January 29, 2026

Haverhill Conservation Commission
City Hall Room 300
4 Summer Street
Haverhill, MA 01830

Re: Notice of Intent
Merrimack Valley Transit
123 Railroad Avenue
Haverhill, MA 01835
Places Project No. 5689

Dear Members of the Commission:

In response to an email from Robert E. Moore. Jr., Haverhill Conservation Commission, with comments on the above Notice of Intent, we offer the following responses:

The comments are listed in *italics,* followed by the response.

(1) *The applicant filed with NHESP. Comments will likely be received mid-January. Although construction activities are outside the mapped habitat on the site, the change in stormwater discharge to sturgeon habitat will likely be considered by the agency.*

MassDEP commented on proof of filing with NHESP and cited 310 CMR 10.59 which requires a 30-day waiting period before issuing and Order of Conditions to allow NHESP to respond. Please see attached MassDEP comments, and mail receipts as proof of filing with NHESP.

Excerpt from 310 CMR 10.59
Within 30 days of the filing of such a Notice of Intent with the issuing authority the Program shall determine whether any state-listed species identified on the aforementioned map are likely to continue to be located on or near the site of the original occurrence and, if so, whether the area to be altered by the proposed project is in fact part of such species' habitat. Such determination shall be presumed by the issuing authority to be correct. Any proposed project which would alter a resource area that is not located on the most recent Estimated Habitat Map (if any) provided to the conservation commission, shall be presumed not to be within a rare species' habitat. Both of these presumptions are rebuttable and may be overcome upon a clear showing to the contrary. If the issuing authority fails to receive a response from the Program within 30 days of the filing of such a Notice of Intent, a copy of which was received by the Program in a timely manner, it shall issue its Order of Conditions based on available information; however, the fact that a proposed project would alter a resource area that is located on an Estimated Habitat Map shall not be considered sufficient evidence in itself that such project is in fact within the habitat of a rare species.

NHESP received the NOI application materials on December 17, 2026. More than 30 days have passed since NHESP received the materials.

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(2) *Site specific soil and groundwater information should be provided for the area of the infiltration gallery. The application and plan reference the presence of ledge that render infiltration not feasible in the current location. What other locations were explored to manage stormwater and provide infiltration?*

Other areas on-site were considered on site, but the locations were not feasible due to high groundwater or being inside the 100-year floodplain.

Please see attached Geotechnical Memo by GZA which states groundwater was observed at approximate elevation 21 and describes the presence of ledge.

The 100-year flood elevation is mapped by FEMA as elevation 21.3 at the site. This is a wetland resource area (Bordering Land Subject to Flooding), and infiltration is not recommended in flood prone areas. The 100-year floodplain is located on most of the undeveloped areas of the site which makes infiltration in these areas unfeasible. The infiltration systems must have a vertical separation of two feet to high groundwater to facilitate effective infiltration. The high groundwater at the site also prohibits the construction of infiltration systems.

(3) *Will the cut and wall construction release groundwater perched on this ledge? What is proposed for retaining wall drainage?*

A 6" wall underdrain is proposed to connect to a proposed catch basin. See attached wall drawings and details.

(4) *There are fuel spill protections factored in the new tank design. A past project included the installation of a similar protection on the north end of the site. This new filing appears to be an opportunity to address what might be the final unprotected area - Drain Manhole #6 near the SW corner of the bus garage. This is the last junction point before flow discharges to the Merrimack and the sturgeon spawning grounds. The new drainage system will also be discharged to this structure. I would request the designer evaluate options for providing similar emergency shutoff protection and additional treatment below DMH6.*

DMH6 will be retrofitted with an emergency shutoff valve. The plans have been updated to reflect this.

(5) *MEVA has had several filings with our office over the years. I would request the OMP/LTPPP, currently within the Stormwater Analysis with additional information on the plan set, to be provided in document form with related BMP sketches. And I would further request that it be expanded to cover all stormwater BMPs at the facility to provide a plan that is both comprehensive and user friendly for facility maintenance staff. The document should include spill response protocols, identify the locations of tools/equipment needed to close valves, identify the locations and uses of other spill response materials (such as catch basin covers) at the facility, protocol signage for tanker truck operators…*

The Operation and Maintenance Plan has been updated with documents currently used by MeVa, including:

- The current Spill Prevention, Control, and Countermeasure (SPCC) Plan
- The current Facility Maintenance Plan
- The current Monthly Environmental Inspection Form

The O & M Plan is attached.

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(6) Will the new fueling area be covered?

The tank provides spill containment inside the tank. The the spill containment area is not exposed to precipitation and does not require a cover. The tank fill area covered and provides a sump to contain spills. Vehicles will be filled inside the existing service building.

- The new tank is a 20,000 gal horizontal double wall storage tank (UL 2085 Fireguard)
  - tank to be equipped with inventory control monitor with alarm set
  - tank fill to be equipped with overfill prevention device set
  - tank has an emergency stop switch mounted to the stairway/ platform
  - tank has liquid leak sensor
  - Spill containment cabinet has a cover so rainwater will not enter the system
- The existing Fuel Dispenser shall have a new aboveground containment sump with liquid leak sensor.
- There is an existing emergency stop switch in the existing building, which will remain in place.

Please see attached plan for the fuel tank information.

Should you have any questions about this application or require clarification or additional information, please do not hesitate to contact the undersigned.

Thank you.

Very truly yours,
Places Associates, Inc.
BY:

Patrick J. Burke
Project Engineer

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Comment #1

MassDEP Comments

NHESP proof of Mailing and Receipt

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Energy & Environmental Affairs
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Wetlands NOI Project Information

Related links

There are no related links for displayed element.

NOI Number
033-1592

Filing Date
12/23/2025

Project Type
Transportation

Comments

Applicant Information
MERRIMACK VALLEY TRANSIT

Filing Type
NOI

Project Address
123 RAILROAD AVENUE

Technical Comments
Proof that a copy of the NOI application was sent to NHESP was not included with the submittal. Per 310 CMR 10.59 a copy of the NOI application must be sent to NHESP by express or priority mail, or otherwise sent in a manner that guarantees delivery within 2 days. Further, per 310 CMR 10.59, the Conservation Commission shall not issue an OOC for at least 30 days after the filing of the NOI, unless NHESP has either determined (in writing) that work will not be in EH; or if work will be in EH, NHESP has issued a written opinion as to whether the project will have an adverse effect on that habitat.

Inland Resource Areas

RESOURCE AREA ALTERED	PROPOSED ALTERATION	PROPOSED REPLACEMENT
BORDERING LAND SUBJECT TO FLOODING	75 (square feet) 0 (Cubic feet)	75 (square feet) 0 (Cubic feet)
RIVERFRONT AREA	3965 (square feet)	0 (square feet)

Coastal Resource Areas

RESOURCE AREA ALTERED	PROPOSED ALTERATION	PROPOSED REPLACEMENT
LAND SUBJECT COASTAL STORM FLOWAGE	75 (square feet)	0 (square feet)

5089 Arch.

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9505 5103 3807 5349 9287 49
9505 5103 3807 5349 9287 63

TRACK STATUS OF ITEMS WITH THIS CODE
(UP TO 25 ITEMS)

[redacted]vailable

PURCHASE DETAILS

Product	Qty	Unit Price	Price
CTOM - Firm - Domestic	6		$4.20
CTOM - Firm - Domestic	6		$4.20
CTOM - Firm - Domestic	6		$4.20
CTOM - Firm - Domestic	5		$3.50
Priority Mail®	1		$11.35

Woburn, MA 01801
Weight: 2 lb 1.90 oz
Expected Delivery Date
Fri 12/19/2025
Tracking #:
9505 5103 3807 5349 9287 25
Insurance $0.00
Up to $100.00 included
Total $11.35

Priority Mail®	1		$11.35

Westborough, MA 01581
Weight: 2 lb 1.80 oz
Expected Delivery Date
Fri 12/19/2025
Tracking #:
9505 5103 3807 5349 9287 49
Insurance $0.00
Up to $100.00 included
Total $11.35

Priority Mail®	1		$11.35

Haverhill, MA 01830
Weight: 2 lb 2.20 oz
Expected Delivery Date
Fri 12/19/2025
Tracking #:
9505 5103 3807 5349 9287 63
Insurance $0.00
Up to $100.00 included
Total $11.35

Grand Total: $50.15

Credit Card Remit $50.15
Card Name: VISA
Account #: XXXXXXXXXXXX1010
Approval #: 03670G
Transaction #: 517
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Comment #2
Geotechnical Memo

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value in the weathered bedrock was greater than 100 bpf, indicating relative density to be "very dense". The split spoon encountered refusal in the weathered bedrock, with less than 1-inch of advancement over 100 hammer blows.

Bedrock

Bedrock was encountered, and cored, below the weathered bedrock in boring GZ-101, and below the glacial till deposits in borings GZ-102 and GZ-103. The top of the bedrock was encountered at depths ranging from 11 to 16 feet below grade, which corresponds to approximate elevations ranging from 10 to 22.5 feet. Based on observed drilling resistance, possible bedrock was encountered in test boring GZ-104 at an approximate elevation of 12.8 feet, however a core sample was not obtained to confirm the presence of bedrock at this location.

The bedrock observed in the rock core samples consisted of siltstone. The bedrock core samples were moderately hard, moderately to slightly weathered, and extremely to slightly fractured. Borings GZ-102 and GZ-103 were advanced approximately 4 feet into the bedrock layer prior to obtaining core samples. It should be noted that the upper portion of the bedrock material may be softer and more weathered/fractured than what was observed in the core samples. The Rock Quality Designation (RQD) is the percentage of recovered rock that is greater than 4 inches long, relative to the total penetration, and is a rough measure of the overall quality of the bedrock. The RQD for the bedrock generally ranged from 0% to 25%, indicating a "poor" rock quality. Photographs of the rock core samples are included in **Attachment C**. Refer to the boring logs in **Attachment B** for additional information on rock core run recovery, RQD, and rock core sample descriptions.

Groundwater

Stabilized groundwater readings were not obtained in the borings at the time of drilling due to the addition of drilling fluids to the boreholes. Based on soil sample moisture, groundwater was inferred at approximately 4 to 5 feet below grade in borings GZ-102 through GZ-104, which corresponds to an approximate elevation of 21 feet.

It is anticipated that groundwater levels will vary due to variations in rainfall and other factors different than those prevailing at the time the explorations were performed, and the measurements were made. Seasonal groundwater elevation changes of 10 feet or more are possible in glacial till and bedrock. It should be noted that the seasonally lowest groundwater levels typically occur during the late summer and early fall months, and the highest levels typically occur during the spring months. Refer to the boring logs in **Attachment B** for additional details on groundwater observations.

GEOTECHNICAL LABORATORY TESTING

Four soil samples were submitted for laboratory grain size analysis in general accordance with ASTM D6913. A summary of the laboratory test results is included in the table below, and the laboratory data sheets are included in **Attachment D**.

Boring	Sample	Depth (ft)	Material	Fines Content (%)	Burmister Classification
GZ-101	S-2A	2-4	Fill	40.5	Brown, fine to coarse SAND and Clayey SILT, little fine to coarse Sand
GZ-101	S-3	5-6.2	Glacial Till	18.6	Brown, fine GRAVEL and fine to coarse SAND, little Silt
GZ-102	S-3	5-7	Sandy Silt	54.4	Light brown, SILT and fine SAND
GZ-103	S-1	1-3	Fill	34.3	Brown, fine to coarse SAND, some Clayey Silt, little fine Gravel



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M E M O R A N D U M

To: Mr. Jason Iacobucci (Robinson Green Beretta Corporation)

From: Anthony DiGiantommaso, P.E.(RI), David R. Carchedi, Ph.D., P.E.(RI)

Date: March 21, 2025

File No.: 03.0035492.00

Re: Geotechnical Design Memorandum
MEVA Facility Site Modifications
123 Railroad Avenue
Haverhill, MA 01835

GZA GeoEnvironmental, Inc. (GZA) is pleased to provide you with this geotechnical design memorandum for the subject project. This memorandum was prepared in accordance with our agreement dated December 6, 2024, and is subject to the Limitations in **Attachment A**.

BACKGROUND

The project consists of site modifications at the Merrimack Valley Regional Transit Authority (MEVA) facility located at 123 Railroad Avenue in Haverhill, Massachusetts. The project site is bound to the northwest by the Merrimack River, to the northeast by a residential development, to the southeast by Railroad Avenue and MBTA railroad lines, and to the southwest by undeveloped woodlands along the Merrimack River. An MBTA train station and rail lines are located east of the site. Refer to **Figure 1, Exploration Location Plan**, for the project location.

Our understanding of the proposed development is based on correspondence with the design team and the progress site civil drawings provided by PLACES Associates, Inc. (PLACES) on February 7, 2025 and March 6, 2025.

The proposed site modifications include re-grading the southern portion of the facility along Railroad Avenue, and the existing site access roadway. Re-grading is required in order to install an above-ground fuel storage tank and create additional parking space at the site. The project also includes the construction of an approximately 650-foot long retaining wall along the south side of the site to achieve the proposed grading. The maximum height of the retaining wall is anticipated to be approximately 13 feet above finish grade.

A future phase of development is planned at the site, which will involve an addition to the Bus Garage and Maintenance Facility. Excavations required for construction of that future development are anticipated to temporarily increase the maximum required height for the new site retaining wall to about 17.5 feet.

GEOLOGIC SETTING

Available United States Geological Survey (USGS) publications were reviewed in order to obtain an understanding of the area's geology. The following sections of this report describe these findings.

Surficial Geology

According to the 2018 Surficial Materials Map of the Haverhill Quadrangle, Massachusetts, the surficial soils in the vicinity of the project site are generally mapped as flood-plain alluvium. The flood-plain alluvium is described as stratified and well sorted to poorly sorted deposits of sand, gravel, silt, and some organic material, which were deposited beneath the flood plains of modern streams. The flood-plain alluvium is typically underlain by stratified glacial deposits. The surficial soils in the southern portion of the site are mapped as thin glacial till deposits overlying bedrock. The glacial till deposits are described as a non-sorted, non-stratified matrix of sand, some silt, and little clay, containing scattered pebbles, cobbles, and boulders. Large surface boulders are also common. The glacial till deposits are generally less than 10 to 15 feet thick.

Bedrock Geology

According to the 1983 Bedrock Geologic Map of Massachusetts, the bedrock in the vicinity of the site consists of the Berwick Formation. The Berwick formation is described as thin to thick bedded, metamorphosed, calcareous sandstone, siltstone, and muscovite schist.

SUBSURFACE EXPLORATIONS

Four test borings, designated GZ-101 through GZ-104, were drilled for this study. **Figure 1**, shows the locations of the test borings and logs of the explorations are in **Attachment B**. An engineer from GZA was present during the drilling to observe and log the explorations.

The test borings were drilled by New England Boring Contractors of Derry, New Hampshire between January 2 and January 3, 2025. The borings were advanced to depths ranging between 14.5 and 25 feet below the existing ground surface using a GTECH GT8 truck-mounted drill rig with drive and wash drilling methods. Split-spoon soil samples were obtained at 2- to 5-foot intervals in general accordance with ASTM D1586, the Standard Penetration Test (SPT). The SPT consists of driving a 1-3/8 inch inside diameter standard split spoon sampler at least 18 inches with a 140-pound hammer dropping from a height of 30 inches. The SPT blow count (N-value) is the number of blows required to drive the sample from 6 to 18 inches of penetration and is a commonly used indicator of soil density and consistency. The soil samples were classified according to the modified Burmister classification system. Bedrock core samples were obtained at borings GZ-101 through GZ-103 using rotary rock coring techniques with an NQ-size double tube core barrel.

The exploration locations were determined using a Global Navigation Satellite System (GNSS) unit with an accuracy of approximately 1-foot horizontally. Ground surface elevations of the explorations have been estimated by interpolating between contours on plans provided by PLACES. Elevations of the explorations are referenced to the North American Vertical Datum of 1988 (NAVD88) and should be considered approximate.

