquid and dry substances including swimming pool chemicals.

2.2.4 Corrosive Wastes

Corrosive wastes are hazardous because they can dissolve metals and burn skin and eyes on contact. They include acids, bases, and other harsh chemicals such as bleach and cleaning components. Examples are:

- Liquids: acids, bases, metal-treating compounds, ammonia, laundry bleaches, and alkaline degreasers (restaurant cleansers);
- Gases: chlorine, ammonia, others; and
- Solids: sodium hydroxide or lye, fertilizers, detergents.



How to identify corrosive wastes: Industrial Labels: “Corrosives,” precautionary words on label such as “Danger,” “Caution,” “Warning,” or “May be corrosive or irritate skin and eyes.”

Types of Wastes: industrial metal cleaning products, suspicious liquid and dry granular material.

2.2.5 Other Hazardous Wastes

Certain other wastes are hazardous and require special treatment/handling. Examples are:

- Radioactive materials with “radioactive” label;
- Waste lubricating oils;
- Loads of more than 25 fluorescent tubes;
- Car and truck batteries; and
- Water-based and oil-based paint.



2.2.6 Non-Biodegradable Wastes

Non-Biodegradable wastes are hazardous because they build up in the environment and poison or injure plants and animals. Examples are:

- Liquids - PCBs, liquids containing some pesticides and metals, mercury;
- Solids - Certain pesticides like DDT, utility poles treated with PCP, lead and asbestos.

How to identify toxic wastes that have the potential to harm the environment:

Industrial Labels:

Contains PCBs, pesticide labels, "Asbestos".

Types of Wastes: Electrical equipment, pesticides, utility poles, insulation material.

2.2.7 *Medical Wastes*

Waste that meets the criteria of both of the following are considered Medical:

- Waste generated during diagnosis, treatment or immunization, research activities, biological production or testing; and
- Bio-hazardous waste or sharps waste.



2.2.7.1 *Bio-hazardous Wastes*

Laboratory Waste:

- Specimen cultures from medical & pathological labs;
- Infectious agent cultures from research & industrial labs;
- Production wastes of bacteria, viruses or spores;
- Suspected contaminated specimens or tissues from surgery or autopsy;
- Suspected contaminated animal parts, tissues fluids or carcasses;
- Waste containing recognizable fluid blood;
- Waste containing suspected contaminated excretion, exudates or secretions;
- Waste contaminate with chemotherapeutic agents;



Examples include, but are not limited to the following:

- All animal carcasses.
- Waste in red bags that have not been autoclaved
- Red plastic sharps boxes & loose hypodermic needles
- Syringes, tubing or IV bags containing liquid blood

A comprehensive list of classified Hazardous Waste is presented in Title 22 CCR Division 4.5, Chapter 11, Articles 4 and 4.1.

A more complete Hazardous Materials Marking, Labeling and Placard Guide is available in Appendix A.

2.3 Universal Waste

Universal wastes are hazardous wastes that pose a lower risk to people and the environment than other hazardous wastes. The following incomplete list of items are considered "Universal Wastes":

- Thermostats, thermometers, switches, gauges, lamps, batteries (other than lead-acid car batteries), etc., that contain mercury
- Non-empty aerosol cans
- Novelties that might contain mercury switches or batteries
- CRTs
- Consumer Electronics

The Temporary and Conditional Universal Waste Exemption for batteries, thermostats, lamps and consumer electronic devices was removed on February 9, 2006. Beginning on that date all such devices were prohibited from the solid waste stream. As a result the County implemented its plan for collecting and temporarily storing all such waste (see Section 3.3.1 *Materials Storage*). The plan includes pre-sorting of universal wastes by consumers and depositing those wastes in designated areas, segregated from normal transfer and processing operations. Universal waste items have been excluded from the list of permissible waste and included as part of the waste screening process as described in section 3.3 of this plan. In addition, a comprehensive list of Universal Waste has been included in Appendix B, *"Managing Universal Waste in California"*.

3.0 **LOAD CHECKING PROGRAM**

3.1 Objective

The objective of the load-checking program is to detect and deter attempts to dispose of prohibited wastes. The program developed for the County of Sonoma has been structured to meet or exceed the requirements for landfills as promulgated in Title 40 of the Code of Federal Regulations, Part 258, Subpart C, Section 258.20 (Subtitle D), and 27 CCR §20870 and for transfer stations as promulgated in 14 CCR §17409.5.

3.2 Training

All operations personnel (i.e., scale house attendant, spotters, equipment operators, etc.) are trained to identify prohibited waste and properly handle those wastes. All employees receive a minimum of eight hours of training annually during which time any updated regulations for hazardous waste are discussed. A

copy of the load-checking program is available to all employees and is available in the Central Landfill library.

3.3 Waste Screening

Waste screening is performed by operations personnel during the operating hours of the landfill and transfer stations. All incoming loads are visually observed by the personnel and suspect waste is returned to the owner or removed, identified and properly stored for eventual disposal.

3.3.1 *Materials Storage*

Temporary Storage

Waste that does not pose any immediate danger, such as universal waste and other less hazardous waste, is stored in a temporary accumulation area. Disposal Workers inspect the items and determine if they are considered hazardous. If they are deemed hazardous they then will take the necessary steps for proper segregation and storage in the hazardous waste lockers.

The hazardous waste storage lockers are compartmentalized for segregating various types of material. The lockers are situated near the tipping area at the transfer stations. The storage lockers at the Central Disposal Site are in a secured location within the footprint of the transfer station building. Each locker has a spill containment floor, equipped with a chemical fire suppression unit. Each substance is stored in plastic storage containers so that there is no contact between dissimilar or unknown substance. The storage lockers are inspected daily to ensure that substances are not leaking, reacting or otherwise posing a threat to the environment.

Universal waste is sorted and placed into 4-foot by four-foot metal baskets and stored in the same general area with television and computer monitors. A contract hauler then removes the waste from the site at least every 90-days or sooner.

The County has contracted with a licensed hazardous waste hauler to remove from the site any known and unknown substances that clearly are reactive or otherwise present a danger. Items that are found to be permissible waste are placed back into the waste stream or items that are reusable, such as latex paint or motor oil, are placed in a locker designated as reusable and are available to the public. This process is typically done on a daily basis.

3.3.2 Disposal of Hazardous Waste

Hazardous or ineligible wastes are removed from storage at least every 90 days of the accumulation date. The type of disposal or recycling depends on the material type and is handled as follows:

- Ammunition- Taken to Sheriff Office;
- Batteries- Recycled by a contractor;
- Gas cylinders- Recycled by a private company;
- Medical Waste- Only autoclaved waste accepted, non-autoclaved waste is handled by a bio-hazardous waste contractor;
- Latex paint- Recycled, or bulk by hazardous waste hauler;
- Oil-based products- Handled by waste hauler;
- Unknowns & Incompatible items- lab packed and handled by hazardous waste contractor.

3.4 Load Checking

The initial step in load checking is to review incoming loads at the site entrance/scale house. The scale house attendant observes incoming loads for any indication of prohibited wastes. If the scale house attendant encounters suspicious looking loads, he or she will contact an operations supervisor to determine if the waste is acceptable. If prohibited wastes are identified during inspection of a load, the driver is notified that the wastes are not accepted at this site and they are allowed to dump everything but those unacceptable items. The scale house notifies the spotters of the truck number and the type of unacceptable waste that is on its way to the tipping areas so they can ensure customer compliance.

The next step in the program is checking the vehicle as it dumps its load at the load checking area. Trained personnel survey the load during and after unloading. All known prohibited wastes are identified and segregated from the load. If a load contains a prohibited material the customer is given information on how to dispose of the unacceptable waste properly.

The equipment operators are also in a position to survey some of the waste as it is being dumped at the tipping area and pushed into trailers. Operators can spot prohibited waste when they are present. If further assessment is needed, a supervisor is notified.

All individuals involved in the actual load checking will exercise caution to protect themselves, other employees and the public from hazardous materials. This includes, at a minimum, the wearing of gloves, boots and other personal protective clothing in conjunction with avoiding hazardous waste if it is encountered. Although the intent of the Load Checking Program is to prevent the

disposal of hazardous waste at solid waste facilities, safety of the employees is always the primary concern.

3.4.1 Type of Loads to be Checked

All loads are subject to the screening process. The disposal workers randomly check loads of both private and commercial haulers.

3.4.2 Frequency of Load Checks

All loads are continuously monitored for hazardous waste. An inspection team is sent to each of the transfer stations, at random, at least twice every month. The team spends approximately 3 to 4 hours inspecting loads and, depending on traffic loading, inspects most of the commercial and public loads that come in. The frequency of inspections can be increased at the discretion of the operations supervisor.

3.4.3 Report of Findings

After each inspection the load check team completes the required hazardous waste load checking form for all loads that are screened at the facility, regardless of the content of the load (see Appendix C). This information is kept on file and is available to the Local Enforcement Agency (LEA) upon request and quarterly reports are filed with the LEA.

3.4.4 Method of Selecting Loads

The load-checking program is conducted randomly. It is the responsibility of the operator to assure that load checks are not performed on the same day of the week or on the same hour of the day.

3.5 Contingency Plan

In the event of an accident or accidental discharge of hazardous waste or other ineligible waste, all appropriate personnel (i.e., operator, responsible agencies) will be notified immediately. The subject area will be isolated and secured, and an experienced hazardous waste clean up contractor summoned.

4.0 METHODS FOR DETERMINING WASTE ACCEPTABILITY

4.1 Physical Assessment

One practical means for determining the acceptability of suspicious waste is to examine its product label. Warning labels such as "harmful if inhaled" or "use only in a well-ventilated area" are often useful in identifying the waste type. In some cases, physical signs, such as odor or color might indicate the presence of a prohibited waste. Such observation, coupled with the customer's response to questions, often provides sufficient data to identify the waste.

When assessing a load the inspector may note an incompatibility in waste type, drawing attention to that part of the load that seems incongruous with the rest of the load. For example, the presence of a 55-gallon drum mixed in with a load of residential waste. Once noted, the customer would be questioned, and if needed, additional assessment undertaken.

4.2 Additional Assessment

In some cases the steps outlined above may be insufficient to identify the waste. It is the customer's responsibility to ensure that a specific waste is permissible before disposal. When a contaminated load is identified and rejected by the landfill/transfer station personnel, ***the original producer of the load retains the responsibility of being the generator***. The load check inspector may require that additional measures be taken by the customer at the customer's expense prior to accepting the waste. When this occurs, the customer will be advised to obtain one or more of the following acceptance authorization:

- Written clarification by regulatory agencies.
- Written clearance from the County of Sonoma, LEA for the Central Landfill
- Copy of Manufacturers Safety Data Sheet (MSDS)

4.3 Disposition of Prohibited Wastes

If prohibited wastes are discovered, as a result of any of the waste identification activities listed above, the customer is informed that such waste cannot be accepted by the facility and that it must be removed from the facility premises and arrangements made for proper disposal.

5.0 **ADDITIONAL WASTE ACCEPTANCE CONTROL PROCEDURES**

5.1 Signs and Flyers

Signs are currently posted near the site entrance that clearly state the types of wastes not accepted. In addition to the existing signs, flyers with alternatives for hazardous waste disposal and associated phone numbers are available at the scale house.

5.2 Operation by Site Personnel

In addition to the procedures for detecting hazardous waste that are conducted as part of the load checking program, operations personnel are trained and directed to identify potentially prohibited wastes that may be delivered to the site. Equipment operators are also trained to identify prohibited wastes as it appears at the tipping areas

5.3 Known Offenders

Special precautions are taken by the inspection team during inspections when accepting waste from sources that have previously attempted to off-load hazardous wastes. Precautionary measures will include: 1) Questioning of the vehicle driver by the scale house attendant and visually inspecting the contents of the load; 2) Sorting through the load during unloading; 3) Additional record keeping of known offender's license plate is kept in the office; and 4) The cashiers, spotters and supervisors all have knowledge of known repeat offenders. Continued repeat offenders will be banned from the facility and prosecuted to the fullest extent of the law.

5.4 Household Hazardous Waste Collection Program

As mentioned in section 1.0 the Integrated Waste Division of the Department of Transportation and Public Works recently opened its Household Toxic Waste Facility. The Facility is located on the property of the Central Disposal Site and adjacent to the Solid Waste Transfer Station at 500 Meham Road in Petaluma. The facility is currently open to the Public Thursday, Friday and Saturday, 7:30 A.M. to 3:30 P.M. Appointments are not necessary except in the case of small businesses.

In addition to the Household Toxics Facility the County offers Community Toxics Collections and Toxics Rover pick up service. The Community Toxics Collections are weekly events that are held every Tuesday from 4-8 P.M., somewhere in the County (call 795-2025 for locations). The Toxic Rover pick up service will pick up hazardous materials at the public's residence by appointment. There is a small fee for this service that includes disposal cost. For a comprehensive description of these and other recycling programs consult the Sonoma County Recycling Guide. These programs are outlined in the Sonoma County Recycling Guide.

LIST OF APPENDICES

Appendix A: Hazardous Materials Marking, Labeling & Placarding Guide

Appendix B: *Managing Universal Waste in California*, Dept. of Toxic Substances, Fact Sheet, June 2003.

Appendix C: Household Hazardous Waste Public Load Checking Reporting Form and Hazardous Waste Screening Reporting Form - Commercial.

RESPIRATORY PROTECTION PLAN

FOR

**CENTRAL DISPOSAL SITE
SONOMA COUNTY, CALIFORNIA**



SONOMA COUNTY DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS INTEGRATED WASTE DIVISION

Administrative Office
2300 County Center Drive, Suite B 100
Santa Rosa, California 95403
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Operations Headquarters
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Phone: (707) 792-0547

JUNE 2002

RESPIRATORY PROTECTION PLAN CENTRAL DISPOSAL SITE

June 2002

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RESPIRATORY PROTECTION PLAN

CENTRAL DISPOSAL SITE

June 2002

1.0 GENERAL INFORMATION

The purpose of the respiratory protection plan is to provide sufficient protection and training for employees whose respiratory tract could be damaged as a result of exposure to air that has been contaminated by a hazardous material or lack of oxygen. This plan is mandatory in accordance with Cal-OSHA Title 8, §5144.

1.1 EMPLOYEES AFFECTED

Employees most directly affected by contaminated air are the cashiers, those who mix and apply the Posi-Shell, employees who perform certain types of maintenance work, and engineers and technicians who may be exposed to toxic fumes while monitoring. For the most part, engineering controls are in place to prevent exposure to toxic fumes.

2.0 POTENTIALLY HARMFUL GASSES AND MATERIALS

There are several potentially harmful materials at Central Landfill that are either dust related or natural gasses that are the bi-product of landfill material.

Table 2.0.1: Mask Types

WORK AREA	HAZARDOUS MATERIAL	TYPE OF CARTRIDGE
Active Cell	Posi-Shell	Dust
All Fill Areas and Perimeters	Methane Gas	Gas
All Fill Areas and Perimeters	Hydrogen Sulfide	Gas
Cashier's Booth, Recycle Area, Heavy Equipment	Dust	Dust

2.1 TRAINING

All employees, full time and temporary, who might come in contact with any of the substances listed in the table above must use the appropriate protective equipment and must be trained annually on the use of that equipment. Those using cartridge type respirators will be given a "fit test." In addition, they will complete and sign a

fit test form once properly fitted. Employees with facial hair that interferes with an adequate seal will not be assigned tasks that require 3M-type mask. In those cases, they will be provided a respirator that does not rely on face to mask seal or assigned other work.

3.0 RESPIRATORY FIT TESTING PROCEDURES

3.1 FIT TEST

The fit test procedures described below are based on the new mandatory procedures promulgated in Cal-OSHA Title 8, §5144. The standard respirator fit test provides a reliable method of meeting qualitative face fit test requirements. Isoamyl Acetate (banana oil) is used for the cartridge respirator fit test.

1. The person being tested is allowed to select the most acceptable respirator for fitting from a sufficient number (2 or 3) of models so the respirator fits correctly.
2. The person will be shown how to put on a respirator. A mirror shall be available to assist the person in evaluating the fit and positioning of the respirator.
3. Assessment of comfort will include the following:

- ✓ Position of the mask on the nose.
- ✓ Room for eye protection.
- ✓ Room to talk.
- ✓ The position of the mask on both face and cheeks.

4. The following criteria shall be used to determine if the respirator fits properly:

- ✓ Chin properly placed.
- ✓ Adequate strap tension.
- ✓ Fit across the bridge of the nose.
- ✓ Respirator of proper size to span the distance from nose to chin.
- ✓ Tendency of respirator to slip.
- ✓ Self observation of the respirator in a mirror to evaluate final fit and position.

5. The test shall not be conducted if there is any hair growth between the skin and the face piece sealing surface.
6. A positive pressure check shall be performed by closing off the exhalation valve and gently exhaling into the face piece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the face piece without any evidence of outward leakage of air at the seal.
7. A negative pressure test shall be performed by closing off the inlet opening of the canister or cartridge(s) by covering them with the palm of the hand(s) or by replacing the filter seal(s), inhale gently so that the face piece collapses slightly, and hold the breath for ten seconds. If the face piece remains in its slightly collapsed position and no inward leakage or air is detected, the tightness of the respirator is considered satisfactory.
8. A card will be placed in front of the person being tested that shall read:

*"The purpose of this test is to determine if you can
smell banana oil at a low concentration."*

9. After proper adjustment and assurance of comfort the tester breaks the ampoules, which releases the banana oil. The tester moves the ampoules around the edge of the respirator for a few minutes while the person:

- ✓ Breaths normally
- ✓ Breaths deeply
- ✓ Turns his head side to side and up and down
- ✓ Talks for a few seconds
- ✓ Grimaces
- ✓ Bends over

If the person does smell banana oil, they are to readjust their mask and be retested.

More specific instructions, outlined in Cal-OSHA Title 8, §5144 may be used, depending on the success or failure of the fore mentioned instructions for proper fitting and testing.

3.2 RESPIRATOR SELECTION

3.2.1 Two-Strap Respirator With Valve

Sonoma County Refuse Operations has selected to use the 3M™, two-strap respirator with a valve for use with chemicals and dust. After evaluating working conditions at the Central site the respirator was recommended by a local safety supply company and consultant. The two-strap respirator is disposable and as such, should be replaced as needed, according to the manufacturers recommendation.

3.2.2 Half-Face Cartridge Respirator

Sonoma County Refuse Operations has selected the acid/gas cartridge or disposable cartridge respirator for use while working near methane or hydrogen sulfide gasses. The respirator must be regularly maintained, cleaned, and properly stored when not being used. In addition, the cartridges on these respirators must be replaced periodically, according to the manufacturers recommendation.

3.3 MEDICAL EXAMINATIONS AND RESPIRATORY TESTING

In order to establish a baseline respiratory capacity, all employees assigned duties that require use of a cartridge respirator will be given a respiratory examination by Occupational Health Department of Sonoma County. The exam is to assure that employees are physically capable of performing their duties while wearing a respirator.

3.4 CARTRIDGE TYPE RESPIRATORS: INSPECTION, CLEANING, AND MAINTENANCE

Employees must inspect their respirators for wear and deterioration before each use. When not being used, respirators and cartridges must be stored in plastic, air tight bags to protect against dust, sunlight, extreme temperatures excessive moisture, and damaging chemicals. When asked, respirators must be made available to OSHA inspectors or by the person responsible for safety at Central Landfill.

3.4.1 Cleaning Procedure

Respirators must be periodically cleaned and disinfected according to the following procedures:

1. Remove filter, cartridge, or canister.
2. Wash components in warm water with a mild detergent or manufacturer recommended cleaner. A stiff bristle (not wire) may be used to remove dirt.
3. Rinse components thoroughly in clean, warm running water.
4. If the cleaning agent does not contain a disinfecting agent, respirator components should be immersed in one of the following:

- ✓ Hypochlorite solution made by adding approximately 1ml of laundry bleach to one liter water.
- ✓ Aqueous solution of iodine made by adding approximately 0.8ml of tincture of iodine to one liter of water at 43°C (110°F).
- ✓ Other commercially available cleaners approved for use by the respirator manufacturer.

5. Rinse components thoroughly in clean, warm running water. It is very important to thoroughly rinse all components.
6. Components should be hand dried with a clean, lint-free cloth or air-dried.
7. Reassemble face piece, replacing filters, cartridges, and canisters when necessary.
8. Test the respirator to ensure that all components work properly.

The employer shall provide, repair, or replace worn or deteriorated respiratory protective equipment as necessary.

**SPILL PREVENTION, CONTROL
AND
COUNTERMEASURE PLAN**

FOR

**CENTRAL DISPOSAL SITE
SONOMA COUNTY, CALIFORNIA**

SONOMA COUNTY

**DEPARTMENT OF TRANSPORTATION
AND
PUBLIC WORKS
INTEGRATED WASTE DIVISION**

**2300 County Center Drive, Suite B 100
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**SPILL PREVENTION, CONTROL,
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SONOMA COUNTY
DEPARTMENT OF TRANSPORTATION
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ACRONYMS

AST	Aboveground Storage Tank
BAAQMD	Bay Area Air Quality Control Board
CDS	Continuous Deflective Separation
CFR	Code of Federal Regulations
CRDM	Continuous Release Detection Method
CUPA	Certificated Unified Program Agency
HHW	Household Hazardous Waste
OWS	Oil/Water Separator
PCBs	Polychlorinated Biphenyls
RPB	Release Prevention Barrier
RWQCB	Regional Water Quality Control Board
SCDTPW	Sonoma County Department of Transportation & Public Works
SIC	Standard Industry Classification Codes
SPCC	Spill Prevention, Control, and Countermeasure
SWRCB	State Water Resources Control Board
UST	Underground Storage Tank
USEPA	United States Environmental Protection Agency
WDR	Waste Discharge Requirement

DEFINITIONS^{1, 2}

ABOVEGROUND STORAGE TANK (AST) – a tank or container designed to operate at pressures from atmospheric pressure through a gauge pressure of one psig measured at the top of the tank. The tank may be sitting on the ground, or set on supports, such as saddles, skids or legs, etc. and may be installed in a vault. Included are shop-fabricated tanks, field-erected tanks, and portable containers with a capacity of 55 U.S. gallons (208 liters) or greater.

BULK STORAGE CONTAINER - means any container used to store oil. These containers are used for purposes including, but not limited to, the storage of oil prior to use, while being used, or prior to further distribution in commerce. Oil-filled electrical, operating, or manufacturing equipment is not a bulk storage container.

CONTINUOUS RELEASE DETECTION METHOD (CRDM) – a means of detecting a release of liquid through inherent design. It is passive because it does not require sensors or power to operate. Liquid releases are visually detected by facility operators. The system shall be designed in accordance with good engineering practice. Several acceptable and commonly used CRDM systems are as follows:

- Release prevention barrier (RPB) described in definition of release prevention barrier.
- Secondary containment AST including double-wall AST or double-bottom AST
- Elevated AST with release prevention barrier described in definitions of elevated AST and release prevention barrier.

CORROSION RATE – the rate of degradation of materials due to chemical reactions with their environment. The rate of corrosion is established by the certified inspector as the maximum shell thickness loss divided by the operational service time.

CERTIFIED INSPECTOR – a tank inspector who meets the certification requirements identified in Section 4.2 of this standard.

DISCHARGE - includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping of oil, but excludes discharges in compliance with a permit under section 402 of the CWA; discharges resulting from circumstances identified, reviewed, and made a part of the public record with respect to a permit issued or modified under section 402 of the CWA, and subject to a condition in such permit; or continuous or anticipated intermittent discharges from a point source, identified in a permit or permit application under section 402 of the CWA, that are caused by events occurring within the scope of relevant operating or treatment systems. For purposes of this part, the term discharge shall not include any discharge of oil that is authorized by a permit issued under section 13 of the River and Harbor Act of 1899 (33 U.S.C. 407).

DOUBLE-WALL AST – an AST with a primary tank contained within a secondary containment tank forming an interstitial (annular) space. An interstitial (annular) space between the two tanks is formed that is capable of being tested and monitored for leakage into the interstice

ELEVATED AST – an AST which is not in contact with the ground and which is raised above the surface of the ground or bottom of a vault using tanks supports. It allows for a visual external inspection of the bottom of the primary tank. Examples of elevated tanks are tanks constructed on grillage or grating, or tanks on supports.

FACILITY - means any mobile or fixed, onshore or offshore building, property, parcel, lease, structure, installation, equipment, pipe, or pipeline (other than a vessel or a public vessel) used in oil well drilling operations, oil production, oil refining, oil storage, oil gathering, oil processing, oil transfer, oil distribution, and oil waste treatment, or in which oil is used, as described in Appendix A

to this part. The boundaries of a facility depend on several site-specific factors, including but not limited to, the ownership or operation of buildings, structures, and equipment on the same site and types of activity at the site. Contiguous or non-contiguous buildings, properties, parcels, leases, structures, installations, pipes, or pipelines under the ownership or operation of the same person may be considered separate facilities. Only this definition governs whether a facility is subject to this part.

FIELD-ERECTED AST – a welded carbon or stainless steel AST erected on-site where it will be used. For the purpose of this standard, ASTs meeting either of the following descriptions are to be inspected as field-erected ASTs:

- a. An AST where the nameplate (or other identifying means such as accurate drawings) indicates that it is a field-erected AST. These are limited to a maximum shell height of 50 feet (15.24 meters) and a maximum diameter of 30 feet (9.14 meters).
- b. An AST without a nameplate (or other identifying means such as accurate drawings) that is more than 50,000 U.S. gallons (189,271 liters) and a maximum shell height of 50 feet (15.24 meters) and a maximum diameter of 30 feet (9.14 meters).

FORMAL EXTERNAL INSPECTION (FEI) – a documented external inspection conducted by a certified inspector to assess the condition of the AST and determine its suitability for continued service without entry into the AST interior.

FORMAL INTERNAL INSPECTION (FII) – a documented internal inspection conducted by a certified inspector to assess the internal and external condition of the AST and determine its suitability for continued service. This includes the inspection requirements of a formal external inspection. A formal internal inspection satisfies the requirements of a formal external inspection and shall be considered equivalent to or better than a formal external inspection for the purposes of scheduling.

INSPECTION PLAN – a written plan developed by the owner or a Professional Engineer that details the inspection requirements for a facility.

INTERSTICE – in a double-wall AST, the space between the primary tank and secondary tank. In a double-bottom AST, the space or void between the two bottoms. This space may be open or closed to the atmosphere and may be monitored or tested by vacuum or teak detection equipment or by visual inspection.

LEAK TESTING METHOD (LTM) – a point in time test method to determine if an AST is liquid tight. Leak testing is not preventive in the sense that it provides an indication only if the AST integrity has already been breached. Therefore, it may be used as a tank integrity measure or as a supplement to other inspection procedures. LTMs may include the following technologies:

- Gas pressure decay (includes vacuum decay)
- Gas pressure soap bubble testing
- Gas tracers (e.g., helium tracer)
- Soil tracers (chemical marker)
- Mass measurement
- Level measurement
- Hydrostatic test

MANWAY – an AST opening designed to allow personnel entry into an AST.

NONDESTRUCTIVE EXAMINATION (NDE) – the development and application of technical methods to examine materials and/or components in ways that do not impair future usefulness and serviceability in order to detect, locate, measure, interpret, and evaluate flaws.

Oil – *Oil* means oil of any kind or in any form, including, but not limited to: fats, oils, or grease of

animal, fish of marine mammal origin; vegetable oils, including oils from seeds, nuts, fruits, of kernels; and, other oils and greases, including petroleum, fuel oil, sludge, synthetic oils, mineral oils oil refuse, or oil mixed with wastes other than dredged spoil.²

OIL-FILLED OPERATIONAL EQUIPMENT - means equipment that includes an oil storage container (or multiple containers) in which the oil is present solely to support the function of the apparatus or the device. Oil-filled operational equipment is not considered a bulk storage container, and does not include oil-filled manufacturing equipment (flow-through process). Examples of oil-filled operational equipment include, but are not limited to, hydraulic systems, lubricating systems (*e.g.* , those for pumps, compressors and other rotating equipment, including pump-jack lubrication systems), gear boxes, machining coolant systems, heat transfer systems, transformers, circuit breakers, electrical switches, and other systems containing oil solely to enable the operation of the device

OWNER - the legal entity having control and responsibility for the operation of the existing AST and storage facilities.

OWNER'S INSPECTOR - the owner or owner's designee responsible for conducting owner's periodic AST inspections.

PAINT FAILURE - significant peeling, cracking, spalling, blistering, pitting and chipping etc. of the paint or coating on an AST resulting in the exposure of the metal surface and corrosion of the tank shell.

PERIODIC AST INSPECTION - a visual, documented inspection conducted by an owners inspector, to assess the general AST conditions, as best as possible, without suspending AST operations or removing the AST from service.

PORTABLE CONTAINER - a closed AST having a liquid capacity equal to or greater than 55 U.S. gallons and not intended for fixed installation.

PRIMARY TANK - the tank in direct contact with the liquid stored.

PROFESSIONAL ENGINEER (PE) - a person who has fulfilled the education and/or experience requirements under state licensure laws and has received a license to practice engineering.

RELEASE PREVENTION BARRIER (RPB) - a liquid containment barrier that is sufficiently impervious to the liquid being stored and is installed under the AST. Its purpose is to divert leaks toward the perimeter of the AST where they can be easily detected as well as to prevent liquid from contaminating the environment. RPBs are composed of materials compatible with the liquid stored in the AST and meet proper engineering standards. Examples are steel (such as in steel double-bottom tanks), concrete, elastomeric liners, or other suitable materials provided the above criteria are met.

SECONDARY CONTAINMENT SYSTEM - provides a secondary means of containment for the entire volumetric capacity of the largest single AST within a common dike/berm and sufficient freeboard to contain precipitation. The secondary containment system is to be designed to contain a spill until it can be discovered and cleaned up. It must be constructed to good engineering practices. (Note: See NFPA 30 and/or 40 CFR Part 112 and other local requirements for additional definitions.)

SECONDARY CONTAINMENT DIKE/BERM - a spill control system consisting of walls and a floor completely surrounding single/multiple ASTs. It provides a secondary means of containment for the entire capacity of the largest single AST and sufficient freeboard to contain precipitation and the displacement volume present below the dike wall of other ASTs in the containment area. The secondary containment dike/berm is to be constructed to good engineering practices.

SECONDARY CONTAINMENT AST - an AST with an integral secondary containment dike. These

integral secondary containment dikes may be pans, boxes or containers and are designed to contain the contents of the primary tank if the primary tank fails. A secondary containment AST may be open or closed to the atmosphere. If precipitation cannot readily enter the integral secondary containment, then the containment need only be sized for the primary tank volume. If precipitation can enter the secondary containment, then the secondary containment is sized to contain the primary tank volume and with sufficient freeboard to contain precipitation.

SECONDARY TANK – the outer wall of a double-wall AST.

SHELL – for the purposes of this standard, the AST shell includes the roof, bottom, head or wall of the AST.

SHOP-FABRICATED – a welded carbon or stainless steel AST fabricated in a manufacturing facility or an AST not otherwise identified as field-erected with a volume less than or equal to 50,000 U.S. gallons (189,271 liters).

SINGLE-WALL AST – an AST with only one wall or shell.

SPILL CONTROL - a means of preventing a release of liquid to the environment including adjoining property and waterways. Methods include the following:

- Remote impounding
- Secondary containment dike/berm
- Secondary containment AST
- Secondary containment system

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN - *SPCC Plan, or Plan* means the document required by §112.3 that details the equipment, workforce, procedures, and steps to prevent, control, and provide adequate countermeasures to a discharge.

STORAGE CAPACITY - Storage Capacity of a container means the shell capacity of the container.

SUFFICIENTLY IMPERVIOUS - Sufficient resistance to diffusion and transport of hydrocarbon or other chemical substances to prevent contamination of the environment until clean-up occurs. Determination of "sufficiently impervious" is a technical consideration that a Professional Engineer or other qualified professional (such as Professional Geologist, Environmental Professional, etc.) must make. This determination is to be based on sound technical considerations, the site specific conditions, as well as risk based considerations, such that ground and groundwater contamination is prevented, using current normally accepted engineering practices and principles. Sufficiently impervious does not necessarily mandate the use of a liner. Additional information about liners is found in API 341, *A Survey of Diked-area Liner Use at Aboveground Storage Tank Facilities*.

SUITABILITY FOR CONTINUED SERVICE – the determination that an AST's condition is adequate for continued use based on the criteria presented in this standard.

TANK IN CONTACT WITH THE GROUND – an AST that does not include a release prevention barrier and has some part of its primary tank shell in direct contact with the ground or soil. Therefore, direct inspection of all exterior surfaces of the AST cannot be conducted from the tank exterior.

TANK SUPPORTS – structures designed to elevate an AST above the ground. These include saddles, skids, beams, legs, and similar structures.

¹ Steel Tank Institute, *Standard for the Inspection of Aboveground Storage Tanks*, SP001 4th Edition, 2006, pp 4-7

² Code of Federal Regulations, 40 CFR 112.2 - Definitions

1.0 GENERAL REQUIREMENTS FOR SPCC PLANS

1.1 SPCC Plan Conformance [40 CFR 112.7(a)(1)]

This Plan has been prepared in accordance with 40 CFR 112, *Oil Pollution Prevention*. The objective of this plan is to describe the procedures that are to be implemented by the County of Sonoma to prevent, control, and mitigate the release of petroleum substances to the environment at the Central Disposal Site (Facility), located in Petaluma, California, in the County of Sonoma. The Department of Transportation and Public Works owns and operates the landfill and adjacent transfer station for the use of the residents of the County of Sonoma. The Central Disposal Site is a class III solid waste municipal landfill and transfer station that meets the regulatory criteria for an on-shore, non-transportation Facility that stores and consumes oil and oil products. This SPCC Plan for the Facility has been prepared because the aggregate aboveground volume of oil stored or oil being used exceeds 1,320 gallons and could be reasonably expected to discharge into or upon a navigable waterway. There are no polychlorinated biphenyls (PCBs) at this site. There are no underground storage tanks (USTs) and no partially buried tanks for the storage of oil products at the Facility.

The Facility management has determined that this facility does not meet the criteria for substantial harm as determined by 40 CFR 112, Attachment C-II, *Certification of the Applicability of the Substantial Harm Criteria* (Appendix A) and, therefore, does not pose a risk of substantial harm.

This Plan describes only those operations that are conducted by the County and not those conducted by independent contractors located at the Facility. Section 25270.2 of the Health and Safety Code defines "tank facility" as a single business entity at a single location or site. Therefore, storage capacity is not the cumulative amount of petroleum on site, but rather the cumulative amount of petroleum that is owned and operated by a business entity. There are four contractors that have operations at the Facility that include the bulk storage and use of oil products. Those contractors and a contact person are listed in Appendix B, *Emergency Contact List*.

If a spill occurs that is the result of an on-site operations contractor, other than the County, the Contractor will respond using the controls and countermeasures identified in the Contractor's SPCC Plan or Emergency Response Plan.

Reference used for the preparation of this SPCC Plan include: *Spill Prevention, Control, and Countermeasure (SPCC) Guidance for Regional Inspectors*; Steel Tank Institute - *Standard for the Inspection of Aboveground Storage Tanks*, 4th Edition; *Oil Pollution Prevention regulation*, California Health and Safety Code and; Title 40, Code of Federal Regulations, part 112.

1.2 SPCC Cross Reference [40 CFR 112]

TABLE 1.2: CROSS REFERENCE WITH SPCC RULE

Section	Regulatory Reference	Page No.
1.1 - SPCC Plan Conformance	40 CFR 112.7(a)(1)	1
1.1 - Certification of the Applicability of the Substantial Harm Criteria	40 CFR 112.20(e)	1 Appendix A
1.2 - Cross Reference with SPCC Rule	40 CFR 112.7	2
1.3 - Plan Location	40 CFR 112.3(e)	4
1.4 - Discharge Notification	40 CFR 112.4(a)	4
2.1 - Management Approval	40 CFR 112.7	5
2.2 - PE Certification	40 CFR 112.3(d)	5
2.3 - SPCC Plan Amendments	40 CFR 112.5(a)	6
2.4 - SPCC Plan Review	40 CFR 112.5(b)	7
3.0 - Facility Information	40 CFR 112.7	8
4.0 - Emergency Contacts	40 CFR 112.7(a)(3)(vi)	9 Appendix B
5.0 - Facility Description and Layout	40 CFR 112.7(a)(3)	10 Figures 3A & 3B
5.4 - Facility Drainage	40 CFR 112.8(b)	13
5.5 - Drainage of Diked Areas	40 CFR 112.8(c)(3)	14
5.6 - Practicability of Secondary Containment	40 CFR 112.7(d)	14

5.7 - Conformance with Other Requirements	40 CFR 112.7(j)	14
6.1 - Brittle Fracture Evaluation	40 CFR 112.7(i)	16
6.2 - Product Compatibility w/Bulk Storage Containers	40 CFR 112.8(c)(1)	16
6.3 - Corrosion Protection	40 CFR 112.8(c)(4)	16
6.4 - Partially Buried Storage Tanks	40 CFR 112.8(c)(5)	16
6.5 - Heating Coils	40 CFR 112.8(c)(7)	16
6.6 - Overfill Prevention System	40 CFR 112.8(c)(8)	17
6.7 - Effluent Treatment	40 CFR 112.8(c)(9)	17
6.8 - Visible Discharge	40 CFR 112.8(c)(10)	18
6.9 - Mobile and Portable Containers	40 CFR 112.8(c)(11)	18
6.10 - Secondary Containment for Bulk Storage	40 CFR 112.8(c)(2)	18
6.11 - On-Site Oil Storage	40 CFR 112.7(a)(3)(i)	19
6.12 - Tank Truck Loading/Unloading Rack	40 CFR 112.7(h)	20
6.13 - Oil Delivery and Handling	40 CFR 112.7(a)(3)(ii)	20
6.14 - Transfer Operations, Pumping and Processing	40 CFR 112.8(d)	20
7.0 - Potential Discharge Volumes and Direction of Flow	40 CFR 112.7(b)	22
8.0 - Containment Structures and Secondary Controls	40 CFR 112.7(c)	25
9.0 - Discharge Response	40 CFR 112.7(a)(5)	33
10.0 - Site Inspections, Testing, and Recordkeeping	40 CFR 112.7(e)	34
10.4 - Tank Integrity Testing	40 CFR 112.8(c)(6)	37
11.0 - Personnel, Training, and Discharge Prevention Procedures	40 CFR 112.7(f)	38
11.0 - Discharge Prevention Briefings	40 CFR 112.7(f)	38
12.0 - Site Security	40 CFR 112.7(g)	39

1.3 Plan Location [40 CFR 112.3(e)]

A copy of the plan will be kept in the Administration Office Library at 500 Mecham Road in Petaluma and will be available for review to the Regional Administrator during normal working hours.

1.4 Discharge Notification [40 CFR 112.4(a)]

In the event that this facility has a discharge of more than 1,000 gallons of oil in a single discharge or more than 42 gallons of oil in each of two discharges occurring within any twelve month period this facility will submit to the Regional Administrator, within 60 days, the following information:

1. Name of the facility;
2. Name of the responsible official of the facility;
3. Location of the facility;
4. Maximum storage capacity of the facility;
5. Corrective action and countermeasures taken in response to the spill, including a description of the equipment repairs and replacement;
6. An adequate description of the facility, including maps, flow diagrams, and topographical maps;
7. The cause of the discharge, including failure analysis of the system or subsystem in which the failure occurred;
8. Additional preventative measures taken and considered to minimize the possibility of a recurring event; and
9. Any additional information as the Regional Administrator may reasonably require pertinent to the Plan or discharge.

A Discharge Notification Form containing the above information is provided in Appendix C.

2.0 APPROVALS AND CERTIFICATION

2.1 Management Approval and Designated Person [40 CFR 112.7]

This SPPC Plan has the approval of the Sonoma County Integrated Waste management. Sonoma County management shall provide the manpower, equipment, and materials required to address spill prevention, to expeditiously control and remove any harmful quantity of oil or related petroleum substances released from the facility, and to take actions to prevent the spill from recurring. The Operations Manager is the Designated Person Accountable for Oil Spill Prevention at this facility, and has the authority to commit the necessary resources to implement this Plan. This Plan will be implemented as described herein.

Manager's Concurrence

Signature: Trish Pisenti
Name: Trish Pisenti
Title: Operations Manager,
Integrated Waste
Date: 8/26/10

2.2 Professional Engineer's Certification [40 CFR 112.3(d)]

Certification: I, Keith Foszcz, hereby certify that I am familiar with the requirements of 40 CFR 112 and, having examined the facility, am satisfied that the plan has been prepared in accordance with good engineering practices and consideration of applicable industry standards including the requirements of 40 CFR 112.3. In addition, I certify that procedures for inspections and testing have been established and that the Plan is adequate for this facility.

Signature: Keith Foszcz
Name: Keith Foszcz
Title: Civil Engineer
Central Disposal Site
Date: 6/10/10



2.3 SPCC Plan Amendments [40 CFR 112.5(a)]

The Plan will be amended in accordance with the general requirements of Section 112.7 whenever there is a change in the facility design, construction, operation, or maintenance that materially affects its potential for a discharge as described in Section 112.1(b). The Plan will be amended within six months and implemented as soon as possible, but not later than six months following preparation of the amendment.

TABLE 2-1: P.E.'s AMENDMENT LOG


CENTRAL DISPOSAL SITE SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN				
Change No.	Date Entered	P.E.'s Initials	Amendment	Page No.
1			Plan Revised and Issued	All

Previous Version of this Plan			
Date	Scope	P.E.'s Name	Licensing State and Registration No.
June 2003	SPCC Plan for Central Disposal Site	Don R. Poindexter	California

2.4 *SPCC Plan Review [40 CFR 112.5(b)]*

In accordance with 40 CFR 112.5(b), a review and evaluation of this SPCC Plan will be conducted by June 10, 2015, or at least once every five years. As a result of the five year review and evaluation, Central Disposal Site Operations Manager, with the authority of the County of Sonoma, will amend the Plan within six months of the review to include more efficient prevention and control technology if: (1) such technology will significantly reduce the likelihood of a spill event from the facility, and (2) if such technology has been field-proven at the time of review. Any amendment to the SPCC Plan shall be certified by a Professional Engineer within six months after a change in the facility design, construction, operation, or maintenance occurs which materially affects the facility's potential for the discharge of oil into or upon the navigable waters of the United States or adjoining shorelines.

TABLE 2-2: SPCC PLAN RECORD OF REVIEW

Review Date	Plan Amendment		Name / Signature of person authorized to review this Plan	
	Will be Amended	Will Not be Amended	Name	Signature
June 2010	✓		Keith Foszcz	

2.5 *Facilities, Procedures, Methods, or Equipment Not Yet Fully Operational[40 CFR 112.7]*

Modifications to the containment structures of the Power Plant and Main transformers (PH-1, PH-2, and #3) will be necessary in order to comply with the requirements for adequate secondary containment storage. Until such time that the modifications are completed the County will implement a plan for Storm Water Sedimentation Pond #5, the ultimate destination of a oil related release from the Power Plant, that consists of installing oily-philic booms in a series of

four concentric rings around the outlet standpipe of the pond such that any release of any type to that pond will be absorbed by the booms.

The County is currently requesting bids to replace the 600-gallon portable diesel tank (#2) that is currently being used to fuel operations equipment in the transfer station building.

Both the modification to the containment structures and the replacement of the fuel tank will be registered in Table 2-1, *P.E.s Amendment Log*, at the time the changes occur.

3.0 FACILITY INFORMATION [40 CFR 112.7]

Name of Facility: Central Disposal Site

Type of Facility: Class III Municipal Solid Waste Disposal

Location of Facility: 500 Mecham Road, Petaluma CA 94952

Phone Number of Facility: (707) 565-7940

Adjoining Neighbors: John Mattos Dairy, 602 Hamel Rd., Petaluma
Joseph Camozzi Dairy, 388 Mecham Rd., Petaluma

Name and Address of Owner: Sonoma County Dept. of Transportation & Public Works
2300 County Center Drive, Suite B 100
Santa Rosa, CA 95403
Tele: (707) 565-2231

Designated Responsible Person: **Name:** Trish Pisenti
Title: Operations Manager, Integrated Waste
Tele: (707) 565-7958

4.0 EMERGENCY CONTACTS [40 CFR 112.7(a)(1)]

Function	Contact Organization/Person*	Contact Numbers	
		Office	Cell
	National Response Center (NRC)	800-424-8802	
Cleanup Contractor	PSC Services Corporation/ Terry McGuiness		
	24-hour Response Line	877-577-2669	480-6444
Key Facility Personnel			
Operations Manager and Designated Person Accountable for Oil Spill Prevention	Trish Pisenti	565-7946	696-9190
Designated Alternates	Tami Danzart	565-7945	696-9192
	Bob Simi	565-7946	696-9193
CUPA	Local Administrating Agency	565-2362	
	Sonoma County DES	565-1152	
California Office of Emergency Services			
	State Warning Center	800-852-7550	
Local Environmental Agency	Sonoma County Environmental Health Dept.	565-6565	
	California Fish & Game (Napa, CA)	944-5500	
	RWQCB – Region 1	323-4945	

*For additional Contacts see Appendix B. *Emergency Contact List*

5.0 FACILITY DESCRIPTION [40 CFR 112.7(a)(3)]

The Standard Industry Classification (SIC) codes for the Central Disposal site are as follows:

- 1429 – Crushed and Broken Stone: Establishments primarily engaged in mining or quarrying crushed and broken stone, not elsewhere classified.
- 4953 – Refuse Systems: Establishments primarily engaged in the collection and disposal of refuse by processing or destruction or in the operation of incinerators, waste treatment plants, landfills, or other sites for disposal of such materials. Establishments primarily engaged in collecting and transporting refuse without such disposal are classified in Transportation, Industry 4212.
- 5093 – Scrap and Waste Materials: Establishments primarily engaged in assembling, breaking up, sorting, and wholesale distribution of scrap and waste materials. This industry includes auto wreckers engaged in dismantling automobiles for scrap. However, those engaged in dismantling cars for the purpose of selling secondhand parts are classified in Industry 5015.

5.1 *Days and Hours of Operation*

The Central Disposal Site is open to the public for receiving solid waste Monday – Saturday from 7:00 am until 3:00 pm. The site is closed for the following holidays: Thanksgiving Day, Christmas Day, New Years Day, Labor Day, and Independence Day.

Operations contractor has access to the site from 6:00 am to 6:30 pm seven days a week for the purpose of moving, loading, and out-hauling solid waste.

5.2 *Facility Location*

The Central Disposal Site has been owned and operated by the County of Sonoma since 1971. The Facility is located at 500 Mecham Road, Petaluma, California, approximately 4 miles southwest of the City of Cotati, in the Rancho Roblar De La Miseria (see Figure 1, *Site Vicinity Map*). The Site is bounded by Mecham Road to the east, Hammel Road to the south, and is located at latitude 38 degrees, 18 minutes north and longitude 122 degrees, 45 minutes west (see Figure 2, *Site Location Map*).

5.3 Facility Operations

The Facility consists of 398.5 acres upon which are located two separate class III solid waste landfills: Landfill 1, consisting of 130 acres and; Landfill 2 consisting of 20 acres. No waste has been placed in either landfill since September 30, 2005 and, though Central is not a "closed site" it is currently being operated strictly as a class III municipal solid waste transfer station. The County operates the transfer station and the heavy equipment maintenance shop. Also located on the County property, but operated by non-County contractors are: Recycle/Reuse Facility; Household Toxics Facility; Landfill Gas to Energy Plant; Metal Recycling and Processing Facility and; Composting Facility. An integral part of operations at the Facility is the storage and dispensing of fuel and lubricants. Other activities include: vehicle equipment storage; equipment maintenance; materials recycling; receiving and processing of clean wood; receiving, processing, and composting yard waste and; sorting, compacting and transporting metal goods. The areas where these activities take place are illustrated on Figures 3A and 3B, *Site Facilities Maps*.

Maps 3A and 3B show the Facility broken down into four quadrants: Northwest; Northeast; Southeast and; Southwest. The quadrants, in turn, have been broken down into quarters. For example, the public tipping facility is in the SW $\frac{1}{4}$, NE $\frac{1}{4}$, read "southwest quarter of the northeast quadrant." Specific activities and locations are further labeled as being in Sectors A, B, C, or D. Each sector has been assigned a map coordinate from Figure 3A. For example, there is a 6000-gallon gasoline/diesel fuel tank adjacent to the transfer building, located in Sector A, in the SW $\frac{1}{4}$, NE $\frac{1}{4}$. Facility operations, and corresponding sector and coordinate designations are listed in Table 5.1.

TABLE 5-1: SECTORS AND COORDINATES (SEE FIGURES 3A & 3B)

Operation	Sector	Coordinates
Solid Waste Transfer Operation	A	SW $\frac{1}{4}$, NE $\frac{1}{4}$
Solid waste Landfill Operation	B	All quadrants
Recycling/Reuse Operation	A	SW $\frac{1}{4}$, NE $\frac{1}{4}$

Household Toxics Facility	A	SW ¼, NE ¼
Landfill Gas-to-Energy Plant	A	SW ¼, NE ¼
Heavy Equipment Maintenance Shop	B	SW ¼, SE ¼
Metal Recycling and Processing operation	C	SE ¼, NW ¼
Chipping and Composting Operation	D	NE ¼, NW ¼

The public tipping facility and recycle/reuse area is open and available to the public, and includes the following buildings and respective operation:

- Building I: Public Tipping Facility
- Building II: Storage Building
- Building III: Refuse/Recycle Office
- Building IV: Attendants Booth
- Building V: Household Toxics Facility
- Building VI: Materials Storage
- Building VII: Materials Storage
- Building VIII: Oil Recycle Building

The public tipping facility, the household toxics facility, and the recycling facility cover approximately 12 acres and are located in SW¼, NE¼ (Figure 3B). With the exception of the compost operations, public access to the Facility is limited to these 12 acres. Household and limited commercial waste is deposited in Building I, household hazardous waste is deposited at Building V, reusable materials, such as windows, doors, clothing and household items can be found in Buildings VI and VII and used motor oil and filters are deposited in Building VIII. All other recycling is handled at the recycling drop off area, adjacent to the "Z" wall, north of Building VI. White goods, such as refrigerators, washing machines and dryers are temporarily stored on a concrete pad north of Building I.

5.4 Facility Drainage [40 CFR 112.8(b)]

Storm water runoff from the Facility is regulated by the State Water Resources Control Board, Water Quality Order No. 97-03-DWQ, NPDES General Permit No. CAS000001 to Discharge Storm Water Associated with Industrial Activities. A Storm Water Pollution Prevention Plan has been prepared for this facility and is available for review at the Administration Office library.

The Facility's storm water is conveyed by a combined network of drain/curb inlets, open ditches, swales, enclosed pipe, an oil/water separator, and a Continuous Deflective Separation (CDS), all of which drain to two storm water containment ponds, No.s 5 & 6, located along the sites south boundary and adjacent to Hammel Road. The ponds have a combined volume of approximately 3.5 million gallons. The Facility operations, including the transfer station, recycle/reuse, and toxics facility, are all interconnected to a storm water transmission system of drain/curb inlets that drain to the CDS unit before draining to storm water containment pond No. 5. The sedimentation ponds and two other drainage areas drain to two unnamed tributaries of Stemple Creek and eventually to the Estero de San Antonio and to the Pacific Ocean, located approximately 15 miles from the Facility.

All curb and drop inlets are equipped with catch basin filter inserts. Hydrocarbon absorbent materials have been installed in all the inserts to trap oil and grease flowing off the asphalt. The inserts are serviced periodically throughout the rainy season: floating material is removed from the inserts and the oil absorbent material is replaced. All drop and curb inlets from the operations area culminate in the CDS unit. The CDS unit removes coarse and medium grained sediments and a significant amount of fine sediments, as well as a percentage of suspended particles.

The direction and engineered pathways of storm water flow is illustrated in Figure 4, *Site Drainage Map*.

The storm drain and sewage system at the Central Disposal Site are not connected to a municipal sewer. All sewage at the Facility is treated locally through either on-site septic systems or through the use of portable toilets. Clean water for the site is supplied by a well that is exclusive to the Facility and is located approximately one mile to the northeast.

5.5 *Drainage of Diked Areas [40 CFR 112.8(c)(3)]*

Stormwater that has accumulated in diked or containment areas will be inspected for an oily sheen prior to discharge. Should the containment area contain storm water with an oily sheen the contents will either be treated insitu and the clean storm water released or the entire contents of the containment will be removed and treated. A record of any such event will be kept on the Record of Containment Drainage. A sample record is available in Appendix N.

5.6 *Practicability of Secondary Containment [40 CFR 112.7(d)]*

It has been determined that secondary containment at the Central Disposal Site is practicable.

5.7 *Conformance with Other Requirements [40 CFR 112.7(j)]*

The locations and quantities of all hazardous materials containers and equipment (including those subject to SPCC requirements) are submitted to the Sonoma County Department of Emergency Services as part of the Hazardous Material Business Plan (HMBP) program.

The Central Disposal Site operates in accordance with the following permits and regulatory requirements: The RWQCB, Region 1 Waste Discharge Requirements – Order No. R1-2004-0040 for the Central Disposal Site; The WRCB, Water Quality Order No. 97-03-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit for the Discharges of Storm Water Associated with Industrial Activities; USEPA Title V Permit; BAAQMD Permit to Operate Plant #A2254; CalRecycle (formerly CIWMB) Solid Waste Facilities Permit No. 49-AA-0001.

6.0 PETROLEUM HANDLING

6.1 *Brittle Fracture Evaluation [40 CFR 112.7(i)]*

There are no field constructed tanks at the Central Disposal Site. Therefore, Brittle Fraction evaluation requirements do not apply to this facility

6.2 *Product Compatibility with Bulk Storage Containers [40 CFR 112.8(c)(1)]*

The design and construction of all County owned bulk storage containers at the Central Disposal Site are compatible with the characteristics of the oil product they contain, and with temperature and pressure conditions. All containers are constructed to accept industry standards.

6.3 *Corrosion Protection [40 CFR 112.8(c)(4)]*

None of the fuel or oil containers described in this section are in contact with soil directly. All containers are on concrete and supported either on saddles, skids, or pallets. Since none of the containers are in contact with soil, the potential for extensive corrosion is relatively low. Certain containers, such as the fuel storage tank, have a factory applied coating for corrosion prevention.

6.4 *Partially Buried and Bunkered Tanks [40 CFR 112.8(c)(5)]*

This section does not apply since there are no partially buried or bunkered storage tanks at this facility.

6.5 *Heating Coils [40 CFR 112.8(c)(7)]*

There are no heating coils used at this facility.

6.6 *Overfill Prevention System [40 CFR 112.8(c)(8)]*

The diesel fuel tanks and the waste oil containers are equipped with level gauges. The gasoline/diesel tank is equipped with a clock gauge while the waste oil containers use a "high tank" gauge. The gasoline/diesel fuel tank has an overfill prevention device situated in the fill tube, which physically stops fuel delivery flow at 95%. Gasoline and diesel fuel used for the transfer station operation is delivered by bulk tanker trucks. The largest fuel delivery is for the 6,000-gallon gasoline/diesel tank. Trained personnel from the fuel supplier are present throughout the filling operations to monitor the product level in the tank. An Emergency Shut-Off switch has been installed within 100 feet of the gasoline/diesel tank and is located on the metal support beam of the transfer station building directly across from the tank. In addition, general secondary containment is provided in the event of overfills, as described in section 8.2 of this Plan. Spill containment boxes are integrated into the tank design and situated at the base of the fill tube of the tank. Buckets are used to slip under the fill connection coupling to catch any fugitive product that might spill during the course of removing the filler hose.

Oil storage drums are not refilled, and therefore overfill prevention systems do not apply. Used oil is stored in double wall constructed waste oil containers and are managed carefully to avoid over-fills. Local spill containment is provided by spill containment pallet systems and spill containment equipment. The concrete floor of the maintenance shop and adjacent work area provide additional protection in the event an over-fill.

6.7 *Effluent Treatment [40 CFR 112.8(c)(9)]*

The Central Disposal Site produces leachate and process water (gray water) from operations that requires an offsite industrial discharge permit; both are collected and removed from the site for treatment at the waste water treatment facility by a licensed hauler. The facility's storm water effluent discharges into an unnamed tributary of the Stemple Creek and is regulated under NPDES Industrial Permit CAS000001 and site specific WDRs. Sampling and visual observations of the discharge in the rainy season is required. Additional information regarding the requirements of this permit is available at the Administration Office.

6.8 Visible Discharge [40 CFR 112.8(10)]

Visible discharges from any container or appurtenance – including seams, gaskets, piping, pumps, valves, rivets, and bolts – are quickly corrected upon discovery. Oil is promptly removed from the containment area and disposed of according to the waste disposal method described later in §9.0 of this Plan.

6.9 Mobile and Portable Containers [40 CFR 112.8(c)(11)]

Small portable oil storage containers, such as 55-gallon drums, are stored inside and outside the Heavy Fleet maintenance shop where secondary containment is provided by spill pallets and the concrete floor. Any discharged material is quickly contained and cleaned up using sorbent pads, spill absorbents and appropriate cleaning products .

6.10 Secondary Containment [40 CFR 112.8(c)(2)]

All bulk oil storage containers (excluding 55-gallon drums) are Shop Fabricated structures with integrated secondary containment, such as double walls. Most have been adapted with some type of tertiary containment feature beyond the integrated secondary containment features of the container itself (refer to Table 7.1) such that most bulk containers are inside a building that offers complete volume containment.

The 55-gallon drums in and outside the Heavy Fleet Maintenance Shop are on spill containment pallets. Each pallet provides 110% of containment capacity of a single 55-gallon drum. None of the drums inside the shop are exposed to precipitation and the spare drums outside the shop are also on a pallet containment system under a roof and, therefore, are out of the rain.

The two oil cooled transformers at the power plant are contained within reinforced concrete containment berms; one for each transformer. The berms were constructed prior to SPCC, and as a result, do not meet the standard for containment capacity (see Appendix D).

6.11 On-Site Oil Storage [40 CFR 112.7(a)(3)(i)]

There are approximately 11,720-gallons of petroleum products stored at various known points within the 398-acre footprint of the Site and are listed in Table 6.1 below. The oil stored ranges in volume from 55-gallon drums to a 6,000-gallon double-wall, divided fuel storage tank. For the purpose of this plan, petroleum products include, but are not limited to: diesel fuel, unleaded gasoline, waste motor oil, fresh motor oil, final drive oil, hydraulic fluid, transformer oil, and transmission oil. The following tables summarize the location, contents and volumes of the various aboveground storage containers at the Central Disposal Site.

TABLE 6-1: OIL STORAGE AND USE DESCRIPTION OF CONTAINERS

ID No.	Equipment	Description	SPCC Classification	Contents	Capacity (gallons)
1	Shop Fabricated Secondary Containment AST Gas/Diesel Storage Tank	6,000-gallon shop fabricated gasoline/diesel AST with integrated secondary containment and 2 dispensers	Bulk Storage Container	Gasoline/Diesel	3000/3000
2	Portable Shop Fabricated double contained AST Diesel Storage Tank	528-gallon portable diesel AST	Bulk Storage Container	Diesel	528
3	Main Power Transformer/Oil Insulated Transformer	Steel transformer casing with other electrical features	Oil Filled Electrical Equipment	Transformer Oil	270
4	Drums ¹	DOT rated drums stored in palletized containment system on concrete floor of Heavy Fleet Maintenance Shop	Bulk Storage Containers	<ul style="list-style-type: none"> Final Drive (SAE-50) – 3 drums (165) Hydraulic Fluid – 3 drums (165) Transmission Oil – 3 drums (165) Motor Oil – 3 drums (165) 	
5	6" Water Pump	6" trailer mounted water pump	Oil Filled Equipment	Diesel	260
PH-1	60 KV Power Plant Substation/Oil Insulated Transformer	Steel transformer casing with other electrical features	Oil Filled Electrical Equipment	Transformer Oil	1189

ID No.	Equipment	Description	SPCC Classification	Contents	Capacity (gallons)
PH-2	60 KV Power Plant Substation/Oil Insulated Transformer	Steel transformer casing with other electrical features	Oil Filled Electrical Equipment	Transformer Oil	1166
9907384	Waste Oil Storage Container	Shop Fabricated Steel Container w/Integrated Secondary Containment	Bulk Storage Container	Used Motor Oil	300
9907379	Waste Oil Storage Container	Shop Fabricated Steel Container w/Integrated Secondary Containment	Bulk Storage Container	Used motor oil	480
9907383	Waste Oil Storage Container	Shop Fabricated Steel Container w/Integrated Secondary Containment	Bulk Storage Container	Used motor oil	480
9907385	Waste Oil Storage Container	Shop Fabricated Steel Container w/Integrated Secondary Containment	Bulk Storage Container	Used motor oil	480
Total Oil Storage.....					11,720

¹ The total number of containers will vary slightly day-to-day as stock is used and refreshed but will not exceed one open drum and two spare drums for each oil type.

6.12 Tank Truck Loading/Unloading Rack Requirements [40 CFR 112.7(h)]

There are no Tank Truck Loading/Unloading Racks at this facility

6.13 Oil Delivery and Handling [40 CFR 112.7(a)(3)(ii)]

Oil products, such as hydraulic oil, transmission oil, and motor oil, are delivered to the Site in 55-gallon drums. Other bulk oil transfers involve the pick-up of used motor oil from the transfer station, the used oil drop-off centers, and County's contractor's areas. All oil handling areas, including contractor's areas, are equipped with spill-containment kits. The location of spill-containment kits throughout the site are illustrated on Figures 3A and 3B.

6.14 *Transfer Operations, Pumping and Processing [40 CFR 112.8(d)]*

Transfer operations at this facility include the filling of the fuel tanks by the fuel vendor, the fueling of vehicles and equipment by County personnel, and transfer of small amounts of products into vehicles and equipment during servicing. Care is taken during these processes to guard against spills and releases, and spill-containment equipment is available on-site in event of a releases. Operations personnel plan their work to avoid releases and spills.

There is no substantial amount of buried piping at this facility that contains oil on a routine basis.

All tank piping and valves are examined monthly to assess their condition. Inspection includes aboveground valves, piping, appurtenances, expansion joints, valve glands and bodies, catch pans, and metal surfaces. Observations are noted on the monthly inspection checklist provided in this Plan.

Concrete filled bollards and K-Rails have been placed where needed to prevent vehicular collisions with equipment.

7.0 POTENTIAL DISCHARGE VOLUMES AND DIRECTION OF FLOW [40 CFR 112.7(b)]

Local secondary containment is provided at nearly all petroleum storage and use areas managed by the County. Containment is provided by a number of means, including integral secondary containment, such as double walled tanks, concrete surfaces and sumps inside buildings or enclosures, such as inside the tipping building or within transformer weather resistant enclosures, and oil/water separator systems. Additional containment is provided by the site's engineered storm water drainage system of ditches and culverts, which terminate at the Sedimentation Ponds that are used to manage storm water. For most of the oil containing equipment and containers operated by the County, the Sedimentation Ponds provide tertiary containment.

Due to the downstream location of the Settling Ponds, there are no containers or equipment for which secondary containment is not "practicable" as described by 112.7(d).

Table 7.1 provides a summary of the type of failure that might occur as well as the expected volumes, discharge rates, predicted direction of flow, and secondary containment in the event of container/equipment failure. Preferential flow pathways from each of the oil storage units at the Central Site, including contractor's areas, are illustrated in Figure 5, *Preferential Drainage Pathways Map*.

Table 7-1: POTENTIAL DISCHARGE VOLUMES AND DIRECTION OF FLOW

ID No.	Equipment	Type of Failure	Maximum Discharge Volume (gallons)	Maximum Discharge Flow Rate ¹ (gpm)	Predicted Direction of Flow ²	Secondary Containment
1	Above Ground 6,000-gallon gas/diesel storage tank	Tank Failure ³	2850/2850	0-2850	South to valley ditch and storm water detention pond #5	Double Wall Tank
		Overfill	5	0-5	South to valley ditch and storm water detention pond #5	Fuel Fill Containment Box, then to Oil/water separator
2	500-gallon portable diesel tank	Tank Failure ³	600	0-600	Rear of transfer building then storm water pond #5	<ul style="list-style-type: none"> • Steel Secondary Containment Box • Concrete Floor to gray

ID No.	Equipment	Type of Failure	Maximum Discharge Volume (gallons)	Maximum Discharge Flow Rate ¹ (gpm)	Predicted Direction of Flow ²	Secondary Containment
						<ul style="list-style-type: none"> • water tanks
3	Main Power/Oil Insulated Transformer	Casing Rupture	270	0-270	South to storm water pond #5	<ul style="list-style-type: none"> • Storm Water Pond Containment Pond #5
4	Drums	Drum Upset of Failure	55	0-55	East then South to storm water pond #6	<ul style="list-style-type: none"> • Secondary Containment Pallets • Concrete Floor
5	6" Trailer Mounted Water Pump	Fuel Storage Tank Failure	260	0-260		<ul style="list-style-type: none"> •
PH-1	Power Plant Substation/Oil Insulated Transformer	Casing Rupture	1189	0-1189	North to perimeter ditch and to storm water pond #5	<ul style="list-style-type: none"> • Containment Berm • Storm Water Pond #5 ~2 Million Gallons
PH-2	Power Plant Substation/Oil Insulated Transformer	Casing Rupture	1166	0-1166	North to perimeter ditch and to storm water pond #5	<ul style="list-style-type: none"> • Containment Berm • Storm Water Pond #5: ~2 Million Gallons
9907379	Recycle/Reuse	Container Failure	480	0-480	Southwest to DI and to storm water pond #5	Double Wall Tank then to Waste Oil Containment Building
9907383	Recycle/Reuse	Container Failure	480	0-480	Southwest to DI and to storm water pond #5	Double Wall Tank then to Waste Oil Containment Building
9907384	Tipping Operations	Container Failure	300	0-300	Rear of transfer building	<ul style="list-style-type: none"> • Double Wall Tank then to Concrete Floor • • Gray Water Tanks

ID No.	Equipment	Type of Failure	Maximum Discharge Volume (gallons)	Maximum Discharge Flow Rate ¹ (gpm)	Predicted Direction of Flow ²	Secondary Containment
9907385	Fleet Maintenance	Container Failure	480	0-480	East to Storm water detention pond #6	<ul style="list-style-type: none"> • Double Wall Tank • Storm Water Pond #6: ~1.5 Million Gallons

¹ Estimated. Flow rates range from instantaneous to gradual.

² Assumes no secondary containment provided by existing structures. Refer to Figure 5 for an illustration of the preferential pathways that a spill might take.

³ Tank is of two compartments (3000/3000 gal) design. Tank limited to 95% by overfill protection valve.

8.0 CONTAINMENT STRUCTURES AND SECONDARY CONTROLS [40 CFR 112.7(c)]

Secondary containment systems at the Central Disposal Site include a combination of structures such as engineered concrete containment berms, drain inlets with inserts and oil sorbent material, concrete pads and floors, buildings with integrated containment sumps, buildings with leachate collection systems that would also act to protect against an oil spill, an oil/water separator, storm water containment ponds, and land-based spill response (spill containment kits stocked with sorbent pads, booms, DI covers, and sorbent material) to prevent oil from reaching navigable waters and adjoining shorelines. Therefore, all discharges from the Central Disposal Site are either locally controlled, or managed through the facility's drainage system, which manages discharges from the entire facility. The settling ponds act as tertiary (and in some cases quaternary) containment for all bulk storage tanks, and acts as secondary containment for the oil filled electrical equipment (pad mounted transformer). Table 8.1 presents a summary of the secondary containment feature for each oil product containment feature, container, and equipment at the Central Disposal Site. Containment calculations for outdoor and exposed types of structures have been prepared and are available in Appendix D, *Containment Structure Calculations*.

TABLE 8-1: CONTAINMENT AND DIVERSIONARY STRUCTURES

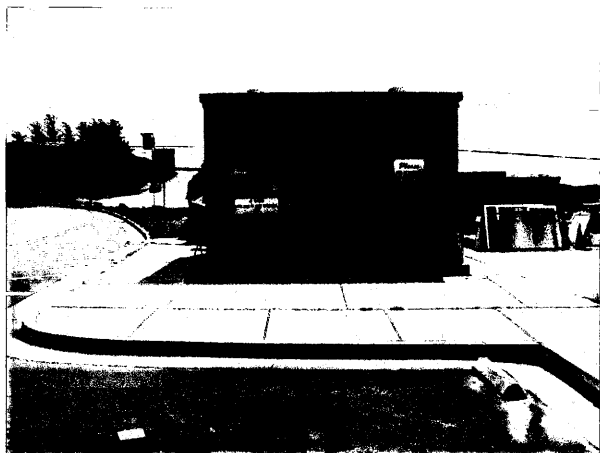
ID No.	SPCC Classification	Source	Secondary Containment
1	Bulk Storage Container	Diesel/Gasoline AST – Operations	<ul style="list-style-type: none"> • Double Walled Tank • Oil/Water Separator
2	Bulk Storage Container	DieselAST – Operations	<ul style="list-style-type: none"> • Containment Box • Gray Water Tanks
3	Oil Filled Electrical Equipment	Main Power Transformer/Oil Insulated Transformer	Storm Water Containment Pond #5
4	Bulk Storage Containers	Drums	<ul style="list-style-type: none"> • Palletized Containment
5	Oil Filled Equipment	6" Trailer Mounted Water Pump	<ul style="list-style-type: none"> •
PH-1	Oil Filled Electrical Equipment	KV Power Plant Substation/Oil Insulated Transformer	<ul style="list-style-type: none"> • Reinforced Concrete Containment Berm • Storm Water Containment Pond #5

ID No.	SPCC Classification	Source	Secondary Containment
PH-2	Oil Filled Electrical Equipment	60 KV Power Plant Substation/Oil Insulated Transformer	Reinforced Concrete Berm
9907379	Bulk Storage Container	Recycle/Reuse: Used Oil Storage Tank	<ul style="list-style-type: none"> • Double Walled Tank • Reinforced Concrete Building w/ Integrated Sump
9907383	Bulk Storage Container	Recycle/Reuse: Used Oil Storage Tank	<ul style="list-style-type: none"> • Double Walled Tank • Reinforced Concrete Building w/ Integrated Sump
9907384	Bulk Storage Container	Tipping Operations: Used Oil Storage Tank	<ul style="list-style-type: none"> • Double Walled Tank • Palletized Containment • Gray Water Tanks
9907385	Bulk Storage Container	Fleet Maintenance: Used Oil Storage Tank	<ul style="list-style-type: none"> • Double Walled Tank • Palletized Containment

The following is a detailed explanation regarding containment structures and is arranged by area and equipment.

8.1 Recycle/Reuse Facility (Sector A)

Waste Oil Containers



Public Waste Oil Container Building

The two shop-fabricated tanks with Integral secondary containment are housed inside a pre-cast steel reinforced concrete structure with post-tensioned roof and floor with a built-in sump designed to contain at least 110% of the contents of the largest container (Building VIII) that acts as an Release Prevention Barrier (RPB).

The building is lighted by two skylights and is vented by two turbine vents in the roof. Access is through a 4 ft. steel role-up door. The containers are equipped with fluid level gauges and are inspected daily by operations personnel.

When the containers are at 75% full the operations supervisor is notified and arrangements are made for waste oil removal by a licensed hauler. At approximately 90% full the lid of the pouring structure is locked down.

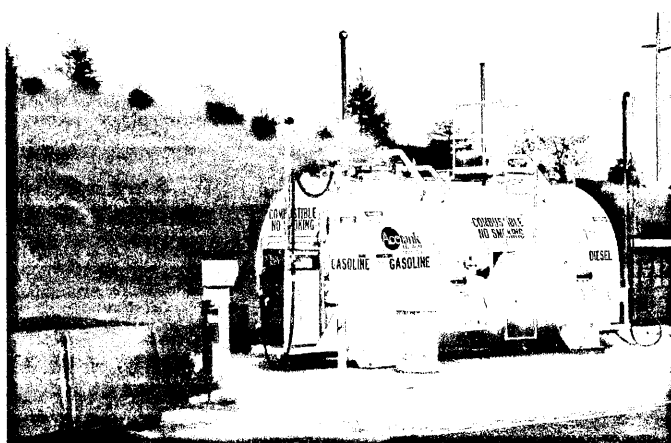
These two containers are used for public drop-off. Customers are limited to 5-gallons of waste oil per drop-off. Drop-off is supervised by recycle personnel who oversee the customers as they pour the oil into the containers. The pouring structures for the containers were designed with oversized pans to accommodate the public and help prevent spillage on the top and sides of

the containers. Small amounts of oil that do end up around the base of the containers are captured in the integrated containment sump of the building. The grated floor of the building is periodically lifted and the sump area is cleaned of spilled oil.



Public Waste Oil Container

8.2 Tipping Operations (Sector A)



6,000 Gallon Gasoline/Diesel Tank

Gasoline/Diesel Fuel Tank The tank, which is used for dispensing gasoline and diesel fuel to County vehicles, is a 6000 gallon shop and UL-2085 Standards. The tank is divided into two 3000-gallon compartments by a double bulkhead - 3000-gallons gasoline and 3000-gallons diesel - with one dispenser for each product. The tank is double walled constructed with an interstitial space and

sensor located between the primary and secondary tank shells. The tank is secured by hold-down anchors to a reinforced concrete slab on grade and surrounded with concrete filled steel pipe guard posts. The concrete pad and tank are segregated from the storm water system by a

concrete gutter that separates the concrete pad from the asphalt area fronting Building I. The concrete gutter is located at the toe of the pad and tank and drains to a double wall constructed 2,000-gallon reinforced fiberglass oil/water separator (OWS) that provides secondary containment for the fuel tank (Figure 3B). A grated trench runs adjacent and perpendicular to the concrete gutter. The grated trench collects storm water from the transfer station area, preventing the OWS from being inundated with storm water in a rain event. A detailed description of the fuel tank is provided in Appendix E, *Owner's Tank System Manual*.

Possible spill scenarios from the gasoline/diesel fuel tank and dispensing units are discussed below:

- i) **Overfilling:** The greatest spill potential is from overfilling during the fuel process (i.e., filling the tank). Spill prevention consists of constant supervision during the filling process. The tank also includes a drop tube overfill device which does not permit the tank to be filled beyond the 95% tank level. . Fill boxes are situated at the tank slab which contain any leaks that could occur during the filling process. Any fuel spilled during filling would be contained and cleaned up immediately.
- ii) **Tank Leak:** The tank is constructed of double walled steel consistent with the UL-2085 standard. It is also protected from vehicle impact by pipe bollards along the south and east sides. The interstitial space between the tanks is continuously monitored using a Kreuger mechanical leak sensor that provides a visual indication alarm if liquids in the annular space. Since the entire tank is secondarily contained, the maximum volume of fuel that could be discharged is expected to be minimal.
- iii) **Dispenser Leak:** The facility is has two dispensers mounted on the tank frame. The dispensers are elevated, and leaks from the dispensers would be immediately obvious. In the event of a release, the spilled liquid would be discharged to the concrete pad, then drain to an oily water separator. A spill kit is located on the island and would be used in event of a leak from the dispensers. The maximum amount of fuel that could be discharged is minimal due to the safety features described above, and any spill would either be immediately cleaned up, or directed to the OWS.
- iv) **Product Transfer:** There is a potential for spill during the transfer process (from tank to containers, or when fueling vehicles). The dispenser nozzles are pressure sensitive automatic shutoff nozzles designed specifically to prevent spills from fueling. Spill prevention consists of constant supervision during the transfer process. The maximum volume of product that could reasonably be expected to discharge during transfer is 3 to 5 gallons, and it would be contained and cleaned up immediately.
- v) **Filling:** In the unlikely event of a vehicle leaving the fueling area without disconnecting the fueling hose from the vehicle (drive-aways), emergency breakaways integrated into the filling hose would minimize the amount of fuel that could be discharged to the ground surface. The maximum volume reasonably expected to discharge in this scenario is less than 1 to 2 gallons.

Oil/Water Separator

The OWS was installed exclusively as additional containment for the fuel tank and white goods area (appliances) and does not itself require secondary containment. Therefore, the separator is exempt and does not count toward facility storage capacity.



Oil Water Separator Unit

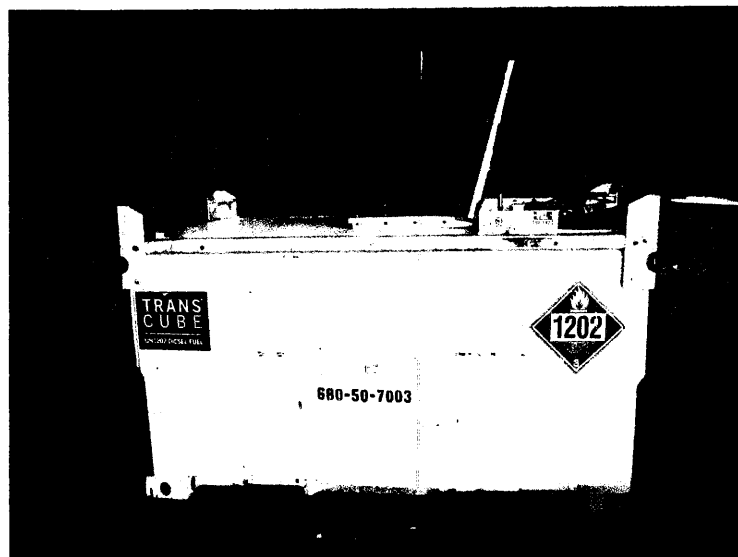
The OWS is constructed according to ASTM Specification D4021-92 and is constructed to the UL 1316 tank standard. A detailed description of the OWS is provided in Appendix F.

Portable Diesel Tank

The 528-gallon portable diesel tank is a double containment shop constructed tank

that is contained within a steel liquid tight containment structure. The tank is kept inside the transfer building and is used to refuel tracked equipment inside the building.

In the unlikely event that the tank and containment structure is damaged fuel would flow across the concrete floor to the rear of the transfer building and be captured in the two 10,000-gallon gray water tanks. The gray water tanks are used to collect and retain storm water and



Portable Diesel Tank

liquids that have come into contact with garbage. The gray water tanks are equipped with high-level alarms that sound when the tanks are at 75% capacity. Operations is notified of the alarm

who, in turn, notify the hauling company who then pumps and trucks the content to the waste water treatment facility. No fuel from a spill at this location would leave the site.

Waste Oil Container

This shop-fabricated double walled AST is located inside the transfer station building. The container is used to contain fugitive containers of used motor oil that are discovered on the transfer station floor. The waste oil container is equipped with a sight gauge that indicates the volume of the product in the container in "inched to full".



Waste Oil Container & Spill Containment Kit

In the unlikely event that a rupture could occur in the secondary containment shell of the container, oil would be contained in the two 10,000-gallon gray water tanks. No oil from a spill at this location would leave the site.

