

A lush green forest with a small waterfall cascading over rocks into a stream. The water is white and frothy as it falls, and the surrounding vegetation is dense and vibrant green. The scene is captured from a slightly elevated angle, looking down at the stream.

Oil/Water Interceptors and Separators

EPA Regulations: Overview and Update

Introduction

- Oil/Water Interceptors and Separators are installed in surface water drainage systems to protect the environment from pollution by oils (and oil coated solids).***
- They separate the oil from the water, and then retain the oil safely until it is removed.***
- They are installed to contain oil leaks from vehicles and plant and accidental spills.***
- To be effective, they need to be correctly designed, installed, and maintained.***

Why Are Oil/Water Separators So Important?





PETROLEUM RELEASES ARE VERY COMMON



OIL IS THE VISABLE POLLUTANT

**HARMFUL, EVEN IN LOW CONCENTRATIONS -
OIL SHEEN ON STREAM**





Definition - Interceptor

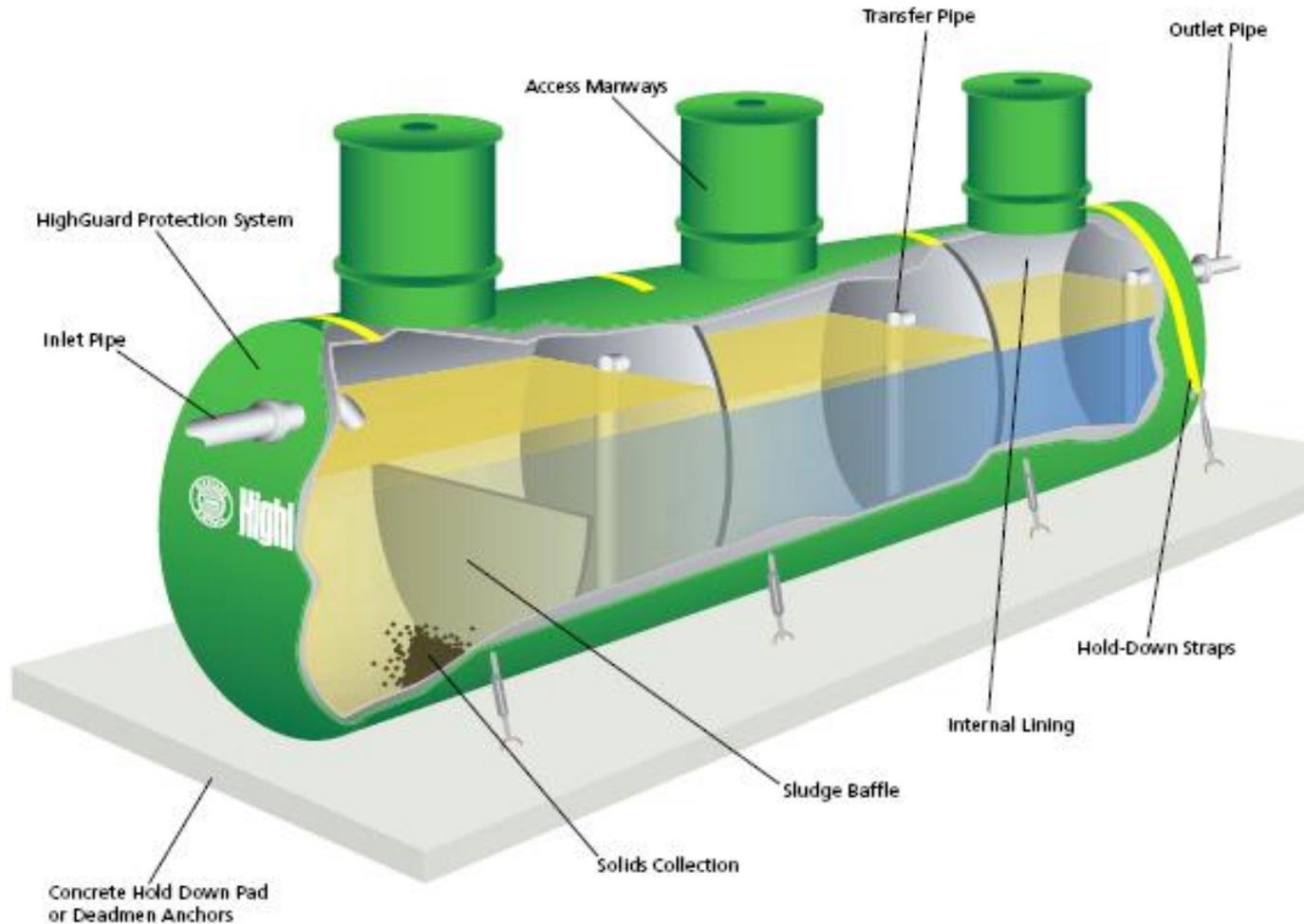
- ***Oil/Water or Oil/Solids Interceptors are designed to achieve a discharge concentration of less than 100 mg/L of oil under standard test conditions.***
- ***They are suitable for dealing with discharges where a lower quality requirement applies, such as discharges to the sanitary sewer.***