SUBSURFACE CONDITIONS

The generalized subsurface profile across the site consists of a surficial layer of asphalt or concrete pavement underlain by fill, glacial till, and bedrock. At boring GZ-102, buried subsoil was encountered above the fill, and a layer of sandy silt was encountered between the fill and glacial till deposits. The subsurface conditions are described in greater detail in the following paragraphs. Refer to the boring logs in **Attachment B** for more specific descriptions of the conditions encountered in each exploration.

Asphalt Pavement & Reclaimed Asphalt Surface

A 6-inch-thick layer of asphalt pavement was encountered at the ground surface at test boring GZ-103, and an 8-inch-thick layer of reclaimed asphalt was encountered at the ground surface at boring GZ-101.

Concrete

Boring GZ-102 was drilled on a concrete pad, which was approximately 6 inches thick.

Buried Subsoil

A layer of buried subsoil material was encountered below the concrete pad in boring GZ-102. The buried subsoil layer was 2 feet thick and consisted primarily of silt with up to 50 percent sand. The SPT N-value in the buried subsoil material was 4 blows per foot (bpf) indicating a relative density of "loose".

Fill

Fill was encountered below the asphalt pavement/reclaimed asphalt in borings GZ-101 and GZ-103, and below the buried subsoil in boring GZ-102. Fill was encountered at the ground surface at boring GZ-104. The fill extended to depths ranging from 3.5 to 10 feet below the existing grade, which corresponds to elevations ranging from 14.5 to 33 feet. The fill material consisted primarily of sand with up to 50 percent silt and up to 35 percent gravel. Presumed pieces of cobbles and/or boulders were encountered in the fill in boring GZ-101. Portions of the fill in borings GZ-101 and GZ-102 contained up to 50 percent concrete pieces. SPT N-values in the fill material ranged from 8 to 85 bpf indicating relative densities of "very loose" to "very dense". The higher blow counts may have been due to presence of concrete, cobbles, and/or boulders in the fill material and may not be indicative of the relative density of the soil.

Sandy Silt

A layer of silt with up to 50 percent sand was encountered below the fill in boring GZ-102. This layer extended from approximately 5 to 9.5 feet below grade, which corresponds to approximate elevations ranging from 10 feet to 16.5 feet. The SPT N-value in this layer was 16 bpf, which corresponds to a relative density of "medium dense".

Glacial Till

The fill material in borings GZ-101, GZ-103, and GZ-104, and the sandy silt material in boring GZ-102, were underlain by glacial till deposits. The glacial till consisted of a heterogeneous mixture of sand, gravel, and silt. Portions of the gravel observed in the glacial till in boring GZ-103 were weathered. Inferred cobbles and/or boulders were encountered when drilling in the glacial till layer and are commonly found in the glacial till in this area. The top of the glacial till was encountered at depths ranging from 3.5 to 10 feet below the existing ground surface, which corresponds to approximate elevations ranging from 14.5 to 33 feet. The glacial till layer ranged from 1.5 to 6.5 feet thick. SPT N-values in the glacial till material ranged from 18 to greater than 100 blows per foot indicating relative densities of "medium dense" to "very dense".

Weathered Bedrock

Weathered bedrock was encountered below the glacial till in boring GZ-101. The weathered bedrock was encountered from 5 to 14 feet below the existing grade, which corresponds to elevations ranging from 22.5 to 31.5 feet. The weathered bedrock was very severely weathered, where the fabric of the rock was discernible, but the strength of the rock was reduced to soil. The SPT N-

value in the weathered bedrock was greater than 100 bpf, indicating relative density to be "very dense". The split spoon encountered refusal in the weathered bedrock, with less than 1-inch of advancement over 100 hammer blows.

Bedrock

Bedrock was encountered, and cored, below the weathered bedrock in boring GZ-101, and below the glacial till deposits in borings GZ-102 and GZ-103. The top of the bedrock was encountered at depths ranging from 11 to 16 feet below grade, which corresponds to approximate elevations ranging from 10 to 22.5 feet. Based on observed drilling resistance, possible bedrock was encountered in test boring GZ-104 at an approximate elevation of 12.8 feet, however a core sample was not obtained to confirm the presence of bedrock at this location.

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It is anticipated that groundwater levels will vary due to variations in rainfall and other factors different than those prevailing at the time the explorations were performed, and the measurements were made. Seasonal groundwater elevation changes of 10 feet or more are possible in glacial till and bedrock. It should be noted that the seasonally lowest groundwater levels typically occur during the late summer and early fall months, and the highest levels typically occur during the spring months. Refer to the boring logs in **Attachment B** for additional details on groundwater observations.

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GZ-103	S-1	1-3	Fill	34.3	Brown, fine to coarse SAND, some Clayey Silt, little fine Gravel

IMPLICATIONS OF SUBSURFACE CONDITIONS

Undisturbed natural deposits of sandy silt, glacial till, weathered bedrock, and bedrock are considered competent bearing materials for support of foundations for the proposed tank pad and site retaining wall. These deposits were encountered below asphalt, concrete, buried subsoil, and existing fill material, which are not considered competent bearing materials for support of shallow foundations. These unsuitable materials will need to be removed from foundation bearing areas prior to foundation construction.

A site retaining wall with a maximum retained height of 17.5 feet is proposed along the southeast side of the parcel. Given the close proximity of the proposed wall alignment to the property line, the project team has selected a drilled soldier pile wall with temporary timber lagging wall and a permanent cast-in-place concrete face. The soldier piles will be cantilevered with toe resistance developed in bedrock. Other wall systems that were considered include a gravity wall (cast-in-place or precast block), a soil nail wall, and mechanically stabilized earth (MSE) walls. Construction of these systems would require excavation beyond the property line, temporary earth support, relocation or temporary support of existing utilities along Railroad Avenue, and/or an easement for wall components that extend off the property. Given these constraints, a soldier pile wall system was selected for this project. At the south end of the wall alignment, where the wall returns into the site and the height decreases, the soldier pile wall will transition to a cast-in-place concrete gravity retaining wall.

Overhead wires in the southern portion of the site and along Railroad Avenue will need to be relocated in order to install the soldier piles. In addition, existing gas and water lines that extend through the proposed wall alignment will need to be relocated prior to construction of the wall.

The excavated existing fill, glacial till, and weathered bedrock can be selectively reused as structural fill provided that the material is placed in lifts and properly compacted. The site soils are silty (silt contents above 10 percent) and may be difficult to work with if the material becomes saturated during construction. It is critical that the earthwork contractor manage the soils to be reused by protecting stockpiles and loose lifts from precipitation and maintaining positive drainage during earthwork operations to avoid ponding of stormwater runoff.

Inferred cobbles and boulders were encountered in the existing fill material and glacial till layer. In addition, portions of the fill contained miscellaneous debris such as concrete. Boulders and other larger debris will need to be culled from excavated materials prior to reuse. The earthwork specifications for the project should reflect the need to cull and/or process cobbles, boulders, or other large debris if the site soils are to be reused. In areas where large voids result from boulder excavation, compacted structural fill will be required to fill the voids and provide an even bearing surface. In addition, it is anticipated that boulders and other debris will be encountered during the drilling of soldier piles for the site retaining wall.

Excavation of weathered bedrock and bedrock will be required for the proposed construction. It should be noted that the bedrock surface may be highly irregular and could be encountered at higher elevations than reported on the exploration logs. The weathered bedrock material encountered in the borings was very severely weathered so it may be possible to excavate the weathered bedrock material by ripping with a dozer or with the bucket of a hydraulic excavator. Excavation into the more competent bedrock material is anticipated and additional means of rock removal such as hammering may be required in order to facilitate bedrock excavation. Hammering may also be required for weathered bedrock if difficulty is encountered during excavation. If hammering is required, the Contractor's Earthwork Plan should include identification of potential offsite impacts and measures to mitigate impacts of construction vibrations and noise. Bedrock cuts will be required along the property line in order to reach the proposed grades. Line drilling may be required during bedrock removal along the southeast edge of the property in order to maintain the site retaining wall alignment and limit rock excavation from extending off the property.

CONCLUSIONS AND RECOMMENDATIONS

The following sections present geotechnical design and related earthwork recommendations for the proposed development. The recommendations have been developed based on the results of the subsurface explorations and design information provided by Robinson Green Beretta Corporation (RGB). If the design is modified, GZA should be provided the opportunity to revise our recommendations as/if needed.

Foundation Recommendations

Undisturbed naturally deposited sandy silt, glacial till, weathered bedrock, and bedrock are considered competent bearing material for support of the tank pad and site retaining wall foundations. These deposits were encountered below buried subsoil and existing fill materials, which are not considered competent bearing materials for the support of foundations. These unsuitable materials will need to be removed from the foundation bearing areas prior to crushed stone placement and foundation construction.

Over-excavation of unsuitable materials should extend to the limit defined by a 1-horizontal to 1-vertical slope extending downward and outward from two feet outside the edges of the foundations. Unsuitable materials should be removed to firm, undisturbed, naturally deposited sandy silt, glacial till, weathered bedrock, or bedrock. The over-excavation at the tank foundation should extend to 4 feet below proposed finished grade for frost protection or to the bottom of the unsuitable soils, whichever is deeper.

Following the over-excavation of unsuitable material(s), and prior to the placement of fill or foundation construction, soil subgrades should be surface compacted with a minimum of six passes of a walk behind double drum vibratory roller such as a Bomag DMP 8500 (or equivalent). It is anticipated that subgrade soils will be silty (silt contents above 10 percent). Care must be taken during proof-compaction if the soils are wet so as not to cause weaving and softening of the subgrade. If subgrade soils are saturated, static rolling may be more appropriate.

If saturated soils resulting from precipitation or groundwater are encountered at subgrade elevations and cannot be proof-compacted, the subgrade could either be left to dry to a workable moisture content and be re-compacted or be replaced. If the subgrade soils are to be replaced due to disturbance or saturation during construction, they should be over-excavated by 6 to 12 inches and replaced by “3/4-Inch Crushed Stone” placed over a layer of non-woven filter fabric (Mirafi 180N or equivalent). Boulders encountered during excavation for foundations should be removed to a depth of at least 12 inches below the bottom of foundations and replaced with “3/4-inch Crushed Stone”.

Following over-excavation at the tank pad, “3/4-Inch Crushed Stone” should be placed to the proposed bottom of foundation elevation. The “3/4-Inch Crushed Stone” should be enveloped in non-woven filter fabric (Mirafi 180N or equivalent). Placement of crushed stone should be performed in horizontal lifts and compacted with vibratory compaction equipment until a non-yielding surface is observed.

The site retaining wall foundation (bottom of wall) should extend at least 4 feet below final exterior grade for frost protection. If freezing weather occurs during construction, measures should be taken to protect exposed footings.

Following over-excavation at the site retaining wall foundation, structural fill consisting of “Granular Fill” and/or “Sand-Gravel Fill” should then be placed to the proposed bottom of footing elevation. Structural fill and backfill should be placed and compacted in horizontal lifts. The maximum loose lift thickness should be 12 inches for vibratory rollers and 6 inches for plate compactors. Structural fill in foundation bearing zones, within the 1H:1V slope defined above, should be compacted to 95% of the maximum dry density as determined by the modified Proctor test (ASTM D1557). Fill placed outside the bearing zone, beyond the 1H:1V slope defined above, should consist of "Granular Fill" compacted to 92% of the maximum dry density. Soils

placed within 3 feet of paved surfaces as either the subbase or base course for pavement or as structural backfill for retaining walls or other structures should be compacted to 95% of the maximum dry density as determined by the modified Proctor test.

A net allowable bearing pressure of 4,000 pounds per square foot (psf) should be used for design of footings on naturally deposited sandy silt, glacial till deposits, or on fill placed and compacted in accordance with the recommendations of this memorandum. A net allowable bearing pressure of 6,000 psf should be used for design of footings on weathered bedrock and a net allowable bearing pressure of 10,000 pounds per square foot (psf) is recommended for foundations bearing on sound bedrock. For footings less than three feet wide, the allowable bearing pressure should be reduced proportionately, and in no case should continuous footings be less than 18 inches wide, with the exception of the soldier pile wall face or the bottom of haunched footings, nor isolated footings be less than 24 inches wide.

Total settlement of foundations bearing on natural undisturbed sandy silt deposits, glacial till deposits, weathered bedrock/bedrock, or properly placed and compacted fill are anticipated to be less than 1-inch and may be expected to occur during construction.

Bedrock may be encountered during foundation construction. Continuous footings on competent bedrock should not be less than 12 inches wide, nor should isolated footings be less than 24 inches wide. Isolated footings that are partially on competent bedrock should be over-excavated and placed completely on competent bedrock. Fill may be required below footing levels to provide a smooth surface for footing construction. Strip footings should not be placed partially on competent bedrock and partially on soil unless special provisions are made. These special provisions may include the following:

1. Excavation of rock 6 inches below the bottom of the footing and replacement with compacted "Granular Fill".

2. A transition zone of at least 20 feet in length. Excavate competent bedrock to 18 inches below the footing at the change in bearing material. Taper this rock excavation to 6 inches below the footing at 20 feet from the change and backfill with compacted "Granular Fill".

It is expected that differential settlements will not exceed ½-inch between the footings constructed on undisturbed natural material or compacted structural fill and the adjacent footings bearing on weathered/competent bedrock. Because the actual location of the transition of footings bearing on competent bedrock to soil will have to be determined during construction, and the difficulty associated with excavating competent bedrock to an exact grade, it may be prudent from a design standpoint to specify that competent bedrock be over-excavated by at least 12 inches below the footing elevation and be replaced to footing grade with "1½-Inch Crushed Stone". In this case the need to evaluate field conditions and the requirements of the special transition zones or construction joints described above will be eliminated, thereby simplifying the design and construction process.

Retaining Walls

The proposed retaining wall along the southeast side of the site is a permanent pre-drilled soldier pile and lagging wall with a cast-in-place concrete face. A pre-drilled solider pile and lagging wall is constructed by pre-drilling a hole, setting a steel H- or W-section soldier pile into the hole, and then backfilling the hole with low strength concrete. The excavation then proceeds from top to bottom in stages as the lagging is installed behind the flanges of adjacent soldier piles to retain the soil. The cast-in-place wall face will be on the outside face of the soldier pile wall. The wall face will be connected to the soldier piles using shear studs located on the pile's flanges. Drainage board should be located between the cast-in-place face and timber lagging to prevent buildup of hydrostatic pressures behind the wall. The drainage board should connect to a collector pipe at the bottom of the wall face, which drains by gravity to convey water away from the wall.

Soldier pile spacing typically ranges from 6 to 10 feet on-center. It is our understanding that an easement for tieback installation is not available, therefore the soldier piles will be cantilevered. The solider piles will develop toe resistance through

a socket drilled into the bedrock. It is anticipated that cobbles and boulders will be encountered during drilling of the soldier piles.

Existing overhead wires located in the vicinity of the proposed site retaining wall will need to be relocated in order to allow for wall construction. In addition, water and gas lines that run through the proposed wall alignment will need to be relocated.

At the south end, where the wall returns in towards the site, it will transition to a cast-in-place gravity wall. It is recommended that retaining wall be supported by a subgrade prepared in accordance with the above foundation recommendations. It is also recommended that the wall be backfilled with free draining "Granular Fill" compacted to at least 95% of the maximum dry density (ASTM D1557) (93 % maximum within 5 feet of the wall stem). For wall design, a moist unit weight of 135 pcf and an internal angle of friction of 32 degrees are recommended for granular backfill. A drainage system should be provided to prevent the buildup of hydrostatic pressures behind the wall. The wall should be designed for any surcharge loads that may occur, including construction traffic.