8.3 Fleet Maintenance (Sector B)

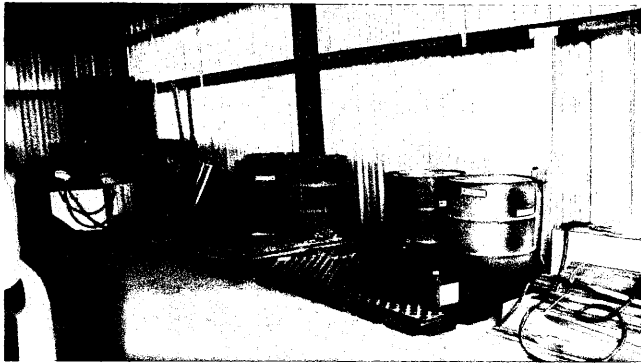
Maintenance Building



55-Gallon Drums - Inside Maintenance Shop
maintenance building.

The Heavy Fleet maintenance building contains no more than four open 55-gallon drum of different types of oil at a time. In addition to the open drums there are an additional two spare full drums of each of the four open oil products. Open 55-gallon oil drums sit inside an oil drum palletized containment system on a reinforced concrete floor at grade inside the

The spare 55-gallon drums are stored on oil drum palletized containment system under a

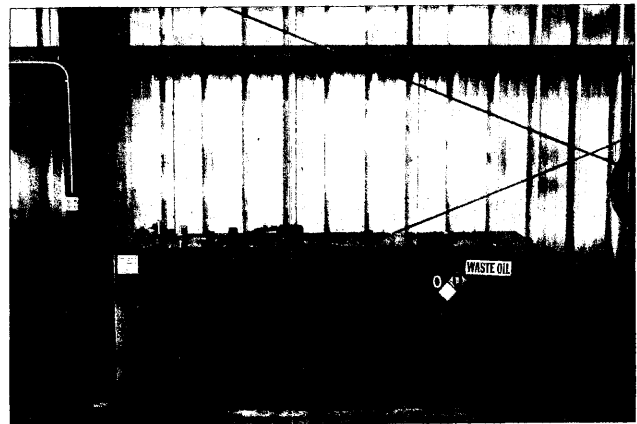


Replacement Oil Product - Maintenance Shop

covered area on a reinforced concrete floor at grade that is located directly adjacent to the maintenance building. There are no more than two drums for each pallet.

In addition to the 55-gallon drums there is a 480-gallon shop-fabricated waste oil AST inside the maintenance building.

The container is used to contain oil that is pumped from various reservoirs of oil filled mechanical equipment, such as track loaders, dozers, compactors, and other equipment used in the day-to-day operations at the facility. The container is equipped with a site gauge that reads in “inches to full”.



Waste Oil Container – Inside Maintenance Shop

In the unlikely event that a rupture could occur in the primary containment of the AST oil would be contained in the secondary containment shell of the AST before the oil began seeping across the concrete floor. For these reasons it is unlikely that oil from a spill at this location would leave the site.

8.4 Power Plant Substation



Oil Insulated Transformers - Power Plant

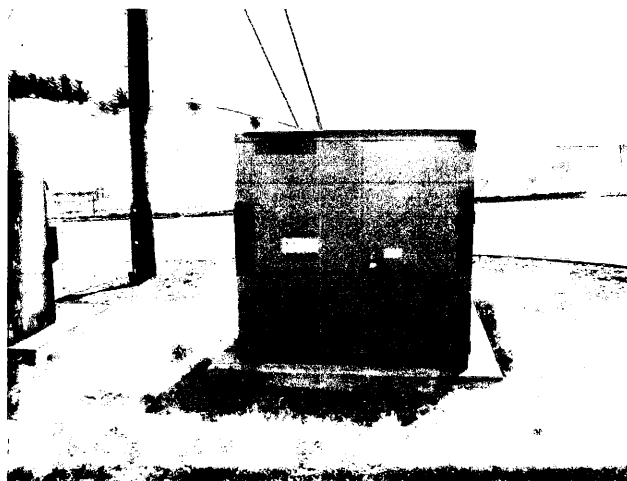
reinforced concrete and are surrounded by 2-inch blotter rock.

There are 2 three phase type RSL oil insulated substation transformers located at the power plant substation. One transformer contains 1189 gallons of non-PCB oil and the other contains 1166 gallons.

The two power transformers for the power plant are each located within their own containment structure. The containment structures are constructed of

8.5 Main Power Transformer

In addition to the two Power Plant Substation transformers the facility owns a small oil insulated transformer that is used to power most of the Central Disposal Site facilities and operations. The transformer is located south east of the tipping building, near the intersection of the main road and the access road leading from the tipping building.



Main Oil Insulated Transformer

The transformer is anchored to a concrete slab and is equipped with a weather-resistant enclosure. Oil filled electrical equipment such as the main power transformer is visually monitored as part of the operations of the facility. In the event of a catastrophic failure of this transformer, facility operators would receive indication of loss of equipment power. In this event, facility staff would investigate and begin appropriate cleanup operations.

A release from this transformer would first be primarily contained within the enclosure, then drain to the concrete slab. Eventually, oil released from this transformer could migrate overland a short distance to the collection ditch and drain inlets, where the installed hydrocarbon absorbent material would likely trap some of the oil. In a major release, some oil could potentially make its way to Storm Water Containment Pond #5, where it would be contained. However, due to the very small quantity of oil (270 gallons), the configuration of the weatherized enclosure, and the distance from the transformer to the ponds (approximately 0.38 miles), it is very unlikely that significant amounts of oil would reach the pond.

9.0 DISCHARGE RESPONSE [40 CFR 112.7(a)(5)]

This section describes the response and cleanup procedures in the event of an oil discharge. The uncontrolled discharge of oil to groundwater, surface water, or soil is prohibited by state and federal laws. Immediate action must be taken to control, contain, and recover discharged product.

The Contingency Plan for the Site is used for response to all emergencies at the facility, including the release of oil and hazardous material. The Contingency Plan is comprehensive and should be used by facility personnel during emergency events that might occur at the site. Spill controls and countermeasures are outlined in the Contingency Plan for the Central Disposal Site that is incorporated by reference into this SPPC Plan as Appendix G.

The Contingency Plan is presented in three basic sections: 1) The evaluation of a potential emergency; 2) The organizational structure and emergency coordinators and; 3) The implementation of the contingency plan.

The evaluation section of the Plan discussed several potential spill scenarios at the Site including spills in oil and chemical storage areas, spills in fueling areas, and spills in waste oil storage areas. The organizational section of the Plan discusses the organizational structure at the Site and how responsibilities within the organization are delegated; Management and Supervisory responsibilities and line personnel. The implementation section of the Plan discusses how the Plan is to be implemented in the case of a spill emergency.

In the case of a spill emergency service personnel, considered first responders, are to contact a designated Emergency Coordinator (EC). The EC is then to contact the Sonoma County Department of Emergence Services and Management before directing the first responders as to a safe course of action until emergency services arrives on site. The operations manager will coordinate with emergency services and contact all relevant agencies as well as direct clean-up activities and coordinate follow-up notifications and reports.

In addition, the facility maintains spill response equipment at the site. The spill equipment inventory is checked monthly, during the SPCC Inspection. Appendix H provides the spill equipment inventory.

10.0 SITE INSPECTIONS, TESTING, AND RECORDKEEPING [40 CFR 112.7(e)]

As required by SPCC Central Disposal Site performs the inspections, tests, and evaluations presented in the following table. The various types of inspections and tests performed at the facility are summarized in Table 10-1. The same inspections and tests are further described later in the section.

TABLE 10-1: INSPECTION AND TESTING PROGRAM

Facility Component	Action	Equipment	Frequency/Circumstances
Aboveground Bulk Storage Containers	Visual Check for Container Integrity	<ul style="list-style-type: none"> Diesel Tanks 	<ul style="list-style-type: none"> Monthly: Monthly SPCC Inspection Checklist Annually: Annual SPCC Inspection Checklist
Aboveground Bulk Storage Containers	Visual Check for Container Integrity	<ul style="list-style-type: none"> Waste Oil tanks Used Oil Filter Drums Drums – Maintenance Shop 	<ul style="list-style-type: none"> Daily: On daily Waste Oil Container Inspection Log Monthly: Monthly SPCC Inspection Checklist Annually: Annual SPCC Inspection Checklist
Aboveground Oil Filled Electrical Equipment	Check for leaks & spills	<ul style="list-style-type: none"> Power Plant Transformers Main Power Transformer 	<ul style="list-style-type: none"> Monthly: Monthly SPCC Inspection Checklist Annually: Annual SPCC Inspection Checklist
Aboveground Oil Filled Operating Equipment	Check for leaks & spills	Portable Generator	<ul style="list-style-type: none"> Monthly: Monthly SPCC Inspection Checklist Annually: Annual SPCC Inspection Checklist
Aboveground Oil Filled Operating Equipment	Check for leaks & spills	Portable 6" Pump	<ul style="list-style-type: none"> Monthly: Monthly SPCC Inspection Checklist Annually: Annual SPCC Inspection Checklist
Supports/Foundation	Inspect supports and foundation	6,000-Gallon Diesel/Gas Tank	<ul style="list-style-type: none"> Monthly Annually
Piping, Valves, and Appurtenances	Access general condition of valve glands and bodies, flange joints, supports, & expansion joints	6,000-Gallon Diesel/Gas Tank	<ul style="list-style-type: none"> Monthly Annually

Facility Component	Action	Equipment	Frequency/Circumstances
Secondary Containment Structures	Inspect for signs of deterioration, discharges, accumulation of oil inside containment area	<ul style="list-style-type: none"> • Waste oil containment building • Concrete gutter • Palletized systems • Power Plant Concrete Berms • Storm Water Containment Ponds 	<ul style="list-style-type: none"> • Monthly, more frequently in wet season (see WDRs)

10.1 Daily Inspections

Facility employees perform informal visual observations of the facility each day. These informal observations involve, among other things, looking for tank/piping damage or leakage, oil pooling and leaking from oil filled mechanical and electrical equipment, stained or discolored concrete and soil, excessive accumulation of water in containment and bermed areas, an oily sheen in the storm water containment ponds, vandalism, and other indications of a potential release from oil filled equipment.

A formal inspection of all bulk waste oil storage containers is performed on a daily basis on days that the facility is open to the public (Monday – Saturday, excluding holidays). These formal inspections involve general overall conditions of the container exterior, oil accumulation in the interstitial space, gauge volume reading, oil accumulation around the exterior of the container, and the general condition of the building that houses the container – where applicable. These observations are recorded on the *Waste Oil Container Inspection Log*. A sample of the Log is available in Appendix I.

10.2 Monthly Inspections

The owner's inspector conducts a monthly inspection of all bulk oil containers, including the gasoline/ diesel tank, the portable diesel tank, and the waste oil containers. Oil filled electrical and operating equipment can be inspected using these forms, and modified to reflect the appropriate contents. The monthly inspections cover the following key elements:

- Observing the exterior of equipment, including tanks and piping, for signs of deterioration, paint failure, leaks, corrosion, and thinning;
- Observing tank foundations and supports for signs of instability or excessive settlement;
- Observing the tank fill and discharge pipes for signs of poor connection that could cause a discharge, and tank vent for obstructions and proper operation;
- Verifying the proper functioning of overfill prevention systems;
- Checking the interior of the gasoline/diesel tank with water finding paste;¹
- Checking the interstitial leak monitoring device; and
- Checking the inventory of discharge response equipment and restocking as needed.

The *Bulk Storage Container Monthly Facility Inspection Checklist*, provided in Appendix J, is used for monthly SPCC inspections of bulk storage containers. All problems regarding tanks, piping, containment, or response equipment must immediately be reported to the Operations Supervisor. Visible oil leaks from tank walls, piping, or other components must be repaired as soon as possible to prevent a larger spill or a discharge. Pooled oil is removed immediately upon discovery. Written monthly inspection records are reviewed consistent with standard operating procedures and practices and maintained with this SPCC Plan for a period of three years

10.3 Annual Inspections

The owner's inspectors perform a more thorough inspection of bulk storage containers on an annual basis. This annual inspection complements the monthly inspection described above and is performed in place of one monthly inspection. The inspection is performed each year using the *Bulk Storage Container Annual Facility Inspection Checklist* provided in Appendix K, of this Plan.

¹ This portion of the inspection is performed on the 6,000 gallon fuel tank only and will be performed monthly for the first 6 months. If water is not found in the fuel tanks, after the first six months water detection will be performed quarterly. In the event that water is found, monthly checks will be resumed until a documented performance history is established. Water checks are required only annually for tanks that are routinely evacuated (such as the waste oil tanks that are required to be emptied every 90 days or less), unless water is found. If water is found in tanks that are routinely evacuated, these tanks will be checked for water monthly until the water source is removed and a performance history is established as described above. Water found in fuel tanks needs to be addressed as soon as possible to avoid tank corrosion and fuel performance problems.

The annual inspection is preferably performed after a large storm event in order to verify the imperviousness and/or proper functioning of drainage control systems. Written annual inspection records are reviewed consistent with plant practices and maintained with this SPCC Plan for a period of three years.

10.4 Periodic Integrity Inspections [40 CFR 112.8(c)(6)]

In addition to the above monthly and annual inspections by facility personnel, bulk storage containers are periodically evaluated following the Steel Tank Institute (STI) *Standard for the Inspection of Aboveground Storage Tanks*, SP-001, 2006 version. A copy of the Standard is provided in Appendix L.

A Formal Internal and External Inspection of the 6,000-gallon fuel storage tank was conducted by a certified inspector using methods allowed by the industry standard. The inspection and tests results report has been included as Appendix M and is on file and available for review in the Administrations Office library at the Central Disposal Site. External inspections of the 6,000 gallon fuel tank are performed monthly by the owner's inspector, and whenever material repairs are made to the tank. A more rigorous external inspection by the owner's inspector is performed annually. The next scheduled formal external integrity inspection by an STI Certified Inspector, consistent with the STI SP-001 Standard, 4th edition, should occur on or before May 21, 2030.

Tanks, storage containers, and equipment are observed daily by both disposal supervisors and service personnel, including equipment operators, engineering staff, and outside contractors. County engineering and operations staff have been trained by an STI certified inspector to both perform and train other County personnel to perform monthly inspections of the fuel tank. Staff will inspect the tanks for damage, the condition of the external coating, vents, cleanliness, and any repairs that have been made. The results of the monthly and annual inspections will be recorded on the Central Disposal Site Monthly SPCC Inspection Checklist and Bulk Storage Container Annual AST Record respectively and placed in the Tank Inspection Log for the Central Disposal Site.

11.0 PERSONNEL TRAINING, BRIEFING, AND SPILL PREVENTION PROCEDURES [40 CFR 112.7(f)]

Personnel are trained in oil handling and discharge prevention procedures, the prevention of discharge associated with equipment maintenance, discharge procedure protocol, applicable pollution control laws, rules, and regulations, general facility operations and, the content of this SPCC Plan. The objective of the training is to reduce the impact of an oil release and to protect the safety of both the public that use the facility and the service personnel acting as first responders. The training program consists of Emergency Response, Spill Prevention, Control, and Countermeasure, Household Hazardous Waste, and Personnel Protective Equipment. In addition, spill prevention briefings are incorporated into regularly scheduled safety meetings and are structured to assure adequate understanding of the SPCC Plan, Emergency Response and Evacuation Plan, and the Contingency Plan for the Central Disposal Site. Refresher training is provided annually and initial training is provided within 60 days of hire. New training and training techniques will be incorporated into the employee training program as the program evolves.

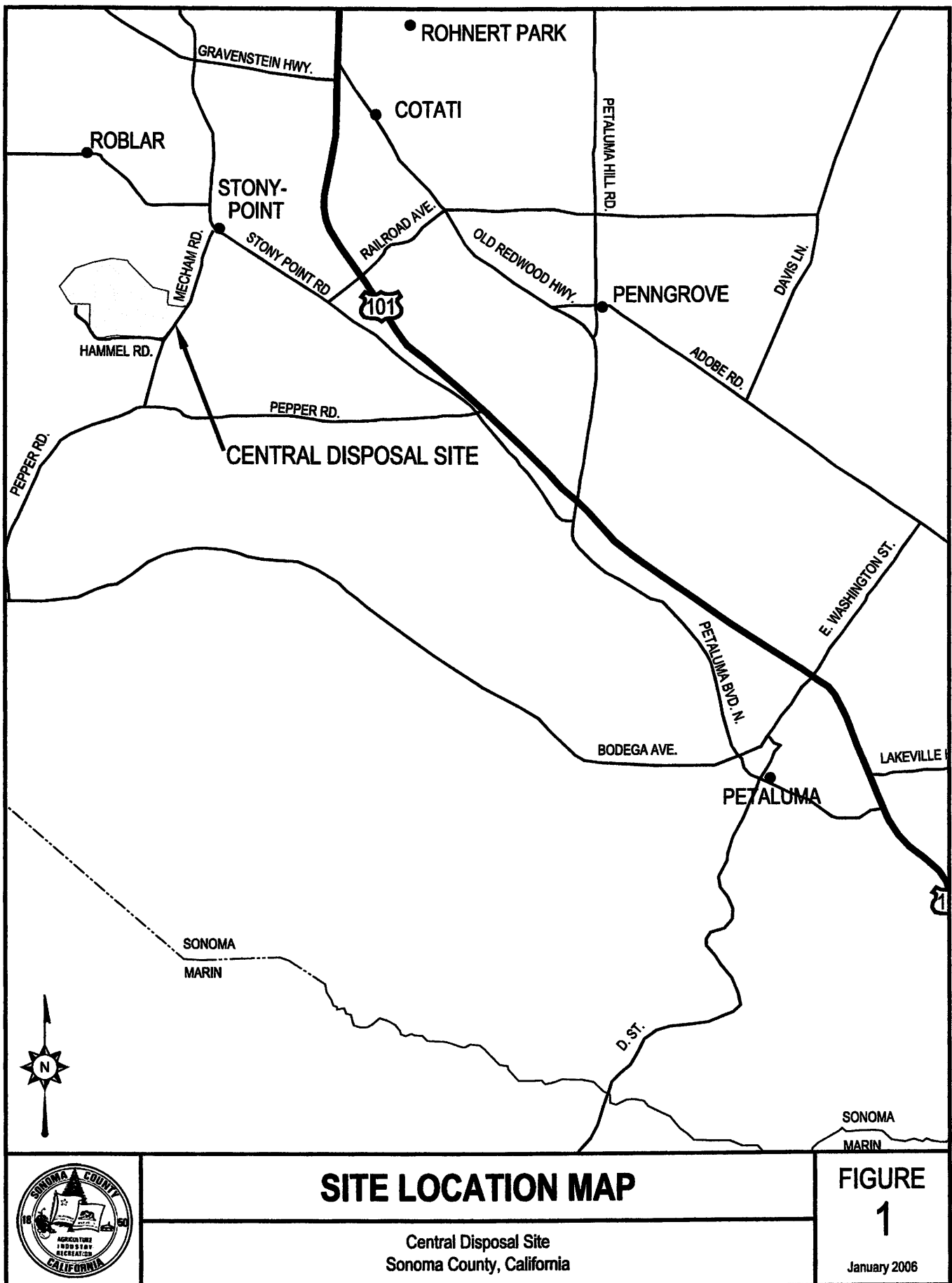
Training was also performed for County staff who will be conducting further training to operators and others regarding the SPCC Plan, daily, monthly, and annual tank inspections and other SPCC topics. The training included a review of the County's SPCC Plan and a review of the Steel Tank Institute STI SP-001 Inspection Standard. Records of SPCC and STI training are on file and available for review in the Administration Office library at the Central Disposal Site.

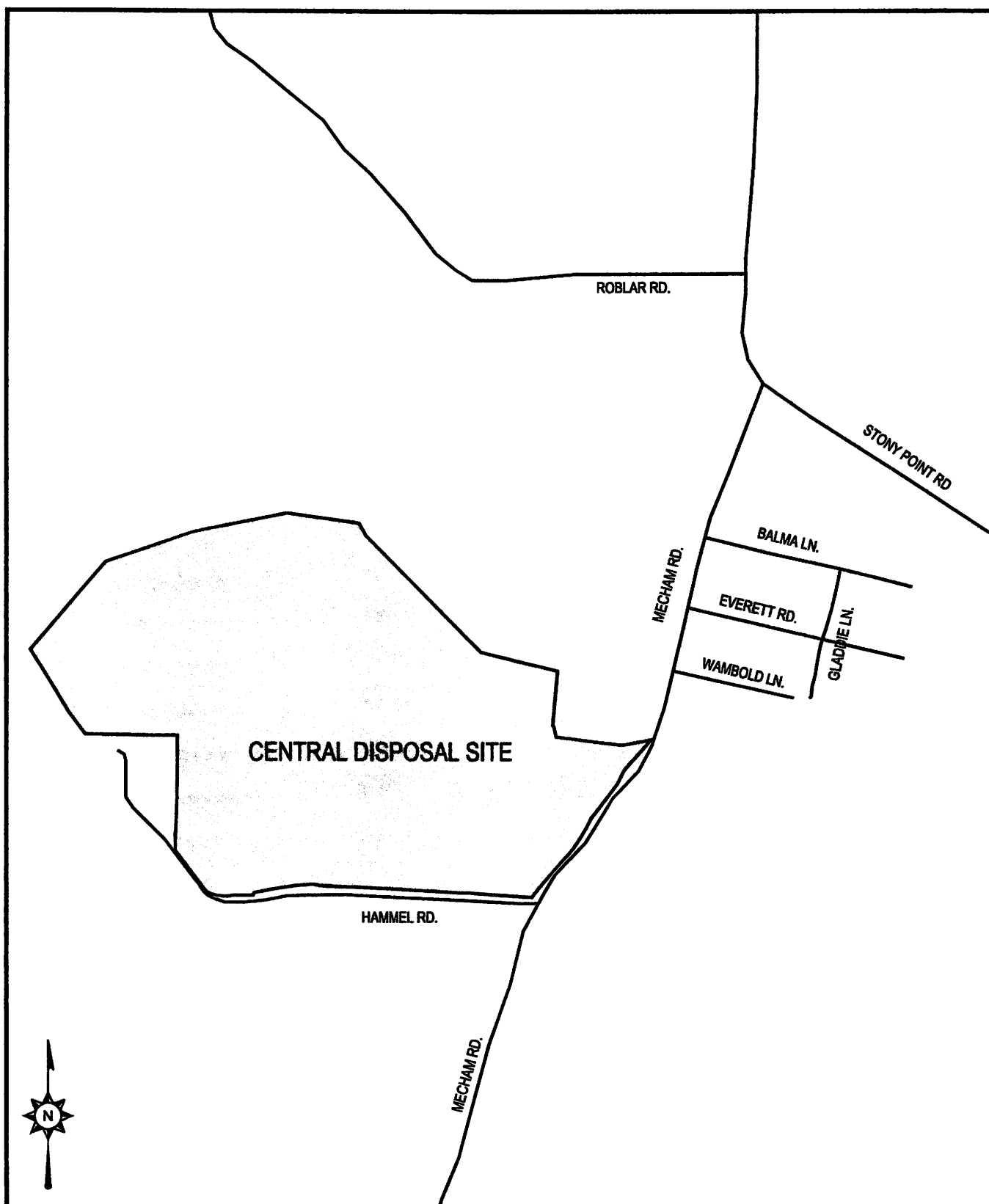
Records of all daily, monthly, and annual tank inspections are available for review at the Central Administration Office.

12.0 SITE SECURITY [40 CFR 112.7(g)]

Access roads are bounded by a chain link fence. There is additional fencing of similar construction surrounding the operations area, leachate pond No. 1, and the main office. Each fenced area is separately secured by a chain link gate and lock. Large diameter pipe gates, built to County specifications, are mounted at both the main entrance, at Mecham Road and at the rear entrance, at Hammel Road. The Main gate, at Mecham Road is locked between the hours of 15:30 hours and 06:00 hours the following morning. Hammel Road is a County road that terminates at the Mattos Dairy. The pipe gate at Mecham and Hammel Roads is left open and locked only when extra security is needed. The rear entrance to the landfill is secured by a chain link gate located off Hammel Road, adjacent to Leachate Pond No.2. The operations area and the main office are lighted between dusk and dawn.

All refueling of main tanks, equipment fueling, and waste oil removal is done during daylight hours when the site is open to the public. The transfer of fuel at the 3000/3000 gallon fuel tank is typically observed by one of the operations supervisors.





SITE VICINITY MAP

Central Disposal Site
Sonoma County, California

FIGURE
2

January 2006

SITE FACILITIES MAP

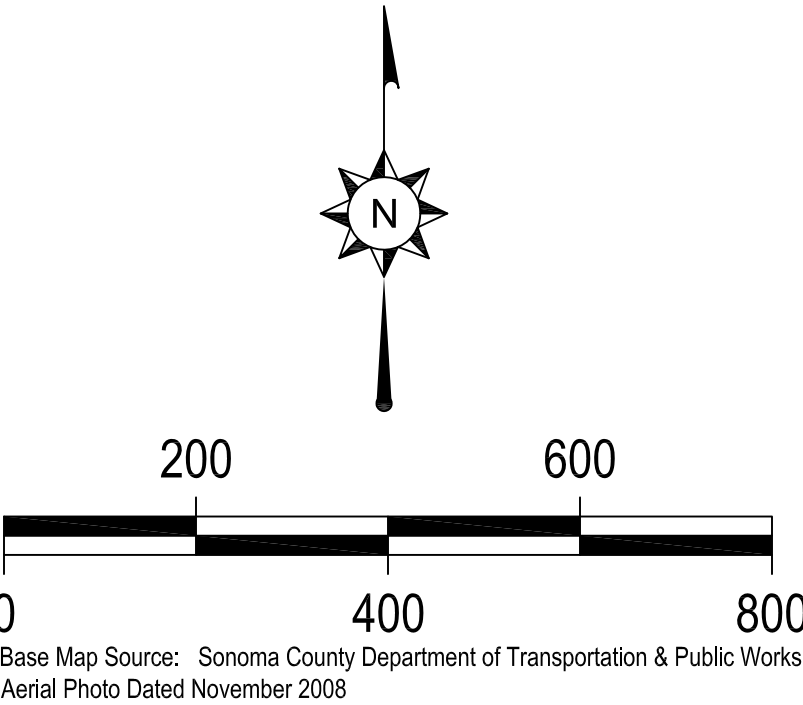
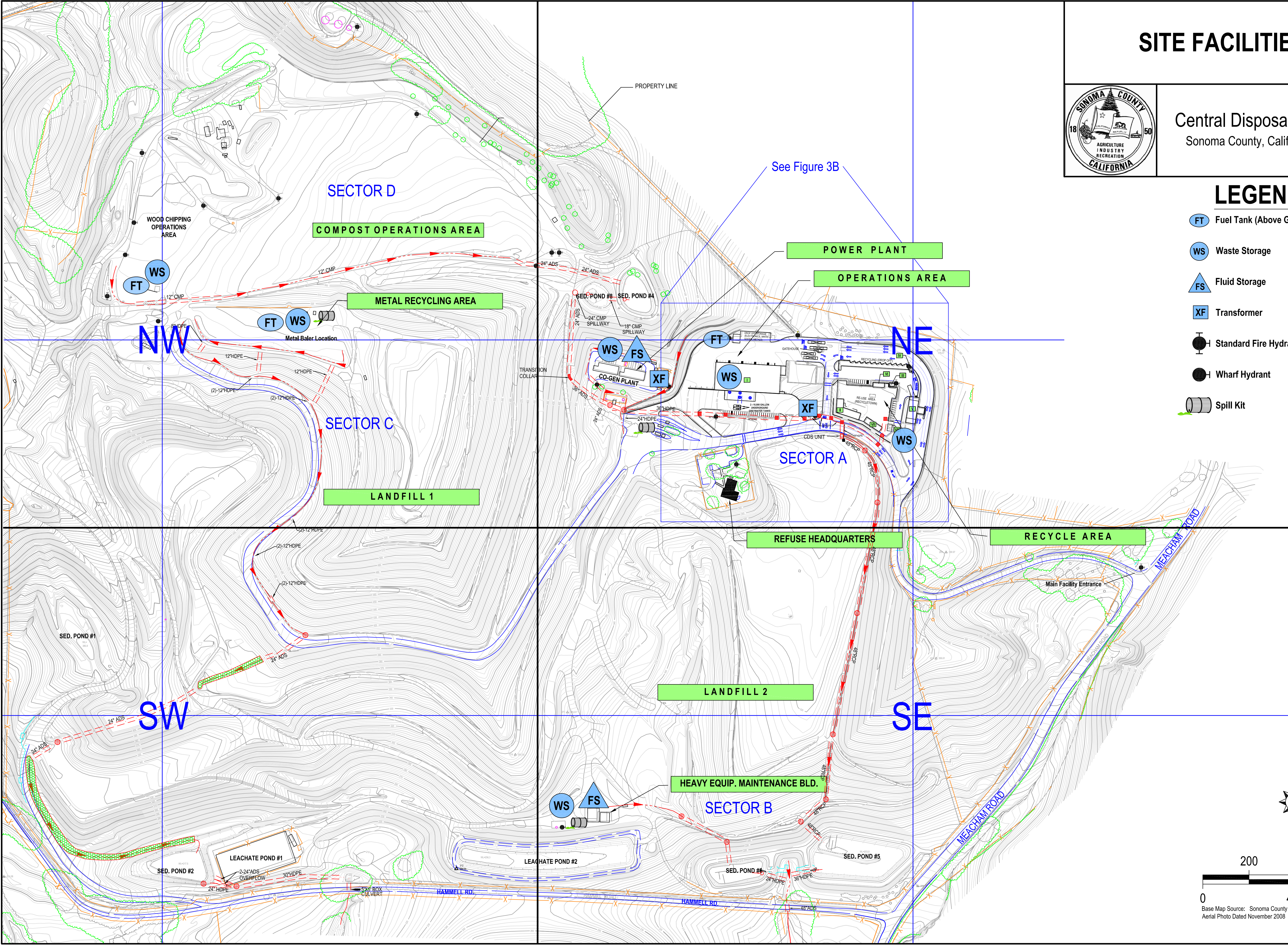


Central Disposal Site
Sonoma County, California

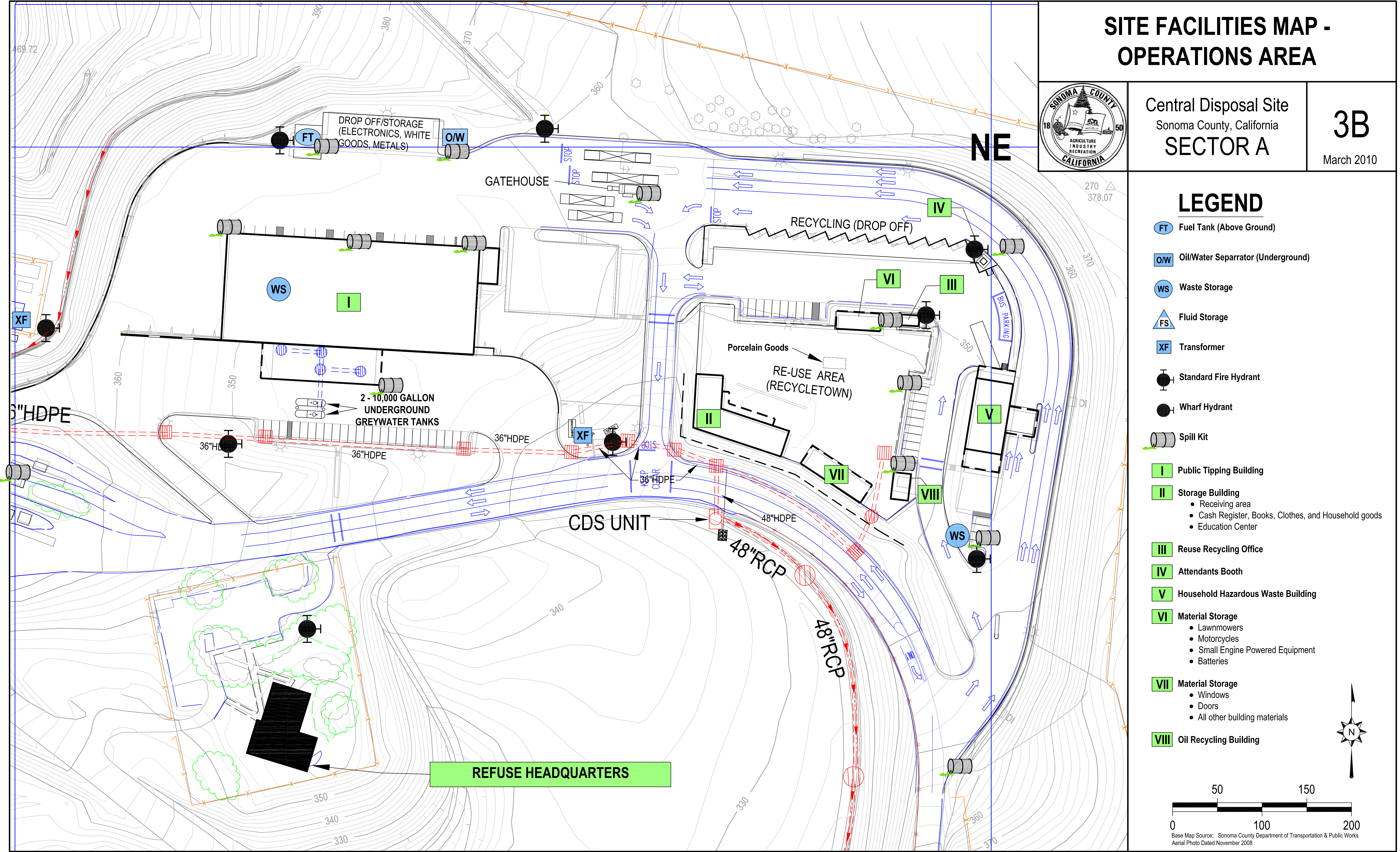
3A
March 2010

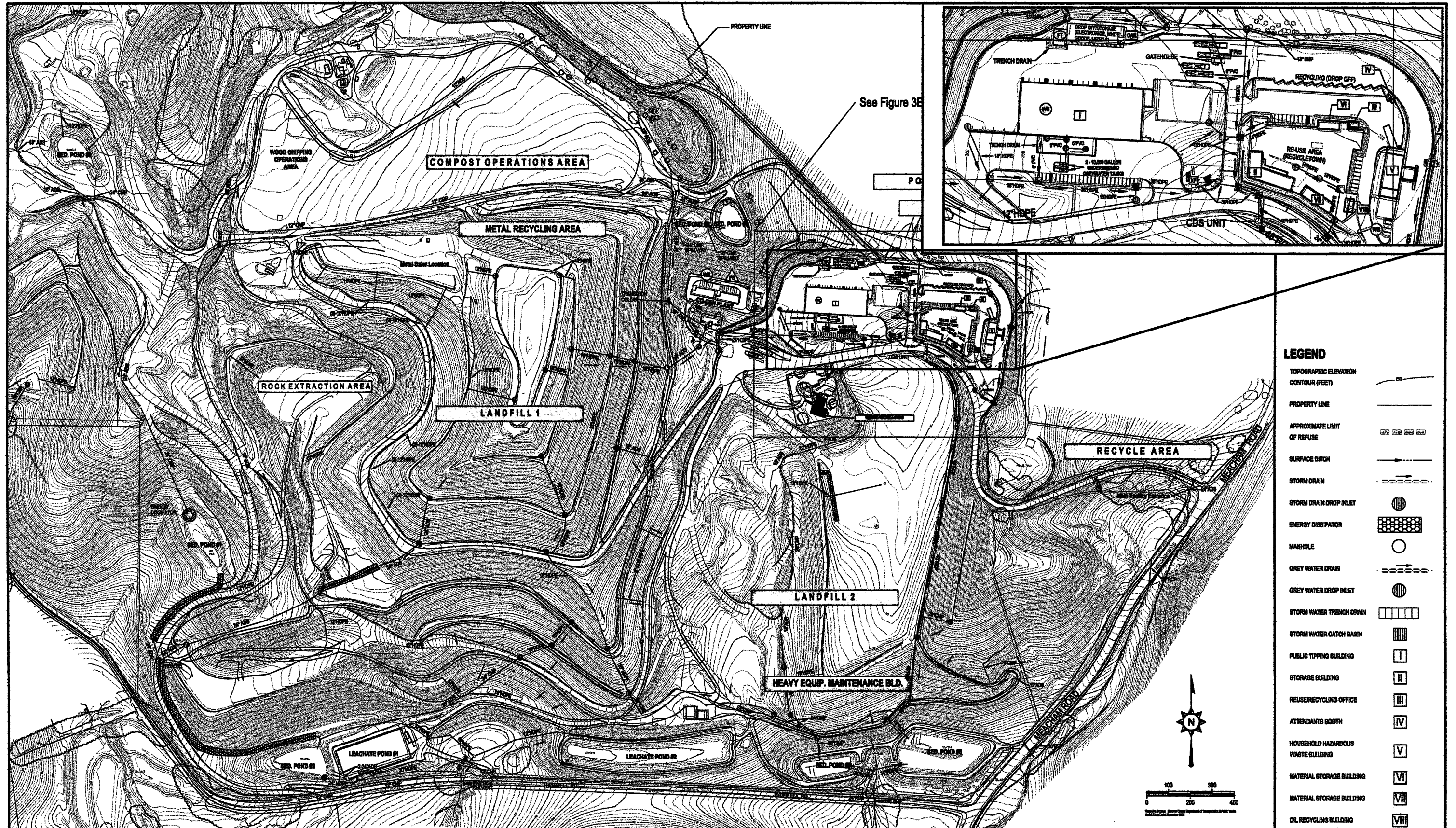
LEGEND

- FT Fuel Tank (Above Ground)
- WS Waste Storage
- FS Fluid Storage
- XF Transformer
- Standard Fire Hydrant
- Wharf Hydrant
- Spill Kit



Base Map Source: Sonoma County Department of Transportation & Public Works
Aerial Photo Dated November 2008





DESIGNED UNDER THE SUPERVISION OF		CIVIL ENGINEER, LICENSE EXPIRES:		AS BUILT INFORMATION TO BE COMPLETED AFTER CONSTRUCTION		DATE	REVISION	BY	APPROVED	COUNTY OF BORNEA DEPARTMENT OF TRANSPORTATION & PUBLIC WORKS PHILLIP M. DEMERY, DIRECTOR				SITE DRAINAGE MAP		
DESIGN		CHECKED		CONSTRUCTION COMPLETED:						BUDGET NUMBER	FISCAL YEAR	SHEET NUMBER	TOTAL SHEETS	LOCATION:	CENTRAL SITE	FIGURE: 4
DRAWING				AS BUILT DRAWINGS BY:										DATE:	MARCH 2010	SCALE: AS SHOWN

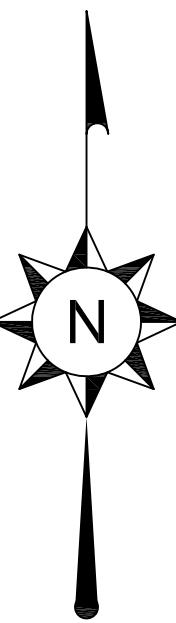
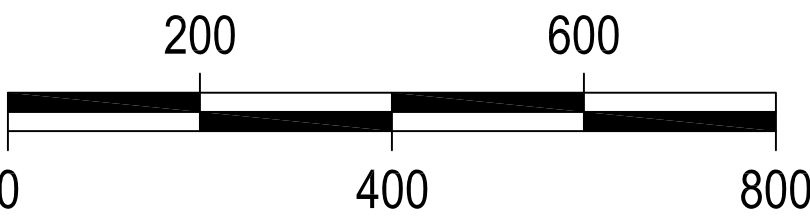
PREFERENTIAL DRAINAGE PATHWAYS MAP

Central Disposal Site
Sonoma County, California

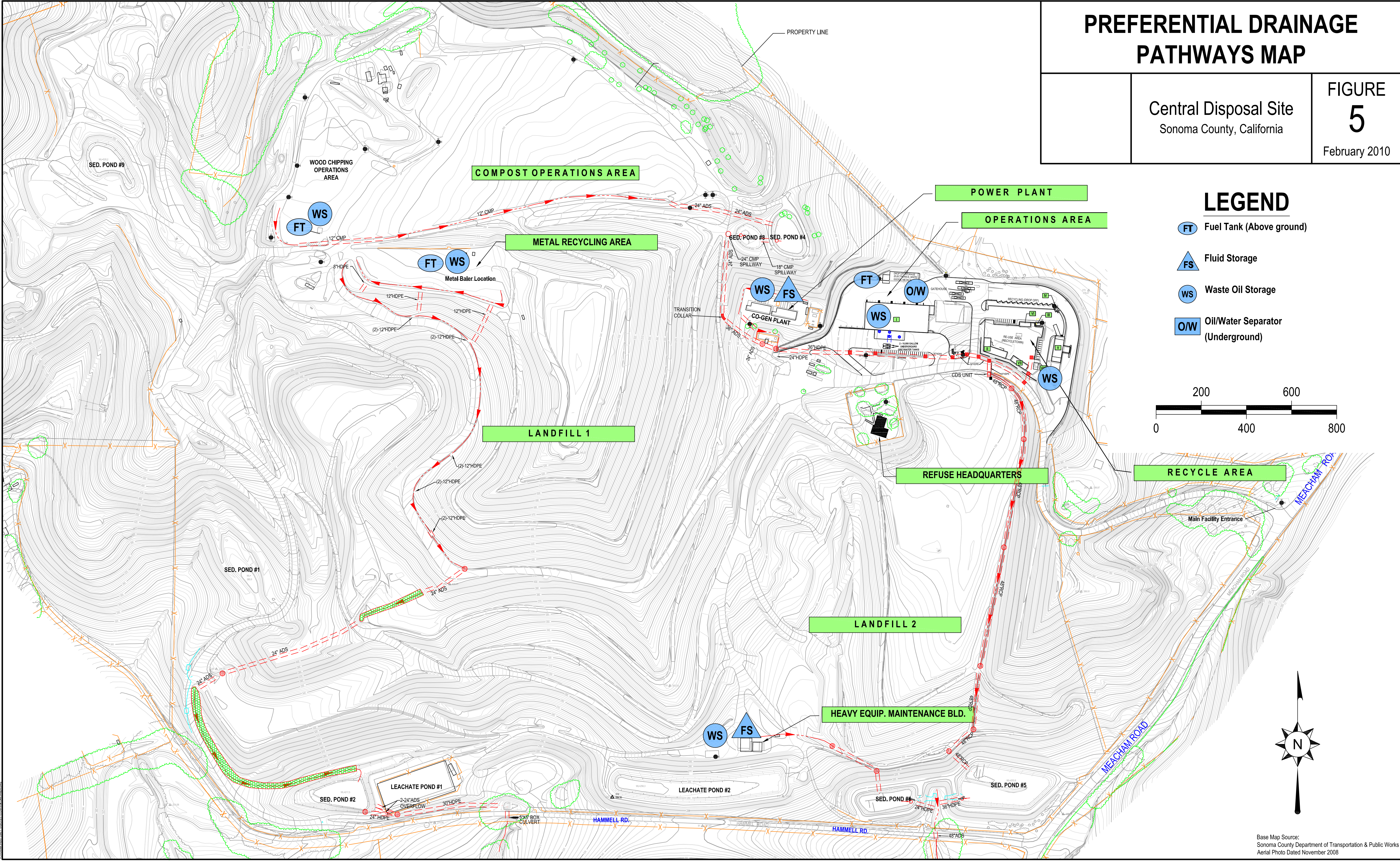
FIGURE
5
February 2010

LEGEND

- FT** Fuel Tank (Above ground)
- FS** Fluid Storage
- WS** Waste Oil Storage
- O/W** Oil/Water Separator (Underground)



Base Map Source:
Sonoma County Department of Transportation & Public Works
Aerial Photo Dated November 2008



Certification of the Applicability of the Substantial Harm Criteria

Facility Name: Central Disposal Site

Facility Address: 500 Mecham Rd., Petaluma, CA 94952

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

Yes ☐ No ☒

2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?

Yes ☐ No ☒

3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula¹) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments" (see Appendix E to this part, section 13, for availability) and the applicable Area Contingency Plan.

Yes ☐ No ☒

4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula¹) such that a discharge from the facility would shut down a public drinking water intake²?

¹ If a comparable formula is used, documentation of the reliability and analytical soundness of the comparable formula must be attached to this form.

² For the purposes of 40 CFR part 112, public drinking water intakes are analogous to public water systems as described at 40 CFR 143.2(c).

Yes ☐ No ☒


5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil discharge in an amount greater than or equal to 10,000 gallons within the last 5 years?

Yes ☐ No ☒

Certification of the Applicability of the Substantial Harm Criteria

Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.



Signature

Keith Foszcz
Name

Date

11/10/10

Date

Civil Engineer
Title



EMERGENCY CONTACT LIST

Sonoma County Department Transportation & Public Works
Integrated Waste Division

Operating Hours

	<u>Hours</u>	<u>Office</u>	<u>Cell</u>
<u>Refuse Operations</u>	Daily.....	565-7940	
Bob Simi, Supervisor	M-F	565-7946.....	696-9193
Trish Pisenti, Operations Manager	M-F	565-7958.....	696-9190
Tami Danzart, Supervisor	Tu-Sa.....	565-7945.....	696-9192
<u>Clean Harbors (HHW)</u>			
John Sorenson		795-2070.....	364-4909
Robert Hubbard.....		795-2070.....	925.435-9094
.....			483-6798
<u>Garbage Reincarnation</u>			
Martin Zamvido	M-Sa	795-3660.....	888-5932
<u>Landfill Energy Systems</u>			
John McHale, Plant Manager	M-F	664-1077.....	241-5332
.....			491-9903 (pager)
Paul Sharp.....	M-F	584-9416.....	284-9416
<u>Sonoma Compost</u>			
Will Bakx	M-F	664-9113.....	479-8098
Alan Siegle	M-F	664-9113.....	849-7365
<u>West Sonoma County Disposal</u>			
Mike O'Brian	M-Sa		975-6251
Rick Holiday	M-Sa		975-6690
Art Morales.....	M-Sa		236-0887
Ellie Rowland	M-Sa		217-2233
Louis Ratto			696-4788
<u>SCS Field Services</u>			
Robert Lundberg.....	M-Fr	795-7100.....	321-8438

Non-Operating Hours

	<u>Home</u>	<u>Cell</u>
<u>Refuse Operations</u>		
Bob Simi, Supervisor	545-5390.....	696-9193
Trish Pisenti, Operations Manager	539-8784.....	696-9190
Tami Danzart, Supervisor	570-2048.....	696-9192
<u>Clean Harbors (HHW)</u>		
John Sorenson	769-1742.....	364-4909
<u>Garbage Reincarnation</u>		
Martine Zamudio.....		227-8397
<u>Landfill Energy Systems</u>		
John McHale, Plant Manager		241-5332
.....		491-9903 (pager)
Paul Sharp.....		284-9416

Non-Operating Hours (con't)

Sonoma Compost

Will Bakx	824-1959	479-8098
Alan Siegle	887-9638	849-7365

Home

Cell

West Sonoma County Disposal

Louis Ratto	696-4788
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SCS Field Services	545-4304	321-8434
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Fire Emergency - 911

Office

Central Disposal Site	Rancho Adobe Fire Protection District	795-6011
Annapolis Transfer Station	Sonoma County Emergency Services	565-1152
Guerneville Transfer Station	Russian River Fire Protection District	869-9089
Healdsburg Transfer Station	Geyserville Fire Protection District	857-3535
Sonoma Transfer Station	Shell-Vista Fire Protection District	938-3633

Health Emergency – 911

Christine Sosko, Program Manager, Environmental Health	565-6521
Mary Maddux-Gonzalez, M.D., Public Health Officer	565-4700

Environmental Emergency

In the case of a Hazardous Material Spill contact the following:

Sonoma County Dept. of Emergency Services (DES)	565-1152
Sonoma County Environmental Health (EHD)	565-6565
Regional Water Quality Control Board, Spill Duty Officer	323-4945
dba 21 st Century Environmental (emergency HazWaste cleanup)	
Terry McGuines	480-6444
24-hour Emergency Response Line	877.577-2669
Sheriff Dispatch	565-2121
After Hours	911

Security

Dean Security (Americom)	800-387-8802
Securitas	526-1715
ADT (LES-Power Plant)	800-347-2323
Service No.	650-635-4747

Distribute to: Senior Civil Engineer (1)__ Operations Manager (1)__ Supervisors (2)__ Office (1)__ Transfer Stations (4)__
Clean Harbors (1)__ Landfill Energy Systems (1)__ SCS(1)__ Pacific GeoScience(2)__ Garbage Reincarnation(1)__ West Coast
Metals(1)__ S.C. Sheriff Dispatch (1)__ Rancho Adobe Fire Protection District (1)__ EHD (1)__ OES (1)__ RWQCB (1)__
Hazardous Waste Coordinator (1)__ Security Contractors (2)__ Sonoma Compost (1)__



**Sonoma County Department of Transportation and Public Works
Integrated Waste Division, Engineering and Operations Section**

Telephone No.: 707.565-7940

Fax No.: 707. 565-7957

DISCHARGE NOTIFICATION FORM

Reporter's Last Name: _____ First Name: _____ M.I.: _____

Title: _____

Phone Numbers Home Phone: _____

(Plus Area Code) Cell Phone: _____

County Department: _____

County Division: _____

Address: _____ City: _____ State: _____ Zip: _____

Were Materials Discharged: _____ Date of Discharge: _____

Does Discharge Meet Federal Obligation To Report? _____ Date Called: _____

Are You Calling For the Responsible Party? _____ Time of Call (hh:mm): _____

Incident Description

Source / Cause of Incident:

Date of Incident: _____

Time of Incident (hh:mm): _____

Incident Location: _____ City: _____ State: _____ Zip: _____

Distance From City (Miles): _____ Direction: _____

Section: _____ Township: _____ Range: _____

Latitude: _____ Longitude: _____

Container Type: _____ Tank Capacity (Gallons): _____

Material Description

CHRIS Code	Discharged Quantity (Gal's)	Material Discharged to Storm Water System	Quantity (Gal's)

Response Action

Action Taken To Correct, Control, or Mitigate Incident:

Number of Injuries: _____ Number of Deaths: _____

Were There Evacuations? _____ Number Evacuated: _____

Was There Any Damage? _____

Describe Damage:

Additional Information

Any Additional Information:

Caller Notification

EPA? _____ State? _____

RWQCB? _____

CUPA? _____ Other: _____

Describe: _____

Signature: _____

CONTAINMENT CALCULATIONS

Central Disposal Site

ID No.	Equipment	Product	Containment Dimensions (ft)			Gross Containment (gallons)	Displacement of Equipment (ft)			Displacement (gallons)	Net Containment (cu.ft.)	Net Containment (gallons)	Storm Amount (cu.ft.)	Storm Amount (gallons)	Available Capacity (cu.ft.)	Available Capacity (gallons)	Oil Capacity (gallons)	Adequate Containment (yes/no)
			L	W	H		L	W	H									
#1	Shop Fab AST	Diesel/Gasoline																yes ¹
#2	Shop Fab AST	Diesel Fuel																yes ²
#3	Oil Filled Transformer	Petroleum Product	0	0	0	0.0	0	0	0	0.0	0.0							yes ³
#4	Drums	Petroleum Product																yes ⁴
PH-1	Oil Filled Transformer	Petroleum Product	15	13	0.96	1400.3	8.75	6.75	0.96	424.1	130.5	976.1	78.0	583.4	52.5	392.7	1189.0	yes ³
PH-2	Oil Filled Transformer	Petroleum Product	21	11	1	1727.9	9.58	5.83	1	418.0	175.1	1309.9	101.6	760.3	73.5	549.6	1169.0	yes ³
#9907379	Waste Oil Storage Container	Waste Oil	10.2	14	1	1060.5	8.95	2.7	1	361.5	117.6	879.8	0.0	0.0	0.0	879.8	480.0	yes
#9907383	Waste Oil Storage Container	Waste Oil	10.2	14	1	1060.5	8.95	2.7	1	361.5	117.6	879.8	0.0	0.0	0.0	879.8	480.0	yes
#9907384	Waste Oil Storage Container	Waste Oil				0.0				0.0	0.0	0.0				0.0		yes ²
#9907385	Waste Oil Storage Container	Waste Oil				0.0				0.0	0.0	0.0				0.0		yes ³

check maybe 25 yr 24 hr.

Sufficient Freeboard, 100 yr-24hr event (from Flood Control Design Criteria, Sonoma County; Plate B-2) = 0.22"/hr

Mean Seasonal Pop (from plate B-3) = 28"/yr

K factor (from plate B-4) = 0.9

.22 in/hr x 24 hr = 5.28" x 0.9 x [1'/12"] = 0.4 ft.

¹ Tank has integrated secondary containment via double steel wall construction. Tertiary containment provided by oily water separator system.

² Tank has integrated secondary containment via double steel wall construction. Two 10,000-gallon gray water tanks provide additional containment.

³ Local Containment may be below required volumes. Storm Water containment pond provides secondary containment.

⁴ Local containment provided by pallet containment systems and floor of maintenance building.



OWNERS TANK SYSTEM MANUAL

SONOMA COUNTY
DEPT OF TRANS & PUBLIC WORKS
SANTA ROSA, CA

QUESTIONS? Please Reference Ace Invoice:
404453

Seattle, Washington
1143 Elliott Ave W, 98119
P.O. Box 9039, 98109
206/281-5000
Fax 206/281-5030

Portland, Oregon
5107 NE 158th Ave
97230
503/252-2000
Fax 503/252-2226

Spokane, Washington
6518 E Dean Ave
99212
509/536-4334
Fax 509/536-4345

San Leandro, California
3055 Teagarden Street
94577
510/297-5555
Fax 510/297-5560



Dear Valued Customer,

Thank you for buying a FuelSafe® system from Ace Tank & Equipment Co. Each component is carefully selected from the latest available technology to provide you with the best product at a reasonable price. The tank is UL-listed and components such as emergency and normal vents are sized to meet fire and other code requirements.

This booklet is an installation, operation, and maintenance manual. You may want to share it with your contractor to assist him in installing your system. After the system is in service, you should keep it available for its operating and maintenance information.

In the event you need parts or other service, please call our sales department at the branch nearest your location, using one of the phone numbers shown below. In the case of emergency, we provide 24-hour service availability.

Sincerely,

A handwritten signature in cursive script that reads "Robert Reese".

Robert Reese
General Manager

Seattle, Washington
1143 Elliott Ave W, 98119
P.O. Box 9039, 98109
206/281-5000
Fax 206/281-5030

Portland, Oregon
5107 NE 158th Ave
97230
503/252-2000
Fax 503/252-2226

Spokane, Washington
6518 E Dean Ave
99212
509/536-4334
Fax 509/536-4345

San Leandro, California
3055 Teagarden Street
94577
510/297-5555
Fax 510/297-5560

Table of Contents

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TANK

2

EQUIPMENT

3

INSTALLATION

4

MAINTENANCE

5

MISCELLANEOUS

FIREGUARD AC050000U2GX

REQUIRED LABELS: ALL LABELS ON EDGE

UL

SPEC LABEL TYPE	MATL	INC	SERIAL No.
2085 (FIREGUARD)	DECAL	<input checked="" type="checkbox"/>	A703071
VENT CAPACITY PRIMARY	DECAL	<input checked="" type="checkbox"/>	288000
VENT CAPACITY SECONDARY	DECAL	<input checked="" type="checkbox"/>	312000
TANK CAPACITY	DECAL	<input checked="" type="checkbox"/>	

STI

SPEC LABEL TYPE	MTL	INC	SERIAL No.
FIREGUARD	DECAL	<input checked="" type="checkbox"/>	14387

ACE TANK & EQUIPMENT CO.

LABEL TYPE	MTL	INC	PART No.
ACE	PAPER/DECAL	<input checked="" type="checkbox"/>	AE42568

PURCHASE ORDER No. 202745AG	ENGG. FILE No. 1F054	JOB IDENTIFICATION No. 295
ACE REP NICK R/ERIC L	CUSTOMER REP. DIANE J	SALES ORDER No. 404453
SHOP LOCATION LG	SHOP ORDERED DATE	START DATE 8/29

CUSTOMER NAME

SONOMA COUNTY OF

NOTE:

1. WELDING:

ALL WELDING WILL USE ONE OF THE FOLLOWING PROCESSES:

FCAW - FLUX CORED ARC WELDING "DUAL SHIELD / INNER SHIELD"

GMAW - GAS METAL ARC WELDING "MIG" (SOLID WIRE)

GTAW - GAS TUNGSTEN ARC WELDING "TIG"

SMAW - SHIELDED METAL ARC WELDING "STICK"

2. FITTINGS:

ALL EXPOSED THREADS ON FITTINGS TO HAVE PLASTIC THREAD PROTECTORS.

3. TESTING:

PRIMARY TANK

BEFORE COATING SECONDARY TANK,

PRIMARY TANK WILL BE AIR PRESSURE TESTED

AT 3 PSIG MAX

SECONDARY TANK

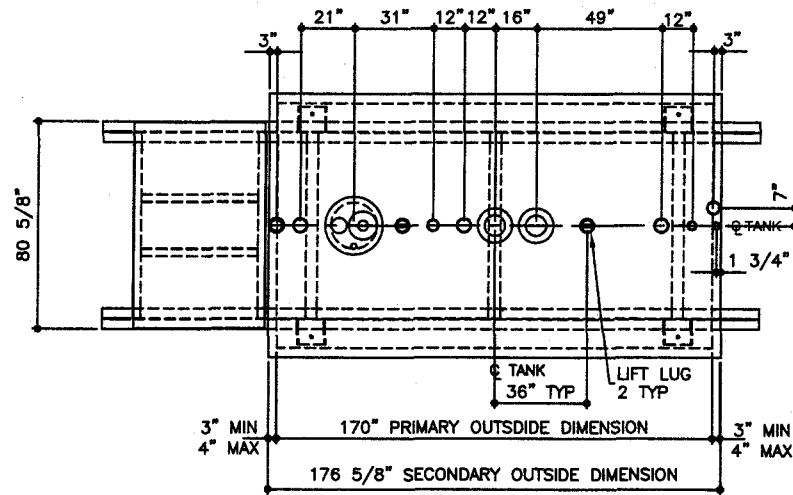
BEFORE COATING, WHILE THE PRIMARY TANK,

REMAINS PRESSURIZED, THE SECONDARY TANK WILL

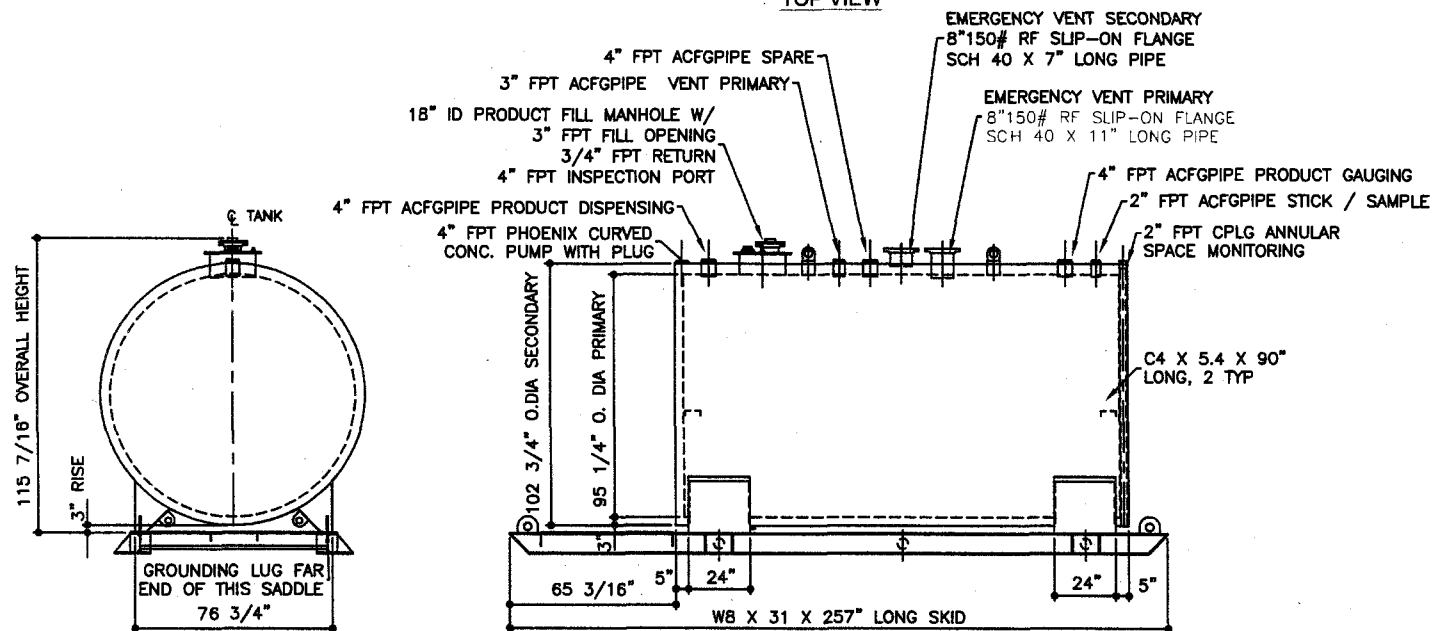
BE AIR PRESSURE TESTED AT 3 PSIG MAX



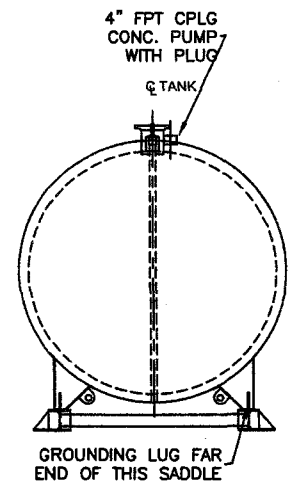
P.O. Box 9039
Seattle, WA 98109-0039
SEATTLE (206) 281-5000
PORTLAND (503) 284-5505
SPOKANE (509) 536-4334
BAY AREA (510) 297-5555



TOP VIEW



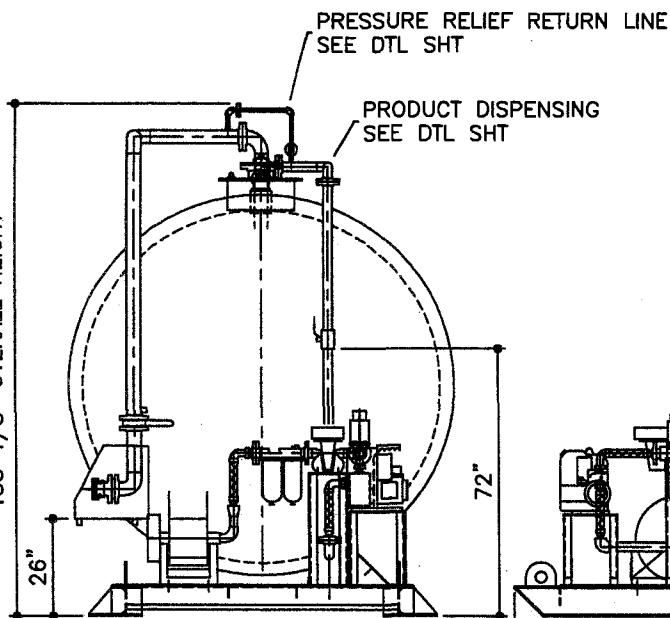
ELEVATION - SIDE VIEW



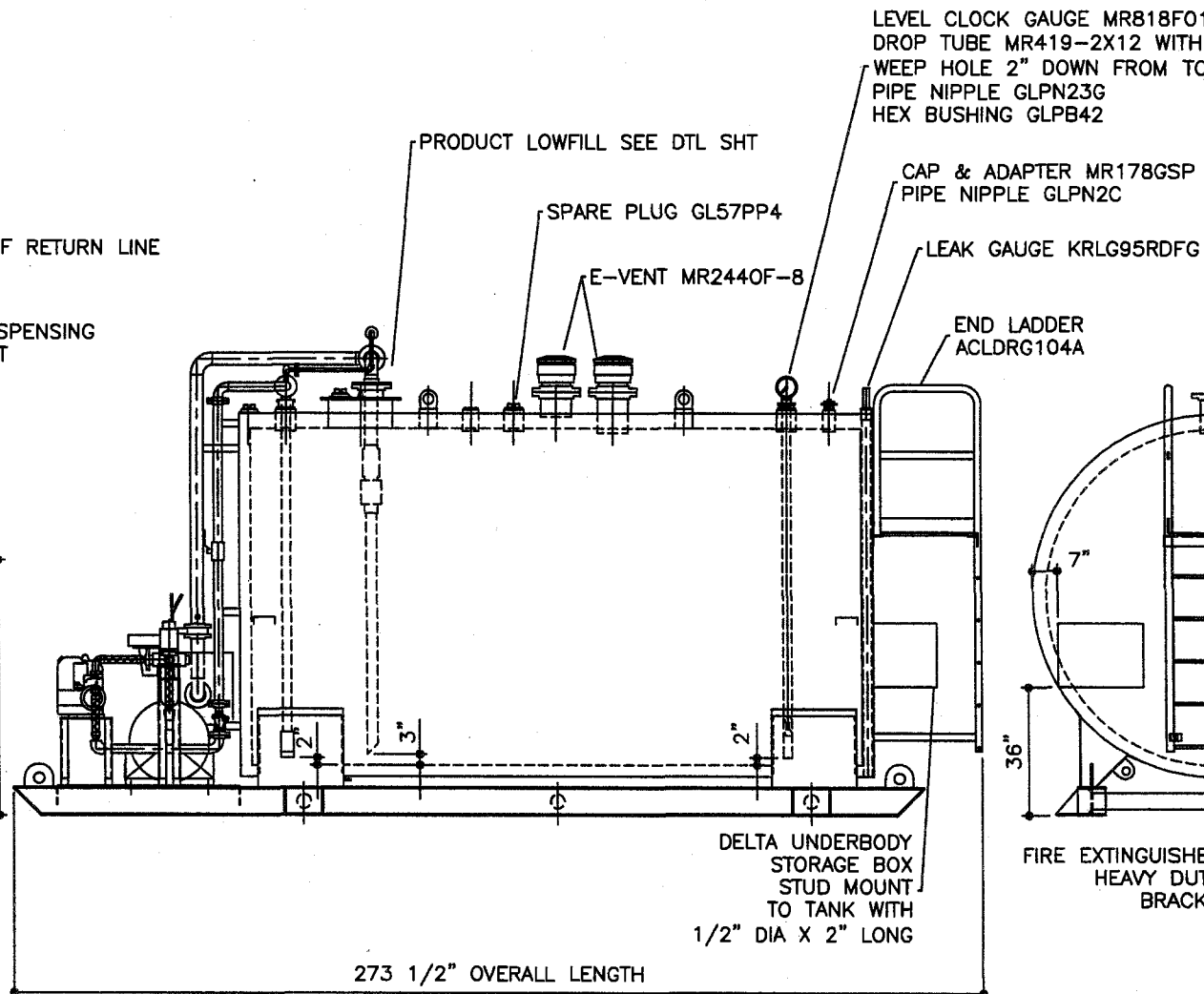
ELEVATION - END VIEW

TOLERANCES		STEEL: ASTM A36		COATING:		SPECIAL INSTRUCTIONS		APPROXIMATE SHIPPING WEIGHT		DRAWN BY	
TANK		UL 142 (BUILT & LABELED) UL 2085 (BUILT & LABELED) STI-F941 (BUILT & LABELED) HOLDDOWNS ARE SEISMIC RATED DOUBLE WALL WITH 3" INSULATION CYLINDRICAL FIREGUARD WITH SUPPORTS		EXTERIOR ACE 3A COATING: SP-6 GRIT BLAST 3A COLOR: #WH01 (WHITE) 1 CT TN-161 EPOXY 3.0-5.0 MILS 1 CT TN-74 URETHANE 2.0-3.0 MILS TDFT 5.0-8.0 MILS		FILL ANNULAR SPACE WITH PORTLAND CEMENT / PERLITE, CEMENT GRADE MIX. LEAVE 1" AIR GAP BETWEEN PERLITE & SECONDARY TANK INTERSTITIAL SPACE: 143 CUBIC FT.		17,325 LBS. 12,750 LBS. (WITHOUT CEMENT)		DBJM	
CAPACITY	-0% / +10	FIREGUARD - 5,000 GALLON		SECONDARY TANK SHELL: 2 GAUGE (1/4") HEAD: 0 GAUGE (5/16")		312,000 SECONDARY		TANK VENT CAPACITY 288,000 PRIMARY		2	
OVERALL LENGTH	-0" / +2"										
OVERALL WIDTH	-0" / +1"										
OVERALL HEIGHT	-1/2" / +1/2"										
OTHER DIMENSIONS	-1/4" / +1/4"	AC05000U2GX QTY: 1		INTERIOR: BARE STEEL		JOB ID No. 295		ACE HOUSE PAPER No. 404453		ENG. FILE No. 1F054	
1-208-261-5000		(F:11)1ACSHOPIFIREGUARDU2G1-31050002-ORTHO.GCD-1:48)				01-01-01 SUPERCEDES 10-1-00					

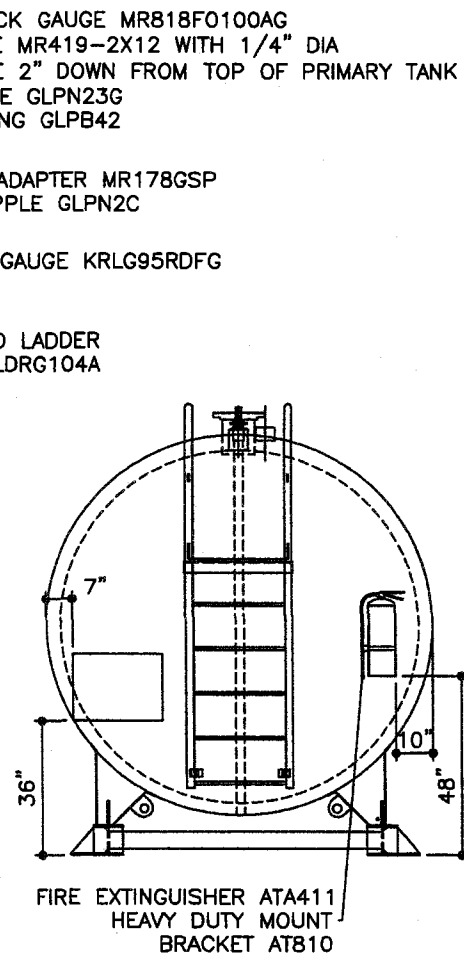
138 1/8" OVERALL HEIGHT



ELEVATION - END VIEW



ELEVATION - SIDE VIEW



ELEVATION - END VIEW



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Seattle, WA 98109-0039

JOB ID No. 295
ACE HOUSE PAPER No. 404453
ENGG. FILE No. 1F054

QUANTITY 1
PART NAME
ACE PART No.

EQUIPMENT - LOCATIONS
3" INSUL, STOCK TANK

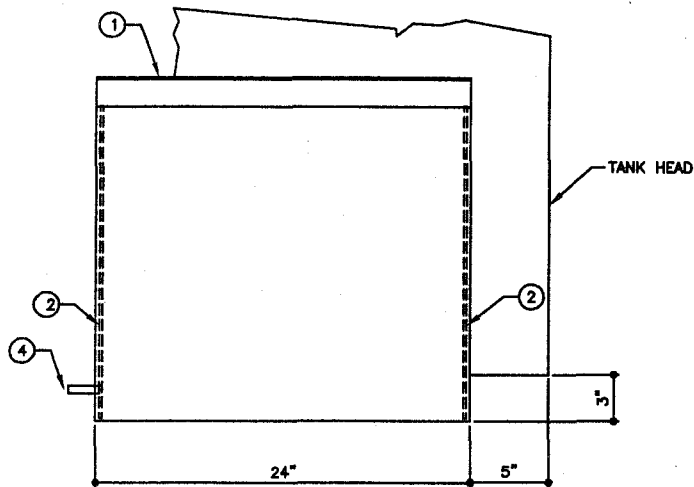
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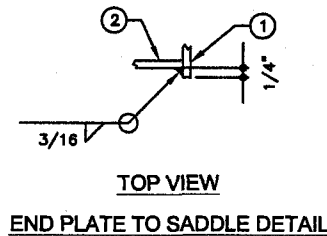
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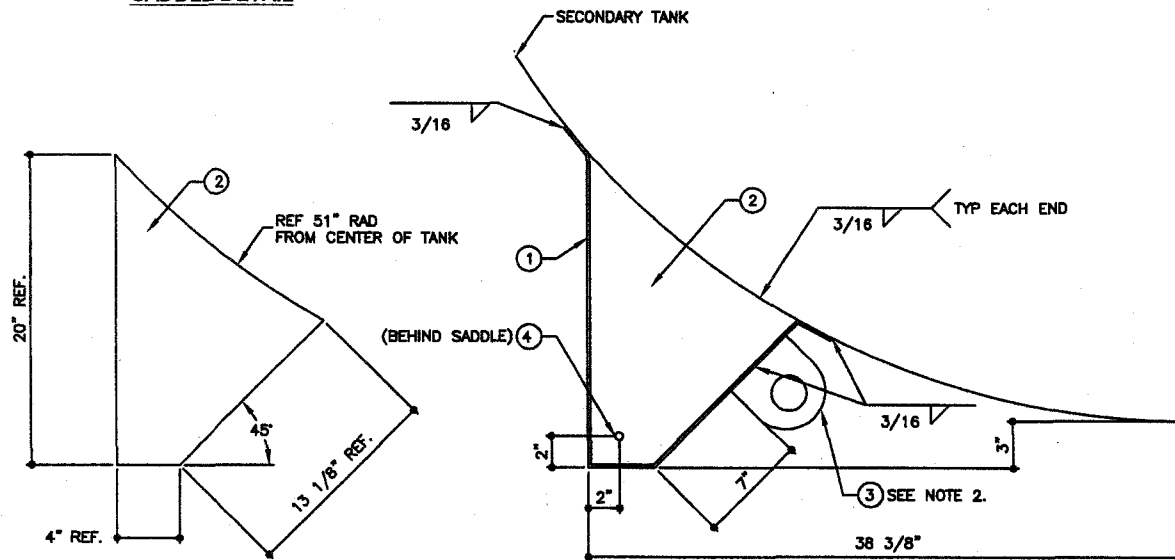
OF 9



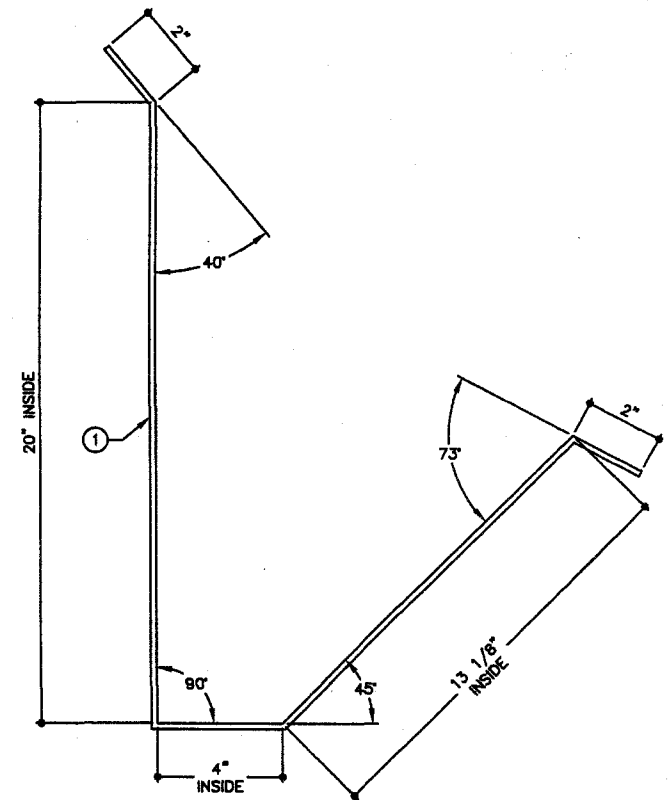
ELEVATION - SIDE VIEW
SADDLE DETAIL



TOP VIEW
END PLATE TO SADDLE DETAIL



ELEVATION - END VIEW-SADDLE LOCATION



ELEVATION - END VIEW
SADDLE DETAIL

BILL OF MATERIAL

ITEM	QTY	NAME	DESCRIPTION	MATL	PART No.	NOTES
1	4	SADDLE	STEEL, 3/16" X 24" X 41 1/8"	A36	-	MOUNT, COAT
2	8	END PLATE	STEEL, 3/16" PLATE X 13 1/4" X 20"	A36	-	MOUNT, COAT
3	4	TIE DOWN	3/8" LIFT LUG, TYPE 1	A36	-	MOUNT, COAT
4	2	GROUNDING LUG	1/2" DIA NC X 2" LONG	A36	-	MOUNT, COAT

NOTE

1. TIE DOWNS TO BE LOCATED TOWARD THE ENDS OF THE TANK CYLINDER (TWO AS SHOWN, TWO OPPOSITE HAND).
TIE DOWNS TO BE RECESSED 1/4" FROM LIP OF ITEM 1 TO ACCOMMODATE FILLET WELD.
2. GROUNDING LUGS REQUIRED ON TWO SADDLES ONLY, SEE SHT 2 FOR ORIENTATION



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JOB ID No. 295
ACE HOUSE PAPER No. 404453
ENGG. FILE No. 1F054

TOLERANCES
SADDLE
OVERALL LENGTH
OVERALL WIDTH
OVERALL HEIGHT
RADIUS

QUANTITY 1

PART NAME

FORMED SADDLE DETAILS

ACE PART No.

