SPCC Plan: Facility Descriptions and Diagrams W-G4

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Disclaimer

This presentation is meant to provide an overview to inspectors, owners and operators of facilities of regulated, and the general public on the implementation of the Spill Prevention, Control, and Countermeasure (SPCC) rule (40 CFR Part 112). This presentation seeks to promote nationally-consistent implementation of the SPCC rule. The statutory provisions and EPA regulations described in this presentation contain legally binding requirements. This presentation does not substitute for those provisions or regulations, nor is it a regulation itself. In the event of a conflict between the discussion in this presentation and any statute or regulation, this presentation is not controlling. This presentation does not impose legally binding requirements on EPA or the regulated community, and might not apply to a particular situation based upon the circumstances. The word "should" as used in this presentation is intended solely to recommend or suggest an action, and is not intended to be viewed as controlling. Examples in this presentation are provided as suggestions and illustrations only. While this presentation indicates possible approaches to assure effective implementation of the applicable statute and regulations, EPA retains the discretion to adopt approaches on a case-by-case basis that differ from this presentation where appropriate. Any decisions regarding compliance at a particular facility will be made based on the application of the statute and regulations. References or links to information cited throughout this presentation are subject to change. Rule provisions and internet addresses provided in this guidance are current as of March 2023. This presentation may be revised periodically without public notice.

Regulatory Requirements of 40 C.F.R. §§112.7(a)(3)-(5), (b)

- Part of §112.7- **General requirements for Spill Prevention, Control, and Countermeasure Plans.**
- Required for onshore facilities including production, drilling and workover facilities, offshore drilling and workover facilities, petroleum and non-petroleum oils.
- Also required Tier II Qualified Facilities; portions are required for Tier I Qualified Facilities.

Tier I Qualified Facility Portions

- Type of oil in each fixed container and its storage capacity (§112.7(a)(3)(i))
- Countermeasures for discharge discovery, response and cleanup (§112.7(a)(3)(iv))
- Contact list for those to be contacted in case of a discharge (§112.7(a)(3)(vi))
- Information and procedures for reporting a discharge (§112.7(a)(4))
- Plan portions describing procedures used when a discharge occurs are organized in a way that will make them readily usable in an emergency (§112.7(a)(5))

Definition of “Facility” §112.2

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.

Facility Description §112.7(a)(3)

Describe in your Plan the physical layout of the facility and include a facility diagram, which must mark the location and contents of each fixed oil storage container and the storage area where mobile or portable containers are located. The facility diagram must identify the location of and mark as “exempt” underground tanks that are otherwise exempted from the requirements of this part under § 112.1(d)(4). The facility diagram must also include all transfer stations and connecting pipes, including intra-facility gathering lines that are otherwise exempted from the requirements of this part under § 112.1(d)(11).

Fixed Oil Storage Containers

- Aboveground storage tanks
- Underground storage tanks - this includes those that are subject to the SPCC rule and those that are exempt
- Oil-filled equipment such as hydraulic operating systems or manufacturing equipment
- Oil-filled electrical transformers, circuit breakers, or other equipment
- Oil production facility stock tanks, separation equipment and produced water containers