For walls that are unrestrained at the top, an active soil pressure coefficient (Ka) of 0.3 is recommended. For foundation and retaining walls that are restrained at the top, an at-rest soil pressure coefficient (Ko) of 0.5 is recommended. For foundations and walls designed to resist lateral forces, a passive pressure coefficient (Kp) of 1.6 is recommended (factor of safety of 2 included due to strain considerations), provided that all backfill is compacted to a minimum of 95% of ASTM D1557 on both sides of the wall.

Excavations

Excavations for the project should be sloped back in accordance with the Occupational Safety Health Administration (OSHA) Construction Industry Standards. In areas where sloping is not possible, excavation support should be designed in accordance with OSHA 29 CFR Part 1926 Occupational Safety Health Standards – Excavations, latest edition.

Bedrock Removal

Excavation of weathered bedrock and bedrock will be required to reach the proposed site grades and bottom of wall elevation for the proposed site retaining wall. It should be noted that the bedrock surface may be highly irregular and could be encountered at higher elevations than reported on the exploration logs. Bedrock should be removed to a minimum depth of 12" below footing elevations and 24" below roadways and parking areas. Bedrock excavation should be carefully controlled to avoid fracturing and loosening of rock below the proposed subgrade levels. Loosened rock should be removed, and remaining voids should be filled with compacted Granular Fill or "3/4-Inch Crushed Stone".

The weathered bedrock material encountered in boring GZ-101 was very severely weathered so it may be possible to excavate the material by ripping with a dozer or with the bucket of a hydraulic excavator. If difficulty is encountered during bedrock excavation, an alternate bedrock excavation technique is using an excavator in conjunction with the use of a hydraulic hammer (hoe ram). Monitoring of vibration levels will likely be required during hoe ramming. This type of bedrock excavation may pose difficulties in areas that do not have an "open face" for which to hoe-ram the bedrock from. In addition, this alternative may not be efficient for deeper bedrock cuts, or where the bedrock excavation will extend over long linear distances.

Given the close proximity of the proposed rock excavation to the property line, blasting will not be feasible for bedrock removal. Alternative bedrock excavation techniques that may be considered are line drilling and chemical splitting. Line drilling and/or chemical splitting, if used, should not extend below the proposed maximum cut elevation in order to avoid weakening the bedrock formation around the toe of the soldier piles. These techniques are described in greater detail below:

1. Excavation by Line Drilling - Using a Hydraulic Excavator, and Hydraulic Hammer – Given the close proximity of the proposed excavation to the property line, line drilling may be required to maintain the excavation face to the lines and grades shown on the plans and to help facilitate the hammering of the bedrock material. Following line drilling, bedrock excavation may consist of the use of a hydraulic hammer and excavator. Typically the fractures caused by excavation using the hydraulic hammer and excavator will extend from each drill hole to the nearby drill hole, therefore maintaining the face. In addition, closely spaced drill holes help to reduce the strength of the rock mass and improve hammering efficiency.

2. Excavation by Drilling and Chemical Splitting – Chemical splitting consists of first drilling a pattern of holes to the dimensions and depth required for the excavation. This type of excavation does not require a specialty contractor; however, the specific chemical agent used should be recommended by the manufacturer based on the rock type. The dry splitting agent is then mixed with water and placed into the drill holes. The water activates a chemical reaction that produces heat and causes the splitting agent to expand within the drill holes. The expansion results in fracturing of the bedrock, typically with the fractures traversing from each drill hole to a nearby drill hole. The splitting agent typically produces fractures within 24 hours and can continue to expand and produce further fracturing for about 48 hours. Following this expansion and fracturing of the bedrock, the bedrock can be excavated with a hydraulic excavator. In some cases, a hydraulic hammer may still be needed to dislodge fracture rock pieces or to assist in the excavation.

Construction Vibrations and Pre-Construction Survey

Hammering activities for bedrock removal will result in construction vibrations. Since there are a number of existing utilities and structures adjacent to the site, it is recommended that a preconstruction survey of structures and properties located within 100 feet of any earthwork activities be completed prior to construction. It is also recommended that vibration monitoring be performed during periods of vibration-intensive activities. Project specifications should include permissible vibration thresholds in accordance with the U.S. Bureau of Mines criteria.

Seismic Design Considerations

The following seismic design guidelines are based on information collected during the subsurface exploration program as well as current design information provided to GZA. Site soils are not considered susceptible to seismic liquefaction. Should conditions vary from those stated in this report, the following should be verified to maintain compliance with the applicable guidelines and codes. In accordance with the International Building Code 2021 with Massachusetts State Building Code (CMR 780) 10th Edition amendments, the following seismic design parameters should be used at the site:

Definition	Value
Site Class	D
Design Spectral Response Acceleration for 0.2-second Period (S_{DS})	0.39 g
Design Spectral Response Acceleration for 1-second Period (S_{D1})	0.13 g

Drainage & Dewatering

Based on the inferred depths to groundwater in the test borings and the anticipated seasonal fluctuations in groundwater levels, dewatering may be required during construction. Should excavations extend only marginally (1 to 3 feet) below groundwater, dewatering can likely be accomplished using sumps and open pumping techniques. During construction, run-off from precipitation should be diverted away from excavations. Sumping of ponded rainfall within excavations may be required.

Fill Materials and Soil-Reuse

All fill should be free from ice, snow, roots, sod, rubbish, rubble, and other deleterious or organic matter. Gradation requirements for the fill materials should meet the requirements tabulated below.

Sieve Size	Percent Finer by Weight			
	Sand-Gravel Fill	Granular Fill	¾-Inch Crushed Stone	1½-Inch Crushed Stone
*	100	100	-	-
1½-inch	-	-	-	100
1¼-inch	-	-	-	85-100
¾-inch	-	-	90-100	10-40
½-inch	50-85	-	10-50	0-8
No. 4	40-75	-	0-5	-
No. 10	30-60	30-95	-	-
No. 40	10-35	10-70	-	-
No. 100	5-20**	-	-	-
No. 200	0-8	0-10	-	<1

* The maximum recommended stone size is 4 inches where used as a base course below slabs and pavement; elsewhere, maximum stone sizes should be 2/3 of the loose lift thickness.

** The amount passing the No. 100 sieve should be between forty percent (40%) and seventy percent (70%) of that amount passing the No. 40 sieve.

The onsite soils are relatively silty and likely will not meet the above-referenced gradation specifications. These materials may still be reused at the discretion of the Geotechnical Engineer provided they are culled of boulders and deleterious material and that proper placement and compaction techniques are followed to achieve adequate compaction. These materials may be particularly difficult to work with if they become saturated during construction. It is critical that the earthwork contractor manage the soils to be reused by protecting stockpiles and loose lifts from precipitation and maintaining positive drainage during earthwork operations to avoid ponding of stormwater runoff. Special measures such as discing or harrowing may be required to facilitate drying of wet soils prior to compaction, which may result in construction delays. Additionally, saturated or wet silty soils may not support wheeled vehicle traffic. It is not recommended that the silty materials be used where free-draining materials are desired, such as retaining wall backfill and pavement base and subbase layers.

Additional Explorations

Additional explorations are recommended to further identify variations in the bedrock surface along the proposed wall alignment. The explorations may consist of a series of test borings and/or test pits along the wall alignment and other proposed cut areas of the site. This data can be used to help quantify the volume of bedrock excavation that will be required to reach the proposed site grades and the pile lengths needed to reach the required embedment in bedrock. A better-defined bedrock elevation could also lead to a more efficient and cost-effective design of the proposed soldier piles.

Construction Monitoring

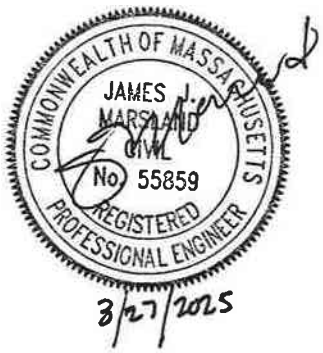
It is recommended that GZA be retained for construction observation and special Inspection services during the earthwork and foundation construction phases of the project. Services may include observation of removal of unsuitable materials, soldier pile installation, placement of fill, performance of field density tests, vibration monitoring, and general

observation of compliance with recommendations in this report and the contract documents. Given the potentially difficult subsurface conditions, construction oversight is considered an important part of obtaining quality site improvements.

We trust that this geotechnical engineering design memorandum meets the present project requirements. Should you have any questions, require clarification on any of the recommendations, or need additional information, please contact Anthony DiGiantommaso at (401) 248-3949 or anthony.digiantommaso@gza.com.

Attachments: Figure 1 - Exploration Location Plan
Attachment A – Limitations
Attachment B – Boring Logs
Attachment C – Rock Core Photo Log
Attachment D – Geotechnical Laboratory Results

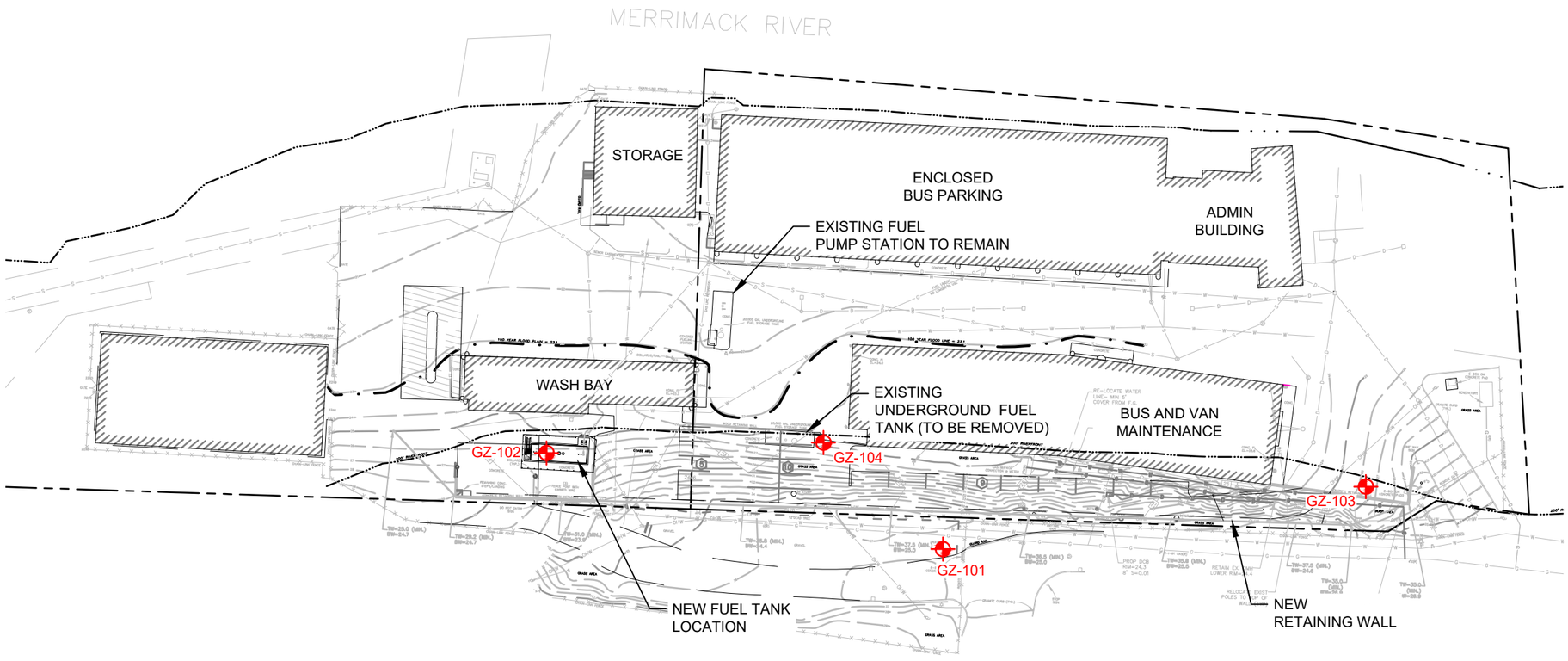
Reviewed By: James J. Marsland, P.E.(MA)



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FIGURE 1

Exploration Location Plan



GENERAL NOTES:

1. SITE BASE PLAN DEVELOPED FROM ELECTRONIC DRAWING FILES TITLED "5689 - SURVEY BASE-CLEAN 1-24-25.DWG" AND "5689 DESIGN 2025-CLEAN 2-7-25.DWG" WHICH WERE PREPARED BY PLACES ASSOCIATES, INC. AND TRANSMITTED TO GZA.
2. BORING LOCATIONS WERE DETERMINED USING A GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) UNIT WITH AN ACCURACY OF APPROXIMATELY 1-FOOT HORIZONTALLY. EXPLORATION LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

LEGEND:

INDICATES SITE PROPERTY BOUNDARIES

GZ-104 — INDICATES APPROXIMATE LOCATION OF BORINGS DRILLED BY NEW ENGLAND BORING CONTRACTORS BETWEEN JANUARY 2 AND 3, 2025 AND OBSERVED BY GZA PERSONNEL.

N W E S

0 40' 80' 160'

SCALE IN FEET 1" = 80'

UNLESS SPECIFICALLY STATED BY WRITTEN AGGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

MEVA FACILITY SITE MODIFICATIONS
123 RAILROAD AVE
HAVERHILL, MA 01835

EXPLORATION LOCATION PLAN

PREPARED BY:		PREPARED FOR:	
GZA GeoEnvironmental, Inc. www.gza.com		ROBINSON GREEN BERETTA CORPORATION	
PROJ MGR: AGD	REVIEWED BY: DRC	CHECKED BY: JJM	FIGURE 1
DESIGNED BY: AGD	DRAWN BY: TRM	SCALE: AS NOTED	
DATE: MARCH 2025	PROJECT NO. 35492.00	REVISION NO.	SHEET NO. 1 OF 1

© 2025 – GZA GeoEnvironmental, Inc.
GZA–J:\GEO\35492.ADG\FIGURES\CAD\35492.00 EXP.DWG FIG. 2 SITE MARCH 13, 2025 ANTHONY DIGIANTOMMASO

ATTACHMENT A

Limitations

USE OF REPORT

1. GZA GeoEnvironmental, Inc. (GZA) prepared this report on behalf of, and for the exclusive use of our Client for the stated purpose(s) and location(s) identified in the Proposal for Services and/or Report. Use of this report, in whole or in part, at other locations, or for other purposes, may lead to inappropriate conclusions; and we do not accept any responsibility for the consequences of such use(s). Further, reliance by any party not expressly identified in the contract documents, for any use, without our prior written permission, shall be at that party's sole risk, and without any liability to GZA.

STANDARD OF CARE

2. GZA's findings and conclusions are based on the work conducted as part of the Scope of Services set forth in Proposal for Services and/or Report, and reflect our professional judgment. These findings and conclusions must be considered not as scientific or engineering certainties, but rather as our professional opinions concerning the limited data gathered during the course of our work. If conditions other than those described in this report are found at the subject location(s), or the design has been altered in any way, GZA shall be so notified and afforded the opportunity to revise the report,as appropriate, to reflect the unanticipated changed conditions .

3. GZA's services were performed using the degree of skill and care ordinarily exercised by qualified professionals performing the same type of services, at the same time, under similar conditions, at the same or a similar property. No warranty, expressed or implied, is made.

4. In conducting our work, GZA relied upon certain information made available by public agencies, Client and/or others. GZA did not attempt to independently verify the accuracy or completeness of that information. Inconsistencies in this information which we have noted, if any, are discussed in the Report.

SUBSURFACE CONDITIONS

5. The generalized soil profile(s) provided in our Report are based on widely-spaced subsurface explorations and are intended only to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and were based on our assessment of subsurface conditions. The composition of strata, and the transitions between strata, may be more variable and more complex than indicated. For more specific information on soil conditions at a specific location refer to the exploration logs. The nature and extent of variations between these explorations may not become evident until further exploration or construction. If variations or other latent conditions then become evident, it will be necessary to reevaluate the conclusions and recommendations of this report.

6. In preparing this report, GZA relied on certain information provided by the Client, state and local officials, and other parties referenced therein which were made available to GZA at the time of our evaluation. GZA did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this evaluation.