**SAND/OIL INTERCEPTOR
INSTALLED AT VEHICLE
MAINTENANCE FACILITY FOR
SEWER PRETREATMENT**

Sand/Oil Interceptor

How It Works



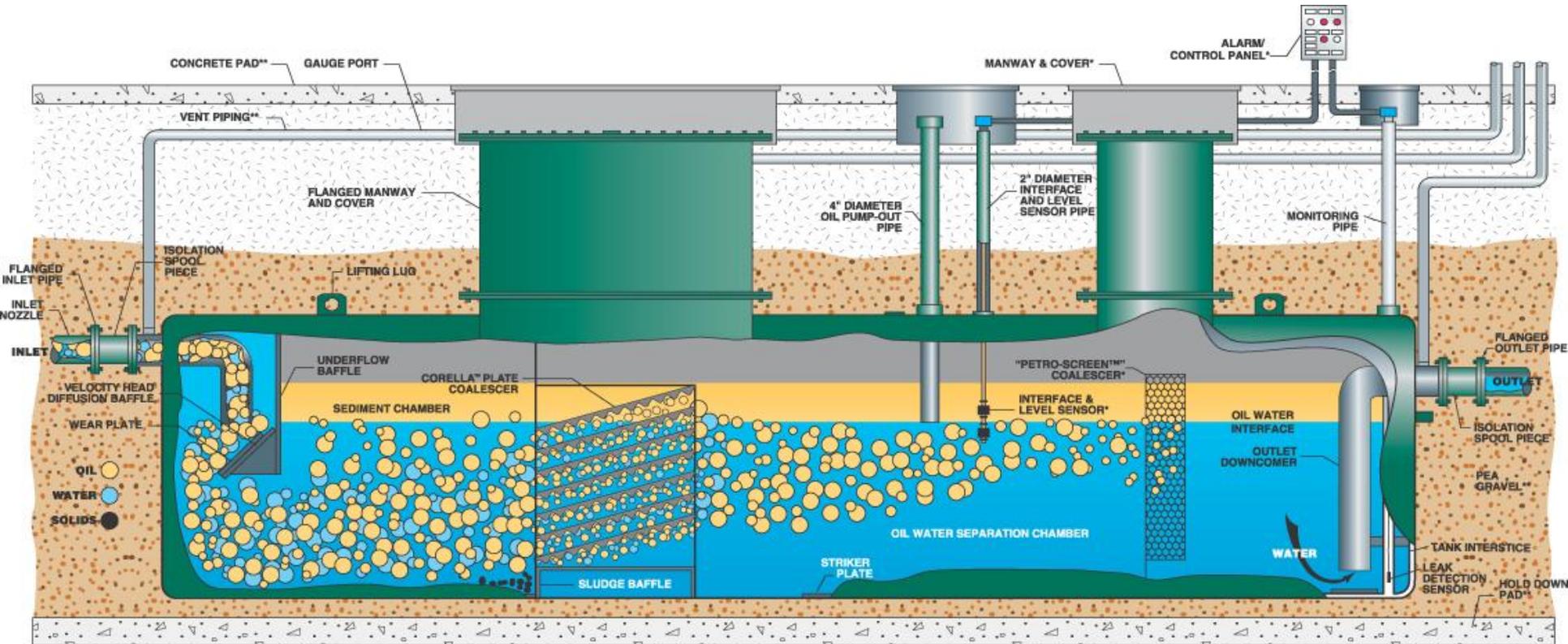
Definition - Separator

- *Oil/Water Separators are designed to achieve a discharge concentration of less than 15 mg/L of oil under standard test conditions.*
- *These separators are required for discharges to surface water drains and the water environment.*
- *Oil/Water Separators contain coalescing plates and devices, which draw the oil droplets together and facilitate separation.*