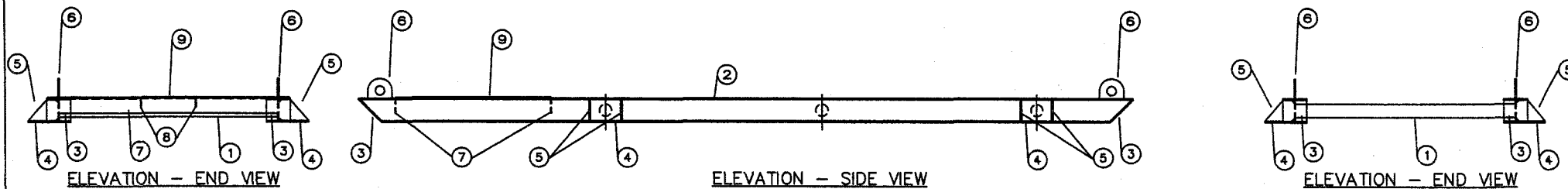
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-	-	-	-	OF
-	-	-	-	204
-	-	-	-	

01-01-01 SUPERCEDES

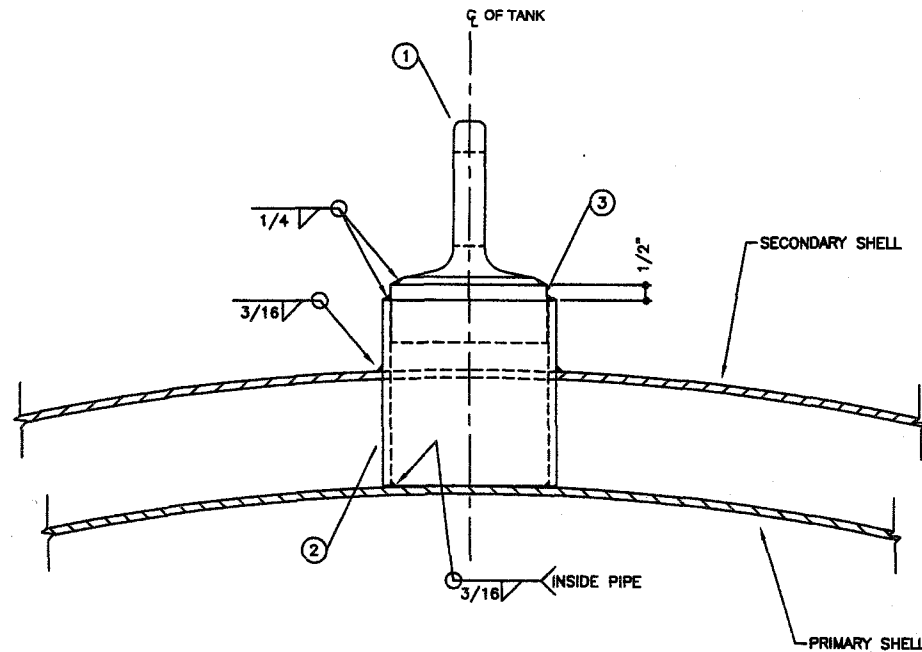
ITEM	QTY	NAME	DESCRIPTION	MATL	PART No.	NOTES
1	3	CROSS BRACE	4" SCH. 80 PIPE X 72 3/8" LONG	A36	-	MOUNT COAT
2	2	SKID	WB X 31 X 257" LONG	A36	-	MOUNT COAT
3	-	END PLATE	1/2 PLATE X 11" X 7 3/4" LONG	A36	-	MOUNT COAT
4	-	HOLD DOWN	1/2 PLATE X 6" X 10" LONG	A36	-	MOUNT COAT
5	-	HOLD DOWN GUSSET	1/2 PLATE X 7 1/16" X 9 7/8" LONG	A36	-	MOUNT COAT
6	-	TOW EYE	1/2 PLATE X 6 1/2" H X 8" LONG W/ 3" DIA HOLE	A36	ASPH12-K	MOUNT COAT
7	2	PLATFORM BRACE	L5 X 3 X 1/4 X 72 5/8" TOE DOWN COPE ENDS AS REQ'D	A36	-	MOUNT COAT
8	2	PLATFORM CROSS BRACE	L3 X 3 X 1/4 X 46" LONG TOE DOWN	A36	-	MOUNT COAT
9	1	DECK PLATE	5/16 PLATE X 51 1/2" X 80" LONG	A36	-	MOUNT COAT



BILL OF MATERIAL

ITEM	QTY	NAME	DESCRIPTION	MATL	PART No.	NOTES
1	2	LIFT LUG	4" FPT, LIFT LUG	A36	PH3-902-TLL	MOUNT, COAT
2	2	PIPE	5" SCH 40 X 6" LONG	A36	ASP5X6	MOUNT, COAT
3	2	COUPLING	4" FPT, HALF COUPLING	BI	GLPCH4	MOUNT, COAT

NOTE: LIFT LUG IS TO BE PLUMB



END VIEW



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Seattle, WA 98109-0039

JOB ID No.	295
ACE HOUSE PAPER No.	404453
ENG. FILE No.	1F054
TOLERANCES	
LIFT LUG	
OVERALL LENGTH	-1/16" / +1/16"
OVERALL WIDTH	-1/16" / +1/16"
OVERALL HEIGHT	-1/16" / +1/16"
OTHER DIMENSIONS	-1/16" / +1/16"

QUANTITY
1

PART NAME

LIFT LUG MOUNTING - DETAIL

ACE PART No.

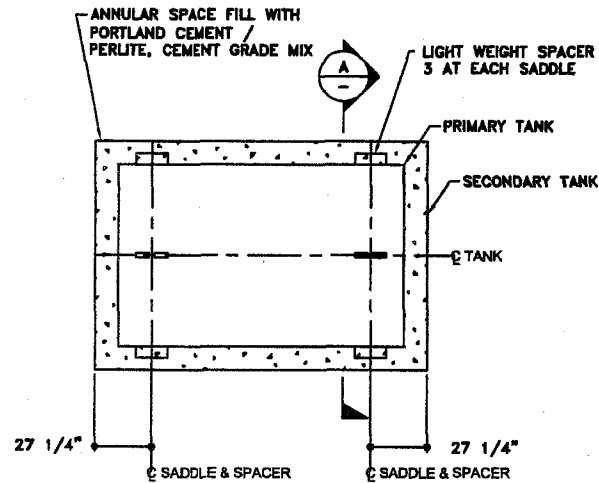
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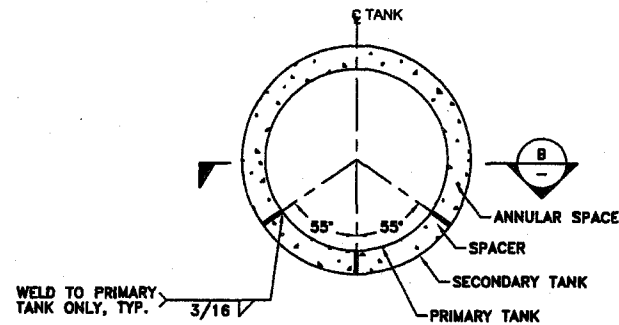
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1	1ST SUBMITTAL	-	-	1
-	-	-	-	OF
-	-	-	-	1
-	-	-	-	1
01-01-01 SUPERCEDES				

BILL OF MATERIAL

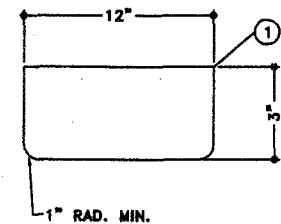
ITEM	QTY	NAME	DESCRIPTION	MATL	PART No.	NOTES
1	6	SPACER	1/2 PLATE X 3" H X 12" LONG	A36	-	MOUNT



B SECTION - TOP VIEW



A SECTION - END VIEW



LIGHT WEIGHT SPACER - DETAIL

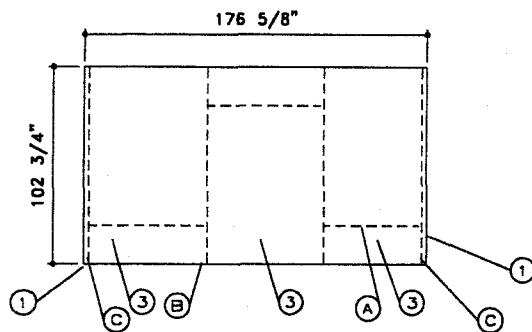
NOTE

- 1) THESE LIGHT WEIGHT SPACERS WILL HOLD THE PRIMARY TANK IN PLACE UNTIL THE CONCRETE IS PUMPED INTO THE ANNULAR SPACE. THE CONCRETE WILL THEN SUPPORT THE PRIMARY TANK. INNER SADDLES ARE NOT REQUIRED.
- 2) WELD LIGHT WEIGHT SPACERS TO THE PRIMARY TANK ONLY.
- 3) 3 LIGHT WEIGHT SPACERS ARE REQUIRED AT EACH SADDLE.
- 4) LIGHT WEIGHT SPACER USED IS UL SPACER OPTION No. 3.

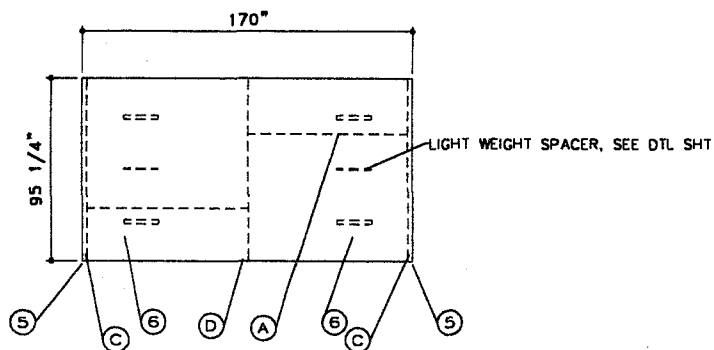


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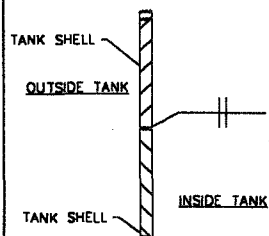
JOB ID No. 295	TOLERANCES TANK SPACER	QUANTITY 1	PART NAME 3" INSUL. LIGHT WEIGHT SPACER - DETAIL FIREGUARD U2G1	No. 1	DRAWING / REVISION 1ST SUBMITTAL	DRAWN BY	CHECKED BY	SHEET 1 OF 1
ACE HOUSE PAPER No. 404453	OVERALL LENGTH -1/16" / +1/16"		ACE PART No. AC05000U2GX	-				
ENG. FILE No. 1F054	OVERALL WIDTH -1/16" / +1/16"		(F:\11\ACSHOPI\FIREGUARD\U2G1-3\DETAIL\F-SPACR.GCD-1:08)	-				
	OVERALL HEIGHT -1/16" / +1/16"			-				
	OTHER DIMENSIONS -1/16" / +1/16"			-				
					01-01-01 SUPERCEDES			



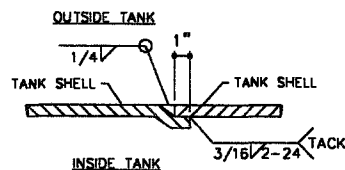
TOP VIEW
SECONDARY TANK



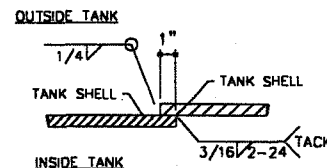
TOP VIEW
PRIMARY TANK



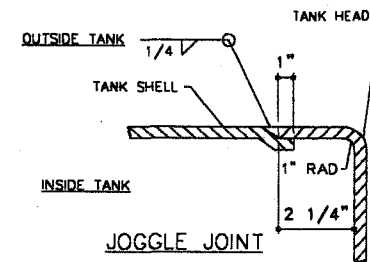
A BUTT JOINT



B JOGGLE JOINT
PRIMARY TANK CIRCUMFERENTIAL SEAM

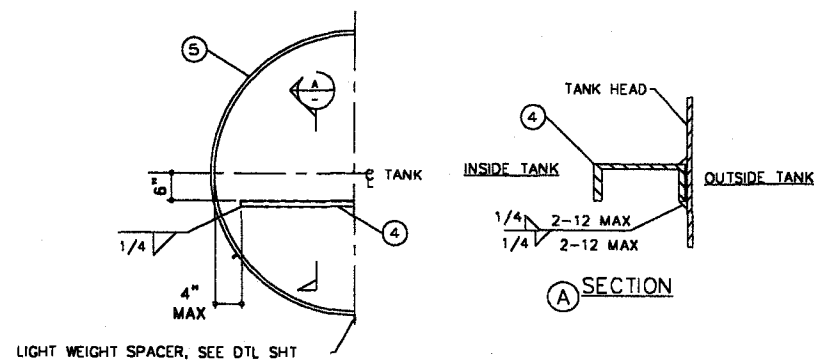


D LAP JOINT
SECONDARY TANK CIRCUMFERENTIAL SEAM



C JOGGLE JOINT
TANK HEAD SEAM

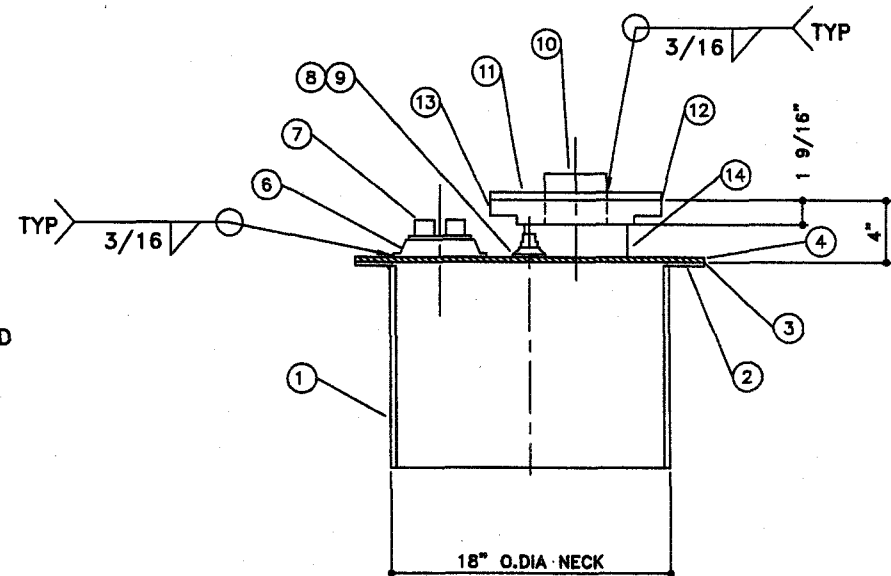
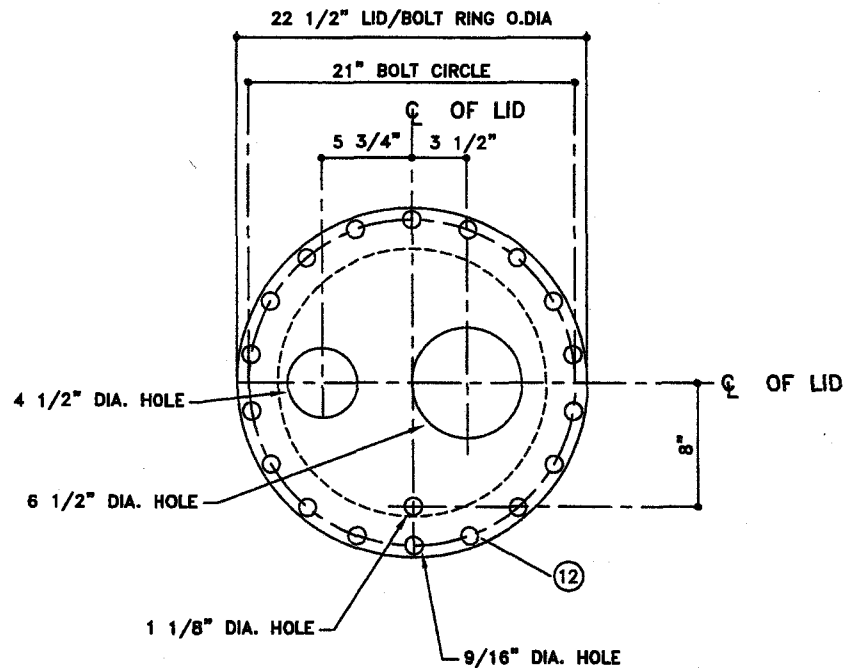
BILL OF MATERIAL					
ITEM	QTY	NAME	DESCRIPTION	MATL	PART No. NOTES
1	2	SECONDARY HEAD	5/16" PLATE X 102 3/4" DIA	A36	DTE102 -
2					
3	3	SECONDARY SHELL	1/4" PLATE X 60" W X 323" LONG (PRE CUT) (CUT ONE COURSE TO 55" LONG)	A36	2G60X323 -
4	2	PRIMARY HEAD BRACING	C5 X 6.7 X 90" LONG	A36	- -
5	2	PRIMARY HEAD	1/4" PLATE X 95 1/4" DIA	A36	2TE95 -
6	2	PRIMARY SHELL	1/4" PLATE X 84" W X 300" LONG (PRE CUT)	A36	2G84X300 -



PARTIAL END VIEW
PRIMARY HEAD BRACING DETAIL

BILL OF MATERIAL

ITEM	QTY	NAME	DESCRIPTION	MATL	PART No.	NOTES
1	1	NECK	18" PE SCH 40 PIPE 8" LONG (FIREGUARDS 13" LONG)	A36	-	MOUNT, COAT
2	1	BOLT RING	1/4" PLATE 17 3/4" ID X 22 1/2" O.DIA	A36	-	MOUNT, COAT
3	1	GASKET	1/8" THICK FOR 18" MANHOLE	VTON	-	MOUNT, COAT
4	1	LID	5/16" PLATE X 22 1/2" DIA	A36	-	MOUNT, COAT
5	18	NUT	1/2" DIA. NC	A307	-	MOUNT, COAT
18	18	BOLT	1/2" DIA. NC X 1 1/2" LONG	A307	-	MOUNT, COAT
18	18	WASHER	1/2" DIA.	A307	-	MOUNT, COAT
6	1	FITTING	4" FPT, PHOENIX FLAT FLANGE	BI	PH112	MOUNT, COAT
7	1	PLUG	4" MPT, BAR LUG	BI	GLPP274	MOUNT, COAT
8	1	FITTING	3/4" FPT, PHOENIX FLAT FLANGE	BI	PH104	MOUNT, COAT
9	1	PLUG	3/4" MPT, BAR LUG	BI	GLH2734	MOUNT, COAT
10	1	COUPLING	3" FPT, STANDARD, SOLO FILL OPENING	BI	GLPC3	MOUNT, COAT
11	1	PLATE	1/2" PLATE BOLT HOLES TO MATCH 6" 150# FLANGE WITH 4 1/8" DIA HOLE FOR 3" COUPLING	BI	-	MOUNT, COAT
12	1	GASKET	1/8" THICK FOR 6" FLANGE	BI	-	MOUNT, COAT
13	1	FLANGE	6" 150# SLIP-ON RF	BI	GL-1921-6	MOUNT, COAT
14	1	PIPE	6" PE SCH 40 X 3 1/2" LONG	A53	-	MOUNT, COAT



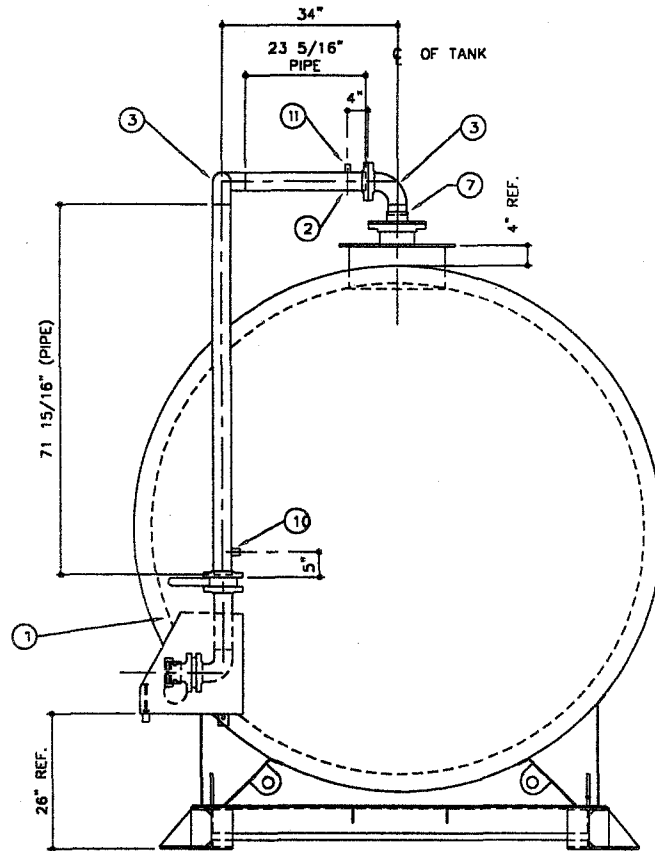
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Seattle, WA 98109-0039

JOB ID No.	295
ACE HOUSE PAPER No.	404453
ENGG. FILE No.	1F054
TOLERANCES	MANHOLE
OVERALL LENGTH	-1/4" / +1/4"
OVERALL WIDTH	-1/4" / +1/4"
OVERALL HEIGHT	-1/4" / +1/4"
OTHER DIMENSIONS	-1/4" / +1/4"

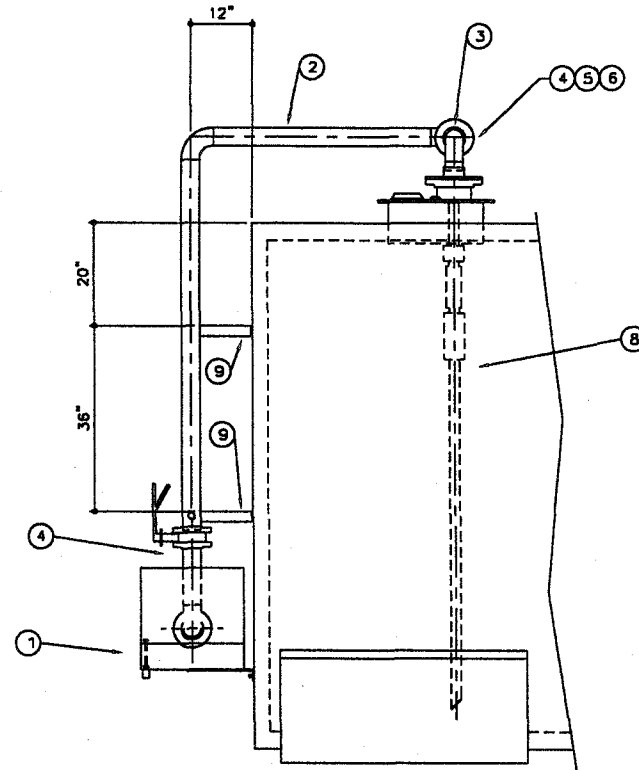
QUANTITY	PART NAME	18" PRODUCT FILL MANHOLE - DETAIL
1	ECN-1007	
ACE PART No.	AC05000U2GX	
(F: 1) 2PART-DT-PLUMBING LOWFIL LOWFIL-LGCD-1:24)		

No.	DRAWING / REVISION	DRAWN BY	CHECKED BY	SHEET
1	1ST SUBMITTAL	-	-	10
-	-	-	-	OF
-	-	-	-	24
-	-	-	-	
01-01-01	SUPERCEDES			

NOTE:
 - BEFORE COATING, AIR PRESSURE TEST PIPING AT 3-5 PSIG.
 - AFTER TESTING, COAT PIPING SAME AS TANK.



ELEVATION - END VIEW



ELEVATION - SIDE VIEW

BILL OF MATERIAL

ITEM	QTY	NAME	DESCRIPTION	MATL	PART No.	NOTES
1	1	SPILL BOX	8 GALLON SPILL CONTAINMENT BOX	A38	AC8LFSCA	MOUNT, SEE DTL SHT
2	1	PIPE	3" SCH. 40 PIPE X 126" LONG, CUT AS REQD	A53	ACPLBAC01A	MOUNT, COAT
3	3	ELBOW	3" BW SCH 40 X 90 DEG LONG RAD	A53	GLWE3-80	MOUNT, COAT
4	3	FLANGE	3" 150# RF, SLIP-ON	-	GL1921-3	MOUNT, COAT
5	1	GASKET	1/8" THICK FOR 3" FLANGE	-	GLGSKT3FF	MOUNT
6	4	NUT, BOLT, WASHER	5/8" DIA X 2 1/2" LONG	A307	-	MOUNT
7	1	PIPE	3" PE X MPT SCH. 40 X 2" LONG	A53	-	MOUNT, COAT
8	1	INT. PIPING	-	-	-	MOUNT, SEE DTL SHT
9	2	SUPPORT	1/4 x 2 FLAT BAR X 12" LONG BEND, CUT & PUNCH AS NEEDED	A36	-	MOUNT, SEE DTL SHT
10	1	COUPLING	3/4" FPT, COUPLING	BI	GLPC34	MOUNT, COAT
11	1	PLUG	3/4" MPT, SQUARE HEAD	BI	GL27D34	MOUNT, COAT
11	1	COUPLING	1/2" FPT, COUPLING	BI	GLPC12	MOUNT, COAT



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JOB ID No. 295
 ACE HOUSE PAPER No. 404453
 ENGG. FILE No. 1F054

TOLERANCES	
PIPING	
OVERALL LENGTH	-0" / +1/4"
OVERALL WIDTH	-0" / +1/4"
OVERALL HEIGHT	-0" / +1/4"
OTHER DIMENSIONS	-0" / +1/4"

QUANTITY
 1

PART NAME

PRODUCT FILL - END MOUNTED
 102" DIA FIREGUARD TANK

ACE PART No.

AC05000U2GX

(F:\1PART-DETAIL\LOWFILL\FG102END.DWG-124)

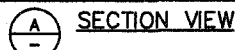
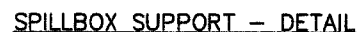
No. DRAWING / REVISION
 1 1ST SUBMITTAL

DRAWN BY CHECKED BY

SHEET

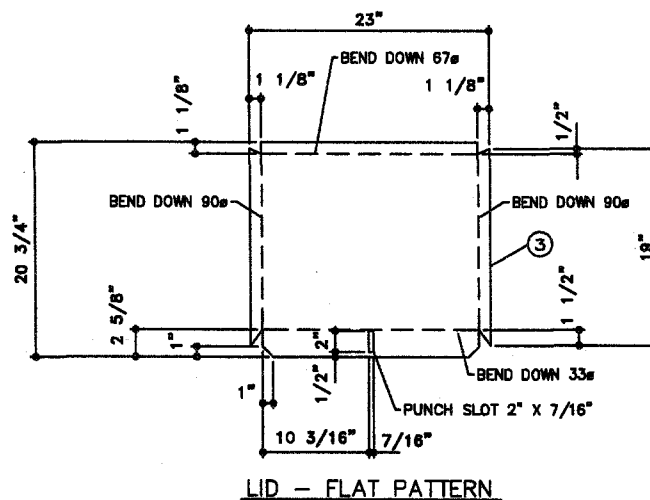
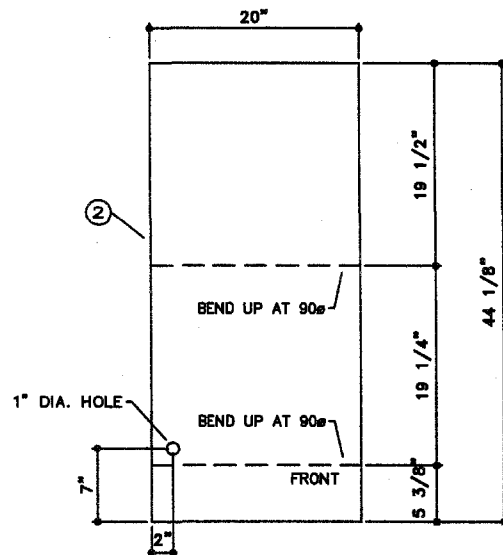
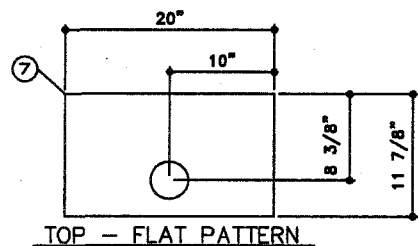
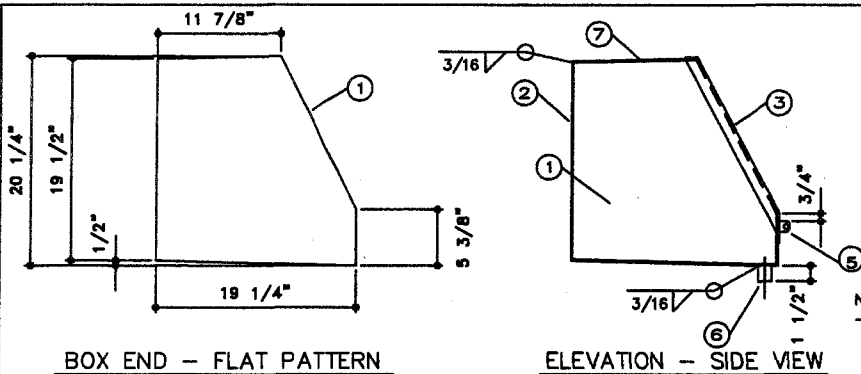
OF

01-01-01 SUPERCEDES



ITEM	QTY	NAME	DESCRIPTION	MATL	PART No.	NOTES
1	1	ELBOW	3" BW, LONG RADIUS 90°	A53	GLELCLR	MOUNT, COAT
2	1	PIPE	3" PE SCH. 40 X 12" LONG	A53	ASP3X12	MOUNT, COAT
3	1	SPILL CONTAINMENT BOX	8 GALLON	A36	AC8FLSCA	MOUNT, COAT
4	2	FLANGE	3" SLIP-ON, RF, 150#	STL	GL1921-3	MOUNT, COAT
5	3	GASKET	1/8" GASKET FOR 3" FLANGE	VITON	GLGSKT3VI	MOUNT
	8	BOLT	5/8" DIA NC X 4 1/2" LONG	A307	-	MOUNT, COAT
	8	NUT	5/8" DIA NC	A307	-	MOUNT, COAT
	8	WASHER	5/8" DIA	A307	-	MOUNT, COAT
6	1	DRAIN	1/2" MPT, PUSH DOWN	BRASS	MR518-0113AD	MOUNT
7	1	VALVE, BUTTERFLY	3" WAFER STYLE, WITH HANDLE, VITON	CI	ATMW223V	MOUNT
8	1	DUST CAP	3"	ALUM	DX300DC	MOUNT
9	1	ADAPTOR	3" 150# FLANGED X ADAPTOR	ALUM	DX300AL	MOUNT
10	1	VALVE, VAPOR CHECK	3" WAFER STYLE	STL	AT3WC-V	MOUNT
11	1	SECURITY CHAIN	12" LONG	BRASS	DXCH-B12	MOUNT
12	2	STUD	1/2" DIA. X 1" LONG	A307	-	MOUNT, COAT
	2	WASHER	1/2" DIA.	A307	-	MOUNT, COAT
	2	NUT	1/2" DIA.	A307	-	MOUNT, COAT
13	1	SPILLBOX SUPPORT	FB 1/4" X 2" X 14 3/4" LONG	A36	-	MOUNT, COAT



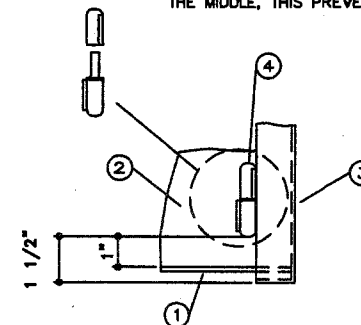


BILL OF MATERIAL

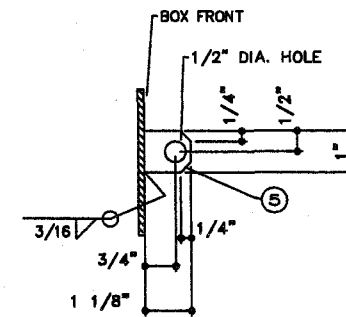
ITEM	QTY	NAME	DESCRIPTION	MATL	PART No.	NOTES
1	2	BOX END	10 GAUGE X 20 1/4" H X 19 1/4" LONG	A36	-	MOUNT, COAT
2	1	FRONT, BOTTOM & BACK	10 GAUGE X 44 1/8" X 20" WIDE	A36	-	MOUNT, COAT
3	1	LID	12 GAUGE X 20 3/4" X 23" WIDE	A36	-	MOUNT, COAT
4	2	HINGE	LIFT-OFF HINGES (McMASTER-CARR PART)	A36	1071A71	MOUNT, COAT
5	1	STAPLE	FB 1/4" X 1" X 1 1/2" LONG	A36	-	MOUNT, COAT
6	1	FULL COUPLING	1/2" FPT, SCH 40	BI	GLPC12	MOUNT, COAT
7	1	TOP	10 GAUGE X 11 7/8" X 20" WIDE	A36	-	MOUNT, COAT

NOTE:
- COUPLING FLUSH WITH INSIDE
BOTTOM OF BOX

NOTE:
- POINT MALE ENDS OF HINGES TOWARDS
THE MIDDLE, THIS PREVENTS LID FROM SLIDING OFF.



TOP VIEW



ELEVATION - END VIEW
STAPLE - DETAIL



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JOB ID No. 295
ACE HOUSE PAPER No. 404453
ENG. FILE No. 1F054

TOLERANCES
OVERALL LENGTH -1/4" / +1/4"
OVERALL WIDTH -1/4" / +1/4"
OVERALL HEIGHT -1/4" / +1/4"
RADIUS -1/32" / +1/32"

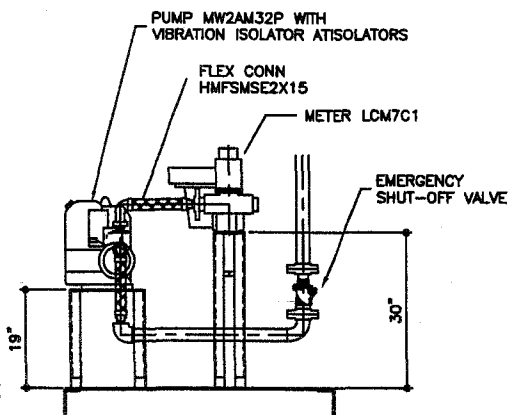
QUANTITY PART NAME
1 ACE PART No.

8 GALLON CONTAINMENT BOX
(SPILLBOX) - DETAIL - AC8FLSCA
AC05000U2GX

No.	DRAWING / REVISION	DRAWN BY	CHECKED BY	SHEET
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2	-	-	-	2
3	-	-	-	3
4	-	-	-	4
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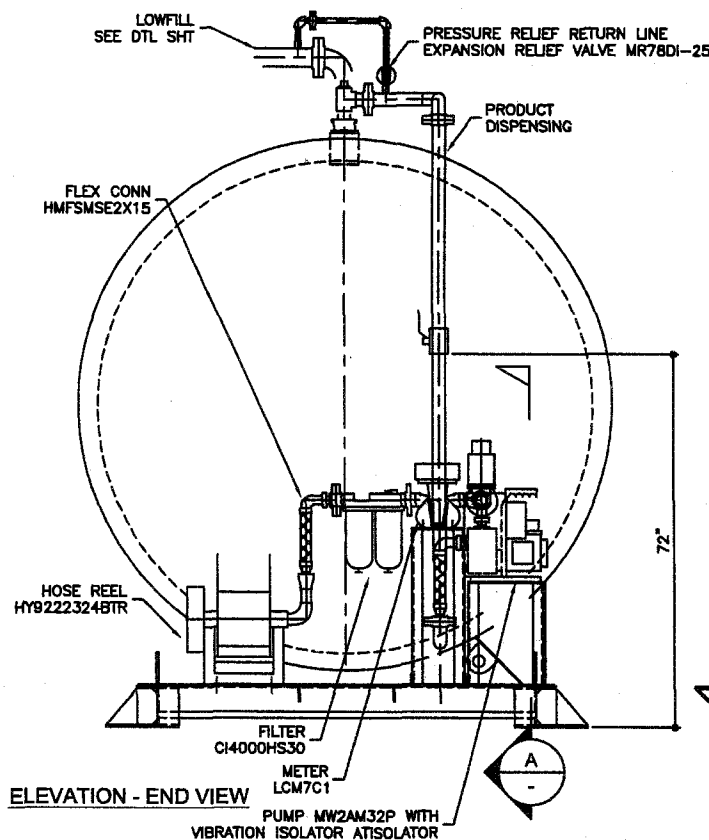
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OF 24

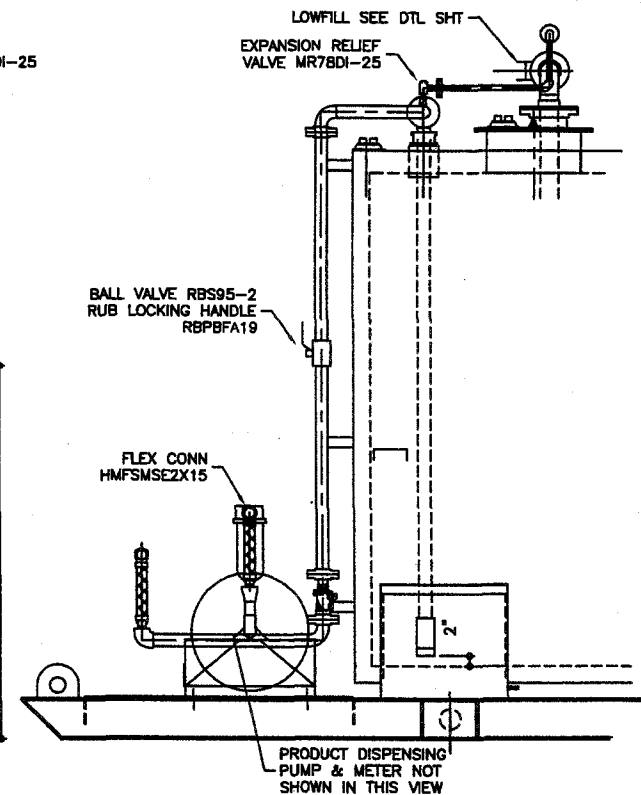


A SECTION VIEW

NOTE:
- BEFORE COATING, AIR PRESSURE TEST PIPING AT 3-5 PSIG.
- AFTER TESTING, COAT PIPING SAME AS TANK.



ELEVATION - END VIEW



ELEVATION - SIDE VIEW

BILL OF MATERIAL

ITEM	QTY	NAME	DESCRIPTION	MATL	PART No.	NOTES
1	1	-	-	A36	-	-



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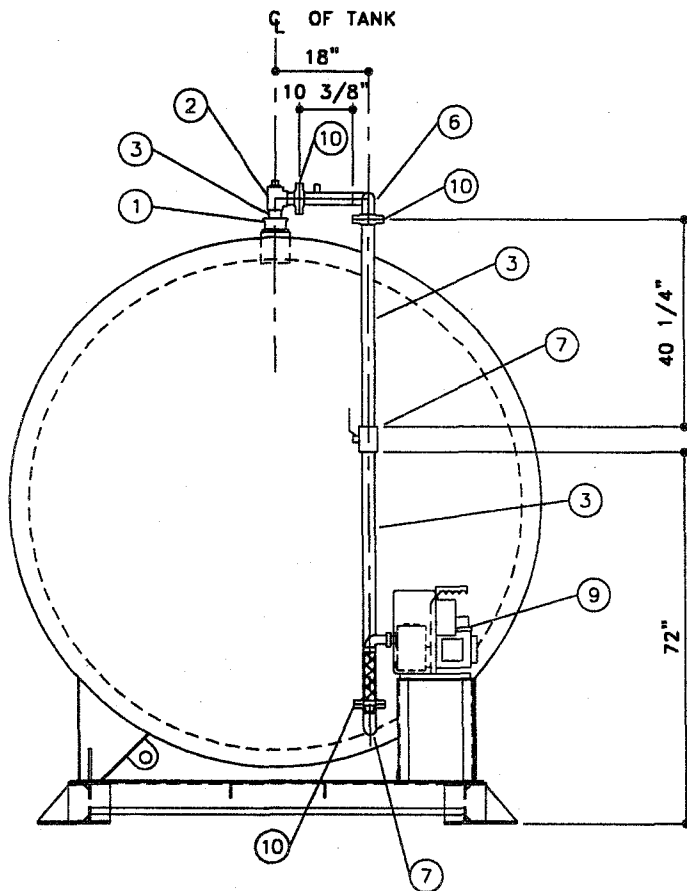
JOB ID No. 295
ACE HOUSE PAPER No. 404453
ENGG. FILE No. 1F054

TOLERANCES	
PIPING	
OVERALL LENGTH	-0" / +1/4"
OVERALL WIDTH	-0" / +1/4"
OVERALL HEIGHT	-0" / +1/4"
OTHER DIMENSIONS	-0" / +1/4"

QUANTITY	PART NAME
1	PRODUCT DISPENSING - END/PLATFORM MOUNTED 102" DIA FIREGUARD TANK
	ACE PART No. AC05000U2GX
	(PART-DETAIL LOWFILL VFG102END.DWG-1-24)

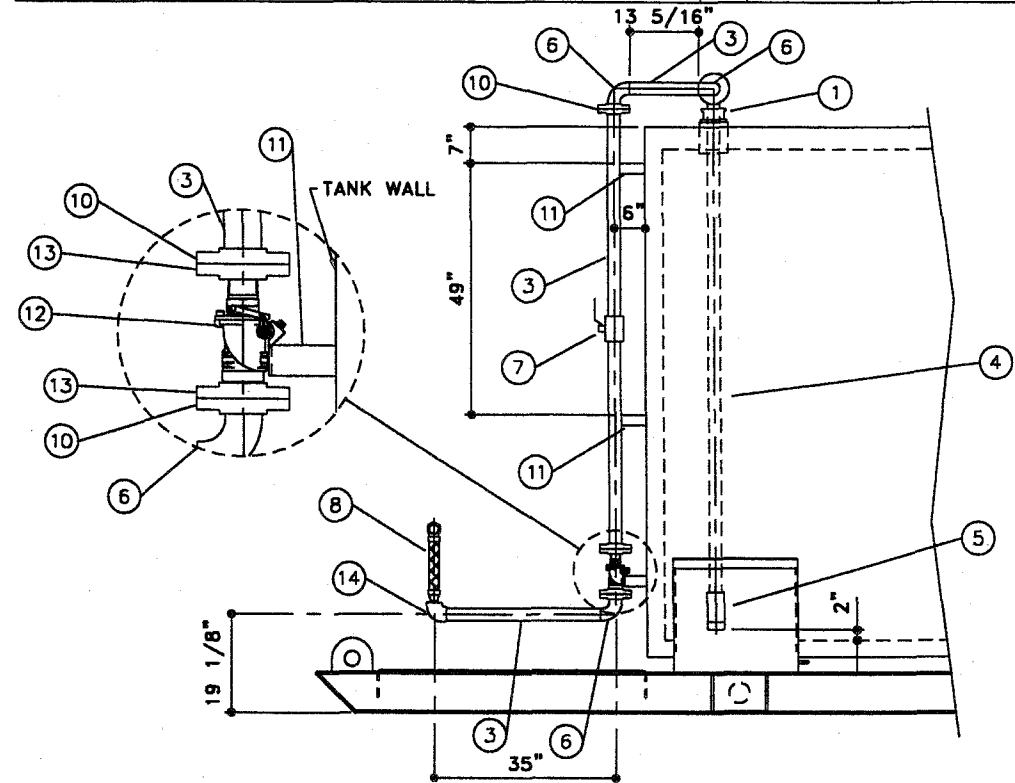
No.	DRAWING / REVISION	DRAWN BY	CHECKED BY	SHEET
1	1ST SUBMITTAL	-	-	15
-	-	-	-	OF
-	-	-	-	347
01-01-01 SUPERCEDES				

NOTE:
 - BEFORE COATING, AIR PRESSURE TEST PIPING AT 3-5 PSIG.
 - AFTER TESTING, COAT PIPING SAME AS TANK.



ELEVATION - END VIEW

BILL OF MATERIAL					
ITEM	QTY	NAME	DESCRIPTION	MATL	PART No.
1	1	BUSHING	4" MPT X 2" FPT, DOUBLE TAP	-	MR184-42
2	1	VALVE	2" FPT RELIEF VALVE	-	-
3	1	PIPE	2" SCH. 40 PIPE X 130" LONG, CUT AS REQD	-	ACPIPE
4	1	PIPE	2" MPT X MPT SUCTION PIPE X 93" LONG	-	ACSUCTION
5	1	VALVE	2" FPT, FOOT VALVE	-	MR334-2
6	3	ELBOW	2" PE, 90 DEG. ELBOW	-	GLWE2-90
7	1	VALVE	2" FPT, BALL VALVE	-	RBS95-2
8	1	LOCK	1 1/4"-2" RUB LOCKING HANDLE	-	RBPBFA19
9	1	HOSE	2" MPT X 90 DEG. FLEX HOSE, 15' LONG	-	HMFMSMSE2X15
10	1	PUMP	2" CENTRIFUGAL PUMP, 3HP	-	MW2AM32P
11	1	ISOLATORS	3/4" X 2" VIBRATION ISOLATORS	-	ATISOLATOR
12	6	FLANGE	2" 150# RF, SLIP-ON FLANGE	-	GL1821-2
13	4	GASKET	1/8" GASKET FOR 2" FLANGE	VITON	GLGSKT2VI
14	16	FASTENERS	1/2" DIA. NUT, BOLT, WASHER	A307	-
15	3	SUPPORT	-	A36	-
16	1	VALVE	2" MPT, EMERGENCY SHUT-OFF VALVE	-	OP10RM-5620
17	2	FLANGE	2" 150#, COMPANION FLANGE	-	GL9131-2
18	1	ELBOW	2" FPT, 90 DEG. ELBOW	-	GLE12-90



ELEVATION - PARTIAL SIDE VIEW



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JOB ID No. 295
 ACE HOUSE PAPER No. 404453
 ENGG. FILE No. 1F054

TOLERANCES	
PIPING	
OVERALL LENGTH	-0" / +1/4"
OVERALL WIDTH	-0" / +1/4"
OVERALL HEIGHT	-0" / +1/4"
OTHER DIMENSIONS	-0" / +1/4"

QUANTITY
 1

PART NAME
 PRODUCT DISPENSING - END/PLATFORM MOUNTED
 102" DIA FIREGUARD TANK
 ACE PART No. AC05000U2GX
 (F:\1PART-DETAIL\LOWFILL\FG102END.DWG-124)

No.	DRAWING / REVISION	DRAWN BY	CHECKED BY	SHEET
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-	-	-	-	OF
-	-	-	-	24
01-01-01 SUPERCEDES				

BILL OF MATERIAL

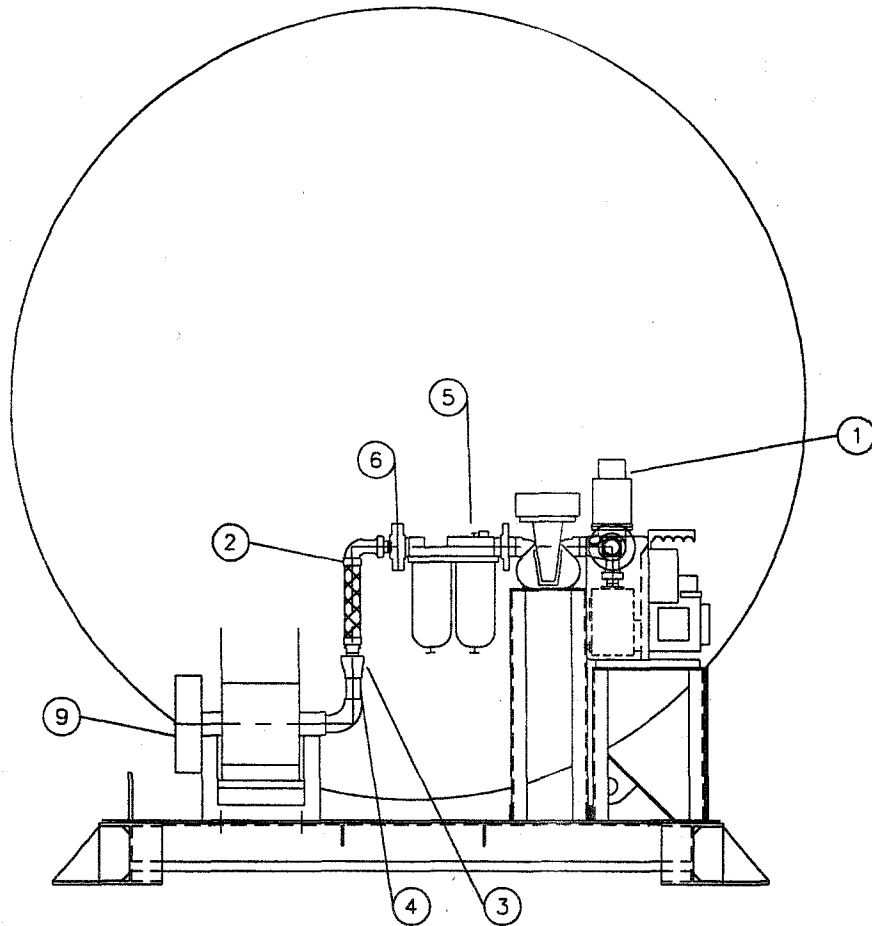
ITEM	QTY	NAME	DESCRIPTION	MATL	PART No.	NOTES
1	1	METER	100 GPM, REG/STR/AIR ELIM	-	LCM7C1	-
2	2	HOSE	FLEX CONN, M X 90 DEG. M. SWIVEL, 2" X 15"	-	HMFSMSE2X15	-
3	1	REDUCER	2" FPT X 1 1/2" FPT, BELL REDUCER	-	GLPBR2112	-
4	1	PIPE	2" MPT X SCH. 40 X 3" LONG	-	-	-
5	1	FILTER	30 MIC HYDRO-FTR, TYPE 2 #40099	-	CH4000HS30	-
6	2	FLANGE	2" 150# RF, SLIP-ON FLANGE	-	GL1921-2	-
1	1	GASKET	1/8" GASKET FOR 2" FLANGE	VITON	GLGSKT2VI	-
4	4	FASTENERS	5/8" DIA. NUT, BOLT, WASHERS	A307	-	-

BILL OF MATERIAL

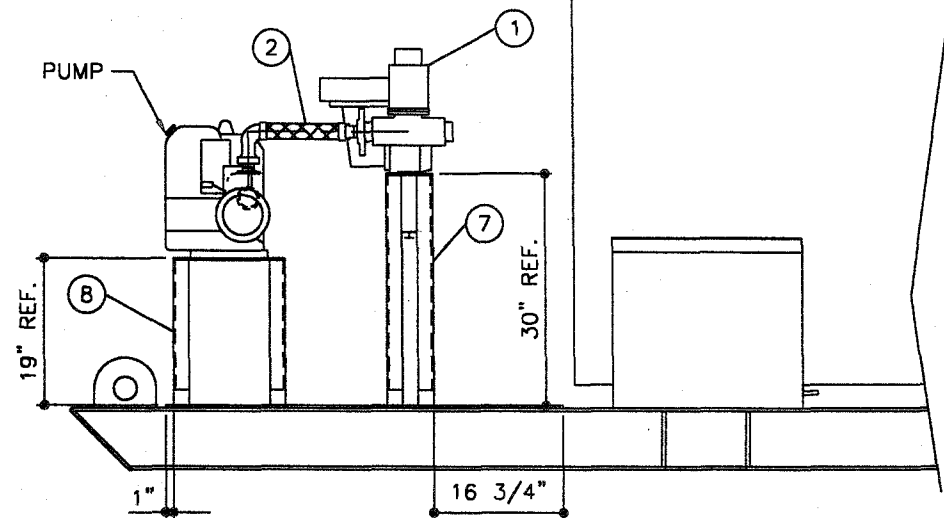
ITEM	QTY	NAME	DESCRIPTION	MATL	PART No.	NOTES
7	1	BRACKET	-	A36	-	SEE DTL SHT
8	1	BRACKET	-	A36	-	SEE DTL SHT
9	1	REEL	SPRING REWIND, 35' X 1 1/4"	-	HY92223248TR	-
1	1	NOZZLE	1 1/4" FO NOZZLE W/ SWV AND CK	-	OP295SC-0139	-
1	1	HOSE	1 1/4" FUEL OIL HOSE	-	GYREDWNG114	-
2	2	COUPLING	1 1/4" HOSE END MALE	-	DXH5222	-
2	2	FERRULE	1 1/4" X 1.858 ID	-	DXR125CS	-
1	1	HOSE STOP	1 1/4" HOSE STOP	-	HYHS-45	-

NOTE:

- BEFORE COATING, AIR PRESSURE TEST PIPING AT 3-5 PSIG.
- AFTER TESTING, COAT PIPING SAME AS TANK.



ELEVATION - END VIEW



ELEVATION - PARTIAL SIDE VIEW



P.O. Box 9039
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JOB ID No. 295
ACE HOUSE PAPER No. 404453
ENGG. FILE No. 1F054

TOLERANCES	
PIPING	
OVERALL LENGTH	-0" / +1/4"
OVERALL WIDTH	-0" / +1/4"
OVERALL HEIGHT	-0" / +1/4"
OTHER DIMENSIONS	-0" / +1/4"

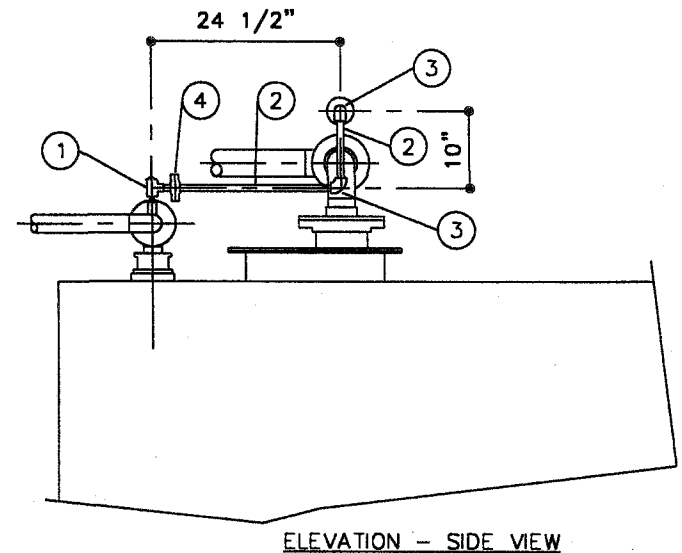
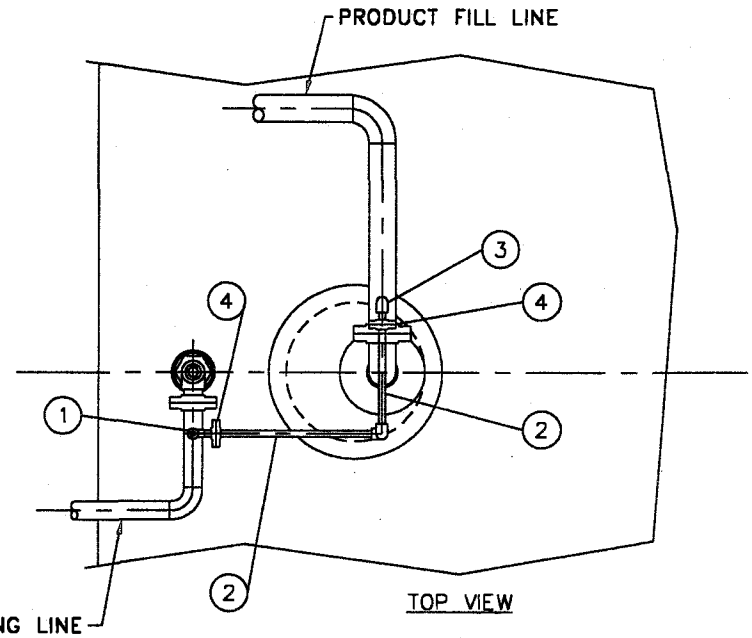
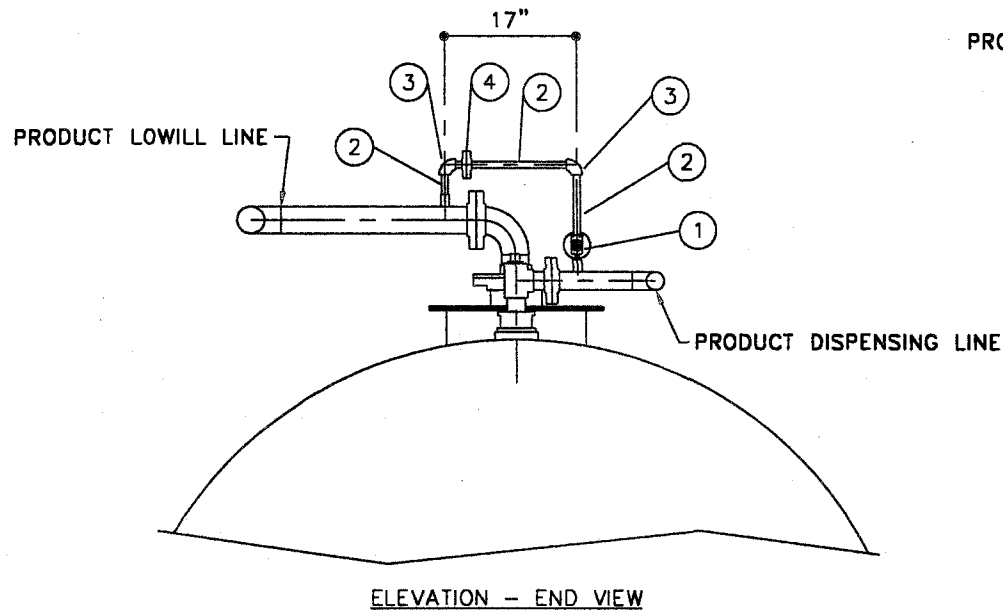
QUANTITY
1

PART NAME
PRODUCT DISPENSING - END/PLATFORM MOUNTED
102" DIA FIREGUARD TANK
ACE PART No. AC05000U2GX
(F:\1PART-DETAIL\LOWFILL\FG102END.DWG-124)

No.	DRAWING / REVISION	DRAWN BY	CHECKED BY	SHEET
1	1ST SUBMITTAL	-	-	17
-	-	-	-	OF
-	-	-	-	211
01-01-01 SUPERCEDES				

BILL OF MATERIAL

ITEM	QTY	NAME	DESCRIPTION	MATL	PART No.	NOTES
1	1	VALVE	1/2" MPT X FPT, EXPANSION RELIEF VALVE	-	MR78DI-25	MOUNT
2	1	PIPE	1/2" SCH. 40 PIPE X 60" LONG, CUT AS REQD	A36	-	MOUNT, COAT
3	3	ELBOW	1/2" 90 DEG. WELD ELBOW	A36	GLWE12-90	MOUNT, COAT
4	4	FLANGE	1/2" 150# RF, SLIP-ON FLANGE	A36	GL1921-12	MOUNT, COAT
2	2	GASKET	1/8" GASKET FOR 1/2" FLANGE	VITON	GLGSKT12W	MOUNT
8	8	FASTENERS	1/2" DIA. NUT, BOLT, WASHER	A307	-	MOUNT



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JOB ID No. 295
ACE HOUSE PAPER No. 404453
ENGC. FILE No. 1F054

QUANTITY 1

PART NAME

1/2" VAPOR EXPANSION LINE - DETAIL

ACE PART No.

AC05000U2GX

(F:\1\1CUST\FIRECARD\U2G1-3\10000\98087\SKID.GCD-1:48)

REV No. 1

No. 1 DRAWING / REVISION

1 1ST SUBMITTAL

DRAWN BY CHECKED BY

SHEET

18

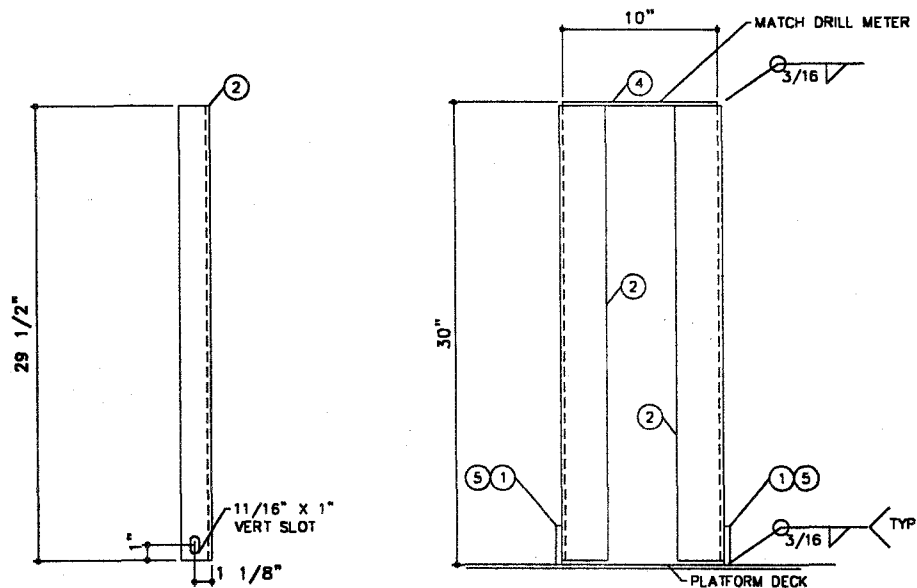
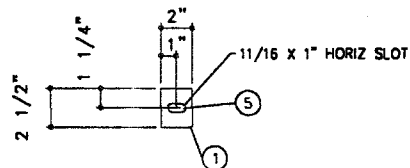
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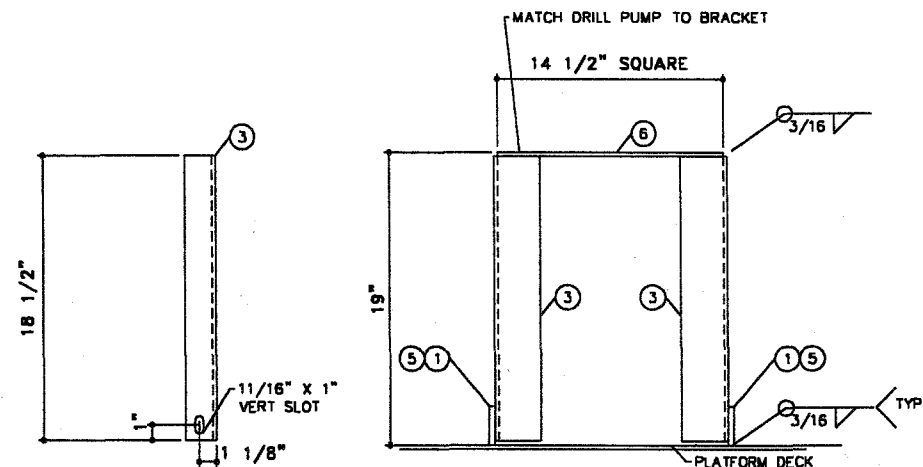
BILL OF MATERIAL

ITEM	QTY	NAME	DESCRIPTION	MATL	PART No.	NOTES
1	8	BOLT TAB	3/8 PLATE X 2" W X 2 1/2" H	A36	-	MOUNT, COAT
2	4	BRACKET LEG	L2 X 2 X 1/4 X 29 1/2" HIGH	A36	-	MOUNT, COAT
3	4	BRACKET LEG	L2 X 2 X 1/4 X 18 1/2" HIGH	A36	-	MOUNT, COAT
4	1	MOUNTING PLATE	1/4 PLATE X 6" X 10"	A36	-	MOUNT, COAT
5	8	BOLT NUT WASHER	1/2" DIA X 1 1/2" LONG	A307	-	MOUNT, COAT
6	1	MOUNTING PLATE	1/2 PLATE X 14 1/2" X 14 1/2"	A36	-	MOUNT, COAT

NOTE:
COAT PLATFORM SAME AS TANK



METER BRACKET - DETAIL



PUMP BRACKET - DETAIL



P.O. Box 9039
Seattle, WA 98109-0039

JOB NO. 295
ACE HOUSE PAPER No. 404453
ENGR. FILE No. 1F054

TOLERANCES	
BRACKET	
OVERALL LENGTH	-0" / +1/8"
OVERALL WIDTH	-0" / +1/8"
OVERALL HEIGHT	-0" / +1/8"
OTHER DIMENSIONS	-0" / +1/8"

QUANTITY 1

PART NAME	METER & PUMP BRACKET - DETAILS
ACE PART No.	AC05000U2GX
SCALE	(F: 1-1.00)

No.	DRAWING / REVISION	DRAWN BY	CHECKED BY	SHEET
1	1ST SUBMITTAL	-	-	19
-	-	-	-	OF
-	-	-	-	24
01-01-01 SUPERCEDES				

Diagram illustrating the assembly of a pressure chamber. The chamber is a rectangular box with a dashed line indicating the internal volume. A pressure gauge (1) is mounted on the top right corner. A 1/4" diameter hole is drilled into the top right corner for air to escape (4). A 2" maximum distance is marked from the top edge to the gauge. A 2" distance is marked from the bottom edge to the dashed line. A vertical dashed line (2) runs down the right side of the chamber.



Acetank
& EQUIPMENT

JOB ID No.	295
ACE HOUSE PAPER No.	404453
ENGG. FILE No.	1F054

QUANT	1
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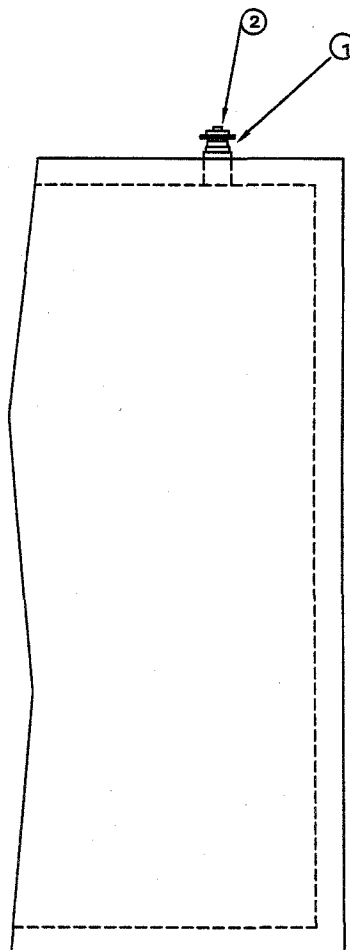
Y	PART NAME
---	-----------

ACE PART No. AC05000U2GX
(F:111PART-DT GAUGESTICK1FG102.DWG-1:16)

No.	DRAWING / REVISION	DRAWN BY	CHECKED BY	SHEET
1	1ST SUBMITTAL	-	-	OF
-	-	-	-	
-	-	-	-	
-	-	-	-	
01-01-01 SUPERCEDES				

BILL OF MATERIAL

ITEM	QTY	NAME	DESCRIPTION	MATL	PART No.	NOTES
1	1	PIPE NIPPLE	2" MPT X 3" LONG	GALV	GLPN23G	MOUNT
2	1	FILL CAP	2" FPT CAP & ADAPTER, 178GSP0100AC	-	MR178GSP	MOUNT



ELEVATION - SIDE VIEW



P.O. Box 9039
Seattle, WA 98109-0039

JOB ID No. 295
ACE HOUSE PAPER No. 404453
ENGG. FILE No. 1F054

TOLERANCES	
PIPING	
OVERALL LENGTH	-1/4" / +1/4"
OVERALL WIDTH	-1/4" / +1/4"
OVERALL HEIGHT	-1/4" / +1/4"
RADIUS	-1/32" / +1/32"

QUANTITY
1

PART NAME
MANUAL GAUGE/STICK PORT - DETAIL
ACE PART No.
(F:111)PART-DTGAUGESTICKIF0102.DWG-1:16

MANUAL GAUGE/STICK PORT - DETAIL

AC05000U2GX

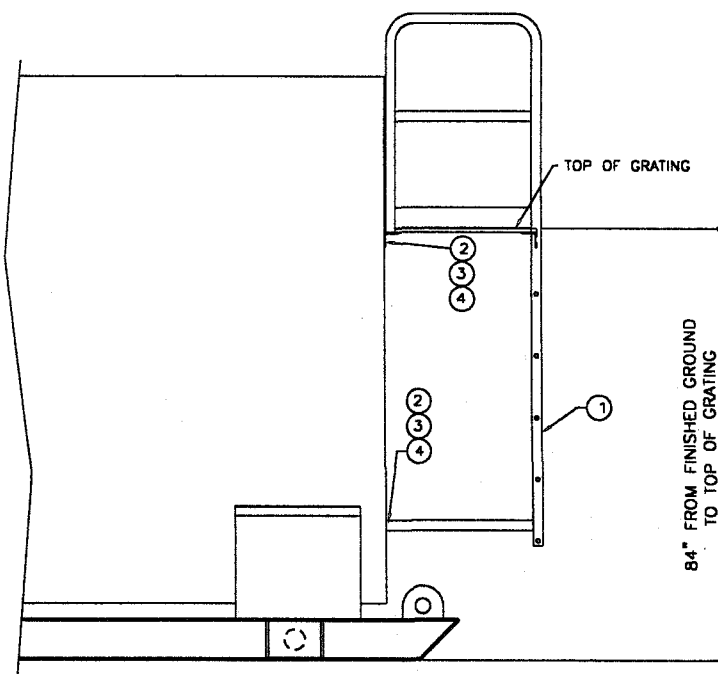
No.	DRAWING / REVISION	DRAWN BY	CHECKED BY	SHEET
1	1ST SUBMITTAL	-	-	21
-	-	-	-	OF
-	-	-	-	30
-	-	-	-	
01-01-01 SUPERCEDES				

BILL OF MATERIAL

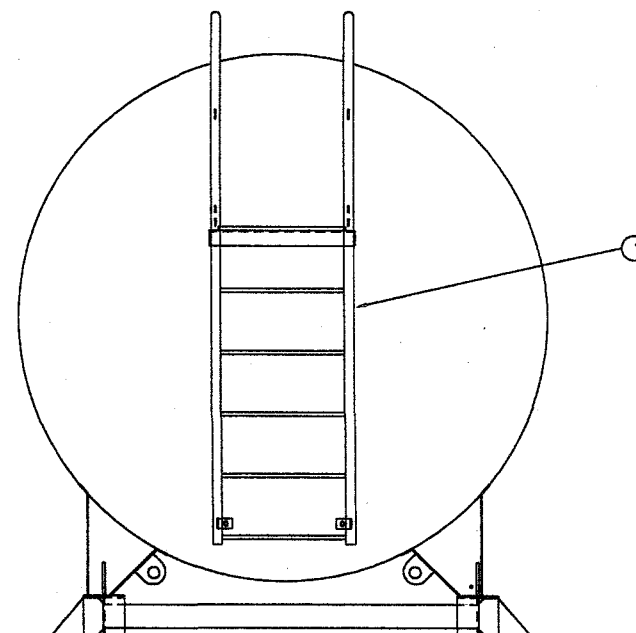
ITEM	QTY	NAME	DESCRIPTION	MATL	PART No.	NOTES
1	-	END LADDER	-	-	-	SEE DETAIL SHEET L2
2	4	WASHER	1/2" PLATED	-	-	MOUNT, COAT
3	4	NUT	1/2"-NC	-	-	MOUNT, COAT
4	4	WELD STUD	1/2" - 13 FULL THREAD X 1" LONG	-	-	MOUNT, COAT

NOTE:

COAT END LADDER ASSEMBLY SAME AS TANK



ELEVATION - SIDE VIEW



ELEVATION - END VIEW



P.O. Box 9039
Seattle, WA 98109-0039

JOB ID No.

295

ACE HOUSE PAPER No.
404453

ENGG. FILE No.
1F054

TOLERANCES LADDER

OVERALL LENGTH	-0" / +1/4"
OVERALL WIDTH	-0" / +1/4"
OVERALL HEIGHT	-0" / +1/4"
OTHER DIMENSIONS	-0" / +1/4"

QUANTITY

1

PART NAME

END LADDER LOCATION - DETAIL
102" DIA FIREGUARD TANK

ACE PART No.

AC05000U2GX

(P:1)PART-DETAIL/LADDERS/HEADWALL/END-1:24)

No. DRAWING / REVISION

1 1ST SUBMITTAL

DRAWN BY

CHECKED BY

SHEET

L1
OF

01-01-01 SUPERCEDES



NOTE:
COAT END LADDER ASSEMBLY SAME AS TANK, SHIP LOOSE



Revised Tank Capacity Chart

Central Disposal Site Fuel Tank

Ace Tank & Equipment Co. (800) ACE-TANK

6000 Gallons Nominal Capacity (Primary tank on doublewalls)

Cylindrical Horizontal Tank

Primary tank: 95" Diameter x 204" (17') Long

NOTE: This chart is approximate only, and is based upon on discussions with ACETANK Representatives

Chart uses 1/2 of capacity of 6000 gallon tank to develop 3000 gallon compartment levels

6000 gallon two compartment 2X wall UL 2085 Tank (3000 gal gasoline/3000 gal diesel)

Depth	Est. Capacity for 3000/3000 gallon split tank, per compartment	Depth	Est. Capacity for 3000/3000 gallon split tank, per side	Depth	Est. Capacity for 3000/3000 gallon split tank, per side	
(inches)	(gallons)	(inches)	(gallons)	(inches)	(gallons)	
1	5.5	37	1128	73	2580.5	
2	16	38	1169	74	2615.5	
3	29.5	39	1210	75	2650	
4	45.5	40	1251.5	76	2684	
5	63	41	1293	77	2717.5	
6	82.5	42	1334.5	78	2750	
7	104	43	1376.5	79	2781.5	
8	126.5	44	1418	80	2812.5	90% of Capacity
9	150.5	45	1460	81	2842.5	
10	175.5	46	1502	82	2872	
11	202	47	1544	83	2900.5	
12	229.5	48	1586	84	2927.5	
13	257.5	49	1627.5	85	2954	95% of Capacity
14	287	50	1669.5	86	2979	
15	317	51	1711.5	87	3003	
16	348	52	1753.5	88	3026	
17	380	53	1795	89	3047	
18	412.5	54	1836.5	90	3066.5	
19	445.5	55	1878	91	3084.5	
20	479.5	56	1919.5	92	3100	
21	514	57	1960.5	93	3113.5	
22	549	58	2001.5	94	3124	
23	585	59	2042.5	95	3129.5	
24	621	60	2083			
25	657.5	61	2123.5			
26	695	62	2163.5			
27	732.5	63	2203			
28	770.5	64	2242.5			
29	809	65	2282			
30	847.5	66	2320.5			
31	887	67	2359			
32	926.5	68	2397			
33	966	69	2435			
34	1006.5	70	2472			
35	1046.5	71	2508.5			
36	1087	72	2545			
90% of Tank Capacity:		2816	≈80", or 6'7"			
Fill Maximum: 95% of Tank Capacity:		2972	≈85", or 7'1"			

Fireguard® LIMITED WARRANTY

Limitations of Liability and Disclaimer

What Is Covered by this Warranty

Provided that the conditions set forth below are satisfied, the steel tank manufacturer identified with the tank (hereinafter referred to as "Warrantor") warrants the Fireguard® tank for 30 years following delivery of the tank to the tank owner at the time of the original installation ("the Owner"), against any of the following events which may occur, provided the event occurs under normal operating conditions: (i) against release of stored product from any secondary containment tank; (ii) against failure of the primary tank caused by non-corrosion related cracking, breakup or collapse; and (iii) against internal corrosion as long as the product stored within the tank is compatible with steel. In addition, the Warrantor warrants the tank against failure due to defective materials and workmanship for up to 1 year following the delivery of the tank to the Owner.

Conditions to Warranty Effectiveness

The limited warranties set forth herein are subject to the following conditions:

1. The Fireguard® tank must be: (i) installed within the Continental United States of America, Alaska, Hawaii, and the Commonwealth of Puerto Rico or Canada; (ii) the tank was fabricated by the Warrantor so as to meet the Fireguard® Specifications; and (iii) the tank was installed and maintained in accordance with the applicable Fireguard® specifications and the applicable Fireguard® Installation Instructions that were in effect on the date of shipment by the Warrantor, any subsequent maintenance procedures of which the Owner has written notice, and any applicable governmental codes and regulations.
2. This Limited Warranty is not valid unless, and until, the Warranty Validation Card is fully completed by the Owner and returned to Steel Tank Institute (STI) within 30 days after the date of tank installation, or 90 days after the Warrantor's shipment of the tank, whichever comes first.
3. Upon discovery of a suspected tank failure or leak by the Owner, the Owner shall give the Warrantor written notice of the suspected tank failure or leak and permit the Warrantor or its designated representative to inspect the tank site prior to, during and after excavation of the tank.
4. Upon the Warrantor's determination that the tank failure or leak is covered by this Limited Warranty, the Warrantor at its sole option shall: (1) repair the tank; or (2) replace it with a tank of approximately the same size, design, quality of material and workmanship specified for the original tank; or (3) refund the purchase price of the original tank. If the Warrantor is unable to repair or replace the tank, it shall refund the original purchase price of the tank.

What Is Not Covered by this Warranty

Warrantor does not warrant any piping system or any other attachments connected with the tank. Under no circumstances, shall the Warrantor be liable for (1) the cost of repair or replacement of any piping system or other attachments to the tank; or (2) labor costs or other installation costs for tank repair or replacement; or (3) damage to the tank or other property resulting from the accumulation of water in the tank or from the placement of water or other matter used as ballast in the tank; or (4) damage caused by other improper operating or maintenance practices; or (5) tank failure due to defective materials and workmanship later than one year following delivery of the tank to the Owner.

Limitation of Liability and Exclusion of Other Remedies and Damages

The foregoing remedy of repair, replacement or refund shall constitute the sole and exclusive remedy to the Owner. Under no circumstances, shall the liability of the Warrantor, or its affiliates or subsidiaries, under this warranty, exceed the purchase price of the tank.

IN NO EVENT SHALL THE WARRANTOR, OR ITS AFFILIATES OR SUBSIDIARIES, BE LIABLE FOR CLAIMS OF PERSONAL INJURY OR FOR SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS OR REVENUE, LOSS OF USE OF THE TANK OR ANY ASSOCIATED EQUIPMENT, COST OF CAPITAL, COST OF THE SUBSTITUTE EQUIPMENT, FACILITIES OR SERVICES, DOWNTIME COST, CLAIMS OF CUSTOMERS OF THE OWNER FOR SUCH DAMAGES, OR FOR DAMAGE TO PROPERTY, WHETHER SUCH CLAIM SHALL BE FOR BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE OR STRICT LIABILITY, AND WHETHER SUCH CLAIM ARISES OUT OF OR RESULTS FROM THIS LIMITED WARRANTY, OR EXPRESS OR IMPLIED WARRANTIES, OR FROM THE DESIGN, MANUFACTURE, SALE, DELIVERY, RESALE, INSTALLATION, TECHNICAL DIRECTION OF INSTALLATION, INSPECTION, REPAIR, OPERATION OR USE OF THE TANK.

Consumer Notice

The exclusion of indirect or consequential damages and the limitation of implied warranties herein may not be applicable to purchasers who are deemed "consumers" and who reside in states that do not allow the limitation of implied warranties or the exclusion of indirect or consequential damages otherwise applicable to consumers. Moreover, if you are deemed a "consumer", you may have specific legal rights in addition to those set forth in this warranty, which rights vary from state to state.

Disclaimer of Other Warranties

THE FOREGOING LIMITED WARRANTY IS THE ONLY WARRANTY MADE. THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Financial Assurance

Warrantor may have purchased insurance to cover its warranty obligations under this Limited Warranty. Such insurance would provide financial assurance for Warrantor's warranty obligations, but would not insure the Owner directly. If the Warrantor has purchased such insurance coverage, the Owner may request that the Warrantor provide a certificate of insurance to evidence Warrantor's purchase of such insurance.

Effective with installations on or after April 1, 2000.