7. Water level readings have been made in test holes (as described in this Report) and monitoring wells at the specified times and under the stated conditions. These data have been reviewed and interpretations have been made in this Report. Fluctuations in the level of the groundwater however occur due to temporal or spatial variations in areal recharge rates, soil heterogeneities, the presence of subsurface utilities, and/or natural or artificially induced perturbations. The water table encountered in the course of the work may differ from that indicated in the Report.

8. GZA's services did not include an assessment of the presence of oil or hazardous materials at the property. Consequently, we did not consider the potential impacts (if any) that contaminants in soil or groundwater may have on construction activities, or the use of structures on the property.

9. Recommendations for foundation drainage, waterproofing, and moisture control address the conventional geotechnical engineering aspects of seepage control. These recommendations may not preclude an environment that allows the infestation of mold or other biological pollutants.

COMPLIANCE WITH CODES AND REGULATIONS

10. We used reasonable care in identifying and interpreting applicable codes and regulations. These codes and regulations are subject to various, and possibly contradictory, interpretations. Compliance with codes and regulations by other parties is beyond our control.

COST ESTIMATES

11. Unless otherwise stated, our cost estimates are only for comparative and general planning purposes. These estimates may involve approximate quantity evaluations. Note that these quantity estimates are not intended to be sufficiently accurate to develop construction bids, or to predict the actual cost of work addressed in this Report. Further, since we have no control over either when the work will take place or the labor and material costs required to plan and execute the anticipated work, our cost estimates were made by relying on our experience, the experience of others, and other sources of readily available information. Actual costs may vary over time and could be significantly more, or less, than stated in the Report.

ADDITIONAL SERVICES

12. GZA recommends that we be retained to provide services during any future: site observations, design, implementation activities, construction and/or property development/redevelopment. This will allow us the opportunity to: i) observe conditions and compliance with our design concepts and opinions; ii) allow for changes in the event that conditions are other than anticipated; iii) provide modifications to our design; and iv) assess the consequences of changes in technologies and/or regulations.

ATTACHMENT B

Boring Logs

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Robinson Green Beretta Corporation
MEVA Facility
123 Railroad Ave, Haverhill, MA

EXPLORATION NO.: GZ-101
SHEET: 1 of 1
PROJECT NO: 35492.00
REVIEWED BY: AGD

Logged By: N.Westkott
Drilling Co.: NEBC
Foreman: Mark D'Ambrosia

Type of Rig: Truck Mount
Rig Model: GTECH GT8
Drilling Method: Drive & Wash

Boring Location: See Plan
Ground Surface Elev. (ft.): 36.5
Final Boring Depth (ft.): 23.7
Date Start - Finish: 1/2/2025 - 1/2/2025

H. Datum:
V. Datum: NAVD88

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size: NQ

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
		S-1	0.0-2.0	24	14	12 10 11 13	21	S-1: Top 8": Black, fine to coarse SAND and ASPAHLT PIECES, little Silt, dry Middle 4": Brown/grey, fine to coarse SAND and MISCELLANEOUS DEBRIS (Concrete), trace Silt, dry		0.67	Reclaimed Aspahlt	35.8
		S-2	2.0-4.0	24	22	17 22 63 65	85	Bottom 4": Brown, fine to coarse SAND and SILT, dry	1	3.5	Fill	33.0
5		S-3	4.0-5.2	14	14	47 79 100 /2"	R	S-2: Top 13": Brown fine to coarse SAND and Clayey SILT, little fine to coarse Gravel, dry Middle 6": Grey, fine to coarse GRAVEL Bottom 3": Brown, fine to coarse SAND, little Silt, dry S-3: Very dense, brown/grey, fine GRAVEL and fine to coarse SAND, little Silt, dry	2	5	Glacial Till with Boulders	31.5
									3			
10		S-4	10.0-10.1	1	1	100 /1"	R	S-4: Very dense, grey, WEATHERED BEDROCK	4		Weathered Bedrock	
	(3:27)	C-1	14.0-15.3	16	16			C-1: Moderately hard, slightly weathered, gray SILTSTONE, extemely fractured (RQD = 0%).		14		22.5
15	(1:50)											
	(2:02)	C-2	15.3-19.1	46	46			C-2: Moderately hard, slightly weathered, gray SILTSTONE, extremely to slightly fractured (RQD = 17%).				
	(2:14)											
	(2:09)											
	(2:16)											
	(2:00)	C-3	19.0-23.7	56	56			C-3: Moderately hard, slightly weathered, gray SILTSTONE, extremely to slightlty fractured (RQD = 18%).			Bedrock	
20	(1:57)											
	(2:12)											
	(3:50)											
	(4:00)									23.8		12.7
25								End of exploration at 23.7 feet				
30												

REMARKS

1 - Gravel in middle of sample S-2 appeared to have been broken by the split spoon and may have been pieces of cobbles and/or boulders.
2 - Inferred boulder encountered between 4' & 5' below grade based on drilling resistance.
3 - Drilling resistance increased at 8.5' below grade.
4 - Drill wash water and cuttings between 8.5' to 10' below grade were iron-stained. Below 10' below grade, limited iron-staining observed in wash water and spoils.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: GZ-101

GZA TEMPLATE TEST BORING - GZA GINT DATA TEMPLATE 10-27-20.GDT - 3/20/25 16:55 - J:\GINT PROJECT DATABASES\35492.00_MEVA MAINTENANCE FACILITY.GPJ

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Robinson Green Beretta Corporation
MEVA Facility
123 Railroad Ave, Haverhill, MA

EXPLORATION NO.: GZ-102
SHEET: 1 of 1
PROJECT NO: 35492.00
REVIEWED BY: AGD

Logged By: N. Westkott
Drilling Co.: NEBC
Foreman: Mark D'Ambrosia

Type of Rig: Truck
Rig Model: GTECH GT8
Drilling Method: Drive & Wash

Boring Location: See Plan
Ground Surface Elev. (ft.): 26
Final Boring Depth (ft.): 25
Date Start - Finish: 1/2/2025 - 1/2/2025

H. Datum:
V. Datum: NAVD88

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size: NQ

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
										0.5	Concrete	25.5
		S-1	1.0-3.0	24	14	2 2 2 2	4	S-1: Top 9": Brown, SILT and fine to medium SAND, moist Bottom 5": Tan, SILT and fine to medium SAND, dry			Buried Subsoil	
		S-2	3.0-5.0	24	5	4 4 4 6	8	S-2: Loose, olive, fine to medium SAND and SILT, some Miscellaneous Debris (Concrete), dry		3		23.0
5		S-3	5.0-7.0	24	10	5 7 9 19	16	S-3: Top 8": Brown, SILT and fine SAND, moist Bottom 2": Gray, coarse GRAVEL			Fill	
										5		21.0
											Sandy Silt	
										9.5		16.5
10		S-4	10.0-12.0	24	13	32 31 25 23	56	S-4: Very dense, olive-brown, fine to medium SAND, some Silt, some fine to coarse Gravel, moist	1			
											Glacial Till with Boulders	
15		S-5	15.0-16.0	12	12	18 100/6"	R	S-5: Very dense, olive-brown, SILT, some fine to medium Sand, little to coarse Gravel, moist		16		10.0
20	(3:02) (2:55)	C-1	20.0-22.5	30	24			C-1: Moderately hard, slightly weathered, gray SILTSTONE, extremely to slightly fractured (RQD=23%)			Bedrock	
	(2:50/6") (1:58/6")	C-2	22.5-25.0	30	30			C-2: Moderately hard, slightly weathered, gray SILTSTONE, extremely to slightly fractured (RQD = 13%)				
25	(2:53) (3:03)									25		1.0
								End of exploration at 25 feet				
30												

REMARKS

1 - Drill chatter when advancing rollerbit at 9.5' below grade.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: GZ-102

GZA TEMPLATE TEST BORING - GZA GINT DATA TEMPLATE 10-27-20.GDT - 3/20/25 16:55 - J:\GINT PROJECT DATABASES\35492.00_MEVA MAINTENANCE FACILITY.GPJ

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Robinson Green Beretta Corporation
MEVA Facility
123 Railroad Ave, Haverhill, MA

EXPLORATION NO.: GZ-103
SHEET: 1 of 1
PROJECT NO: 35492.00
REVIEWED BY: AGD

Logged By: N. Westkott
Drilling Co.: NEBC
Foreman: Mark D'Ambrosia

Type of Rig: Truck
Rig Model: GTECH GT8
Drilling Method: Drive & Wash

Boring Location: See Plan
Ground Surface Elev. (ft.): 26.5
Final Boring Depth (ft.): 20.1
Date Start - Finish: 1/3/2025 - 1/3/2025

H. Datum:
V. Datum: NAVD88

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size: NQ

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
										0.5	Asphalt	26.0
		S-1	1.0-3.0	24	15	15 22 18 15	40	S-1: Dense, brown fine to coarse SAND, some Clayey Silt, little fine Gravel, dry.				
		S-2	3.0-5.0	24	6	14 12 14 14	26	S-2: Medium dense, brown fine to coarse SAND, little Sllt, little fine to coarse Gravel, dry.				
5		S-3	5.0-7.0	24	10	14 6 8 10	14	S-3: Medium dense, brown fine to coarse SAND and SILT, little fine to coarse Gravel, moist			Fill	
										8.5		18.0
									1			
10		S-4	10.0-10.8	10	10	37 100 /4"	R	S-4: Very dense, olive-brown fine to coarse SAND and fine and coarse GRAVEL, some Silt, moist	2		Glacial Till with Boulders	
										11		15.5
15	(3:03) (2:46) (2:36) (3:19) (5:13)	S-5 C-1	15.0-15.0 15.1-20.1	0 60	0 60	50 /0"	R	S-5: No Recovery C-1: Moderately hard, moderately to slightly weathered, gray with orange SILTSTONE, extremely to slightly fractured, 5" quartz layer at bottom of core sample (RQD = 25%)			Bedrock	
20										20.1		6.4
								End of exploration at 20.1 feet				
25												
30												

REMARKS

1 - Drilling resistance increased at 8.5' below grade.
2 - Portions of the gravel in sample S-4 were weathered.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: GZ-103

GZA TEMPLATE TEST BORING - GZA GINT DATA TEMPLATE 10-27-20.GDT - 3/20/25 16:55 - J:\GINT PROJECT DATABASES\35492.00_MEVA MAINTENANCE FACILITY.GPJ

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Robinson Green Beretta Corporation
MEVA Facility
123 Railroad Ave, Haverhill, MA

EXPLORATION NO.: GZ-104
SHEET: 1 of 1
PROJECT NO: 35492.00
REVIEWED BY: AGD

Logged By: N. Westkott
Drilling Co.: NEBC
Foreman: Mark D'Abrosia

Type of Rig: Truck
Rig Model: GTECH GT8
Drilling Method: Drive & Wash

Boring Location: See Plan
Ground Surface Elev. (ft.): 24.5
Final Boring Depth (ft.): 14.5
Date Start - Finish: 1/3/2025 - 1/3/2025

H. Datum:
V. Datum: NAVD88

Hammer Type: Automatic Hammer
Hammer Weight (lb.): 140
Hammer Fall (in.): 30
Auger or Casing O.D./I.D Dia (in.): 4

Sampler Type: SS
Sampler O.D. (in.): 2.0
Sampler Length (in.): 24
Rock Core Size: N/A

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
		S-1	0.0-2.0	24	14	5 7 9 8	16	S-1: Top 7": Black fine to coarse SAND, some fine to coarse Gravel, little Silt, dry Bottom 7": Brown fine to coarse SAND, trace SIlt, dry				
		S-2	2.0-4.0	24	6	14 8 5 4	13	S-2: Medium dense, brown fine to coarse SAND, some Silt, little fine to coarse Gravel, moist				
5		S-3	4.0-6.0	24	0	3 3 2 2	5	S-3: No recovery			Fill	
10		S-4	10.0-11.8	21	3	1 2 15 100/3"	17	S-4: Medium dense, brown/grey, fine to coarse GRAVEL and fine to coarse SAND, trace Silt, wet	1	10		14.5
									2	11.75	Glacial Till with Boulders	12.8
									3	14.5	Inferred Bedrock or Boulder	10.0
15		S-5	14.5-14.5	0	0	50 /0"	R	S-5: No Recovery	4			
								End of exploration at 14.5 feet				
20												
25												
30												

REMARKS

1 - Dilling wash return lost when washing out casing at 10' below grade.
2 - Drilling resistance between 11.75' and 14.5' indicated boulder or bedrock. Wash return was white when rollerbitting over this depth.
3 - Drilling wash returned when rollerbitting at 12' after seating casing at 12'.
4 - Drilling wash return was lost at 14.5'.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: GZ-104

GZA TEMPLATE TEST BORING - GZA GINT DATA TEMPLATE 10-27-20.GDT - 3/20/25 16:56 - J:\GINT PROJECT DATABASES\35492.00_MEVA MAINTENANCE FACILITY.GPJ

ATTACHMENT C

Rock Core Photo Log

Photographic Log

Client Name:	Site Location:	Project No.:
Robinson Green Beretta Corporation	123 Railroad Avenue, Haverhill, MA 01835	03.0035492.00

Photo 1



Description: View of rock core samples from borings GZ-101 and GZ-102.

Photo 2



Description: View of rock core sample from boring GZ-103.

ATTACHMENT D

Geotechnical Laboratory Results

Thielsch
DIVISION OF THE RISE GROUP

195 Frances Avenue
Cranston RI, 02910
Phone: (401)-467-6454
Fax: (401)-467-2398
cts.thielsch.com
Let's Build a Solid Foundation

Client Information:		Project Information:	
GZA GeoEnvironmental		**MEVA Maintenance Facility**	
Providence, RI		**85 Railroad Ave, Haverhill, MA**	
(401) 421-4140		Project Number:	03.0035492.00
Project Contact:	Anthony DiGiantommaso	Summary Page:	1 of 1
Collected By:	Client	Report Date:	1/17/2025