OIL/WATER SEPARATOR INSTALLED AT A POWER PLANT FOR STORMWATER DISCHARGE COMPLIANCE AND SPILL CONTROL



EZ-Access Oil/Water Separator with Corella™ Plate Coalescer



* Optional equipment available from Highland Tank

** Installer supplied equipment

CORELLA®
SELF-CLEANING PLATE PACK





**PETRO-SCREEN
IMPINGEMENT COALESCER**

OIL/WATER SEPARATOR INSTALLED AT A MILITARY BASE FOR STORMWATER DISCHARGE COMPLIANCE AND SPILL CONTROL



OIL/WATER SEPARATOR BANK INSTALLED AT AN INDUSTRIAL FACILITY FOR STORMWATER DISCHARGE COMPLIANCE AND SPILL CONTROL



ABOVEGROUND OIL/WATER SEPARATOR EQUIPPED WITH NON-EMULSIFYING PUMPS



OIL/WATER SEPARATOR WITH AHFS HYDROCARBON REMOVAL SYSTEM FOR OIL AND GAS PRODUCED WATER





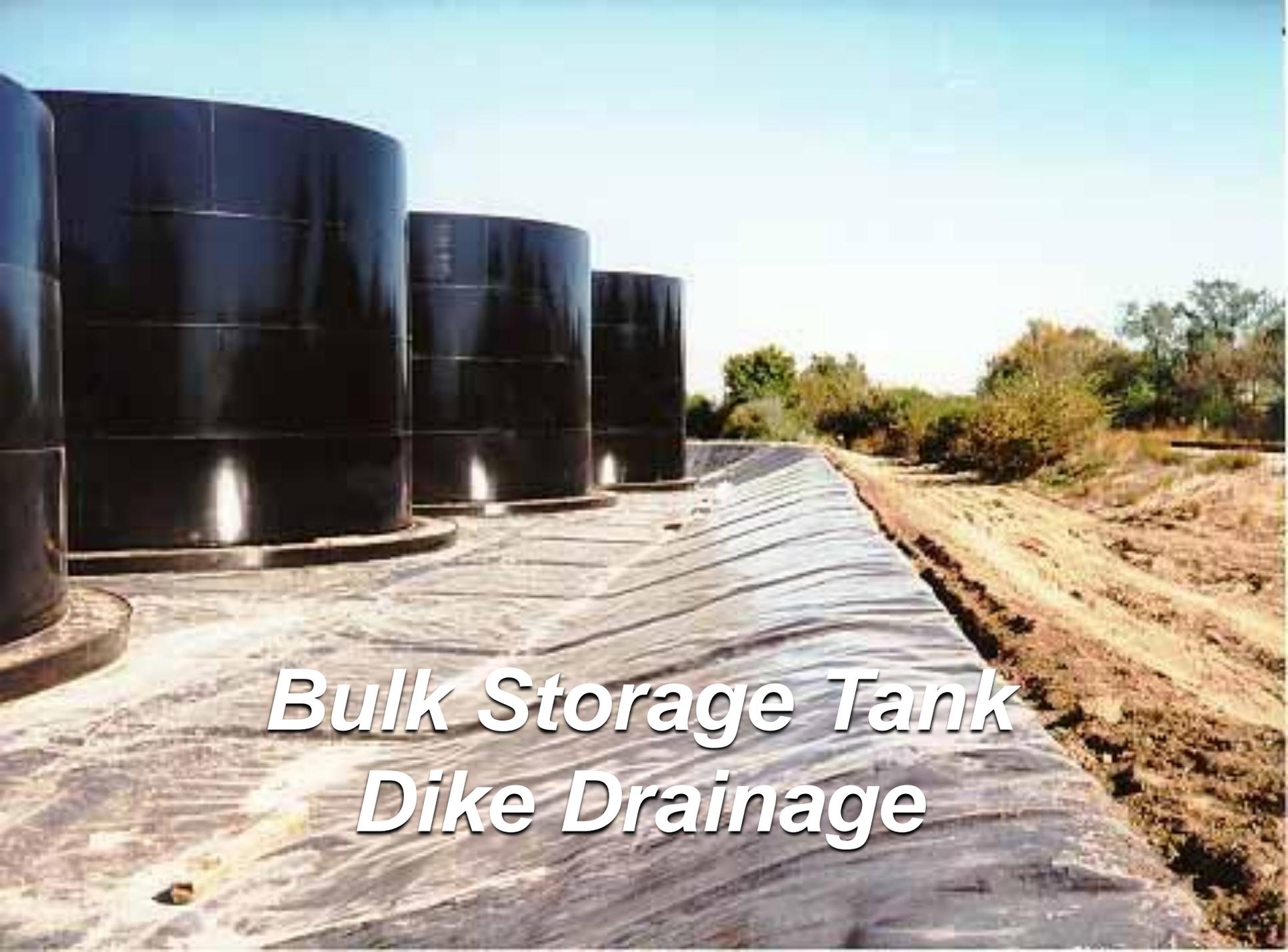
**HYDROCARBON REMOVAL SYSTEM FOR
PURE OIL RECOVERED AND
CLEAN EFFLUENT DISCHARGED**