Fireguard® (U.S. Pat. No. 5,695,089)
INSTALLATION, TESTING & MAINTENANCE INSTRUCTIONS

1.0 TANK SITE EVALUATION AND PREPARATION PRIOR TO INSTALLATION

- 1.1** The foundation for the tank must be designed to support the tank plus 100% of the weight of the maximum amount of product the tank will be storing. The foundation may be comprised of concrete, asphalt, gravel or other stable material and must include provisions in its design to prevent tank movement. The foundation should include any provisions necessary for seismic design. The foundation design must also include provision for draining surface water away from the tank.
- 1.2** For tank installations without cathodic corrosion protection, a grounding system should be installed for the tank in accordance with applicable electrical and fire code standards. Steel tanks in contact with the earth should not use copper grounding.
- 1.3** For tank installation with cathodic corrosion protection, consult applicable standards (i.e., National Association of Corrosion Engineers) to provide the tank with appropriate protection from lightning without interference with the corrosion protection. Steel tanks in contact with the earth should not use copper grounding. Refer to STI R893-89, "Recommended Practice for External Corrosion Protection of Shop Fabricated Aboveground Storage Tank Floors."
- 1.4** Tanks located in areas subject to flooding must be protected against floatation.
- 1.5** Aboveground tanks should not be located above underground utilities or directly beneath overhead power lines.
- 1.6** The tank shall be protected from vandalism and accidental damage in accordance with all applicable codes, i.e., NFPA 30, NFPA 30A, UFC, etc. as well as local environmental regulations and safety codes. Consult local authorities before installing this tank.

2.0 TANK HANDLING

- 2.1** Do not handle or install tank without having knowledge and experience in procedures involved with proper and safe installation of an aboveground tank used for storage of stable, flammable and combustible liquids. Reliance on skilled, professional installers is an important factor in avoidance of tank damage and system failures.
- 2.2** Equipment for handling the tank shall be of adequate size to lift and position the tank. **DO NOT DROP OR DRAG THE TANK.**
- 2.3** Tanks shall be carefully handled using cables or chains of adequate length (with spreader bars, if necessary) and size. Attach to the tank using the lifting lugs provided. Care should be taken that the angle between the two cables, at the lift point, shall be no greater than 60 degrees.
- 2.4** **DO NOT HANDLE OR MOVE THE TANK UNLESS IT IS EMPTY.**
- 2.5** This is a stationary tank. Do not use this tank for transport of any product.

3.0 TESTING

3.1 General Requirements

- 3.1.1** An on-site air test of the tank may be required by local authorities to ensure no damage has occurred in shipping and handling. All testing should be done as described below, or according to the tank manufacturer's Listing.
- 3.1.2** **DO NOT APPLY A VACUUM TO THE PRIMARY TANK.**
- 3.1.3** In lieu of the air pressure test, the tank may be shipped from the factory with a vacuum in the tank interstice. Read and record the vacuum pressure. If the vacuum pressure is less than 5.6 inches Hg (21.8 kPa), contact the tank manufacturer.

3.2 Air Pressure Test Procedure for Tanks

- 3.2.1** Remove emergency vents and cap openings to hold tank pressure as required.
NOTE: Use only calibrated air pressure gauges with a 0-15 psig (0-103 kPa) dial span.
The regulated air supply test pressure used for this test should be as follows:
- a.** **Horizontal cylindrical tanks**-Not less than 3 psig (20.7 kPa) nor more than 5 psig (34.5 kPa). Set pressure relief valve in test air supply line at 5.5 psi (38 kPa)

- b.** **Vertical tanks**-Not less than 1½ psig (10.4 kPa) nor more than 3 psig (20.7 kPa). Set pressure relief valve in test air supply line at 3 psig (20.7 kPa).
- c.** **Rectangular tanks**-Not more than 3 psig (20.7 kPa). Set pressure relief valve in test air supply line at 3 psig (20.7 kPa).

CAUTION: Do not leave pressurized tank unattended while the pressure line/air line is connected. Do not stand in front of tank heads or fittings when pressurizing tank.

Pressurizing of large tanks may result in the bulging of the tops and bottom of vertical tanks, bulging of the sides of rectangular tanks, and bulging of the heads and ends of cylindrical tanks. Should visible bulging occur, immediately relieve the pressure.

3.2.3 Tank Pressurizing Procedure

- 3.2.3.1** The following air pressure testing does not apply to double-wall tanks equipped with interstitial vacuum monitoring systems. (In lieu of the air pressure test, the tank may be shipped from the factory with a vacuum in the tank interstice. Read and record the vacuum pressure. If the vacuum pressure is less than 5.6 inches Hg (21.8 kPa), contact the tank manufacturer).
- 3.2.3.2** Install test piping as shown in Figure 2. Close valves A and B. Open valve C. Temporarily plug, cap or seal off remaining tank openings to hold pressure.
- 3.2.3.3** Connect regulated test air supply line to test piping as shown in Figure 2.
- 3.2.3.4** Slowly open valve A to pressurize the primary tank. Pressure gauge 1 should indicate test air pressure given in paragraph 3.2.1 above.
- 3.2.3.5** Close valve A. Disconnect regulated test air supply line from test piping.
- 3.2.3.6** Monitor test pressure in primary tank for 1 hour minimum. A steady drop in pressure reading for gauge 1 indicates there may be a leak in the primary tank. Check the fittings, the gauge, and then retest. If the problem persists, contact the tank manufacturer.
- 3.2.3.7** If no leaks are found, close valve C and slowly open valve B to pressurize the interstitial space between the double walls of the tank.

WARNING: Do not apply air pressure to the interstitial space between the walls of a double wall tank without air pressure in the primary tank. Do not apply air pressure to the interstitial space that is higher than the air pressure in the primary tank. Damage to the tank may result.

Pressure gauge 1 will indicate a slight drop in test pressure when valve B is opened, but should hold steady at the lower pressure. If test pressure drops below minimum requirements, close valve B, reconnect air supply line and slowly open valve A to increase pressure in primary tank. When the required pressure is indicated on gauge 1 close valve A, disconnect test air supply line. Open valve B to equalize pressure in the primary tank and the interstitial space. Gauge 1 and gauge 2 should have the same pressure reading.

- 3.2.3.8** Close valve B. Hold test pressure in interstitial space for 1 hour minimum. A steady drop in pressure gauge 2 indicates there may be a leak in the interstitial space. Check the fittings, the gauges, and then retest. If the problem persists, contact the tank manufacturer.
- 3.2.3.9** Proceed to paragraph 3.2.4 below.

3.2.4 Detection of Leaks

- 3.2.4.1** Immediately apply leak test solution to tank exterior surfaces, welds, fittings, etc. Check for leaks. No leaks are allowed. If leaks are found, notify the tank manufacturer. If no leaks are found, testing of the tank is complete.

APPLICATION

COVERAGE RATES*

	Conventional Build (Spray, Brush or Roller)			High-Build (Spray Only)		
	Dry Mills (Microns)	Wet Mills (Microns)	Sq Ft/Gal (m ² /Gal)	Dry Mills (Microns)	Wet Mills (Microns)	Sq Ft/Gal (m ² /Gal)
Suggested	2.5 (65)	3.5 (90)	449 (41.7)	4.0 (100)	5.5 (140)	281 (26.1)
Minimum	2.0 (50)	3.0 (75)	561 (52.1)	3.0 (75)	4.5 (115)	374 (34.7)
Maximum	3.0 (75)	4.5 (115)	374 (34.7)	5.0 (125)	7.0 (180)	225 (20.9)

Note: Can be spray applied at 3.0 to 5.0 mils (75 to 125 microns) DFT per coat when extra protection or the elimination of a coat is desired. Allow for overspray and surface irregularities. Film thickness is rounded to the nearest 0.5 mil or 5 microns. Application of coating below minimum or above maximum recommended dry film thicknesses may adversely affect coating performance.

MIXING

Stir contents of the container marked Part A, making sure no pigment remains on the bottom. Add the contents of the can marked Part B to Part A while under agitation. Continue agitation until the two components are thoroughly mixed. When used with 44-710 Urethane Accelerator, first blend 44-710 into Part A under agitation; continue as above. Do not use mixed material beyond pot life limits. **Caution:** Part B is moisture-sensitive and will react with atmospheric moisture. Keep unused material tightly closed at all times.

POT LIFE

2 hours at 77°F (25°C) unthinned
1 hour at 100°F (38°C) unthinned

3 hours at 77°F (25°C) thinned
2 hours at 100°F (38°C) thinned

THINNING

For air or airless spray, thin up to 10% or ¼ pint (380 mL) per gallon with No. 42 Thinner. For brush or roller, thin 3% to 5% or ¼ pint (190 mL) per gallon with No. 39 Thinner. Thinning is required for proper application. **Caution:** Do not add thinner if more than thirty (30) minutes have elapsed after mixing.

SURFACE TEMPERATURE

Minimum 40°F (4°C) Maximum 120°F (49°C)

The surface should be dry and at least 5°F (3°C) above the dew point.

Cure time necessary to resist direct contact with moisture at surface temperature:

40°F (4°C): 24 to 32 hours 50°F (10°C): 18 to 24 hours 60°F (16°C): 7 to 10 hours

70°F (21°C): 4 to 8 hours 90°F (32°C): 2 to 4 hours 100°F (38°C): 1 to 2 hours

If the coating is exposed to moisture before the preceding cure parameters are met, dull, flat or spotty-appearing areas may develop. Actual times will vary with air movement, film thickness and humidity.

APPLICATION EQUIPMENT

Air Spray

Gun	Fluid Tip	Air Cap	Air Hose ID	Mat'l Hose ID	Atomizing Pressure	Pot Pressure
DeVilbiss MBC	E	78	5/16" or 3/8" (7.9 or 9.5 mm)	3/8" or 1/2" (9.5 or 12.7 mm)	75-90 psi (5.2-6.2 bar)	10-20 psi (0.7-1.4 bar)

Low temperatures or longer hoses require higher pot pressure.

Airless Spray

Tip Orifice	Atomizing Pressure	Mat'l Hose ID	Manifold Filter
0.009"-0.013" (230-330 microns)	3000-3500 psi (207-241 bar)	1/4" or 3/8" (6.4 or 9.5 mm)	100 mesh (150 microns)

Use appropriate tip/atomizing pressure for equipment, applicator technique and weather conditions.

Roller: Use 1/4" (6.4 mm) synthetic nap cover. Do not use medium or long nap roller covers.

Two coats are required to obtain dry film thickness above 3.0 mils (75 microns).

Brush: Recommended for small areas only. Use high quality natural or synthetic bristle brushes.

Note: Two coats are required to obtain recommended film thickness.

CLEANUP

Flush and clean all equipment immediately after use with the recommended thinner or MEK.

*Values may vary with color.

WARRANTY & LIMITATION OF SELLER'S LIABILITY: Tnemec Company, Inc. warrants only that its coatings represented herein meet the formulation standards of Tnemec Company, Inc.

THE WARRANTY DESCRIBED IN THE ABOVE PARAGRAPH SHALL BE IN LIEU OF ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. The buyer's sole and exclusive remedy against Tnemec Company, Inc. shall be for replacement of the product in the event a defective condition of the product should be found to exist and the exclusive remedy shall not have failed its essential purpose as long as Tnemec is willing to provide comparable replacement product to the buyer. NO OTHER REMEDY (INCLUDING, BUT NOT LIMITED TO, INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR LOST PROFITS, LOST SALES, INJURY TO PERSON OR PROPERTY, ENVIRONMENTAL INJURIES OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL LOSS) SHALL BE AVAILABLE TO THE BUYER. Technical and application information herein is provided for the purpose of establishing a general profile of the coating and proper coating application procedures. Test performance results were obtained in a controlled environment and Tnemec Company makes no claim that these tests or any other tests, accurately represent all environments. As application, environmental and design factors can vary significantly, due care should be exercised in the selection and use of the coating. PUBLISHED TECHNICAL DATA AND INSTRUCTIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. CONTACT YOUR TNEMEC REPRESENTATIVE FOR CURRENT TECHNICAL DATA AND INSTRUCTIONS. FOR INDUSTRIAL USE ONLY.

FOR COATINGS, RESINS, AND RELATED MATERIALS
(APPROVED BY THE U.S. DEPARTMENT OF LABOR AS
"ESSENTIALLY SIMILAR" TO FORM OSHA-101)
(MEETS REQUIREMENTS OF CFR 29 PART 1910.1200,
OSHA'S HAZARD COMMUNICATION STANDARD) NFPA 1-84

SECTION 1 - MANUFACTURER AND PRODUCT INFORMATION

PRODUCT IDENTIFICATION: NAME: F074-AA90A 5G
PRODUCT CLASS: ACRYLIC
TRADE NAME: SERIES 674 ENDURA-SHIELD
FORMULA VERSION NUMBER: 1
MSDS PREPARATION DATE: 11/01/1999
MANUFACTURER IDENTIFICATION: NAME: THEMEC COMPANY, INC.
ADDRESS: 121 WEST 73RD AVENUE
NORTH KANSAS CITY, MO. 64116-3064
TELEPHONE: 816-474-1400
EMERGENCY TELEPHONE: 816-474-1425

SECTION 2 - HAZARDOUS INGREDIENTS

1 ALKOXYLATED GLYCOL
CAS# 51479-58-0
POLYPROPYLENE GLYCOL NEOPENTYL GLYCOL ETHER
PCT BY WT: 5.8410
EXPOSURE LIMIT:
ACGIH TLV/TWA: 0000.10 MG/M3
OSHA PEL/TWA: 0000.05 MG/M3

2
CAS# 14808-60-7
CRYSTALLINE SILICA (QUARTZ, RESPIRABLE DUST)
PCT BY WT: 9.9850
EXPOSURE LIMIT:
ACGIH TLV/TWA: 0010.00 MG/M3
OSHA PEL/TWA: 0010.00 MG/M3

3 TITANIUM DIOXIDE
CAS# 13463-67-7
TITANIUM DIOXIDE (TOTAL DUST)
PCT BY WT: 24.3720
EXPOSURE LIMIT:
ACGIH TLV/TWA: 0010.00 MG/M3
OSHA PEL/TWA: 0010.00 MG/M3

4
CAS# 76311-86-9
AMORPHOUS SILICA (DIATOM, BARTH/UNCALCINED/TOTAL DUST)
PCT BY WT: 3.0090
EXPOSURE LIMIT:
ACGIH TLV/TWA: 0010.00 MG/M3
OSHA PEL/TWA: 0005.00 MG/M3

5
CAS# 1344-28-1
ALUMINUM OXIDE
PCT BY WT: 2.7080
EXPOSURE LIMIT:
ACGIH TLV/TWA: 0010.00 MG/M3

6 ACETIC ACID BUTYL ESTER
CAS# 123-86-4
N-BUTYL ACETATE
PCT BY WT: 7.7610 VAPOR PRESSURE: 10.000 MMHG @ 68F
EXPOSURE LIMIT:
ACGIH TLV/TWA: 0150.00 PPM
ACGIH TLV/STEL: 0200.00 PPM
OSHA PEL/TWA: 0200.00 PPM
OSHA STEL: 0200.00 PPM

CAS# 763-69-9
ETHYL 3-BETHOXYPROPIONATE
PCT BY WT: 2.4400 VAPOR PRESSURE: 1.500 MMHG @ 68F
EXPOSURE LIMIT:
ACGIH TLV/TWA: 0050.00 MFG REC. IN CFM
ACGIH TLV/STEL: 0100.00 MFG RE C, IN PPM

1024943-00

PAGE 2

THEMEC COMPANY, INC.
MATERIAL SAFETY DATA SHEET

F074-AA90A 5G

8 2-HEPTANONE
CAS# 110-43-8
METHYL N-AMYL KETONE
PCT BY WT: 5.3810 VAPOR PRESSURE: 2.100 MMHG @ 68F
EXPOSURE LIMIT:
ACGIH TLV/TWA: 0050.00 PPM
OSHA PEL/TWA: 0100.00 PPM

***** This product contains one or more reported carcinogens or suspected carcinogens which are noted NTP, IARC, or OSHA-Z in the other limits recommended column. *****

***** This product contains pigment dusts which may be released when subjected to abrasive blasting, sanding, or grinding. The information contained in this section is considered confidential and proprietary and should be used only for safety and health purposes. *****

SECTION 3 - HEALTH HAZARD INFORMATION

EMERGENCY OVERVIEW:

POTENTIAL HEALTH EFFECTS:

EYES:

Redness, tearing, blurred vision.

SEVERE IRRITATION:

Severe irritation.

SKIN:

Moderate irritation, drying of skin, defatting and possible dermatitis.

INHALATION - OVEREXPOSURE TO SOLVENT VAPORS OR SPRAY MIST:

Nasal and respiratory irritation, anesthetic effects, dizziness,

possible unconsciousness and asphyxiation, stupor, weakness,

fatigue, nausea, and headache.

INHALATION - OVEREXPOSURE TO FREE PIGMENT DUST:

Coughing, wheezing, shortness of breath, restricted nasal passages,

lung injury.

INGESTION:

Gastrointestinal irritation, nausea, vomiting, diarrhea, death.

Aspiration into the lungs which can be fatal.

CHRONIC EFFECTS:

Prolonged inhalation of dusts containing crystalline silica may

result in the development of lung disease known as silicosis.

NOTICE: Reports have associated repeated and prolonged occupational

overexposure to solvents with permanent brain and nervous system

damage. Intentional misuse by deliberately concentrating and

inhaling the vapors may be harmful or fatal.

This product contains crystalline silica, which is considered a cancer

hazard by inhalation of respirable dust. The International Agency for

Research on Cancer (IARC) concluded that respirable crystalline silica

inhaled in the form of quartz or cristobalite from occupational sources

is carcinogenic to humans (Group 1B).

TARGET ORGANS:

Can cause eye irritation.

Can cause respiratory tract irritation.

Can cause skin irritation.

Can cause lung damage.

Can cause gastrointestinal tract irritation.

Can cause nervous system effects.

Can cause cancer. Risk of cancer depends on duration and level of exposure.

Can cause liver damage.

OTHER:

This product when mixed with other components acquires the hazards

of all components.

PRIMARY ROUTES OF ENTRY:

Dermal and Inhalation.

PROPOSITION:

Pigments and/or other raw materials present in this product contain

trace amounts of a chemical or chemicals known to the State of

California to cause cancer, birth defects or other reproductive harm.

THEMEC COMPANY, INC.
MATERIAL SAFETY DATA SHEET

F074-AA90A 5G

SECTION 4 - FIRST AID MEASURES

EYE CONTACT:
Flush immediately with large amounts of clean water under low
pressure for at least 15 minutes. Consult a physician.
SKIN CONTACT:
Wash affected area with soap and water. Remove contaminated
clothing. Dispose of or launder accordingly. Consult a physician
if skin irritation persists.
INHALATION:
Remove affected individual to fresh air. Treat symptomatically. If
breathing is difficult, administer oxygen. If breathing has stopped
give artificial respiration. Consult a physician.
INGESTION:
Drink 1 or 2 glasses of water to dilute and induce vomiting by either
giving IPECAC syrup or by placing finger at back of throat. Consult a
physician or poison control center IMMEDIATELY. Treat symptomatically.
NOTE TO PHYSICIAN:

SECTION 5 - FIRE AND EXPLOSION HAZARD DATA

FIRE AND EXPLOSIVE PROPERTIES OF THIS CHEMICAL:

Flammability Classification: 98.0
Flashpoint: Low N/A
Explosion Level: High N/A
Flammability Limits: Lower - N/A
Higher - N/A

EXTINGUISHING MEDIA:

Foam, carbon dioxide, and dry chemical.
FIRE-FIGHTING PROCEDURES AND EQUIPMENTS:
Keep away from heat, open flames, sparks, and areas where static
charges may be generated. Do not apply to hot surfaces due to
possible fire and explosion risk. For closed containers, pressure
build-up and possible explosion might occur due to extreme heat
exposure. Solvent vapors are heavier than air and may travel
considerable distance to a source of ignition and flash back.
Water may be used to cool unruptured containers. Near self-contains-
ed breathing apparatus with a full facepiece operated in pressur-
ized demand or other positive pressure mode to prevent inhalation of
hazardous decomposition products. Use appropriate extinguishing
media to control fire. Water may cause violent frothing if sprayed
directly into containers of burning liquid.

SECTION 6 - SPILL OR LEAK PROCEDURES

CLEAN-UP:
Remove all sources of ignition. Spills may be collected with inert,
absorbent material for proper disposal. Use non-sparking tools,
protective gloves, goggles and clothing, adequate ventilation, avoid
the breathing of vapors and use respiratory protective devices.
Transfer absorbent material to suitable containers for proper
disposal. Remove containers to a safe place and cover loosely until
carbon dioxide has finished evolving.

SECTION 7 - SPECIAL PRECAUTIONS

HANDLING AND STORAGE:

Store in dry area. Keep closures tight and upright to prevent
leakage. Do not store in high temperature areas or near fire or
open flames. Refer to product data sheet for recommended storage

SPECIAL COMMENTS:

Prevent prolonged breathing of airborne contaminants such as vapor, spray
mists, dusts. Prevent contact with skin and eyes. Do not take
internally. Keep out of reach of children. Do not reuse or alter
containers without proper industrial cleaning. Do not use flame cut
empty uncleaned containers. Do not use for fire and explosion hazard.
Consult product data sheet for proper application instructions.

THEMEC COMPANY, INC.
MATERIAL SAFETY DATA SHEET

F074-AA90A 5G

SECTION 8 - SAFE HANDLING AND USE INFORMATION

HYGIENIC PRACTICES:

Wash hands and other contaminated skin areas with warm soap and
water before eating.

EYE PROTECTION:

Use chemical resistant splash type goggles.
Respiratory protection devices must be used when engineering and
administrative controls are not adequate to maintain threshold limit
values (TLV) and permissible exposure limits (PEL) of airborne
contaminants below the listed values for those hazardous ingredients
identified in Section 2.9 (1910.134) whenever a respirator is used.
To remove hazardous decomposition products formed during welding or flame
cutting operations of surfaces coated with this product, heavier than air
solvent vapors should be removed from lower levels of work area due to potential explosion hazard and all ignition
sources (non-explosion proof equipment) should be eliminated if
flammable mixtures will be encountered.

OTHER PROTECTION:

Use chemical resistant gloves.
Use chemical resistant coveralls or apron to protect against skin
and clothing contamination.

Use protective cream where skin contact is likely.

VENTILATION:
Adequate ventilation, in volume and pattern, should be provided through
both local and general exhaust to keep the air concentration
below current applicable Permissible Exposure Limits (PEL) and ACGIH's
threshold limit values (TLV). Appropriate ventilation should be employed
to remove hazardous decomposition products formed during welding or flame
cutting operations of surfaces coated with this product. Heavier than air
solvent vapors should be removed from lower levels of work area due to potential explosion hazard and all ignition
sources (non-explosion proof equipment) should be eliminated if
flammable mixtures will be encountered.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Vapor Pressure: 10.00
Vapor Density: Lower - 244.0 °F
Boiling Range: Higher - 129.0 °F
Formula Weight per Volume: 2.44
VOC in LBS PER GALLON: 17.400 (Ether = 1)
Evaporation Rate: 21.320
% Volatile by Weight: 34.490
% Volatile by Volume: 34.490

SECTION 10 - STABILITY AND REACTIVITY

INCOMPATIBILITIES:

Strong oxidizing agents.

CAUSTICS:

Decomposition: Carbon monoxide, carbon dioxide, hydrocarbon fragments

CONDITIONS TO AVOID:

Heat, sparks, open flames.

POLYMERIZATION:

Will not occur.

STABILITY:

Stable.

SECTION 11 - TOXICOLOGICAL INFORMATION

OTHER:

Consult various toxicology references such as NIOSH's "Registry of
Toxic Effects of Chemical Substances" or OSHA's "Occupational Properties
of Industrial Chemicals" for specific toxicity information
regarding hazardous ingredients.

TNAMEC COMPANY, INC.
MATERIAL SAFETY DATA SHEET

P074-AA90A 5G

SECTION 12 - ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:
Dispose of in accordance with Federal, state, and local regulations regarding pollution.

SECTION 14 - TRANSPORT INFORMATION

DOT HAZARD CLASS
TRANSPORTATION ASSISTANCE:
Contact Tnamec's Traffic department @ (816) 474-3400.

SECTION 15 - REGULATORY INFORMATION

FEDERAL REGULATIONS:
There are no SARA reportable materials in this product.
This product contains NONE of the substances subject to the reporting requirements of Section 311 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.
STATE REGULATIONS:

SECTION 16 - OTHER INFORMATION

Prepared by : Kevin Settles
Date of issue : 11/01/1999
Last Revision Date : 06/06/1996
MSDS Prepared for : ACE TANK & EQUIPMENT CO INC
1540 MARINE VIEW DR

TACOMA

WA 98422

MSDS Last Prepared : 06/03/1999

HMIS Information: Health- 2* Flammability- 3
Reactivity- 1

For specific information regarding occupational safety and health standards, please refer to the Code of Federal Regulations, Title 29, Part 1910.
To the best of our knowledge, the information contained herein is accurate. However, neither the Tnamec Company or any of its subsidiaries assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.



EQUIPMENT LIST

<i>Part#</i>	<i>Description</i>
1. MR9095A-3	OVERFILL PREVENTION
2. MR818F01100AG	CLOCK GAUGE
3. KRLG95RDFG	LEAK GAUGE
4. MW2AM32P	PUMP, 2" CENTRIF

Seattle, Washington
1143 Elliott Ave W, 98119
P.O. Box 9039, 98109
206/281-5000
Fax 206/281-5030

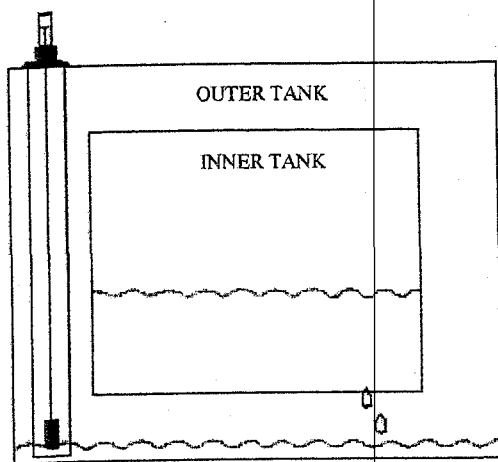
Portland, Oregon
5107 NE 158th Ave
97230
503/252-2000
Fax 503/252-2226

Spokane, Washington
6518 E Dean Ave
99212
509/536-4334
Fax 509/536-4345

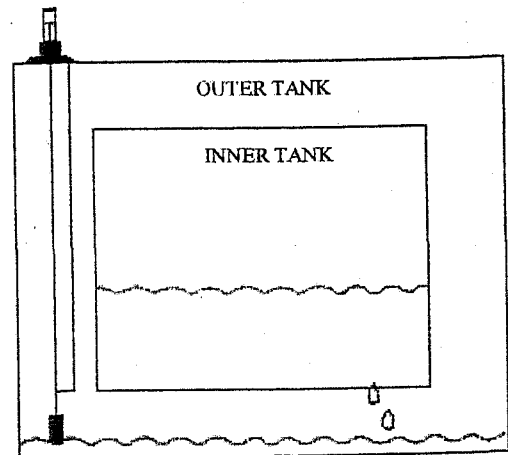
San Leandro, California
3055 Teagarden Street
94577
510/297-5555
Fax 510/297-5560

THE AT-A-GLANCE Leak Gauge

Ideal For Detecting A Leak Within A Containment System



*When Gauge on a system
with an interstitial tube*



*When Gauge on a system
without an interstitial tube*

*Vertical Floatation Creates A Direct Mechanical
Action To Detect A Leak Of The Inner Tank*

When ordering specify:

- 1/1/2" or 2" opening
- Dimension from mount to bottom of interstitial space
- Whether or not system contains interstitial tube
- 77" depth and up must be ordered for 2" opening

KRUEGER **SENTRY** GAUGE

KRUEGER SENTRY GAUGE CO. INC.
1873 Siesta Lane: Green Bay, WI 54313-8021
Phone: (920) 434-8860 : Fax (920) 434-8897
Office Hours: 7:00 A.M. to 5:00 P.M. (CST)
<http://www.kruegersentrygauge.com>

AST Overfill Prevention Valve

2" Fig. 9095A

Features—

- Full flow up to shutoff
- Prevents shock or kickback at shutoff
- Fine adjustment in the field, up to 1½"
- Float movement is within the profile of the riser pipe, and will not hang up in tank
- Stainless steel linkage
- Retrofits to existing AST
- Eliminates the need for an outside power source
- ULC Listed

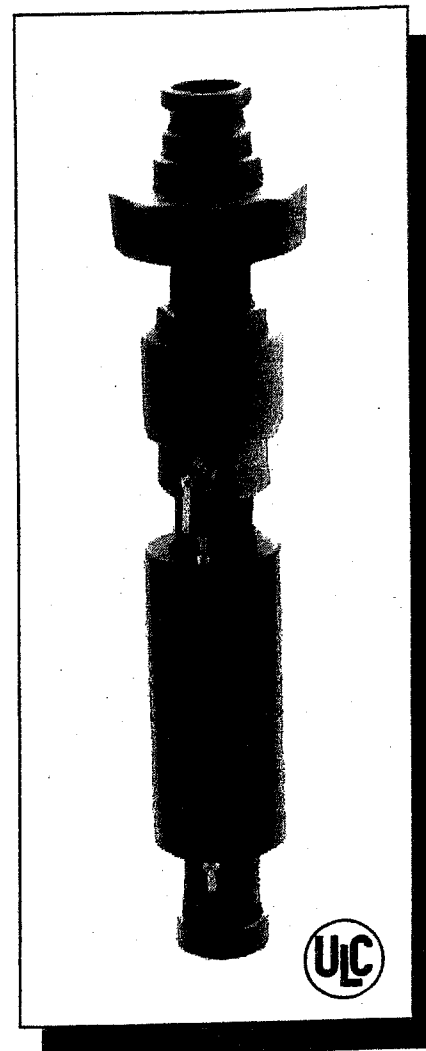
Connections—

- 2" Male quick disconnect adaptor w/4" female N.P.T. connection to tank
- 2" Male remote fill adaptor
- 2" Dry disconnect adaptor (Buna-N or Viton seal)
- 2" x 2" x 4" Female threaded adaptor

This valve can be used to comply with the following codes:
NFPA 30, 30A, UFC, BOCA, SBCCI/SFC, and PEI RP200

Construction Details—

- Body — Anodized Aluminum
- Internal Components — Brass
- Linkage — Stainless Steel
- Floats — Buna-N
- Adaptors—
 - Male Adaptor — Anodized Aluminum
 - Male Remote Fill Adaptor — Aluminum
 - Dry Disconnect Adaptor — Brass
 - Female Threaded Adaptor — Ductile Iron



- 9095A-0200 AV** Overfill Valve w/2" Male Quick Disconnect x 4" Female Adaptor — 14.1 lbs
- 9095A-0500 AV** Overfill Valve w/2" Remote Fill Adaptor — 12.6 lbs
- 9095A-0800 AV** Overfill Valve w/2" Dry Disconnect (Buna-N) Adaptor — 14.7 lbs
- 9095A-1800 AV** Overfill Valve w/2" Dry Disconnect (Viton®) Adaptor — 14.7 lbs
- 9095A-3200 AV** Overfill Valve w/2" x 2" x 4" Female Threaded Adaptor — 14.1 lbs



MORRISON BROS. CO.

24th & Elm Street • Dubuque, IA 52001

Phone: 800•553•4840

Fax: 319•583•5028

E-mail: custserv@morbros.com

9/7/99

Printed in the U.S.A.

MEMBER
PEI
PULP & ENVIRONMENTAL INDUSTRIES

AST Overfill Prevention Valve

Seattle, WA 800/426-2380
Spokane, WA 800/414-4224
Portland, OR 800/452-7437
San Leandro, CA 800/282-0028

3" Fig. 9095A

Features—

- Full flow up to shutoff
- Prevents shock or kickback at shutoff
- Fine adjustment in the field, up to 1¼"
- Float movement is within the profile of the riser pipe, and will not hang up in tank
- Stainless steel linkage
- Retrofits to existing AST
- Eliminates the need for an outside power source
- 3" Morrison Fig. 419 drop tubes easily attached
- ULC Listed

Connections—

- 3" male quick disconnect w/6" female connection to tank (for tanks with male risers)
- 3" male quick disconnect adaptor (for tanks with remote fills)
- 3" female by 6" female threaded adaptor (for remote piping applications)

This valve can be used to comply with the following codes:
NFPA 30, UFC, BOCA, SBCCI/SFC, and PEI RP200

Construction Details—

- Body—Anodized Aluminum
- Internal Components—Brass
- Linkage—Stainless Steel
- Float—Buna-N
- Adaptors—
 - Male Adaptor—Anodized Aluminum
 - Male Quick Disconnect Adaptor for Remote Fill—Aluminum
 - Female Threaded Adaptor—Ductile Iron

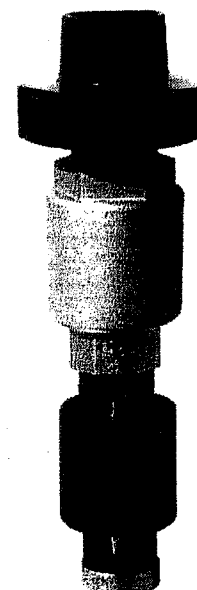
For Tank Mounted Fills w/3" Male Quick Disconnect x 6" Female Adaptor
9095A-0300 AV



For Remote Fills w/3" Male Quick Disconnect
9095A-0600 AV



For Remote Fills w/3" x 6" Threaded Female Adaptor
9095A-3300 AV



9095A-0300 AV Overfill Valve w/3" Male Quick Disconnect x 6" Female — 29 lbs

9095A-0600 AV Overfill Valve w/3" Male Quick Disconnect Adaptor for Remote Fill — 26 lbs

9095A-3300 AV Overfill Valve w/3" x 6" Female Threaded Adaptor — 38 lbs



MORRISON BROS. CO.
24th & Elm Street • Dubuque, IA 52001

Phone: 800•553•4840
Fax: 319•583•5028
E-mail: custserv@morbros.com





9095A For Tank Mounted Fill Applications Installation Instructions

2" AST OVERFILL PREVENTION VALVE

Fig. 9095 A

Description

The 9095A AST Overfill Prevention Valve is installed at the fill port of a top loading aboveground storage tank. Used in a tight fill application, the valve terminates flow of product when the liquid level reaches a preset warning level (90-95% full). The valve is installed on a standard 4" NPT male connection when used with the tight fill adaptor. The valve can be used in conjunction with the Morrison line of AST Spill Containers for added spill protection. When installed to manufacturers requirements the Morrison Fig. 9095A Overfill Prevention Valve can eliminate environmentally hazardous spills.

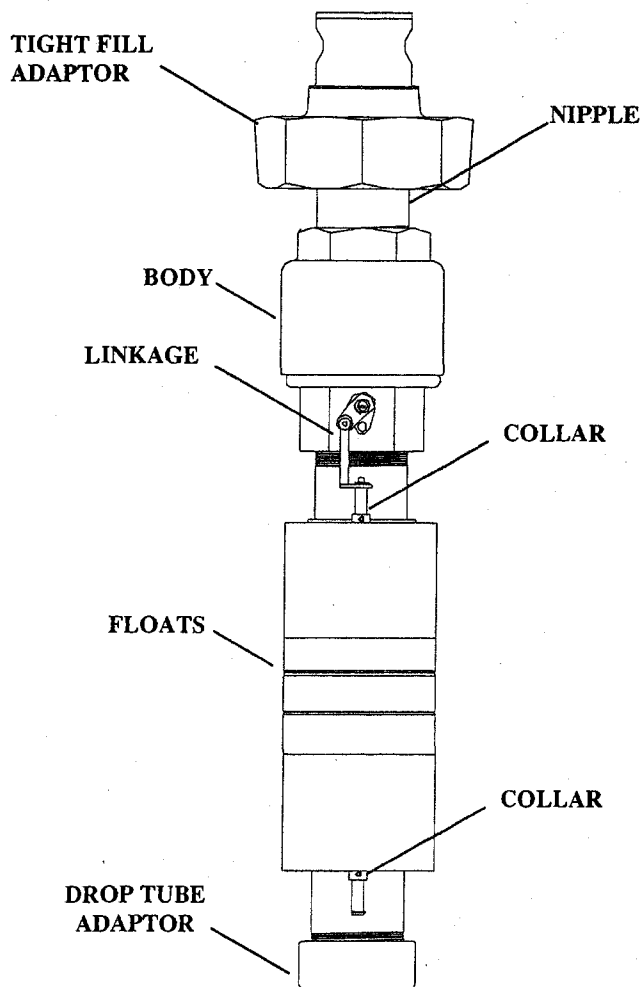
This valve complies with the following codes:

NFPA 30, 30A, UFC, BOCA, SBCCI/SFC, and PEI RP2000

Read instruction manual completely before installation

Product Warnings and Cautions

- 3 PSI & 5 GPM is the minimum flow requirement for valve operation (100 PSI max.)
- A tight fill is required for the valve to operate. Do not substitute any other fill adaptors for the special adaptor supplied.
- The valve should be properly inspected before installation to insure the unit was not damaged during the delivery process.
- Use caution during installation to protect float devices and their linkage. Damage to the parts may cause the valve to function improperly.
- The valve must be used with clean product. Debris from products such as contaminated waste oil may cause the valve to function improperly.
- Consult Morrison Brothers Co. for product compatibility with the valve.
- **Failure to follow any or all of the above warnings may render the valve non-functional and could result in a hazardous product spill, which may result in personal injury, property damage, fire, explosion, or environmental contamination.**



Filling Procedure

1. Make sure the fill nozzle is equipped with the appropriate coupler to form a secure connection with the tight fill adaptor.
2. Attach the nozzle to the tight fill adaptor making sure connection is secure.
3. Switch on pumping system.
4. Open the fill nozzle and begin product transfer.
5. Continually monitor the liquid level measurement device during the fill.
6. Watch for a slight movement of the hose or listen for pump bypass activation which indicates overfill shut-off.

Overfill Disconnect Procedure

1. Once shut-off has occurred, close the fill nozzle immediately.
2. Turn off the pumping system.
3. Wait for one (1) minute. Slowly detach nozzle by releasing one arm of the quick coupler. This will allow product between nozzle and valve to drain.
4. After draining line, completely uncouple the nozzle.

Warning: Attempting to disconnect the tight fill adaptor from the coupler with pressure in the hose will result in a product spill.

9095A INSTALLATION INSTRUCTIONS FOR TANK MOUNTED FILL APPLICATIONS

1. Remove the valve from box and remove all packaging material. Check the valve for any shipping damage. Remove the adaptor and nipple from the overfill valve. Check for freedom of plunger movement by securing float, turning unit upside-down, and looking through the body opening at the plunger. The plunger should slide freely to contact the seal surface of the body and drop back down into the dashpot when turned back to the upright position. Set the valve upright and move the floats up & down to insure there are no binding of the parts.
2. Determine the **TANK SHUTOFF HEIGHT (A)** at 90 or 95% full , (See Fig. 1 below & Mfg. tank ullage chart).
3. Find the **TANK SHUTOFF HEIGHT (A)** on table 1. Use table 1 to determine **RISER PIPE HEIGHT FROM TOP OF THE TANK (B)** and proper **NIPPLE LENGTH (C)** (for applicable stored fluid) required to adapt the unit to your application. Note: A 4" long nipple is provided with the valve.
4. If your existing riser pipe height is different from the **RISER PIPE HEIGHT (B)** required, see step 5. If the **RISER PIPE HEIGHT (B)** is applicable to your tank configuration then go to step 6. **IMPORTANT: THE TANK MUST HAVE A RISER PIPE WITH 4"-8 NPT MALE THREAD TO FIT THE TIGHT FILL ADAPTOR.**
5. When adjusting the riser pipe height, two rules apply. The **RISER PIPE HEIGHT (B)** must not be less than 3 inches and the **nipple length (c)** must not be less than 2 inches. For every 1" adjustment to the **RISER PIPE HEIGHT (B)**, the **NIPPLE LENGTH (C)** must be adjusted 1" in the same direction. See example and proceed to step 6.

EXAMPLE: You are installing this overfill protection valve (with tight fill adaptor) on a gasoline storage tank and you determine your **SHUTOFF HEIGHT (A)** to be 7 inches. According to Table 1, a **SHUTOFF HEIGHT (A)** of 7 inches requires a **RISER PIPE HEIGHT (B)** of 6 inches and a 4 inch long **NIPPLE (C)**, (provided). If your tank has an 8 inch **RISER PIPE HEIGHT (B)**, (instead of 6 inches), you need to add 2 more inches to the required **NIPPLE LENGTH (C)** in order to maintain the proper shutoff height.

6. Use care with floats and linkage during installation. Attach drop tube to the bottom of the valve. Apply a non hardening gasoline resistant sealant sparingly to all threads. Assemble piping and install valve in the tank.
Caution: Excessive use of thread sealant may cause valve to function improperly.

FIG. 1

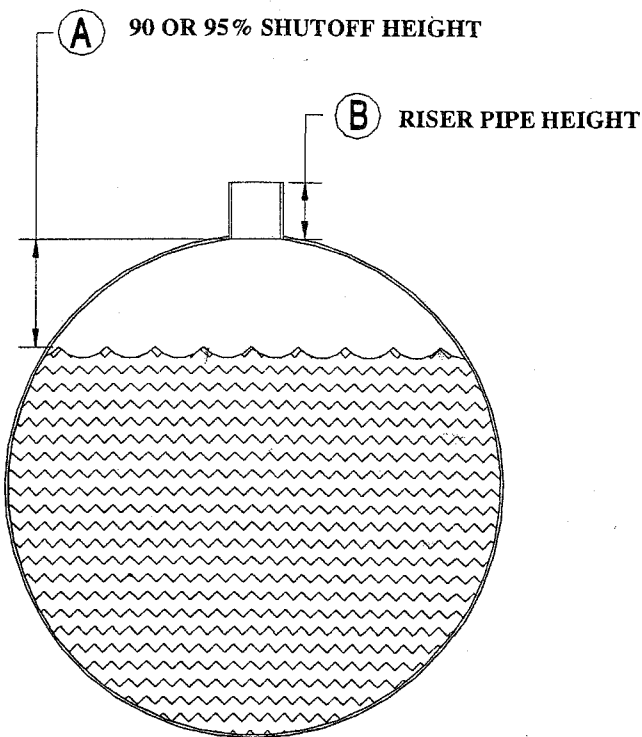


TABLE 1

SHUTOFF HEIGHT (A) (IN INCHES)	RISER PIPE HEIGHT FROM TOP OF THE TANK (B) (LENGTH IN INCHES)		NIPPLE REQUIRED (C) 4" NIPPLE PROVIDED (LENGTH IN INCHES)	
	GASOLINE	DIESEL	GASOLINE	DIESEL
2"	11"	12"	4"	4"
3"	10"	11"	4"	4"
4"	9"	10"	4"	4"
5"	8"	9"	4"	4"
6"	7"	8"	4"	4"
7"	6"	7"	4"	4"
8"	3"	6"	2"	4"
9"	3"	3"	3"	2"
10"	3"	3"	4"	3"
11"	3"	3"	5"	4"
12"	3"	3"	6"	5"
13"	3"	3"	7"	6"
14"	3"	3"	8"	7"
15"	3"	3"	9"	8"
16"	3"	3"	10"	9"
17"	3"	3"	11"	10"
18"	3"	3"	12"	11"
19"	3"	3"	13"	12"
20"	3"	3"	14"	13"
21"	3"	3"	15"	14"
22"	3"	3"	16"	15"
23"	3"	3"	17"	16"
24"	3"	3"	18"	17"
25"	3"	3"	19"	18"

AST SPILL PREVENTION AND ANTI SYPHON EQUIPMENT

9095 A

AST OVERFILL PREVENTION VALVE

Installed at the fill port of an aboveground storage tank. Used in a tight fill application, the valve terminates flow of product when the liquid level reaches a preset warning level (90-95% full). The valve is installed on a standard N.P.T. male connection when used with the quick disconnect or female adaptor. The 2" valve can be used in conjunction with the Morrison Fig. 518 line of AST Spill Containers for added spill protection. When installed to manufacturers requirements, the OPV valve can eliminate environmentally hazardous spills. All models are supplied with an adaptor to mount to Morrison Fig 419 aluminum drop tubes. ULC Listed.

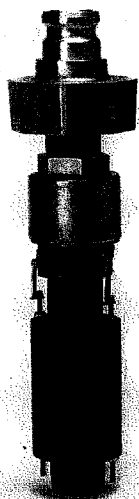


FIG 9095

CONSTRUCTION DETAILS

Aluminum (hard-coat anodized) adapter, anodized Aluminum body, Brass plunger and dashpot, Stainless Steel shaft, linkages, and hardware, and epoxy coated steel piping.

FEATURES

- Adjustable float** (1 1/2") for setting the precise level of shut-off in the field and allowing it to be done using standard length pipe nipples.
- Immediate and cushioned shut-off.** Full flow up to within 1-2 seconds of closing and no abrupt kick-back, jolt, or startling noise in the line when valve closes.
- One piece adaptor/coupler casting.** No extra seams and joints to leak when top portion is under pressure from closing.
- Dry disconnect.** After shut-off, product is allowed to automatically drain from the highest point so fill nozzle can be removed without spilling.
- Simple Mechanics.** Minimum moving parts. Shut-off is activated by basic hydraulic principle with no springs, levers, or complicated sequence leading to closure.

CODE COMPLIANCE

NFPA 30, 30A, UFC, BOCA, SBCCI/SFC, and PEI RP200.

Size

Size	Weight
2"	12.5 lbs
3"	26 lbs

CHARACTERISTICS

- Operates at 120 volts (240 volt available).
- Includes a continuous duty Class H standard coil.
- Must be mounted with solenoid vertical and upright.
- No differential pressure is required to open the valve.
- Connects to 1/2" conduit.
- Enclosure is watertight and rated for hazardous locations - NEMA 3, 4, and 7; groups C and D.
- Available in Viton or Buna-N seals.
- A strainer with 100 mesh screen is recommended at the inlet.

710

SOLENOID VALVE

Installed on pipeline leading from an aboveground tank. This valve is used to prevent accidental siphoning of product from the tank in the event of a fracture in the pipe or other cause for leak downstream and below the liquid level.

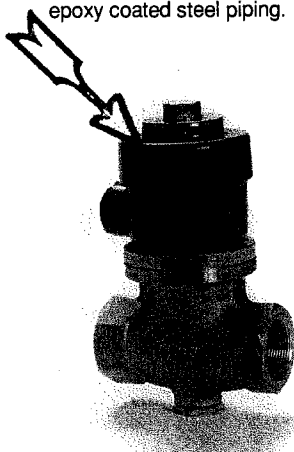


FIG 710

The FIG 710 Solenoid Valve is a two-way, one directional flow, hung piston type valve with normally "closed at rest positioning". The valve opens upon receipt of an electronic signal such as when a dispenser or pump is switched on. CSA Approved.

CODE COMPLIANCE

NFPA 30, 30A, UFC, BOCA, SBCCI/SFC, and PEI RP200..

CONSTRUCTION DETAILS

Forged Bronze body. Solenoid housed in an integral, watertight, explosion-proof shell. Viton or Buna-N seals.

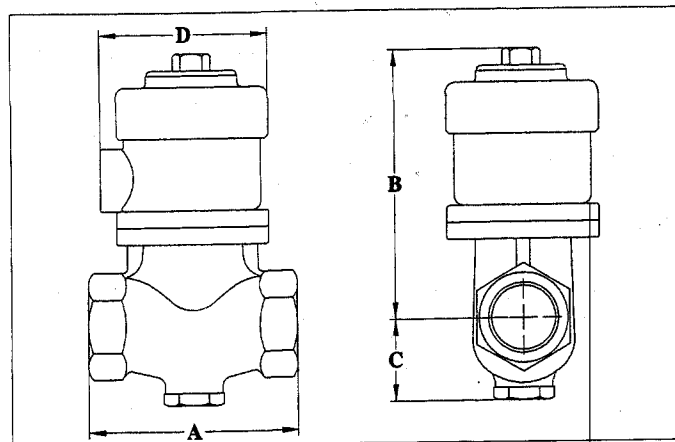


FIG NO	Size (NPT)	Seal Material	Orifice Size (Inch)	CV	Operating Pressure Differential (PSI)	Fluid Temp Max (DEG F)	Power Usage (Watt)	Ship WT (LBS)	General Dimensions (Inch)			
									A	B	C	D
710-0075 1V	3/4"	VITON	3/4"	6.85	0 105	220	30	11.0	4.0	5.9	1.5	4.38
710-0100 1V	1"	VITON	1"	11.40	0 105	220	30	13.0	4.8	6.25	1.75	4.38
710-1075 1V	3/4"	BUNA-N	3/4"	6.85	0 105	180	30	11.0	4.0	5.9	1.5	4.38
710-1100 1V	1"	BUNA-N	1"	11.40	0 105	180	30	13.0	4.8	6.25	1.75	4.38
710-0150 1V	1 1/2"	VITON	1 1/4"	17	0 105	220	30	19.0	5.4	6.9	2.0	4.38
710-0200 1V	2"	VITON	1 1/2"	26	0 105	220	30	21.0	5.9	7.0	2.25	4.38
710-0300 1V	3"	VITON	3"	93.6	0 45	220	48	45.5	8.8	9.5	4.5	4.38
710-1150 1V	1 1/2"	BUNA-N	1 1/4"	17	0 105	180	30	19.0	5.4	6.9	2.0	4.38
710-1200 1V	2"	BUNA-N	1 1/2"	26	0 105	180	30	21.0	5.9	7.0	2.25	4.38

9095A For Remote Fill Applications

3" AST OVERFILL PREVENTION VALVE

Description

The 9095A AST Overfill Prevention Valve is installed at the fill port of an aboveground storage tank. Used in a tight fill application, the valve terminates flow of product when the liquid level reaches a pre-set warning level (90-95% full). The valve is installed through a 6" riser pipe or a 6" bunghole when used with the tight fill adaptor. When installed to manufacturers requirements, the Morrison Fig. 9095A Overfill Prevention Valve can eliminate environmentally hazardous spills.

This valve complies with the following codes:

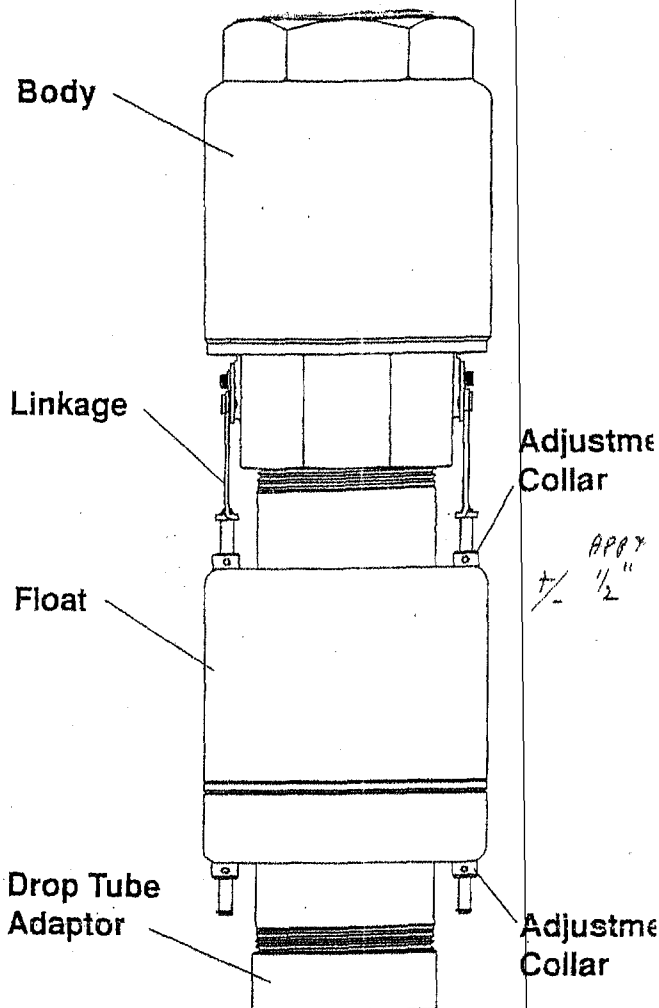
NFPA 30, 30A, UFC, BOCA, SBCCI/SFC, and PEI RP2000

Product Warnings and Cautions

- Read all warnings, cautions, and instructions completely before installation.
- 5 PSI & 5 GPM is the minimum flow requirement for valve operation (100 PSI and 300 GPM max.).
- A tight fill is required for the valve to operate. Do not substitute any other fill adaptors for the special adaptor supplied.
- The valve should be properly inspected before installation to insure the unit was not damaged during the delivery process.
- Use caution during installation to protect float devices and their linkage. Damage to these parts may cause the valve to function improperly.
- The valve must be used with clean product. Debris from products such as contaminated waste oil may cause the valve to function improperly.
- Consult Morrison Brothers Co. for product compatibility with the valve.
- **Failure to follow any or all of the above warnings may render the valve nonfunctional and could result in a hazardous product spill, which may result in personal injury, property damage, fire, explosion, or environmental contamination.**

Filling Procedure

- 1) Make sure the fill nozzle is equipped with the appropriate coupler to form a secure connection with the tight fill adaptor.
- 2) Attach the nozzle to the tight fill adaptor making sure the connection is secure.
- 3) Switch on the pumping system.
- 4) Open the fill nozzle and begin product transfer.
- 5) Continually monitor the liquid level measurement device during the fill.
- 6) Watch for a slight movement of the fill hose or listen for pump bypass activation which indicates overfill shut-off.



Overfill Disconnect Procedure

- 1) Once shut-off has occurred, close the fill nozzle immediately.
- 2) Turn off the pumping system.
- 3) If using a quick coupler, slowly release one arm of the coupler. This will allow product between nozzle and valve to drain, (wait a minimum of (1) minute for product to drain).
- 4) Completely uncouple and remove the nozzle after the line has drained.

Warning: Attempting to disconnect the coupler from the tight fill adaptor with pressure in the hose will result in a product spill.



Morrison Brothers Co.
24th & Elm St.
Dubuque, IA 52001



Tel: (800) 553-4840
Fax: (319) 583-5028

10/1/98
B680429.pm6

3" 9095A INSTALLATION INSTRUCTIONS

1. Attach warning tag at fill point, with supplied cable tie, in location visible to operator.
2. Remove the valve from the box and remove all packaging material. Check the valve for any shipping damage. Remove the adaptor and nipple from the valve. Check for freedom of plunger movement by securing float, turning unit upside-down, and looking through the body opening at the plunger. The plunger should slide freely to contact the seal surface of the body and drop back down into the dashpot when turned to the upright position. Set the valve upright and move the floats up and down to insure there is no binding of the parts.
3. Determine the **SHUTOFF HEIGHT** (A) at 90 or 95% full. (See Fig. 2 or Fig. 3 below & Mfg. tank ullage chart).
4. If your **SHUTOFF HEIGHT** (A) is less than 15" for use in gasoline or diesel fuel, then; **YOU MUST INSTALL THE OVER-FILL DEVICE ON A RISER PIPE** using Table 2 and Fig. 2 to determine **THE DISTANCE FROM THE TOP OF THE OVERFILL VALVE TO THE TOP OF THE TANK** (B).
5. If your **SHUTOFF HEIGHT** (A) is 15" or more for use in gasoline or diesel fuel, then use Table 3 and Fig. 3 to determine **THE DISTANCE FROM THE TOP OF THE TANK TO THE TOP OF THE OVERFILL VALVE** (C).
6. Use care with floats and linkage during installation. Apply a non-hardening gasoline resistant sealant sparingly to all male threads. Attach the drop tube to the bottom of the valve. Assemble piping and install valve in the tank at distance determined in steps above.

Caution: Excessive use of thread sealant may cause the valve to function improperly, application of thread sealant should be to male threaded members of the system only (to reduce the possibility of sealant being forced inside the system).

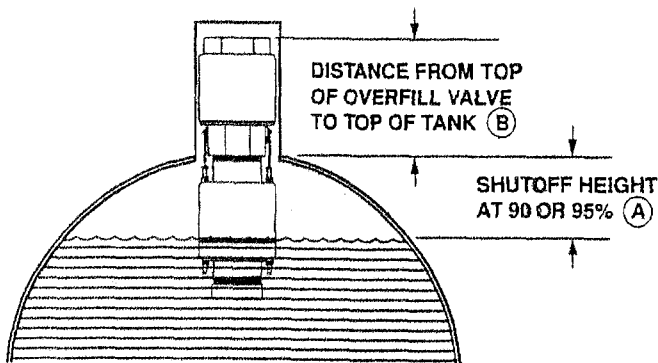


FIGURE 2

TABLE 2

(A) Shutoff Height Note: All lengths are inches.	(B) Distance from top of Overfill Valve to top of Tank	
	Gasoline	Diesel
2"	12"	12.25"
3"	11"	11.25"
4"	10"	10.25"
5"	9"	9.25"
6"	8"	8.25"
7"	7"	7.25"
8"	6"	6.25"
9"	5"	5.25"
10"	4"	4.25"
11"	3"	3.25"
12"	2"	2.25"
13"	1"	1.25"
14"	—	0.25"

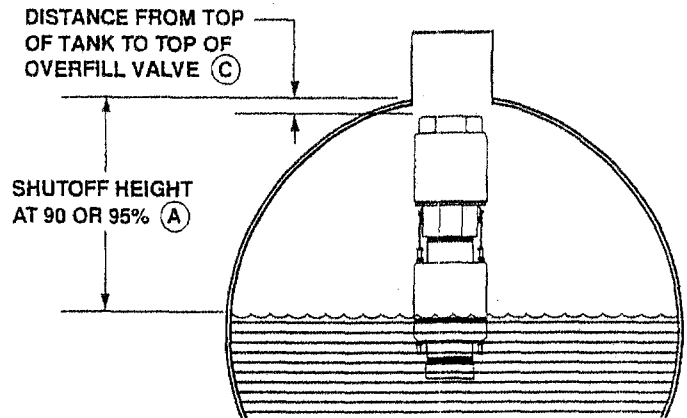


FIGURE 3

TABLE 3

(A) Shutoff Height Note: All lengths are inches.	(C) Distance from top of Tank to top of Overfill Valve	
	Gasoline	Diesel
15"	1"	0.75"
16"	2"	1.75"
17"	3"	2.75"
18"	4"	3.75"
19"	5"	4.75"
20"	6"	5.75"
21"	7"	6.75"
22"	8"	7.75"
23"	9"	8.75"
24"	10"	9.75"
25"	11"	10.75"

MANHOLES & SPILL CONTAINERS

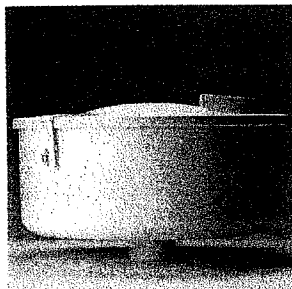


FIG 517

517 SERIES

3 1/2 GALLON AST SPILL CONTAINER

Installed on aboveground storage tanks for the purpose of containing small spills and drips from the fill nozzle. 3 1/2 gallon capacity. Steel construction. Lockable, and powder coated white. ULC Listed.

FIG 517 - Spill Containment. Male (NPT) riser connection.

FIG 517 F - Spill Containment. Female (NPT) riser connection.

FIG 517 WO - WASTE OIL CONTAINMENT - Removable screen on inside of container so used filters etc. can be allowed to drain.

SIZE	WEIGHT
2" (517, 517F, and 517WO)	15 lbs
4" (517F and 517F)	15 lbs

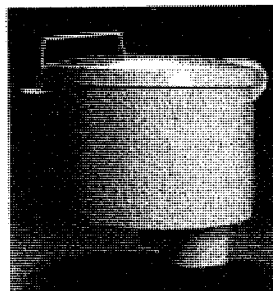


FIG 518

518

7 1/2 GALLON AST SPILL CONTAINER

Installed on aboveground storage tanks for the purpose of containing small spills and drips from the fill nozzle. 7 1/2 gallon capacity. Lockable, with drain valve and vented lid. Connects to 4" male (NPT) riser, and is powder coated on the outside surface. ULC Listed.

CONSTRUCTION DETAILS

Steel body and lid (14 ga.), Brass drain valve, Viton drain O-ring.

SIZE	WEIGHT
4"	21.5 lbs

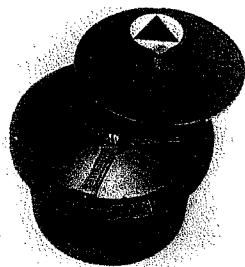


FIG 519

519

WATERTIGHT MONITORING WELL MANHOLE

Premium grade Monitoring Well Manhole. Fully watertight, one-piece Cast Iron ring and skirt. Permanent black triangle on white warning decal with brass well plate for stamping well number. Buna-N seal (replaceable), Stainless Steel bolt machined with O-ring groove, made to stay on cover when removed.

FIG 519

9"x7"	32 lbs
12"x12"	70 lbs

FIG 519 A - Same as FIG 519, but with Aluminum cover.

12"	60 lbs
-----	--------

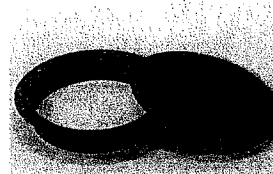


FIG 819

819 & 820

NON-PRESSURE STORAGE MANHOLE

Installed on atmospheric aboveground storage tanks providing a manway hatch for access inside the tank. All Carbon Steel construction. Bolts, nuts and gaskets are available. Double Punched version is also available. (819DP and 820DP)

SIZE	WEIGHT
819 - 4" Neck	820 - 7" Neck

SIZE	WEIGHT
Above Liquid Type	
18"	55 lbs
20"	63 lbs
24"	80 lbs
Below Liquid Type	
18"	62 lbs
20"	71 lbs
24"	92 lbs



FIG 356

356 & 357 B

FLUSH FILL BOX

Traditional fill box. Fits standard riser pipe with cover flush with driveway surface. Gasket provides water-tight seal. Wrench furnished with box.



FIG 357 B

FIG 357 B - Settle-proof type with lockable inner brass cap. Cast Iron body, Brass cover, Buna-N gasket.

NOTE: U.S. Federal UST Regulations require spill containment for fill ports. These types of fill boxes, when used alone, will not comply.

FIG 356
Cast Iron body (rim), Brass cover, Buna-N Gasket.

SIZE	WEIGHT
2"	3.75 lbs
3"	7.75 lbs
4"	13 lbs

SIZE	WEIGHT
2"	12.75 lbs
3"	25.25 lbs
4"	33.5 lbs

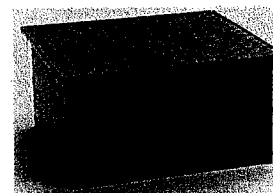


FIG 420/424

420 424 & 524

SQUARE MANHOLE

Square box to provide access to equipment etc. on driveway surface.

FIG 420 & 424 - Knock-down style for service stations. Requires minimal assembly at jobsite.

FIG 524 - Remediation type used for site clean-up. Bolt down, gasketed cover with 24" deep skirt. Pre-assembled, all welded construction.

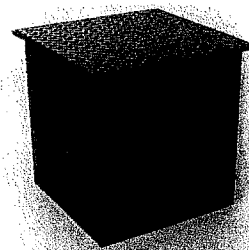


FIG 524

FIG 420 - 16 ga. skirt - 3/8" 4-way Floor Plate (cover)	WEIGHT
20" x 20" x 10" deep skirt	59 lbs
FIG 424 - 14 ga. skirt - 3/8" 4-way Floor Plate (cover)	
24" x 24" x 10" deep skirt	97 lbs
FIG 524 - 14 ga. skirt - 3/8" 4-way Floor Plate (cover)	
24" x 24" x 24" deep skirt	NA

KRUEGER SENTRY GAUGE

Assembly instructions for Leak Gauge 77" and over for interstitial space.

Parts Description:

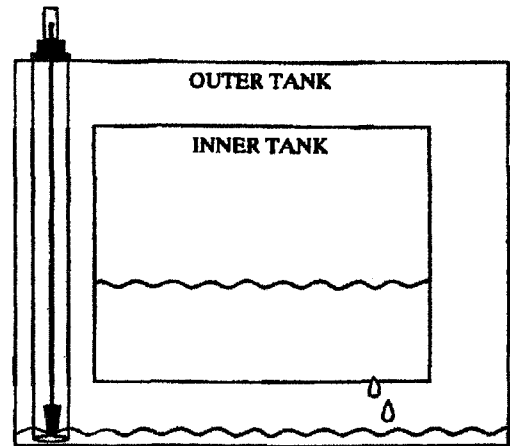
- 3/16"-.187 aluminum rod
- Drilled indicator tube w/clips (Polyethelene)
- Gasket (Duro Nitrile)
- Bushing (Standard NPT cast aluminum)- (1-1/2" or 2")
- Drilled Thermal Well
- Calibration (Cellulose acetate)
- Assembly nut (Polyethelene)
- Float (Polyethelene coated cork)
- Brass connectors

Assembly:

Connect rods together with brass connectors,
use 3/8" and 7/16" wrench to tighten or loosen connectors.

Gauge w/guide:

3/16"-.187 Galvanized rod is press fit into thermal well.
To assemble gauge, slide aluminum rod thru hole in disc and
attach aluminum rods with brass connector.



*When Gauge on a system
with an interstitial tube*

Assembly instructions for Leak Gauge 76" and under for interstitial space.

Parts Description:

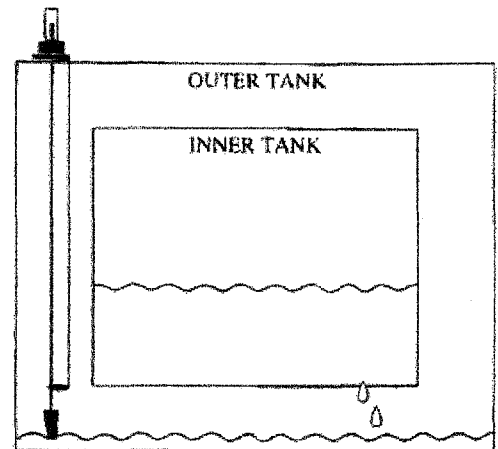
- 1/8"-.125 aluminum rod
- Indicator tube w/clip (Polyethelene)
- Gasket (Duro Nitrile)
- Bushing (Standard NPT cast aluminum)- (1-1/2"- 2" or 3/4"NPTS)
- Thermal Well
- Calibration (Cellulose acetate)
- Assembly nut (Polyethelene)
- Float (Polyethelene)
- Steel connector

Assembly for dual rod gauge:

Connect rods together with steel connector.
To disassemble press on top of connector.

Gauge w/guide:

1/8"-.125 Galvanized rod is press fit into thermal well.
To assemble gauge, slide aluminum rod thru hole in disc and
attach aluminum rods with connector.



*When Gauge on a system
without an interstitial tube*

KRUEGER SENTRY GAUGE CO. INC.

1873 Siesta Lane: Green Bay, WI 54313-8021

Phone: (920) 434-8860 : Fax (920) 434-8897

Office Hours: 7:00 A.M. to 5:00 P.M. (CST)

<http://www.kruegersentrygauge.com>

Engine-Driven Petroleum Pumps

ITT Marlow

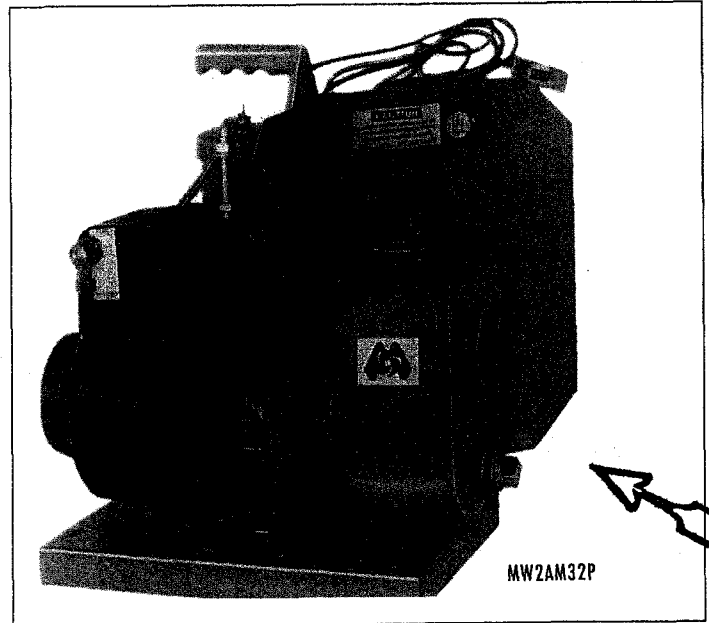
ITT Marlow's UL listed Petro-Guard is a safer and more efficient way to handle petroleum products in remote locations where the lack of electricity prohibits the use of electrical motors.

Applications: Designed for pumping water or petroleum products, like diesel, jet fuel or gasoline in well ventilated areas that do not contain potentially explosive fumes. Primarily intended for fuel transfer or refueling construction equipment at remote open air sites where the lack of electricity makes it impossible to use pumps driven by explosion-proof electric motors.

Petro-Guard provides excellent pumping performance with an added measure of safety and convenience. It comes in three models, from 2" to 3" suction and discharge connections with power provided by custom-designed, air-cooled, single-cylinder Briggs & Stratton engines. Pump casings are made from cast or ductile iron with integral volute or replaceable diffuser. Features include:

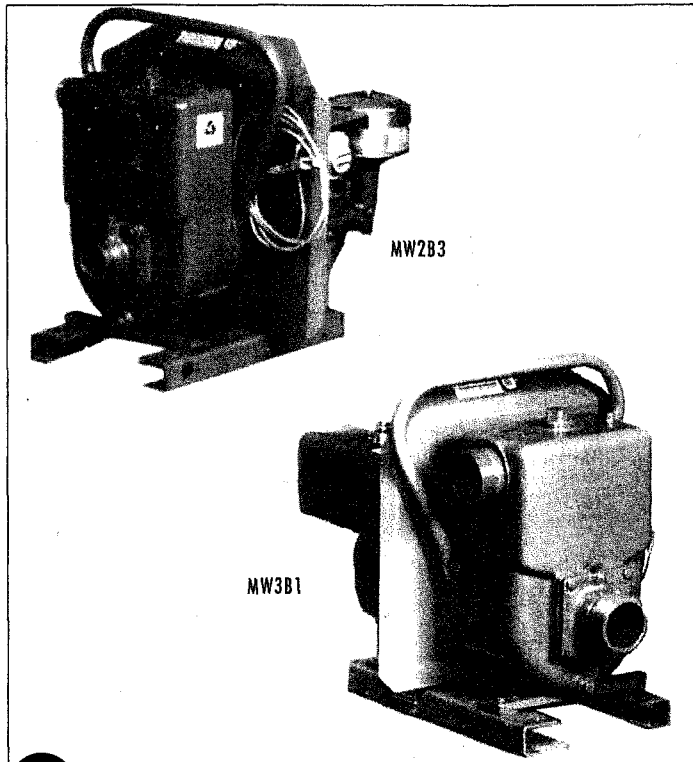
- Convenient carrying handle or chassis mount for maximum portability.
- Shielded ignition and spark plug eliminates electrical sparking potential.
- Enclosed ON/OFF switch reduces possibility of sparks from contact arcing.
- Pleated paper element air cleaner helps prevent chance of spark from carburetor backfire.
- Spark-arresting muffler reduces possibility of sparks due to carbon particles in exhaust.
- Anti-sparking aluminum impeller reduces chance of internal spark.
- 10' grounding wire reduces static-electricity.
- Self-lubricating stainless steel mechanical seal with viton elastomers provides effective sealing with petroleum products.

Warning: Pumping of volatile petroleum products can be hazardous. For this reason, extreme care must be exercised and all operating and safety instructions strictly adhered to.



MW2AM32P

Pump Model	MW2AM32P	MW2B3P	MW3B1P
Connections	2" F. N.P.T.	2" M. N.P.T.	3" M. N.P.T.
Mechanical Seal	5/8" Viton	1" Viton	1" Viton
Max. size solids handled	3/8"	1/2"	3/4"
Casing	Cast Iron	Ductile Iron	Ductile Iron
Engine	Briggs & Stratton 8	B & S 19 I/C	B & S 19 I/C
Horsepower	3.0 HP @ 3600 rpm	8.0 HP @ 3600 rpm	8.0 HP @ 3600 HP
Fuel Capacity	2 Qts.	1 Gallon	1Gallon
Fuel Consumption	.33 gal./hr @ full load.	.67 gal./hr. @ full load	.77 gal./hr. @fullload
Air Cleaner	Oil Wetted Metal Screen	Dual Element	Dual Element
Oil Reservoir	1-1/4 pints	2-3/4 pints	2-3/4 pints
Dimensions			
Height w/ Engine	17-13/16"	21-7/16"	21-7/16"
Length w/Engine	16"	22-5/8"	24-5/16"
Width w/Engine	15-1/8"	19-1/4"	19-1/4"
Net Weight (approx.)	67 lbs.	150 lbs.	164 lbs.
Shipping Weight	77 lbs.	165 lbs.	179 lbs.



MW2B3

MW3B1

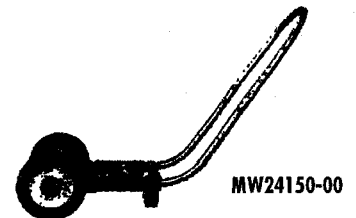
Accessories

Replacement Spark Plugs

Part Number	For Pump Model
MW37014-00	MW2AM32P

Rubber-Tired Chassis Kit

Applications: Kit is designed to allow MW2AM32P pump to be easily moved.



MW24150-00

Part Number	Length	Width	Height	Weight
MW24150-00	33"	16-3/4"	28"	20 lbs.

ENGINE-DRIVEN PETROLEUM PUMPS



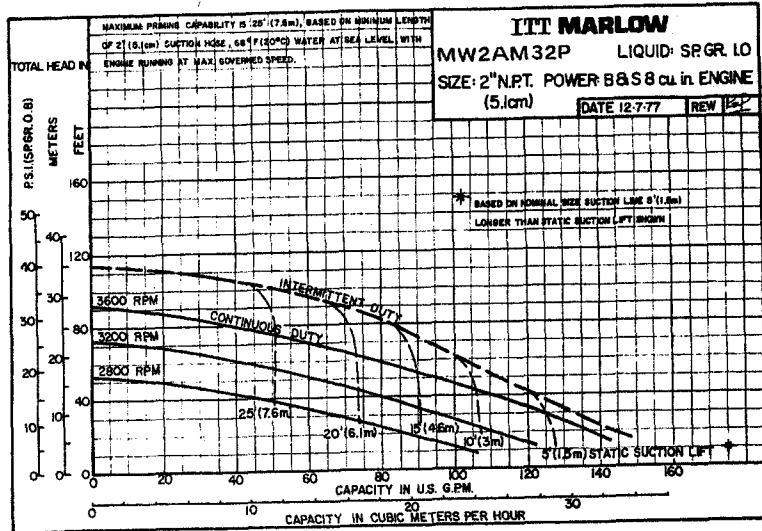
Performance Specifications

ITT Marlow

MODEL 2AM32-P — 3 HP

CAPACITIES IN U.S. GALLONS PER MINUTE
CONTINUOUS SERVICE (Governed Throttle)

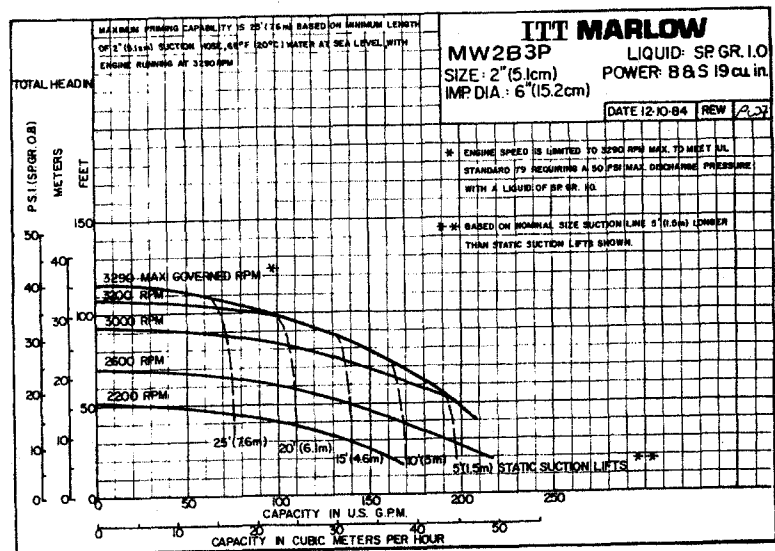
TOTAL HEAD (including friction)		Total-Static-Suction Lift in feet				
FEET	P.S.I.	5'	10'	15'	20'	25'
20	8.6	127	107	—	—	—
25	10.8	127	107	91	—	—
30	13.0	125	107	91	74	—
35	15.2	117	107	91	74	50
40	17.3	111	106	90	74	50
50	21.6	95	95	90	74	50
60	26.0	78	78	78	73	50
70	30.3	58	58	58	58	50
75	32.5	50	50	50	50	50



MODEL 2B3-P — 8 HP

CAPACITIES IN U.S. GALLONS PER MINUTE
CONTINUOUS SERVICE (Governed Throttle)

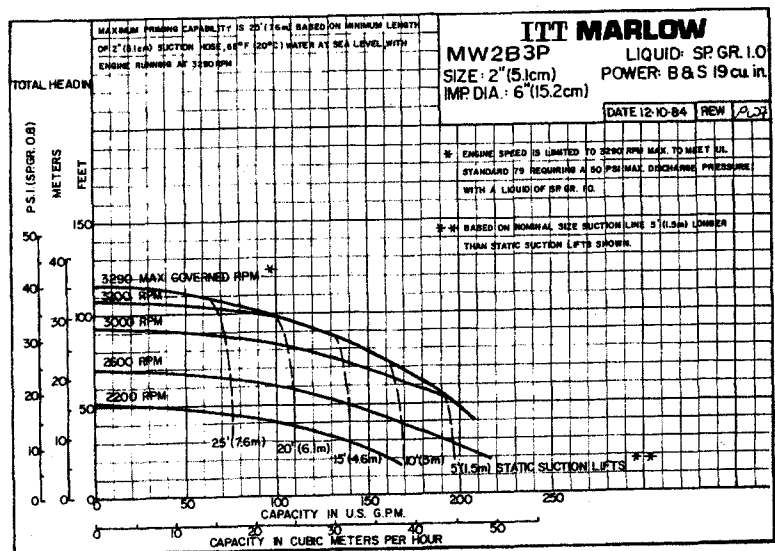
TOTAL HEAD (including friction)		Total-Static-Suction Lift in feet				
FEET	P.S.I.	5'	10'	15'	20'	25'
20	8.7	198	169	141	110	76
30	13.0	197	168	140	110	76
40	17.3	195	167	140	110	76
50	21.6	192	167	140	110	76
60	26.0	182	165	139	110	75
80	34.6	148	148	136	107	73
100	43.3	95	95	95	95	69
115.5	50.0	20	20	20	20	20



MODEL 3B1-P — 8 HP

CAPACITIES IN U.S. GALLONS PER MINUTE
CONTINUOUS SERVICE (Governed Throttle)

TOTAL HEAD (including friction)		Total-Static-Suction Lift in feet				
FEET	P.S.I.	5'	10'	15'	20'	25'
20	8.7	400	350	288	239	180
30	13.0	400	345	285	232	180
40	17.3	377	325	280	225	175
50	21.6	345	330	275	220	170
60	26.0	305	305	262	211	160
80	34.6	225	225	225	188	142
100	43.3	120	120	120	120	105



INSTALLATION INSTRUCTIONS

R942-00

MARCH 2000

1.0 TANK SITE EVALUATION AND PREPARATION PRIOR TO INSTALLATION

- 1.1 The foundation for the tank must be designed to support the tank plus 100% of the weight of the maximum amount of product the tank will be storing. The foundation may be comprised of concrete, asphalt, gravel or other stable material and must include provisions in its design to prevent tank movement. The foundation should include any provisions necessary for seismic design.