LABORATORY TESTING DATA SHEET, Report No.: 7425-A-162

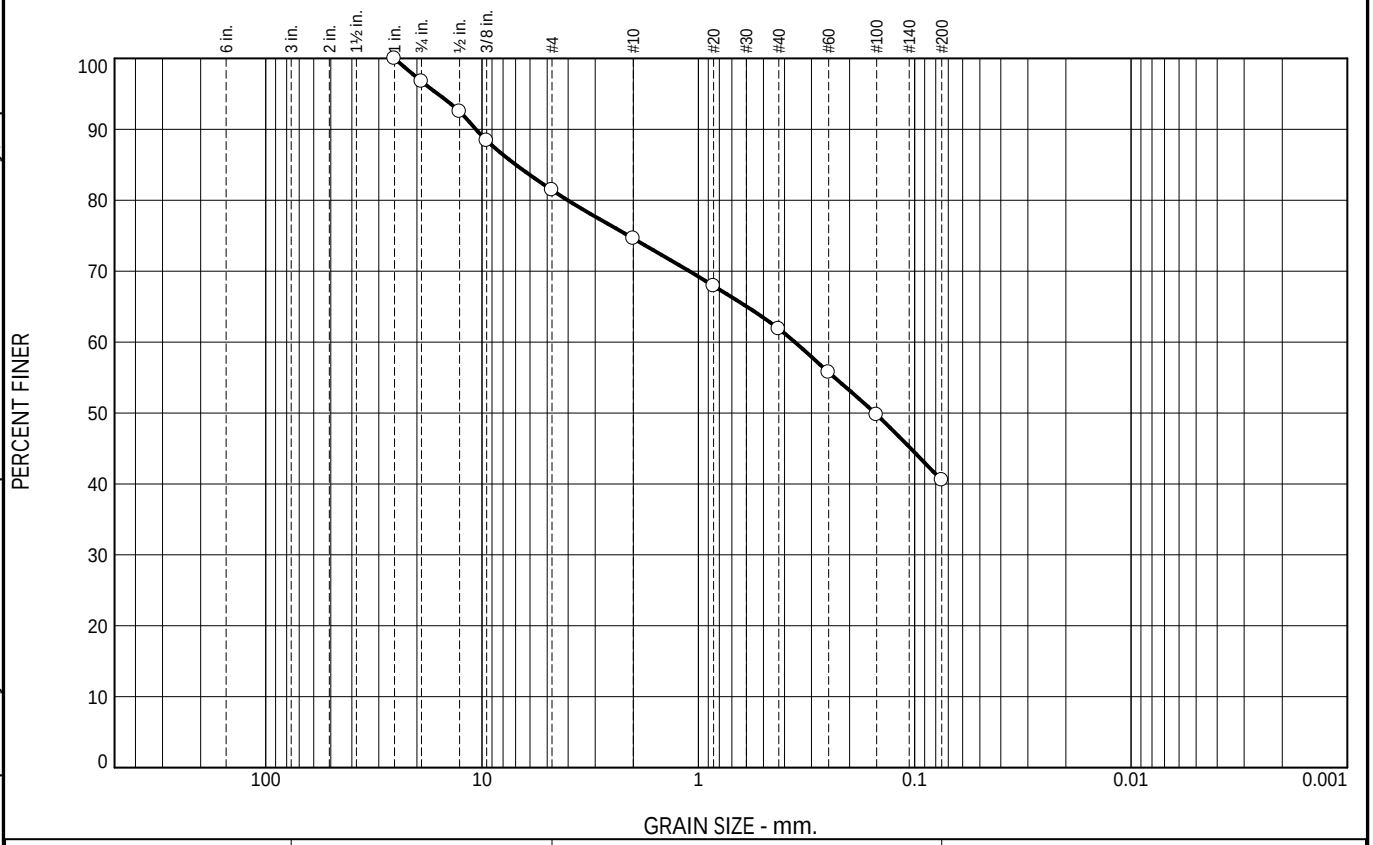
Material Source	Sample ID	Depth (ft)	Laboratory No.	Identification Tests									Proctor / CBR / Permeability Tests								Laboratory Log and Soil Description
				As Rcvd Moisture Content %	LL %	PL %	OD LL	Gravel %	Sand %	Fines %	Org. %	pH	g_d MAX (pcf) W_{opt} (%)	g_d MAX (pcf) W_{opt} (%) (Corr.)	Dry unit wt. (pcf)	Test Moisture Content %	Target Test Setup as % of Proctor	CBR @ 0.1"	CBR @ 0.2"	Permeability cm/sec	
				D2216	D4318			D6913			D2974	D4792	D1557								
GZ-101	S-2A	2-4	25-S-180					18.6	40.9	40.5											Brown f-c SAND and CLAYEY SILT, little f-c Gravel
GZ-101	S-3	5-6.2	25-S-181					41.5	39.9	18.6											Brown fine GRAVEL and f-c SAND, little Silt
GZ-102	S-3A	5-7	25-S-182					0.0	45.6	54.4											Light Brown SILT and fine SAND
GZ-103	S-1	1-3	25-S-183					15.7	50.0	34.3											Brown f-c SAND, some Clayey Silt, little fine Gravel

Date Received: **1/13/2025** Reviewed By: Date Reviewed: **1/17/2025**

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Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	3.3	15.3	6.8	12.7	21.4	40.5	

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100.0		
3/4"	96.7		
1/2"	92.5		
3/8"	88.4		
#4	81.4		
#10	74.6		
#20	67.9		
#40	61.9		
#60	55.7		
#100	49.8		
#200	40.5		

* (no specification provided)

Soil Description

Brown f-c SAND and CLAYEY SILT, little f-c Gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 10.6685 D_{85}= 6.9693 D_{60}= 0.3580
D_{50}= 0.1529 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-4(0)

Remarks

Sample visually classified as plastic. Sample rolled to 1/4"

Source of Sample: Boring Depth: 2-4'
Sample Number: GZ-101 / S-2A

Date: 1/16/25

Thielsch Engineering Inc.

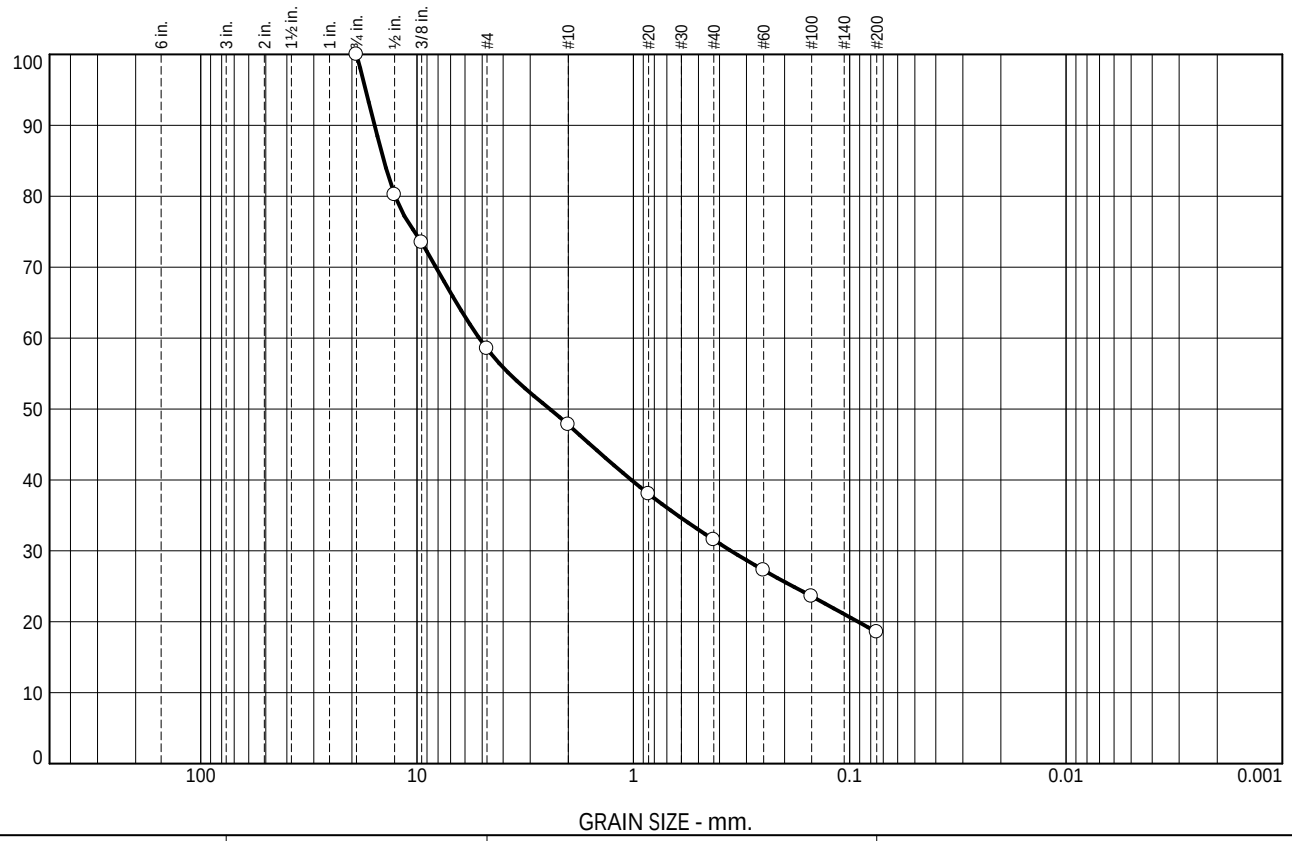
Cranston, RI

Client: GZA GeoEnvironmental
Project: MEVA Maintenance Facility
Haverhill, MA
Project No: 03.0035492.00 Fig. 25-S-180

Tested By: RKO/SBR Checked By: Rebecca Roth

These results are for the exclusive use of the client for whom they were obtained. This report only relates to items inspect and/or tested. No warranty, expressed or implied, is made.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	41.5	10.7	16.2	13.0	18.6	

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
1/2"	80.2		
3/8"	73.5		
#4	58.5		
#10	47.8		
#20	38.0		
#40	31.6		
#60	27.3		
#100	23.6		
#200	18.6		

* (no specification provided)

Soil Description

Brown fine GRAVEL and f-c SAND, little Silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 15.7135 D_{85}= 14.2224 D_{60}= 5.1611
D_{50}= 2.4341 D_{30}= 0.3538 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= GM AASHTO= A-1-b

Remarks

Source of Sample: Boring Depth: 5-6.2'
Sample Number: GZ-101 / S-3

Date: 1/16/25

Thielsch Engineering Inc.

Cranston, RI

Client: GZA GeoEnvironmental
Project: MEVA Maintenance Facility
Haverhill, MA
Project No: 03.0035492.00 Fig. 25-S-181

Tested By: RKO/SBR Checked By: Rebecca Roth

These results are for the exclusive use of the client for whom they were obtained. This report only relates to items inspect and/or tested. No warranty, expressed or implied, is made.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	2.3	3.3	40.0	54.4	

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	97.7		
#20	96.3		
#40	94.4		
#60	92.0		
#100	85.3		
#200	54.4		

* (no specification provided)

Soil Description

Light Brown SILT and fine SAND

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.1955 D_{85}= 0.1487 D_{60}= 0.0845
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Sample visually classified as non-plastic. Sample could not be rolled to 1/4".

Source of Sample: Boring Depth: 5-7'
Sample Number: GZ-102 / S-3A

Date: 1/16/25

Thielsch Engineering Inc.

Cranston, RI

Client: GZA GeoEnvironmental
Project: MEVA Maintenance Facility
Haverhill, MA
Project No: 03.0035492.00 Fig. 25-S-182

Tested By: RKO/SBR Checked By: Rebecca Roth

These results are for the exclusive use of the client for whom they were obtained. This report only relates to items inspect and/or tested. No warranty, expressed or implied, is made.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	15.7	6.3	18.0	25.7	34.3	

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
1/2"	93.8		
3/8"	90.7		
#4	84.3		
#10	78.0		
#20	69.6		
#40	60.0		
#60	53.3		
#100	46.0		
#200	34.3		

* (no specification provided)

Soil Description

Brown f-c SAND, some Clayey Silt, little fine Gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 8.9141 D_{85}= 5.1690 D_{60}= 0.4265
D_{50}= 0.1970 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Sample visually classified as plastic. Sample rolled to 1/4"

Source of Sample: Boring Depth: 1-3'
Sample Number: GZ-103 / S-1

Date: 1/16/25

Thielsch Engineering Inc.

Cranston, RI

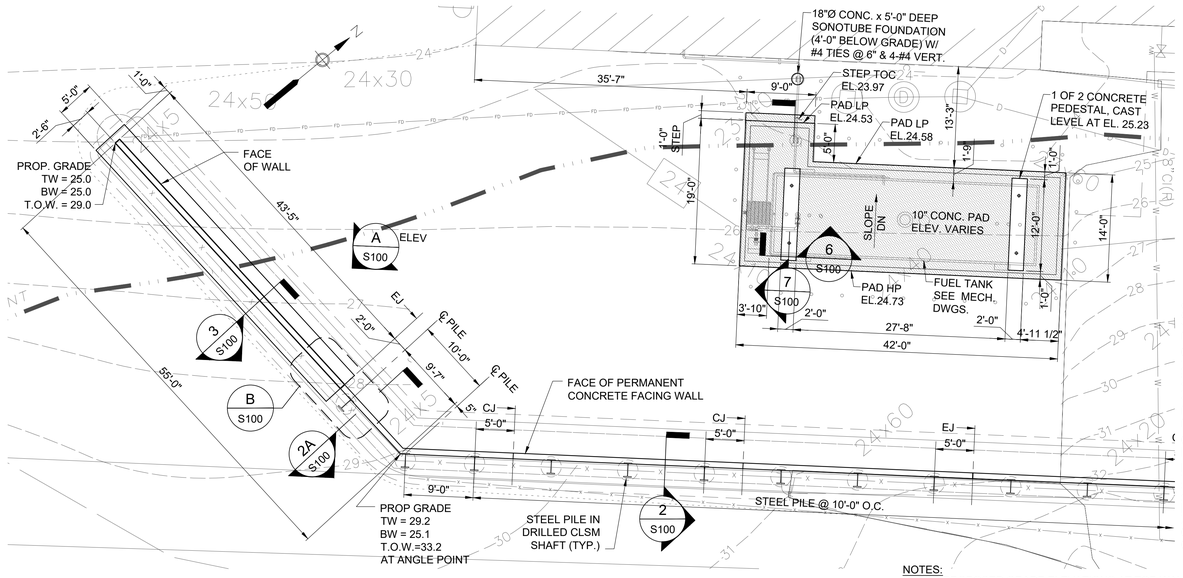
Client: GZA GeoEnvironmental
Project: MEVA Maintenance Facility
Haverhill, MA
Project No: 03.0035492.00 Fig. 25-S-183

Tested By: RKO/AB/SBR Checked By: Rebecca Roth

.

Comment #3
See Attached Drawings

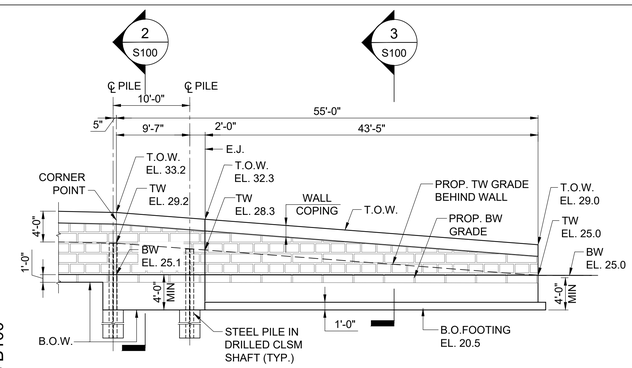
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RETAINING WALL / PILE LAYOUT PARTIAL PLAN & FUEL TANK PAD PLAN

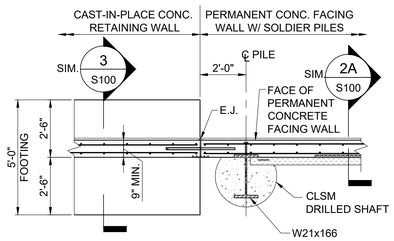
SCALE: 1/8" = 1'-0"

NOTES:
1. FOR PROPOSED GRADE ELEVATIONS AT TOP WALL GRADE (TW) AND BOTTOM WALL GRADE (BW) OF RETAINING WALL AND THE CONTINUATION OF THE SOLDIER PILE LAYOUT SEE DRAWING B100.



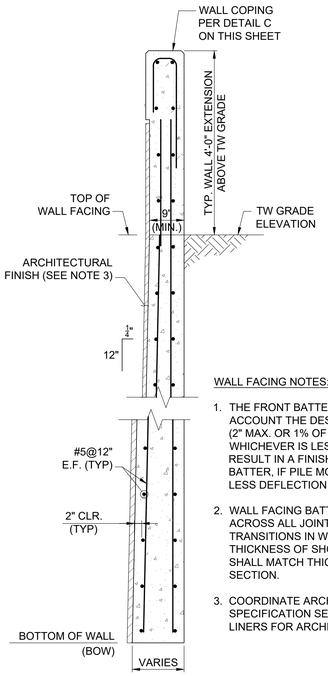
RETAINING WALL ELEVATION

SCALE: 1/8" = 1'-0"



DETAIL

SCALE:3/8" = 1'-0"

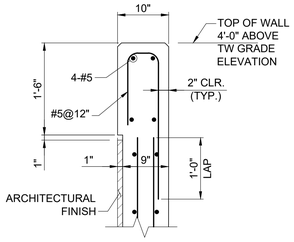


WALL FACING NOTES:

1. THE FRONT BATTER SPECIFIED TAKES INTO ACCOUNT THE DESIGN DEFLECTION CRITERIA (2" MAX. OR 1% OF FINAL WALL HEIGHT, WHICHEVER IS LESS), AND IS INTENDED TO RESULT IN A FINISHED WALL WITH POSITIVE BATTER, IF PILE MONITORING INDICATES LESS DEFLECTION THAN ESTIMATED.
2. WALL FACING BATTER SHALL BE UNIFORM ACROSS ALL JOINTS INCLUDING AT TRANSITIONS IN WALL HEIGHT. WALL FACING THICKNESS OF SHORTER WALL SECTION SHALL MATCH THICKNESS OF TALLER WALL SECTION.
3. COORDINATE ARCHITECTURAL FINISH WITH SPECIFICATION SECTION 031210 - FORM-LINERS FOR ARCHITECTURAL CONCRETE.