**STORMWATER MANAGEMENT SYSTEM
SAND/OIL INTERCEPTOR AND OIL/WATER SEPARATOR
AT CAPITAL CITY AIRPORT, YORK, PA**

Oil/Water Separators Applications

- ***Aircraft Services***
- ***Airports***
- ***Ambulance Services***
- ***Automobile Dealers***
- ***Automobile Rental Services***
- ***Bus Companies***
- ***Construction Companies***
- ***Garbage Carting***
- ***Gasoline Service Stations***
- ***Industrial Facilities***
- ***Military Installations***
- ***Municipal Fleets***
- ***Railroads***
- ***Petroleum Storage Facilities***
- ***Trucking Companies***
- ***Utilities***



***Bulk Storage Tank
Dike Drainage***

Tank Car or Tank Truck Loading/Unloading Rack



Fuel Loading and Unloading Applications



Fuel Loading and Unloading Applications



Fueling Facilities



Fueling Facilities



Fueling Facilities



Surface Drainage Storm Water Runoff



Surface Drainage Storm Water Runoff



Vehicle Maintenance Facilities



Vehicle Wash Facilities



Accidents Happen!





***STORMWATER
DISCHARGE COMPLIANCE
AND SPILL PREVENTION***

***HIGH PERFORMANCE
OIL/WATER SEPARATORS
AND
ADVANCED HYDROCARBON
FILTRATION SYSTEMS***

Choosing the “Right” Separator

- ***Product compliance with national consensus codes: API-421, UL-SU2215, OSHA, etc.***
- ***Use the manufacture’s data to help you select the appropriate system for your site.***
- ***More than one separator might be required on larger sites or a site with many activities.***
- ***You will need to consider the local circumstances and risk factors including:***
 - ***activities on your site.***
 - ***the discharge point of the proposed separator,***
 - ***the environmental sensitivity of your location.***

EPA Regulations

NPDES - National Pollutant Discharge Elimination System

- Storm and Sanitary Sewer Discharges Regulations***

SPCC – Spill Prevention Control and Countermeasure Plans

OUST – Proposed UST Regulations

NPDES - National Pollutant Discharge Elimination System

- The NPDES Permit Program regulates all industrial wastewater discharges into waters of the U.S.***
- The program may require locations discharging from wastewater treatment systems, sanitary systems, and storm water runoffs to obtain an NPDES permit.***