The foundation design must also include provision for draining surface water away from the tank.

- 1.2 For tank installations without cathodic corrosion protection, a grounding system should be installed for the tank in accordance with applicable electrical and fire code standards. Steel tanks in contact with the earth should not use copper grounding.

- 1.3 For tank installation with cathodic corrosion protection, consult applicable standards (i.e., National Association of Corrosion Engineers) to provide the tank with appropriate protection from lightning without interference with the corrosion protection. Steel tanks in contact with the earth should not use copper grounding. Refer to STI R893-89, "Recommended Practice for External Corrosion Protection of Shop Fabricated Aboveground Storage Tank Floors."

- 1.4 Tanks located in areas subject to flooding must be protected against floatation.

- 1.5 Aboveground tanks should not be located above underground utilities or directly beneath overhead power lines.

- 1.6 The tank shall be protected from vandalism and accidental damage in accordance with all applicable codes, i.e., NFPA 30, NFPA 30A, UFC, etc. as well as local environmental regulations and safety codes. Consult local authorities before installing this tank.

2.0 TANK HANDLING

- 2.1 Do not handle or install tank without having knowledge and experience in procedures involved with proper and safe installation of an aboveground tank used for storage of stable, flammable and combustible liquids. Reliance on skilled, professional installers is an important factor in avoidance of tank damage and system failures.

- 2.2 Equipment for handling the tank shall be of adequate size to lift and position the tank. DO NOT DROP OR DRAG THE TANK.

- 2.3 Tanks shall be carefully handled using cables or chains of adequate length (with spreader bars, if necessary) and size. Attach to the tank using the lifting lugs provided. Care should be taken that the angle between the two cables, at the lift point, shall be no greater than 60 degrees.

- 2.4 DO NOT HANDLE OR MOVE THE TANK UNLESS IT IS EMPTY.

- 2.5 This is a stationary tank. Do not use this tank for transport of any product.

3.0 TESTING

3.1 General Requirements

- 3.1.1 An on-site air test of the tank may be required by local authorities to ensure no damage has occurred in shipping and handling. All testing should be done as described below, or according to the tank manufacturer's Listing.
- 3.1.2 DO NOT APPLY A VACUUM TO THE PRIMARY TANK.
- 3.1.3 In lieu of the air pressure test, the tank may be shipped from the factory with a vacuum in the tank interstice. Read and record the vacuum pressure. If the vacuum pressure is less than 5.6 inches Hg (21.8 kPa), contact the tank manufacturer.

3.2 Air Pressure Test Procedure for Tanks

- 3.2.1 Remove emergency vents and cap openings to hold tank pressure as required.

NOTE: Use only calibrated air pressure

gauges with a 0-15 psig (0-103 kPa) dial span.

The regulated air supply test pressure used for this test should be as follows:

- a. **Horizontal cylindrical tanks** - Not less than 3 psig (20.7 kPa) nor more than 5 psig (34.5 kPa). Set pressure relief valve in test air supply line at 5.5 psi (38 kPa)
- b. **Vertical tanks** - Not less than 1½ psig (10.4 kPa) nor more than 3 psig (20.7 kPa). Set pressure relief valve in test air supply line at 3 psig (20.7 kPa).
- c. **Rectangular tanks** - Not more than 3 psig (20.7 kPa). Set pressure relief valve in test air supply line at 3 psig (20.7 kPa).

CAUTION: Do not leave pressurized tank unattended while the pressure line/air line is connected. Do not stand in front of tank heads or fittings when pressurizing tank. Pressurizing of large tanks may result in the bulging of the tops and bottom of vertical tanks, bulging of the sides of rectangular tanks, and bulging of the heads and ends of cylindrical tanks. Should visible bulging occur, immediately relieve the pressure.

3.2.3 Tank Pressurizing Procedure

3.2.3.1 The following air pressure testing does not apply to double-wall tanks equipped with interstitial vacuum monitoring systems. (In lieu of the air pressure test, the tank may be shipped from the factory with a vacuum in the tank interstice. Read and record the vacuum pressure. If the vacuum pressure is less than 5.6 inches Hg (21.8 kPa), contact the tank manufacturer).

3.2.3.2 Install test piping as shown in Figure 2. Close valves A and B. Open valve C. Temporarily plug, cap or seal off remaining tank openings to hold pressure.

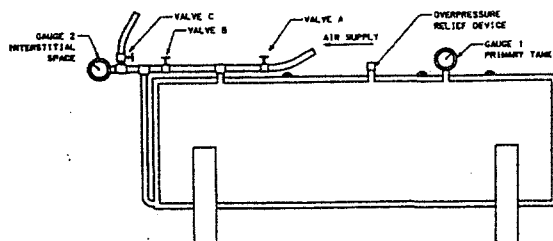


FIGURE 2
DOUBLE WALL TANK

3.2.3.3 Connect regulated test air supply line to test piping as shown in Figure 2.

3.2.3.4 Slowly open valve A to pressurize the primary tank. Pressure gauge 1 should indicate test air pressure given in paragraph 3.2.1 above.

3.2.3.5 Close valve A. Disconnect regulated test air supply line from test piping.

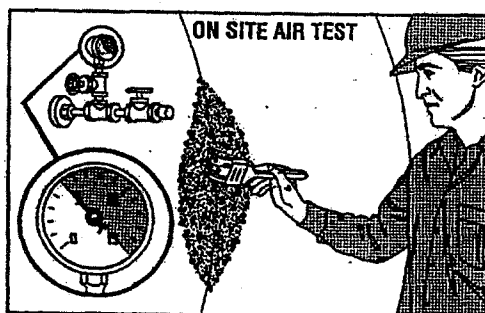
3.2.3.6 Monitor test pressure in primary tank for 1 hour minimum. A steady drop in pressure reading for gauge 1 indicates there may be a leak in the primary tank. Check the fittings, the gauge, and then retest. If the problem persists, contact the tank manufacturer.

3.2.3.7 If no leaks are found, close valve C and slowly open valve B to pressurize the interstitial space between the double walls of the tank.

WARNING: Do not apply air pressure to the interstitial space between the walls of a double wall tank without air pressure in the primary tank. Do not apply air pressure to the interstitial space that is higher than the air pressure in the primary tank. Damage to the tank may result. Pressure gauge 1 will indicate a slight drop in test pressure when valve B is opened, but should hold steady at the lower pressure. If test pressure drops below minimum requirements, close valve B, reconnect air supply line and slowly open valve A to increase pressure in primary tank. When the required pressure is indicated on gauge 1 close valve A, disconnect test air supply line. Open valve B to equalize pressure in the primary tank and the interstitial space. Gauge 1 and gauge 2 should have the same pressure reading.

3.2.3.8 Close valve B. Hold test pressure in interstitial space for 1 hour minimum. A steady drop in pressure gauge 2 indicates there may be a leak in the interstitial space. Check the fittings, the gauges, and then retest. If the problem persists, contact the tank manufacturer.

- 3.2.3.9 Proceed to paragraph 3.2.4 below.
- 3.2.4 Detection of Leaks
- 3.2.4.1 Immediately apply leak test solution to tank exterior surfaces, welds, fittings, etc. Check for leaks. No leaks are allowed. If leaks are found, notify the tank manufacturer. If no leaks are found, testing of the tank is complete.
- 3.2.4.2 Open valve C, then slowly open valve B to release test air pressure.



- 3.2.4.3 With tank depressurized, remove test piping, temporary plugs, caps and seals. Reinstall emergency relief vents, etc. which were removed in paragraph 3.2.1 above. Emergency vents are required on both the primary tank and the secondary tank.
WARNING: Emergency relief vents must be operable to prevent causing tank failure by over-pressurization.

4.0 TANK PIPING AND ACCESSORIES

- 4.1 Install all permanent piping and fittings using compatible, non-hardening thread sealant material.
- 4.2 All unused tank openings must be properly sealed using metal threaded pipe plugs, flanges and gaskets, or caps using compatible non-hardening thread sealant material.
- 4.3 **DO NOT WELD ON THE TANK, MODIFY OR PENETRATE THE TANK STRUCTURE IN ANY WAY WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE TANK MANUFACTURER.**

- 4.4 All tank accessories shall be installed as required per local codes. Anti-siphon devices, overflow shut-offs and alarms, vents gauges, emergency vents, etc. are common requirements for tanks storing motor fuels for the purpose of being dispensed into motor vehicles.

5.0 LABELING

- 5.1 Tanks shall be labeled in accordance with all applicable codes.

6.0 MAINTENANCE

- 6.1 The tank operator should perform periodic walk-around inspections to identify and repair areas of damage to the vessel or the coating itself and check for proper drainage around the tank area.
- 6.2 It is imperative that the tank exterior be inspected periodically to ensure that the integrity of the coating is maintained. The frequency of periodic repainting will be based upon environmental factors in the geographic area where the tank is located. Special consideration should be given to the selection of the paint, surface preparation and coating application. The coating selected should be suitable for use with the current coating, or the existing coating should be removed. The coating selected should be of industrial quality.
- 6.3 Proper site preparation and maintenance are vital to ensure drainage of surface water. Should ground conditions change or settlement occur, take the appropriate steps to maintain proper drainage and prevent standing water near or under the tank area.
- 6.4 The primary tank should be inspected monthly for the presence of water at the lowest possible points inside the primary tank. Remove any water found. Water and sediment in fuel can cause plugging of filters. Also, bacterial growth, in this media, can cause filters to plug and cause corrosion of tanks and lines. A report by the US Department of Energy, BNL 48406, provides information on methods to test for and remove water from tanks. It also discusses how to test for the presence of bacteria in the fuel.
- 6.5 This tank must be removed from service if damaged by fire exposure, other physical means or misuse.
- 6.6 Failure to adhere with these maintenance instructions may void your warranty.

Disclaimer

These instructions are intended only as an aid to tank installers who are knowledgeable and experienced in aboveground tank installation. Compliance herewith does not necessarily meet the requirements of applicable federal, state and local laws, regulations and ordinances concerning tank installation. STI makes no warranties, express or implied, including but not limited to, any implied warranties of merchantability or fitness for a particular purpose, as a result of these installation instructions.

Disclaimer: Every effort has been made by the Steel Tank Institute to ensure the accuracy and reliability of the information contained in this instruction. The Steel Tank Institute does not make any representation, warranty or guarantee in connection with the publication of these instructions, and hereby expressly disclaims any liability or responsibility for loss or damage resulting from the use of this instruction; violation of any federal, state or local regulation(s) with which these instructions may conflict; or the infringement of any patent resulting from the use of these instructions. Nor is this instruction meant to provide interpretation of regulatory or legislative requirements in the tank industry.

OWNER'S MANUAL:

**RECOMMENDED MAINTENANCE PROCEDURES
FUEL STORAGE AND HANDLING SYSTEMS**

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PART 1

SCOPE AND PURPOSE

1.1 Purpose

The purpose of this Fuel System Maintenance Manual is to provide the Owner with safe and efficient operation, monitoring and maintenance of the fuel storage and handling equipment installed as part of the facility reconstruction program.

1.2 Scope

The work to be performed and the division of that work between the facility manager and the service contractor(s) described herein can be modified by mutual agreement. This manual provides basic instructions for the operation and maintenance of the following equipment:

- Motor vehicle fuel storage, handling and monitoring equipment
- Tanks, dikes, fills, vents, and other components
- Dispensers, hoses, swivels, breakaway valves, nozzles, and emergency valves
- Pumps, valves, filters, piping, and monitors
- Tank monitoring, gauging, and liquid sensing components
- Controls and electrical components

1.3 Facility Maintenance Manual (FMM)

One copy of a Facility Maintenance Manual will be provided for each site. The Manual will be in a loose-leaf format to facilitate making changes and to permit the addition of supplemental information.

The following information should be added to the FMM at the conclusion of construction of the facility:

Station Layout. Diagram of the site showing the tank, pump and piping layout and the equipment identification numbers. The location of the emergency shut-off switch should also be shown.

Equipment List. List of equipment, manufacturers' serial numbers, and warranty expiration dates, and numbers to be called for service.

Monitoring System. Monitoring system identification numbers, and details of the probe operation.

Manufacturers' Instructions. Manufacturers' instructions for maintenance and testing the systems must be followed to protect warranty rights.

1-4 Use of the Facility Maintenance Manual (FMM)

The FMM consists of systems descriptions and inspection check lists, and is intended to supplement, not replace, the detailed instructions provided by the equipment manufacturers.

The FMM should remain at each site permanently. Literature and check lists provided are originals and should be copied as necessary to support the facility.

Recommendations are in checklist format to provide a convenient means of scheduling, reporting and documenting work done.

1-5 Limitations

The FMM itself is not intended to provide the basic instruction necessary to install, test, calibrate, program, or service equipment covered in the program. Individuals trained by the equipment manufacturer will perform the work.

Inclusion of manufacturers' materials is not intended to define the scope of work. The FMM may require more or less than the manufacturers suggest in their manuals.

Recommended inspections and maintenance which is not included in the service contractor's scope of work shall be the Owner's responsibility and shall be performed by individuals trained and qualified by the Owner.

1-6 Safety

Public and employee safeties are of paramount importance. Any indication of a release of flammable liquid, exposed electrical wiring or physical damage to equipment represents a significant safety and environmental hazard. The Facility Manager shall take immediate precautions and address each problem in accordance with safe practices.

Flammable and Combustible Liquids. Release of flammable or combustible liquids creates a serious fire hazard and potential environmental hazard. Eliminate the source of the release and take precautions prescribed by safe procedures.

Barricades. Take precautions to restrict traffic from areas in which work is being performed. Many reported accidents occurred while routine maintenance was being performed in traffic areas.

Fire Extinguishers. State fire codes require that fire extinguishers must be readily available during any service or inspections.

Lifting. Some heavy lifting may be required. Individuals lifting heavy objects should be trained in the proper method of doing so.

Precautions. Monitor confined spaces for flammable and combustible vapors. Ventilate before performing work other than inspection which can be done without entry. Petroleum vapors are heavier than air and will collect in low points, sumps and contained spaces.

1-7 Telephone Numbers:

Fire: _____

Police: _____

Hospital: _____

Owner Representative: _____

Service Contractor: _____

Service Contractor: _____

Service Contractor: _____

PART 2

SYSTEM DESCRIPTIONS

2-1 General Instructions

The procedures included in this FMM shall be consistent with the recommendations of the manufacturer of the equipment and, in some cases, fire and environmental regulations. They shall be performed by qualified employees and service contractors with training in the procedures, and in the interpretation of the results and findings.

Maintenance of accurate records of work performed will be permanently maintained. The procedures followed, the name of the employee, and findings shall be entered on the Maintenance Log, which is part of this FMM.

If, during routine inspections, items are found to be out of conformance with the standards, the employee shall:

1. Follow manufacturer's instructions for additional investigation.
2. Suspend use of the system if safety or environmental problems might result from its continued use.
3. Notify the service contractor responsible for the item.

Checklists shall be provided as a general guide for scheduling work.
Some problems will require the assistance of qualified service personnel.

2-2 Definitions.

- a. **Calibrate:** Calibrate means to test for accuracy and to adjust to established standards in accordance with the instructions of the manufacturer and state regulations.
- b. **Clean:** Clean means to wash the equipment as directed by the manufacturer.
- c. **Factory-trained technician:** Some work described requires special skill and training. Factory-trained technicians should be employed.
- d. **Frequency:** The frequencies of service shown in the checklists are minimum desirable service intervals. Service may be more frequent, particularly if concealed components are exposed for other reasons.
- e. **Inspect:** Inspect means to visually examine the equipment for indications of wear, damage, questionable or unusual operating conditions which may require attention by service personnel.
- f. **Operate:** Operate means to use the equipment normally and to be alert for abnormal operations indicating potential problems requiring service or adjustment.

- g. Sample:* Sample means to take a representative portion of the whole and inspect for evidence of substandard quality.
- h. Service technician:* A service technician is an individual trained and equipped to perform the service work described.
- i. Simulate:* Simulate means to test for problems by performing the normal functions of the equipment.
- j. Test:* Test means to perform a functional test of the equipment as described by the manufacturer to ensure its proper operation.

2-3 Dispensing Equipment

- a. Dispensing Equipment.** The operating condition and general appearance of the dispensing equipment should be maintained in order to ensure uninterrupted operations and to properly convey the correct image of the quality of services. The dispensing mechanism should be well maintained, clean and fully operational. Inspect the appearance and condition of the dispensing equipment and meters weekly.
- b. Hoses.** Inspect hoses for indications of kinks, leaks, wear, or damage weekly.
- c. Nozzles.** Inspect dispenser nozzles for indications of leaks and damage. Inspect nozzle coating and splashguards for tears or wear. Operate each nozzle to ensure proper operation and free flow, particularly that they shut-off at the appropriate level. Inspect and operate nozzles weekly.
- d. Flow rate.** During a delivery into a vehicle tank, measure the flow rate by timing the delivery from start to shut-off. Divide the gallons by the time. Test the flow rate on each hose weekly. Consistently slower delivery might indicate plugged fuel filters. See "Filters".
- e. Hose swivels.** Inspect hose nozzle swivels for free movement, leaks, or signs of wear. Inspect hose swivels weekly.
- f. Hose break-away fittings.** Breakaway fittings are installed in each hose to provide protection to the dispenser in case a vehicle is driven away without removing the nozzle. Inspect device for signs of leakage or abnormal wear. Check hose supports to make sure they are properly anchored. **Do not** attempt to test the fitting by breaking it. Inspect hose break-away fittings weekly.
- g. Dispensing meter displays.** Inspect the gallon display, register, pulsars and ticket printer weekly. Check for dirty or broken glass. Clean and inspect displays weekly.
- h. Dispensing device meter exterior housings.** Clean the exterior surfaces of the equipment. Inspect the housing for dents, sharp edges, corrosion, or indications of damage. Clean and inspect the meter housing weekly. Clean meter housings monthly.

- i. **Pump switches and times.** Operate each pump switch to ensure proper operation. The dispenser switch should reset the dispenser display to zero and turn on the pump for dispensing. This should be done weekly.
- j. **Meter accuracy.** Calibrate the dispensing meter annually or when unexplained product loss is indicated. This requires the services of a trained service technician.
- k. **Piping.** Inspect aboveground piping for leaks and damage quarterly.
- l. **Filter cartridges.** The filter cartridges shall be removed and replaced annually. If the pressure differential drops to an unacceptable level or the flow rate drops the filter may require replacement.

2-4 Storage tank, Dike and Dispensing

- a. Inspect above ground tank for signs of damage, rust and leaks. Clean tank and dispensing equipment as needed.
- b. Clean debris, water & fuel out of dike monthly.
- c. Inspect dike for signs of cracking, rust & damage monthly.
- d. Inspect tank grounding clamps & wire for damage & continuity annually.
- e. Inspect ladders to make sure they are free of debris, snow & ice as required.
- f. Check for water in tank. Remove & properly dispose of water as needed.
- g. Visually inspect placards & signage. Replace as needed.
- h. Tank tightness. Perform the "leak mode" tank tightness test described in the ATG if applicable.
- i. Interstice liquid sensors. If the interstice of the doublewall tank is equipped with a liquid sensor, test this sensor annually.

2-5 Electrical Panels (Work to be done by trained technician.)

- a. **Dispensing Controls.** Operation of the dispenser controls equipment is on-going and problems should be readily apparent. Report any apparent malfunctions of the meter, pulsar or tick printer to the service representative immediately.
- b. **Emergency shut-off switch.** Test the operation of each emergency shut-off switch and manual re-starting quarterly.

- c. **Automatic tank gauge ATG interface.** Inspect the automatic tank gauge panel for indications of damage annually.
- d. **Pump relay.** The pump relay operates each time a pump switch is activated. The indicator light should be lit whenever the on/off switch is on. Test these relays annually.
- e. **Dispenser anchoring.** Fire codes may require that the dispensing equipment be securely anchored. Inspect the anchor bolts for corrosion and security quarterly.

2-6 Pumps and Components

- a. Pumps are provided for the fuel dispensing. Testing and inspection of pumps shall be done by trained service technicians annually.
- b. **Low Fuel Warning.** If the electronic tank gauge "low level" warning appears for any tank, switch the pump in that tank off at the relay for that tank until a delivery is received into the tank.
- c. **Fuel filter housings.** Inspect fuel filter housings for signs of corrosion, leaks and damage. Inspect the filter housings at least annually.
- d. **Filter cartridges.** Replace the fuel filter cartridges annually. Replace gaskets and seals when replacing filters. Carefully test for leaks.

2-7 Monitoring System

- 1. **Electronic Tank Gauging/Automatic Tank Gauge (ATG)-**
Monitoring of tank condition and product inventory from electronic probes in the tank reporting (communicating) back to a programmable console.
 - a. **Tank gauge console.** The operation of the pumping system is described in the enclosed operations and maintenance manual. Inspect tank gauge console and communications monthly.
 - b. **Tank gauge console printer.** Clean and inspect the printer located in the console at least monthly. Replace paper as required.
 - c. **Tank gauge probes.** Tank probe is located in the approximate center of each tank. The probes do not require periodic inspection. A factory-trained technician should test the operation of the entire system annually.
 - d. **Low Fuel Warning.** If the electronic tank gauge "low level" warning appears for any tank, switch the pump in that tank off at the relay for that tank until a delivery is received into the tank.

- e. **Liquid sensors.** Test and inspect the liquid sensors annually, or when an alarm is sounded.
- f. **Tank product level sensors.** A service technician shall inspect and test the tank level sensor annually.

[Note: A factory-trained technician should test the operations and accuracy of the tank probes, liquid sensors, and system communications annually.]

2. **Mechanical Level Indicators-**

Allows for continuous read of liquid level even during power outage and product delivery situations.

- a. **Float devices.** Made of non-corrosive materials (stainless steel, polypropylene, etc.) Activated by the rise and fall of the liquid level in the tank. Check condition of float and verify proper attachment to connecting cable annually, or whenever an alarm is sounded.
- b. **Connecting cable.** Stainless steel cable or kevlar string connected to electronic sensor or float device back to a base controller visual gauge for inventory control and overfill protection. Check cable for kinks and general condition annually.
- c. **Gauge readouts.** Clock, tape or window type gauges, activated by a float connected to a cable, with highly visible numerals and positioned such that the liquid level can be read without mounting the tank. Check moving parts annually for proper operation.

2-8 **Dispensing Equipment**

- a. **Dispenser anchoring.** Fire codes require that dispensing equipment be securely anchored. Inspect the anchor bolts for corrosion and security quarterly.

2-9 **Tanks**

- a. **Tank tightness.** Perform the "leak mode" tank tightness test described in the ATG manual monthly if provided.
- b. **Interstice liquid sensors.** If the interstice of the double-wall tanks is equipped with a liquid sensor (ATG), test this sensor annually by removing it, immersing it in water, checking the alarm panel, and reinstalling it. Trained service technicians shall inspect and test the tank interstice annually.

2-10 Accessories

- a. Delivery hose connections. At the time of each delivery, inspect the tank fill cap, fill adapter, and containment manhole. Check for damages or missing equipment. Ensure that the fill is tightly secured after the deliver is completed.
- b. Spill Containment. Remove any accumulated water or debris from the containment manhole. If fuel is present (and only fuel), open the drain valve/plug and allow it to return to the tank. Test the operation of the drain valve. Clean and inspect the containment man holes quarterly or as needed.
- c. Drop tube valves. Tank fills are equipped with drop tube valves to shut-off deliveries at approximately 90% of the tank capacity. Remove the fill drop tube and test the mechanical operation of the valve annually.

2-11 Piping

- a. Blocking valves. Valves are provided in the STP sump to isolate piping for pressure testing. Inspect valves and test their free movement annually.
- b. Aboveground vent risers and vent caps. Check appearance and paint annually. Inspect the vent caps, make sure they are clean and free of debris annually.
- c. Locate tracing wire. A bare copper wire is installed above the non-metallic (fiberglass) piping to facilitate locating the piping using a metal detector. Test tracer wire every three years.
- d. Visually inspect fittings and piping for signs of damage, rusting or leaks quarterly.

2-12 Documentation

- a. The following conditions should be documented:
 - 1. Product spills and releases. Describe the circumstances, actions taken and reports made.
 - 2. Equipment repairs. Identify the equipment repaired, the work performed, and attach the Service Company's report.
 - 3. Routine inspection. Attach a completed checklist to the Daily Station Report, noting work performed and any unusual conditions that were identified found.
 - 4. Monitoring alarms. Attach an alarm log for any new or unaddressed alarming conditions.

PART 3

CHECKLISTS

3-0 Checklists

- a. **Arranged by Function.** The checklists in Part 3 are arranged by function. For added convenience, we have provided a second set of checklists (Part 4) arranged in the time order in which the work should be performed.
- b. **Use of the Checklists.** When using the checklists, make a copy of the list desired from the full-sized master table provided. Do not use the master copy itself. The frequencies of maintenance activities shown are recommended minimums and can be scheduled more frequently if desired by the Owner.
- c. **Documentation.** Indicate the work performed, the person doing the work, and the date. Make notes of the findings of inspections and the results of testing.
- d. **Reporting.** Have a copy of each periodic inspection report submitted to the Owner. Maintain a copy of all completed checklists in a permanent file on-site.
- e. **Responsibility.** Tasks are divided between those to be performed by Owner's personnel and those to be performed by a service contractor.
 - 1. O = Owner
 - 2. C = Service Contractor
 - 3. F = Factory-trained Technician
- f. **Changes.** The information provided regarding who performs the maintenance functions is based on limited knowledge and basic assumptions regarding the typical qualifications of the Owner's personnel, and may be changed as required to fit the specific operation and the individual's skill level. Remember to make changes on both sets of checklists.
- g. **Checklists.** The following checklists are provided:
 - 1. Dispensing Equipment, Hoses and Nozzles
 - 2. Electrical Panel
 - 3. Submersible Pumps and Components
 - 4. Monitoring System
 - 5. Product Storage and Fuel Dispensing Areas
 - 6. Tanks and Accessories
 - 7. Pipings

3-1 Dispensing Equipment, Hoses and Nozzles

Sect.	Equipment	by	Maintenance	Frequency	By	Date
2-3.a	Dispensing Equipment	O	Inspect/Clean	Weekly		
2-3.b	Hoses	O	Inspect	Weekly		
2-3.c	Nozzles	O	Inspect/Operate	Weekly		
2-3.d	Flow Rate - each hose	O	Test	Weekly		
2-3.e	Hose swivels	O	Inspect	Weekly		
2-3.f	Hose break-away fittings	O	Inspect	Weekly		
2-3.g	Meter displays, ticket printer, etc.	O	Clean/Inspect	Weekly		
2-3.h	Disp. dev. meter housing - exterior	O	Clean/Inspect	Weekly		
2-3.i	Pump switch (es)	O	Clean and wax	Monthly		
2-3.j	Meter accuracy	C	Calibrate	Annually		
2-4.k	Impact valve/check valve	O	Inspect/Test	Quarterly		
2-3.l	Filter cartridges	O	Replace	Annually		

3-2 Electrical Panel

Sect.	Equipment	by	Maintenance	Frequency	By	Date
2-5.a	Dispensing controls	O	Inspect/Test	Ongoing		
2-5.b	Emergency shut-ff	O	Inspect/Test	Quarterly		
2-5.c	ATG Interface	O	Inspect/Test	Annually		
2-5.d	Pump relays	C	Inspect/Test	Annually		

3-3 Submersible Pumps and Components (if applicable)

Sect.	Equipment	by	Maintenance	Frequency	By	Date
2-6.a	Pumps	C	Inspect/Test	Annually		
2-7.d	Line leak detectors	C	Inspect/Test	Annually		
2-7.d	Leak detector filters	C	Replace	Annually		
2-6.c	Fuel filter housing	O	Inspect	Annually		
2-6.c	Filter cartridge, gaskets, seals	O	Replace	Annually		

3-4 Monitoring System

Sect.	Equipment	by	Maintenance	Frequency	By	Date
2-7.1a	ATG-Tank gauge console	O	Inspect/Operate	Monthly		
2-7.1a	ATG-Tank gauge comm.	O	Test	Monthly		
2-7.1b	ATG-Tank gauge printer	O	Inspect/Clean/Operate	Monthly		
2-7.1c	ATG-tank gauge probes	F	Inspect/Test	Annually		
2-7.1d	ATG-Tank gauge liquid sensors	F	Inspect/Test	Annually		
2-7.1e	ATG-High/low pro.lev.sensors	F	Inspect/Test	Annually		
2-7.2a,b	MTG-Float dev. & connect cable	O	Inspect	Annually		
2-7.2c	MTG-Level gauge readout	O	Inspect	Annually		

3-5 Product Storage and Fuel Dispensing Areas

Sect.	Equipment	by	Maintenance	Frequency	By	Date
2-4.a	Tank exterior	O	Inspect/Clean	As needed		
	Steel pipe bollards	O	Clean/paint	Annually		
2-4.d	Area lighting - fixtures	C	Inspect/Clean	Quarterly		
2-4.d	Canopy light fixtures	C	Inspect/Clean	Quarterly		
2-9.a	Dispenser/Pump anchoring	O	Inspect/Tightness	Quarterly		
2-4.c	Steel island form exterior	O	Clean/Paint	Annually		

3-6 Tanks and Accessories

Sect.	Equipment	by	Maintenance	Frequency	By	Date
2-9.a	Tank fill cap/adaptor	O	Inspect	Ea. Delivery		
2-9.b	Spill contain. manhole/drain valve	O	Clean/Inspect/Test	Quarterly		
	Extractor fitting access cover	O	Inspect/Operate	Quarterly		
	Interst'l monitoring - tank (if applicable)	O	Inspect	Weekly		
2-8.a	ATG leak mode test	O	<i>Leak Mode</i> test	Monthly		
	Emergency vent (primary, secondary)	O	Inspect/Clean	Quarterly		
2-9.d	STP sump and lid	O	Inspect	Annually		
2-9.d	Tank sump penetration fittings	C	Inspect/Tighten	Annually		
2-9.e	Tank sump liquid sensors	F	Inspect/Test	Annually		
2-8.b	Interstice liquid sensors (if applicable)	O	Inspect/Test	Annually		
2-9.c	Drop tube overflow prevention valve	C	Test	Annually		
	Ball float valves	C	Inspect	Annually		
2-10.b	Vent Cap (normal, press. vac.)	C	Inspect/Clean	Annually		

3-7 Piping

Sect.	Equipment	by	Maintenance	Frequency	By	Date
2-11.d	Aboveground Piping	O	Inspect for leaks	Quarterly		
2-11.d	Exposed flexible connectors	O	Inspect	Annually		
2-11.a	Blocking valves	C	Inspect/Test	Annually		
2-11.d	Contain. termination fittings fit	O	Inspect	Annually		
	Primary piping tightness	C	Hydrostatic test	3-Years		
	Secondary piping tightness	C	Hydrostatic test	3-Years		
2-11.b	Aboveground vent risers	O	Inspect/Paint	Annually		
2-11.c	Tracing wire	C	Locate/Test	3-Years		

PART 4
MAINTENANCE LOG
<CHECKLISTS>

ARRANGED IN ORDER OF FREQUENCY

4-1 Dispensing Equipment, Hoses and Nozzles

Sect.	Equipment	by	Maintenance	Frequency	By	Date
2-3.g	Meter display, ticket printer, etc.	O	Clean/Inspect	Weekly		
2-3.f	Hose break-away fittings	O	Inspect	Weekly		
2-3.e	Hose swivels	O	Inspect	Weekly		
2-3.d	Flow Rate	O	Test	Weekly		
2-3.c	Nozzles	O	Inspect/Operate	Weekly		
2-3.b	Hoses	O	Inspect	Weekly		
2-3.a	Dispensers, Pumps	O	Inspect/Clean	Weekly		
2-3.i	Pump switch(es)	O	Clean and wax	Monthly		
2-3.h	Dispensing Device/meter housings	O	Clean/Inspect	Monthly		
2-4.b	Impact valve/check valve	O	Inspect/Test	Quarterly		
2-3.j	Meter accuracy	C	Calibrate	Annually		
2-3.l	Filter cartridges	O	Replace	Annually		

4-2 Electrical Panel

Sect.	Equipment	by	Maintenance	Frequency	By	Date
2-5.a	Dispensing controls	O	Inspect/Test	Ongoing		
2-5.b	Emergency shut-off	O	Inspect/Test	Quarterly		
2-5.c	ATG Interface	O	Inspect/Test	Annually		
2-5.d	Pump relays	C	Inspect/Test	Annually		

4-3 Submersible Pumps and Components (if applicable)

Sect.	Equipment	by	Maintenance	Frequency	By	Date
2-6.a	Submersible turbine pumps	C	Inspect/Test	Annually		
2-7.d	Leak detector filters	C	Replace	Annually		
2-7.d	Line leak detectors	C	Inspect/Test	Annually		
2-6.c	Fuel filter housing	O	Inspect	Annually		
2-6.c	Filter cartridge, gaskets, seals	O	Replace	Annually		

4-4 Monitoring System

Sect.	Equipment	by	Maintenance	Frequency	By	Date
2-7.a	ATG-Tank gauge console	O	Inspect/Operate	Monthly		
2-7.a	ATG-Tank gauge communications	O	Test	Monthly		
2-7.b	ATG-Tank gauge printer	O	Inspect/Clean/Operate	Monthly		
2-7.c	ATG-Tank gauge probes	F	Inspect/Test	Annually		
2-7.d	ATG-Tank gauge liquid sensors	F	Inspect/Test	Annually		
2-7.e	ATG- High/low product level sensors	F	Inspect/Test	Annually		
2-7.a,b	MTG-Float devices and connecting cable	O	Inspect	Annually		
2-7.c	MTG-Level gauge readout	O	Inspect	Annually		

4-5 Product Storage and Fuel Dispensing Areas

Sect.	Equipment	by	Maintenance	Frequency	By	Date
2-4.a	Tank exterior	O	Inspect/Clean	As needed		
2-9.a	Dispenser/Pump anchoring	O	Inspect/Tighten	Quarterly		
2-4.d	Canopy light fixtures	C	Inspect/Clean	Quarterly		
2-4.d	Area lighting - fixtures	C	Inspect/Clean	Quarterly		
	Steel pipe bollards	O	Clean/Paint	Annually		
2-4.c	Steel island form exterior	O	Clean/Paint	Annually		

4-6 Tanks and Accessories

Sect.	Equipment	by	Maintenance	Frequency	By	Date
2-10.a	Tank fill cap/adapter	O	Inspect	Ea. Delivery		
	Interst'l monitoring - tank (if applicable)	O	Inspect	Weekly		
2-9.a	ATG leak mode test	O	<i>Leak Mode</i> test	Monthly		
2-10.b	Spill contain. manhole/drain valve	O	Clean/Inspect/Test	Quarterly		
	Emergency vent (primary, secondary)	O	Inspect/Clean	Quarterly		
	Extractor fitting access cover	O	Inspect/Operate	Quarterly		
2-9.e	Tank sump liquid sensors	F	Inspect/Test	Annually		
2-9.d	Tank sump penetration fittings	C	Inspect/Tighten	Annually		
2-11.a	STP sump and lid (if applicable)	O	Inspect	Annually		
	Ball float valves	C	Inspect	Annually		
2-10.c	Drop tube overfill prevention valve	C	Inspect/Test	Annually		
2-9.b	ATG- Interstice liquid sensors (if applicable)	O	Inspect/Test	Annually		
2-11.b	Vent Cap (normal, press. vac.)	C	Inspect/Clean	Annually		

4-7 Piping

Sect.	Equipment	by	Maintenance	Frequency	By	Date
2-11.d	Aboveground Piping	O	Inspect for leaks	Quarterly		
2-11.d	Exposed flexible connectors	O	Inspect	Annually		
2-11.a	Blocking valves	C	Inspect/Test	Annually		
2-11.d	Contain. termination fittings fit	O	Inspect	Annually		
2-11.b	Aboveground vent risers	O	Inspect/Paint	Annually		
	Primary piping tightness	C	Hydrostatic test	3-Years		
	Secondary piping tightness	C	Hydrostatic test	3-Years		
2-11.c	Tracing wire	C	Locate/Test	3-Years		

PART 5
SUPPLEMENTAL INFORMATION

The Facility Maintenance Manual manufacturers service and maintenance literature for major fuel system component

United States
Environmental Protection
Agency

Region 10
1200 Sixth Avenue
Seattle WA 98101-9797

Alaska
Idaho
Oregon
Washington

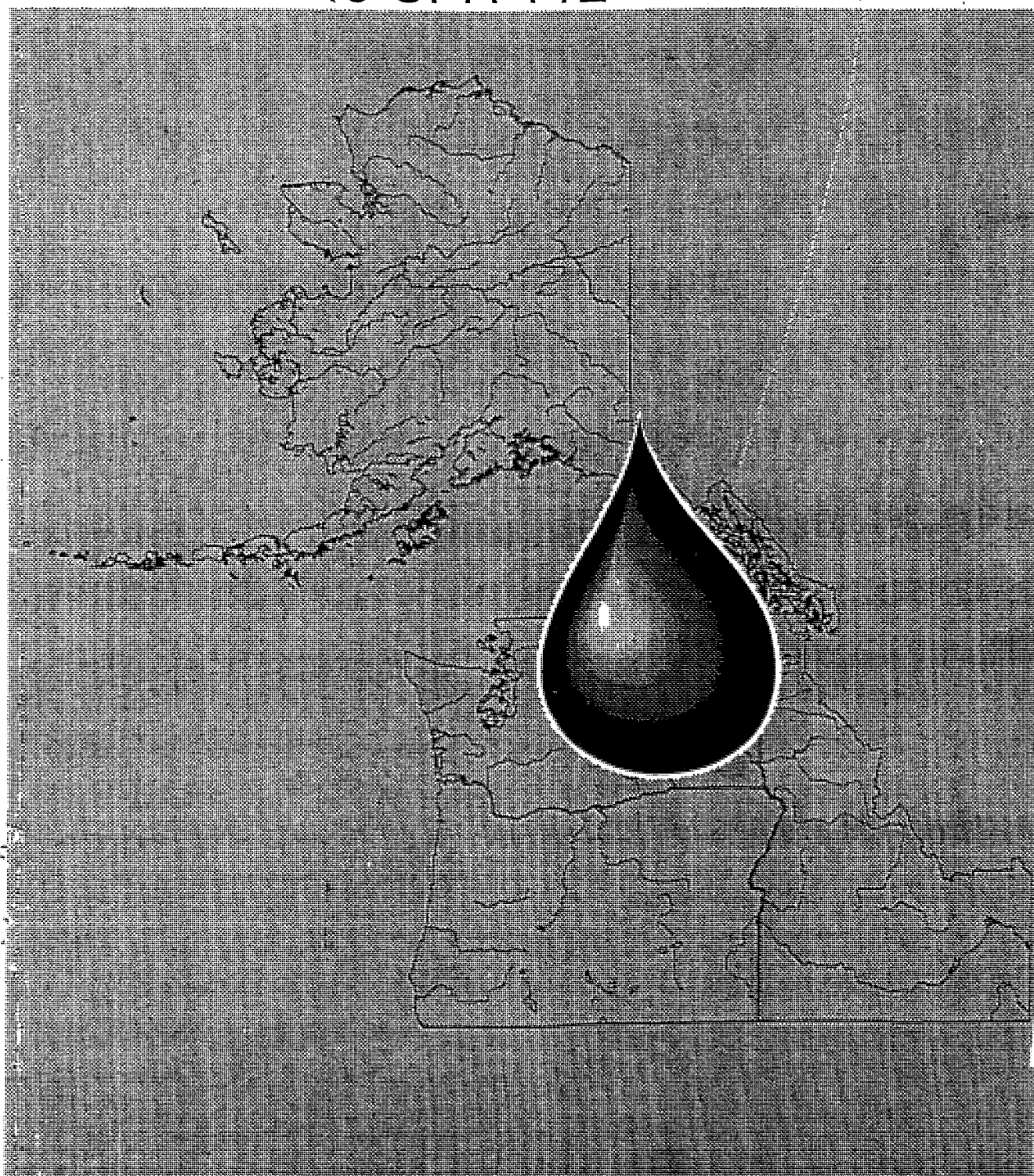
Emergency Response

September 1995



Information on SPCC Plans

40 CFR 112



Environmental Protection Agency
Emergency Response Team
Region 10
1200 Sixth Avenue
1-800-424-4EPA

The Superintendent of Documents
Classification Number is:
EP 1.2:
Sp4

First Printing 10/84
Second Printing 2/87
Third Printing 4/89
Fourth Printing 7/90
Updated: Oil Pollution Act 1990
First Printing 7/92
Revision: 9/93
First Printing 9/93
Revision: 6/95
First Printing 6/95

KEY POINTS OF PREVENTION REGULATION

The Environmental Protection Agency (EPA) Oil Pollution Prevention Regulations, published in the Federal Register on 11 December 1973, promulgated under Section 311(j)(1)(C) of the Clean Water Act, and amended by the Oil Pollution Act of 1990, addresses non-transportation related facilities and is further identified as Title 40, Code of Federal Regulations (CFR), Part 112. The main requirement of facilities subject to the regulation is the preparation and implementation of a plan to prevent any discharge of oil into navigable waters of the United States. The plan is referred to as a Spill Prevention Control and Countermeasure Plan (SPCC Plan) as defined in 40 CFR 112.1.

Purpose:

To prevent discharges of oil into navigable waters of the United States (U.S.) and the adjoining shorelines. The main thrust of the existing SPCC regulations is prevention as opposed to after-the-fact reactive measures commonly described in Spill Contingency Plans. However, on July 1, 1994, EPA published the Final Rule to 40 CFR Part 112.20 which requires certain oil handling facilities to develop Facility Response Plans (FRPs) to deal with response type measures in addition to the preventative actions.

Notice of Proposed Changes to the Existing SPCC Regulations:

Following one of the largest inland oil spills in U.S. history, the 750,000 gallon diesel fuel spill into Pennsylvania's Monongahela River from an Ashland Oil facility, EPA assembled an interagency SPCC Task Force to review the adequacy of existing Federal regulations governing above ground storage tanks. Based on Task Force recommendations, the EPA developed a two-phased approach to modifying the existing SPCC regulations.

Phase I Changes:

The EPA published a Proposed Rule in Federal Register, Vol. 56, No. 204, Tuesday, October 22, 1991 which would implement Phase I of the proposed changes to the existing regulations. The proposed revision involves changes to the applicability of the SPCC regulations and the required procedures for the completion of SPCC Plans, as well as the addition of a facility notification provision. The Proposed Rule also reflects changes in the jurisdiction of Section 311 of the Clean Water Act (CWA). The comment period for this Proposed Rule expired December 23, 1991. The Final Rule has not been published at the time of this printing.

Phase II Changes:

EPA published a Proposed Rule in Federal Register, Vol. 58, No. 30, Wednesday, February 17, 1993 which would implement Phase II of the proposed changes to the existing regulations. The proposed revision was intended to incorporate new requirements added by the Oil Pollution Act of 1990 (OPA), which direct facility owners and operators to prepare

plans for responding to a worst case discharge of oil and to a substantial threat of such a discharge. Other changes intended to strengthen the existing regulations were also proposed. The comment period for this Proposed Rule expired April 19, 1993. The Final Rule was published in Federal Register, Vol. 59, No. 126, Friday, July 1, 1994, and requires certain oil handling facilities to develop Facility Response Plans (FRPs).

EXISTING SPCC REGULATIONS

Applying To:

Owners or operators of facilities engaged in drilling, producing, gathering, storing, processing, refining, transferring, or consuming oil products, providing:

1. The facility is non-transportation related (see definition, page 3).
2. Aboveground storage capacity of a single container is in excess of 660 gallons, or an aggregate aboveground storage capacity greater than 1,320 gallons, or the total underground storage capacity is equal to or greater than 42,000 gallons.
3. The facility, due to its location, could reasonably be expected to discharge oil upon the navigable waters of the United States or adjoining shorelines. This determination is based solely upon a consideration of geographical locational aspects and NOT on man made features such as dikes or other structures.

In addition, a facility must comply with FRP Final Rule regulations, providing:

1. The facility transfers oil over water to or from vessels and has a total oil storage capacity greater than or equal to 42,000 gallons; or
2. The facility's total oil storage capacity is greater than or equal to 1 million gallons, and one or more of the following is true:
 - a) The facility does not have secondary containment for each aboveground storage area sufficiently large to contain the capacity of the largest aboveground storage tank within each storage area plus sufficient freeboard to allow for precipitation;
 - b) The facility is located at a distance such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments;
 - c) The facility is located at a distance such that a discharge from the facility would shut down operations at a public drinking water intake; or
 - d) The facility has had a reportable spill greater than or equal to 10,000 gallons within the last 5 years.

For more information about the FRP Final Rule Regulations, please contact the EPA at the phone number noted at the beginning of this booklet.

Main Objective of SPCC Regulations:

Requires facilities that are subject to the regulation (based on above criteria) to prepare and implement an SPCC Plan in accordance with guidelines outlined in paragraph 112.7 of the regulations.

Who Prepares the SPCC Plan?

- o Owners-operating their own facilities, or,
- o Operators-of leased facilities, or,
- o Persons in Charge-including departments, agencies, and instrumentalities of either State or Federal Governments.

General Requirements of the SPCC Plan:

1. The SPCC Plan shall be a carefully thought-out plan, prepared and implemented in accordance with accepted engineering standards and practices, and have the full approval of facility management at a level of authority sufficient to commit the necessary resources.
2. The complete SPCC Plan shall follow the sequence outlined in 40 CFR, paragraph 112.7 of the regulation and include a discussion of the facility's conformance with the appropriate guidelines listed.

Specific Requirements:

The plan must be certified by a registered professional engineer (see paragraph 112.3(d) of the regulation).

A complete copy of the SPCC Plan shall be maintained at the facility if the facility is normally attended at least eight hours per day, or at the nearest field office if the facility is not so attended. The plan is only submitted to the EPA or State Agencies under circumstances and conditions outlined in paragraph 112.3(f) and paragraph 112.4(a).

The SPCC Plan shall be made available to the EPA Regional Administrator, or to a duly authorized representative for on-site review during normal working hours.

If a discharge occurs in excess of 1,000 gallons in a single event, or two discharges occur in "harmful quantities" within any twelve month period, the owner/operator must then submit copies of the SPCC Plan to the Regional Administrator and to the State Agency in charge of water pollution control activities. Other information must accompany the SPCC Plan as outlined in paragraph 112.4(a).

After review of the SPCC Plan submitted under these circumstances, the Regional Administrator may require an amendment to the Plan as deemed necessary to prevent any future discharges.

Time Limits:

For Existing Facilities:

The effective date of the regulations was 11 January 1974, therefore, all existing facilities should already have prepared a Plan.

For New Facilities:

From time of startup of a new facility:

Six Months to Prepare SPCC Plan

AND

Twelve Months to Implement

Time Extensions:

The Regional Administrator may authorize an extension of time for the preparation and full implementation of an SPCC Plan beyond the time permitted (listed above) when he/she finds that the owner or operator of a facility cannot fully comply with the requirements of this part as a result of either unavailability of qualified personnel, or delays in the construction or equipment delivery beyond the control and without the fault of such owner or operator and their respective agents or employees.

Extension requests shall be submitted to the Regional Administrator and include:

1. A complete copy of the SPCC Plan, if completed;
2. A full explanation of the delay cause and specific aspects of the SPCC Plan affected by the delay;
3. A full discussion of actions being taken or contemplated to minimize or mitigate such delay; and
4. A proposed time schedule for the implementation of any corrective actions being taken or contemplated.

Questions Frequently Asked:

Question - What facilities are subject to the 40 CFR 112 Regulations?

Answer - Non-transportation related facilities which have:

1. Aboveground storage capacity in excess of 1,320 gallons or a single container in excess of 660 gallons, or
2. Underground storage capacity in excess of 42,000 gallons, and
3. Facilities which due to their location and storage capacities in 1 or 2 could reasonably be expected to discharge into waters of the United States if a spill should occur.

Question - What is considered a non-transportation related facility?

Answer -

- A) Fixed onshore and offshore oil well drilling facilities,
- B) Mobile onshore and offshore oil well drilling platforms, barges, trucks, or other similar facilities,
- C) Fixed onshore and offshore oil production structures, platforms, derricks, and rigs,
- D) Mobile onshore and offshore oil production facilities,
- E) Oil refining facilities,
- F) Oil storage facilities,
- G) Industrial, commercial, agricultural or public facilities which use or store oil,
- H) Waste treatment facilities,
- I) Loading racks, transfer hoses, loading arms and other equipment which are appurtenant to a non-transportation-related facility,
- J) Highway vehicles and railroad cars used to transport oil exclusively within the confines of a non-transportation-related facility, and
- K) Pipeline systems used to transport oil exclusively within the confines of a non-transportation-related facility.

Note: All the above entities excludes any portion of the facility, unit or process integrally associated with the handling or transferring of oil in bulk to or from a vessel.

Question - Who determines if a facility is in need of an SPCC Plan?

Answer - The owner or operator is required to make this assessment by the Regulation.

Question - What determines reasonability of a spill reaching U.S. navigable waters?

Answer - Location of the facility in relation to a stream, ditch, storm sewer, distance, volume of material, drainage patterns, soil conditions, etc. Further, according to the regulations, this determination is "Based solely upon . . . geographical locational aspects of the facility . . . and shall exclude consideration of manmade features such as dikes"

Question - Who is required to prepare the SPCC Plan?

Answer - The facility owner/operator. The Certifying Engineer may assist, but the owner/operator is responsible.

Question - Why does the SPCC Plan have to be certified?

Answer - To assure that good engineering practices are followed in preparing the SPCC Plan.

Question - What are the requirements for certification?

Answer - The engineer should be familiar with the provisions of 40 CFR Part 112 and must have examined the facility, and be registered in at least one state. It is not currently necessary to be registered in the state in which the facility is located.

Question - What constitutes an SPCC Plan?

Answer - A Plan that follows the guidelines suggested in the Regulations 40 CFR Part 112.7. Include a sketch or drawing of the site to assist in identification of site characteristics and layout, and the implementation of SPCC practices.

Question - When the SPCC Plan is completed and certified, is it sent to the EPA for review?

Answer - No, a certified copy of the Plan is required to be available at the facility for the EPA on-site review, if the facility is attended at least eight hours a day. If the facility is not attended, the Plan shall be kept at the nearest company office. But, it must be made available to either EPA or their representatives upon request during normal working hours. However, 40 CFR Part 112.4 requires any facility that has experienced a spill in excess of 1,000 U.S. gallons in a single event into navigable waters, or any two discharges of harmful quantities of oil, into navigable waters, within a 12 month period to submit their SPCC Plan to the EPA within 60 days of the incident(s).

Question - What is the time frame for plan preparation and implementation for a new facility?

Answer - The SPCC plan shall be prepared within six months after the date the facility begins operation and should be fully implemented no later than one year from the date the facility begins operation.

Question - Does the submission of a letter of request for extension relieve the owner or operator from his obligation to comply with the requirement of 112.3 (a), (b) or (c) of 40 CFR 112?

Answer - No, where an extension of time is authorized by the Regional Administrator for particular equipment or other specific aspects of the SPCC Plan, such an extension shall in no way affect the owner's or operator's obligation to comply with the requirements 112.3 (a), (b) or (c) with respect to other equipment or specific aspects of the plan for which an extension of time has not been expressly authorized.

Question - Is an SPCC Plan required when a facility has existing preventive systems in place and no previous history of spills?

Answer - The need for an SPCC plan is determined by two criteria; the storage capacity and the location in relationship to the waters of the U.S., disregarding existing manmade structures.

Question - When a production lease consists of several operations, such as wells, oil/water separators, collection systems, tank batteries, etc., does each operation require a separate SPCC Plan?

Answer - No, one SPCC Plan may include all operations within a single geographical area, as long as each operation is addressed in the Plan.

Question - Is every loss of oil or oil product subject to a penalty?

Answer - No, a discharge is defined in Section 311(a)(2) of the Federal Water Pollution Control Act (FWPCA) as including, but not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping that enters the navigable waters of the U.S. or on the adjoining shorelines in harmful quantities. If the water is affected, a penalty could be assessed. If a spill occurs and is prevented by some means from entering water, no penalty should be assessed.

Question - What is considered to be a harmful quantity?

Answer - See the Glossary at the end of this booklet for a definition.

Question - What are considered navigable waters?

Answer - See the Glossary at the end of this booklet for a definition.

Question - Is one spillage of oil into a municipal storm sewer a violation?

Answer - If oil reaches "navigable waters", a violation has occurred and penalties may result. The facility spilling the oil must also have an SPCC Plan implemented.

Question - What penalties are assessed?

Answer - Paragraph 112.6 of 40 CFR 112 authorizes the Regional Administrator to assess a civil penalty of up to \$5,000 for each day a violation continues.

Question - Can "Double Walled" tanks be used to meet the requirement for secondary containment?

Answer - The use of "Double Walled" tanks as a substitute for a single walled tank and dike is allowed under certain conditions. In addition to the tank, overfill alarms and automatic shut-off devices are required. Contact the EPA for specifics on the use of "Doubled Walled" tanks.

THE SPCC PLAN

Basic Concepts:

There is no rigid format for an SPCC Plan. The guidelines (40 CFR, Part 112.7) of the regulation suggesting a format is quoted - "The complete SPCC Plan shall follow the sequence outlined below, and include a discussion of the facility's conformance with the appropriate guidelines listed". These guidelines indicate "minimal" requirements and must necessarily provide wide latitude to the many types of facilities to which they apply. A synthesis of these guidelines is presented on the following pages.

Spills can best be controlled by installation of prevention systems, adherence to proper operating procedures, and preventative maintenance, supported by positive containment and removal. If these elements are well-thought-out and documented, the result will be an adequate SPCC Plan. Therefore, three basic principles should be embodied within an SPCC Plan:

1. The practices devoted to the prevention of oil spills.
2. The plan of containment should a spill occur.
3. The plan for removal and disposal of spilled oil.

Furthermore, the Plan must be maintained and/or revised according to any changes in operation, process, or facilities covered, within six months of the change (40 CFR Part 112.5).

Spill Prevention:

Operational errors and equipment failures are the primary causes of spills. Therefore, the plan should contain measures designed to avoid these errors and failures.

Operational Errors can be minimized through:

1. Personnel training.
2. Operator awareness of the imperative nature of spill prevention.
3. Adequate supervision of procedures.

Management must be committed to spill prevention and must develop and enforce techniques for safe and efficient operation.

Equipment Failures can be minimized through:

1. Proper initial selection and construction.
2. Maintenance of structural integrity and function.
3. Frequent inspections.

Industry standards and sound engineering practices dictate the proper course of action in each of these areas.

Containment of Spilled Oil:

In this EPA Region, we are generally concerned with spills from facilities where positive containment devices and systems are practical and effective. Dikes, retaining walls, curbing, spill diversion ponds, sumps, etc. fall into the category of prevention systems. Only where impracticability to provide positive containment can be clearly demonstrated does the facility have the option to take the "contingency" plan approach. Contingency plans are considered "reactive" in nature - that is, they generally describe after-the-fact actions and can be expected to mitigate the effects of a spill after it occurs. Therefore, preventative systems must be given first priority considerations in the initial study and preparation of the SPCC Plan.

*"Impracticability to provide positive containment" alludes mainly to those cases where severe space limitations may preclude installation of structures or equipment to prevent oil from reaching water. Justifying "Impracticability" on the basis of financial considerations is difficult because the required commitment of manpower, equipment, and materials to expeditiously control, remove, and disperse spilled oil would not normally offer any significant economic advantage.

Elements of an SPCC Plan:

While each SPCC Plan is unique, there are certain elements which may be included almost without exception to make a plan comply with provisions of the regulation and the spirit of oil spill prevention. These elements are discussed or listed as follows:

Name of Facility - This may or may not be the business name.

Type of Facility - This briefly describes the business activity.

Date of Initial Operation - The date that the facility began operation.

Location of Facility - This may be a word description or city address which can be supported by area maps.

Name and Address of Owner - Usually an address if remote from the facility location.

Designated Person Responsible for Oil Spill Prevention - Each facility should have some person with overall oil spill responsibility. This person should be thoroughly familiar with the regulation and the facility's SPCC Plan.

Oil Spill History - This section can be either a reactive declaration, or a detailed history of significant spill events which occurred in the twelve month period prior to the publication of the regulation. In the latter case, typical information would include:

1. Type and amount of oil spilled,
2. Location, date, and time of spill(s);
3. Watercourse affected,
4. Description of physical damage,
5. Cost of damage,
6. Cost of cleanup,
7. Cause of spill,
8. Action taken to prevent recurrence.

Management Approval - This is a signed statement of a person with the authority to commit management to implementation of the plan.

Certification - This is a statement of plan certification under the seal, signature, state, and registration number of a registered professional engineer. The certifying engineer does not have to be registered in the state in which the facility is located.

Periodic Review - This is a signed and dated statement by the owners and operators that a review and evaluation of the SPCC Plan has been performed. A review of the plan must be completed at least once every three years. As a result of the review evaluation the owner or operator shall amend the SPCC Plan within six months of the review to include more effective prevention and control technology if the technology will significantly reduce the likelihood of a spill event and the technology has been field-proven at the time of review.

Note: All of the above information may be presented on a single page of an SPCC Plan. As an example, in Appendix A is a sheet entitled Certification Information.

Facility Analysis - A portion of the plan should include a description of the facility operation, which should generally indicate the magnitude of spill potential. For example, the amount and type of storage, normal increments of transfer or patterns of usage, distribution, processes, etc. In this analysis, the direction of flow of spilled oil should be indicated along with any factors which are pertinent to or influence spill potential. It is appropriate to support this type of information by charts, tables, plot plans, etc., to aid clarity or promote brevity.

Location of Facility - The geographical location is an integral part of the SPCC Plan. Location and topographic maps can be critical in determining the adverse consequences of an oil spill. Sources for such maps include: (1) U.S. Geological Survey, (2) State Highway Department, (3) County Highway Engineer, (4) local land surveys, and (5) City Engineer.

Facility Inspection - An inspection report covering the facility in terms of equipment, containment, operation, drainage, security, etc., may provide essential information necessary to formulate the SPCC Plan. Therefore, such reports could reasonably be incorporated as part of the Plan. This kind of report would best serve in more complex facilities and is not necessarily considered an element common to all SPCC Plans.

Amendment of SPCC Plans - Paragraph 112.5 (a), (b) and (c) of 40 CFR 112 states that owners or operators of facilities shall amend the SPCC Plan whenever there is a change in facility design, construction, operation or maintenance which materially affects the facility's potential for the discharge of oil into or upon the waters of the United States or adjoining shorelines. Amendments shall be fully implemented as soon as possible, but no later than six months after the discharge occurs. Amendments must be certified by a professional engineer in accordance with 40 CFR 112.3(d).

Facility Drainage (onshore) - All drainage from diked storage areas shall be restrained by valves or other positive means to prevent a spill or leakage of oil into the drainage system or in-plant effluent treatment system, except where plan systems are designed to handle such leakage. Pumps or ejectors for draining diked areas should be manually activated and secured when not in use and condition of the accumulation should be examined before draining to be sure no oil will be discharged into the water. Flapper-type drain valves should not be used to drain diked areas. As stated in 40 CFR 112.7 (e), (1), (ii) when plant drainage drains directly into a watercourse and not into wastewater treatment plants, retained storm water should be inspected to ensure the bypass valve is normally sealed closed; inspection of the runoff rainwater ensures compliance with applicable water quality standards; and the bypass valve is resealed following drainage under responsible supervision. Plant drainage systems from undiked areas should flow into areas designed to retain oil or return it to the facility. Catchment basins should not be located in areas subject to periodic flooding.

Bulk Storage Tanks - No tank should be used for the storage of oil unless its material and construction are compatible with the material stored and conditions of storage, such as pressure and temperature. All bulk storage installations should have secondary means of containment for the entire contents of the largest single tank plus sufficient freeboard to allow for precipitation. This is normally interpreted to be at least 10-15% additional volume. Mobile or portable oil storage tanks (onshore) should be positioned or located so as to prevent spilled oil from reaching navigable waters. The following areas, if applicable, should be addressed in the SPCC plan for facilities containing bulk storage tanks.

1. Are containment dikes constructed with materials sufficiently impervious to contain spilled oil?
2. Are catchment basins or trenches sufficient for retaining or returning oil to the facility and are not in areas subject to periodic flooding?
3. Is the area secured?
4. Are buried tanks protected from corrosion with coatings, cathodic protection or other effective methods compatible with local soil conditions, and are buried tanks subjected to regular pressure testings or other suitable testings procedures?
5. Are aboveground tanks subjected to periodic integrity testing, such as hydrostatic testing, visual inspections for signs of deterioration or leaks, or non-destructive shell thickness testing?

6. Are tank supports and foundations appropriate?
7. Are high liquid level alarms audible or visual signals, or high liquid pump cutoff devices available and tested frequently?
8. Are direct audible or code signal communications between the tank gauger and pumping station present and sufficient?
9. Are mobile or portable tanks positioned to prevent spilled oil from reaching the navigable waters.

Facility Transfer Operations, Pumping, and In-Plant Process -

1. Is buried piping protectively wrapped and coated, and cathodically protected?
2. Is piping which is not in service for extended times capped or blank-flanged?
3. Are piping supports designed to minimize abrasion?
4. Are above ground valves and pipelines subject to regular examinations?
5. Is vehicular traffic aware (warned) of above ground piping?

Facility Tank Car and Truck Loading/Unloading Rack Areas - Facility tank car and truck loading/unloading should meet the minimum requirements and regulations established by the Department of Transportation. Rack areas should have a containment system designed to hold at least the maximum capacity of any single compartment of a tank car or truck in the rack area. If a containment system is not available the facility should provide a draining system that would prevent the release of oil into the surrounding waters, and allow for recovery of the spilled oil.

Site Security - Security of all plants handling, processing, and storing oil (excluding oil production facilities) should be fully fenced, and entrance gates should be locked or guarded when the plant is not in production or is unattended. All master flow drain valves that may permit direct outward flow of the tank's content to the surface should be securely locked in the closed position when in non-operating or non-standby status. The starter control on all oil pumps should be locked in the off position or located at a site accessible only to authorized personnel when the pumps are in a non-operating or non-standby status. The loading/unloading connections of oil pipelines should be securely capped or blank-flanged when not in service for an extended time. Facility lighting should be suitable to: 1) aid in the discovery of spills occurring at night, and 2) prevent spills occurring through acts of vandalism.

Most Common Flaws/Problems With SPCC Plans and Implementation:

- o No SPCC Plan available or if available, not approved by a certified engineer.
- o SPCC Plan is not up to date; i.e., not implemented or reviewed recently. The regulations require owners and operators to review and evaluate their SPCC Plans once every three years (40 CFR Part 112.5).
- o Drain valve types or operation logs not sufficient or available.
- o Site security is inadequate; i.e., no locks or fences.
- o Inadequate loading/unloading area containment.
- o Containment lacking or insufficient; i.e., existing cracks or too small.
- o Leaking pipes.
- o Tanks have flaws or are not labeled.
- o Pipes or valves are exposed and do not have crash barriers.
- o Emergency procedures lacking or insufficient.
- o Safety equipment inadequate or lacking.
- o Inadequate access to spill supplies.
- o Illegal off-site drainage.
- o Facility personnel inadequately trained in spill prevention.

SPCC EXAMPLES

Several industrial trade associations have developed suggested SPCC Plan preparation guidelines for use by their members. Generally these guidelines were developed for a particular type of facility and have been very helpful. However, care should be exercised not to rely totally on any stereotyped format. Each plan is unique to the facility and requires individual thought processes and tailoring to specific spill hazards.

The American Petroleum Institute has prepared a bulletin entitled "Suggested Procedure for Development of Spill Prevention Control and Countermeasure Plans" (API Bulletin D 16). This was designed primarily for oil production facilities.

The National Oil Jobbers Council has prepared a sample SPCC Plan covering a modest sized bulk plant which includes written and graphic details along with a dike design procedure. A modified copy of this is included in Appendix B.

APPENDIX A
EXAMPLE CERTIFICATION PAGE

An example of a certification page for an SPCC Plan is shown below.

Certification Information:

- A. Name of Facility - Washington Bulk Storage Terminal
- B. Type of Facility - Crude Oil Storage and Handling
- C. Date of Initial Operation - 1 January 1974
- D. Location of Facility - 1111 Main Street, Seattle, Washington
- E. Name and Address of Owner:
ABC Oil Company
P.O. Box 100
Oilville, Washington 98000
- F. Designated Person Responsible for Oil Spill Prevention:
Name: John Doe
- G. Oil Spill History - This facility has experienced no significant oil spill events during the twelve months prior to 10 January 1974.
- H. Management Approval - Full approval is extended by Management at a level with authority to commit the necessary resources toward spill prevention.

Signature

Name: Ms. A.A. Jones

Title: President, ABC Oil Company

- I. Certification - I hereby certify that I have examined the facility and, being familiar with the provisions of 40 CFR, Part 112 attest that this SPCC Plan has been prepared in accordance with good engineering practices.

Name: I.M. TAT

Signature:

(Seal)

Date: 10 January 1974

Registration No: 0000-00
State: Oregon

APPENDIX B
SAMPLE SPCC PLAN

Spill Prevention Control and Countermeasure Plan

Washington Bulk Storage Terminal
ABC Oil Company
1111 Main Street
Seattle, Washington 98000
Telephone (000) 123-4567

Contact
John Doe, Manager

Certification:
Engineer: I.M. TAT

Signature:

License Number: 0000-00

(Seal)

State: Oregon

Date: 10 January 1974

1. Name and Ownership

Name: ABC Oil Company
100 Neverspill Road
Post Office Box 100
Oilville, Washington 98000
Telephone (123) 456-7890

Manager: John Doe
505 Oil Road
Oilville, Washington 98000
Telephone: (123) 456-0987

Owner: Ms. A.A. Jones

Other

Personnel: Secretary-Bookkeeper
Dispatcher
Transport Driver
(3) Delivery People

Service

Area: King County, Washington

2. Description of Facility

The bulk plant of the ABC Oil Company handles, stores, and distributes petroleum products in the form of motor gasoline, kerosene, and No. 2 fuel oil. The accompanying drawing shows the

property boundaries and adjacent highway, drainage ditches, on-site buildings, and oil handling facilities.

Fixed

Storage: (2) 20,000 gallon vertical tanks (premium gasoline)
(2) 20,000 gallon vertical tanks (regular gasoline)
(2) 20,000 gallon vertical tanks (No. 2 fuel oil)
(1) 20,000 gallon vertical tanks (kerosene)

Total: 140,000 gallons

Vehicles: (1) Transport Truck
(4) Tankwagon Delivery Trucks

The bulk plant is surrounded by steel security fencing and the gate is locked when the plant is unattended. Two area lights are located in such positions so as to illuminate the office and storage areas.

3. Past Spill Experiences

(None)

4. Spill Prevention - Storage Tanks

- 1) Each tank is UL-142 construction (aboveground use).
- 2) The main outlet valve on each tank is lock-shut when the plant is unattended.
- 3) Each tank is equipped with a direct-reading gauge.
- 4) Venting capacity is suitable for the fill and withdrawal rates.
- 5) Main power switch for pumps is located in a box which is locked when the bulk plant is unattended.
- 6) A dike surrounds the tank assembly. Its volume (height vs. area) is computed based on a single largest tank within (20,000 gallons) and allowance is made for all additional vertical tank displacement volumes below the dike height (estimated spill liquid level). Total storage capacity is 140,000 gallons. A 2-inch water drain is located at the lowest point within dike enclosure and it connects to a normally-closed gate valve outside the dike.

5. Spill Prevention - Vehicular

1) On site

The frontal highway ditch and the ditch on the property's southern boundary intersect before crossing the highway through a culvert headed eastward and eventually to a stream located approximately one-half mile distant. Emergency containment action will constitute the erection of an earthen dam and placement of absorbent pillars at the entrance to the culvert. Additional cascading of barriers will be provided as necessary.

Personnel training and drill are described herein later.

2) Off site

Each vehicle is equipped with a shovel and two absorbent

pillars. The driver is instructed to achieve emergency containment, if possible, then call the office for help immediately.

6. Personnel

All personnel have been instructed and rehearsed in the following SPCC practices:

- 1) No tank compartments to be filled prior to checking reserves.
- 2) No pump operations unless attended continuously.
- 3) Warning signs are displayed to check for line disconnections before vehicle departures.
- 4) Instruction has been held on oil spill prevention, containment, and retrieval methods, and a "dry-run" drill for an on-site vehicular spill incident has been conducted.
- 5) Instructions and phone numbers have been publicized and posted at the office regarding the report of a spill to the National Response Center (1-800-424-8802), the U.S. Coast Guard, the EPA, and the applicable State Environmental agency.
- 6) Instructions and company regulations have been posted conspicuously which relate to oil spill prevention and countermeasure procedures.

7. Future Spill Prevention Plans

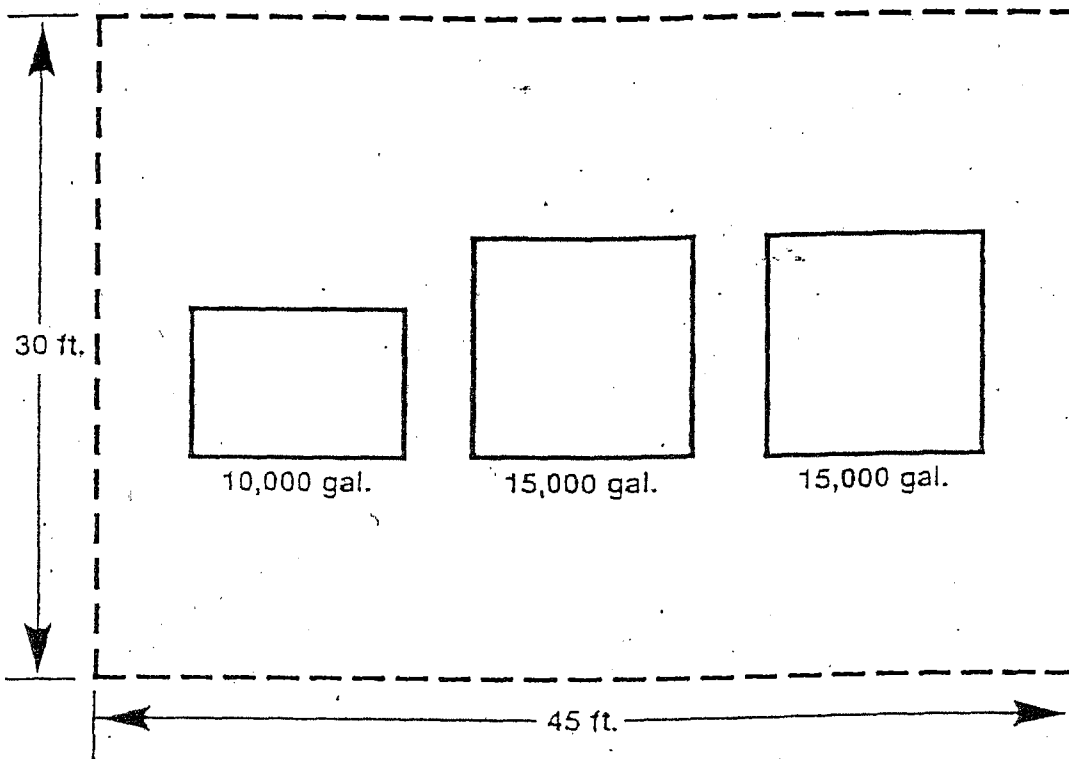
By July 10, 1996 (implementation deadline) the following additional plans will be completed:

- 1) On-site storage of spill containment and retrieval materials and equipment: bagged absorbent, absorbent pillars and booms, and tools. Storage facility will be well-publicized and clearly identified.
- 2) Installation of a sand-filled catchment basin for minor, routine spillage at loading pump intakes and at loading rack. Sand to be periodically replaced.
- 3) A routine inspection program with check-off listing of tanks, piping, valves, hoses, and pumps for the prevention of both major spills and also minor spills or leakage through proper maintenance.

John Doe

Signature

1. Example of Design: Horizontal Tanks Only
Plan View - Available dike position



- (a) Minimum Containment Volume is single largest tank dike: 15,000 gallons, this example

$$15,000 \text{ gal.}, @.1337 \text{ cu ft/gal} = 2006 \text{ cu ft.}$$

- (b) Available Area:

$$30 \text{ ft} \times 45 \text{ ft} = 1350 \text{ sq ft, this example.}$$

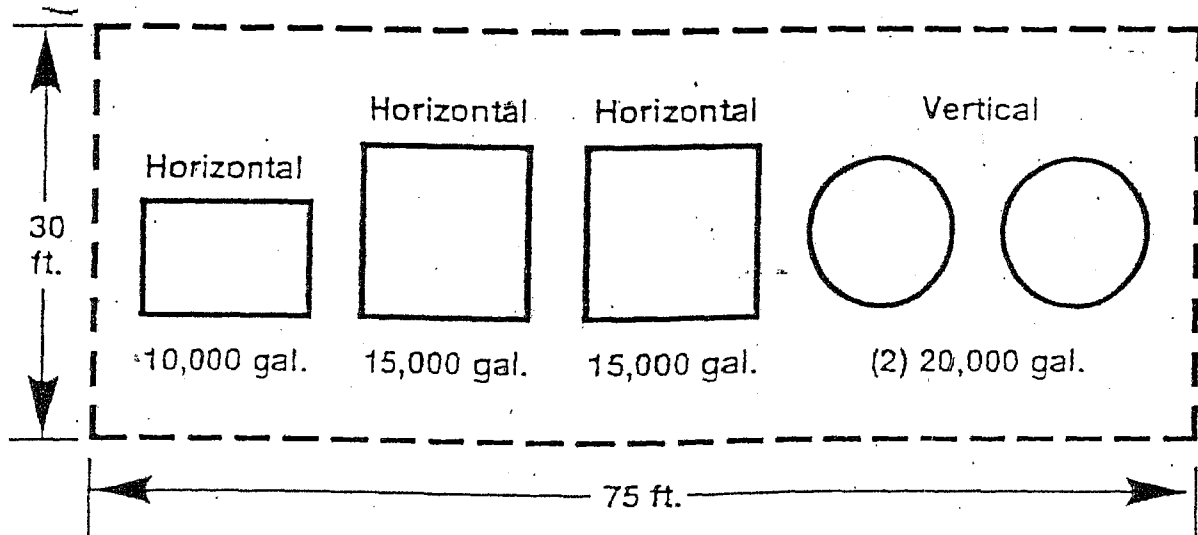
- (c) Average Dike Height "h" is:

$$h \times 1350 \text{ sq ft} = 2006 \text{ cu ft.}$$

$$h = 2006 \div 1350$$

$$h = 1.486 \text{ ft.} = 17.8 \text{ inches plus freeboard.}$$

2. Example of Design: Horizontal and Vertical Tanks
Plan View - Available dike portion



- (a) From code, the Minimum Containment Volume is single largest tank within dike: 20,000 gallons, this example.
 $20,000 \text{ gallons} \times .1337 \text{ cu ft/gallon} = 2674 \text{ cu ft.}$
- (b) Available Dike Area, this example: $30 \text{ ft} \times 75 \text{ ft} = 2250 \text{ sq ft.}$
- (c) Observe that some volume of the vertical tanks goes below the dike wall height (see last sentence, paragraph 1.a). This volume of the second 20,000 gallon tank (and any additional verticals) assumed not ruptured must be considered.
- (d) Average Dike Height "h" is:

$h \times \text{Area of Dike} = \text{Minimum Containment Volume} + h \times \text{circular area of second and any additional vertical tanks.}$

$$h \times 2250 \text{ sq ft} = 2674 \text{ cu ft} + h \times 3.14 \times 5.25 \times 5.25 \text{ (radius squared)}$$

$$2250 h - 86.5 h = 2674$$

$$2163.5 h = 1.236 \text{ ft} = 14.8 \text{ inches.}$$

Average Dike Height = approximately 15 inches plus freeboard.

GLOSSARY

- Discharge:** Includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping. Excludes discharges in compliance with a permit under section 402 of the Clean Water Act (CWA); discharges resulting from circumstances identified, reviewed, and made part of the public record with respect to a permit issued or modified under section 402 of the CWA, and subject to a conditions in such permit; or continuous or anticipated intermittent discharges from a point source, identified in a permit or permit application under section 402 of the CWA, that are caused by events occurring within the scope of relevant operating or treatment systems.
- Facility:** Any mobile or fixed, onshore or offshore building, structure, installation, equipment, pipe, or pipeline used in oil well drilling operations, oil production, oil refining, oil storage, and waste treatment. The boundaries of a facility may depend on several site-specific factors, including, but not limited to, the ownership or operation of building, structures, and equipment on the same site and the types of activity at the site.
- Harmful Quantity:** Includes discharges of oil that violate applicable water quality standards or cause a sludge or emission to be deposited beneath the surface of the water or upon adjoining shorelines.
- Injury:** A measurable adverse change, either long- or short-term, in the chemical or physical quality or the viability of a natural resource resulting either directly or indirectly from exposure to a discharge of oil, or exposure to a product of reactions resulting from a discharge of oil.
- Navigable Waters:** As defined by 40 CFR Part 110.1, means the waters of the United States, including the territorial seas. The term includes:
- (a) All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide;
 - (b) Interstate waters, including interstate wetlands;

- (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, and wetlands, the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
 - (1) That are or could be used by interstate or foreign travelers for recreational or other purposes;
 - (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce;
 - (3) That are used or could be used for industrial purposes by industries in interstate commerce;
- (d) All impounds of waters otherwise defined as navigable waters under this section;
- (e) Tributaries of waters identified in paragraphs (a) through (d) of this definition, including adjacent wetlands; and
- (f) Wetlands adjacent to waters identified in paragraphs (a) through (e) of this definition: Provided, that waste treatment systems (other than cooling ponds meeting the criteria of this paragraph) are not waters of the U.S.

Nearshore Area:

The area extending seaward 12 miles from the boundary lines defined in 46 CFR Part 7, except in the Gulf of Mexico. In the Gulf of Mexico the nearshore area is the area extending seaward 12 miles from the line of demarcation (COLREG lines) defined in 33 CFR 80.740-80.850.

Non-persistent Oil:

A petroleum-based oil that, at the time of shipment, consists of hydrocarbon fractions: (1) at least 50% of which by volume, distill at a temperature of 340 degrees C (645 degrees F) and (2) at least 95% of which by volume, distill at a temperature of 370 degrees C (700 degrees F). A Group 1 oil can also be a non-petroleum oil with a specific gravity less than 0.8.

Non-petroleum Oil:

Oil of any kind that is not petroleum based. It includes, but is not limited to, animal and vegetable oils.

Oil:

Oil in any kind or in any form, including, but not limited to petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged soil.