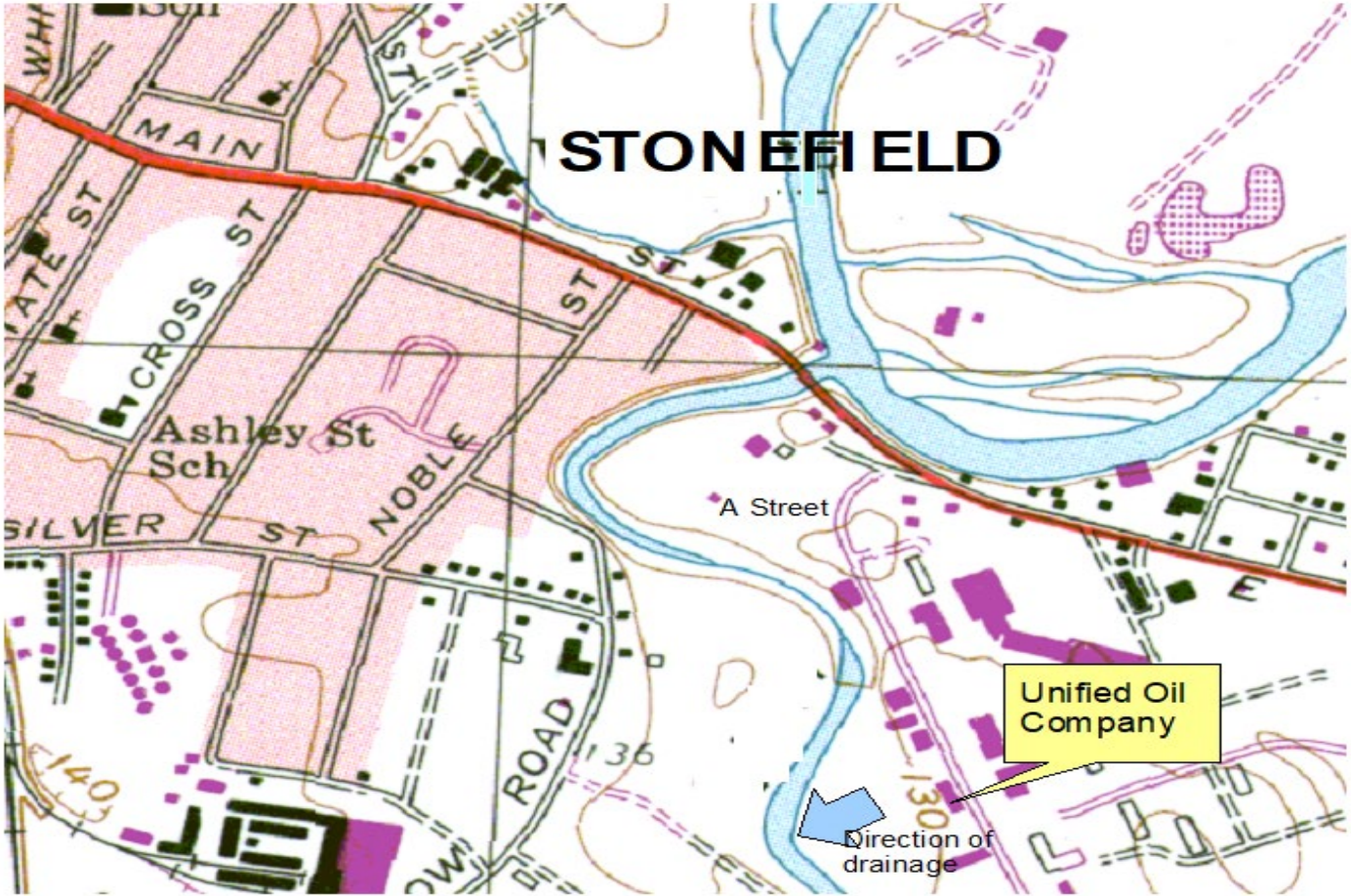
General Facility Description

Regulation requires that the Plan include a description of the physical layout of the facility.

This description may include information on the facility's:

- location, type, size
- geographic and topographic characteristics, and
- proximity to navigable waters, as well as other relevant information.

General Facility Description – Site Plan Example



Items to address in the Plan §§ 112.7(a)(3)(i)

Type of oil in each container and its storage capacity.

For mobile or portable containers, either provide the type of oil and storage capacity for each container or provide an estimate of the potential number of mobile or portable containers, the types of oil, and anticipated storage capacities

Oil container capacities

Providing information on a container-specific basis helps the owner or operator of the facility to prioritize inspections and maintenance of containers based on characteristics such as age, capacity, or location and helps to formulate contingency planning, if such planning is necessary. This information also helps inspectors to prioritize inspections of higher-risk containers at a facility and verify the facility capacity calculation.

Oil types and container capacities

In addition to the facility diagram, include a description of the total number of containers, capacities, and contents. The Plan should include an estimate of the number of mobile or portable containers expected to be stored in an area and the capacity of each container. This estimate can be used to determine the applicability of the rule thresholds and provide a general description of the mobile/portable containers in the Plan and may be represented as a capacity range.

Capacities and oil types – example table

ID	Storage capacity	Content	Description
Fixed Storage			
1	20,000 gallons	Diesel	Aboveground vertical tank
2	20,000 gallons	Unleaded regular gasoline	Aboveground horizontal tank elevated on built-in saddles
3	20,000 gallons	Unleaded premium gasoline	Aboveground horizontal tank elevated on built-in saddles
6	1,000 gallons	No. 2 fuel oil	Underground horizontal tank
7	10,000 gallons	No. 6 fuel oil	Field-constructed aboveground vertical tank
	1,100 gallons	Motor oil	55-gallon storage drums (variable stock; up to 20 drums on site at any time)
Portable storage			
4	500 gallons	Gasoline	Double-walled aboveground horizontal tank
Vehicles			
	2,000 gallons	Fuel oil	Delivery truck*

Container Storage Capacity

Storage capacity of a container means the shell capacity of the container (§112.2 definition)

Listed capacities are to be shell capacities, not maximum safe fill level or administrative fill level (e.g. 90%)

Items to address in the Plan §§ 112.7(a)(3)(ii),(iii)

- Discharge prevention measures including procedures for routine handling of products (such as loading and unloading operations and other oil transfers)