NPDES - Stormwater Program

- NPDES-regulated point sources are discrete conveyances such as pipes or man-made ditches from which pollutants may be discharged.***
- Oil/Water Interceptors and Separators are typically identified as BMPs for sewer pretreatment and storm water pollution control.***

NPDES – Sewer Pretreatment

- ***In addition to direct discharges and storm water runoff to surface water bodies, the NPDES covers discharges of wastewater to POTWs.***
- ***Industries with direct discharges into POTWs must comply with pre-treatment standards to prevent pollutants from passing through the system without treatment.***

SPCC



All SPCC plans contain measures to:

- *prevent and control oil spills from:*
 - *Human operational error*
 - *Equipment failures*
- *ensure effective response to oil spills*

The SPCC rule applies to a facility that meets the following criteria:

- **Drills, produces, gathers, stores, processes, refines, transfers, distributes, uses, or consumes oil and oil products; and**
- **Is non-transportation-related; and**
- **Can reasonably be expected to discharge oil in quantities that may be harmful into or upon the navigable waters of the U.S. or adjoining shorelines; and**
- **Meets either of the capacity thresholds:**
 - **Aboveground storage > 1,320 gallons; or**
 - **Completely buried storage > 42,000 gallons (exempts USTs that are regulated under 40 CFR part 280 or 281).**

SPCC – Spill Prevention Control and Countermeasure Plans

- When referring to the EPA's Guidance for Regional Inspectors, we can cite four specific instances where oil/water separators can be applied to meet SPCC secondary containment requirements (<http://www.epa.gov/oilspill/guidance.htm>).***

1. “Section 112.7(c) requires “appropriate containment and/or diversionary structures or equipment to prevent a discharge as described in §112.1(b).” An oil/water separator may be used to satisfy this requirement for onshore or offshore facilities. This separator must be constructed to contain oil and prevent an escape of oil from the system prior to cleanup in order to comply with the secondary containment provision for which it is intended (§112.7(c)).

- ***A description explaining how an oil/water separator complies with secondary containment provisions, and how it is operated and maintained, should be included in the SPCC Plan.***
- ***BMPs or O&M manuals which detail operation and maintenance procedures for oil/water separators used specifically for secondary containment may be referenced in the SPCC Plan and maintained separately.”***

2. “Section 112.7(h)(1) requires “a quick drainage system” for areas where a tank car or tank truck loading or unloading rack is present.

- An oil/water separator may be used as part of a quick drainage system to meet this requirement.**
- This containment system must hold at least the maximum capacity of any single compartment of a tank car or tank truck loaded or unloaded at the facility (§112.7(h)(1)).”**

3. “Sections 112.8(b), 112.9(b), and 112.12(b) set forth design specifications for drainage systems associated with secondary containment at onshore facilities. Environmentally equivalent measures can be used to satisfy these requirements... In order to comply with secondary containment requirements, facilities might use ponds, lagoons, or catchment basins as part of the design criteria for facility drainage systems. However, an oil/water separator might serve as an environmentally equivalent measure.”

- ***In this instance, EPA recommends that the oil/water separator be designed to handle the flow rate and volume of oil and water expected to be generated by facility operations. When certifying a facility's SPCC Plan, the PE must verify that the separator is adequately designed, maintained, and operated to provide environmentally equivalent protection under the potential discharge scenarios it is aimed to address, in order to comply with the corresponding secondary containment provision.***

- 4. Sections 112.8(c)(2), 112.8(c)(11), 112.12(c)(2), and 112.12(c)(11) require that all bulk storage containers be provided with secondary containment for “the entire capacity of the largest single container and sufficient freeboard to contain precipitation.”**
- An oil/water separator may be used for this purpose, but it must be appropriately sized to meet the requirements of the rule provision for which it is intended to comply.**

- ***The oil/water separator must be capable of handling both the oil and precipitation that come into the separator from the general drainage area, and from any accidental discharge from the largest bulk storage container located within the drainage area.***
- ***Good engineering practice would suggest that the use of separators for the specific secondary containment provisions be on a very limited basis and typically with smaller capacity container storage areas (e.g., drum storage area).***