Onshore Production Facilities:

Includes all wells, flowlines, separation equipment, storage facilities, gathering lines, and auxiliary non-transportation-related equipment and facilities in a single geographical oil or gas field operated by a single operator.

Owner/Operator: Any person owning or operating an onshore facility or an offshore facility, and in the case of any abandoned offshore facility, the person who owned or operated or maintained such facility immediately prior to such abandonment.

Persistent Oil: Includes a petroleum-based oil that does not meet the distillation criteria for a non-persistent oil. Persistent oils are further classified based on specific gravity as follows:
Group II Specific gravity less than .85,
Group III Specific gravity between .85 and .95
Group IV Specific gravity between .95 and 1.0
Group V Specific gravity greater than 1.0
This criteria is also applicable to non-petroleum oils.

Regional Administrator: The EPA Regional Administrator or a designee of the Regional Administrator, in and for the Region in which the facility is located.

Rivers and Canals: Includes bodies of water confined within the inland area with a project depth of 12 feet or less, including the Intracoastal Waterway and other waterways artificially created for navigation.

SPCC Plan: The document required by the Oil Pollution Prevention regulation that details the equipment, manpower, procedures, and steps to prevent, control and provide adequate countermeasures to an oil spill. The plan is a written description of the facility's compliance with the procedures of this regulation.



COUNTY OF SONOMA
DEPARTMENT OF EMERGENCY SERVICES
FIRE SERVICES o EMERGENCY MANAGEMENT o HAZARDOUS MATERIALS

VERNON A. LOSH II, DIRECTOR

FOR THE
RANCHO ADOBE FIRE PROTECTION DISTRICT

TO: Permit and Resource Management Department
(Building Department)

FROM: Jerry Faddis, Fire Protection Plans Examiner.
(707) 565-2410, FAX (707) 565-1972 or JFADDIS@SONOMA-COUNTY.ORG

DATE: May. 9, 2002

SUBJECT: ~~BLD 02-1581~~
Address: 500 Meacham Rd.
Applicant: County of Sonoma
Scope: Underground oil/water separator tank 2000 gal.

The Department of Emergency Services (DES) Plan check fee for this permit is \$219.00 and the field inspection fee is \$219.00. These fees will be collected when the permit is issued by the Sonoma County Permit and Resources Management Department.

This proposal is in reasonable compliance with the Uniform Fire Code and Fire Safe Standards as adopted by the County of Sonoma and **approved** with the following conditions:

This project has been reviewed and approved by the DES Hazardous Materials Office.

Inspections Prior to final approval, all Fire Safe Standards and/or Uniform Fire Code conditions must be verified by field inspection by a member of the **Sonoma County Department of Emergency Services**. There shall be inspections of the following portions of this project:

- 1) Fire Final (198)

Your job has been billed for 3 hour(s) of field inspection. If more time is needed to inspect this project, you will be billed at a rate of \$ 73.00/hr., two-hour minimum. Automated inspection requests shall be made in advance by calling the Permit and Resource Management Department at (707) 565-3551.

COUNTY OF SONOMA
DEPARTMENT OF TRANSPORTATION & PUBLIC WORKS
INTEGRATED WASTE DIVISION - OPERATIONS HEADQUARTERS
500 MECHAM ROAD, PETALUMA, CA 94952
PHONE (707) 792-0547, FAX (707) 792-0416

MEMORANDUM

Date: March 21, 2002

Subj.: Central Disposal Site Operational Improvement
Fuel Pad Containment System - Oil/Water Separator

PROJECT DESCRIPTION

1. Enclosed is a layout of the fuel pad containment system. The contractor is to install a 12-inch wide Polydrain trench drain (800 Series MAXI Heavy Duty approx. 216 ft) and discharge into a 12-inch HDPE culvert which then drain into CB #14. The beginning of the trench drain shall intercept/connect into the valley gutter at the fire hydrant located past the fuel pad on the west end.
2. A drain inlet for a 6-inch pipe shall be installed at the eastern end of the white good pad within the valley gutter. The contractor is to install a 2,000 gallon double wall CSI -10 oil/water separator tank (approx. a 6' dia. by 13' 9" long) by Containment Solutions. The inlet and outlet pipes for this tank shall be a 6" PVC Schedule 80 pipe and discharge into CB #14. The tank installation shall include an electronic tank monitoring system and an external monitoring well.

CHOOSE YOUR INDUSTRY

Petroleum
Lubricants / Automotive
Water / Wastewater
Chemical
Service

Oil/Water Separators

Underground Fiberglass Oil/Water Separators: Typical System Overview

- [Scroll Down for System Illustration](#)

Standard Features:

A. Fiberglass Double-Wall Tank

Rustproof, continuous monitoring, and precision testing capability, with factory installed Hydrostatic monitor and proven performance backed by Containment Solutions.

B. Enhanced Coalescer Oil/Water Separator System

State-of-the-art separating system that provides superior performance, easy to clean coalescing plates and modular construction. Plates can be removed from units for cleaning and/or tank entry. This system can remove free oil to achieve a 10 ppm or 15 ppm effluent quality.**

C. Optional Fiberglass Reservoir

The heart of the double-wall tank Hydrostatic Monitor System. When used with factory installed monitoring fluid, this system can be used as a continuous monitor with precision testing capability.

D. Optional Electronic Monitoring System

Containment Solutions can provide optional electronic equipment that can monitor your double-wall tank and/or the accumulated oil buildup within your tank.

Other Optional Accessories

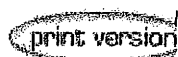
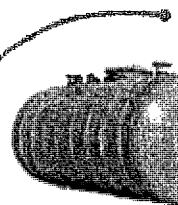
Containment Solutions can provide additional accessories to complete your underground Oil/Water Separator Tank installation, including pumps and pump controls.

Containment Solutions, Inc. Oil/Water Separators are designed to separate free oil and grease and settleable solids from water. The separated oil is retained within the Oil/Water Separator and the clean water is discharged from the Separator. Optional waste oil pump-out systems are available.

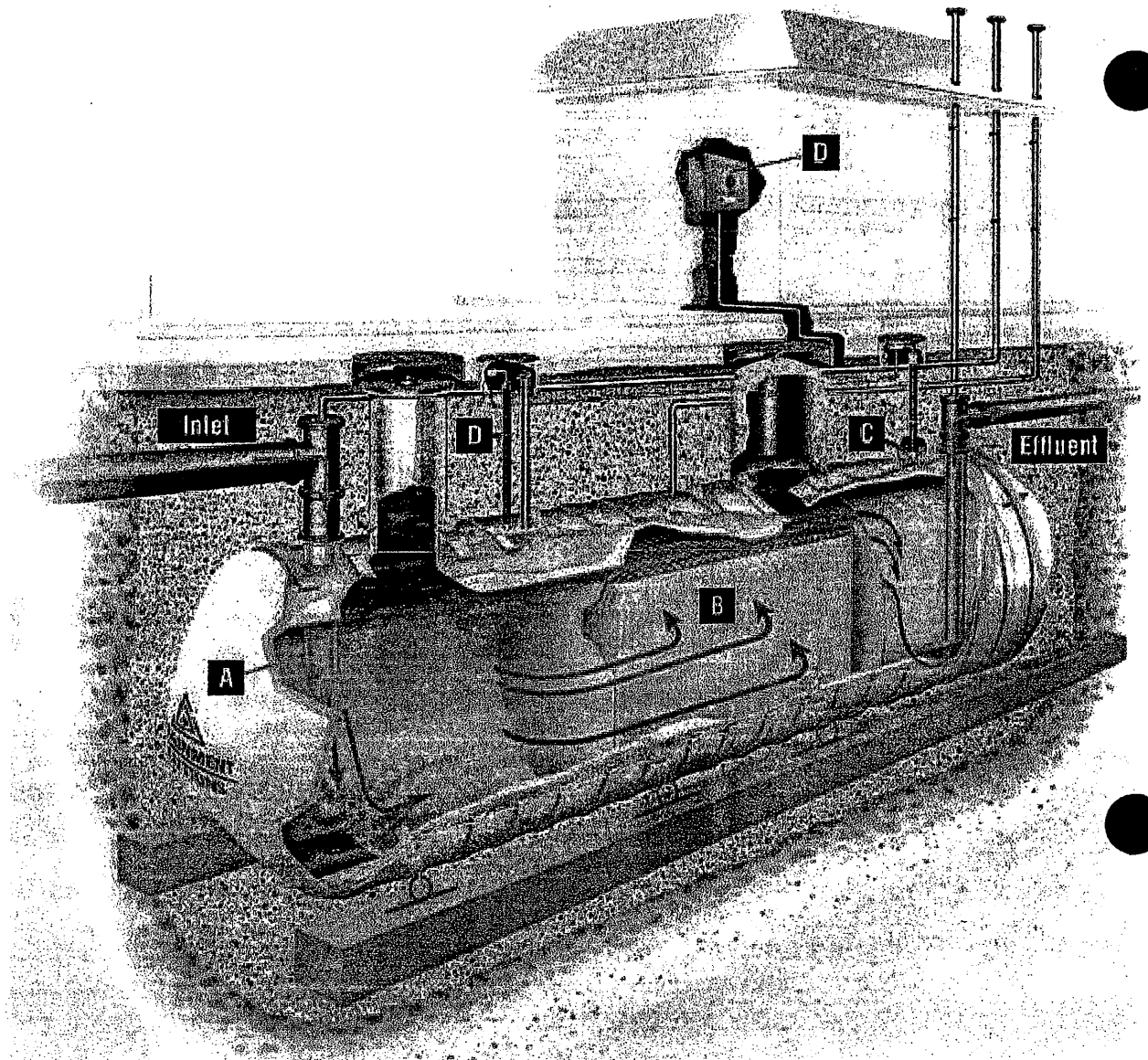
Optional Designs Available

- Effluent pump-out systems
- Waste oil pump-out systems

** Conditions differ for every installation. Contact your Containment Solutions'



Representative for an evaluation of your particular needs.



[[Chemical](#) | [Water / Wastewater](#) | [Petroleum](#) | [Lubricants / Automotive](#) | [Service](#)
[Contact Us](#) | [Home](#)]

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Containment Solutions' Oil/Water Separators Models CSI-10 and CSI-15

To Achieve 10 ppm or 15 ppm Oil Effluent

Models CSI-10 or CSI- 15	Nominal Volume Gallons	Nominal Dia (ft)	Single- Wall Tank (SWT) Length	Double- Wall Tank (DWT) Length	Inlet/ Outlet Nozzle Size (in)	Flow Rate (gpm)	Oil Storage Capacity (gal)	Storage & Oil Spill Capacity* (gal)	Single- Wall Tank Weight (lbs)	Double- Wall Tank Weight (lbs)
550	550	4'	9' 8"	9' 9"	4	55	110	440	425	900
1,000	1,000	4'	11' 0"	11' 1"	4	100	200	800	500	1,050
1,500	1,500	4'	16' 10"	16' 11"	4	150	300	1,200	750	1,275
2,000	2,000	6'	13' 10"	13' 9"	6	200	400	1,500	1,000	2,275
3,000	3,000	6'	16' 0"	16' 9"	6	300	600	2,400	1,075	2,750
4,000	4,000	6'	19' 8"	19' 9"	6	400	800	3,200	1,475	2,975
5,000	5,000	6'	24' 7"	25' 0"	8	500	1,000	4,000	1,800	3,475
6,000	6,000	6'	29' 6"	30' 3"	8	600	1,200	4,800	2,100	3,900
6,000	6,000	8'	19' 5"	19' 6"	8	600	1,200	4,800	2,300	4,200
7,000	7,000	8'	22' 2"	23' 7"	8	700	1,400	5,600	2,650	4,675
8,000	8,000	8'	24' 11"	26' 4"	10	800	1,600	6,400	2,950	5,075
9,000	9,000	8'	27' 8"	27' 9"	10	900	1,800	7,200	3,300	5,450
10,000	10,000	8'	30' 5"	30' 6"	10	1,000	2,000	8,000	3,550	5,950
12,000	12,000	8'	35' 11"	36' 0"	10	1,200	2,400	9,600	4,375	7,000
15,000	15,000	8'	44' 5"	44' 6"	12	1,500	3,000	12,000	5,350	8,650
20,000	20,000	10'	37' 8"	37' 9"	14	2,000	4,000	16,000	6,950	11,900
25,000	25,000	10'	45' 11"	46' 0"	16	2,500	5,000	20,000	8,300	13,900
30,000	30,000	10'	54' 2"	54' 3"	16	3,000	6,000	24,000	9,600	16,300
40,000	40,000	10'	71' 3"	71' 4"	20	4,000	8,000	32,000	12,650	20,975

*Actual capacity - 870 Gallons

**Emergency oil spill capacity is 80% of tank volume based on no accumulated oil in vessel at time of spill.

CSI Oil/Water Separators are designed in accordance with Stokes Law, API 1630 and API 421, for the gravity separation of free oils and settleable solids from water, for intermittent and variable flows of oil/water combinations up to 20% oil concentration.

SPECIFICATIONS

UNDERGROUND FIBERGLASS OIL/WATER SEPARATOR SPECIFICATIONS

(FOR NON UL LISTED TANKS, PLEASE DELETE ALL SECTIONS
PREFACED BY "UL 2215 LISTED OIL/WATER SEPARATORS ONLY")

SECTION 02700 DRAINAGE

PART 1: GENERAL

1.01 Related Documents

1. The provisions of the General Conditions, Supplementary Conditions, Sections included under Division 1, General Requirements, and Section _____ of this Division are included as part of this Section as though bound herein.
2. Refer to details and schedules on the drawings for additional requirements.

1.02 Related Work

1. Concrete drop out box: contractor to furnish and install (1) precast drop out box.
2. Plastic pipe: contractor to furnish and install all necessary PVC drainage pipe and fittings. Contractor shall install one butterfly valve between the drop out box and tank inlet, as well as one additional butterfly valve between the outlet of the separator and the effluent pipe.

1.03 Description/Summary

1. The Contractor shall furnish the labor, materials, equipment, appliances, services and hauling, and perform operations in connection with the construction and installation of the work. Work shall be as herein specified and as denoted on the accompanying Drawings but not limited to the following general terms of work:
 - a. Storm sewers.
 - b. Sanitary sewer
 - c. Catch basin and manholes
 - d. Trench drains
 - e. Oil/water separators
2. Provide _____ double wall 1000 gallon reinforced fiberglass oil/water separator tank(s), hold-down straps and anchoring system, hydrostatic leak detection system for tanks, turbine enclosure or manway extension, piping and venting for the influent and effluent, vent piping and cap for tank, and ~~oil draw-off pump(s) (if necessary)~~ required to make a complete installation ready for use.
3. ~~Provide _____ single wall _____ gallon reinforced fiberglass oil/water separator tank(s), hold-down straps and anchoring system, turbine enclosure or manway extension, piping and venting for the influent and effluent, vent piping and cap for tank, and oil draw-off pump(s) (if necessary) required to make a complete installation~~

ready for use.

4. The separator shall be a pre-packaged, pre-engineered, ready to install unit. The Contractor will provide filling of tanks with clean water.
5. Tanks/anchoring system shall be constructed for non-flotation under full submersion of water.
6. The contractor shall mechanically unload the oil/water separator at the job site.

1.04 Governing Standards

1. ASTM Specification D4021-92. Glass Fiber Reinforced Polyester Underground Petroleum Storage Tanks.
2. U.L. 1316 Underwriters Laboratories, Inc. Glassfiber Reinforced Plastic Underground Storage Tanks for Petroleum Products.
3. National Fire Protection Assoc. (NFPA 30 Flammable and Combustible Liquids Code, (NFPA 30A) Automotive and Marine Service Station Code, (NFPA 70) National Electrical Code.
4. Military Specification MIL-T-52777A, dated July 6, 1978, Tanks, Storage, Underground, Glass Fiber Reinforced Plastic.
5. General Service Administration, Public Building Service Guide Specification, PBS: 1568.
6. All tanks and piping shall be properly installed in accordance with the manufacturer's instructions and either "Petroleum Equipment Institute Publication RP100-97; Recommended Practices for Installation of Underground Liquid Storage Systems" or "American Petroleum Institute Publication 1615-87; Installation of Underground Petroleum Storage Systems."
7. Piping to and from oil/water separator shall be non-metallic.
8. ASTM Specification D2996. Filament Wound Reinforced Thermosetting Resin in pipe.
9. API manual on disposal of refinery wastes
10. API bulletin no. 1630 first edition
11. API bulletin no. 421
(UL 2215 Listed Oil/water Separators Only)
12. Coast Guard Specification 46 CFR 162.50 - 46 CFR Chapter 1 Coast Guard, Department of Transportation, Subchapter Q, Equipment Construction and Material: Specifications and Approval, Part 162 Engineering Equipment, Subpart .050 Pollution Prevention Equipment.
13. EPA Test Method 413.1, Oil and Grease, Total Recoverable (Gravimetric, Separatory Funnel Extraction).
14. EPA Test Method 413.2, Oil and Grease, Total Recoverable Spectrophotometric, Infrared).
(UL 2215 Listed Oil/water Separators Only)
15. Underwriters Laboratories 2215 - Construction/Performance Test Listing.

~~1.5 Quality Assurance~~

~~(UL 2215 Listed Oil/water Separators Only)~~

- ~~1. Test Data: The manufacturer must provide test data and a written report proving that the oil/water separator is capable of producing effluent with no more than 10 ppm or 15 ppm (depending on the design selected) free oil and grease (not dissolved nor chemically~~

emulsified with soaps or detergents) when tested using the Coast Guard test method 46 CFR 162.50. The test inlet oils include both 0.8 and 0.95 specific gravity (approximate) oils.

For both oils, the testing and report will show results for:

- a) Pre-loading the test vessel with each oil prior to starting the performance testing for that specific oil. These tests pre-coat the oil separating media. Pre-coating insures that claimed long term performance results are obtained in the performance tests and that dilution or absorption does not give false results.
- b) The maximum claimed flow rate for the maximum claimed inlet oil concentration that results in 10 ppm oil discharge.
- c) The maximum claimed flow rate for a lower inlet oil concentration that results in 10 ppm oil discharge.
- d) The maximum claimed flow rate for the maximum claimed inlet oil concentration that results in 15 ppm oil discharge.
- e) Testing for clean water contamination. At the high and low flow rates tested, with no oil in the inlet water, analyze effluent. Effluent cannot exceed 10 ppm or 15 ppm for the respective design previously tested.
- f) Each test will be conducted for a minimum 3 vessel volumetric turn-overs to show steady-state effluent conditions. Effluent samples will be obtained and analyzed after three (3) or more turnovers. During the entire test, oil is continuously fed and mixed with the inlet water. 1 vessel volumetric turn-over (time period in minutes) equals the entire vessel volume (gallons) divided by the flow rate (gallons/minute).

The oil/water effluent is to be analyzed by an independent laboratory using EPA test methods 413.1 and 413.2. A certificate of analysis will be supplied for each analysis performed. The laboratory must be accepted under the EPA Contract Laboratory Program (CLP) and must also regularly analyze EPA check (audit) samples as required for the performance of NPDES permit analyses. This documentation must be supplied to the OWS manufacturer along with the certificates of effluent analysis and oil's specific gravity and viscosity analyses for inclusion in the test report.

All flow sensors used will be traceable to NIST standards and such documentation will be included in the test report.

A test report detailing the results of the above testing shall be submitted with the bid.

2. Oil/Water separator tank shall be Double wall fiberglass, ~~UL~~ labeled, constructed to meet governing standards with certification plate (~~UL Label~~) affixed.

~~(UL 2215 Listed Oil/Water Separators Only)~~

~~2a. UL Oil/water Separator Tank shall be tested and listed in accordance with UL 2215 and labeled accordingly.~~

3. Shop Drawings: Contractor shall submit 6 copies of shop drawings for each OWS tank. Drawings shall include all critical dimensions, locations of fittings and accessories, i.e.: manways, hold-down straps, secondary containment collar, manway extensions, etc.

4. All OWS tanks, equipment and piping materials shall be physically inspected and air tested before being installed. Any defects observed shall be immediately brought to the attention of the Owner. It shall be the sole responsibility of the Contractor to correct any deficiencies, with the manufacturer in strict accordance with manufacturers' recommendations, at no additional cost to the Owner.
5. Contractor shall submit 6 copies of manufacturer's literature including 6 copies of manufacturer's current installation instructions to the Owner.
6. The Contractor shall be a licensed UST installer in the State of CA, during the entire duration of the project. ~~The Contractor shall have the responsibility of notifying and coordinating with all local and state officials, including _____ and the City of _____ Fire Department (where required). All inspection and registration fees shall be paid by the Owner (where required). The Contractor shall coordinate with the Owner to provide a written site safety plan (where required).~~
7. Containment Solutions Oil/water separators will not remove oils with specific gravity's greater than .95, chemical or physical emulsions, dissolved hydrocarbons, or volatile organic compounds (VOC).
8. The contractor shall obtain and pay for all permits, tests, inspections, etc. required by the local boards that have jurisdiction over the project. All work shall be executed and inspected in accordance with all local and state codes, rules, ordinances, or regulations pertaining to the particular work involved. Should any changes in the contract drawings and specifications be required to conform to such ordinances, notify the owner at time of submitting bid. After entering into the contract the contractor shall be held responsible for the completion of all work necessary for a complete and approved installation without extra expense to the owner.

PART 2: PRODUCTS

2.00 Acceptable Manufacturers:

1. Oil/water Separator: CONTAINMENT SOLUTIONS INC., CONROE, TEXAS
2. Turbine Enclosure or Manway Extension: CONTAINMENT SOLUTIONS INC.
3. Oil/Water Separator Control System: CONTAINMENT SOLUTIONS INC.
4. Oil/water Interface Float Sensor: CONTAINMENT SOLUTIONS INC.
5. Hydrostatic Monitoring System: CONTAINMENT SOLUTIONS INC c.
6. Concrete Drop Out Box and Catch Basins: LOCAL SUPPLIER
7. Gate/~~Butterfly~~ Valves: AMERICAN FLOW CONTROL
8. Inlet and Outlet T's:
9. Manholes:
10. Vent Cap and Piping:
11. Oil Draw Off By Vacuum Truck:
12. Pipe Materials:
13. Trench Drains:
- OPTIONAL:
- ~~14. Optional Scavenger Tank: CONTAINMENT SOLUTIONS INC.~~
- ~~15. Optional Skimmer system: ABANAKI~~
- ~~16. Optional Oil Draw Off Pump:~~
 - * Air Driven:
 - * Electric Driven:

17. Optional Control Panel: CONTAINMENT SOLUTIONS INC.
~~18. Optional Overfill Sensor for Scavenger Tank: CONTAINMENT SOLUTIONS INC.~~
~~19. Optional Dry Interstitial Sensors: CONTAINMENT SOLUTIONS INC.~~

~~Manufacturer equals must be submitted to the engineer for approval at least ___ days prior to bidding. If approved, the engineer will then forward addendum out for contractor's consideration.~~

2.01 OIL/WATER SEPARATOR TANKS: Provide double wall fiberglass reinforced plastic underground oil/water separator tank with fittings and accessories as denoted on the Drawings.

1. Loading Conditions; Tank shall meet the following Design Criteria:
 - a. External Hydrostatic Pressure: Buried in ground with seven feet of overburden over the top of the tank. (Consult manufacturer for burial depths greater than seven feet). The hole fully flooded and a safety factor of 5:1 against general buckling.
 - b. Surface Loads: When installed according to manufacturer's installation instruction, tank will withstand surface H-20 axle loads. (32,000 lbs/axle)
 - c. Internal Load: Tank shall withstand 5 psi air pressure test with 5 to 1 safety factor. Test prior to installation, since this design condition is the test for leakage.
 - d. Tank shall be designed to support accessory equipment as denoted on plans when installed according to manufacturer's recommendations and limitations.
2. Tank must be separately vented at the influent tee, oil/water separator chamber and at the effluent tee.
3. Tank shall be capable of storing liquids with specific gravity of up to 1.1.
4. Tank shall be capable of storing grease and oils at temperatures not to exceed 150 degrees Fahrenheit at the tank interior face.
5. Tanks shall be chemically inert to petroleum products.
6. The tank shall be warranted for a period of 30 years from date of original delivery against external corrosion.
7. The tank shall be warranted for a period of 30 years from date of original delivery due to internal corrosion.
8. The tank shall be warranted for a period of 30 years from date of original delivery due to structural failure provided (1) the installing contractor completes an Containment Solutions installation checklist, (2) the installing contractor has been educated in the use of fiber glass tank installation through the use Containment Solutions educational materials.
9. Coalescer plates and associated internal mounting hardware shall be rust- proof and removable through a 22" x 29" oval access manway. Areas above and below the coalescer plates must be sealed off to prevent oil/water mixture from flowing around the coalescer packs.
10. Provide glass fiber-reinforced plastic anchor straps for each tank shown. Number and locations of straps shall be as specified by manufacturer. Each strap shall be capable of withstanding the buoyancy load for tank diameter as shown.

4'0- 4,200 lbs.
6'0-18,000 lbs.
8'0-25,000 lbs.
10'0-32,000 lbs.

11. Threaded fittings on U.L. labeled tank shall be of a material of construction consistent with the requirements of the U.L. label. Fittings to be supplied with cast iron plugs. Standard threaded fittings are 4" in diameter and shall be half couplings. Reducers are to be used for smaller sizes where specified and provided by Contractor. See contract drawings for size and locations of fittings.
12. The tank laminate shall consist of granular inert material with less than 1 percent moisture content.

CAPABILITY AND DIMENSIONAL REQUIREMENTS

1. Oil/water Separator shall be a ~~Single-Wall~~ or Double-Wall Tank.
2. Nominal volume of the separator tank shall be 2000 gallons.

(UL 2215 Listed Oil/Water Separators Only)

- ~~3. The total spill capacity shall be _____ gallons.~~

3a. The total oil storage capacity shall be 400 gallons.

4. Inlet oil specific gravity shall range from 3AS to heavy oils
5. Inlet oil concentration shall be no more than 200,000 parts per million.
6. Flow rate shall be from zero (0) 200 GPM.
7. Effluent free oil shall be no greater than 10 parts per million.
8. Inlet flange diameter shall be 6 inches.
9. Effluent flange diameter shall be 6 inches.
10. Nominal overall length of the tank shall be 14 feet.
11. Nominal outside diameter of the separator shall be 6 feet.
12. Oil/water separator shall be for any combination of non- emulsified oil/water mixtures.
13. Operating temperatures of the influent oil/water mixture shall range from 400 F to 1500 F.
14. (1) 22" x 29" oval or access manway will be provided with each tank. Tank greater than 3,000-gallon total capacity will also include one 22" flanged manway.
15. All manways will be furnished complete with U.L. listed gaskets, bolts and covers.
16. Location – see standard tank drawings.
17. Each manway cover shall include one 4" NPT steel fitting with lift lug plug.

2.02 TURBINE ENCLOSURES AND MANWAY EXTENSIONS: Provide fiberglass reinforced plastic secondary containment collar and turbine enclosure as shown on the drawings. Provide manway extensions as shown on the drawings if applicable.

1. The secondary containment collar shall be 42" diameter for containment around the 22" (or the 22" x 29" oval) manway on the tank.
2. The height for the turbine enclosure shall be ± 3 feet high.
3. The turbine enclosure top and lid assembly shall be sealed

watertight and waterproof. The installing contractor is not to use grommets for piping or electrical connections.

4. The contractor is to furnish two adhesive kits for every sealed enclosure supplied.
5. If manway extensions are shown on drawings, the contractor is to furnish the correct diameter to mate with the specified manway diameter.

2.03 OIL/WATER SEPARATOR CONTROL SYSTEM: Provide an electronic control panel constructed of U.L. listed, electronic components. The control panel power source is 120 volts AC (contractor provided wiring). The sensor monitoring circuit is an intrinsically safe circuit, i.e., the circuit incapable of releasing sufficient electrical or thermal energy to cause ignition of specific hazardous material under "normal" or "fault" operating conditions.

1. The model number shall be Model CPF-4 or approved equal as provided by Containment Solutions.
2. The number of monitoring circuits shall be four.
3. The electrical components rating shall be Weatherproof (NEMA 4).
4. The dimensions of the control unit are 11.5" x 8" x 4.5" deep.
5. The total power consumption is 0.1 amps and 120 VAC.
6. The monitoring circuit power is 12 Volts D.C. at 15ma.
7. Both the model FHRB810 sensor and the FOWS interface alarm sensor connect at the Model CPF-4 control panel.
8. All control panels include:

- Alarm lights for each circuit
- Warning horn
- Auxiliary dry contacts switch output for each sensing circuit
- Panel housing materials: steel, epoxy coated
- Alarm horn silence switch
- Containment Solutions electronics do not require shielded cable. Sensor cable uses #18 AWG up to 5000 feet (provided by contractor).

Note: All wiring materials are provided by the contractor. Wiring is required from the power source to the control panel and from the control panel to the probe assembly. Sensor wires must be in a separate conduit from the power wires.

2.04 OIL/WATER INTERFACE FLOAT SENSOR: Provide an Oil/Water interface Alarm Sensor that is used to determine two separate high waste oil levels in the separator. Level one is to activate visual alarm. Level two is to activate both a visual and audible alarm.

1. The oil/water interface sensor is to be model FOWS 50U-8 by Containment Solutions.
2. The standard unit is set up for 24" riser pipe. The contractor is responsible for referring to Containment Solutions Oil/water Installation instructions for other lengths.
3. Oil Level Warning Alarm: As the top float approaches the bottom of its travel, the oil level warning alarm will activate. This alarm warns that the OWS tank is almost full of oil and the oil will need to be removed soon.
4. Oil Pump Out Alarm: As the bottom float approaches the stem bottom, the oil pump out alarm activates. The pump out alarm

alerts the operator that the oil must be removed immediately to maintain efficiency of the oil/water separator.

2.05 TANKS LEAK DETECTION SYSTEM AND RESERVOIR SENSOR:

Tank shall provide an interstitial space between the primary and secondary tank walls to allow for free flow of brine monitoring liquid between tank's walls and containment of any released product from the primary tank.

1. Precision tank testing:
 - a. Tank manufacturer shall provide an inner and outer wall tank precision test within the first year following original shipment.
 - b. Test shall be performed by tank manufacturer direct employees.
 - c. Manufacturer shall provide precision tank test checklist to tank owner upon request.
2. The hydrostatic tank leak detection system shall be capable of detecting a breach in the inner and/or outer tank under the following installed conditions:
 - when the inner tank is empty
 - when the inner tank is partially or completely full and the ground water table is below the tank bottom
 - when the inner tank is partially or completely full and the tank is partially or completely submerged in ground water.
3. The hydrostatic leak detection system shall meet the California State Water Resources Control Board as a precision test.
4. The leak detection performance of the monitoring system shall be tested and verified by a qualified Independent consultant to detect leaks as small as .05 gallons per hour with a 99.9% probability of detection and 1.2% probability of false alarm.
5. The leak detection performance is to be documented on an EPA generated form called "Results of U.S. EPA Standard Evaluation - Volumetric Tank Tightness Testing Method".
6. The hydrostatic monitoring fluid shall be a non-toxic brine solution and shall be shipped in the tank interstitial space from the manufacturing plant. The brine shall be dyed a deep green color so as to aid contractor in identifying damage to tank. The tanks laminate shall be U.L. listed for compatibility with monitoring fluid.
7. The hydrostatic reservoir sensor shall include titanium conductance probes to determine monitoring fluid levels in the tank mounted reservoir. The sensor shall be supplied by Containment Solutions. The model number shall be FHRB 810. Each tank is to have one FHRB 810 per tank.

2.06 CONCRETE DROP OUT BOX AND CATCH BASINS: Contractor to furnish and install precast drop out box and catch basins.

1. Catch Basins shall be precast concrete conforming to ASTM C478, latest edition.
2. Bottom, sides and top shall be designed and constructed to withstand backfill pressures and surcharge pressures resulting from AASTHO H-20-44 loading.
3. Castings shall be gray iron conforming to ASTM A48 and shall be designed to sustain AASHTO H20-44 wheel loads.

2.07 GATE/BUTTERFLY VALVES: Contractor to furnish a 6 " gate/butterfly valve with stem extensions. Valves shall be located between the

drop out box and the tank inlet, as well as one located downstream of the effluent tee. Butterfly valves should be used if the inlet and outlet drain lines are 14" or larger in diameter. If the drain lines are 4" through 12" in diameter, then a ductile iron resistant wedge gate valve with 316 stainless steel bolt shall be used. The iron wedge shall be encapsulated with a bonded in place Nitrile elastomer covering. Gate valve shall be model ACF-2500 as manufactured by American Flow Control or equal.

1. The valves must be 100% open during the normal operation to prevent flow turbulence.
2. The valves must be the same size as the piping with no valve seat or trim reduction.
3. When gate valves are used the contractor shall provide access to the 2" square operating nut with 8" diameter PVC pipe. The PVC pipe should overlap the containment manhole skirt to prevent pea gravel intrusion.
4. Contractor shall provide (1) one valve key operating wrench clearly tagged for the owner upon completion.

2.08 INLET AND OUTLET TEES AND PIPING: Provide 6 " inlet and 6 " outlet T's for the described separator system. The flanges are to be standard ANSI class 125/150 flanges.

1. The T's are to have a 4 " tapped blind flanges in the top of them to provide venting as shown on the drawings.
2. ~~Plug the inlet and effluent pipe until the drainage site is paved and the drop out box is installed.~~
3. Inlet and outlet piping to and from the OWS tank must be greater than or equal to the tank inlet and outlet nozzle diameter.
4. If the inlet and outlet piping is greater than 6" diameter, install appropriate expansion joints or loops on any inlet and outlet tee/elbow connections.
5. Both the inlet and outlet piping tees/elbows must be vented to the atmosphere.
6. A sampling port is to be installed by the contractor by installing 4 " tee on the effluent pipe and surrounding this pipe with 6 " PVC pipe and capping it.

2.09 MANHOLES: Provide manholes as needed from the schedule shown below:

1. Gate/Butterfly Valve Manholes: 8" round manhole. Two are needed for each separator. Universal model 60-8075 or equal.
2. Oil Draw Off Manhole: Industry standard spill containment manhole. Emco Wheaton A1003-009 or OPW 4580 or equal.
3. Oil /Water Interface Sensor Manhole: 18" round manhole with screws and gaskets. Manhole to be offset to allow maximum clearance between oil draw off manhole and interface sensor manhole. Universal 98-1810 or equal.
4. Access Manhole for 22" manway with 42" containment collar: 36" x 10" round manhole. Universal 68-3610 or equal.
5. Reservoir Sensor Manhole: 18" round manhole with screws and gaskets. Universal 98-1810 or equal.
6. Access Manhole for Coalescer Removal: 42" Safe-lite composite

manhole. EBW 781-443-12 or equal.

7. Effluent/Influent Sample Manhole: 8" monitoring well manhole with a clearly marked cast iron cover with a monitoring well designation. Unit to be Universal model 65-8012-WC or equal.

2.10 VENT CAP AND PIPING: Provide vent materials according to the schedule below. Contractor to use 2" FRP single wall piping.

1. Vent cap: 2" aluminum upward "v" vent cap. OPW 23 or equal.
2. The OWS tank inlet, outlet, and the tank itself must be vented separately to the atmosphere to ensure proper operation of the OWS tank. See drawing for details.
3. All vents must be separate. Manifolding of vent pipes is not permitted.

2.11 OIL DRAW OFF BY VAC TRUCK: Provide following materials for oil draw off:

1. See section 2.09 for manhole specifications.
2. 20 Emco Wheaton 4 x 2 double tapped bushing or equal.
3. 200-F-AL Andrews 2" Cam & Grove adapter and Male NPT or equal.
4. 200-DC-AL Andrews 2" Cam & Grove Dust Cap.
5. 2" suction pipe (length to be determined by burial depth).

2.12 PIPE MATERIALS: Provide the following materials as specified on the drawings:

1. Ductile iron pipe, designated DIP on the drawings, shall be centrifugally cast push on joint ductile iron pipe conforming to ANSI specification A21.51 with rubber gaskets conforming to ANSI specification A21.11 Fittings shall be ductile iron conforming ANSI specification A21.10.
2. Polyvinyl chloride pipe and fittings, designated PVC on the drawings, shall conform to ASTM D3034, SDR 35.
3. Reinforced concrete pipe, designated RCP on the drawings, shall conform to ASTM specification C76, Class IV, Wall B, with gasketed joints conforming to ASTM specification C443.

2.13 TRENCH DRAINS: Provide the following materials as specified on the drawings.

1. Trench drains shall be a precast polymer concrete system of interlocking channel sections with fitting outlets, endcaps and catch basins equal to Polydrain as manufactured by ABT Inc., Troutman, N.C.
2. Grate shall be a ductile iron frame and grate equal to Polydrain Part No. 514 with the Locking Device No. 815c.

~~**2.14 OPTIONAL WASTE OIL / SCAVENGER TANK:** Provide~~
gallon double wall fiberglass reinforced plastic underground tank with fittings and accessories as denoted on the Drawings.

1. ~~Loading Conditions;~~ Tank shall meet the following Design Criteria:

a. External Hydrostatic Pressure: Buried in ground with seven feet of overburden over the top of the tank. The hole fully flooded and a safety factor of 5:1 against general buckling.

b. Surface Loads: When installed according to manufacturer's installation instruction, tank will withstand surface H-20 axle loads. (32,000 lbs./axle)

c. Internal Load: Tank shall withstand 5 psi air pressure test with 5 to 1 safety factor. Test prior to installation, since this design condition is the test for leakage.

d. Tank shall be designed to support accessory equipment as denoted on plans when installed according to manufacturer's recommendations and limitations.

2. Tank shall be capable of storing liquids with specific gravity of up to 1.1.
3. Tank shall be capable of storing grease and oils at temperatures not to exceed 150 degrees F at the tank interior face.
4. Tanks shall be chemically inert to petroleum products.
5. The tank shall be warranted for a period of 30 years from date of original delivery against external corrosion.
6. The tank shall be warranted for a period of 30 years from date of original delivery due to internal corrosion.
7. The tank shall be warranted for a period of 30 years from date of original delivery due to structural failure provided (1) the installing contractor completes an Containment Solutions installation checklist, (2) the installing contractor has been educated in the use of fiber glass tank installation through the use Containment Solutions educational materials.
8. Provide glass fiber-reinforced plastic anchor straps for each tank shown. Number and locations of straps shall be as specified by manufacturer. Each strap shall be capable of withstanding the buoyancy load for tank diameter as shown.

4'0- 4,200 lbs.

6'0-18,000 lbs.

8'0-25,000 lbs.

10'0-32,000 lbs.

9. Threaded fittings on U.L. labeled tank shall be of a material of construction consistent with the requirements of the U.L. label. Fittings to be supplied with cast iron plugs. Standard threaded fittings are 4" in diameter and shall be half couplings. Reducers are to be used for smaller sizes where specified and provided by Contractor. See contract drawings for size and locations of fittings.
10. The tank laminate shall consist of granular inert material with less than 1 percent moisture content.

2.15 OPTIONAL OIL DRAW OFF PUMP: Separator shall be furnished with oil level/liquid levels controls to start and stop oil pump at predetermined levels. Contractor to furnish a 2 inch FRP secondarily contained line (either FRP or flexible) to connect the pump to the oil/water separator.

2.16 OPTIONAL OVERFILL SENSOR FOR SCAVENGER TANK: Contractor to provide a tank product level alarm float switch for the scavenger tank. This sensor is used to determine when fuel in the tank approaches a predetermined level. The control panel alarm will activate

when the high level float passes the set point. The sensor will not provide overfill shutoff.

1. The sensor to be model FOVF600 (brass or stainless) by Containment Solutions.
2. The sensor to have stainless steel or brass stem.
3. The sensor is to have intrinsically safe circuits.

2.17 OPTIONAL INTERSTITIAL SENSORS: Contractor to provide a monitoring system to monitor the annular space of the double wall oil/water separator tank. The sensors interface with CPF control panels or approved equal as furnished by Containment Solutions

1. System to include the following models from Containment Solutions:
 - * FDAS710 Dry Annular Space Float Switch
 - * FHRB810 Hydrostatic Sensor
2. Sensors to have intrinsically safe circuits.

PART 3: EXECUTION

3.01 Installation of FRP Tanks

1. Contractor's personnel involved with tank system installation shall be educated by tank system manufacturer and any state governing agency.
2. Contractor shall test and install tank according to two (2) current installation instructions provided with tank.
3. Tanks cannot be unloaded from the truck manually. Capacity of lifting equipment must be checked before moving tanks.
4. Tank shall be placed on 12-inch thick bed of clean aggregate; smooth and level, free of voids around and adjacent to the tank. Gravel shall be 1/8 to 3/4 inch diameter pea gravel, or equal approved by the tank manufacturer, with not more than 3% passing No. 8 sieve. The gravel shall conform to ASTM C33 (naturally rounded aggregate, free flowing). The dry gravel density must be a minimum of 95 lbs. per cubic foot.
5. Contractor shall require a sieve analysis from backfill supplier to show that backfill supplied meets tank manufacturer specifications.
6. Tank shall be installed in a dry hole. Pumps should be provided by contractor to keep water table down during installation. Do not install tank on timber, blocks, or cradles. Place backfill in no greater than 12 inch layers. Backfill shall be placed to ensure a complete filling of voids between tank, ballast pad and side of excavations.
7. A 12" gravel bed for tank shall be placed on concrete anchor pad. Secure the tank to the concrete ballast pad with tank manufacturer's recommended straps. Anchor points in concrete at bottom of hole must be aligned within 1" from the arrows on the ribs of the tank. The concrete must extend a minimum of 18" beyond the sides of the tank and be at least equal to the length of the tank. Wire rope must be triple clamped. Coat exposed metal with bitumastic coating.
8. Place the first 12" lift of backfill evenly around tanks. The backfill must be pushed completely beneath tank bottom, between ribs and under end caps to provide necessary support. Place another 12" lift of backfill evenly around tanks. After completion of second lift,

- backfill can be brought to top of tanks without additional hand work.
9. Do not fill tanks until backfill is to top of tank.
 10. Contractor is to complete the installation checklist provided by the manufacturer. A copy of the installation checklist must be retained by the tank owner and/or installation contractor to validate any future warranty claim.
 11. Tanks shall be tested and installed according to the current installation instructions provided with the tank (refer to Containment Solutions publication #3-PE-18151 and include as part of your specification).

SPECIAL FOR OIL/WATER SEPARATOR TANKS:

1. Upon delivery, inspect the OWS tank for exterior damage. Remove manway cover plates and inspect interior to insure that all baffles, coalescer packs and internal piping are secure and have not been damaged.
2. Install the OWS tank with sufficient truck access (top side clearance) for removal of oil, sludge and water.
3. The OWS tank must be installed in either of the following positions:
 - a. A level and plumb position.
 - b. The outlet side 1/2" to 1" lower than the inlet side.
4. Slope inlet piping to OWS tank 1/4" to 1/16" per foot downward to attain proper gravity flow. Slope the effluent piping away from the OWS tank following the same pitch.
5. Waste oils should not be intentionally drained into the OWS tank.
6. The OWS tank should be filled with clean water immediately after installation and prior to use. The OWS should be filled at all times for proper operation.

MAINTENANCE INSTRUCTIONS

1. Close inlet and outlet pipes before entering the tank.
2. The coalescer packs must be removed for cleaning. Do not attempt to clean the coalescer packs inside the OWS.
3. Maintenance is required at the following times (whichever comes first)
 - * once per year.
 - * When the OWS tank bottom sludge is 12" deep.
 - * When the effluent water contains high contaminant levels.
4. See Containment Solutions Pub. No. OWS 2012 & 2013 for installation, start-up, operations and maintenance requirements.

FUEL PAD $15' \times 40' = 600 \text{ sq. ft}$

White Goods $120' \times 38' = 4,560 \text{ sq. ft}$

$$\frac{5,160 \text{ ft}^2}{43,560 \text{ ft}^2/\text{Ac}} = 0.118 \text{ acres}$$

$$Q = CIA$$

$$C = 1 \text{ Concrete PAD}$$

$$t = 10 \text{ min}$$

$$C_{10} = \frac{10.15}{t \cdot 0.529} = \frac{10.15}{3.38} = 3.0024$$

$$Q = CIA = (1)(3.0024)(0.118) = 0.3557 \approx \underline{.36 \text{ cfs}}$$

$$= 448.83 \text{ gal/min} (0.36 \text{ cfs}) = 159.68 \text{ gpm} \approx \underline{160 \text{ gpm}}$$

$$C_{10} = \frac{7.08}{t \cdot 0.529} = \frac{7.08}{3.35} = 2.108$$

$$Q = CIA (1)(2.108)(0.118) = 0.248 \text{ say } 0.25 \text{ cfs}$$

$$= 448 \text{ gal/min} (0.25 \text{ cfs}) = 111.68 \text{ say } \underline{112 \text{ gpm}}$$

- Based on the flow rate = rational method 100 year storm

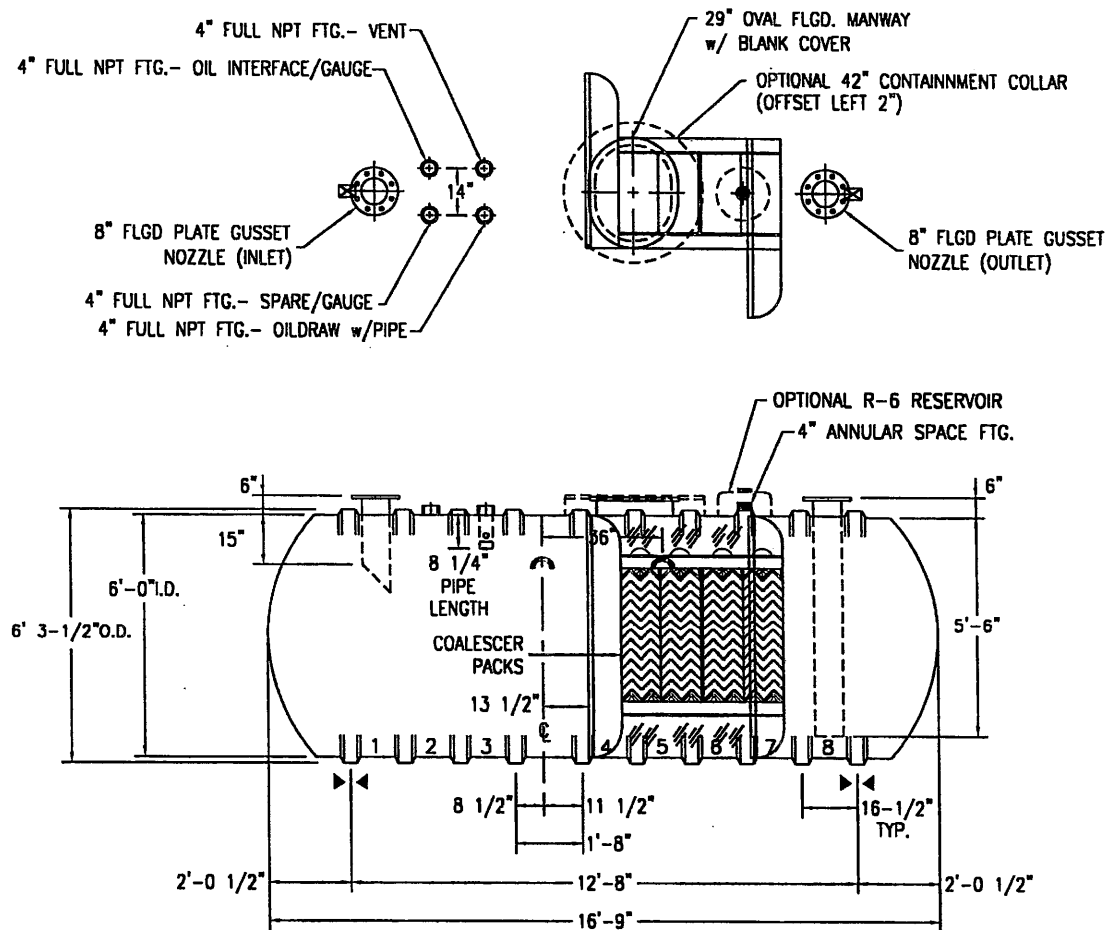
$Q = 160 \text{ gpm}$ OIL WATER SEPARATOR Model CSC-10 or CSC-15

look at a 2,000 gal tank with a flow rate of 200 gpm

Double wall containment

10ppm - 15ppm

SHELL CODES: 1-E6D06SD, 1-E6D04SD



NOTES:

- ☒ HOLD DOWN STRAP CLIP
- ▶◀ HOLD DOWN STRAP LOCATION
- TOP MOUNTED LIFT LUG
- SIDE MOUNTED LIFT LUG

DWT (6')-2000 OWS CSI-10

DATE: 2/1/99

DRAWN BY: K.A.SOEDER

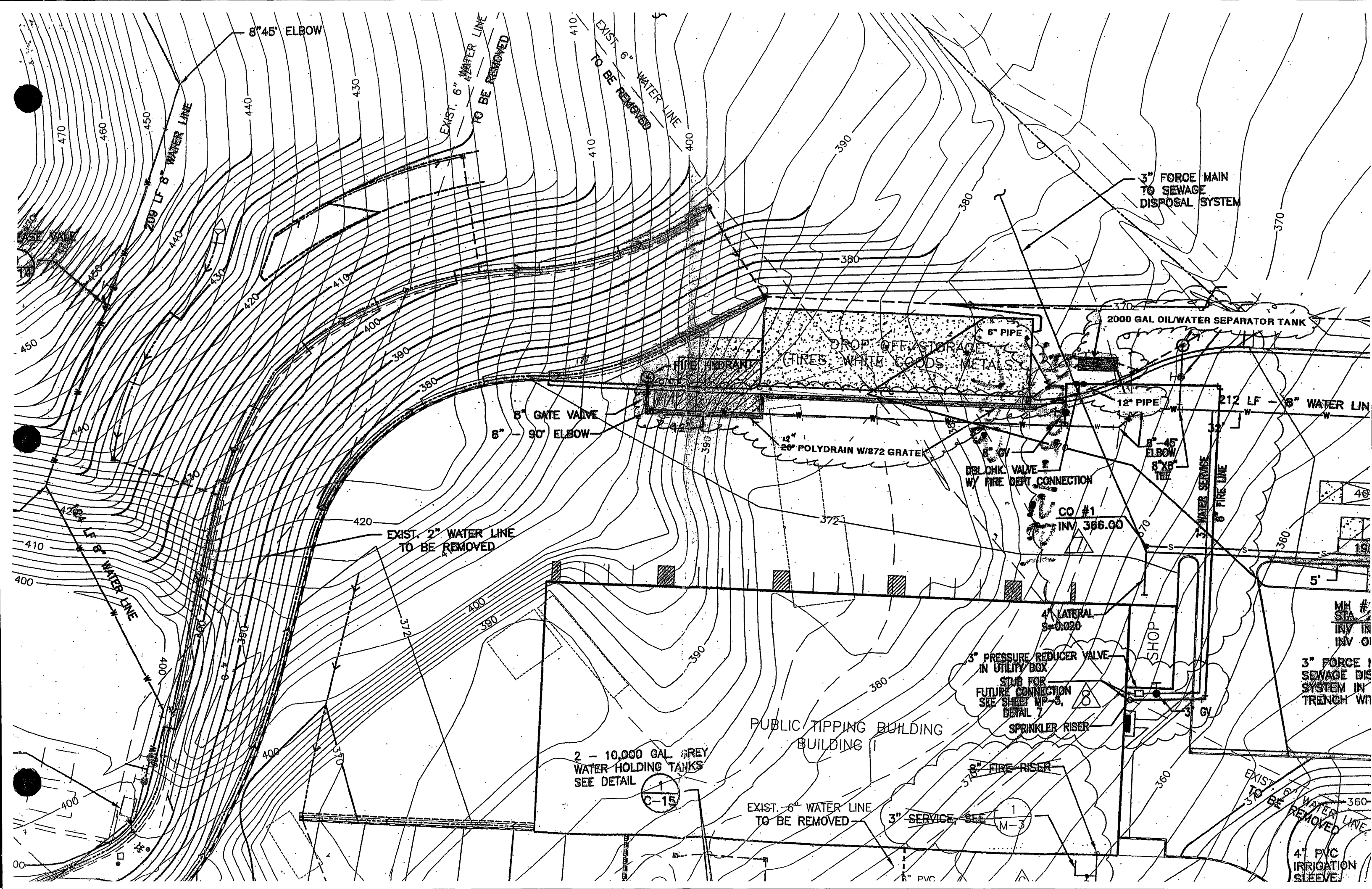


CAPACITY: 3,323

REVISED:

WEIGHT: DRY/WET
4100/4750

DWG NUMBER: 62VDOW-UL



8" 45° ELBOW

209 LF 8" WATER LINE

EXIST. 6" WATER LINE
TO BE REMOVED

EXIST. 6" WATER LINE
TO BE REMOVED

3" FORCE MAIN
TO SEWAGE
DISPOSAL SYSTEM

2000 GAL OIL/WATER SEPARATOR TANK

DROP OFF STORAGE
(TIRES, WHITE GOODS, METALS)

8" GATE VALVE
8" 90° ELBOW

12" POLYDRAIN W/872 GRATE

8" GV
DRINK. VALVE
WY FIRE DEPT CONNECTION

12" PIPE 212 LF 8" WATER LINE

8" 45° ELBOW
8" X 8" TEE

EXIST. 2" WATER LINE
TO BE REMOVED

CO #1
INV. 366.00

4" LATERAL
S=0.020

3" PRESSURE REDUCER VALVE
IN UTILITY BOX

STUB FOR
FUTURE CONNECTION
SEE SHEET MP-3,
DETAIL 7

SPRINKLER RISER

8" FIRE RISER

PUBLIC TIPPING BUILDING

2 - 10,000 GAL GREY
WATER HOLDING TANKS
SEE DETAIL

1
C-15

EXIST. 6" WATER LINE
TO BE REMOVED

3" SERVICE SEE 1
M-3

SHOP

3" FORCE I
SEWAGE DIS
SYSTEM IN
TRENCH W

EXIST. 6" WATER LINE
TO BE REMOVED
4" PVC IRRIGATION
SLEEVE

D
J**D.J. Amoroso Construction**500 Meham Road
Petaluma, CA 94952-9641Phone: (707) 793-9098
Fax: (707) 793-9097**SUBMITTAL
NO. 02740-2.1A****TITLE:** Oil/water separation tank
PROJECT: Central Disposal Improvements**REQUIRED START:**
REQUIRED FINISH:**DRAWING:****DAYS HELD:** 0**STATUS:** NEW**DAYS ELAPSED:** 0**BIC:** COS**DAYS OVERDUE:** 0

Revision No.	Description / Remarks	Received	Sent	Returned	Forwarded	Status	Sept	Prints	Drawing Date	Held	Elapsed
148	Oil/water separation tank	3/25/02	3/25/02			NEW	0	4		0	0

D
J
A**D.J. Amoroso Construction Co., Inc.****SUBMITTAL REVIEW**

*This certifies that this Submittal has been reviewed
and that the information presented herein conforms
to all requirements of the Contract Documents.*

Job Name: Central Disposal ImprovementsJob No.: 169Submittal No.: 148By: [Signature] Date: 3/25/02**SUBMITTAL REVIEW**

SONOMA COUNTY

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

Corrections or comments made on the shop drawings during this review do not relieve the contractor of his responsibility to comply with the requirements of the drawings and specifications. This review is only to check for general conformance with the Contract Documents. The Contractor remains responsible for confirming and correlating all dimensions and quantities; selecting fabrication processes and techniques of construction; coordinating the work of the trades; and performing the work in a safe and satisfactory manner.

This review is subject to all provisions of the Contract Documents.

<input checked="" type="checkbox"/> NO EXCEPTIONS TAKEN	<input type="checkbox"/> AMEND & RESUBMIT
<input type="checkbox"/> REVISE AS NOTED (No resubmission required)	<input type="checkbox"/> REJECTED - RESUBMIT
By: <u>[Signature]</u> Date: <u>3/25/02</u>	

Leak Detection & Overfill Alarm Systems

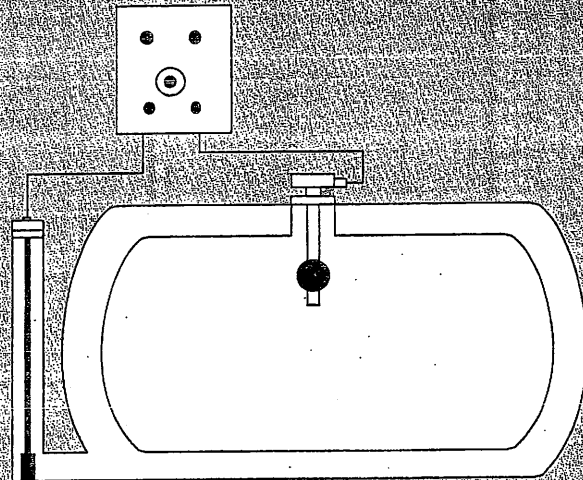
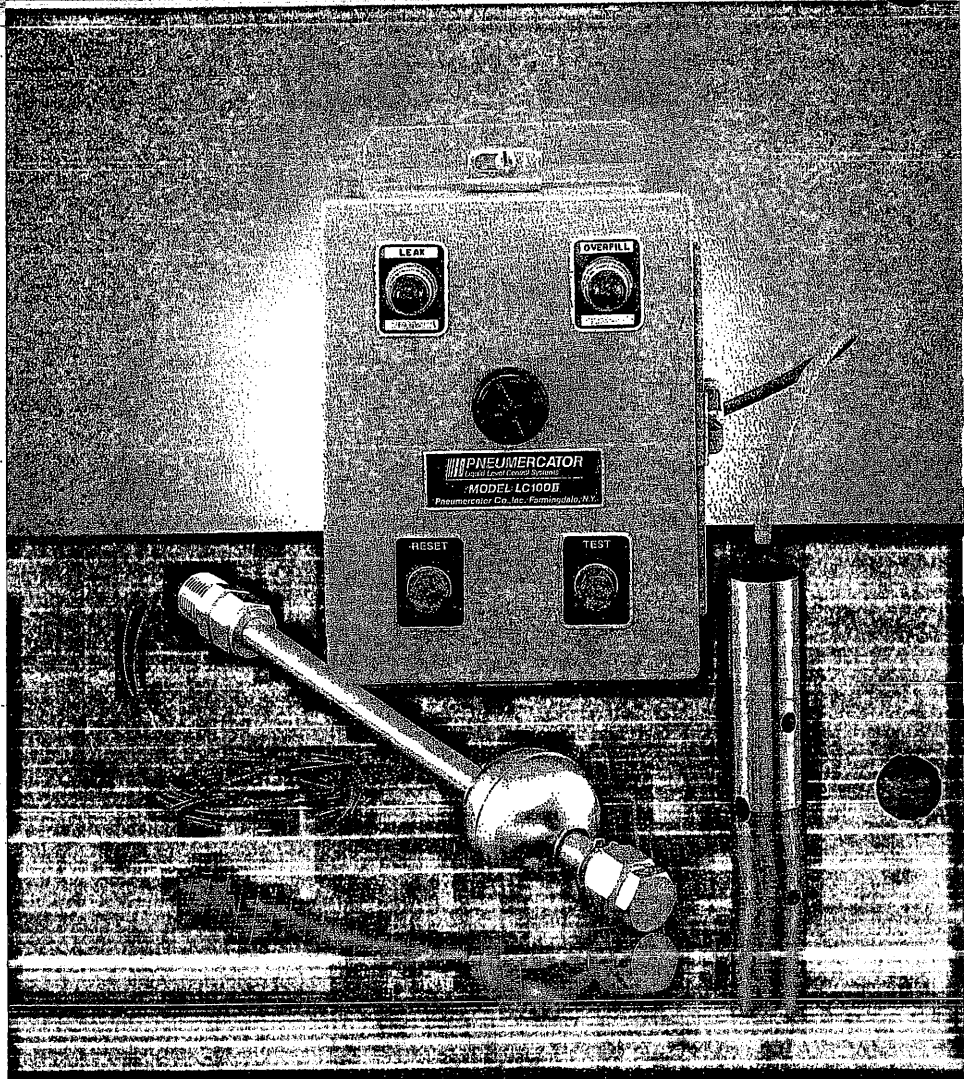
LS 600/600LD

The accurate LS 600 Series High-Level Float Switch and the precision LS 600LD Leak Sensor are combined with the time-proven LC 1000 Series Alarm Console to provide a straightforward, no-fuss approach to both leak detection and overfill alarming.

High-level float switches are available in two different designs. Both may be of brass or all stainless steel construction. The LS 600A has a fixed 8-inch actuation, a ½-inch NPT fitting and 10-foot wire leads. This design affords flexibility with respect to tank size and installation considerations in that percent volume settings are fixed at the time of installation. The standard LS 600 High-Level Float Switch is sized prior to installation and comes standard with an explosion-proof housing for terminations.

The unique LS 600LD float-actuated Leak Sensor provides cost-effective continuous monitoring of any liquid in secondary containment areas around aboveground or underground tanks and associated piping. The compact size is ideal for narrow leak monitor tubes. A variety of available materials permits the LS 600LD to monitor any type of chemical or petrochemical storage tank, manway or piping sump.

The LC 1000 Series Alarm Console provides multiple-point monitoring with an audible alarm and easy-to-view per-sensor alarm indicator lamps. Internal relays provide per-sensor output contacts for controlling external devices such as pumps, valves and remote alarms. The weatherproof intrinsically safe system has the approval of nationally recognized third-party test laboratories and conforms with Federal and State regulations for overfill alarming and leak detection.



PNEUMERCATOR
Liquid Level Control Systems



Leak Detection & Overfill Alarm Systems

SPECIFICATIONS

LS 600

Probe Materials

Brass or stainless steel .50" dia.

Float

2.0" dia. stainless steel or 1.4" dia. Buna-N.

Bushing

2 or 1 1/2" NPT cast iron standard

Wiring

2 conductor—18 AWG each switch.
10 feet long for models LS 600A.

Float Switch

Dry reed type hermetically sealed within probe.
SPST rated 100W resistive load, 400V max. at 3A.

Repeatability

1/8" typical per point.

Housing

(Model LS 600) Explosion-proof die cast alum.,
1/2" NPT conduit fitting. UL approved for Class I
and II Group C,D,E,F & G; NEMA 4.

LS 600LD

Float and Stem

Buna-Nitrile float and brass stem

Shield

stainless steel

Sensor Cable

10 foot/2 conductor 18 AWG.
May be extended up to 5000 feet.

Temperature

-40° to 160° F (-40° to 71°C)

LC 1000

Power Input

120 VAC ±10%, 60Hz Fuse—.10 AMP, AG-SLO BLO

Power to Field Sensor

Low electrical energy; 12 VDC at 15mA provided by
control unit to each sensor switch. Safe for Class I,
Division I, Groups A, B, C, D; Class II Division I,
Groups E, G.

Control Relay Output

Dry switch contact—SPDT per point, rated 3 AMPS
at 120 VAC. Selectable either normally open or
normally closed.

Indicators/Controls

Red light indicates alarm condition/Horn signals
audible alarm—85 dB min./Reset button silences
horn/Test button tests alarm circuits

Enclosure

NEMA 4 weatherproof standard

Specifications subject to change without notice

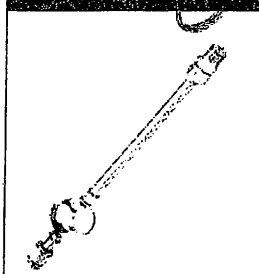
PNEUMERCATOR
Liquid Level Control Systems

120 Finn Court, Farmingdale, NY 11735
(516) 293-8450 Fax (516) 293-8533

HOW TO ORDER

- Before ordering, ascertain the compatibility of the material selected with the tank contents.
- Unless specified, overfill and high levels are set normally open to close on the rise of liquid level.

LS 600A



Check One:

- ☐ brass stem, 2.0" s/s float
- ☐ s/s stem, 2.0" s/s float
- ☐ brass stem, 1.4" Buna-N float

8" Actuation Point

Percent volume settings may be fixed at the time of installation.

LS 600



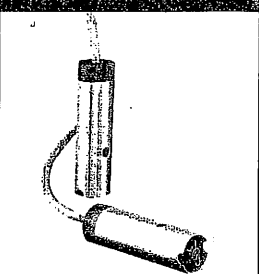
Check One:

- ☐ brass stem, 2.0" s/s float
- ☐ s/s stem, 2.0" s/s float
- ☐ brass stem, 1.4" Buna-N float

Check Actuation Point:

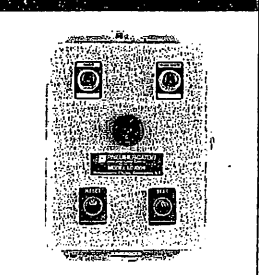
- ☐ 6" ☐ 8" ☐ 12" ☐ Custom

LS 600LD



- ☐ LS 600LD BN:
Buna-N float & brass stem

LC 1000

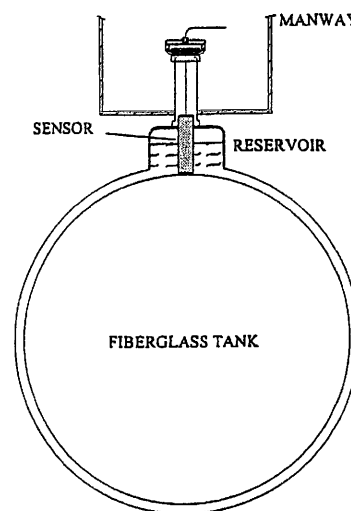
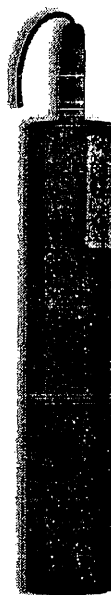
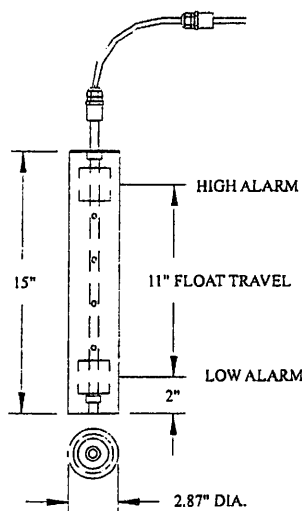


Order the LC 1000 Alarm Control Console according to the desired number of LS 600 Switches (1-4):

- ☐ LC 1001 (One switch)
- ☐ LC 1002 (two switches)
- ☐ LC 1003 (three switches)
- ☐ LC 1004 (four switches)

Distributed by:

Dual Float Reservoir Sensor



Product Description

Model RSU800-2 is a dual float normally closed sensor that detects level changes within the reservoir. A breach of the inner tank wall will trigger a high alarm, and a breach of the outer wall will trigger a low alarm as the reservoir level changes. Fluctuations due to temperature and barometric pressure changes should not trigger an alarm. The sensor can be wired as non-discriminating (one alarm for high and low levels) requiring (1) N.C. input, or as discriminating (individual alarms for high and low levels) requiring (2) N.C. inputs.

Application

Brine or glycol filled fiberglass double wall tank reservoirs

Specifications

- Technology: Magnetic Floats, Hermetically Sealed Reed Switches
- Wetted Materials: PVC, Buna-N
- Operating Temperature: -40° to +175°F (-40° to +80° C)
- Cable: 22AWG, 4-conductor, PVC Jacket, 16' Length
- Pass-thru Opening Size: 3" Riser, Schedule 40 PVC
- Location Approval: UL Class I, Div I, Groups C and D

Installation

Sensor is installed through a minimum 3" riser and rests on the reservoir floor. The reservoir fluid level is typically set at halfway up the sensor housing.

Certifications/Approvals

- UL Approved, File #E139464, CSA approval pending
- NYC, LA City and various other City and State Approvals
- Third-Party EPA Listed

Note: Specifications subject to change w/o notice. 07-24-2001

PNEUMERCATOR
Liquid Level Control Systems

Pneumercator Company, Inc.
120 Finn Court
Farmingdale, New York 11735

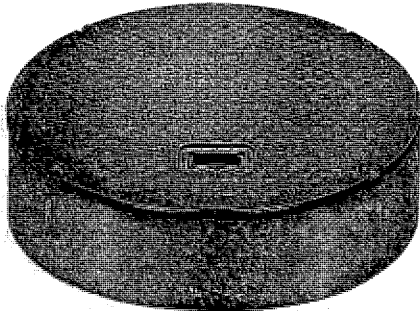
Tel: 631-293-8450
Fax: 631-293-8533
<http://www.pneumercator.com>

SAFE-LITE™ FRC Manholes 30" 36" & 42"

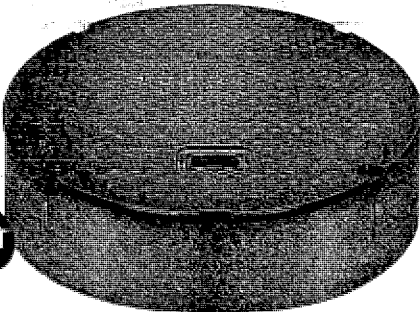
Technical Information



Handle Covers



with Stainless Steel bolts



30" 36" 42" SAFE-LITE™ FRC Manholes

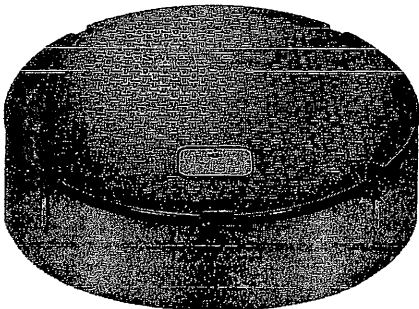
Bolt Down models

Part No.	Size (in.)	Assembly Parts	Lbs.
781-430-12	30	assm	95
781-459-01	30	cover	45
781-433-12	36	assm	125
781-456-01	36	cover	65
781-443-12	42	assm	157
781-441-01	42	cover	95

Non Bolted models

Part No.	Size (in.)	Assembly Parts	Lbs.
781-430-13	30	assm	95
781-490-01	30	cover	45
781-433-13	36	assm	125
781-448-01	36	cover	65
781-443-13	42	assm	157
781-445-01	42	cover	95

Slide Action Cover



30" 36" 42" SAFE-LITE™ FRC Manholes

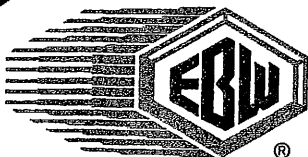
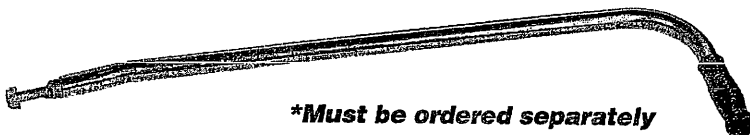
Slide Action Models

Part No.	Size (in.)	Assembly Parts	Lbs.
781-484-12	30	assm	95
781-481-01	30	cover	45
781-485-12	36	assm	125
781-482-01	36	cover	65
781-486-12	42	assm	157
781-483-01	42	cover	95

Slide Action Handle*

Part No.	Lbs.
781-341-01	2.6

*Must be ordered separately



Sales Desk (800) 475-3291 • Sales Fax (800) 475-4329 • Phone (231) 755-1671

2814 McCracken Avenue, Muskegon, MI 49441 • Fax (231) 755-7201 • <http://www.ebw.com>

BAKER INDUSTRIES NORTHWEST, INC.

12428 Highway 99 South • Unit 56 • Everett, WA 98204

Phone (206) 745-6130 • FAX (206) 353-6788

ROUND ACCESS BOXES

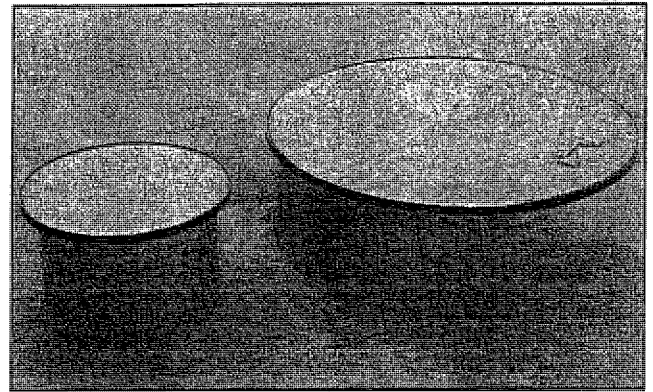
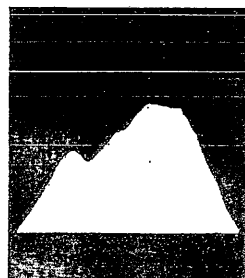
For Grade Level Applications

DESIGN FEATURES OF 400 SERIES:

- Heavy Duty Steel Diamond Plate Lid, Rated For H20 Axle Loads.
- Fully Recessed Steel Handle, Watertight.
- Galvanized Steel Skirt.
- Formed STEEL Support Ring.
- BUNA-N Lid Gasket, Watertight Lid.
- Recessed STAINLESS STEEL Security Bolts In Lid.
- Manufactured In Everett, WA.

NOTE: 300 Series Models 300-12RL thru 300-42RL same as above except do not include lid gasket or security bolts. (not a watertight lid)

DISTRIBUTED BY:



Model 400-16R

Model 400-36R

DESCRIPTION

MODEL	SKIRT I.D.	LID O.D.	HEIGHT
400-12RL	12"	15"	10"
400-16R	16"	19"	13"
400-16RL	16"	19"	10"
400-18R	18"	21"	13"
400-18RL	18"	21"	10"
400-24R	24"	27"	13"
400-24RL	24"	27"	10"
400-30R	30"	33"	13"
400-30RL	30"	33"	10"
400-36R	36"	39"	13"
400-36RL	36"	39"	10"
400-42R	42"	45"	13"
400-42RL	42"	45"	10"

- * 'L' models are 10" rather than 13" high.
- * 12"-18" sizes do not include recessed handle unless specified.
- * Dimensions are approximate.
- * Other sizes produced on request.
- * 20" x 20" and 24" x 24" square access boxes available.

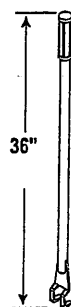
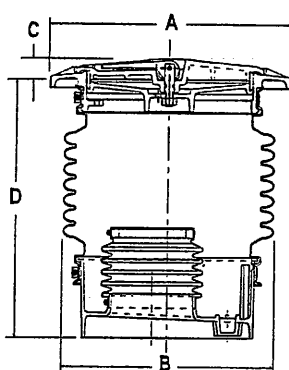
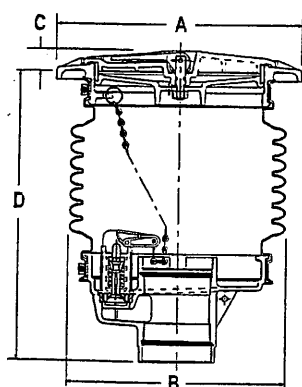
OPW 1SC-2100 SERIES SEALABLE COVER SPILL CONTAINERS

OPW and Pomeco Spill Containment Manholes are designed to prevent spilled product from entering the soil near the fill and vapor return riser connections on underground storage tanks during normal tank filling operation, or in the event of tank overfill. The spill containers catch spillage to help prevent soil contamination and groundwater pollution. The OPW 1SC-2100 Series Sealable Cover Spill Containers are designed to eliminate the problems associated with water entering grade level spill containers. The operation of the cover is similar to that of a "plumbers plug." When the lever is latched down, the plates are drawn together, expanding the seal against the machined mounting ring wall. The 1SC-2100 spill containers are ideal for areas with a high water table, areas subject to tropical rain and standing water, and cold regions where melting snow and road salt can enter standard spill containers.

Features:

- ◆ **Simple "Plumbers Plug" Operation** - Seal is expanded against mounting ring wall.
- ◆ **Vertical Sealing Surface** - Prevents gravel and debris from damaging or interfering with the seal.
- ◆ **Machined Sealing Surface** - Ensures watertight seal.
- ◆ **Field Replaceable Seal** - Designed for all-weather performance.
- ◆ **Black Anodized Aluminum Top Plate** - to deter cover theft.
- ◆ **Potted Hinge Mechanism** - to prevent ice and debris from hindering lever operation.
- ◆ **Product Identification Tags** - Available for both the spill container cover and bucket to positively identify the product contained in the UST with standard API symbols. (See product I.D. tag specification page for more information)
- ◆ **Capacities** - 5 and 15-gallon; special deep bucket 5-gallon thread-on model is available to provide additional clearance for threaded-top 61TNG Overfill Prevention Valve installations.
- ◆ **Fuel Compatibility** - Designed to accommodate the fuels of the future, including methanol, ethanol and MTBE.

Dimensions



1SC-T00L
Optional Opening Tool

Slip-On Models				
	1SC-2105		1SC-2155	
	in.	cm.	in.	cm.
A	16 ⁷ / ₃₂ "	41	16 ⁷ / ₃₂ "	41
B	14"	36	22"	56
C	1 ⁵ / ₃₂ "	3	1 ⁵ / ₃₂ "	3
D*	17"	43	22"	56

	Thread-On Models					
	1SC-2100		1SC-2100E**		1SC-2115	
	in.	cm.	in.	cm.	in.	cm.
A	16 ⁷ / ₃₂ "	41	16 ⁷ / ₃₂ "	41	16 ⁷ / ₃₂ "	41
B	14"	36	12 ¹ / ₂ "	32	22"	56
C	1 ⁵ / ₃₂ "	3	1 ⁵ / ₃₂ "	3	1 ⁵ / ₃₂ "	3
D*	18 ¹⁹ / ₃₂ "	47	22 ²¹ / ₃₂ "	58	23 ⁵ / ₈ "	60

*Subtract 2" from "D" dimension for Cast Iron Base Models.