- Discharge or drainage controls such as secondary containment around containers and other structures, equipment, and procedures for the control of a discharge

Items to address in the Plan §§112.7(a)(3)(iv)-(vi)

- Countermeasures for discharge discovery, response, and cleanup (include facility and contractor capabilities)
- Methods of disposal of recovered materials, in accordance with applicable requirements
- Contact list and phone numbers including:
  - National Response Center
  - Contractors, with whom you have a response agreement (contract not required)
  - All appropriate Federal, State, and local agencies who must be contacted in case of a discharge as described in §112.1(b)

Facility Diagram §112.7(a)(3)

- Supplements facility description, which may include facility location, type, size, and proximity to navigable waters, etc.
- Provides enough detail to undertake prevention activities, perform inspections, and take response measures
- Includes intra-facility gathering lines that are otherwise exempted from the Rule
- Includes completely buried tanks that are otherwise exempted from the Rule

Facility Diagram

Required elements:

- The location and contents of oil containers (≥55 gallons)
- Completely buried tanks otherwise exempt
- Connecting piping
- Transfer stations

Recommended elements:

- Secondary containment
- Storm drain inlets and surface waters
- Direction of flow in the event of a discharge
- Legend – scale and symbols
- Location of response kits and firefighting equipment
- Location of valves or drainage system controls
- Compass direction
- Topographical information and area maps

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Facility Diagram Piping

Although EPA stated in both the preamble of the 2002 SPCC rule and in §112.7(a)(3) that all facility transfer stations and connecting pipes that handle oil must be included in the diagram, the rule allows flexibility on the method of depicting concentrated areas of piping and oil-filled manufacturing equipment on the facility diagram.

These areas may be represented in a more simplified manner, as long as more detailed diagrams (such as blueprints, engineering diagrams, or process charts) are available at the facility and referenced in the SPCC Plan.

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Facility Diagram Requirement §112.7(a)(3)

- The facility diagram must include all *fixed* (i.e., not mobile or portable) containers.
- For mobile or portable containers, the diagram must:
  - Identify a storage area on the facility diagram (e.g., a drum storage area).
- For mobile or portable containers the diagram must be supplemented with a discussion that:
  - Includes the type of oil and storage capacity for each in the storage area, or
  - Provides an estimate of the potential number of containers, types of oil, and anticipated capacities

Fixed Containers – Field erected tanks

Fixed Containers – Shop built tanks

Fixed Containers – Shop built tanks

Mobile/portable tanks

Discharge reporting §112.7(a)(4)

Unless there is a Facility Response Plan, provide information and procedures in your Plan to enable a person reporting a discharge as described in §112.1(b) to relate information on:

- The type of material discharged
- Estimates of the total quantity discharged
- Estimates of the quantity discharged as described in §112.1(b)
- The exact address or location and phone number of the facility; the date and time of the discharge
- The source of the discharge
- A description of all affected media (continued on next slide)

Discharge reporting §112.7(a)(4)

(continued):

- The cause of the discharge
- Any damages or injuries caused by the discharge
- Actions being used to stop, remove, and mitigate the effects of the discharge
- Whether an evacuation may be needed, and
- The names of individuals and/or organizations who have also been contacted

Governor's Office Emergency Services

Hazardous Materials Spill Report

DATE: 03/14/2023 TIME: 0743	RECEIVED BY:	CONTROL#: Cal OES - 23-1847 NRC -

1.a. PERSON NOTIFYING Cal OES:

1. NAME:	2. AGENCY:	3. PHONE#:	4. Ext:	5. PAG/CELL:
	Tesla Inc.			

1.b. PERSON REPORTING SPILL (If different from above):

1. NAME:	2. AGENCY:	3. PHONE#:	4. Ext:	5. PAG/CELL:

2. SUBSTANCE TYPE:

2. a. SUBSTANCE:	b.QTY:>=<	*Amount*	*Measure*	c. TYPE:	d. OTHER:	e. PIPELINE	f. VESSEL >= 300 Tons
1. Cutting Oil	=	200	Gal(s)	PETROLEUM		No	No
2.	=					No	No
3.	=					No	No

g. DESCRIPTION: RP stated that a tote containing the cutting oil had a puncture hole in it. The reporting party applied absorbents and sand but was unsuccessful causing the release to enter into a nearby storm drain and another part of the release went into a storm water management device.

h. STOPPAGE/CONTAINMENT:	i. WATER INVOLVED:	j. WATERWAY:	k. DRINKING WATER IMPACTED
Stopped, Contained	Yes	Storm Drain	No
l. MARITIME VESSEL		**m. KNOWN IMPACT**	
No		None	