- ***The EPA document states that “the capacity of an oil/water separator used to meet secondary containment requirements does not count toward a facility’s overall storage capacity.***
 - ***Any volume of oil that would flow into the oil/water separator would come from another source within the drainage area that is already generally counted in the facility storage capacity determination.***
 - ***Containers used to store recovered oil after separation, however, represent additional oil storage and count toward a facility’s total storage capacity (e.g., slop tanks).”***

- ***Further, the EPA document establishes that “the SPC rule does not require redundant secondary containment around oil/water separators used for secondary containment (i.e., tertiary containment is not required).”***

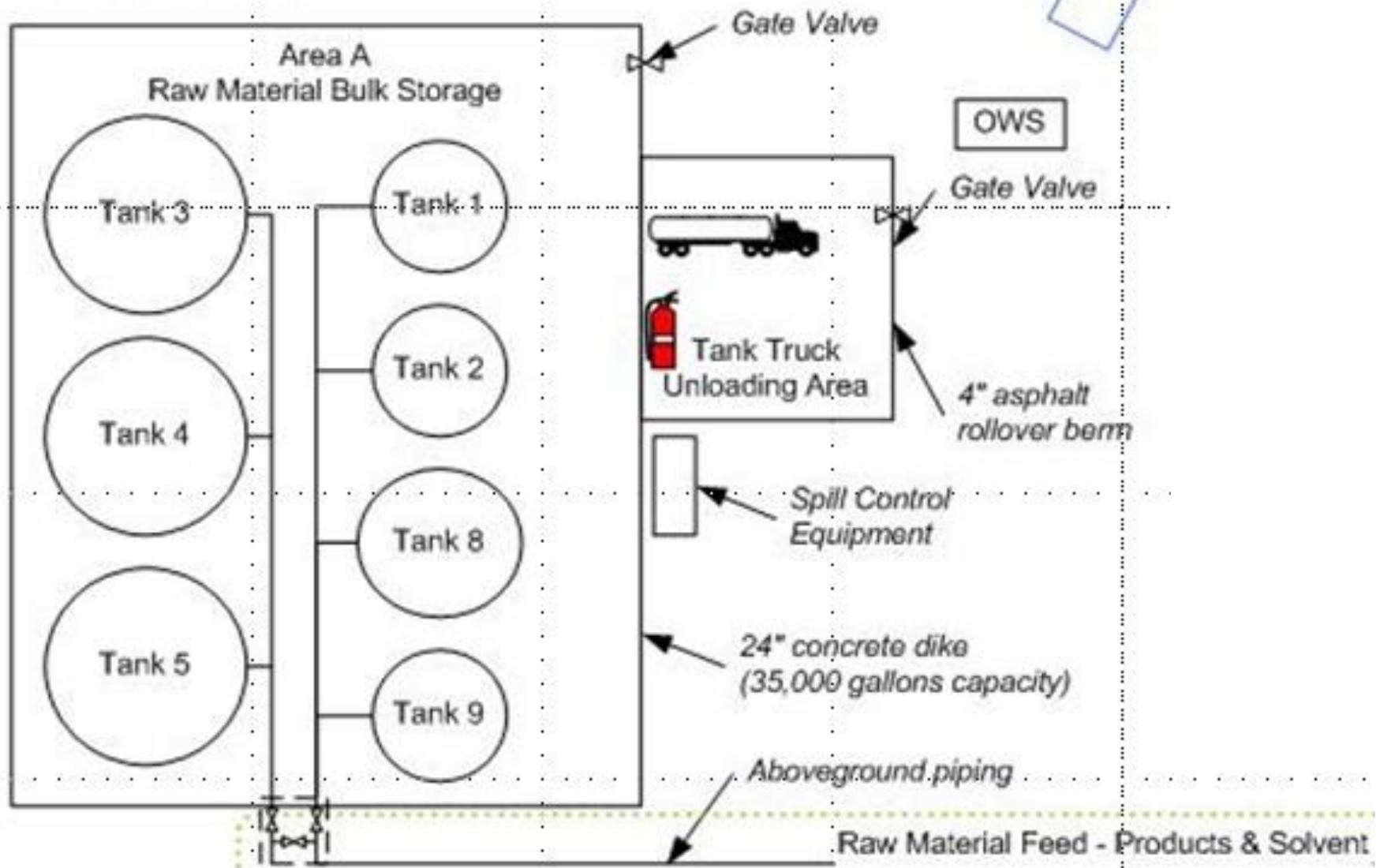
OUST – Proposed UST Regulations

- The EPA proposes to regulate wastewater treatment tank systems (including oil/water separators) that are not part of a wastewater treatment facility regulated under NPDES or pretreatment regulations promulgated under the Clean Water Act.***
- Newly applicable requirements for these tank systems will likely include release prevention (secondary containment), release detection, agency notification, and financial responsibility.***