**Deep Bucket Model.

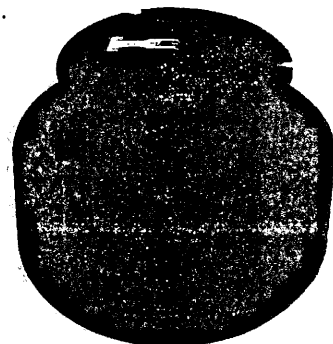
Ordering Specifications

Model*	Style	Gal.	Liter	Lbs.	kg.
1SC-2100	Thread-on	5	19	43	20
1SC-2115	Thread-on	15	57	49	22
1SC-2100E**	Thread-on	7.5	28	44	20
1SC-2105	Slip-on	5	19	42	19
1SC-2155***	Slip-on	15	57	48	22
1SC-T00L	Optional Easy Opening Tool	4	2		

* Add a "C" to the end of thread-on model numbers for Cast Iron Base option.
** Deep Bucket Model
*** New York City Fire Dept. Approval #4803

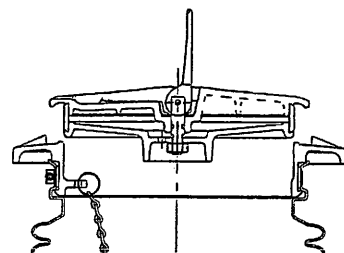
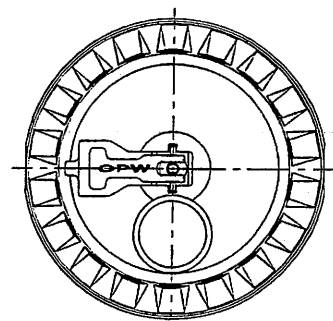
Cover Replacement Parts

Part No.	Description
C04158	Replacement Cover
H13931M	Cover Gasket
C04101B	Bronze Lever Arm
D01874M	Lower Plate
C04141M	Rubber Insert
H12927M	Adjustment Nut

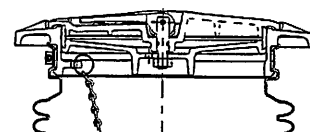


OPW 1SC-2115, 15-Gallon
Thread-On Spill Container

Sealable Cover Operation



Lid in Open Position



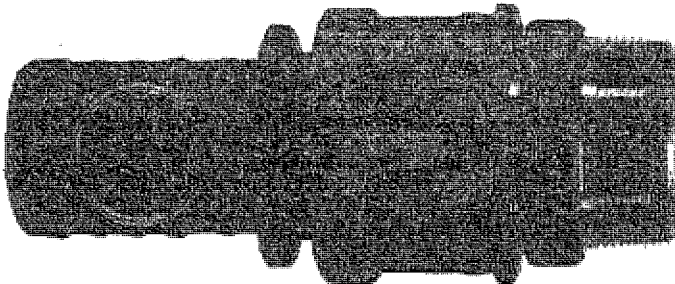
Lid in Closed Position

Materials:

Cover: cast aluminum
Cover seal: low swell viton
Lever: bronze
Mounting ring: Teflon plasma coated cast iron
Bellows: high-density polyethylene
Base: Duratuff® II or cast iron
Clamps: stainless steel
Seals: low swell nitrile

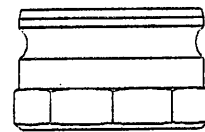
"EZ BOSS-LOCK"

No more fumbling with clamps, wire, clips or pins . .
*Just close the handles and the locking
 mechanism is engaged.*

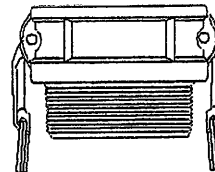


Unlike other safety couplings . . .

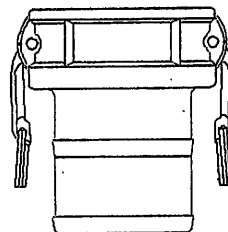
- The EZ Boss-Lock is extremely EASY TO OPEN!!!
The release lever is under your thumb when you want to open the fitting. ERGONOMIC.
- The EZ Boss-Lock is resistant to accidental disconnection when being dragged. *The release lever opens in the direction opposite to the cam arm, so movements that tend to open the release lever also tend to close the cam arm!!!*
- The EZ Boss-Lock alerts you if it is not properly engaged. *If the rotating lever is not flush with the handle, it is not properly engaged.*
- The EZ Boss-Lock has no sliding pins to jam. *The EZ Boss-Lock's rotating action helps keep the locking device free of debris.*
- The EZ Boss-Lock has no sliding pins to pop open. *The EZ Boss-Lock is designed to protect critical parts from impact and to withstand rugged use.*
- The EZ Boss-Lock can be supplied with special shanks custom suited to your needs. *The EZ Boss-Lock is available with Swaged and PF shank designs, for hard to couple chemical hoses.*
- The EZ Boss-Lock is easier to insert into the hose tubes on Tank Trucks, and easier to use in restricted spaces. *This is due to the smaller maximum O.D. and a more snag free exterior.*
- The EZ Boss-Lock Cam Arm assemblies can be retrofitted onto Undamaged Stainless Steel Boss-Lock. *This allows you to protect your investment in Stainless Steel Boss-Lock couplings while you upgrade.*
- The EZ Boss-Lock is Made in the USA.

CAM & GROOVE LINE DRAWINGS

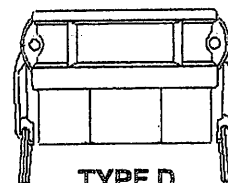
TYPE A



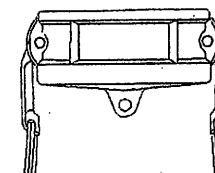
TYPE B



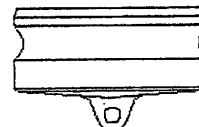
TYPE C



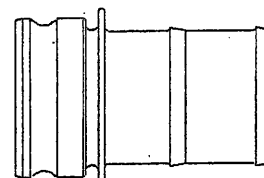
TYPE D



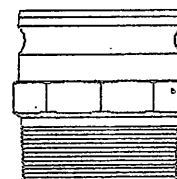
TYPE DC



TYPE DP



TYPE E



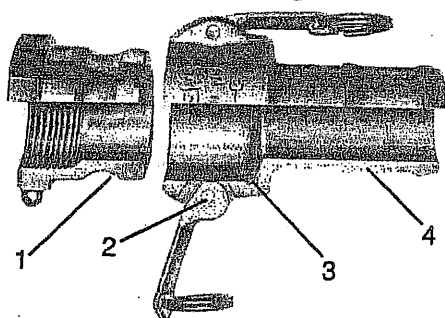
TYPE F

NOTE: Line drawings are representative of the Dixon / "Andrews" line of cam and groove.

CAM and GROOVE

CAM AND GROOVE

"ANDREWS"



1. Precision machined to rigid tolerances.
2. Durable stainless steel cam arm pins will not rust or bind, for greater strength and safety.
3. Recess holds gasket firmly in place - assures proper placement.
4. Long shank design allows proper banding thus eliminating the major cause of hose damage.

ANDREWS ORDERING SYSTEM

200 - A - AL - *

See gasket
page 20

Material Code

Style Code

Size of coupler or adapter and hose
or pipe end; i.e. = 2 inch size.

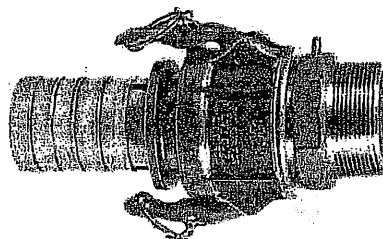
If coupling is a reducing size, the coupler or adapter is the first size (i.e. 4030-C is 4 inch coupler to 3 inch hose shank.)

Operation of Cam and Groove

1. To make connection, simply slide the adapter into the coupler and with normal hand pressure, press the cam levers down.
2. Uncoupling is as quick and simple as coupling. Just lift the cam arms and remove the adapter.

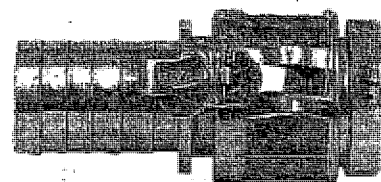
"BOSS-LOCK"

"Boss-Lock" Cam & Groove provides a unique patented safety feature.



The Cast-in lugs allow safety clips to be attached once the lugs are passed through slots in the special cam lever arms. These clips prevent the coupler from being unlocked until they are removed, providing a **positive locking action**.

Pull Ring Safety Clips



Dixon has developed the Pull Ring Safety Clip to simplify the locking action on "Boss-Lock" couplers. No more inserting clips or dangling lanyards, just a twist and it's locked, giving you a low profile **positive locking action**.

The Pull Ring Safety Clip will be phased into stock on all "Boss-Lock" couplers as inventory is replaced.

Buy with Confidence

"Boss-Lock" Investment Stainless Steel Cam Arms are Guaranteed!!!

Should you ever break a "Boss-Lock" Investment Stainless Steel Cam Arm, simply return it to the nearest warehouse for a free replacement.

SPECIFICATIONS ON OUR CAM AND GROOVE

Specifications:

"Boss-Lock" and "Andrews" Cam and Groove couplers and adapters are produced to interchange with all product produced to **MIL-C-27487F**.

No standard exists for the 1/2" and 8" fittings, and generally these sizes do not interchange with other manufacturers.

For use with Liquids, consult Dixon for specific recommendations.

Pressure Ratings:

Recommendations based on the use of mating Dixon fittings at ambient temperature (70° F) with standard Buna-N Seal installed. For use at elevated temperature or other unusual operating conditions, consult the factory.

"Boss-Lock" and "Andrews" Couplers and Adapters Maximum Working Pressure						
Sizes	1/2"	3/4"-2"	2 1/2"	3"	4"	5" & 6"
PSI	150	250	150	125	100	75

VAPOR VENTS

"UPFLOW VENT" - Features an upward flow design which rapidly disperses vapors. A grooved drain lip in the cap extends beyond the base for efficient water drain-off. Includes two set screws for easy installation.

Model #	Size	Weight (lbs.)	Height	Width
45-15	1 1/2"	1.2	4 3/8"	4"
45-20	2"	1.1	4 3/8"	4"
45-30	3"	2.6	5 3/8"	6"

- Assures even pressure in the UST during filling or pumping
- All metal construction
- Flame-retardant 40 mesh bronze screen
- Conforms with NFPA-30

45

RESTRICTOR VENT - Utilized for vapor recovery applications. Has a restrictor plate with 1/2" hole and two set screws for easy installation.

Model #	Size	Weight (lbs.)	Height	Width
45R-15	1 1/2"	1.2	4 3/8"	4"
45R-20	2"	1.1	4 3/8"	4"
45R-30	3"	2.0	5 3/8"	6"

- Assures even pressure in the UST during filling or pumping
- All metal construction
- Flame-retardant 40 mesh bronze screen
- Conforms with NFPA-30

45R

PRESSURE VACUUM VENT - Utilized for vapor recovery applications. An internal pressure valve, available in 8, 12, or 16 oz. settings, restricts vapor escape during product drops. All pressure valves have a 1/2 oz. vacuum setting. The 46 has a 2" pipe thread; the 46S has two set screws.

Model #	Size	Weight (lbs.)	Height	Width	Pressure
46-2080	2"	2.0	5 7/8"	4 1/4"	8 oz.
46-2012	2"	2.0	5 7/8"	4 1/4"	12 oz.
46-2016	2"	2.0	5 7/8"	4 1/4"	16 oz.
46S-2080	2"	2.0	5 7/8"	4 1/4"	8 oz.
46S-2012	2"	2.0	5 7/8"	4 1/4"	12 oz.
46S-2016	2"	2.0	5 7/8"	4 1/4"	16 oz.

- Assures even pressure in the UST during filling or pumping
- All metal construction
- Flame-retardant 40 mesh bronze screen
- Conforms with NFPA-30

46

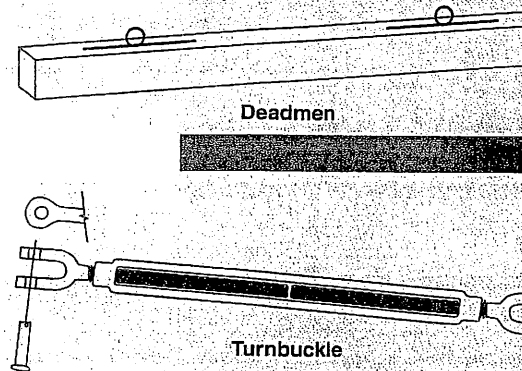
Anchoring Systems

Deadmen/Turnbuckles

Fluid Containment can provide deadmen anchors and turnbuckles for selected models of double wall tanks. Deadmen anchors provide a means to prevent installed fiberglass tanks from floating out of the ground when the tank installation is subject to ground water around the tank. Deadmen anchors, when used with FCI fiberglass hold down straps and other FCI or contractor supplied hardware and installed according to FCI installation instructions, prevent tank flotation and cost less than a concrete pad under the tank.

The FCI deadmen and turnbuckles can usually be shipped with 4', 6' and 8' tanks at no additional charge.

Deadmen are available in various lengths and are designed with and without eyebolts. Ask for publication "Deadmen Anchors and Turnbuckles" to select the proper deadman for a particular tank size.

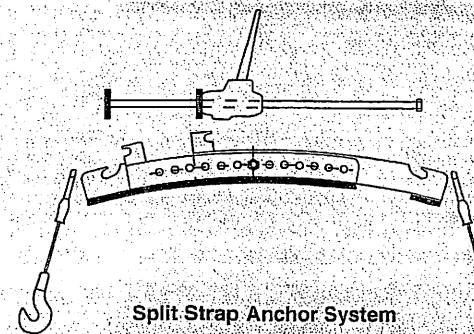


Deadmen

Turnbuckle

Split Strap Anchor System

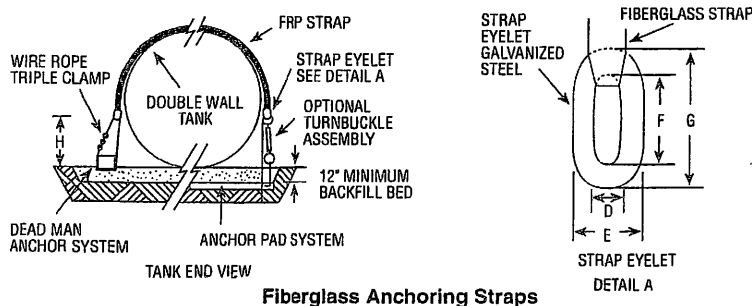
Fluid Containment can provide a split strap anchor system for 6', 8' and 10' diameter double wall tanks. The split strap anchor system provides a method to attach and tighten the tank anchor straps to deadmen or to an anchor pad without entry into the excavation. The split strap anchor system is safer and less costly than traditional methods that require shoring or other hole stabilization techniques to allow entry into the excavation.



Split Strap Anchor System

Fiberglass Anchoring Straps

When mechanical anchoring is specified, fiberglass anchoring straps are available for all Double-Wall Tanks.



Fiberglass Anchoring Straps

Tank Diameter		D	E	F	G
Nominal	H				
4'	21"	9/16"	1 3/8"	1 1/8"	2 1/16"
6'	34"	1 1/8"	2 7/8"	2 1/2"	4 1/4"
8'	38"	1 1/8"	2 7/8"	2 1/2"	4 1/4"
10'	52"	1 1/8"	2 7/8"	2 1/2"	4 1/4"

Tank Capacity	Diameter	No. of Straps Required
550	4'	2
600	4'	2
1,000	4'	2
2,500	6'	2
3,000	6'	2
4,000	6'	2
5,000	6'	4
6,000	6'	4
5,000	8'	2
6,000	8'	2
8,000	8'	4
10,000	8'	4
12,000	8'	4
15,000	8'	6
10,000	10'	3
12,000	10'	4
15,000	10'	4
20,000	10'	6
25,000	10'	8
30,000	10'	8
35,000	10'	8
40,000	10'	10

Containment Solutions' Oil/Water Separators Models CSI-10 and CSI-15

To Achieve 10 ppm or 15 ppm Oil Effluent

Models CSI-10 or CSI-15	Nominal Volume Gallons	Nominal Dia (ft)	Single- Wall Tank (SWT) Length	Double- Wall Tank (DWT) Length	Inlet/ Outlet Nozzle Size (in)	Flow Rate (gpm)	Oil Storage Capacity (gal)	Storage & Oil Spill Capacity* (gal)	Single- Wall Tank Weight (lbs)	Double- Wall Tank Weight (lbs)
550	550	4'	9' 8"	9' 9"	4	55	110	440	441	871
1,000	1,000	4'	11' 4"	11' 5"	4	100	200	900	514	1,054
2,000	2,000	6'	13' 8"	13' 9"	5	200	400	1,800	948	2,201
3,000	3,000	6'	16' 0"	16' 1"	6	300	600	2,700	1,046	2,566
4,000	4,000	6'	19' 8"	19' 9"	6	400	800	3,600	1,384	2,984
5,000	5,000	6'	24' 7"	24' 8"	8	500	1,000	4,500	1,705	3,380
6,000	6,000	6'	29' 6"	29' 7"	8	600	1,200	5,400	1,930	3,710
6,000	6,000	8'	19' 5"	19' 6"	8	600	1,200	5,400	2,680	4,575
7,000	7,000	8'	22' 2"	22' 3"	8	700	1,400	6,300	3,025	5,001
8,000	8,000	8'	24' 11"	25' 0"	10	800	1,600	7,200	3,310	5,435
9,000	9,000	8'	27' 8"	27' 9"	10	900	1,800	8,100	3,580	5,801
10,000	10,000	8'	30' 5"	30' 6"	10	1,000	2,000	9,000	3,915	6,300
12,000	12,000	8'	35' 11"	36' 0"	10	1,200	2,400	10,800	4,645	7,300
15,000	15,000	8'	44' 5"	44' 6"	12	1,500	3,000	13,500	5,551	8,870
20,000	20,000	10'	37' 4"	37' 5"	14	2,000	4,000	18,000	6,040	11,000
25,000	25,000	10'	45' 11"	46' 0"	16	2,500	5,000	22,500	7,295	12,920
30,000	30,000	10'	54' 6"	54' 7"	16	3,000	6,000	27,000	8,480	15,180
40,000	40,000	10'	71' 3"	71' 4"	20	4,000	8,000	36,000	11,400	20,030

*Emergency oil spill capacity is 90% of tank volume based on no accumulated oil in vessel at time of spill.

CSI Oil/Water Separators are designed in accordance with Stokes Law, API 1630 and API 421, for the gravity separation of free oils and settleable solids from water, for intermittent and variable flows of oil/water combinations up to 20% oil concentration.

SUBMITTAL REVIEW
SONOMA COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

Corrections or comments made on the shop drawings during this review do not relieve the contractor of his responsibility to comply with the requirements of the drawings and specifications. This review is only to check for conformance with the Contract Documents. The Contractor remains responsible for confirming and correlating all dimensions and quantities; selecting fabrication processes and techniques of construction; coordinating the work of the trades; and performing the work in a safe and satisfactory manner.

This review is subject to all provisions of the Contract Documents.

<input checked="" type="checkbox"/> NO EXCEPTIONS TAKEN INLET VALVE	<input type="checkbox"/> AMEND & RESUBMIT REJECTED - RESUBMIT	<input type="checkbox"/> WASTE OIL PUMP
REVISE AS NOTED (No revision required) OR INTERCEPTOR		

By: Debra Baum Date: 8/2/02

WASTE OIL STORAGE
 TANK WITH
 OVERFILL PUMP CONTROL

OUTLET
 VALVE

Optional interstitial monitoring for oil/water separator and waste oil storage tank not shown.

CSI also offers UL 2215 listed, performance rated, continuous flow Oil/Water Separators. CSI UL 2215 listed Oil/Water Separators have been tested in accordance with US Coast Guard 46 CFR 162.050. Contact your Containment Solutions' Representative for additional information.

CONTINGENCY PLAN
FOR
CENTRAL DISPOSAL SITE
SONOMA COUNTY, CALIFORNIA



SONOMA COUNTY
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC WORKS
INTEGRATED WASTE DIVISION

Administrative Office
2300 County Center Drive, Suite B 100
Santa Rosa, California 95403
Phone: (707) 565-2231

Operations Headquarters
500 Mecham Road
Petaluma, CA 94952
Phone: (707) 565-7940

JUNE 2002

CONTINGENCY PLAN

CENTRAL DISPOSAL SITE SONOMA COUNTY, CA

JUNE 2002

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FIGURES

- FIGURE 1: Site Vicinity Map
- FIGURE 2: Site Location Map
- FIGURE 3A: Site Facilities Map
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APPENDICES

- APPENDIX A: Emergency Coordinators, Phone Numbers and Agencies

EXHIBITS

- EXHIBIT 1: Fire Supression System, Piblic Tipping Facility
- EXHIBIT 2: Smoking Policy, November 1997
- EXHIBIT 2a: Addendum to November 1997 Smoking Policy

CONTINGENCY PLAN

CENTRAL DISPOSAL SITE

General Information

The Contingency Plan has been prepared in accordance with Title 40 CFR, Subpart D of Parts 264 and 265, and the California Code of Regulations (CCR) Title 22, Article 20, following the provisions set forth in 40 CFR, Part 109. The principles of the Contingency Plan are meant to establish a criteria by which to minimize damage that might result from an accidental discharge of hazardous material to a receiving waterway in the vicinity of the Central Disposal Site should the primary line of defense, detailed in the SPCC Plan, fail.

The purpose of the Contingency Plan is to reduce the threat to the safety and health to both County employees and residents of the neighboring community and their environment. Therefore, it is important that in the case of an accidental spill or release, the principles of the Contingency Plan are quickly and effectively carried out.

A detailed outline of Central Disposal's owner, operator, facility contacts and facility description are provided in the first several sections of the SPCC Plan, and will not be repeated here.

1.0 EVALUATION OF EMERGENCY POTENTIAL

Several emergency situations that could occur at the facility have been identified and are listed in this section. Although the list is not comprehensive, it does reflect major health and environmental hazards that could arise. Should any of these situations arise, the appropriate provision of the Contingency Plan must be followed.

1.1 OIL AND CHEMICAL STORAGE AREAS

- 1) A spill may occur due to loss of drum integrity or leakage directly from a drum.
- 2) A fire might break out from the ignition of stored chemicals by an electrical source malfunction or electrostatic discharge.
- 3) A spill or fire could result from damaged or overturned drums or other containers during shipping and receiving.
- 4) A release to the air caused by overheating of volatile chemical compounds in containers.
- 5) A release of chemicals to soil or subsurface waters due to improper discharge of water and spilled chemicals from storage areas.
- 6) Chemical spills during transfer operations of drummed or containerized materials.

FUELING AREAS

- 1) A fuel spill caused by damage to or deterioration of plumbing or fittings.
- 2) A fuel spill due to overfilling equipment tanks.
- 3) A fuel spill due to faulty plumbing or transfer connections at the transport loading/unloading areas.
- 4) A rupture of transport tankers due to inappropriate venting or heating during transport loading/unloading areas.
- 5) A spill due to improper transfer of fuel to an inappropriate area, container, or storage tank.
- 6) A release to the air caused by overheating of volatile compounds in the storage tanks.
- 7) Fire due to static discharge or electrical malfunction.

WASTE OIL STORAGE AREAS

- 1) Spills during transfer operations.
- 2) Spills resulting from the loss of drum integrity or leakage directly from a drum.
- 3) Fire due to static discharge or electrical malfunction.
- 4) Fire or explosion caused by the violent reaction of inappropriately stored/mixed materials and compounds.

1.4 ROCK EXCAVATION

- 1) Fire due to various causes, including drilling and landfill gas.
- 2) Spills due to leakage of port fuel or product from trucks or vehicles.
- 3) Explosion or fire from explosives used during blasting.

2.0 ORGANIZATIONAL STRUCTURE AND EMERGENCY COORDINATORS

2.1 ORGANIZATIONAL STRUCTURE

At the present time, there are approximately 68 full time and extra help employees working at the Central Disposal Site, including service personnel and management personnel.

2.2 DEPARTMENTAL RESPONSIBILITIES

Both management and service personnel have certain responsibilities associated with ongoing operations and emergency procedures. Those responsibilities directly relevant to implementing the Contingency Plan are listed below.

2.2.1 All personnel must:

- ✓ Be thoroughly trained and familiar with emergency response measures, emergency alarms, environmental upset reporting procedures, and evacuation.
- ✓ Be familiar with fire, medical, and other safety and environmental response procedures.
- ✓ Immediately report suspected environmental or safety violations to management.
- ✓ Perform routine maintenance and housekeeping tasks as required.

2.2.2 Management/Supervisory personnel must:

- ✓ Designate appropriate personnel to implement the Contingency Plan, including Emergency Coordinators for each shift.
- ✓ Routinely inspect vessels, containers, vents, plumbing, and other equipment for integrity and wear.
- ✓ Ensure that employees periodically review the Contingency Plan and that they feel competent to take the necessary action in the event of an emergency.
- ✓ Conduct meetings, training, and provide resources for developing spill response procedures and other environmental monitoring and spill cleanup.
- ✓ Periodically inspect and perform preventative maintenance on the interior and exterior of storage tanks.
- ✓ In an emergency, notify the Department of Emergency Services as well as the appropriate local, state and federal agencies. A comprehensive list of Emergency Coordinators, Phone Numbers and Agencies can be found in Appendix A.
- ✓ Ensure that tasks and responsibilities described herein are carried out in a safe and environmentally sound manner.

In the wake of an emergency, such as a fire, an explosion, or a release that threatens human health, the environment, or property outside the facility, Emergency Coordinators are to complete and submit a Spill Response Notification Form (Appendix B) to federal, state, and local agencies.

2.2.3 Service personnel must:

- ✓ Faithfully and accurately follow all operation procedures, including the procedures of this Contingency Plan.
- ✓ Immediately report safety problems to management personnel.
- ✓ Maintain good housekeeping practices in the process and storage areas.
- ✓ Report to management any equipment conditions that might result in environmental degradation.
- ✓ Perform preventative maintenance according to manufacturing specifications.
- ✓ Perform daily walk around inspections of tankers, tractors, and trailers for equipment wear and deterioration before commencing operations. In particular, valves, hoses, and pumps must be maintained in a safe and usable condition. Note and report any and all items in need of repair.
- ✓ Use drip pans or buckets or adsorbent material underneath fittings, couplings, and manifolds when transferring raw materials.
- ✓ Maintain safety and protective gear.
- ✓ Wear appropriate protective gear when transferring or handling raw materials.

2.3 DESIGNATED EMERGENCY COORDINATORS

Specific site personnel have been designated by management to act as Emergency Coordinators in case of a spill, fire, or other emergency at this facility. It is the job of the Emergency Coordinators to aid service personnel or to act directly by initiating contact with the Department of Emergency Services (DES) and dialing 911. Once DES has arrived on site they will assume responsibility for coordinating the different emergency service agencies. A list of Emergency Coordinators has been compiled and has been included as Appendix A.

It is the responsibility of service personnel to contact the Emergency Coordinator in the event of an environmental or other emergency, as well as to implement the appropriate portions of the Contingency Plan.

In the event of an emergency, the Emergency Coordinator, or alternate is responsible for implementing the facilities Contingency Plan and for notifying emergency response authorities. In addition, regulations *require* that an Emergency Coordinator *always* be available, either on-site or on call and be able to reach the facility quickly in order to carry out the contingency plan. (40 CFR 264.55 and 40 CFR 265.55).

3.0 IMPLEMENTATION

3.1 IMPLEMENTATION REQUIREMENTS

In the case of an emergency that threatens human safety or health of the environment, the Emergency Coordinator or alternate will implement the emergency response portion of this plan. In order to assist the Emergency Coordinator in his or her decision to implement the plan, the following criteria have been set up. If there is indecision whether or not to set the plan in motion because, for example, the degree of the emergency seems uncertain, the plan should be implemented until it is obvious that no emergency exists. It is better to err on the side of safety.

3.1.1 Spills

3.1.1.1 Implementation Criteria

Any of the following conditions require implementation of the plan:

- ✓ The spill could present a fire or explosion hazard.
- ✓ The spill could release toxic fumes or liquids.
- ✓ The spill cannot be readily contained on impervious surfaces.
- ✓ The spill cannot be readily contained on impervious surfaces, and presents a significant potential for present or future contamination of surface water or groundwater.
- ✓ The spill cannot be contained on County property.
- ✓ A spill of fuel or other material originating at the Landfill occurs on some site other than County property.
- ✓ The spill results in visible sheen of oil or other petroleum products on a receiving waterway.

For spills not meeting any of the above criteria, the decision to implement the Contingency Plan should be based on the following criteria:

- ✓ Quantity of materials spilled.
- ✓ Hazardous nature of materials spilled.
- ✓ Environmental, health and safety considerations of the particular area in which the spill occurred.

3.1.1.2 Agency Notification Requirements

In the event of a spill, various local, state and federal agencies will need to be notified. In California, state requirements mirror those of the federal government and require notification to the Department of Health Services (Appendix A) of spills in excess of the reportable quantity (RQ). The following is a synopsis of current requirements as set forth in 40 CFR, Part 302. Some of the chemicals found at Central that are subject to these requirements are listed along with their respective federal reportable quantities. If the amount of the spill in any 24-hour period exceeds the RQ listed, the spill must be reported immediately to the California Department of Health Services office at the telephone numbers listed in section 3.4, Table 3.4.1 of this plan.

Table 3.1.1: Materials and Reporting Quantities

Substance	Associated Products	Reportable Quantity*
Gasoline	N/A	**
Diesel	Diesel Fuel	**
Petroleum Oils	Engine Oil, Hydraulic Fluid, Transmission Fluid, etc.	**
Ethylene glycol	Anti Freeze	55 gallons
Methylene Chloride	Paint Products	1,000 pounds
Acetone	Paint/Primer Products	5,000 pounds
Sulfuric Acid	Batteries	1,000 pounds
Sodium Hydroxide	Base Product	1,000 pounds

* Reportable Quantities (RQ) are taken from 40 CFR Table 302.4. Consult Material Safety Data Sheet (MSDS) to determine exact chemical ratios of chemical substances in figuring exact quantities for comparison to the reportable quantities listed above.

** 40 CFR 110 Discharge of oil in such quantities as "may be harmful" pursuant to section 311(b)(4) of the Act. For purposes of section 311(b)(4) of the Act, discharges of oil in such quantities that the Administrator has determined may be harmful to the public health or welfare or the environment of the United States include discharges of oil that:

- (a) Violate applicable water quality standards; or
- (b) Cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

Since additional, unlisted materials might be stored on County property, and because other factors will apply to these reporting requirements, County management should consult relevant sections of 40 CFR, Part 302 whether or not they need to report a specific spill event.

In addition, Section 304 of the Emergency Planning and community Right-to-Know Act of 1986 (EPCRA) requires that releases in excess of the reportable quantities that migrate beyond the facility boundaries must be reported to the state and local emergency response agencies. Such notification must be made immediately by telephone, radio, or in person. Telephone numbers for this and other agencies are listed in Appendix A of the "Book of Plans", Book K located in the main office. The notification must include the name, address, and EPA number (CAD 983 597 485) of the facility, the chemical name or identity of any substance involved in the release, an estimate of the quantities involved, the time and duration of the release, the media to which the release occurred, and any known or anticipated chronic or acute health risks associated with the released substance.

As soon as practicable following the release (maximum of fifteen days), a written follow up notice must be made to the state and local emergency response agencies. The follow up notice must include the information provided in the original verbal notification, as well as a description of actions taken to respond to and contain the release.

3.1.2 Fires

Any fire at the facility is cause for implementing the Contingency Plan. In the event of a fire in the Public Tipping Facility or in the fill, set guidelines apply and are included in the Emergency Response and Evacuation Plan. In addition, specialized emergency assistance should be summoned if any of the following conditions exists:

- ✓ If the fire releases toxic vapors or smoke from burning product or raw material.
- ✓ If there is a reasonable expectation that the fire will spread such that it presents a potential source of ignition for other hazardous materials.
- ✓ If the fire and fumes could spread to an off site location.
- ✓ If fire fighting procedures could lead to contamination of surface water or groundwater, or could generate contaminated runoff that could migrate to an off site location.

3.1.3 Explosion

Any explosion occurring (excluding planned blasting activities during rock excavation operations) at the Central Disposal Site is cause for implementing this plan. In addition, either of the following conditions are reason for implementing the plan:

- ✓ An imminent threat of explosion that may exist for any reason (an explosion could threaten human life or property, ignite hazardous materials or waste, or result in direct release of toxic material).
- ✓ An uncontrolled reaction at the facility leading, for example, to a fire or breach of a container.

3.1.4 Other Releases or Emergencies

The following miscellaneous conditions require implementing the contingency plan:

- ✓ The unregulated release of toxic vapors or fumes.
- ✓ Collapse or threats of collapse of fuel or chemical storage, or handling equipment due to earthquake, flood, windstorm, or other natural phenomenon.
- ✓ Any other condition that in the opinion of the Emergency Coordinator may present a significant threat to human health and safety, or the environment.

3.2 GENERAL EMERGENCY RESPONSE PROCEDURES

The following general procedures are applicable in all areas of the Central Disposal Site. Additional, more specific response procedures for particular types of emergencies are presented in Section 3.4. Since each person has different responsibilities, it is important that all employees be well versed in reporting emergencies and initiating portions of this Contingency Plan. Because employee and community safety is the primary concern, any situation that may be perceived as hazardous should be immediately reported to the appropriate supervisory staff or Emergency Coordinator.

3.2.1 Detection

A hazardous situation may be detected in a number of ways. This list is not intended to be exhaustive but is designed, rather, to reflect the types of circumstances that may lead an employee to evaluate the potential for emergency action.

- ✓ Unusual odors.
- ✓ Visible indications of leaks or spills.
- ✓ Abnormal heat generation, vibrations or sounds in storage or mixing tanks.
- ✓ The unexpected presence of smoke or fumes.
- ✓ Unexplained power outages.
- ✓ Visible, non-routine steam plumes from tank vents.
- ✓ Activation of any fail safe protective device or alarm.
- ✓ Substantial or rapid leakage from any tank or vault.
- ✓ The presence of smoke or visible fumes.
- ✓ Any other unusual condition that cannot be readily ascribed to normal operations.

3.2.2 Immediate Action

Once it has been determined that emergency action is necessary, the Contingency Plan should be set in motion; the following immediate steps should be taken:

- ✓ Notify co-workers to clear the area.
- ✓ Report to a supervisor immediately (any employee may declare an emergency and notify supervisors of the situation). To report a potentially hazardous condition, proceed to the office. Describe the nature and location of the problem to a supervisor or Emergency Coordinator.
- ✓ Evacuate the immediate area. If it is deemed necessary, the Emergency Coordinator or a designee should signal a general evacuation over the facility radio and phone system. Evacuate Immediately! Do not stop for belongings or continue working.
- ✓ The Emergency Coordinator should disseminate information, report conditions to management, and summon environmental or emergency assistance. If evacuation is necessary, the evacuation procedure found in the Emergency Response and Evacuation Plan should be followed. The designated evacuation routes shown in Figure 5 are to be included as a fundamental portion of the employee orientation training at the Central Disposal Site.

3.3 SPECIFIC EMERGENCY RESPONSE PROCEDURES

3.3.1 Hazardous Material Spills

At all times, there must be at least one employee either 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. The Emergency Coordinator must be thoroughly familiar with all aspects of the facility's Contingency Plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all plans and records within the facility, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the Contingency Plan.

In the case of a chemical spill it is the responsibility of the Site Supervisor, who will act as the Emergency Coordinator to notify emergency services and to communicate to management the size and scope of the emergency. If the primary Emergency Coordinator is not available the responsibility falls to an Alternate.

If the Emergency Coordinator determines that the facility has had a release, fire, or explosion that could threaten human health, or the environment, outside the facility, he must report his findings as follows:

- (1) If the Emergency Coordinator's assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities. The Emergency Coordinator must be available to help appropriate officials decide whether local areas should be evacuated; and

(2) The Emergency Coordinator must immediately notify either the government official designated as the on-scene coordinator for that geographical area, (in the applicable regional contingency plan under part 1510 of this title) or the National Response Center (see Appendix A).

Ordinarily, County employees are limited to first responder actions, such as detection, securing and denying access to the area and notifying the Emergency Coordinator. County employees should limit their response to defensive actions that will not compromise the safety of either themselves or other employees. The job of containing the release should be left to trained technicians and specialists: clean-up will be performed by specially trained contractors. It is appropriate to contract cleanup specialists for any spill smaller than fifty-five gallons that has been determined to present a special hazard and cannot be safely handled by County employees or an uncontained spill consisting of more than fifty-five gallons of material, unless otherwise directed by the Emergency Coordinator

THE SAFETY OF ALL THE EMPLOYEES IS OF THE UTMOST CONSIDERATION. NO SPILL RESPONSE OR CLEANUP SHOULD BE ATTEMPTED OUTSIDE THE PURVIEW OF THE EMPLOYEE'S TRAINING AND WITHOUT THE USE OF PROPER SAFETY AND PROTECTIVE EQUIPMENT.

Additionally, no person should attempt to perform cleanup procedures without having been previously trained in the proper handling of spilled chemicals and their chemical, physical, and toxicological hazards.

3.3.1.1 General Procedures for Spill Cleanup

The following general procedure is meant for the cleanup of spills in any area.

- ✓ Notify the Emergency Coordinator or Alternate immediately
- ✓ If appropriate, sound alarms.
- ✓ Clear the immediate vicinity of the spill and make certain that employees are available to stand guard to prevent the exposure or contamination of people who unwittingly enter the spill site.
- ✓ Identify the spilled material and determine the amount of the spill.
- ✓ Obtain personal protective equipment and appropriate spill cleanup material.
- ✓ If not trained in spill response and chemical safety procedures, do not attempt cleanup.
- ✓ Begin containment procedures by blocking drains, catch basins, or other sources of discharge.
- ✓ Evacuate the facility if there is a possibility that personnel could become trapped.

In the case of an ignitable material spill use a combustible gas meter to detect the presence of volatile vapors, such as methane gas (gas detection is available in the main office). Obtain emergency fire extinguishers and bring them to the spill area. Extinguish, disconnect or shut down any possible ignition sources in the area. However, be careful not to shut down equipment when the process of shutting down might produce an arc that could ignite the spilled material.

Beginning at the edges of the spill, control the material by forming a barricade or a dike. Any absorbent material including diatomaceous earth, vermiculite, sand, dirt or other materials is suitable. Many of these materials are available in the spill kits, located throughout the facility.

After the material has been adequately contained (to the point where further spread of the spill has been halted) additional absorbent may be added to the material to sufficiently absorb the remainder of the spill. The direct recovery of spilled material, by pumping to a holding tank, may also be attempted if the quantities of spilled material are large enough.

Sweep, shovel, or squeegee absorbed material into dustpans or other suitable collection devices and place into approved 17-H ring top drums for disposal. Materials may alternatively be placed into double lined plastic bags prior to drumming. All containers should be labeled with their contents, as well as the name of a person who may be contacted for additional information regarding the material inside. Bags should be placed in drums and all drums should be stored in a secure area.

Note that absorbed materials maintain their hazardous properties. Ignitable material may still be ignitable after being absorbed and should be protected from sources of ignition. Caustics remain corrosive, and absorbed phenol must continue to be regarded as toxic. Following cleanup of the bulk of the spill, the spill area should be further cleaned using mops, brooms, or other cleanup equipment. Following a secondary cleanup with damp mops or other suitable procedures, all depleted cleanup materials should be noted and restocked to prevent depletion of cleanup material supplies.

Additional cleanup may be required to meet state or federal standards, depending on the nature and extent of the event. This effort may require soil excavation and chemical testing of the spill site. The standard of cleanup applied to cleanup of contaminated soil and other media depends on the specific substances involved in the contamination.

3.3.2 Fire Response

Fire constitutes a major potential hazard at the Central Disposal Site due to the large amount of combustible materials and flammable products on the site. The following general procedures should be followed in the event of a fire at the facility:

- 1) Upon detection of a fire immediately notify the Emergency Coordinator or your supervisor. Information should include your name, your location, the nature and extent of the fire, and any injuries that may have occurred.
- 2) The Emergency Coordinator or Site Supervisor should immediately evaluate the situation and, if visible flames exist, initiate orderly evacuation of the facility. The evacuation procedures described in section 3.3 should be followed.
- 3) The Emergency Coordinator or Site Supervisor should notify the fire department. He should use his judgment whether or not deal with the fire using site personnel or to wait for the fire department to arrive. Either way, the Site Supervisor should emphasize concern for the protection of employees and community safety when determining a course of action.
- 4) The Site Supervisor and first responders should stand by to assist emergency response teams and conduct orderly and safe evacuations of the public and nonessential personnel. The Emergency Coordinator will direct emergency vehicles, provide information regarding the nature of the fire and ignited components, and prepare an incident report of the incident.
- 5) Following a response by the local fire department, the Emergency Coordinator should evaluate potential environmental contamination due to runoff of contaminated fire fighting water. The Emergency Coordinator should take precautions to prevent contamination of personnel and off site migration of contaminated water.
- 6) Evacuation of the facilities may be warranted in the event of a chemical fire or emission of large amounts of smoke and toxic fumes. Evacuees should be directed to upwind areas to prevent exposure to toxic fumes or smoke. The fire department should be called to arrange for evacuations of downwind residents or industrial sites.
- 7) IN THE EVENT OF A CHEMICAL FIRE, BE ON THE LOOKOUT FOR EXPLOSIONS AND/OR TOXIC FUMES. NO COUNTY PERSONNEL ARE TO RESPOND TO CHEMICAL FIRES WITHOUT PREVIOUS TRAINING IN CHEMICAL HAZARDS, FIRE FIGHTING TECHNIQUES, AND PERSONAL PROTECTIVE GEAR APPLICATION. FIRE FIGHTING ACTIVITIES ARE RESTRICTED TO TRAINED FIRE FIGHTING PROFESSIONALS.

3.3.2.1 Fire In The Fill

Should a fire occur in the fill, employees are to implement the Emergency Response and Evacuation Plan.

3.3.2.2 Fire On The Tipping Floor

In the event of a fire in the Public Tipping Facility, employees are to implement the Emergency Response and Evacuation Plan.

3.3.3 Explosion Response

Explosions may occur at any site around the facility where combustible gasses or vapors have achieved concentrations between the upper and lower explosive limits. These concentrations are most likely to occur in chemical storage areas. Explosions in chemical storage areas present significant risk of environmental contamination due to released chemicals from these facilities.

In all cases of explosion, notification of the local fire department is required. Response to explosions by County employees should be restricted to evacuation and reporting measures. The Emergency Coordinator should ensure that reporting requirements have been met and that the fire and police departments have been adequately notified. Response to explosive events at the facility must be directed by qualified professionals and should be restricted to cooperating with and assisting the responding agencies.

In addition to the responses described in the section of fire response, the Emergency Coordinator should ensure that in case of explosion, an evaluation is made of the structure integrity of the facility in the area of the explosion, including an appraisal of the potential for future collapse of the facility.

SPILL CONTAINMENT EQUIPMENT INVENTORY

Item	Stock		Comment
Emergency Pocket Guide Book	1 each	yes__ no__	_____
Safety goggles	2 each	yes__ no__	_____
Silver Shield Gloves	2 pair	yes__ no__	_____
Dura Wear TyVex Suits	2 pair – XL	yes__ no__	_____
Pig Socks – for water & water-based fluids	5 each - Blue	yes__ no__	_____
30" x 30" Oil Plus Pads	25 each	yes__ no__	_____
36" x 30" - 0.50 mil clear bags	2 each	yes__ no__	_____
3 x 4 Oil 430 Oil Socks	5 each	yes__ no__	_____
2 ¼" H x 10" L Dikes	2 each	yes__ no__	_____
Nitrile Gloves – 11mil - 13"L	2 pair	yes__ no__	_____
Ultra Drain Seal – 48" x 48"	2 each	yes__ no__	_____

Additional Comments:

Inspected By: _____

Date: _____

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**** Contact supervisor Immediately when guage indicates 9 or fewer inches until full.**

Central Disposal Site Monthly SPCC Inspection Checklist

(adapted from STI SP-001)

Date of Inspection: _____ **Tank ID#:** _____

Date of Last Inspection: _____ **Inspector's Signature:** _____



Item	Status*	Notes/Comments
Is water present in the primary tank?**	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
Does the tank show signs of leakage?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
Is the tank damaged, rusted, or deteriorated?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
Are any bolts or seams damaged?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
Has the tank foundation settled?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
Have the tank supports deteriorated or buckled?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
Is the level gauge in poor condition or not operating?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
Are vents obstructed or non-operable?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
Are there liquids in the secondary containment, in the annular space, interstice, or spill container?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
Are there visible signs of leakage around the tank, concrete pad, containment pad, or spill container?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
Are any pipes, gaskets, valves, or other equipment leaking?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
Is there any debris or fire hazards in containment?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
Are drain valves operable and in the closed position?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
Are containment egress pathways blocked or gates non-operable?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
Are any tank openings not properly sealed?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
Is any of the spill response inventoried missing?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
Are there any conditions that should be addressed for the continued safe operation or that might affect the site SPCC Plan?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	
Additional Comments or Notes:		

The periodic AST inspection is intended for monitoring the external AST condition and its containment structure. This visual inspection does not require a certified inspector. It shall be performed by the owner's inspector who is familiar with the site and can identify changes and developing problems.

*Any item marked "Yes" requires an explanation and is to be addressed immediately.

**Use water detecting paste to check for the presence of water in the fuel tank. If water is present, arrange to have it removed. Upon discovery of water in the primary tank, secondary containment area or spill container, interstice, remove promptly or take other corrective action. Before discharging to the environment inspect the liquid for regulated products or other contaminants and dispose of properly.

In the event of severe weather (snow, ice, wind storms) or maintenance (painting, etc.) that could affect the operation of critical components (normal and emergency vents, valves) an inspection of these components is required immediately following the event.

Retain for at least 36 months

Sonoma County Central Disposal Site Annual Inspection Checklist

(Adapted from STI-SP001)

Bulk storage containers at the facility are required to be inspected annually in accordance with the SPCC Plan. This checklist is used to document the results of the inspection. The annual inspection is performed in lieu of one of the monthly inspections, not in addition to.

Inspection Guidance:

- For equipment not included in this standard, follow the manufacturer recommended inspection/testing schedules and procedures.
- The periodic AST Inspection is intended for monitoring the external AST condition and its containment structure. This visual inspection does not require a certified inspector. It shall be performed by an owner's inspector who is familiar with the site and can identify changes and developing problems.
- Inspect the AST shell and associated piping, valves, and pumps including inspection of the coating for Paint Failure.
- Inspect:
 1. Concrete containment structures and tank foundations/supports including examination for holes, washout, settling, paint failure, in addition to examination for corrosion and leakage.
 2. Steel containment structures and tank foundations/supports including examination for washout, settling, cracking, and for paint failure, in addition to examination for corrosion and leakage.
- Inspection of cathodic protection system, if applicable, includes the wire connections for galvanic systems and visual inspection of the operational components (power switch, meters, and alarms) of impressed current systems.
- Remove promptly upon discovery standing water or liquid in the primary tank, secondary containment area, interstice, or spill container. Before discharge to the environment, inspect the liquid for regulated products or other contaminants and disposed of it properly.
- In order to comply with EPA SPCC (Spill Prevention, Control and Countermeasure) rules, a facility must regularly test liquid level sensing devices to ensure proper operation (40 CFR 112.8(8)(v)).
- Non-conforming items important to tank or containment integrity require evaluation by an engineer experienced in AST design, a certified inspector, or a tank manufacturer who will determine the corrective action. Note the non-conformance and corresponding corrective action in the comment section. Retain the completed checklists for 36 months.
- Complete this checklist on an annual basis supplemental to the owner monthly performed inspection checklists.
- Note: If a change has occurred to the tank system or containment that may affect the SPCC plan, the condition should be evaluated against the current plan requirement by a Professional Engineer knowledgeable in SPCC development and implementation.

Sonoma County Central Disposal Site Annual SPCC Inspection Checklist

Date of Inspection:	Tank Name/Id:
Date of Last Annual Inspection:	Inspector (signature)

Item	Status	Item	Status
Tank Containment		Tank Manways, Piping and Equipment within Secondary Containment	
Containment structure in satisfactory condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Flanged connection bolts tight and fully engaged with no sign of wear or corrosion??	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Drainage pipes/valves fit for continued service?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Is Equipment in Containment suitable for continued service?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Tank Foundation and Supports		Venting	
Evidence of tank settlement or foundation washout?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Vents free of obstructions?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Cracking or spalling of concrete pad or ring wall?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Emergency vent operable? Lift as required?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Tank supports in satisfactory condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Level and Overfill Prevention	
Water able to drain away from tank?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Has the tank liquid level sensing device been tested to ensure proper operation?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Grounding strap secured and in good condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Does the tank liquid level sensing device operate as required?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Tank External Coating		Are overfill prevention devices in proper working condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Evidence of paint failure?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Electrical Equipment	
Tank Shell/Heads		Are tank grounding lines in good condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Noticeable shell/head distortions, buckling, denting or bulging?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Is electrical wiring for control boxes/lights in working order?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Evidence of shell/head corrosion or cracking?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		

Additional Notes/Observations: _____



STANDARD FOR THE INSPECTION OF ABOVEGROUND STORAGE TANKS

**SP001
ISSUED JULY 2006
4th EDITION**

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PREFACE

The Steel Tank Institute (STI), formed in 1916, is a not-for-profit organization whose purpose is to secure co-operative action in advancing by all lawful means the common purposes of its members and to promote activities designed to enable the industry to conduct itself with the greatest economy and efficiency. It is further the purpose of STI to cooperate with other industries, organizations and government bodies in the development of reliable standards which advance industry manufacturing techniques to solve market-related problems.

This Standard was developed by the Steel Tank Institute AST Inspection Standard Committee comprised of the following members and alternates:

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1.0 GENERAL

- 1.1 This standard provides inspection and evaluation criteria required to determine the suitability for continued service of aboveground storage tanks until the next scheduled inspection. The purpose of conducting inspections is to identify the condition of and changes to the AST.
- 1.2 This Standard is intended for use by organizations and/or individuals who are knowledgeable and experienced in aboveground tank inspection. Note that the requirements included in this standard are minimum requirements and these other documents may have requirements that are more stringent. When applicable federal, state and local laws, and regulations concerning tank inspection are more stringent than the requirements of this standard, then these laws and regulations shall apply.
- 1.3 **OTHER STANDARDS**
- 1.3.1 Only aboveground tanks included in the scope of this standard are applicable for inspection per this standard.
- 1.3.2 Other standards, recommended practices and other equivalent engineering and best practices exist that provide alternative inspection requirements for tanks defined within the scope of this standard and for tanks outside the scope of this standard. For example, see API Standard 653, *Tank Inspection, Repair, Alteration, and Reconstruction*, for additional information pertaining to tanks built to API Standard 650 and API Specification 12C tanks and API 12R1, *Recommended Practice for Setting, Maintenance, Inspection, Operation, and Repair of Tanks in Production Service*, for tanks employed in production service or other similar service.
- 1.4 **OWNER'S RESPONSIBILITY**
- 1.4.1 The owner is responsible for compliance with fire codes, local ordinances, and other applicable rules and regulations. The owner may want to retain assistance from specialists to aid in regulatory compliance, safe operations and installations in accordance with recognized industry standards.
- 1.4.2 The owner shall verify that persons working on ASTs understand and address the hazards associated with the contents of the ASTs as well as safe entry and procedures associated with those ASTs.
- 1.4.3 The owner's inspector is responsible for performing the periodic AST inspections and documenting the results in accordance with this standard.
- 1.4.4 The owner has the responsibility to address corrective actions identified in inspection reports.
- 1.5 **SCOPE**
- 1.5.1 This standard applies to the inspection of aboveground storage tanks. These storage tanks include shop-fabricated tanks, field-erected tanks and portable containers as defined in this standard, as well as the containment systems. The requirements for field-erected tanks are covered separately in Appendix B.
- 1.5.2 This standard applies to ASTs storing stable, flammable and combustible liquids at atmospheric pressure with a specific gravity less than approximately 1.0.
- 1.5.3 This standard applies to ASTs storing liquids with operating temperatures between ambient temperature and 200 degrees F (93.3°C).
- 1.6 At a minimum, the following tank components shall be inspected (as applicable):
- Primary tank
 - Secondary tank
 - Tank supports
 - Tank anchors
 - Tank foundation and external supports
 - Tank gauges and alarms
 - Insulation covering
 - Tank appurtenances
 - Normal vents
 - Emergency vents
 - Release Prevention Barriers
 - Spill Control Systems

ABOVEGROUND STORAGE TANK (AST) – a tank or container designed to operate at pressures from atmospheric pressure through a gauge pressure of one psig measured at the top of the tank. The tank may be sitting on the ground, or set on supports, such as saddles, skids or legs, etc. and may be installed in a vault. Included are shop-fabricated tanks, field-erected tanks, and portable containers with a capacity of 55 U.S. gallons (208 liters) or greater.

CONTINUOUS RELEASE DETECTION METHOD (CRDM) – a means of detecting a release of liquid through inherent design. It is passive because it does not require sensors or power to operate. Liquid releases are visually detected by facility operators. The system shall be designed in accordance with good engineering practice. Several acceptable and commonly used CRDM systems are as follows:

- Release prevention barrier (RPB) described in definition of release prevention barrier.
- Secondary containment AST including double-wall AST or double-bottom AST
- Elevated AST with release prevention barrier described in definitions of elevated AST and release prevention barrier.

CORROSION RATE – the rate of degradation of materials due to chemical reactions with their environment. The rate of corrosion is established by the certified inspector as the maximum shell thickness loss divided by the operational service time.

CERTIFIED INSPECTOR – a tank inspector who meets the certification requirements identified in Section 4.2 of this standard.

DOUBLE-WALL AST – an AST with a primary tank contained within a secondary containment tank forming an interstitial (annular) space. An interstitial (annular) space between the two tanks is formed that is capable of being tested and monitored for leakage into the interstice

ELEVATED AST – an AST which is not in contact with the ground and which is raised above the surface of the ground or bottom of a vault using tanks supports. It allows for a visual external inspection of the bottom of the primary tank. Examples of elevated tanks are tanks constructed on grillage or grating, or tanks on supports.

FIELD-ERECTED AST – a welded carbon or stainless steel AST erected on-site where it will be used. For the purpose of this standard, ASTs meeting either of the following descriptions are to be inspected as field-erected ASTs:

- a. An AST where the nameplate (or other identifying means such as accurate drawings) indicates that it is a field-erected AST. These are limited to a maximum shell height of 50 feet (15.24 meters) and a maximum diameter of 30 feet (9.14 meters).
- b. An AST without a nameplate (or other identifying means such as accurate drawings) that is more than 50,000 U.S. gallons (189,271 liters) and a maximum shell height of 50 feet (15.24 meters) and a maximum diameter of 30 feet (9.14 meters).

FORMAL EXTERNAL INSPECTION (FEI) – a documented external inspection conducted by a certified inspector to assess the condition of the AST and determine its suitability for continued service without entry into the AST interior.

FORMAL INTERNAL INSPECTION (FII) – a documented internal inspection conducted by a certified inspector to assess the internal and external condition of the AST and determine its suitability for continued service. This includes the inspection requirements of a formal external inspection. A formal internal inspection satisfies the requirements of a formal external inspection and shall be considered equivalent to or better than a formal external inspection for the purposes of scheduling.

INSPECTION PLAN – a written plan developed by the owner or a Professional Engineer that details the inspection requirements for a facility.

INTERSTICE – in a double-wall AST, the space between the primary tank and secondary tank. In a double-bottom AST, the space or void between the two bottoms. This space may be open or closed to the atmosphere and may be monitored or tested by vacuum or leak detection equipment or by visual inspection.

LEAK TESTING METHOD (LTM) – a point in time test method to determine if an AST is liquid tight. Leak testing is not preventive in the sense that it provides an indication only if the AST integrity has already been breached. Therefore, it may be used as a tank integrity measure or as a supplement to other inspection procedures. LTMs may include the following technologies:

- Gas pressure decay (includes vacuum decay)
- Gas pressure soap bubble testing
- Gas tracers (e.g., helium tracer)
- Soil tracers (chemical marker)
- Mass measurement
- Level measurement
- Hydrostatic test

LOCKOUT/TAGOUT – a procedure for affixing lockout or tagout devices to energy isolating equipment and for otherwise disabling machines or equipment to prevent unexpected energization, startup, or release of stored energy. Its intent is to prevent injury to employees, and to comply with the following OSHA (Occupational Safety & Health Administration) regulations or their equivalent:

- 29 CFR part 1910.147, *The Control of Hazardous Energy (Lockout/Tagout)*
- 29 CFR part 1910.331 to 1910.333, *Electrical Lockout/Tagout*.

MAGNETIC FLUX LEAKAGE (MFL) – a method used to nondestructively inspect ferromagnetic materials such as a carbon steel floor plate. A magnetic field is applied to steel to near saturation, so that it cannot hold any additional field. In the presence of a flaw (wall thinning), some of the magnetic flux escapes or “leaks” into the surrounding environment, where magnetic sensors detect it and quantitatively report a flaw signal. Once the flaw is detected and identified, an ultrasonic thickness scan (UTS) is required in the area to quantify the flaw. This method is commonly used on AST floors (MFL Floorscan) to determine the underside condition of the tank floor.

MANWAY – an AST opening designed to allow personnel entry into an AST.

MICROBIAL INFLUENCED / INDUCED CORROSION (MIC) – corrosion accelerated/caused by certain microbes. Depending on the type of bacteria, the degree of microbial activity, and the thickness and type of AST material, MIC is characterized by a high rate of corrosion. It sometimes penetrates tank walls and bottoms in two years or less. It is typically characterized by a ring-like pattern of cone or crater-shaped penetrations.

NONDESTRUCTIVE EXAMINATION (NDE) – the development and application of technical methods to examine materials and/or components in ways that do not impair future usefulness and serviceability in order to detect, locate, measure, interpret, and evaluate flaws.

OWNER - the legal entity having control and responsibility for the operation of the existing AST and storage facilities.

OWNER'S INSPECTOR – the owner or owner's designee responsible for conducting owner's periodic AST inspections.

PAINT FAILURE – significant peeling, cracking, spalling, blistering, pitting and chipping etc. of the paint or coating on an AST resulting in the exposure of the metal surface and corrosion of the tank shell.

PERIODIC AST INSPECTION - a visual, documented inspection conducted by an owner's inspector, to assess the general AST conditions, as best as possible, without suspending AST operations or removing the AST from service.

PORTABLE CONTAINER - a closed AST having a liquid capacity equal to or greater than 55 U.S. gallons and not intended for fixed installation.

PRIMARY TANK - the tank in direct contact with the liquid stored.

PROFESSIONAL ENGINEER (PE) - a person who has fulfilled the education and/or experience requirements under state licensure laws and has received a license to practice engineering.

RELEASE PREVENTION BARRIER (RPB) - a liquid containment barrier that is sufficiently impervious to the liquid being stored and is installed under the AST. Its purpose is to divert leaks toward the perimeter of the AST where they can be easily detected as well as to prevent liquid from contaminating the environment. RPBs are composed of materials compatible with the liquid stored in the AST and meet proper engineering standards. Examples are steel (such as in steel double-bottom tanks), concrete, elastomeric liners, or other suitable materials provided the above criteria are met.

REMOTE IMPOUNDING - a spill control system that uses a sloped spillway to channel liquid releases away from an AST to a contained collection area that is remote from important facilities, adjoining property, or waterways. The containment area is sized for the capacity of the largest AST plus sufficient freeboard to allow for precipitation. For the purposes of this standard, remote impounding is equivalent to secondary containment. Remote impounding is further defined in NFPA 30.

SECONDARY CONTAINMENT SYSTEM - provides a secondary means of containment for the entire volumetric capacity of the largest single AST within a common dike/berm and sufficient freeboard to contain precipitation. The secondary containment system is to be designed to contain a spill until it can be discovered and cleaned up. It must be constructed to good engineering practices. (Note: See NFPA 30 and/or 40 CFR Part 112 and other local requirements for additional definitions.)

SECONDARY CONTAINMENT DIKE/BERM - a spill control system consisting of walls and a floor completely surrounding single/multiple ASTs. It provides a secondary means of containment for the entire capacity of the largest single AST and sufficient freeboard to contain precipitation and the displacement volume present below the dike wall of other ASTs in the containment area. The secondary containment dike/berm is to be constructed to good engineering practices.

SECONDARY CONTAINMENT AST - an AST with an integral secondary containment dike. These integral secondary containment dikes may be pans, boxes or containers and are designed to contain the contents of the primary tank if the primary tank fails. A secondary containment AST may be open or closed to the atmosphere. If precipitation cannot readily enter the integral secondary containment, then the containment need only be sized for the primary tank volume. If precipitation can enter the secondary containment, then the secondary containment is sized to contain the primary tank volume and with sufficient freeboard to contain precipitation.

SECONDARY TANK - the outer wall of a double-wall AST.

SHELL - for the purposes of this standard, the AST shell includes the roof, bottom, head or wall of the AST.

SHOP-FABRICATED - a welded carbon or stainless steel AST fabricated in a manufacturing facility or an AST not otherwise identified as field-erected with a volume less than or equal to 50,000 U.S. gallons (189,271 liters).

SINGLE-WALL AST - an AST with only one wall or shell.

SPILL CONTROL - a means of preventing a release of liquid to the environment including adjoining property and waterways. Methods include the following:

- Remote impounding
- Secondary containment dike/berm
- Secondary containment AST
- Secondary containment system

SUFFICIENTLY IMPERVIOUS - Sufficient resistance to diffusion and transport of hydrocarbon or other chemical substances to prevent contamination of the environment until clean-up occurs. Determination of "sufficiently impervious" is a technical consideration that a Professional Engineer or other qualified professional (such as Professional Geologist, Environmental Professional, etc.) must make. This determination is to be based on sound technical considerations, the site specific conditions, as well as risk based considerations, such that ground and groundwater contamination is prevented, using current normally accepted engineering practices and principles. Sufficiently impervious does not necessarily mandate the use of a liner. Additional information about liners is found in API 341, *A Survey of Diked-area Liner Use at Aboveground Storage Tank Facilities*.

SUITABILITY FOR CONTINUED SERVICE - the determination that an AST's condition is adequate for continued use based on the criteria presented in this standard.

TANK IN CONTACT WITH THE GROUND - an AST that does not include a release prevention barrier and has some part of its primary tank shell in direct contact with the ground or soil. Therefore, direct inspection of all exterior surfaces of the AST cannot be conducted from the tank exterior.

TANK SUPPORTS - structures designed to elevate an AST above the ground. These include saddles, skids, beams, legs, and similar structures.

ULTRASONIC TESTING SCAN (UTS) - an ultrasonic scan to evaluate the corrosion on the opposite side of the inspection surface using an ultrasonic flaw detector. This inspection is to be performed by an NDT examiner certified in accordance with ASNT-TC-1A (or equivalent) per paragraph 4.3.2.

ULTRASONIC THICKNESS TESTING (UTT) - a point thickness reading taken by a competent person, per paragraph 4.3.3, utilizing a digital ultrasonic thickness meter.

3.0 SAFETY CONSIDERATIONS

- 3.1 The hazards associated with the cleaning, entry, inspection, testing, maintenance or other aspects of ASTs are significant. Safety considerations and controls should be established prior to undertaking physical activities associated with ASTs.
- 3.2 This standard does not address all applicable health and safety risks and precautions with respect to particular materials, conditions or procedures. Information concerning safety and health risks and precautions should be obtained from the applicable standards, regulations, suppliers of materials and material safety data sheets.
- 3.3 The following activities may be regulated and consideration to the relevant requirements and best management practices shall be included in an inspection:
- Breaking Lines, Isolating, and Release of Equipment
 - General Work Permit
 - Hot Work
 - Lockout/Tagout
 - Gas Testing
 - Contractor Safety
 - Respiratory Protection
 - Tank Cleaning, Repair, and Dismantling
 - Confined Space Entry

- 3.4 Plans to enter an AST require development or use of appropriate safety procedures, precautions and requirements. The owner, the contractors and all persons associated with the AST inspection, cleaning or entry, shall review these prior to the start of work.
- 3.4.1 Before the inspection begins, check for the accumulation of harmful vapors around and in the AST. Refer to the following documents for additional information:
- NFPA 326, *Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning or Repair*
 - API RP 2015, *Requirements for Safe Entry and Cleaning of Petroleum Storage Tanks*
 - API RP 2016, *Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks*
- 3.4.2 Each AST entry requires an Emergency Action Plan. The owner and contractor must develop the Plan together. This Plan describes the actions required for personal safety from fire and other emergencies. This plan includes the following requirements as well as others:
- SCBA (Self Contained Breathing Apparatus) and lifelines on site, as well as rescuers trained in their use.
 - Establishment of and review of emergency escape routes and procedures with authorized entrants.
 - Establishment of an assembly area and procedures to account for all authorized entrants after emergency evacuation is complete.
 - Establishment of rescue and first-aid duties for those authorized entrants assigned to perform them.
- 3.4.3 After plans, procedures and administrative controls are in place and before entering the AST, isolate the AST by locking out and tagging all energy sources associated with the AST. Line isolation shall be at the closest flange practical to the equipment or space. Lockout/Tagout establishes a procedure for affixing lockout or tagout devices to energy-isolating equipment and for otherwise disabling machines or equipment to prevent unexpected energization, startup, or release of stored energy. Its intent is to prevent injury to employees, and to comply with the following OSHA regulations or their equivalent:
- 29 CFR part 1910.147, *The Control of Hazardous Energy (Lockout/Tagout)*
 - 29 CFR part 1910.331 to 1910.333, *Electrical Lockout/Tagout*
 - 29 CFR part 1910.146, *Permit-required Confined Spaces*
- 3.4.4 The atmosphere inside the space must be tested and confirmed safe before authorized entrants may enter without wearing supplied-air respiratory protection or SCBA. Continuous atmospheric monitoring is best. At a minimum, test the space for the following, and in the following order:
- 3.4.4.1 Oxygen
 - 3.4.4.2 Flammable vapors
 - 3.4.4.3 Toxics
- 3.5 Inspect the roof and support structures for soundness. Inspect stairs, ladders and platforms to determine that they can safely support equipment and people before accessing them. Corrosion may attack the deck plate at the edge of a fixed roof and at the rafters in the center of the roof first. Therefore, in addition to entry hazards, there are those associated with the access to AST roofs. For AST roofs where one side is not visible, it may be necessary to check the plate thickness with ultrasonic instrument or hammer test it to verify its adequacy. If there is a doubt, place planks on the roof that span structural members and walk on the planks instead of directly on the roof. These same hazards may also apply to other AST walking surfaces, such as the surfaces of floating roofs. Guidance for this is covered in API RP 2016, *Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks*.
- 3.6 A safety analysis shall be conducted prior to a leak test. Some leak testing scenarios may be hazardous. For example, the leak test methods referenced in 9.1.1 requires that either an inert gas be used or that the tank be thoroughly cleaned and gas free prior to testing and pressurizing an AST. Combining hydrocarbons with air provides a potentially hazardous atmosphere. Each test method may have unique hazards and these shall be considered and addressed in a pre-test safety plan prior to testing activities. A qualified person shall review the safety plan.

4.0 AST INSPECTOR QUALIFICATIONS

4.1 OWNER'S INSPECTOR QUALIFICATIONS

4.1.1 Periodic inspections are to be performed by an owner's inspector.

4.1.2 The personnel performing these inspections shall be knowledgeable of storage facility operations, the type of AST and its associated components, and characteristics of the liquid stored.

4.2 CERTIFIED INSPECTOR QUALIFICATIONS

4.2.1 Formal external and formal internal tank inspections are to be performed by a certified inspector.

4.2.2 A Certified inspector shall be certified by one or more of the following:

4.2.2.1 American Petroleum Institute (API) Standard 653 Authorized Inspector Certification with STI SP001 Adjunct Certification.

4.2.2.2 Steel Tank Institute (STI) Certified SP001 AST Tank System Inspector

4.2.2.3 Additional certifications as may be required by individual states or other governing bodies.

4.3 NDT EXAMINER QUALIFICATIONS

4.3.1 Non-destructive test (NDT) examiner - Personnel performing non-destructive examinations shall meet the qualifications described below, but need not be certified in accordance with paragraph 4.2. The results of NDE work, however, must be considered in the evaluation of the tank by the certified inspector.

4.3.2 Testing personnel referenced within this standard shall be qualified in accordance with their employer's written practice which must be in accordance with the American Society for Nondestructive Testing's (ASNT) document SNT-TC-1A, "Personnel Qualification and Certification in Nondestructive Testing" unless otherwise noted within this standard.

4.3.2.1 Referenced within this standard are the following nondestructive techniques. All inspectors performing the following inspection methods shall be certified per 4.3.2.

- MT – Magnetic Particle Testing
- RT – Radiographic Testing
- UT – Ultrasonic Testing
- MFL – Magnetic Flux Leakage
- PT – Penetrant Testing

4.3.3 Testing personnel performing ultrasonic thickness (UTT) point readings are required to have the minimum training described in this paragraph to operate a Digital Ultrasonic Thickness Meter. A Digital Ultrasonic Thickness Meter is an ultrasonic unit which is only used to obtain a point thickness reading displaying the resulting specimen thickness. This does not cover the use of ultrasonic flaw detectors. It does not cover the interpretation of an A, B or C scan unit readout.

4.3.3.1 Training - The operator of the digital ultrasonic thickness unit must be trained by a competent person in the operation, calibration and set-up of the unit. This should be a minimum of one hour and is usually performed by the manufacturer, or manufacturer's representative upon delivery of the unit. This training shall be documented and specifically state that the trainee has received at least one hour of training in the proper operation, calibration and set up of the unit. The unit type shall be noted on the documentation (manufacturer and model). The trainer shall sign his name to attest that the training has been completed and the trainee is now proficient in the use of that ultrasonic digital meter. At the time of training, the trainee shall have all of the tools and materials needed to carry out the proper function of the meter. These tools and materials are as follows:

- Step wedge of the right thickness range and material for the desired application.
- Ultrasonic couplant of the type that would be needed for the desired application.
- Ultrasonic transducer of the right type, frequency and diameter for the desired application.

4.3.3.2 Testing personnel should be aware that there are many factors that affect the performance and accuracy of a digital thickness meter, such as listed below:

- Equipment calibration
- Surface roughness of test specimen
- Coupling technique
- Couplant
- Curvature of test piece
- Taper or eccentricity of the test specimen
- Acoustic properties of the material to be tested
- Temperature of the test specimen

4.3.3.3 Surface coatings can have a significant effect on the performance and accuracy of the thickness reading. It is recommended that the surface coating be removed in test areas. There are digital thickness meters specifically made for the inspection of metal through coatings and these can be used without removal of the coating.

5.0 INSPECTION SCHEDULE

5.1 The owner shall use the AST's type, size, and type of installation, corrosion rate and previous inspection history, if any, to develop a schedule of applicable types of inspections for each AST per Table 5.5.

5.2 Owners who have an inspection plan shall use this standard to establish the inspection criteria for ASTs described in this standard using the AST type, size, and previous inspection history, type of installation and corrosion rate.

5.3 Certified inspectors using this standard to conduct inspections, shall use the AST type, size, previous inspection history, type of installation, corrosion rate and the schedule determined by the owner, so long as the information is correct and in accordance with the requirements of this standard.

5.4 AST CATEGORIES USED IN TABLE 5.5

5.4.1 Category 1 - ASTs with spill control, and with CRDM

5.4.2 Category 2 - ASTs with spill control and without CRDM

5.4.3 Category 3 - ASTs without spill control and without CRDM

5.4.4 Table 5.4 shows some typical tank types and their corresponding AST category

TABLE 5.4 EXAMPLE TANK CONFIGURATION AND AST CATEGORY

TANK CONFIGURATION	TANK HAS CRDM?	AST CATEGORY
AST in contact with ground	no	2 or 3
Elevated tank with spill control and with no part of AST in contact with ground	yes	1
Vertical tank with RPB and spill control	yes	1
Vertical tank with double bottom and spill control	yes	1
Vertical tank with RPB under tank and spill control	yes	1
Double-wall AST	yes	1
AST with secondary containment dike/berm	yes	1

5.5 IN TABLE 5.5 USE THE FOLLOWING DESIGNATIONS:

- 5.5.1 P – Periodic AST inspection
Refer to Section 6
- 5.5.2 E – Formal external inspection by certified inspector
Refer to Section 7
- 5.5.3 I – Formal internal inspection by certified inspector
Refer to Section 8
- 5.5.4 L – leak test by owner or owner's designee
Refer to Section 9
- 5.5.5 () indicates maximum inspection interval in years. For example, E (5) indicates formal external inspection every 5 years.

TABLE 5.5 TABLE OF INSPECTION SCHEDULES

AST Type and Size (U.S. gallons)		Category 1	Category 2	Category 3
Shop-Fabricated ASTs	0 – 1100 (0-4164 liters)	P	P	P, E&L(10)
	1101 - 5,000 (4168-18,927 liters)	P	P, E&L(10)	[P, E&L(5), I(10)] or [P, L(2), E(5)]
	5,001 - 30,000 (18,931-113,562 liters)	P, E(20)	[P, E(10), I(20)] or [P, E(5), L(10)]	[P, E&L(5), I(10)] or [P, L(1), E(5)]
	30,001 - 50,000 (113,566-189,271 liters)	P, E(20)	P, E&L(5), I(15)	P, E&L(5), I(10)
Portable Containers		P	P	P**

** Owner shall either discontinue use of portable container for storage or have the portable container DOT (Department of Transportation) tested and recertified per the following schedule (refer to Section 9.0):

Plastic portable container - every 7 years

Steel portable container - every 12 years

Stainless Steel portable container - every 17 years

6.0 PERIODIC AST INSPECTIONS

- 6.1 Periodic AST inspections are to be conducted by owner's inspector. Checklists for periodic AST inspections are found in Appendix C of this standard. These are to be used as a guide for recording inspection data.
- 6.2 The owner's inspector must meet the requirements of paragraph 4.1.
- 6.3 Review prior inspection, repair and alteration data before each inspection. Note special conditions for a particular AST.
- 6.4 The owner's inspector is to complete the STI SP001 AST Record for each AST or tank site as designated in the checklists. Note special conditions and changes or alterations to the tank.
- 6.5 The owner's inspector is to complete the STI SP001 Monthly Inspection Checklist each month. Take note of instructions on the checklist. Note special conditions.
- 6.6 The owner's inspector is to complete the STI SP001 Annual Inspection Checklist each year. Take note of instructions on the checklist. Note special conditions.
- 6.7 For portable containers, the owner's inspector is to complete only the STI SP001 Portable Container Monthly Inspection Checklist each month. Take note of the instructions on the checklist. Note special conditions.
- 6.7.1 As an alternative, if documentation is kept on-site for each portable container that indicates how long each has been kept at the facility, then the owner's inspector is to complete only the STI

- SP001 Portable Container Monthly Inspection Checklist each month for containers on-site for 91 days or more. Take note of the instructions on the checklist. Note special conditions.
- 6.8 Additional requirements for field-erected tanks are included in Appendix B.
- 6.9 Refer to Section 10.0 for conditions that warrant immediate action.
- 6.10 By removing water or taking other corrective action on a regular basis, harmful MIC is prevented. Monitor for water accumulation monthly. If corrosion is found due to MIC, treat the AST with a proper biocide or otherwise sterilize the AST. In addition, take necessary steps to repair or remove the AST from service, if warranted by the extent of the corrosion (per Section 10.0).

7.0 FORMAL EXTERNAL INSPECTION GUIDELINES

7.1 GENERAL

- 7.1.1 Formal external inspections are to be performed by certified inspectors per paragraph 4.2.
- 7.1.2 These guidelines are minimum inspection requirements. There are numerous AST configurations and components and it is the responsibility of the certified inspector to identify and properly inspect them to conform to the owner's requirements and/or industry standards. The inspector or the inspection company shall develop detailed checklists that identify, record and document all aspects of each inspection.
- 7.1.3 Review prior formal and periodic inspections, repair and alteration data before each inspection.
- 7.1.4 Record AST nameplate data, if available, and check the information included for accuracy against actual conditions. Record AST data, inspection findings, and problems identified.
- 7.1.5 Inspect the fabrication of the AST against applicable industry standards.
- 7.1.6 Inspect the AST foundations for indications of settlement, cracking, exposed rebar, or general disrepair. Inspect for areas of wash-out and voids under the AST. Confirm that the ground is sloped away from the AST and that there is no soil resting against the side of the AST covering parts of the shell or bottom extension. Inspect for standing water against the AST or the indication of drainage problems.
- 7.1.7 Visually inspect the AST support condition. Severe cracking or spalling of concrete supports shall be noted and evaluated. If there are pad plates between the supports and the shell, inspect the condition. Inspect the supports to be sure that they are sitting securely on the foundation or grade. If the supports are welded to the shell, inspect the welds for visible signs of stress or deterioration.
- 7.1.8 Identify and record the type of and the condition of the secondary containment, spill control, and CRDM, if present.
- 7.1.8.1 Visually inspect the general condition of the containment area to be sure that it is in good condition and that there is not a breach in the containment structure. Note changes from the original design and installation information if available.
- 7.1.8.2 Inspect for foreign materials in the containment area. Inspect for liquid in the containment system and CRDM. If liquid is present, find the source and report findings. Record other ASTs or containers within the same containment area.
- 7.1.8.3 Make sure that the drain valves are operable and in good condition. Report penetrations through the secondary containment that may compromise the integrity of the containment area. Report penetrations that are likely to lead to failure of the secondary containment should the liquid level of water or liquid rise to these penetrations.
- 7.1.9 Inspect and verify the operability of ancillary equipment including the following items:
- 7.1.9.1 Piping and piping connections for visible signs of stress or leakage such as severe corrosion, rusted bolted connections, or other severe degradation.
- 7.1.9.2 Normal and emergency vents and pressure/vacuum devices. Verify that the devices are of adequate size and capacity, operable, and in good condition. Refer to the device manufacturer's literature, typical industry venting requirements, and other appropriate resources. Record the types and locations of these devices.
- 7.1.9.3 Primary tank level gauge and secondary tank interstitial gauge for free movement and the floats, guides and attachments are in working order. Check that the liquid level gauge length is sized correctly for the tank diameter. Inspect the alarms connected to the level gauge for operability and for a complete loop and circuit from the primary sensor to the final annunciation or alarm point.

- 7.1.10 Inspect the bonding and grounding system of the AST, if present. (Refer to NFPA 780 *Standard for the Installation of Lightning Protection Systems*.)
- 7.1.11 Inspect stairways, handrails and platforms for broken welds, bent members, and corrosion.
- 7.1.12 Inspect the coating on the AST shell, heads, and supports for paint failure.
- 7.2 **DETERMINE THE ORIGINAL SHELL THICKNESS OF THE AST.** Suggested methods of determining this are as follows:
 - 7.2.1 Review the original tank documentation, such as drawings and packing lists.
 - 7.2.2 Consult the tank manufacturer.
 - 7.2.3 Examine the tank labels for evidence of a widely accepted tank standard, such as Underwriters Laboratories Standard UL 142, etc. Consult the referenced standard to determine the minimum design shell thickness.
 - 7.2.4 Measure the tank thickness of several areas of the tank that have no visible corrosion or pitting. The average of these measurements will result in a minimum shell thickness that can be used.
- 7.3 **HORIZONTAL AST-** Requirements in addition to the applicable items in 7.1
- 7.3.1 Inspect shell plates and welds for indications of exterior corrosion, buckling or distortion, as well as for cracking, pinholes or mechanical damage. Inspect the shell of the AST and the ancillary equipment for signs of distortion and stress.
 - 7.3.1.1 Take and record UTT readings and the location of the reading of each plate or shell course in areas accessible without entering the AST. Readings must be concentrated in areas where corrosion is likely to occur. If significant internal corrosion is detected, further investigation using Ultrasonic Testing Scans (UTS) is required. If applicable, include areas marked from previous readings. Refer to Section 10.0.
- 7.3.2 Inspect shell attachments for changes made after the AST was fabricated. Refer to previous drawings or make new sketches that show all the appurtenances, attachments and nozzle locations on the AST shell and heads or roof. Record repads (reinforcing plates) and/or insert plates. Inspect attachment welds for signs of stress and corrosion.
- 7.4 **VERTICAL OR RECTANGULAR AST -** Requirements in addition to the applicable items in 7.1
 - 7.4.1 Shell Surface – Refer to 7.3.1 and 7.3.2
 - 7.4.2 Shell Attachments – Refer to 7.3.3
 - 7.4.3 Vertical AST Roof - Inspect for low areas on the roof and standing water that may corrode the roof areas. Inspect for paint failure, holes and corrosion. Take UTT readings on the roof and record results. If possible, measure thicknesses in previously measured areas for corrosion rate determination. If significant corrosion is detected, further investigation using Ultrasonic Testing Scans (UTS) is required. Refer to Section 10.0
 - 7.4.4 **DOUBLE WALL AND DOUBLE BOTTOM AST -** Requirements in addition to the applicable items in 7.1:
 - 7.4.5 Verify that the leak detection equipment or method is operating if the tank is so equipped.
 - 7.4.6 Check for a leak or the presence of liquid in the interstice.
 - 7.4.7 Double-bottom ASTs require UTT readings of areas that are single-wall as described in paragraph 7.3.1.1 above. Double-wall ASTs do not require UTT readings.
- 7.5 **INSULATED AST -** Requirements in addition to the applicable items in 7.1 to 7.4
 - 7.5.1 Remove the insulation in areas where mold or moisture is present or points where moisture is likely to accumulate and examine the metal surface for signs of significant corrosion. Consider the wicking effect of water in the insulation, particularly in the lower exterior portion of the tank shell.
 - 7.5.2 If insulation damage is suspected, remove sections of the insulation to check for corrosion. Continue removing the insulation until the extent and nature of the corrosion has been established.
 - 7.5.3 Take UTT readings of the shell and record results including, if applicable, areas marked from previous readings. If significant internal corrosion is detected, further investigation using Ultrasonic Testing Scans (UTS) is required. Refer to Section 10.0
- 7.6 Additional requirements for field-erected ASTs are included in Appendix B.
- 7.7 In the final report, include field data, measurements, pictures, drawings, tables and an inspection summary. In the summary, identify unacceptable conditions and recommended corrective actions. Determine the suitability for continued service of the AST per Section 10.0. Include the next

scheduled formal external inspection or formal internal inspection, as applicable. Include the inspector's name and certification number in the report.