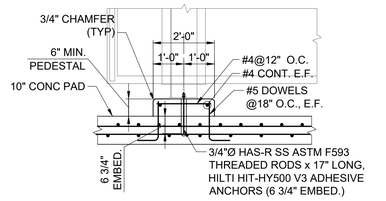
PERMANENT CONCRETE FACING WALL SECTION

SCALE: NOT TO SCALE



WALL COPING DETAIL

SCALE: 1" = 1'-0"



SECTION

SCALE:3/4" = 1'-0"

SECTION

SCALE:3/8" = 1'-0"

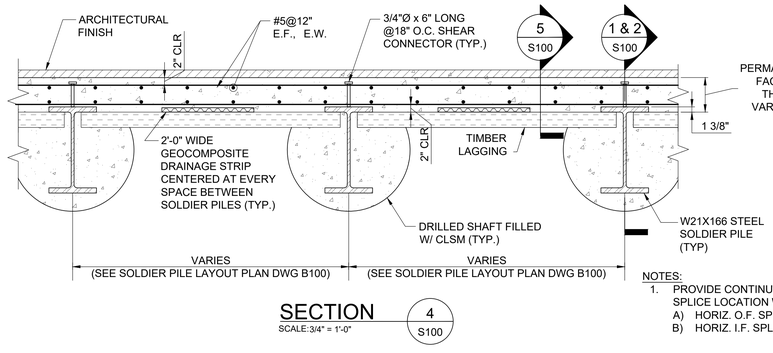
SECTION

SCALE:NOT TO SCALE

NOTES FOR SECTIONS 1, 2 AND 2A:
1. FOR PROPOSED GRADE ELEVATIONS AT TOP WALL GRADE (TW) AND BOTTOM WALL GRADE (BW) OF RETAINING WALL AND SOLDIER PILE LAYOUT COORDINATE WITH DRAWINGS C-3 AND B100.
2. FOR PERMANENT CONCRETE FACING WALL REINFORCEMENT SEE SECTIONS 4 AND 5 ON THIS SHEET.

SECTION

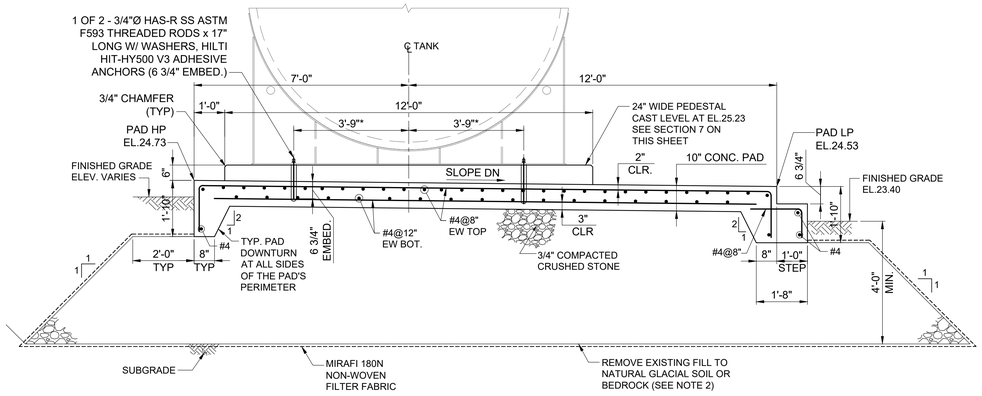
SCALE:3/8" = 1'-0"



SECTION

SCALE:3/4" = 1'-0"

NOTES:
1. PROVIDE CONTINUOUS HORIZ. REINF. EACH FACE WITH SPLICE LOCATION WHEN REQUIRED AS FOLLOWS:
   A) HORIZ. O.F. SPLICE AT CENTER OF PILE SUPPORTS
   B) HORIZ. I.F. SPLICE AT MID-SPAN BETWEEN PILE SUPPORTS



SECTION

SCALE:3/4" = 1'-0"

NOTES:
1. COORDINATE FUEL TANK 10" MIN. CONCRETE PAD SIZE AND HEIGHT ABOVE FINISHED GRADE WITH FUEL TANK MANUFACTURER BASE PAD REQUIREMENTS.
2. COORDINATE SUBGRADE PREPARATION WITH GEOTECHNICAL ENGINEER REQUIREMENTS.

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Certification



Drawn by R LAM

Checked by G KARJADI

Revised on

1 Addendum #2

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Project

MERRIMACK VALLEY REGIONAL TRANSIT AUTHORITY

MASTER PLAN

123 RAILROAD AVE.
HAVERHILL, MA 01835

Drawing Status

FOR CONSTRUCTION

Issued On 07/16/2025

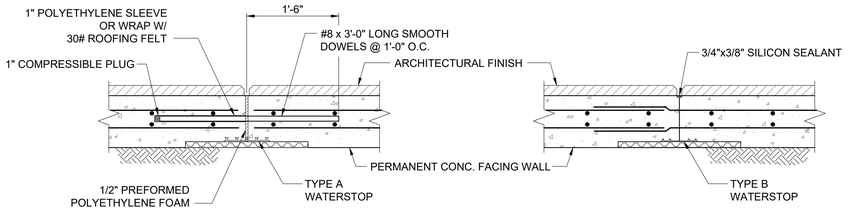
Sheet Contents

RETAINING WALL / PILE LAYOUT PARTIAL PLAN, FUEL TANK PAD PLAN AND SECTIONS

Project Number. 6859

Drawing No. S100

Sheet of

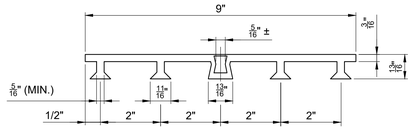


TYPICAL EXPANSION JOINT DETAIL

SCALE: 1" = 1'-0"

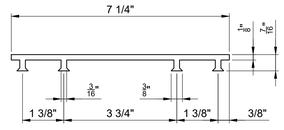
TYPICAL CONSTRUCTION JOINT DETAIL

SCALE: 1" = 1'-0"



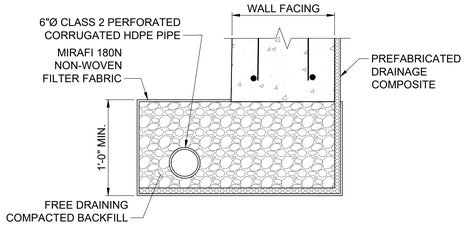
TYPE A WATERSTOP DETAIL

SCALE: NOT TO SCALE



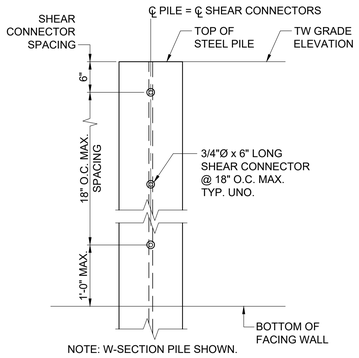
TYPE B WATERSTOP DETAIL

SCALE: NOT TO SCALE



UNDERDRAIN DETAIL

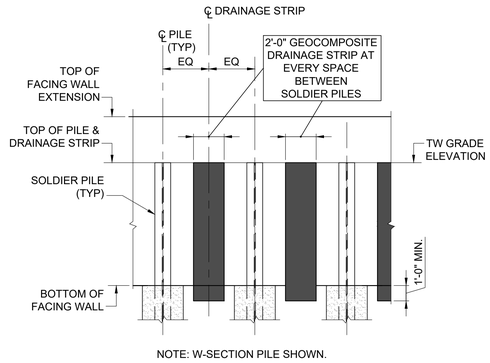
SCALE: NOT TO SCALE



NOTE: W-SECTION PILE SHOWN.

STUD LOCATION DETAIL

SCALE: 1" = 1'-0"



NOTE: W-SECTION PILE SHOWN.

GEOCOMPOSITE DRAINAGE STRIP DETAIL

SCALE: N.T.S.

A GENERAL

A1 STRUCTURAL WORK SHALL CONFORM TO THE TENTH EDITION OF THE MASSACHUSETTS STATE BUILDING CODE-780 CMR (MSBC).

A2 ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE CIVIL, ARCHITECTURAL, AND PLUMBING DRAWINGS AND SPECIFICATIONS.

A3 EXAMINE CIVIL, ARCHITECTURAL AND PLUMBING DRAWINGS FOR VARIATIONS OF LOCATIONS AND DIMENSIONS OF CHASES, INSERTS, OPENINGS, SLEEVES, WASHES, DRIPS, REVEALS, DEPRESSIONS, AND OTHER PROJECT REQUIREMENTS NOT SHOWN ON STRUCTURAL DRAWINGS, ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

A4 THE CONTRACTOR SHALL REVIEW, COORDINATE AND VERIFY DIMENSIONS SHOWN IN ALL PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT THE INSTALLATION OF THE STRUCTURES. SHOULD DISCREPANCIES APPEAR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER, OBTAIN ENGINEER'S CLARIFICATION BEFORE COMMENCING THE WORK.

A5 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STRUCTURAL STABILITY DURING CONSTRUCTION. THE STRUCTURE SHOWN ON THE DRAWINGS HAS BEEN DESIGNED FOR STABILITY UNDER THE FINAL CONFIGURATION ONLY.

A6 OPENINGS IN WALLS LESS THAN 12" MAXIMUM DIMENSION ARE GENERALLY NOT SHOWN ON STRUCTURAL DRAWINGS. OPENINGS SHOWN ON STRUCTURAL DRAWINGS SHALL NOT BE REVISED WITHOUT PRIOR APPROVAL OF THE ENGINEER.

A7 TYPICAL DETAILS AND NOTES SHOWN ON STRUCTURAL DRAWINGS SHALL BE APPLICABLE TO ALL PARTS OF THE STRUCTURAL WORK EXCEPT WHERE SPECIFICALLY REQUIRED OTHERWISE BY CONTRACT DOCUMENTS.

A8 DETAILS NOT SPECIFICALLY SHOWN SHALL BE SIMILAR TO THOSE SHOWN FOR THE MOST NEARLY SIMILAR CONDITION AS DETERMINED BY THE ENGINEER.

B FOUNDATION

B1 FOUNDATIONS FOR THIS PROJECT CONSISTS OF SPREAD FOOTINGS AND FOUNDATION WALLS.

B2 SPREAD FOOTING SHALL REST ON UNDISTURBED SOIL OR COMPACTED STRUCTURAL FILL WITH MIN. BEARING CAPACITY OF 4000 POUNDS PER SQUARE FOOT AS SPECIFIED IN THE SUBGRADE SPECIFICATIONS AND GEOTECHNICAL ENGINEERING REPORT BY GZA DATED MARCH 21, 2025. FOUNDATION SUBGRADE PREPARATION AND APPROVAL PER SPECIFICATION DIVISION 31 - EARTHWORK.

B3 ALL STRUCTURAL FILL SHALL BE COMPACTED TO 95% DRY DENSITY TO ACHIEVE BEARING CAPACITY SHOWN UNLESS OTHERWISE NOTED.

B4 FOUNDATION UNITS SHALL BE CENTERED UNDER SUPPORTED STRUCTURAL MEMBERS, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

B5 EXTERIOR CONSTRUCTION SHALL BE CARRIED DOWN BELOW FINISHED EXTERIOR GRADE TO MINIMUM DEPTH OF 4'-0", UNLESS NOTED OTHERWISE. SLAB SUBGRADE PREPARATION AND APPROVAL PER SPECIFICATION DIVISION 31 - EARTHWORK.

B6 CARRY OUT CONTINUOUS CONTROL OF SURFACE AND SUBSURFACE WATER DURING CONSTRUCTION SUCH THAT FOUNDATION WORK IS DONE IN DRY AND ON UNDISTURBED SUBGRADE MATERIAL, AS APPLICABLE.

B7 NO FOUNDATION CONCRETE SHALL BE PLACED IN WATER OR ON FROZEN SUBGRADE MATERIAL.

C CONCRETE

C1 CONCRETE WORK SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318; 318R)", "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301)".

C2 UNLESS NOTED OTHERWISE, CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI (NORMAL WEIGHT).

C3 SIZE OF CONCRETE PLACEMENT UNLESS NOTED OTHERWISE SHALL BE AS FOLLOWS:

	MAX LENGTH (FEET)	MAX AREA (SQ. FEET)
(A) FOOTINGS AND WALLS	30*	-

* EXCEED ONLY IF INTERMEDIATE CONTROL JOINTS ARE PERMITTED AND PROVIDED.

C4 MINIMUM OF 72 HOURS SHALL ELAPSE BETWEEN ADJACENT CONCRETE PLACEMENTS.

C5 CONSTRUCTION, EXPANSION AND CONTROL JOINTS SHOWN ON DRAWINGS ARE MANDATORY; ANY OMISSIONS, ADDITIONS, OR CHANGES SHALL BE SUBMITTED FOR REVIEW IN THE FORM OF A WRITTEN REQUEST TOGETHER WITH DRAWINGS OF THE PROPOSED JOINT LOCATIONS.

C6 CONCRETE SHALL BE PLACED WITHOUT HORIZONTAL CONSTRUCTION JOINTS EXCEPT WHERE SHOWN OR NOTED; VERTICAL CONSTRUCTION JOINTS AND STOPS IN CONCRETE WORK SHALL BE MADE AT MIDSPAN OR AT POINTS OF MINIMUM SHEAR.

C7 ALL EDGE OF CONCRETE EXPOSED TO VIEW SHALL HAVE 3/4" CHAMFER.

D REINFORCING

D1 REINFORCEMENT WORK, INCLUDING DETAILING, FABRICATION, AND ERECTION SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318; 318R)", "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT (ACI 315) (SP-66 FIRST PART)", "MANUAL OF ENGINEERING AND PLACING DRAWINGS FOR REINFORCED CONCRETE STRUCTURES (AC1 315R) (SP-66 SECOND PART)", "CRSI MANUAL OF STANDARD PRACTICE (DA4)."

D2 STEEL REINFORCEMENT, UNLESS NOTED OTHERWISE, SHALL CONFORM TO THE FOLLOWING:
(A) BARS, TIES, AND STIRRUPS ..... ASTM A615 GRADE 60 (Fy=60,000 PSI)
(B) WELDED WIRE FABRIC ..... ASTM A185, FLAT SHEETS
(C) BARS TO BE WELDED ..... ASTM A706, GRADE 60 (Fy=60,000 PSI)

D3 PROVIDE SCHEDULE ON SHOP DRAWINGS INDICATING NECESSARY ACCESSORIES TO HOLD REINFORCEMENT SECURELY IN POSITION, MINIMUM REQUIREMENTS SHALL BE: HIGH CHAIRS, 4'-0" O.C. WITH CONTINUOUS #5 SUPPORT BAR; SLAB BOLSTERS, 3'-6" OC; BEAM BOLSTERS, 5'-0" OC.