- ***Wastewater treatment tank systems installed on or before the effective date of the final UST regulation that do not meet the upgrade requirements within three years must be permanently closed.***

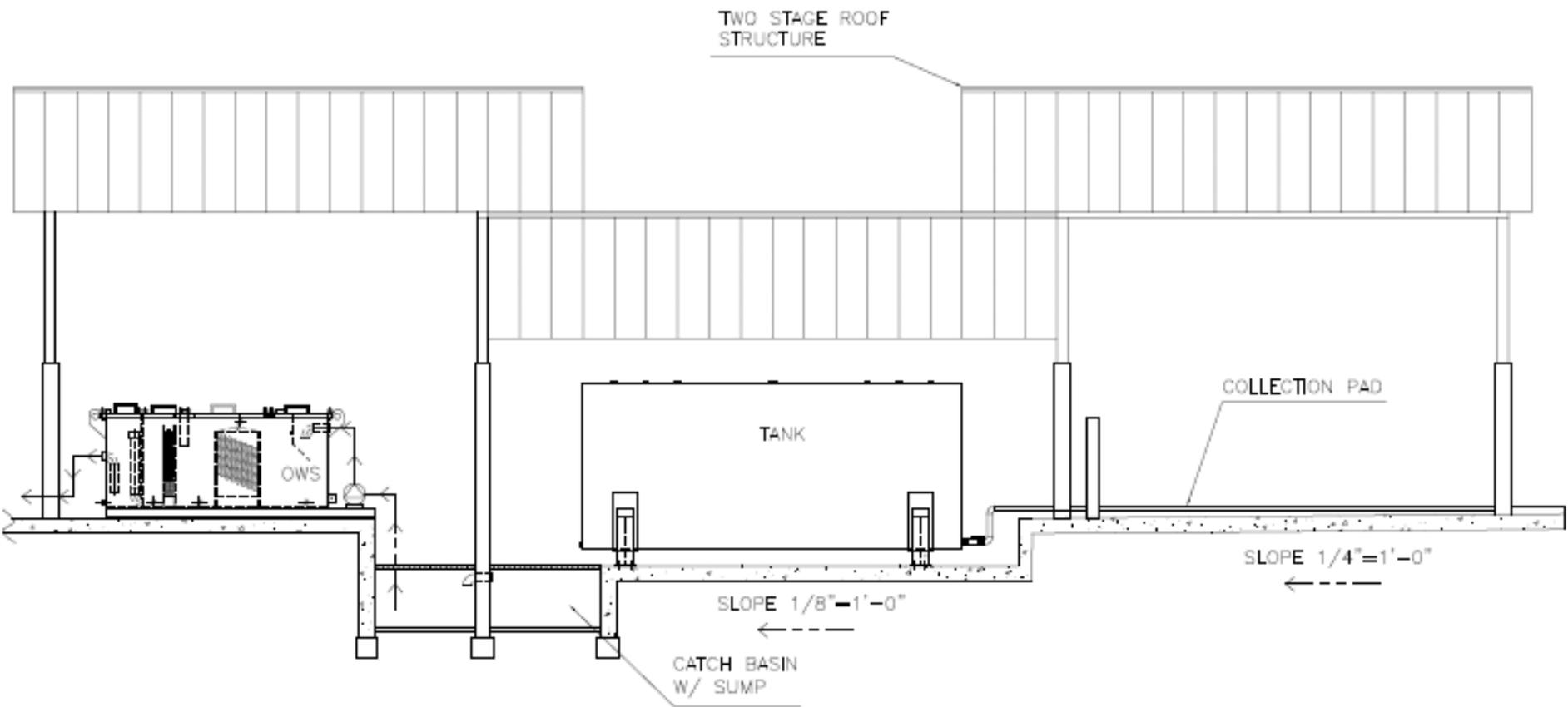


**BELOWGROUND DOUBLE-WALLED
OIL/WATER SEPARATOR WITH
ELECTRONIC LEAK DETECTION**



ABOVEGROUND OIL/WATER SEPARATOR WITH NON-EMULSIFYING PUMPS, INSULATION, AND FREEZE PROTECTION SYSTEM





ABOVEGROUND FUEL STORAGE SYSTEM W/ TWO STAGE ROOF STRUCTURE & ABOVEGROUND OIL WATER SEPARATOR



***Storage Tank and
Oil/Water Separator
with AHFS***

Case History

***Aviation Fuel Storage Tanks
and
Oil/Water Separator System***



***Southwest Airlines
Long Island/MacArthur Airport
Islip, NY***

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AND R-HTC 1,000 OWS/AHFS
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MACARTHUR AIRPORT, ISLIP, NY**

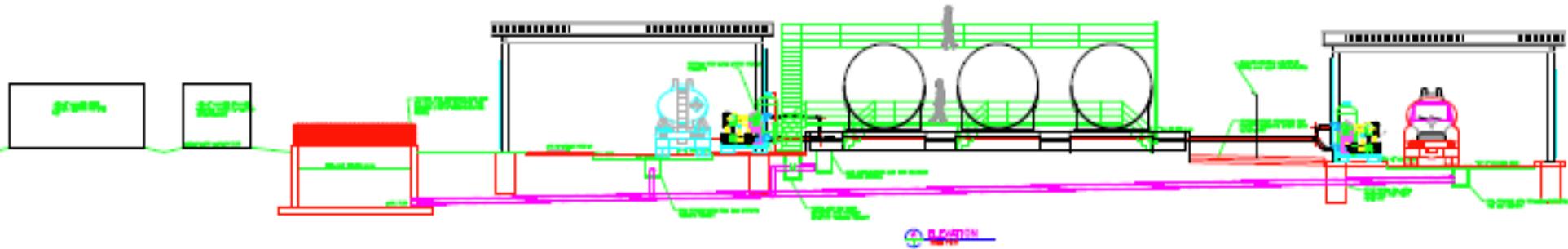
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AND R-HTC 1,000 OWS/AHFS
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SWA New Fuel Storage Facility



**Compliant Aviation
Fuel Storage Tanks**



**High-Performance
Oil/Water Separator**



**Advanced
Wastewater Filtration
System**



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**RHTC OWS WITH AFS/GAC
HYDROCARBON REMOVAL SYSTEM
LONG ISLAND MACARTHUR AIRPORT
ISLIP, NY**

**RHTC OWS WITH AHFS/GAC
HYDROCARBON REMOVAL SYSTEM
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ISLIP, NY**



SPCC Resources



- **EPA SPCC Website –**
<http://www.epa.gov/emergencies/content/spcc/>
- **EPA Guidance for Regional Inspectors**
http://www.epa.gov/emergencies/content/spcc/spcc_guidance.htm
- **Steel Tank Institute**
 - **<http://www.steeltank.com/>**
 - **STI Standard SP001 for inspection of shop-fabricated tanks**

That's all, folks!



HIGHLAND TANK

A silhouette of a worker wearing a hard hat is positioned inside a large, circular industrial tank. The worker is facing away from the camera, looking towards a bright light source at the top of the tank. The light creates a dramatic, high-contrast scene, with the worker's form and the tank's interior walls appearing in deep shadow. The overall atmosphere is industrial and focused.

www.highlandtank.com

The background features a stylized American flag with stars and stripes. On the right side, there is a 3D rendering of a person wearing a blue protective helmet and goggles, holding a shield with the American flag design. The scene is lit with blue and white light, suggesting an industrial or manufacturing environment.

***High Quality Steel
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Since 1946.
Wastewater Treatment
Tanks,
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AND DELIVERY

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Fuel Storage and
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