8.0 FORMAL INTERNAL INSPECTION GUIDELINES

8.1 GENERAL

8.1.1 Formal internal inspections are to be performed by certified inspectors per paragraph 4.2.

8.1.2 These guidelines are minimum inspection requirements. There are numerous AST configurations and components and it is the responsibility of the certified inspector to identify and properly inspect them to conform to the owner's requirements and/or industry standards. The inspector or the inspection company shall develop detailed checklists that identify, record and document all aspects of each inspection.

8.1.3 A formal internal inspection includes the requirements of a formal external inspection with the addition of the requirements described below. Refer to paragraphs 7.1 to 7.7 for formal external inspection requirements.

8.1.4 Double wall tanks and secondary containment tanks may be inspected by checking the interstice for liquid or by other equivalent methods.

8.1.5 For elevated ASTs where all external surfaces of an AST are accessible, the internal inspection requirements may be satisfied with an examination from the exterior by using such methods as UTS. For all other situations, entry into the interior of the AST is necessary to assess the condition of all surfaces.

8.2 HORIZONTAL AST INTERNAL INSPECTION

8.2.1 Identify, measure, inspect and record all AST internal appurtenances. Inspect for mechanical damage, corrosion, cracking, etc. Inspect for deteriorating or corroding internal attachments and piping. Take thickness readings of internal structures and record the readings.

8.2.2 Inspect the welds for cracking by visual inspection or if necessary, by magnetic particle (MT) inspection or equivalent method.

8.2.3 Internal NDT Inspection

8.2.3.1 AST assessment:

8.2.3.1.1 Ultrasonic testing equipment that is capable of scanning the tank (UTS), rather than measuring only individual points (UTT), is the preferred method of testing. Personnel performing UTS are to be qualified per paragraph 4.3.2.

8.2.3.1.2 If ultrasonic testing equipment that is capable of scanning the tank (as described in 8.2.3.1.1) is not practical, use equipment that tests individual points. In this case, take UTT measurements of at least 15 points per each 12 inches x 12 inches (0.3 meters x 0.3 meters) square area of the shell that is in contact with the ground. Any questionable areas are to be assessed by UTS per 8.2.3.1.1.

8.2.3.2 Perform a vacuum box (VB) examination of questionable welds to check for leaks.

8.2.3.3 Refer to Section 10.0 for criteria for suitability for continued service.

8.3 VERTICAL AND RECTANGULAR AST INTERNAL INSPECTION

8.3.1 Identify record, inspect and measure all AST internals. Inspect AST internals to check for mechanical damage, corrosion, cracking, etc. Check for deteriorating or corroding internal attachments and piping. Take thickness readings of internal structures and record the readings.

8.3.2 Inspect the welds for cracking by visual inspection or if necessary, by magnetic particle (MT) inspection or equivalent method.

8.3.3 Internal NDT Inspection

8.3.3.1 AST floor thickness assessment is required as follows:

8.3.3.1.1 Complete coverage of the AST floor is recommended due to random corrosion characteristics of metal in contact with ground. Inspection of the AST floor is recommended using inspection methods capable of determining the underside floor condition such as UTS, MFL followed by UTS of questionable areas, or other equivalent methods.

8.3.3.1.2 If ultrasonic testing equipment that is capable of scanning the tank (as described in 8.3.3.1.1) is not practical, use equipment that tests individual points. In this case, take UTT measurements of at least 15 points per each 12 inches x 12 inches (0.3 meters x 0.3 meters) square area of the

- 8.3.3.1.1. shell that is in contact with the ground. Any questionable areas are to be assessed by UTS per 8.3.3.1.1.
- 8.3.3.2 Perform a vacuum box (VB) examination of questionable welds to check for leaks.
- 8.3.4 Refer to Section 10.0 for criteria for Suitability for Continued Service.
- 8.4 Additional requirements for field-erected ASTs are included in Appendix B.
- 8.5 **REPORT** - In the final report, include field data, measurements, pictures, drawings, tables and an inspection summary. Identify in the summary unacceptable conditions and recommended corrective actions. Determine the suitability for continued service of the AST. Include the time until the next scheduled formal external and/or formal internal inspection, as applicable. Include the inspector's name and certification number in the report.

9.0 LEAK TESTING METHODS (LTM)

- 9.1 **SHOP-FABRICATED AST LEAK TESTING PROCEDURE.**
- 9.1.1 Consult the Steel Tank Institute Recommended Practice R912, *Installation Instructions for Shop Fabricated Stationary Aboveground Storage Tanks for Flammable, Combustible Liquids*. Air should not be used for a pressure test and an inert gas should be used instead. The introduction of a gas containing oxygen (such as air) to a tank that has previously held petroleum liquid can pose an explosion hazard.
- 9.1.2 Vacuum testing of the interstice of double-wall or double-bottom tanks is an option. Refer to the Steel Tank Institute Recommended Practice R912, *Installation Instructions for Shop Fabricated Stationary Aboveground Storage Tanks for Flammable, Combustible Liquids*.
- 9.2 **PORTABLE CONTAINERS LEAK TESTING PROCEDURE.** Refer to DOT Sections 49 CFR 173.28 (Reuse, reconditioning and remanufacturing of packagings - mainly for drums) and Part 178 - 49 CFR Subpart O - Testing of IBC's (section 178.803 Testing and certification of IBC's) and 49 CFR 180.605, or equivalent, for portable container testing and recertification.
- 9.2.1 See the definition of Leak Testing Methods for more information.

10.0 SUITABILITY FOR CONTINUED SERVICE

- 10.1 Evaluation for suitability for continued service is a result of formal internal and/or external inspections performed by a certified inspector. This section describes the recommended actions to be taken by the owner as a result of these inspections. These conditions and others found during these inspections may require additional inspections or evaluations.
- 10.2 **FORMAL EXTERNAL AND INTERNAL INSPECTIONS** (refer to AST categories in Section 5.0)
- 10.2.1 **MIC** - For all tanks in Table 5.5, if evidence of MIC is found at any time, then corrections and repairs should be promptly made to the AST. Refer to Steel Tank Institute SP031 *Standard for Repair of In-Service Shop Fabricated Aboveground Tanks for Storage of Combustible and Flammable Liquids* for alterations or repairs to an AST. Conduct the next formal internal or formal external inspection no more than two years after the discovery of MIC.
- 10.2.1.1 When Table 5.5 allows formal external inspections to be performed in lieu of formal internal inspections, then conduct the next formal external inspection no more than two years after the discovery of MIC.
- 10.2.1.2 If the re-inspection shows that sufficient measures have been taken to eliminate MIC, such as regular and careful water removal and sterilization of the tank and piping systems, then the AST may be inspected according to Table 5.5.
- 10.2.2 **Category 3 ASTs** - If the shell thickness has been reduced to less than 75% of the original shell thickness, then the AST should be taken out of service and repaired or replaced. Refer to Steel Tank Institute SP031 *Standard for Repair of In-Service Shop Fabricated Aboveground Tanks for Storage of Combustible and Flammable Liquids* for alterations or repairs to an AST. The certified inspector shall document in the report that the next formal external or formal internal inspection shall be within 5 years and each subsequent 5 years.
- 10.2.3 **Category 2 ASTs** - The AST shall be repaired or replaced if more than 3 square inches of any one square foot of the tank shell (i.e. approximately 2%) is found to be less than 75% of the original shell thickness or if the remaining shell thickness of an area is less than 50% of the

original shell thickness at any point. Refer to Steel Tank Institute SP031 *Standard for Repair of In-Service Shop Fabricated Aboveground Tanks for Storage of Combustible and Flammable Liquids* for alterations or repairs to an AST. The certified inspector shall document in the report that the next formal external or formal internal inspection shall be within 5 years and each subsequent 5 years.

- 10.2.4 Category 1 ASTs - The AST shall be repaired or replaced if more than 3 square inches of any one square foot of the tank shell (i.e. approximately 1/2%) is found to be less than 50% of the original shell thickness or if the remaining shell thickness of an area is less than 25% of the original shell thickness at any point. Refer to Steel Tank Institute SP031 *Standard for Repair of In-Service Shop Fabricated Aboveground Tanks for Storage of Combustible and Flammable Liquids* for alterations or repairs to an AST. The certified inspector shall document in the report that the next formal external or formal internal inspection shall be within 5 years and each subsequent 5 years.

- 10.2.4.1 For Category 1 ASTs, alternatively, if the certified inspector establishes and documents a corrosion rate, the inspector may determine the next formal internal inspection based upon corrosion rates. The calculated time until the next formal internal inspection interval or the next formal external inspection, as applicable may exceed the values listed in Table 5.5 if corrosion rates allow.

- 10.2.4.2 Refer to API 575, *Inspection of Atmospheric and Low-Pressure Storage Tanks*, for some acceptable methods of determining corrosion rates.

- 10.2.4.3 Further, if the shell thickness is reduced anywhere to less than 25% of the original shell thickness, the AST should be repaired or replaced. Refer to Steel Tank Institute SP031 *Standard for Repair of In-Service Shop Fabricated Aboveground Tanks for Storage of Combustible and Flammable Liquids* for alterations or repairs to an AST.

- 10.3 **OTHER TANK DAMAGE** - An AST subjected to damage caused by the following conditions requires evaluation by an engineer experienced in AST design or a tank manufacturer who will jointly with the owner determine if an immediate formal external or internal inspection is required:

- Fire - AST exposed to fire or flame impingement
- Natural disaster - AST exposed to flooding, hurricane force winds, etc. and has been lifted or damaged
- Excessive Settlement - AST that has experienced excessive settlement
- Overpressure - AST exposed to excessive internal pressure caused by overfill or failure of venting devices or other reason
- Damage from Cracking - AST with evidence of cracking of welds or of an AST surface

- 10.4 If a leak is discovered at any time by the owner or the inspector, the tank must be repaired, replaced or closed and removed from service in accordance with good engineering practice.

11.0 RECORDKEEPING

- 11.1 Retain each AST Record for the life of the AST.

- 11.2 Retain each Monthly Inspection Checklist for at least 36 months.

- 11.3 Retain each Annual Inspection Checklist for at least 36 months.

- 11.4 Retain each Portable Container Monthly Inspection Checklist for at least 36 months.

- 11.5 Retain all certified inspection reports for the life of the AST.

REFERENCES

American Petroleum Institute:

- API Standard 341, *A Survey of Diked-area Liner Use at Aboveground Storage Tank Facilities*
- API Standard 575, *Inspection of Atmospheric and Low Pressure Storage Tanks*
- API Standard 650, *Welded Steel Tanks for Oil Storage*
- API Recommended Bulletin D16, *Suggested Procedure for Development of a Spill Prevention Control and Countermeasure Plan*
- API 12R1, *Recommended Practice for Setting, Maintenance, Inspection, Operation and Repair of Tanks in Production Service*
- API Standard 653, *Tank Inspection, Repair, Alteration, and Reconstruction*
- API RP 2015, *Requirements for Safe Entry and Cleaning of Petroleum Storage Tanks*
- API RP 2016, *Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks*

American Society for Nondestructive Testing

- ANSI/ASNT Recommended Practice No. ASNT-TC-1A, *Guideline to Personnel Qualification and Certification in NDT*

National Fire Protection Association:

- NFPA 30, *Flammable and Combustible Liquids*
- NFPA 326, *Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair*
- NFPA 780, *Standard for the Installation of Lightning Protection Systems*

Steel Tank Institute:

- SP031, *Standard for Repair of In-Service Shop Fabricated Aboveground Tanks for Storage of Combustible and Flammable Liquids*
- STI-R893, *Recommended Practice For External Corrosion Protection of Shop Fabricated Aboveground Tank Floors*
- STI-R912, *Installation Instructions for Shop Fabricated Stationary Aboveground Storage Tanks for Flammable, Combustible Liquids*

Underwriters Laboratories Inc.

- UL 142, *Steel Aboveground Tanks for Flammable and Combustible Liquids*

United States Environmental Protection Agency:

- EPA 40 CFR part 112, *Oil Pollution Prevention and Response; Non-Transportation-Related Onshore and Offshore Facilities*
- EPA 510-K-95-002, *Musts for USTs. A Summary of Federal Regulations for Underground Storage Tank Systems*

United States Department of Labor, Occupational Safety & Health Administration (OSHA)

- 29 CFR Part 1910.147, *The Control of Hazardous Energy (Lockout/Tagout)*,
- 29 CFR Part 1910.331 to 1910.333, *Electrical Lockout/Tagout*

United States Department of Transportation

- DOT Sections 49 CFR 173.28, *Reuse, Reconditioning and Remanufacturing of Packaging*,
- DOT part 178-49 CFR Subpart O, *Testing of IBC's*
- DOT 49 CFR part 178.803, *Testing and certification of IBC's*
- DOT 49 CFR part 180.605, *Portable container Testing and Recertification*

**APPENDIX A
SUPPLEMENTAL TECHNICAL INFORMATION**

1.0 TYPICAL AST DIAGRAMS

- 1.1 The diagram below shows terms commonly associated with ASTs. For the purposes of this standard, all of these surfaces are called the "shell" of the AST to avoid confusion.

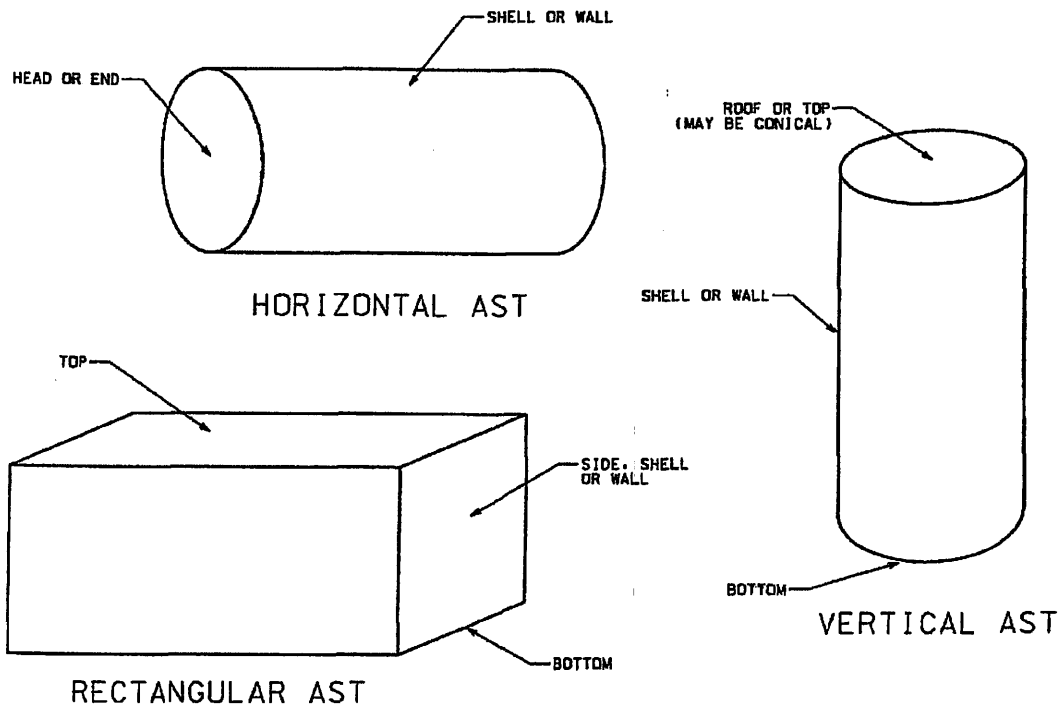


FIGURE A1.1

1.2

The diagram below is included to assist in the identification of the appurtenances of an AST. A specific tank may include some or all of these appurtenances.

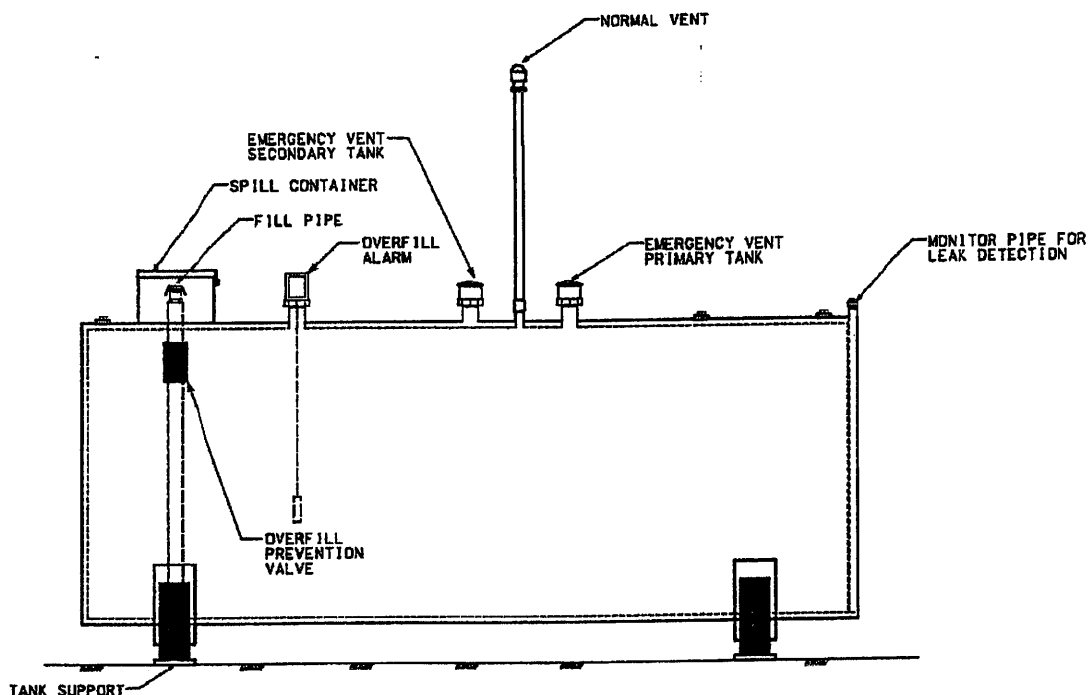


FIGURE A1.2

1.2.1 The purpose of these appurtenances is as follows:

- 1.2.1.1 Spill container – This tank accessory is designed to catch spills during tank filling operations. It typically has a lockable, hinged lid and allows spilled fluid to drain into the tank.
- 1.2.1.2 Tank vent – This tank accessory allows air to enter the tank when liquid is being withdrawn and exhausts air when the tank is being filled. This prevents damage to the tank due to too much pressure.
- 1.2.1.3 Overfill prevention valve – A specially designed device that provides positive shut-off at a predetermined value to prevent overfilling of an AST.
- 1.2.1.4 Overfill alarm – A device designed to alert personnel who are filling a tank when a predetermined level is reached.
- 1.2.1.5 Emergency vent (for primary and secondary tank)–These tank accessories prevent damage to the tank by allowing excess pressure to be vented. They are designed to relieve excess pressure in the event of an emergency, such as a fire.
- 1.2.1.6 Monitor pipe for leak detection –This pipe is installed in the air space (Interstice) between the primary tank and secondary tank of a double-wall tank. It is typically used with leak detection equipment to detect a leak in either the primary or the secondary tank.
- 1.2.1.7 Tank supports –These structures are used to elevate the tank off the ground.

2.0 WATER INSIDE ASTS

- 2.1 The functional life of an AST can be significantly extended by regularly checking for water accumulation inside an AST and interstice of a double-wall AST and removing it or taking other corrective action.
- 2.2 Water affects the quality of some stored liquids and therefore remove the water or take other corrective action on a regular basis.
- 2.3 Bacteria may develop in the water and in certain stored liquids, such as petroleum liquids, and initiate microbial activity. Microbial activity can cause the formation of undesirable by-products, such as sludge and slime. Such activity will corrode metals and deteriorate plastics and may affect product quality.

3.0 RELEASE MANAGEMENT SYSTEM (RMS)

- 3.1 One of the basic purposes of AST inspection standards is to minimize the likelihood and consequences of leaks. Even small leaks over extended periods may have considerable impacts on the environment. The use of industry standards to prevent leaks is a fundamental principle of pollution prevention. Industry standards cover the tank life cycle from construction, to ongoing inspection and maintenance, to final closure.
- 3.2 Applying RMS can reduce the likelihood and consequences of leaks. Typically, RMS is applied to provide additional integrity assurance against leaks.
- 3.3 In the context of this standard, RMS specifically refers to two basic methodologies as defined below:
 - Leak Testing Methods (LTM)
 - Continuous Release Detection Methods (CRDM)
- 3.4 Experience has shown long-term, slow leaks may develop and cause environmental damage with an AST that is in direct contact with the ground. These types of ASTs are subjected to the full hydrostatic pressure of the liquid on one side of the AST surface and are in direct contact with the ground on the other side of the AST surface. These ASTs may allow a slow leak over a long time with the full liquid hydrostatic pressure, which may go undetected and cause environmental damage. LTM is a layer of protection beyond conventional AST inspection practices that is most effective when applied to ASTs that are in direct contact with the soil and that do not have CRDMs. An LTM is ordinarily *not* necessary for tanks that have CRDMs (continuous release detection methods) such as elevated tanks, double-wall tanks, or tanks with release prevention barriers.

Figure A3.5 shows RMS graphically.

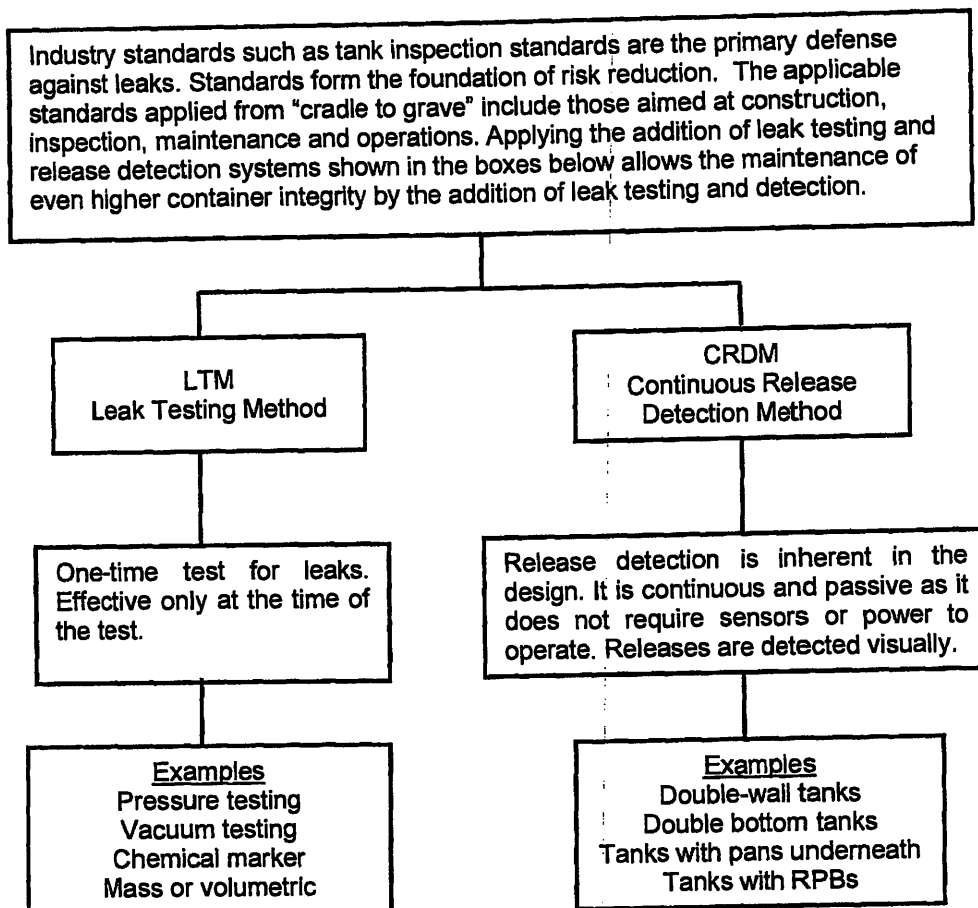


Figure A3.5
Release Detection Systems

4.0 REGULATIONS

- 4.1 The Federal EPA and some states have enacted regulations regarding the storage and handling of oils, both petroleum and non-petroleum, called the Spill Prevention Control and Countermeasures (SPCC) Rule under the authority of the Clean Water Act (40 CFR part 112). Entities regulated by these sections may use this standard or others to inspect and determine the fitness of their storage systems. Refer to <http://www.epa.gov/oilspill/> for more information and The American Petroleum Institute's (API) Recommended Practice Bulletin D16, *Suggested Procedure for Development of a Spill Prevention Control and Countermeasure Plan*, (see: <http://api-ep.api.org/>)

APPENDIX B INSPECTION OF FIELD-ERECTED ASTS

1.0 GENERAL

- 1.1 Purpose and Applicability – this Appendix addresses the additional and special inspection requirements of field-erected tanks. Tanks larger than 30 feet (9.1 meters) diameter or more than 50 feet (15.2 meters) high should be inspected according to an appropriate field-erected tank inspection standard. This Appendix is applicable only when specifically referenced by written contractual language between the owner and the inspector. Further, it is applicable only when not prohibited by the regulatory authority having jurisdiction. This appendix specifies only those requirements which modify or exceed the requirements of the main body of the standard.
- 1.2 Scope - This Appendix applies to steel ASTs that are as follows:
- 1.2.1 Welded and flat-bottom, cone-up or cone-down design
- 1.2.2 Up to 30 feet (9.1 meters) in diameter and with a height of less than 50 feet (15.2 meters).
- 1.2.3 Fabricated with full-fusion, butt-welded shells and with lap-welded or butt-welded bottom plates
- 1.2.4 Fabricated with a shell thickness of each course less than ½ inch and with original nominal bottom thickness plates equal to ¼ inch or 6 mm
- 1.2.5 Built to a nationally recognized standard.
- 1.3 Brittle Fracture Assessment - Because the tank shells are under ½ inch thick, the risk of brittle fracture is minimal. Brittle fracture assessments and documentation are not required for tanks that fall within the scope of this standard.

2.0 INSPECTIONS

- 2.1 Refer to the Table B2.1 below for the inspection timetable. Category 1, 2 and 3 as well as the P, E, I and L designations are described in the main body of the SP001 Standard. Note that the internal inspection intervals shown in this table are guiding values when corrosion rates are not determined in accordance with recognized and accepted industry principles and practice.
- 2.1.1 When corrosion rates are established, then the corrosion rates may govern the internal inspection interval which may be shorter or longer than the values shown.
- 2.1.2 For Category 1 tanks, the maximum internal re-inspection interval is 30 years.
- 2.1.3 For Category 2 tanks, the maximum internal re-inspection interval is 20 years.
- 2.1.4 For Category 3 tanks, the maximum internal re-inspection interval may not be longer than shown in Table B2.1.

TABLE B2.1 TABLE OF INSPECTION SCHEDULES

AST Type and Size	Category 1	Category 2	Category 3
Field-erected AST	P, E(5), I(10)	P, E&L(5), I(10)	P, E&L(5), I(10)

- 2.2 Follow the requirements found in the main body of the SP001 Standard for the requirements of periodic inspections, formal external inspections and formal internal inspections and any additional requirements in this Appendix. Also, follow all the requirements of the Safety Section. Leak testing methods for field-erected tanks currently under research by API and STI and requirements will be added to SP001 in the future.
- 2.3 Below are additional inspection requirements for field-erected ASTs
- 2.3.1 Vertical AST Floating Roof
- 2.3.1.1 For safety, make sure that the roof pontoons are free of liquid and harmful vapors and that the floating roof is properly stabilized against collapse. (see API 2016, *Guidelines and Procedures for*

- Entering and Cleaning Petroleum Storage Tanks.*) Inspect the vapor space on top of the floating roof before gaining access.
- 2.3.1.2 For formal internal inspections, inspect the seal for deterioration, holes, tears and cracks to determine the Suitability for Continued Service.
- 2.3.1.3 For external floating roofs, assess the condition of the outer roof rim plate by visual or ultrasonic methods. It may be necessary to assess the condition by performing ultrasonic inspection from the inside of the pontoon. Inspect that either the roof drain is open or the drain plug in the roof is open in case of unexpected rain. Inspect the roof legs for their contact with the floor and that the striker plates are present and in position. Inspect the roof legs for corrosion and damage.
- 2.3.1.4 Inspect for standing water on top of the roof and inspect the roof drainage system operation. Inspect the pontoons for presence of liquid.
- 2.4 Suitability for Continued Service
- 2.4.1 As an alternative to the criteria in the main body of SP001, and if the certified inspector is API 653 Certified, then the methods included in API 653 may be used to evaluate the AST.
- 2.4.2 The minimum allowable remaining thickness is 0.1 inch (2.54 mm). In setting the next inspection interval based upon corrosion rates, neither the bottom nor the shell shall be allowed to corrode less than 0.1 inch.
- 2.4.2.1 The minimum required thickness of each shell course shall be according to

$$t_{\min} = \frac{(H-1)DG}{10,000}$$

- t_{\min} = the minimum acceptable average thickness, in inches, for each course as calculated from the above formula. However, t_{\min} shall not be less than 0.1 inch (2.54 mm) for any tank course.
- D = nominal diameter of tank, feet.
- H = height from the bottom of the shell course under consideration to the maximum liquid level when evaluating an entire shell course, feet.
- G = largest specific gravity of the contents.

- 2.4.3 One method of determining the interval between formal internal inspections required by the tank bottom assessment is as follows: (Corrosion rates shall be assumed constant for these calculations.)

$$MFIII = \frac{\min(RT_{bc}, RT_{ip}) - MRT}{(St\ Pr + U\ Pr)}$$

- MRT = minimum allowable remaining tank bottom thickness at the end of inspection interval which is 0.1 inch (2.54 mm).
- MFIII = maximum formal internal inspection interval (years to next internal inspection) no to exceed that allowed in paragraph 2.1 of this Appendix.
- RT_{bc} = minimum remaining thickness from bottom side corrosion after repairs.
- RT_{ip} = minimum remaining thickness from internal corrosion after repairs.
- St Pr = maximum rate of corrosion not repaired on the top side. This value is zero for coated areas of the bottom. The expected life of the coating must equal or exceed MFIII to use St Pr = 0.
- U Pr = maximum rate of corrosion on the bottom side. To calculate the corrosion rate, use the minimum remaining thickness after repairs. For tanks that have proven cathodic protection, the corrosion rate from the underside shall be U Pr = 0.002 inches per year (0.05 mm per year).

Note: For areas of a bottom that have been scanned by the magnetic flux leakage (or exclusion) process, and do not have effective cathodic protection, the thickness used for calculating $U Pr$ must be the lesser of the MFL threshold or the minimum thickness of corrosion areas that are not repaired. The MFL threshold is defined as the minimum remaining thickness to be detected in the areas inspected. This value should be predetermined by the owner based on the desired inspection interval.

- 2.4.4 Widely scattered pitting will not appreciably affect the strength of the tank shell and the tank may be allowed to continue operation provided that both of the following conditions are met:
- 2.4.4.1 Pit depths or thinning (with a diameter or maximum dimension of less than 2 inches (50.8 mm)) does not result in a remaining wall thickness of less than 0.05 inch (1.27 mm).
- 2.4.4.2 No pit or thinned area results in any area 2 inches (50.8 mm) in diameter or larger with a thickness less than 0.1 inch (2.54 mm).

APPENDIX C
PERIODIC INSPECTION CHECKLISTS

STI SP001 AST Record

OWNER INFORMATION	FACILITY INFORMATION	INSTALLER INFORMATION
Name	Name	Name
Number and Street	Number and Street	Number and Street
City, State, Zip Code	City, State, Zip Code	City, State, Zip Code

TANK ID _____			
SPECIFICATION: Design: <input type="checkbox"/> UL _____ <input type="checkbox"/> SWRI _____ <input type="checkbox"/> Horizontal <input type="checkbox"/> Vertical <input type="checkbox"/> Rectangular <input type="checkbox"/> API _____ <input type="checkbox"/> Other _____ <input type="checkbox"/> Unknown			
Manufacturer: _____	Contents: _____	Construction Date: _____	Last Repair/Reconstruction Date: _____
Dimensions: _____	Capacity: _____	Last Change of Service Date: _____	
Construction: <input type="checkbox"/> Bare Steel <input type="checkbox"/> Cathodically Protected (Check one: A. <input type="checkbox"/> Galvanic or B. <input type="checkbox"/> Impressed Current) Date Installed: _____ <input type="checkbox"/> Coated Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Plastic/Fiberglass <input type="checkbox"/> Other <input type="checkbox"/> Double Bottom <input type="checkbox"/> Double Wall <input type="checkbox"/> Lined Date Installed: _____			
Containment: <input type="checkbox"/> Earthen Dike <input type="checkbox"/> Steel Dike <input type="checkbox"/> Concrete <input type="checkbox"/> Synthetic Liner <input type="checkbox"/> Other _____			
CRDM: _____ <input type="checkbox"/> Date Installed: _____ Type: _____			
Release Prevention Barrier: <input type="checkbox"/> Date Installed: _____ Type: _____			

TANK ID _____			
SPECIFICATION:			
Design: <input type="checkbox"/> UL _____ <input type="checkbox"/> SWRI _____ <input type="checkbox"/> Horizontal <input type="checkbox"/> Vertical <input type="checkbox"/> Rectangular			
<input type="checkbox"/> API _____ <input type="checkbox"/> Other _____			
<input type="checkbox"/> Unknown			
Manufacturer: _____		Contents: _____	
Construction Date: _____		Last Repair/Reconstruction Date: _____	
Dimensions: _____		Capacity: _____	
Last Change of Service Date: _____			
Construction: <input type="checkbox"/> Bare Steel <input type="checkbox"/> Cathodically Protected (Check one: A. <input type="checkbox"/> Galvanic or B. <input type="checkbox"/> Impressed Current) Date Installed: _____			
<input type="checkbox"/> Coated Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Plastic/Fiberglass <input type="checkbox"/> Other			
<input type="checkbox"/> Double Bottom <input type="checkbox"/> Double Wall <input type="checkbox"/> Lined Date Installed: _____			
Containment: <input type="checkbox"/> Earthen Dike <input type="checkbox"/> Steel Dike <input type="checkbox"/> Concrete <input type="checkbox"/> Synthetic Liner <input type="checkbox"/> Other _____			
CRDM: <input type="checkbox"/> Date Installed: _____		Type: _____	
Release Prevention Barrier: <input type="checkbox"/> Date Installed: _____		Type: _____	

TANK ID _____			
SPECIFICATION:			
Design: <input type="checkbox"/> UL _____ <input type="checkbox"/> SWRI _____ <input type="checkbox"/> Horizontal <input type="checkbox"/> Vertical <input type="checkbox"/> Rectangular			
<input type="checkbox"/> API _____			
<input type="checkbox"/> Unknown <input type="checkbox"/> Other _____			
Manufacturer: _____		Contents: _____	
Construction Date: _____		Last Repair/Reconstruction Date: _____	
Dimensions: _____		Capacity: _____	
Last Change of Service Date: _____			
Construction: <input type="checkbox"/> Bare Steel <input type="checkbox"/> Cathodically Protected (Check one: A. <input type="checkbox"/> Galvanic or B. <input type="checkbox"/> Impressed Current) Date Installed: _____			
<input type="checkbox"/> Coated Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Plastic/Fiberglass <input type="checkbox"/> Other			
<input type="checkbox"/> Double Bottom <input type="checkbox"/> Double Wall <input type="checkbox"/> Lined Date Installed: _____			
Containment: <input type="checkbox"/> Earthen Dike <input type="checkbox"/> Steel Dike <input type="checkbox"/> Concrete <input type="checkbox"/> Synthetic Liner <input type="checkbox"/> Other _____			
CRDM: <input type="checkbox"/> Date Installed: _____		Type: _____	
Release Prevention Barrier: <input type="checkbox"/> Date Installed: _____		Type: _____	

TANK ID _____			
SPECIFICATION:			
Design:	<input type="checkbox"/> UL _____	<input type="checkbox"/> SWRI _____	<input type="checkbox"/> Horizontal <input type="checkbox"/> Vertical <input type="checkbox"/> Rectangular
	<input type="checkbox"/> API _____		
	<input type="checkbox"/> Unknown	<input type="checkbox"/> Other _____	
Manufacturer: _____		Contents: _____	Construction Date: _____ Last Repair/Reconstruction Date: _____
Dimensions: _____		Capacity: _____	Last Change of Service Date: _____
Construction:	<input type="checkbox"/> Bare Steel <input type="checkbox"/> Cathodically Protected (Check one: A. <input type="checkbox"/> Galvanic or B. <input type="checkbox"/> Impressed Current) Date Installed: _____ <input type="checkbox"/> Coated Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Plastic/Fiberglass <input type="checkbox"/> Other <input type="checkbox"/> Double Bottom <input type="checkbox"/> Double Wall <input type="checkbox"/> Lined Date Installed: _____		
Containment:	<input type="checkbox"/> Earthen Dike <input type="checkbox"/> Steel Dike <input type="checkbox"/> Concrete <input type="checkbox"/> Synthetic Liner <input type="checkbox"/> Other _____		
CRDM:	<input type="checkbox"/>	Date Installed: _____	Type: _____
Release Prevention Barrier:	<input type="checkbox"/>	Date Installed: _____	Type: _____

TANK ID _____			
SPECIFICATION:			
Design:	<input type="checkbox"/> UL _____	<input type="checkbox"/> SWRI _____	<input type="checkbox"/> Horizontal <input type="checkbox"/> Vertical <input type="checkbox"/> Rectangular
	<input type="checkbox"/> API _____		
	<input type="checkbox"/> Unknown	<input type="checkbox"/> Other _____	
Manufacturer: _____		Contents: _____	Construction Date: _____ Last Repair/Reconstruction Date: _____
Dimensions: _____		Capacity: _____	Last Change of Service Date: _____
Construction:	<input type="checkbox"/> Bare Steel <input type="checkbox"/> Cathodically Protected (Check one: A. <input type="checkbox"/> Galvanic or B. <input type="checkbox"/> Impressed Current) Date Installed: _____ <input type="checkbox"/> Coated Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Plastic/Fiberglass <input type="checkbox"/> Other <input type="checkbox"/> Double Bottom <input type="checkbox"/> Double Wall <input type="checkbox"/> Lined Date Installed: _____		
Containment:	<input type="checkbox"/> Earthen Dike <input type="checkbox"/> Steel Dike <input type="checkbox"/> Concrete <input type="checkbox"/> Synthetic Liner <input type="checkbox"/> Other _____		
CRDM:	<input type="checkbox"/>	Date Installed: _____	Type: _____
Release Prevention Barrier:	<input type="checkbox"/>	Date Installed: _____	Type: _____

STI SP001 Monthly Inspection Checklist

General Inspection Information:

Inspection Date: _____	Retain Until Date: _____ (36 months from inspection date)
Prior Inspection Date: _____	Inspector Name: _____
Tanks Inspected (ID #'s): _____	

Inspection Guidance:

- For equipment not included in this standard, follow the manufacturer recommended inspection/testing schedules and procedures.
- The periodic AST Inspection is intended for monitoring the external AST condition and its containment structure. This visual inspection does not require a certified inspector. It shall be performed by an owner's inspector who is familiar with the site and can identify changes and developing problems.
- Upon discovery of water in the primary tank, secondary containment area, interstice, or spill container, remove promptly or take other corrective action. Before discharge to the environment, inspect the liquid for regulated products or other contaminants and disposed of it properly.
- (*) designates an item in a non-conformance status. This indicates that action is required to address a problem.
- Non-conforming items important to tank or containment integrity require evaluation by an engineer experienced in AST design, a certified inspector, or a tank manufacturer who will determine the corrective action. Note the non-conformance and corresponding corrective action in the comment section.
- Retain the completed checklists for 36 months.
- **In the event of severe weather (snow, ice, wind storms) or maintenance (such as painting) that could affect the operation of critical components (normal and emergency vents, valves), an inspection of these components is required immediately following the event.**

Item	Status	Comments
1.0 Tank Containment		
1.1 Water in primary tank, secondary containment, interstice, or spill container?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
1.2 Debris or fire hazard in containment?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
1.3 Drain valves operable and in a closed position?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
1.4 Containment egress pathways clear and gates/doors operable?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	

2.0 Leak Detection		
2.1 Visible signs of leakage around the tank, concrete pad, containment, ringwall or ground?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
3.0 Tank Attachments and Appurtenances		
3.1 Ladder and platform structure secure with no sign of severe corrosion or damage?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
3.2 Tank Liquid level gauge readable and in good condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
3.3 Check all tank openings are properly sealed	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
4.0 Other Conditions		
4.1 Are there other conditions that should be addressed for continued safe operation or that may affect the site SPCC plan?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

STI SP001 Annual Inspection Checklist

General Inspection Information:

Inspection Date: _____	Retain Until Date: _____ (36 months from inspection date)
Prior Inspection Date: _____	Inspector Name: _____
Tanks Inspected (ID #'s): _____	

Inspection Guidance:

- For equipment not included in this standard, follow the manufacturer recommended inspection/testing schedules and procedures.
- The periodic AST Inspection is intended for monitoring the external AST condition and its containment structure. This visual inspection does not require a certified inspector. It shall be performed by an owner's inspector who is familiar with the site and can identify changes and developing problems.
- Inspect the AST shell and associated piping, valves, and pumps including inspection of the coating for Paint Failure.
- Inspect:
 1. Earthen containment structures including examination for holes, washout, and cracking in addition to liner degradation and tank settling.
 2. Concrete containment structures and tank foundations/supports including examination for holes, washout, settling, paint failure, in addition to examination for corrosion and leakage.
 3. Steel containment structures and tank foundations/supports including examination for washout, settling, cracking, and for paint failure, in addition to examination for corrosion and leakage.
- Inspection of cathodic protection system, if applicable, includes the wire connections for galvanic systems and visual inspection of the operational components (power switch, meters, and alarms) of impressed current systems.
- Remove promptly upon discovery standing water or liquid in the primary tank, secondary containment area, interstice, or spill container. Before discharge to the environment, inspect the liquid for regulated products or other contaminants and disposed of it properly.
- In order to comply with EPA SPCC (Spill Prevention, Control and Countermeasure) rules, a facility must regularly test liquid level sensing devices to ensure proper operation (40 CFR 112.8(c)(8)(v)).
- (*) designates an item in a non-conformance status. This indicates that action is required to address a problem.
- Non-conforming items important to tank or containment integrity require evaluation by an engineer experienced in AST design, a certified inspector, or a tank manufacturer who will determine the corrective action. Note the non-conformance and corresponding corrective action in the comment section.
- Retain the completed checklists for 36 months.
- Complete this checklist on an annual basis supplemental to the owner monthly-performed inspection checklists.
- **Note: If a change has occurred to the tank system or containment that may affect the SPCC plan, the condition should be evaluated against the current plan requirement by a Professional Engineer knowledgeable in SPCC development and implementation.**

Item	Status	Comments
1.0 Tank Containment		
1.1 Containment structure in satisfactory condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
1.2 Drainage pipes/valves fit for continued service	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
2.0 Tank Foundation and Supports		
2.1 Evidence of tank settlement or foundation washout?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
2.2 Cracking or spalling of concrete pad or ring wall?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
2.3 Tank supports in satisfactory condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
2.4 Water able to drain away from tank?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
2.5 Grounding strap secured and in good condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
3.0 Cathodic Protection		
3.1 CP system functional?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> n/a	
3.2 Rectifier Reading:		
4.0 Tank External Coating		
4.1 Evidence of paint failure?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
5.0 Tank Shell/Heads		
5.1 Noticeable shell/head distortions, buckling, denting or bulging?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
5.2 Evidence of shell/head corrosion or cracking?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
6.0 Tank Manways, Piping and Equipment within Secondary Containment		
6.1 Flanged connection bolts tight and fully engaged with no sign of wear or corrosion?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
7.0 Tank Roof		
7.1 Standing water on roof?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
7.2 Evidence of coating cracking, crazing, peeling, blistering?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
7.3 Holes in roof?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	

Item	Status	Comments
8.0 Venting		
8.1 Vents free of obstructions?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
8.2 Emergency vent operable? Lift as required?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
9.0 Insulated Tanks		
9.1 Insulation missing?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
9.2 Are there noticable areas of moisture on the insulation?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
9.3 Mold on insulation?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
9.4 Insulation exhibiting damage?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
9.5 Is the insulation sufficiently protected from water intrusion?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
10.0 Level and Overfill Prevention Instrumentation of Shop-Fabricated Tanks		
10.1 Has the tank liquid level sensing device been tested to ensure proper operation?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
10.2 Does the tank liquid level sensing device operate as required?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
10.3 Are overfill prevention devices in proper working condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
11.0 Electrical Equipment		
11.1 Are tank grounding lines in good condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
11.2 Is electrical wiring for control boxes/lights in good condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	

Additional Comments:

STI SP001 Portable Container Monthly Inspection Checklist

General Inspection Information:

Inspection Date: _____	Retain Until Date: _____ (36 months from inspection date)
Prior Inspection Date: _____	Inspector Name: _____
Containers Inspected (ID #'s): _____	

Inspection Guidance:

- For equipment not included in this standard, follow the manufacturer recommended inspection/testing schedules and procedures.
- The periodic AST Inspection is intended for monitoring the external AST condition and its containment structure. This visual inspection does not require a certified inspector. It shall be performed by an owner's inspector who is familiar with the site and can identify changes and developing problems.
- (*) designates an item in a non-conformance status. This indicates that action is required to address a problem.
- Non-conforming items important to tank or containment integrity require evaluation by an engineer experienced in AST design, a certified inspector, or a tank manufacturer who will determine the corrective action. Note the non-conformance and corresponding corrective action in the comment section.
- Retain the completed checklists for 36 months.

Item	Area: _____	Area: _____	Area: _____	Area: _____
1.0 AST Containment/Storage Area				
1.1 ASTs within designated storage area?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Yes <input type="checkbox"/> No*
1.2 Debris, spills, or other fire hazards in containment or storage area?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No
1.3 Water in outdoor secondary containment?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No
1.4 Drain valves operable and in a closed position?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No
1.5 Egress pathways clear and gates/doors operable?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No

DISCLAIMER

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STI SP-001 Formal External Inspection 6000 gallon Fuel Tank Sonoma County Central Disposal Site

500 Mecham Road
Petaluma, CA 94952



Prepared for
**SONOMA COUNTY DEPARTMENT OF TRANSPORTATION
AND PUBLIC WORKS**

Central Disposal Site
Integrated Waste Division
2300 County Center Dr., Suite B 100
Santa Rosa, CA 95403

May 28, 2010

Prepared by

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STI SP-001
Formal External Inspection
6000 gallon Fuel Tank
Sonoma County Central Disposal Site

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1.0 Introduction and Purpose

This document presents the results of an in-service Steel Tank Institute (STI) formal external inspection of the two compartment 6,000 gallon (3000 gasoline/3000 diesel) fuel tank at the Sonoma County Central Disposal Site. This inspection was performed consistent with the STI SP-001 tank inspection standard and was conducted by a STI Certified Inspector. This assessment has been performed to fulfill the bulk storage container integrity testing requirements for these tanks described in the facility's Spill Prevention Control and Countermeasures (SPCC) Plan.

2.0 Facility Description

The Sonoma County Central Disposal Site is located at 500 Mecham Road in Petaluma, California. The Sonoma County Department of Transportation and Public Works (DTPW) owns and operates the landfill and adjacent transfer station for the use of the residents of the County of Sonoma.

The Site consists of 398.5 acres upon which are located two separate class III solid waste landfills: Landfill 1, consisting of 130 acres and; Landfill 2 consisting of 20 acres. No waste has been placed in either landfill since September 30, 2005 and, though Central is not a "closed site" it is currently being operated strictly as a class III municipal solid waste transfer station. The County operates the transfer station and the heavy equipment maintenance shop. Figure 1 presents the Location Map for the site; further information, including a Site Facilities drawing depicting the detailed facility layout is provided in the SPCC Plan.

3.0 Tank System Description

The 6,000-gallon gasoline/diesel tank is used for the refueling of County owned equipment and vehicles at the Central Site. The tank is a two compartment split (3,000/3,000) gallon double walled steel Fireguard model built by Acetank, with STI serial number 14386. The compartments of the tank are separated by a double bulkhead, and are surrounded by a single shell that provides integral secondary containment. According to the tank nameplate, it was constructed in August 2001.

To our knowledge, no previous formal inspections have been conducted since the construction in 2001. The tanks are routinely inspected by operators as part of normal rounds, and SPCC Plan inspections are conducted monthly. The facility uses the STI SP-001 Standard for compliance with the integrity testing requirements outlined in Title 40 of the Code of Federal Regulations (40CFR 112.8(c)(6)).

3.1 Tank Construction

The tank is a shop built horizontal cylindrical double walled tank constructed to the Underwriter Labs (UL) 142 and 2085 Standards. Tanks designed to this standard are required to have passed several tests at the factory prior to shipment to the job site, including tank tightness testing of the primary and secondary tanks. The tank is secured to the concrete pad using eight ¾" anchor bolts. Since the tank is of two compartment design, a single emergency vent on the secondary tank suffices for venting in the event of a fire. Each compartment includes a working vent and a separate emergency vent. The tank interstitial space is continuously monitored using a float/flag device to alert operators in the event of a release from the primary tank. Additional information about the piping features is presented in Section 3.2.

Figure 2 presents a plan view of the tank and major features. Photographs of the tank are included in Attachment I.

3.2 Piping & Ancillary Features

The tank system is equipped with two separate piping systems, one system for each product (gasoline/diesel). The gasoline tank is additionally equipped with piping for vapor recovery during tank filling. Both tanks have dedicated tank truck fill containment boxes that provide secondary containment to manage drips during tank product deliveries.

Both tanks are also equipped with level gauges, are equipped with overfill prevention valves, as included in the parts list from the Acetank Owners Manual. Anti-siphon of the dispenser lines is provided by solenoid valves located downstream of the turbine pumps. Anti-siphon of the fuel delivery line is provided by an air brake installed on the fill line termination inside of the tank, as part of the overfill prevention valve (Morrison Bros. Co. 9095A AST Overfill Prevention Valve).

The fueling system includes two end-mounted dispensers, which are elevated on platforms integrated into the tank design. Due to this design, any leaks would be immediately visible to the operator. 12-inch flex stainless steel hoses provide for suitable travel in the event of a seismic event. The dispensers are also equipped with break-aways in the event of a drive-off.

Containment for the tank is provided by an integral double walled system. Containment for the tank filling connections is provided by a tank mounted spill box. Containment for the dispensers, piping, and other equipment on the tank is provided by a concrete drainage swale that leads to an oil-water separator. Figure 2 includes the locations of the area drains, berms, and containment features.

4.0 Inspection Summary

The SP-001 inspection was performed by Craig R. Fletcher, STI Certified Inspector #AST 107-09, on March 31, 2010. A STI Field inspection checklist, designed to be complete and address the required information in the SP-001 Standard, was used to capture the information from the inspection; a copy of the inspection checklist is included in Attachment II.

The tank is classified as a Category I tank under the SP-001 Standard, as the tank design includes a release prevention barrier (concrete foundation and secondary steel tank) and a continuous release detection method (the interstitial space monitoring location between the two tank shells). Both compartments of the tank were in service at the time of our inspection.

The exterior of the tank concrete foundation was inspected and did not show evidence of settlement, cracking, exposed rebar, or disrepair. No areas of washout were observed near the concrete foundation. The area around the foundations slopes away from the tanks, and an engineered concrete trench directs rainwater to an oily water separator. No areas where standing water could collect were observed. The tank foundations are completely surrounded by concrete which was in good condition. The AST supports were also inspected, and no evidence of cracking or spalling was observed, and appear secured to the foundation. Welds on the tank support system, as well as other welds on the tank, did not exhibit signs of stress or deterioration.

No foreign materials were observed in the tank secondary containment, and liquids were not present. No other containers or ASTs were present in the containment area that drains to the oil water separator. The tank does not have any drain valves that require operation to release storm water. All piping, valves, and related equipment were observed during the inspection.

The normal and emergency vents were inspected and checked, and determined to be suitable for the tank size. The level gauges appeared to be in good working order and appropriate for the tank size. The tank is not equipped with remote or local alarms that annunciate.

The tank is equipped with suitable grounding at two locations. During our initial inspection, the tank was observed to not be properly grounded; however, suitable grounds were subsequently installed and the tank appears to be adequately grounded at two locations. Readings of the potential of the grounding cables were not collected during this investigation; based on our review, however, it appears the grounding cables are in continuity with the ground rod.

The tank is equipped with an exterior ladder and platform that provides access to the tank top. These features were observed to be in good condition, and did not have areas of corrosion, bent welds, or bent members.

During our inspection, particular attention was directed toward areas of the tank with visible corrosion and evidence of paint failure. Minor paint failure was observed on some portions of the tank and piping; significant paint failure was originally observed on the gasoline tank fill connection to the tank top. The significant paint failure on both tank fill connections has been repaired and repainted to our satisfaction.

Since the tank is double walled, Ultrasonic Thickness Testing (UTT) was not necessary, consistent with the STI standard requirements.

5.0 Field Checklist

A field checklist was used during the site inspection conducted on March 31, 2010. The checklist is included in Attachment III.

6.0 Suitability for Continued Service and Recommendations

The determination of suitability for continued service is a fundamental component of any tank inspection. Considerations used in determining the suitability for continued service include the results of the visual inspection, any testing or measurements obtained, and other factors.

Based on our inspection of the tank, and review of supplemental items provided by the client, the tank system is suitable for continued service.

Given the age of the tank system and the criteria in the STI SP-001 Standard, the next STI formal external inspection is required by May 28, 2030. However, if the tank is subject to damage caused by **fire** (including flame impingement) a **natural disaster** (such as flooding, hurricane force winds, etc.) and has been lifted or damaged by these events, **excessive settlement**, **over-pressurization**, or **cracking** of welds on tank surfaces, the tank requires evaluation by a trained engineer in tank design or a tank manufacturer who will determine whether an immediate formal external or internal inspection is required. Further, if leaks are detected or observed by the owner or inspector, the tank must be repaired, replaced, or closed and removed from service consistent with good engineering practice. Further information about these issues is included in the STI SP-001 standard

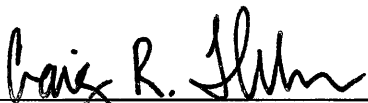
Consistent with the requirements of 40CFR 112.8(c)(6), testing of the tank system is also required following repairs. If repairs of the tank shell are needed, tank repair standard STI SP-031 should be followed. As outlined in the Standard, certain repairs require re-inspection by a qualified individual. Further information about these requirements is included in the SP-031 standard.

7.0 Certification

This document presents the results of the STI Formal External Inspection for the tank systems at the facility. Drawings, manufacturer's information, field inspections, on-site test results, and information provided by the client were used to develop this assessment.

I certify that the 6,000 gallon gasoline/diesel two compartment tank at the Sonoma County Central Sanitation Facility has been designed and constructed for the intended use in accordance with good engineering practices and meets the requirements of the STI SP-001 Standard.

Date: May 26, 2010



Craig R. Fletcher, P.G.

Steel Tank Institute Certified Inspector AST- 107-09 (expires 2/13/2014)

California Professional Geologist No. 5633

8.0 References

Acetank, "Owners Tank System Manual, Sonoma County Department of Transportation and Public Works", Acetank Reference Number 404553, 2001.

American Petroleum Industry (API) API Standard 653, "Tank Inspection, Repair, Alteration and Reconstruction", September 2003.

Steel Tank Institute, "Standard for the Inspection of Aboveground Storage Tanks SP 001", 4th Edition, July 2006.

Steel Tank Institute, "Standard for Repair of Shop Fabricated Aboveground Storage Tanks for the Storage of Flammable and Combustible Liquids, SP 031", 4th Edition, November 2008.

9.0 Limitations

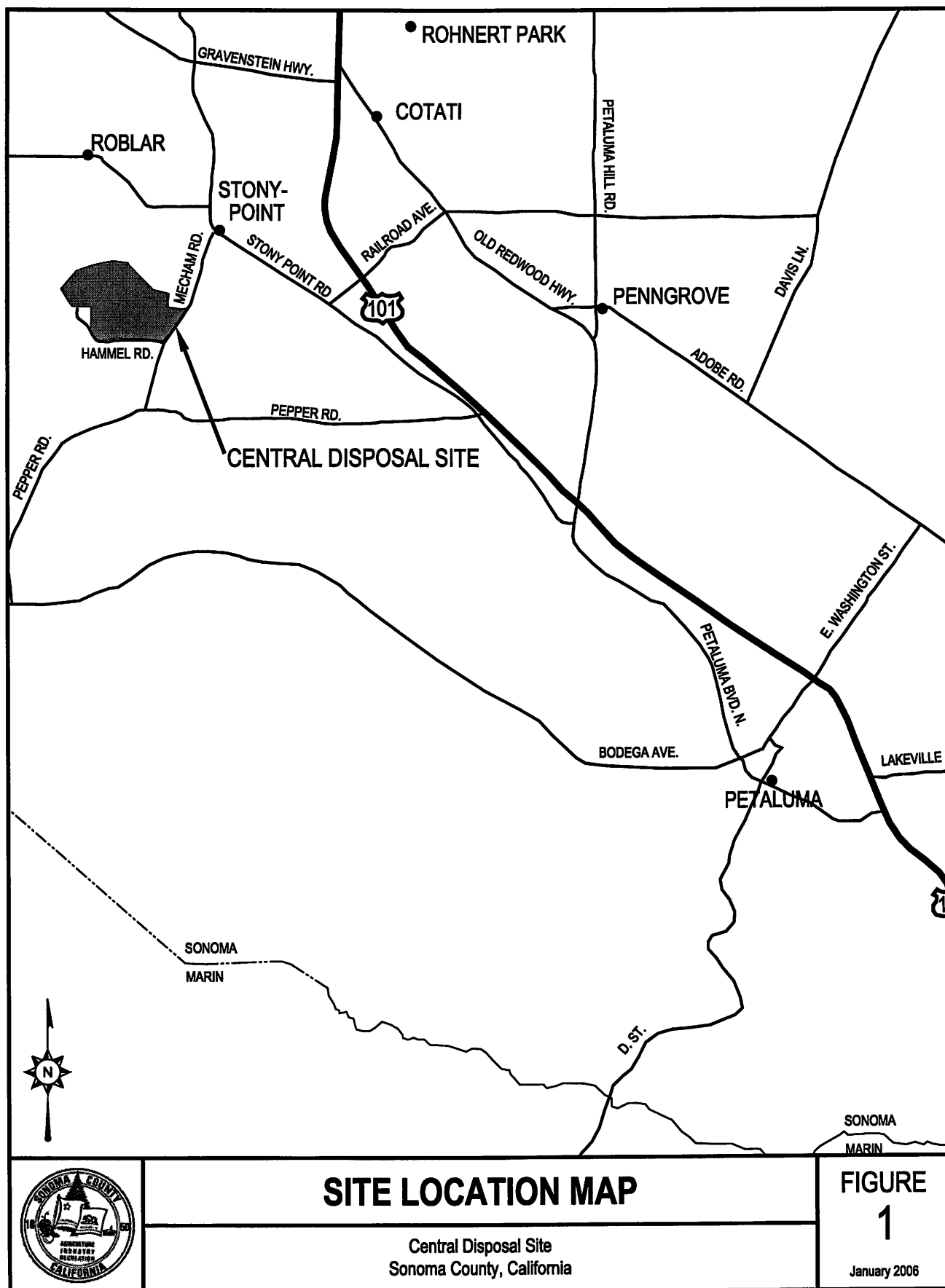
This assessment was conducted to assess the design and construction of the tank consistent with good engineering practice and regulatory requirements. FCI prepared this report as a third-party independent consultant. Due to project timelines and other constraints, this assessment relies on statements made by the Client's staff and other individuals who are considered knowledgeable about the system. FCI is not responsible for the accuracy and completeness of information provided by others. Inaccurate or incomplete data, or data not made available to FCI, may result in material changes to our findings, conclusions and recommendations.

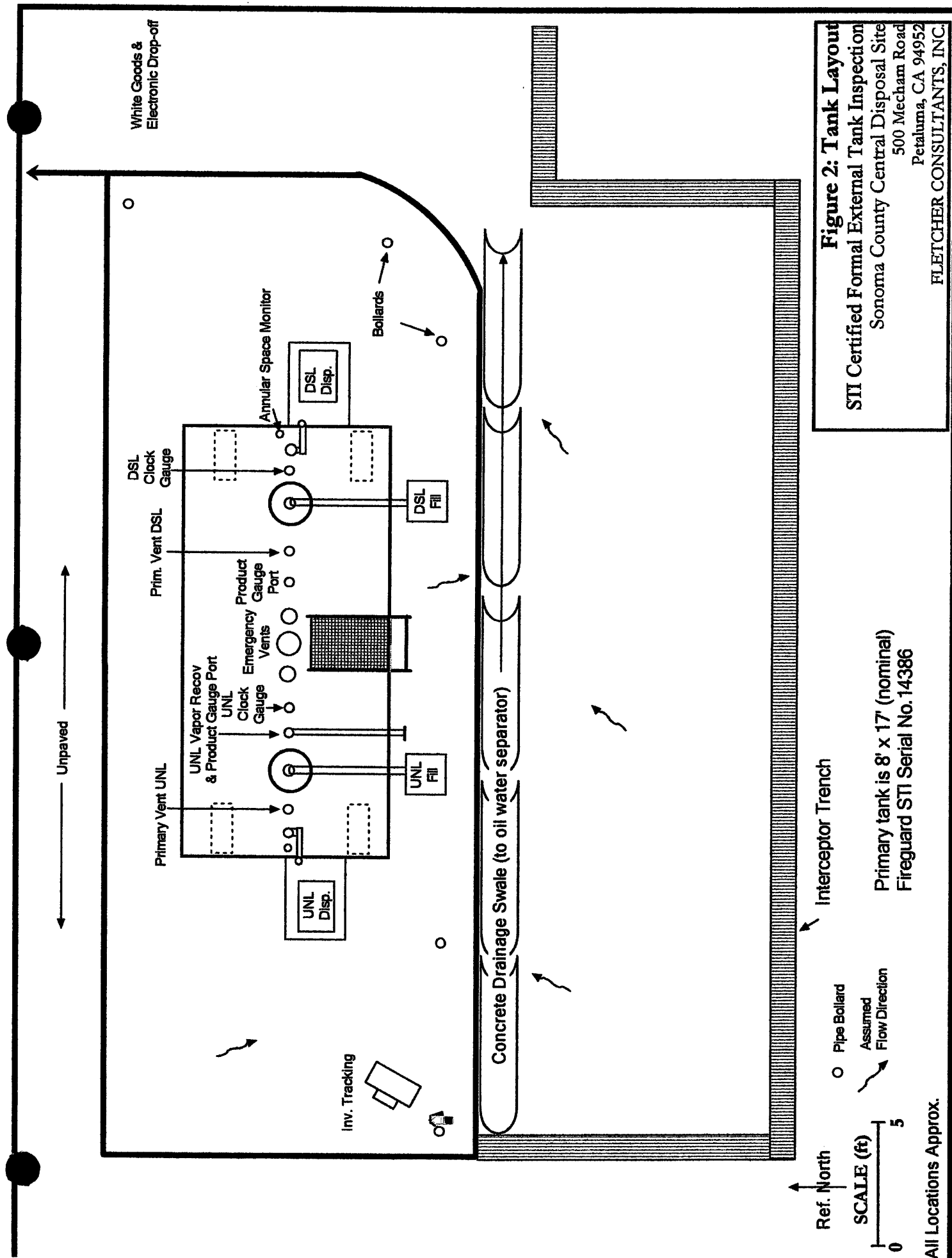
Maintenance of tank system integrity is vital to the long term use of any mechanical equipment. Inspections, tests, and records for this system should be maintained by the Client onsite, and be performed consistent with regulatory requirements and manufacturer's recommendations. It is possible that concealed or hidden flaws, imperfections, or other irregularities may exist in this tank system that were not identified at the time of the assessment. While every effort was made to ensure that the information used to develop interpretations was valid and correct, this document does not offer a warranty or guarantee regarding the system condition at the site.

As in any report of this type, engineering judgment was exercised using information obtained from a review of the facility data and site inspection. Recommendations and conclusions are made with an incomplete knowledge of all conditions; these conclusions and recommendations in this report may change as new or additional data become available.

This document has been prepared consistent with the accepted practices of this industry, and the services provided were provided consistent with the level of care and skill ordinarily practiced by members of the profession under like circumstance.

FIGURES





ATTACHMENT I
Tank Photo Documentation

Sonoma County DPTW Central Disposal Site Fuel Tank STI Formal External Inspection



Fuel Tank, gasoline end with integrated dispenser



Fuel Tank diesel end with integrated dispenser

Sonoma County DPTW Central Disposal Site Fuel Tank STI Formal External Inspection



End view of tank, diesel side. Concrete pad slopes to left, then is directed to OW Separator



Gasoline dispenser; elevated dispenser platform allows for immediate detection of piping leaks



Anti-siphon solenoid valve, diesel fuel tank



Tank Interstitial Monitor



Clock gauge and turbine pump head, diesel tank



End view of gasoline tank showing NFPA placard

ATTACHMENT II
Detailed Inspection Checklist

STI External Integrity Assessment Inspection Checklist

General Information

Inspector Name: Craig R. Fletcher Cert# 107-09

Site Name: <u>Sonoma Co. Central Disp Facility</u>	Facility Contact: <u>Jim Arcady</u>	Contact Tel No.: <u>(707) 565-7952</u>	Inspection Date: <u>3/31/2010</u>
Site Address: Street: <u>500 Mecham Road</u> City: <u>Petaluma</u> State: <u>CA</u> Zip: <u>94952</u>			Tank Contents: <u>Unleaded gas & Diesel</u>
Tank Id (if any) <u>Fuel Tank #1</u>	Gross Capacity: <u>3000/3000</u>	Yr Installed: <u>2001</u>	Tank Mfg.: <u>AceTank</u>
			Tank Model <u>Fireguard</u>

Previous Formal Inspections ☒ No ☐ Yes Date: _____ Type: ☐ Internal ☐ External
Copy of Prior Inspection Available?: ☐ Yes ☒ No

Owner Annual Inspections Review
Copy of Inspection Available?: ☐ Yes ☒ No _____
Owner Monthly Inspections Review
Copy of Inspection Available?: ☐ Yes ☒ No _____

Operating Inspection Frequency
☐ Annually ☒ Monthly ☐ Weekly ☐ Daily ☐ Per Shift Recorded ☒ Yes ☐ No _____

Tank Configuration (long. dimen.)
☒ Horizontal ☐ Vertical
Dimensions: Rectangular Tanks: L: _____ W: _____ H: _____
Cylindrical Tanks: Length: 17' Diam. 8'

Industry Standard (Fabrication)
☒ UL 142 ☒ UL 2085 ☐ UL 80 ☐ API 650 ☐ Other _____ ☐ Not Determined
Nameplate Shell Thickness: _____ in. Bottom Thickness: _____ in. Deck Thickness: _____ Not on Nameplate ☒

Dwg's Available? ☒ Yes ☐ No Is Tank inside Building or Covered? ☐ Yes ☒ No
Dwg # See Owners Manual Leak Test or Inspection Avail? ☐ Yes ☒ No If Yes, Date _____

Overall Tank System Condition:
☒ Good ☐ Fair ☐ Poor _____ Adequate? (if no, explain)
☒ Yes ☐ No _____

Tank Primary Containment Material ☒ Steel ☐ Fiberglass ☐ Other Thickness: _____ Basis ☐ UT ☐ Spec
Tank Secondary Containment Material ☒ Steel ☐ Fiberglass ☐ Other _____ ☐ None

Foundation Type: ☒ Concrete Slab ☐ Housekeeping Pad ☐ Ringwall
☐ Asphalt ☐ Saddle ☐ Other _____ Adequate? (if no, explain)
☒ Yes ☐ No _____

Condition ☒ Good ☐ Fair ☐ Poor _____
Ringwall/Concrete Support Condition
☒ Good ☐ Fair ☐ Poor ☐ Not Applicable _____ Adequate? (if no, explain)
☒ Yes ☐ No _____

Anchor Bolt Size: 3/4 in. No. of Bolts: 8 Condition: ☒ Secure ☐ Not Secure ☐
Not Bolted _____ Adequate? (if no, explain)
☒ Yes ☐ No _____

Tank Head ☒ Good ☐ Fair ☐ Poor _____ Adequate? (if no, explain)
Paint Failure? ☐ Yes ☒ No _____ ☒ Yes ☐ No _____

Tank Shell: ☒ Good ☐ Fair ☐ Poor _____ Adequate? (if no, explain)
Paint Failure? ☐ Yes ☒ No _____ ☒ Yes ☐ No _____

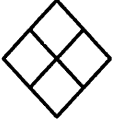
Tank Base/Chime/Supports ☒ Good ☐ Fair ☐ Poor _____ Adequate? (if no, explain)
Paint Failure? ☐ Yes ☒ No _____ ☒ Yes ☐ No _____

Stairs/Handrails/Platforms:
☒ Good ☐ Fair ☐ Poor ☐ None _____ Adequate? (if no, explain)
☒ Yes ☐ No _____

Fire Valve/Fusible Link: ☒ Yes ☐ No _____ Adequate? (if no, explain)
Anti-Siphon: ☒ Yes ☐ No _____ ☒ Yes ☐ No _____

Grounding/Bonding
☒ Present ☐ Absent installed May 2010 Adequate? (if no, explain)
☐ Yes ☒ No _____

Leak Detection
Tank ☒ Visual ☒ Cont. Interst. Monitor ☐ Manual ☐ None Testing
☒ Pass ☐ Fail ☐ Not Tested _____

How is Tank Level Determined? <input type="checkbox"/> Electronic <input checked="" type="checkbox"/> Tank Gauge <input type="checkbox"/> Dipstick <input type="checkbox"/> Float <input type="checkbox"/> Sight Glass <input type="checkbox"/> Other _____ Level Gauge Operational? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No _____ Alarms Operational? <input type="checkbox"/> Yes <input type="checkbox"/> No <u>No level alarms present</u>	
Description/Comments: Petro-tech 707 5448324	
NFPA Placard <input checked="" type="checkbox"/> Present  <input type="checkbox"/> Absent <input type="checkbox"/> Health 0 React Other	Labeling <input checked="" type="checkbox"/> No Smoking <input checked="" type="checkbox"/> Product Description _____ <input type="checkbox"/> Hazardous Waste <input type="checkbox"/> HW Accum. Start Date <input checked="" type="checkbox"/> Construction Standard. <u>UL 2085</u> <input checked="" type="checkbox"/> Other Prop 65 Warning
Tank Primary Containment Material <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Fiberglass <input type="checkbox"/> Other _____ Wall Thickness _____ Tank Secondary Containment Material <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Fiberglass <input type="checkbox"/> Other _____ Wall Thickness _____ <input type="checkbox"/> None	
Description/Comments: _____	
Piping Primary Containment Material <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Fiberglass <input type="checkbox"/> Other _____ Diameter (in.) <u>3 in</u> Piping Secondary Containment Material <input type="checkbox"/> Steel <input type="checkbox"/> Fiberglass <input type="checkbox"/> Other _____ Diameter (in.) _____ <input checked="" type="checkbox"/> None Piping Connection Type: <input type="checkbox"/> Threaded <input checked="" type="checkbox"/> Welded <input checked="" type="checkbox"/> Flanged <input type="checkbox"/> Other _____	
Description/Comments: Piping is primarily welded	
Piping: <input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor Leaks Present: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Adequate? (if no, explain) Severe Corrosion/Degradation Noted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No _____ <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No _____	
Other Equipment <input checked="" type="checkbox"/> Pump, Internal (type, size) <u>turbine</u> _____ <input type="checkbox"/> Pump, External (type, size) _____ <input type="checkbox"/> Day Tank <input type="checkbox"/> Drain Table <input type="checkbox"/> Filter Crusher <input checked="" type="checkbox"/> Dispenser (type, size) <u>2- gasboy</u> _____ <input checked="" type="checkbox"/> Other <u>Electronic Card system</u> <input type="checkbox"/> Electronic Monitor (Mfg/ Model) _____ Last Calibration/Service Date _____	
Description/Comments: _____	
Spill Prevention/Overfill Spill Bucket <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, Capacity <u>Boxes on both fills</u> Engineered Prevention Means: <input checked="" type="checkbox"/> Yes Describe <u>drop tube, gullotine valve</u> <input type="checkbox"/> No Adequate? (if no, explain) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No _____ <input type="checkbox"/> N/A	
High Level Alarm <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, <input type="checkbox"/> Audible <input type="checkbox"/> Visual _____	Testing <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not Tested _____
Auto Shutoff <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, how triggered: <u>drop tube shutoff</u>	Testing <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A <input type="checkbox"/> Not Tested _____
Corrosion Protection <input checked="" type="checkbox"/> Paint/Epoxy Coating <input type="checkbox"/> Cathodic Prot. <input type="checkbox"/> Other _____ <input type="checkbox"/> None Adequate? (if no, explain) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <u>fair</u>	
Venting Primary Tank Working Vent <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Diam: <u>2"</u> Adequate? (if no, explain) <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Not Clear _____	
Primary Tank Emerg. Vent <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Diam: _____ in. <input type="checkbox"/> Lifted Properly? <input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	
Secondary Tank Emerg. Vent <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Diam: <u>8 & 10 in.</u> <input type="checkbox"/> Lifted Properly? <input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK <input type="checkbox"/> N/A	
Piping & Ancillary Equipment Leak Detection Piping <input checked="" type="checkbox"/> Visual <input checked="" type="checkbox"/> Cont. Interst. Monitor <input type="checkbox"/> Manual <input type="checkbox"/> None Testing <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> Not Tested _____	
Secondary Containment Tank: <input checked="" type="checkbox"/> Integral DW Tank <input type="checkbox"/> Containment berm <input checked="" type="checkbox"/> Controlled Drain/Sump <input type="checkbox"/> None <input type="checkbox"/> Other _____ Piping: <input type="checkbox"/> Integral DW Piping <input type="checkbox"/> Containment berm <input checked="" type="checkbox"/> Controlled Drain/Sump <input type="checkbox"/> None <input type="checkbox"/> Other _____	
Secondary Containment Condition <input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor _____ Adequate? (if no, explain) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No _____ Any unsealed cracks, penetrations or impaired integrity? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No _____	
Secondary Containment Dimensions (for bermed systems) Separate Page Prepared? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Containment Diagram Prepared? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No _____ If no, complete below Containment: Length _____ Width _____ Depth _____ Displacement(s) Length _____ Width _____ Depth _____	
Secondary Containment Drain Valve <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor <input checked="" type="checkbox"/> No Valve goes to oily water separator Operational? (if no, explain) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

Bollards/ Impact Protection: <input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor <input type="checkbox"/> None _____		Adequate? (if no, explain) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No _____
Housekeeping: <input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor _____		Adequate? (if no, explain) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No _____
Construction Quality/Installation: <input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor		Adequate? (if no, explain) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No _____
Evidence of Release (if yes, describe) Staining: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No _____ Outside Containment? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Distressed Vegetation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No _____		Spills: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No _____ Runoff: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No _____
All Ports labeled? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Electrical Any loose or unprotected wiring? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No _____ Conduits, junction boxes, and other protective equipment sealed as required? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No _____ Any other electrical issues that require attention? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No _____		
STI Tank Category Determination (Describe) <input checked="" type="checkbox"/> Category 1 <input type="checkbox"/> Category 2 <input type="checkbox"/> Category 3 CRDM? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Method: <u>leak gauge on annular</u> RPB? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Method: <u>concrete & 2x wall tank</u>		
Notes/Comments/Remarks <u>Two copper grounds installed April 2010</u> <u>Gasoline tank manhole connection cleaned and recoated by contractor April 2010</u> <u>Tank labeling and placarding changes made April 2010</u> <u>Cracked leak detector float/flag unit replaced May 2010</u> <u>Emergency shutoff location changed May 2010</u>		
Required Actions for Continued Service: <u>None</u> Recommended Actions for Continued Service: Ensure that coatings periodically maintained to prevent corrosion Continue monthly and annual STI inspections as per SPCC Plan		
Data Collected at Site <input type="checkbox"/> UT Readings <input type="checkbox"/> Tank Monitor Printout <input checked="" type="checkbox"/> Tank Sketch <input checked="" type="checkbox"/> Tank Drawings <input type="checkbox"/> Borescope Survey <input type="checkbox"/> Previous Inspection Reports <input type="checkbox"/> Tank Test Results <input checked="" type="checkbox"/> Other <u>Tank Installation documents</u>		
Tank Suitable for Continued Use? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Next Inspection Due by: <u>Continued STI integrity testing inspections by owner monthly and annually</u> <u>Next STI Formal External Inspection 2030</u>

Record of Containment Drainage

Records such as this document shall be completed when rainwater from containment areas is drained to a storm drain or into an open watercourse or pond, or somehow bypasses the normal flow path. Discharge valve shall remain sealed in closed position under non-discharge conditions. Close valve following release of water.

Consult facility staff for records to be maintained for discharges from onsite ponds or other features.

Date	Containment Area	Presence of Oil or Sheen* (Yes/No)	Time open	Time closed	Signature

*If present, do not discharge water unless sheen or oil removed prior to release. If emergency condition, note condition of water and notify Supervisor immediately.