D4 REINFORCING STEEL SHALL HAVE THE FOLLOWING MINIMUM CLEAR CONCRETE COVER, UNLESS OTHERWISE NOTED:
(A) CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH .....3 INCHES
(B) CONCRETE SURFACE IN CONTACT WITH SOIL, WATER OR EXPOSED TO WEATHER (INCLUDING BOTTOM COVER OVER LIQUID CONTAINING STRUCTURES) .... 2 INCHES (UNO)
(C) CONCRETE SURFACES NOT IN CONTACT WITH SOIL, WATER OR EXPOSED TO WEATHER
(1) BEAMS AND COLUMNS:
STIRRUPS AND TIES ..... 1 1/2 INCHES
PRINCIPAL REINFORCEMENT ..... 2 INCHES
(2) WALLS AND SLABS ..... 1 INCHES UNLESS NOTED OTHERWISE (UNO)

D REINFORCING (CONT.)

D5 SPLICES SHALL BE LAPPED IN ACCORDANCE WITH CONTRACT DRAWINGS.

D6 UNLESS SPECIFICALLY SHOWN OR NOTED, PROVIDE CONTINUOUS REINFORCEMENT, IT WILL BE EXTENDED CONTINUOUSLY AROUND CORNERS, LAPPED AT SPLICES AND HOOKED AT DISCONTINUOUS ENDS.

D7 WHERE REINFORCEMENT IS NOT SHOWN ON DRAWINGS, PROVIDE REINFORCEMENT IN ACCORDANCE WITH APPLICABLE DETAILS AS DETERMINED BY THE ENGINEER; IN NO CASE SHALL REINFORCEMENT BE LESS THAN THE MINIMUM REINFORCEMENT PERMITTED BY THE APPLICABLE CODES.

D8 ANY SCHEDULE REINFORCING BLOCKED BY AN OPENING OR SLAB HARDWARE (DUCT, MANHOLES) SHALL BE CUT TO FIT. ALSO ALL CUT REBAR SHALL BE REPLACED WITH NEW BARS (NOT CUT TO FIT) AND POSITIONED 50% TO EITHER SIDE OF OPENING. SEE DRAWING S-701 FOR TYPICAL ADDITIONAL REINFORCING AT OPENING DETAILS.

E DESIGN LOADS

E1 STRUCTURAL DESIGN LOAD: CONFORMING TO MASSACHUSETTS STATE BUILDING CODE (780 CMR), TENTH EDITION.

E2 DEAD LOADS
(A) WEIGHT OF BUILDING COMPONENTS ..... ACTUAL WEIGHT

E4 SNOW LOAD
(A) GROUND SNOW LOAD, Pg..... 50 PSF

E5 WIND LOAD
(A) ULTIMATE DESIGN WIND SPEED, Vult = 123 MPH
(B) NOMINAL DESIGN WIND SPEED, Vasd = 95.3 MPH
(C) RISK CATEGORY II
(D) WIND EXPOSURE B

E6 SEISMIC LOAD
(A) EARTHQUAKE DESIGN FACTORS — Ss..... 0.26; Si..... 0.077
(B) SITE CLASS "D", — Fa..... 1.6; Fv..... 2.4
(C) MCE SPECTRAL RESPONSE ACCELERATION, — SMs..... 0.416; SM1..... 0.185
(D) SEISMIC DESIGN CATEGORY, — SDs..... 0.277 CATEGORY "B"; SD1..... 0.123 CATEGORY "B"
(E) SEISMIC IMPORTANCE FACTOR, — Ie ..... 1.0 WITH RISK CATEGORY II

E7 NET ALLOWABLE SOIL BEARING PRESSURE ..... 4000 PSF

E8 COEFFICIENT OF FRICTION 0.50

E9 DESIGN BASE FLOOD WATER ELEVATION (FEMA 100 YEAR FLOOD PLAIN) ..... EL. 23.1

E10 LATERAL EARTH LOADS (EQUIVALENT FLUID DENSITY):
(A) AT-REST ..... 40.5 PCF (DRY)
(B) PASSIVE PRESSURE ..... 300 PCF

STRUCTURAL ABBREVIATIONS:

A.B.	ANCHOR BOLTS	JT	JOINT
APPROX	APPROXIMATE(LY)	MAX	MAXIMUM
ARCH	ARCHITECTURAL	MIN	MINIMUM
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	MSBC	MASSACHUSETTS STATE BUILDING CODE-780 CMR
BOT	BOTTOM	NTS	NOT TO SCALE
B.O.	BOTTOM OF	NO.	NUMBER
BOF	BOTTOM OF FOOTING	OC	ON CENTER
BW	BOTTOM OF WALL GRADE	OF	OUTSIDE FACE
CJ	CONSTRUCTION JOINT	OPNG	OPENING
CL	CLEARANCE	OPP	OPPOSITE
CMU	CONCRETE MASONRY UNITS	PL	PLATE
CONC	CONCRETE	PROP	PROPOSE
CONT	CONTINUOUS/CONTINUATION	REINF	REINFORCEMENT
DN	DOWN	REQD	REQUIRED
DWL	DOWEL	SECT	SECTION
EA	EACH	SIM	SIMILAR
EF	EACH FACE	SS	STAINLESS STEEL
EJ	EXPANSION JOINT	STRU	STRUCTURAL
EL, ELEV	ELEVATION (NORTH AMERICAN VERTICAL DATUM OF 1988)	T&B	TOP AND BOTTOM
		T.O.	TOP OF
		T.O.C.	TOP OF CONCRETE
		TW	TOP OF WALL GRADE
EMBED	EMBEDMENT	TYP	TYPICAL
EQ	EQUAL	UNO	UNLESS NOTED OTHERWISE
EW	EACH WAY	VERT	VERTICAL
EXP	EXPANSION	VIF	VERIFY IN FIELD
EXIST	EXISTING	W/	WITH
IF	INSIDE FACE		

SPLICE SCHEDULE

REINFORCING BAR DEVELOPMENT AND LAP SPLICE LENGTHS FOR f'c = 4000 PSI AND Fy = 60 KSI

BAR SIZE	TENSION DEVELOPMENT		TENSION SPLICE (CLASS B)		STANDARD 90° HOOK	COMPRESSION BARS	
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	EMBEDMENT Ldh	DEVELOPMENT Ldb	SPLICE LENGTH
#3	19"	15"	24"	19"	8"	8"	12"
#4	25"	20"	33"	25"	10"	10"	15"
#5	32"	24"	41"	32"	12"	12"	19"
#6	38"	30"	49"	38"	15"	15"	24"
#7	44"	35"	57"	44"	18"	18"	27"
#8	50"	38"	65"	50"	20"	20"	30"

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Certification



Drawn by R LAM

Checked by G KARJADI

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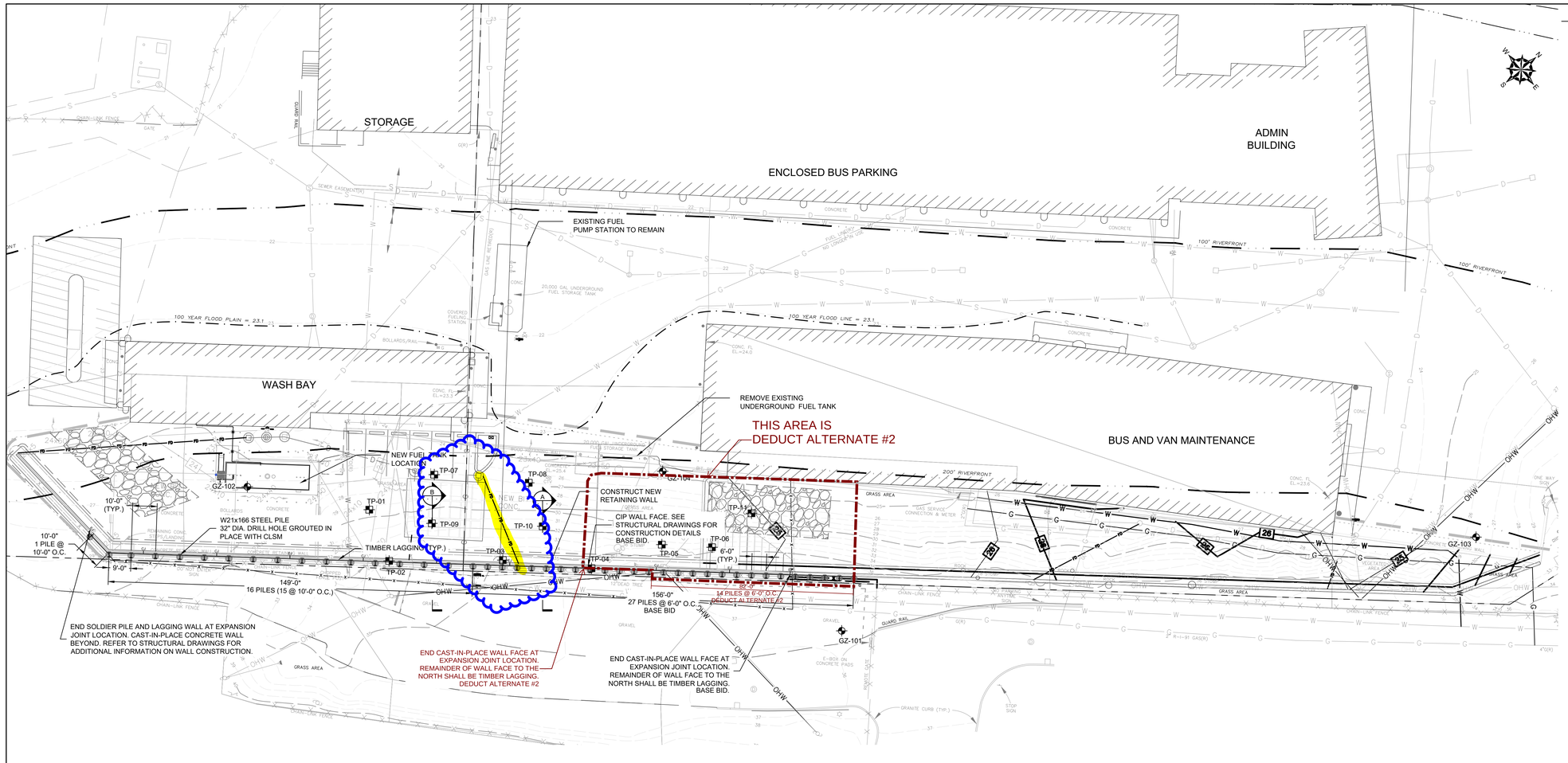
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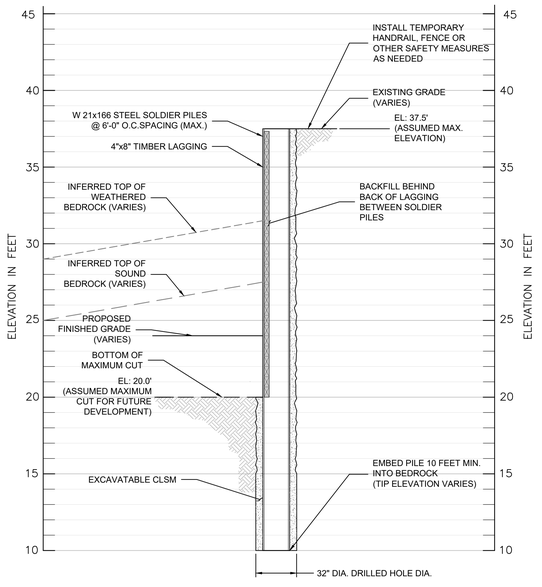
GENERAL NOTES AND TYPICAL DETAILS

Project Number. 6859

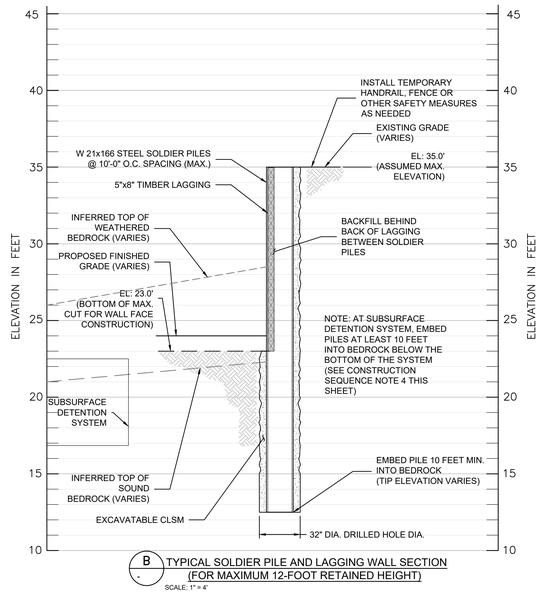
Drawing No. S101

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A TYPICAL SOLDIER PILE AND LAGGING WALL SECTION (FOR MAXIMUM 17.5-FOOT RETAINED HEIGHT)
SCALE: 1" = 4'



B TYPICAL SOLDIER PILE AND LAGGING WALL SECTION (FOR MAXIMUM 12-FOOT RETAINED HEIGHT)
SCALE: 1" = 4'

GENERAL NOTES:

1. PLAN DEVELOPED FROM ELECTRONIC DRAWING FILES TITLED "5689 - SURVEY BASE-CLEAN 3-26-25.DWG" AND "5689 DESIGN 2025- 3-26-25 CLEAN.DWG" WHICH WERE PREPARED BY PLACES ASSOCIATES, INC. AND TRANSMITTED TO GZA.
2. EXPLORATION LOCATIONS WERE DETERMINED USING A GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) UNIT WITH AN ACCURACY OF APPROXIMATELY 1-FOOT HORIZONTALLY. EXPLORATION LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.
3. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS.
4. CONFORM TO CONSTRUCTION SEQUENCE, NOTES, AND ALL OTHER REQUIREMENTS ON THESE DRAWINGS UNLESS OTHERWISE APPROVED BY GZA GEOENVIRONMENTAL, INC. (GZA). ANY DEVIATIONS FROM THE REQUIREMENTS SHOWN ON THE THIS DRAWING SHALL BE APPROVED BY GZA.
5. ALL EXCAVATIONS SHALL CONFORM TO THE REQUIREMENTS OF THE FEDERAL REGISTER BY THE DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), 29 CFR PART 1926, FOR EXCAVATIONS.
6. INSTALL ALL ANCILLARY ITEMS SUCH AS CONSTRUCTION FENCES, HANDRAILS, AND/OR BARRIERS (DESIGNED BY OTHERS) WHICH ARE REQUIRED BY OSHA BUT NOT SHOWN ON THE DRAWINGS.
7. ALL EXCAVATION, BACKFILLING AND GRADING SHALL BE IN GENERAL ACCORDANCE WITH THE CONTRACT DOCUMENTS AND SPECIFICATIONS.
8. ALL PRE-CUT AND OPEN CUTS SHALL BE AT A MAXIMUM SLOPE OF 1.5H:1V UNLESS NOTED OTHERWISE.
9. REPORT CHANGES IN THE CONTRACT DOCUMENTS AND CHANGES IN SUBSURFACE CONDITIONS TO GZA SO THAT THE DESIGN CAN BE MODIFIED ACCORDINGLY.
10. FIELD VERIFY THE LOCATION OF ALL EXISTING AND PROPOSED CONSTRUCTION, INCLUDING EXISTING UNDERGROUND STRUCTURES AND UTILITIES, PRIOR TO COMMENCING INSTALLATION OF SOLDIER PILE WALL SYSTEM.
11. THIS DRAWING IS FOR SOLDIER PILE WALL CONSTRUCTION ONLY AND OTHER PROPOSED SITE FEATURES ARE SHOWN FOR GENERAL REFERENCE ONLY. REFER TO THE CONTRACT DOCUMENTS FOR THE LOCATIONS AND DIMENSIONS OF THE OTHER PROPOSED CONSTRUCTION.
12. SOLDIER PILE WALL CONSTRUCTION SHALL BE COORDINATED WITH THE PLANNED BEDROCK REMOVAL TECHNIQUES IN FRONT OF THE WALL FACE. IF LINE DRILLING IS USED TO FACILITATE BEDROCK REMOVAL, THE DRILLING SHALL NOT EXTEND BELOW THE DESIGN MAXIMUM CUT ELEVATION.
13. EXPANSION (EJ) AND CONTROL JOINT (CJ) LOCATIONS HAVE BEEN PROVIDED BY LIN ASSOCIATES. REFER TO STRUCTURAL DRAWINGS FOR EXPANSION AND CONTROL JOINT DETAILS.
14. REFER TO THE EARTHWORK SPECIFICATION (SECTION 310000) FOR ADDITIONAL REQUIREMENTS ON SOLDIER PILE WALL CONSTRUCTION.