3. a. INCIDENT LOCATION: 45500 Fremont Blvd

b. CITY:	c. COUNTY:	d. ZIP:	
Fremont	Alameda County		BAY AREA AQMD

4. INCIDENT DESCRIPTION:

a. DATE:	b. TIME *(Military)*:	c. SITE:	d. REPORTED CAUSE
03/14/2023	0500	Merchant/Business	Unknown
e. INJURIES	**f. FATALITY**	**g. EVACUATION**	**h. CLEANUP BY:**
No	No	No	Reporting Party

6. NOTIFICATION INFORMATION:

a. ON SCENE:	b. OTHER ON SCENE:	c. OTHER NOTIFIED:
		Local FD.

d. ADMIN. AGENCY: Fremont City Fire Department
e. SEC. AGENCY: Alameda County Environmental Health
f. ADDITIONAL COUNTY:
g. ADMIN. AGENCY:
h. NOTIFICATION LIST:
Cal GEM:
RWQCB Unit: 2
Cal OES Region:

AA/CUPA, DTSC, RWQCB, US EPA, USFWS, DFW-OSPR, CDPH-D.O., LANDS, PARKS & REC, Co/WP, Co/Hlth, Co/E-Hlth

Discharge response procedures §112.7(a)(5)

Unless there is a facility response plan, organize portions of the Plan describing procedures you will use when a discharge occurs in a way that will make them readily usable in an emergency, and include appropriate supporting material as appendices.

Failure Analysis §112.7(b)

- Where experience indicates reasonable potential for equipment failure
  - Tank loading or unloading equipment
  - Tank overflow, rupture, or leakage
  - Any other equipment known to be a source of a discharge
- Predict for each type:
  - Direction
  - Rate of flow
  - Total quantity of oil which could be discharged

Potential Discharge Volumes and Direction of Flow

Potential Event	Maximum volume released (gallons)	Maximum discharge rate	Direction of Flow	Secondary Containment
Bulk Storage Area (Aboveground Storage Tanks #1, 2, 3, or 7)				
Failure of aboveground tank (collapse or puncture below product level)	20,000	Gradual to instantaneous	SW to Silver Creek	Concrete dike
Tank overfill	1 to 120	60 gal/min	SW to Silver Creek	Concrete dike
Pipe failure	20,000	240 gal/min	SW to Silver Creek	Concrete dike
Leaking pipe or valve packing	600	1 gal/min	SW to Silver Creek	Concrete dike
Leaking heating coil (Tank #7)	10,000	1 gal/min	SW to Silver Creek	Concrete dike
Loading Rack/Unloading Area				
Tank truck leak or failure inside the rollover berm	1 to 2,000	Gradual to instantaneous	SW to Silver Creek	Rollover berm, on to oil/water separator
Tank truck leak or failure outside the rollover berm	1 to 2,000	Gradual to instantaneous	SW to Silver Creek	Rollover berm, on to oil/water separator
Hose leak during truck loading	1 to 300	60 gal/min	SW to Silver Creek	Rollover berm
Fuel Dispensing Areas				
Tank #4 and diesel dispenser hose/ connections leak	1 to 150	30 gal/minute	SW to Silver Creek.	Land-based spill response capability (spill kit) and oil/water separator

Potential Discharge Volumes and Direction of Flow

Potential Event	Maximum volume released (gallons)	Maximum discharge rate	Direction of Flow	Secondary Containment
Maintenance Building				
Leak or failure of drum	1 to 55	Gradual to instantaneous	SW to Silver Creek.	Spill pallets, oil/water separator
Other Areas				
Complete failure of portable tank (Tank #4)	500	Gradual to instantaneous	SW to Silver Creek.	Secondary shell, oil/water separator
Leaking portable tank or overfills (Tank #4)	1 to 100	3 gal/min	SW to Silver Creek.	Secondary shell, oil/water separator
Leak during transfer to heating fuel UST (Tank # 6)	1 to 120	60 gal/min	SW to Silver Creek.	Oil/water separator
Oil/water separator malfunction	1 to 300	1 gal/min	SW to Silver Creek.	


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SPCC Plan Diagrams

Facility diagrams are important because they are used for effective prevention, planning, management (for example, inspections), and response considerations. The diagram also will help the facility and emergency response personnel to plan for emergencies.

A facility diagram prepared for a state or other federal plan (including the FRP requirements under §112.20) or for other purposes (e.g., as-built plans, construction permits, facility modifications, and other pollution prevention requirements) may be used in an SPCC Plan if it meets the requirements of the SPCC rule.

Container capacities and contents

ID	Storage capacity	Content	Description
Fixed Storage			
1	20,000 gallons	Diesel	Aboveground vertical tank
2	20,000 gallons	Unleaded regular gasoline	Aboveground horizontal tank elevated on built-in saddles
3	20,000 gallons	Unleaded premium gasoline	Aboveground horizontal tank elevated on built-in saddles
6	1,000 gallons	No. 2 fuel oil	Underground horizontal tank
7	10,000 gallons	No. 6 fuel oil	Field-constructed aboveground vertical tank
	1,100 gallons	Motor oil	55-gallon storage drums (variable stock; up to 20 drums on site at any time)
Portable storage			
4	500 gallons	Gasoline	Double-walled aboveground horizontal tank
Vehicles			
	2,000 gallons	Fuel oil	Delivery truck*

**One of the two delivery trucks is periodically parked while full. This truck is therefore counted in the storage capacity for this facility.*

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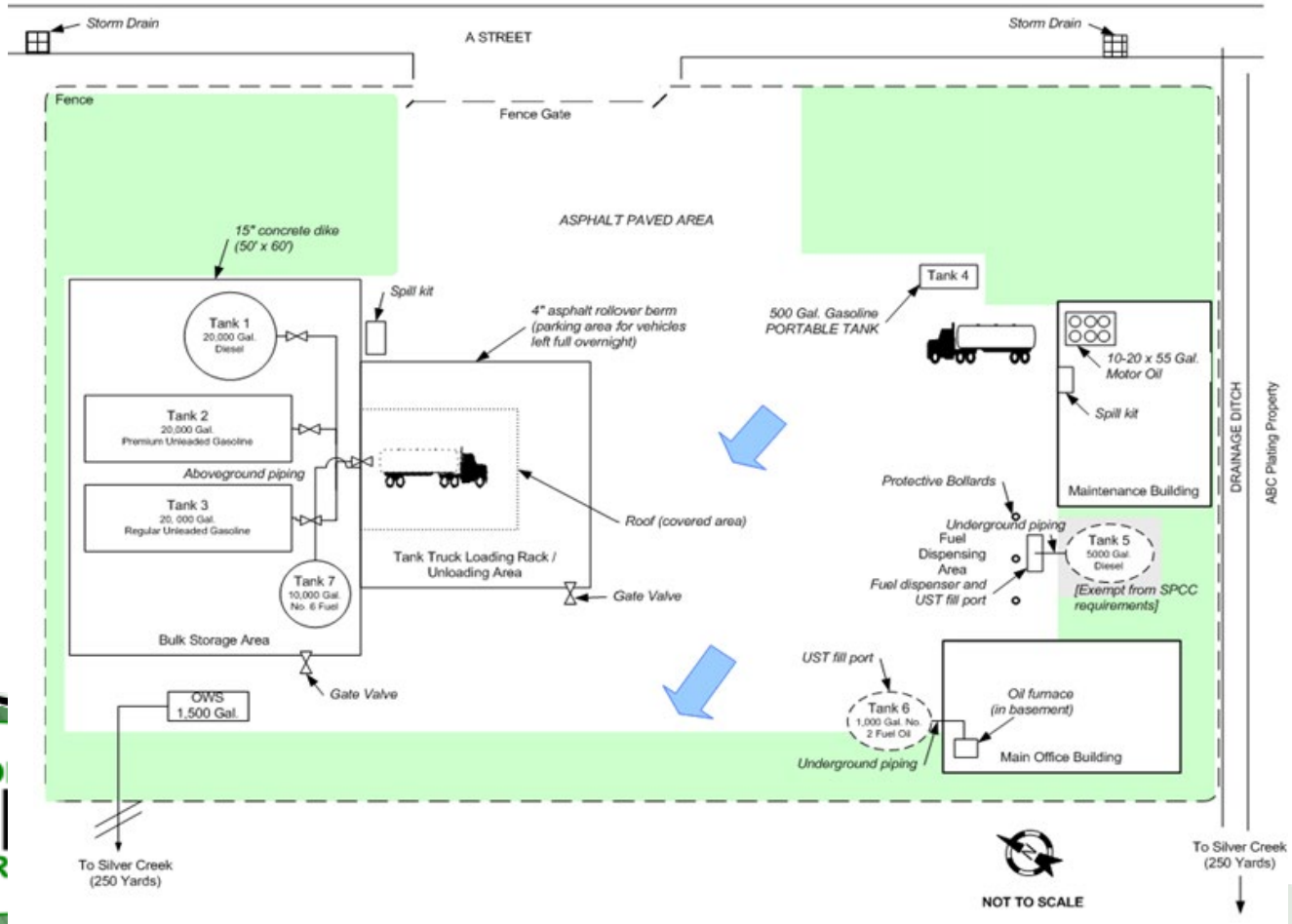
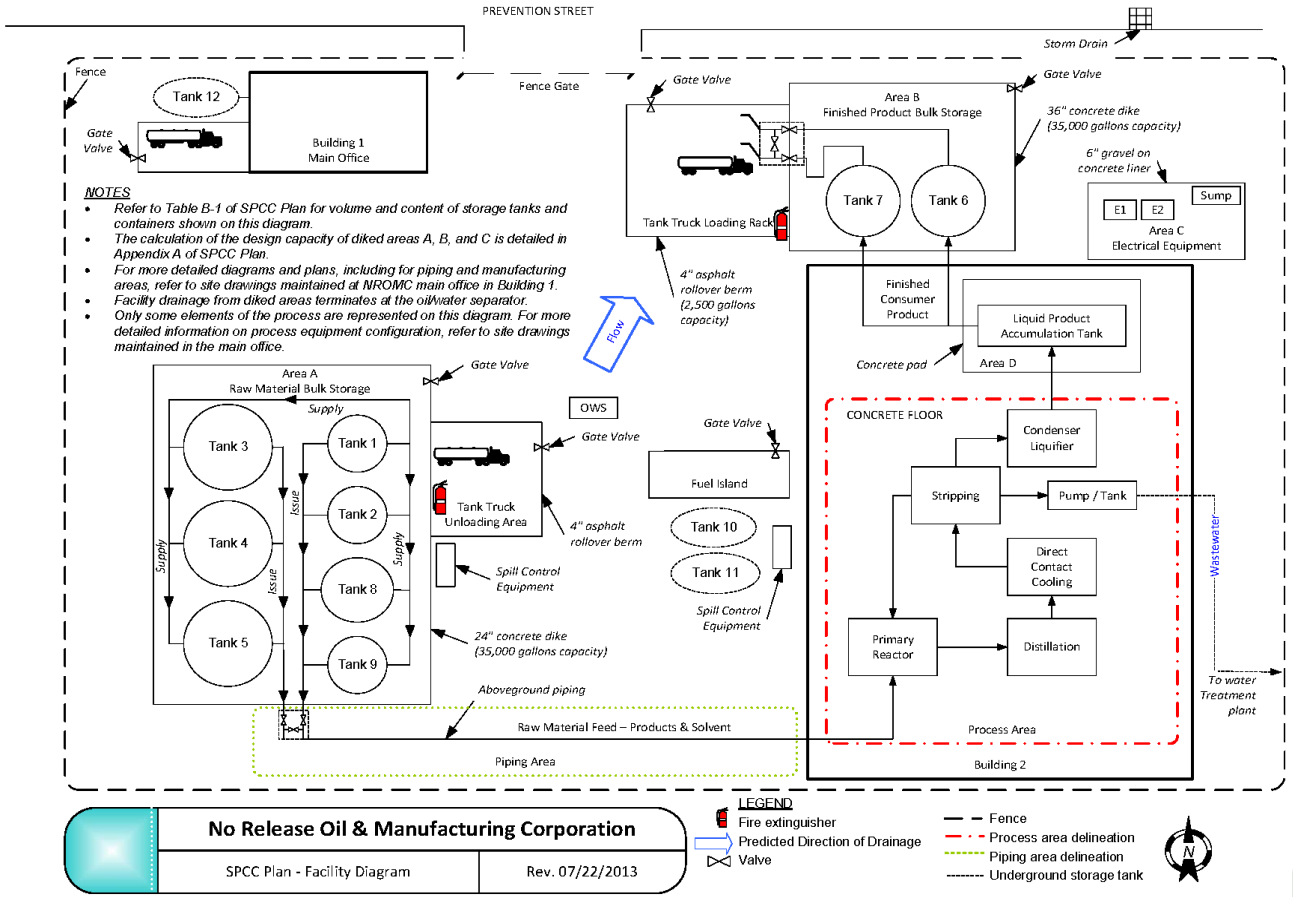
Facility Diagram



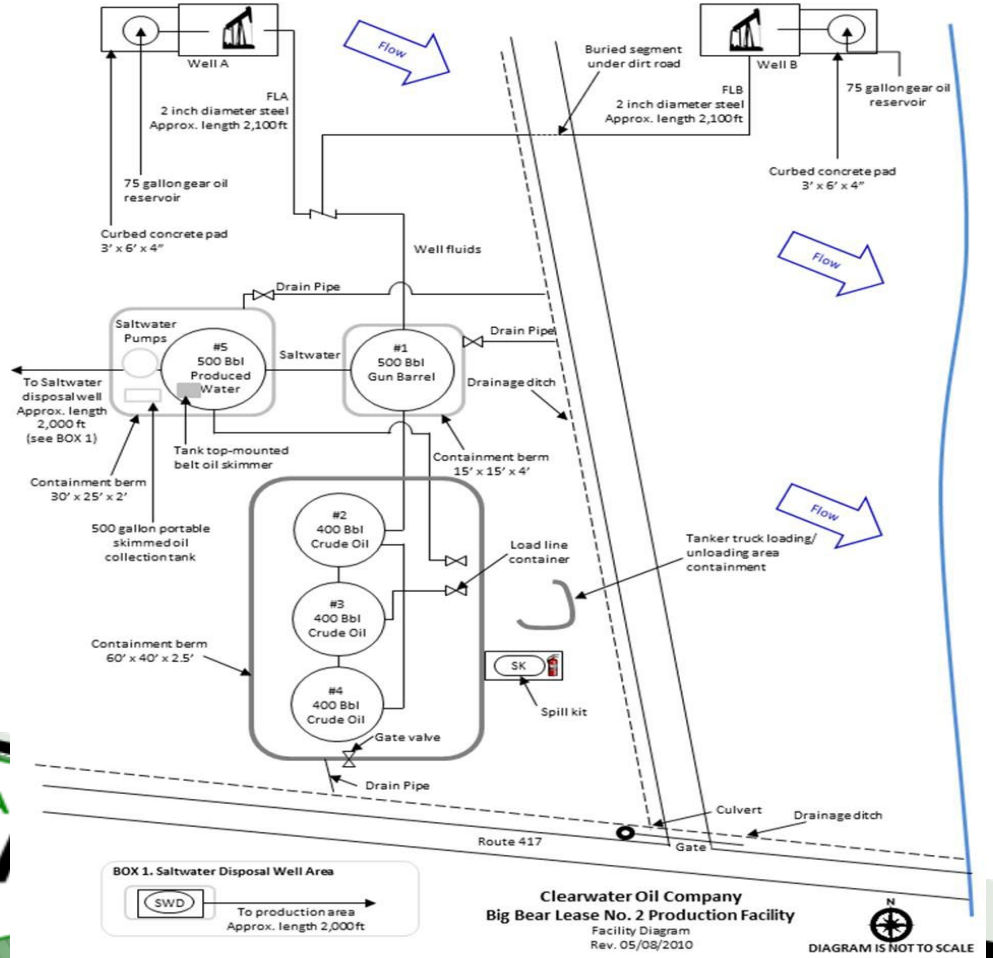
Manufacturing facility

TANK/CONTAINER	VOLUME (gallons)	CONTENTS
Area A – Raw Material Bulk Storage		
Tank 1	4,000	Product A -- #2 fuel oil
Tank 2	4,000	Product A -- #2 fuel oil
Tank 3	20,000	Product B -- #6 fuel oil
Tank 4	20,000	Product B -- #6 fuel oil
Tank 5	20,000	Product B -- #6 fuel oil
Tank 8	6,000	Product B -- Kerosene
Tank 9	40,000	Product C -- Toluene
Area B – Finished Product Storage		
Tank 6	20,000	Product D – Proprietary oil
Tank 7	20,000	Product D – Proprietary oil
Area C – Electrical Equipment		
Transformer E1	235	Silicon-based dielectric fluid
Transformer E2	235	Silicon-based dielectric fluid
Area D		
Liquid Product Accumulation Tank	10,000	Product D – Proprietary oil
Process Area		
Primary Reactor	500	Intermediate oil product
Distillation	500	Intermediate oil product
Direct Contact Cooling	500	Intermediate oil product
Stripping	500	Intermediate oil product
Pump/Tank	300	Intermediate oil product
Condenser Liquefier	500	Intermediate oil product
Underground Storage Tanks		
Tank 10 (otherwise exempt from SPCC requirements)	8,000	Gasoline
Tank 11 (otherwise exempt from SPCC requirements)	8,000	Gasoline
Tank 12	2,000	Heating oil

Manufacturing facility diagram



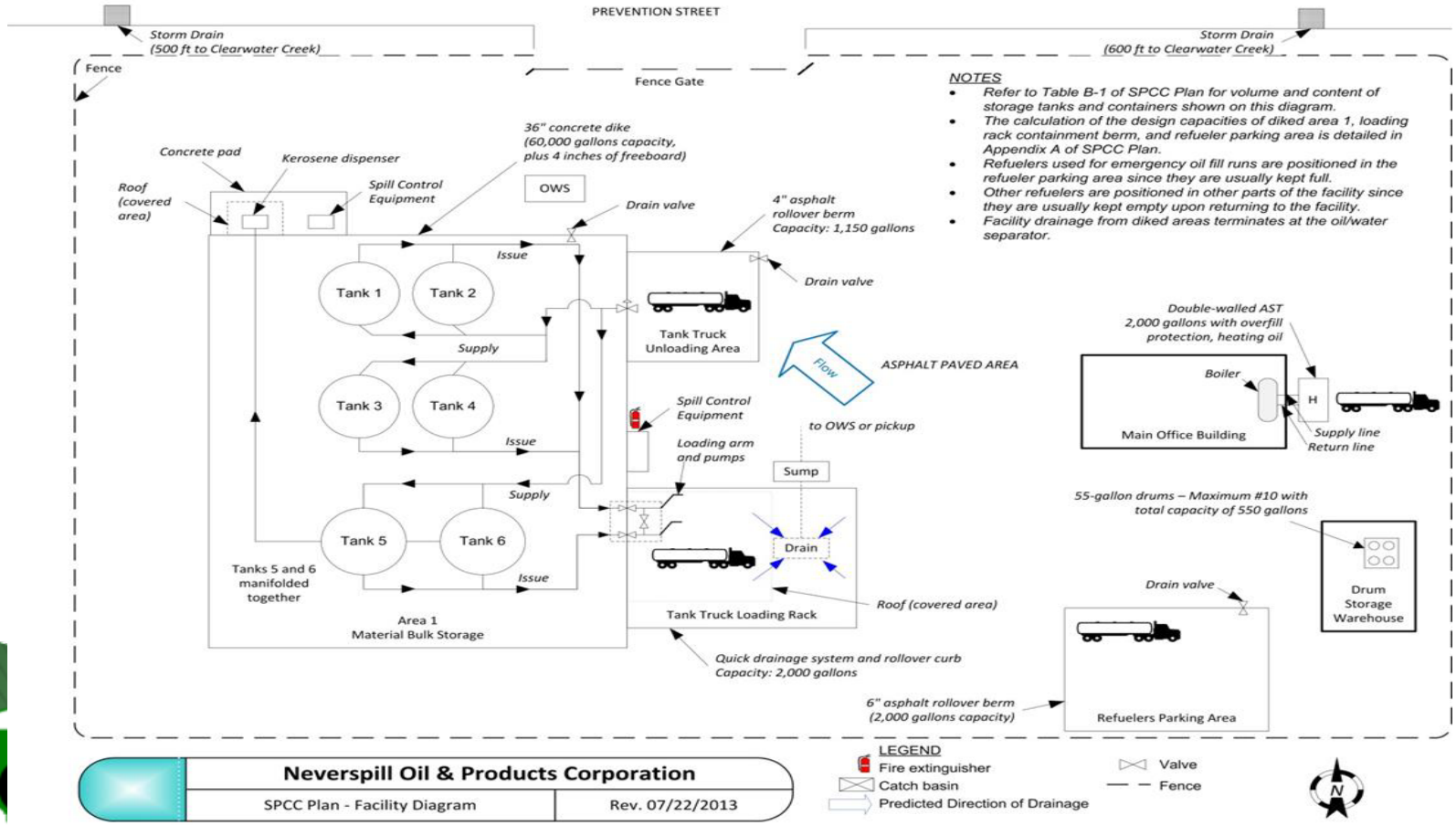
Production facility diagram



Volume and contents of containers identified on the facility diagram

Tank/Container	Volume (gallons)	Contents
Area 1		
Tank 1	25,000	Product A – #2 fuel oil
Tank 2	25,000	Product A – #2 fuel oil
Tank 3	25,000	Product B – #6 fuel oil
Tank 4	25,000	Product B – #6 fuel oil
Tank 5	30,000	Product C – Kerosene
Tank 6	30,000	Product C – Kerosene
Main Office Building		
Tank H	2,000	Heating oil
Drum Storage Warehouse		
Up to 10 drums	55 (each)	Various oil products (lubricating oil, engine oil, used oil, etc.)

Example facility diagram, including a loading rack and a separate loading area



Reviewing a diagram

The inspector should verify that the diagram included in the Plan includes:

- Location and contents of each fixed container – compare with actual site conditions and also tank list.
- Location of storage areas (which may also include operational or staging areas) for mobile or portable containers.
- Completely buried tanks, including those that are otherwise exempt from the SPCC rule by §112.1(d)(4).
- All transfer stations (i.e., areas where oil is transferred) and connecting pipes including intrafacility gathering lines that are otherwise exempt from the SPCC rule by §112.1(d)(11).

Common diagram deficiencies

- Diagram reflects as-designed rather than as-built conditions
- Changes to facility made without updating diagram
  - Tanks added, removed, or permanently closed
  - Tank contents changed
  - Process or equipment changes not reflected
- Piping, transfer areas, and mobile/portable containers not included

For additional information

EPA's Oil Program Website has links to Oil Pollution Prevention Regulations, Inspector Guidance, Sample Plans-

https://www.epa.gov/oil-spills-prevention-and-preparedness-regulations

Any Questions?

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