DESIGN NOTES:

1. THE TEMPORARY EARTH SUPPORT SYSTEM HAS BEEN DESIGNED FOR A MAXIMUM RETAINED HEIGHT OF 12 OR 17.5 FEET, DEPENDING ON THE DESIGN SECTION.
2. A 250 PSF SURCHARGE LOAD BEHIND THE SOLDIER PILE & LAGGING WALL SYSTEM HAS BEEN CONSIDERED IN THIS DESIGN. CONTRACTOR SHALL ENSURE MATERIALS AND EQUIPMENT STAGED AT THE TOP OF THE SOLDIER PILE WALL DURING CONSTRUCTION DO NOT EXCEED THIS SURCHARGE LOAD.
3. GROUNDWATER SHALL BE MAINTAINED 2 FEET BELOW THE PROPOSED BOTTOM OF CUT ELEVATION DURING CONSTRUCTION. IF DEWATERING IS REQUIRED THE CONTRACTOR SHALL SUBMIT A DEWATERING PLAN FOR REVIEW PRIOR TO CONSTRUCTION. THE DEWATERING PLAN SHALL BE PREPARED BY A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF MASSACHUSETTS

MATERIAL NOTES:

1. ALL STRUCTURAL STEEL W SECTIONS SHALL BE SIZED AS NOTED AND SHALL CONFORM TO ASTM A572, GR.50, MIN.
2. ANY SUBSTITUTIONS OF STRUCTURAL SHAPES MUST BE APPROVED BY GZA IN WRITING PRIOR TO USE.
3. TIMBER LAGGING SHALL BE 4" OR 5" (SEE DESIGN SECTIONS) MIXED SOUTHERN YELLOW PINE NO. 2 (OR BETTER) WITH A MINIMUM ALLOWABLE BENDING STRESS OF Fb=1100 PSI AND SHEAR STRESS OF Fv=175 PSI. TIMBER LAGGING SHALL BE PRESSURE TREATED.
4. ALL MATERIALS SHALL BE CLEAN AND STRAIGHT. EACH ASSEMBLY SHALL BE ACCURATELY FABRICATED TO THE LINES AND DIMENSIONS CALLED FOR AND SHALL BE FREE FROM UNDUE TWISTS, BENDS, WARPING, DISTORTION AND OTHER IRREGULARITIES.
5. THE ANNULAR SPACE SURROUNDING THE SOLDIER PILE IN THE AUGERED HOLE SHALL BE FILLED WITH EXCAVATABLE CONTROLLED LOW STRENGTH MATERIAL (CLSM) MEETING THE REQUIREMENTS OF SECTION M4.08.0 OF THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, WITH A MINIMUM COMPRESSIVE STRENGTH OF 100 PSI.

CONSTRUCTION SEQUENCE:

1. FIELD LOCATE AND REMOVE AND/OR RELOCATE EXISTING UTILITIES AND STRUCTURES THAT CONFLICT WITH SOLDIER PILE AND LAGGING WALL SYSTEM.
2. LAYOUT SOLDIER PILE LOCATIONS.
3. PRE-DRILL A MINIMUM 32-INCH DIAMETER HOLE TO THE REQUIRED TIP ELEVATION BY ADVANCING STEEL CASING.
4. INSTALL SOLDIER PILES, AND ENSURE THAT THE PILES MEET THE REQUIRED TIP ELEVATION. THE PILE TIP SHALL BE LOCATED AT LEAST 10 FEET INTO BEDROCK BELOW THE DESIGN MAXIMUM CUT ELEVATION. WHERE SOLDIER PILES ARE INSTALLED ADJACENT TO THE PROPOSED SUBSURFACE DETENTION AREA, THE SOLDIER PILES SHALL EXTEND AT LEAST 10 FEET INTO BEDROCK BELOW THE BOTTOM ELEVATION OF THE SUBSURFACE DETENTION SYSTEM.
5. FILL THE ANNULAR SPACE AROUND THE SOLDIER PILE WITH CLSM WHILE WITHDRAWING THE DRILL CASING.
6. PROVIDE A MEANS TO PLUMB AND SUPPORT THE PILES WHILE THE CLSM SETS.
7. ALLOW A MINIMUM OF 24 HOURS FOR THE CLSM TO SET.
8. SIMULTANEOUSLY EXCAVATE AND INSTALL TIMBER LAGGING BOARDS. INSTALL LAGGING BETWEEN THE FLANGES OF THE SOLDIER PILES AND BACKFILL BEHIND THE LAGGING WITH ¾-INCH CRUSHED STONE OR OTHER APPROVED MATERIAL TO ESTABLISH TIGHT CONTACT WITH THE FACE OF THE EXCAVATION.
9. PACK OPENINGS BETWEEN LAGGING WITH FREE DRAINING MATERIAL (HAY) OR EQUIVALENT TO ALLOW DRAINAGE FOR WATER WITHOUT LOSS OF RETAINED SOIL OR GRAVEL PACK.
10. COORDINATE EXCAVATION WITH LAGGING PLACEMENT. MAXIMUM HEIGHT OF UNSUPPORTED EXCAVATION FACE SHALL BE 3 FEET OR LESS AS CONDITIONS REQUIRE. LAGGING SHALL BE INSTALLED IMMEDIATELY UPON EXCAVATION. DO NOT LEAVE ANY EXCAVATION BETWEEN SOLDIER PILES OPEN OVERNIGHT.
11. CONTINUE EXCAVATION TO BOTTOM OF PROPOSED TOE DRAIN INFRONT OF SOLDIER PILE AND LAGGING WALL. EXCAVATION SHALL NOT EXTEND BELOW THE SPECIFIED MAXIMUM RETAINED HEIGHT FOR THE GIVEN DESIGN SECTION.
12. INSTALL GEOCOMPOSITE DRAINAGE STRIPS BETWEEN SOLDIER PILES, INSTALL THE TOE DRAIN, AND WRAP THE GEOMCOMPOSIT DRAINAGE STRIPS AROUND THE TOE DRAIN.
13. BACKFILL THE TOE DRAIN EXCAVATION WITH ¾" CRUSHED STONE ENVELOPED IN FILTER FABRIC.
14. INSTALL SHEAR STUDS ON THE SOLDIER PILE FLANGERS AND FACING REINFORCEMENT.
15. CUTOFF SOLDIER PILES AT LEAST 3 INCHES BELOW PROPOSED FINISHED GRADE PRIOR TO INSTALLING CAST-IN-PLACE WALL FACE.
16. PLACE THE CAST-IN-PLACE WALL FACE.

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Certification

COMMONWEALTH OF MASSACHUSETTS
JAMES J. MARSLAND
No. 55859
REGISTERED PROFESSIONAL ENGINEER
7/16/2025

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Project

MERRIMACK VALLEY REGIONAL TRANSIT AUTHORITY

FUEL TANK RELOCATION AND RETAINING WALL

123 RAILROAD AVE.
HAVERHILL, MA 01835

Drawing Status

FOR CONSTRUCTION

Issued On 07/16/2025

Sheet Contents

SOLDIER PILE & LAGGING LAYOUT PLAN, NOTES AND DETAILS

Project Number. 35492.00

Drawing No.

B100

Sheet of

Comment #4

See Attached Drawings

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Certification

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REGISTERED PROFESSIONAL ENGINEER
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1/29/26

Drawn by LS

Checked by SEC

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Project

MERRIMACK VALLEY REGIONAL TRANSIT AUTHORITY

FUEL TANK RELOCATION AND RETAINING WALL

MeVA Merrimack Valley Transit

123 RAILROAD AVE.
HAVERHILL, MA 01835

Drawing Status
FOR CONSTRUCTION

Issued On 7/16/2025

Sheet Contents
GRADING AND DRAINAGE PLAN

Project Number. 6859

Drawing No. C-3

Sheet of

BAR SCALE
1"=20'
20' 0 20' 40'
CHECK GRAPHIC SCALE BEFORE USING

NOTES:
1. *UTILITIES SHOWN ARE FROM RECORD INFORMATION ONLY AND MUST BE FIELD VERIFIED PRIOR TO ANY SITE DISTURBANCE.*
2. *PROPERTY LINES ARE TAKEN FROM THE 1991 STAMPED SURVEY PLAN BY HANCOCK ASSOCIATES PLAN.*
3. *ALL SURFACES NOT STABILIZED BY HARDSCAPE (PAVING, GRAVEL OR OTHER) SHALL BE LOAMED AND SEEDED.*
4. *PRIOR TO ORDERING MATERIALS OR INITIATING CONSTRUCTION, THE EXISTING DRAIN LINE UNDER SERVICE BUILDING SHALL BE VIDEOTAPED FROM EX. CB#5 TO DMH#6 TO VERIFY ITS ABILITY AND SUITABILITY FOR REUSE. SUPPLY VIDEO TO DESIGN ENGINEER AND OWNER TO PERMIT SUFFICIENT TIME TO ADAPT DESIGN, IF NEEDED.*

REVISIONS:
1. *01/29/2026 CONSERVATION COMMISSION COMMENTS*

Comment #5

Operation & Maintenance Plan

PLACES Associates, Inc.

256 Great Road, Suite 4, Littleton MA 01460 · (978) 486-0334 · www.placesassociates.com

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE (SPCC) PLAN
MERRIMACK VALLEY REGIONAL TRANSIT AUTHORITY
MAINTENANCE FACILITY
85 RAILROAD AVENUE
HAVERHILL, MASSACHUSETTS

Prepared for:

Merrimack Valley Regional Transit Authority
85 Railroad Avenue
Haverhill, Massachusetts 01835

Prepared by:

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(978) 465-1822

Project 081.01020
December 2018

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1.0 MANAGEMENT APPROVAL AND CERTIFICATION

1.1 Management Approval of SPCC Plan

This Spill Prevention, Control, and Countermeasure (SPCC) Plan has been developed to meet the requirements of U.S. Environmental Protection Agency (U.S. EPA) Title 40, Code of Federal Regulations, Part 112 (40 CFR 112) for the Merrimack Valley Regional Transit Authority facility (MVRTA) located at 85 Railroad Avenue in Haverhill, Massachusetts (the Facility). The programs and procedures outlined in the Plan will be implemented as described herein. The SPCC Plan will be periodically reviewed and updated as needed with changes at the Facility or with applicable regulations.

MVRTA has assigned its authority for implementation of this SPCC Plan to management personnel. The signature of the MVRTA management personnel authorized to approve and oversee the implementation of this SPCC Plan is provided in Appendix A.

1.2 Certification by Professional Engineer

I hereby certify that I or my agent has examined the MVRTA facility located at 85 Railroad Avenue in Haverhill, Massachusetts and, being familiar with the provisions of 40 CFR 112, attest that this SPCC Plan has been prepared in accordance with good engineering practices, including consideration of applicable industry standards. In addition, I attest that procedures for the required inspections and testing have been established, that this SPCC Plan is adequate for the Facility, and that this SPCC Plan is in accordance with 40 CFR Part 112 requirements. This certification shall not relieve the owner of the Facility (MVRTA) of their duty to prepare and fully implement the SPCC Plan in accordance with the provisions of 40 CFR 112.

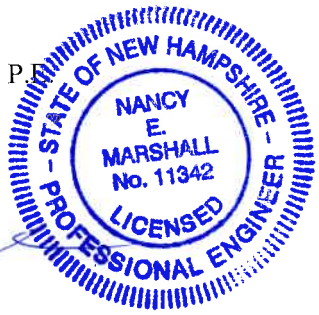
Registered Professional Engineer: Nancy E. Marshall, P.E.

Firm: Ransom Consulting, Inc.

PE Registration No.: 11342, New Hampshire

Signature: Nancy E. Marshall

Date: 12/14/18



2.0 CONFORMANCE WITH REQUIREMENTS

2.1 Regulatory Background

Originally published in 1973 under the authority of §311 of the Clean Water Act, the Oil Pollution Prevention regulation ([40 CFR 112), also known as the Spill Prevention, Control, and Countermeasure (SPCC) rule, sets forth procedures, methods, and requirements to prevent the discharge of oil from non-transportation-related onshore and offshore facilities into or upon waters of the U.S. In December 2006 and 2008, the U.S. EPA Administrator signed final rules to amend the existing SPCC rule to address a number of issues raised by its 2002 final rule, including those pertaining to facilities with smaller oil storage capacities, qualified oil-filled operational equipment, motive power containers, and mobile refuelers. On November 5, 2009, the EPA Administrator again amended the SPCC rule and promulgated the revisions to the December 2008 amendments. The November 5, 2009, rule was effective on January 14, 2010. A copy of 40 CFR 112 is provided in Appendix B.

2.2 Regulatory Deadlines

On October 7, 2010, EPA published in the *Federal Register* a SPCC compliance date extension for those onshore facilities not required to have a Facility Response Plan to November 10, 2011. Therefore, the regulatory deadlines are in effect at this time.

2.3 Plan Implementation and Availability

Implementation of this SPCC plan is the responsibility of the MVRTA Management. This includes personnel training, adherence to procedures, and maintaining an inventory of necessary cleanup equipment and supplies in each of the designated areas.

The SPCC Plan will be accessible at all times by response personnel and available for on-site review by the U.S. EPA Regional Administrator and/or Massachusetts Department of Environmental Protection (MassDEP) personnel during normal working hours. A copy of this SPCC Plan will be maintained at the following locations:

Copy No. 1: Maintenance Shop, with Right-to-Know Information; and

Copy No. 2: Office of the General Manager.

2.4 Applicable Requirements

The procedures, methods, and equipment described in this document meet the requirements of the following:

1. U.S. EPA, 40 CFR Parts 109, 110, and 112;

2. Massachusetts General Laws, Chapter 21E, Massachusetts Oil and Hazardous Material Release Prevention Act;

3. Chapter 527 Code of Massachusetts Regulations Section 9.00 (527 CMR 9.00) Board of Fire Prevention Regulations; and

4. Chapter 520 Code of Massachusetts Regulations Section 12.00 (520 CMR 12.00) Massachusetts Department of Public Safety Regulations.

2.5 Applicable Facilities

The SPCC rule applies to all non-transportation facilities which may reasonably be expected to discharge oil in quantities that may be harmful into or upon the navigable waters of the U.S., as defined in Section 3.0 of this SPCC Plan. The determination of "reasonable expectation" must be based solely upon consideration of the geographical and location aspects of the facility, excluding consideration of manmade features. Exceptions are the following:

1. Facilities that are not under the jurisdiction of the U.S. EPA;

2. Facilities that store less than 42,000 U.S. gallons (gallons) of oil underground;

3. Facilities used exclusively for wastewater treatment and not for any other requirements of 40 CFR 112; and

4. Facilities that store less than 1,320 gallons of oil aboveground. For purposes of this exemption, only containers of oil with a capacity of 55 gallons or greater are counted. The storage capacities of permanently closed containers, motive power containers, hot-mix asphalt (HMA) containers, residential heating oil tanks, and produced water containers are also excluded from the aggregate aboveground storage capacity of the facility.

The MVRTA facility located at 85 Railroad Avenue in Haverhill, Massachusetts stores more than 1,320 gallons of oil (i.e., new and used motor oil and transmission fluid) above ground and is located adjacent to the Merrimack River. The topography, manmade features and indoor storage of oil at the Facility have eliminated a reasonable expectation that oil could be discharged to the river.

2.6 Qualified Facilities

SPCC Plan requirements for *Qualified Facilities* are described in 40 CFR §112.6. The owner or operator of a *Qualified Facility* may self-certify his facility's SPCC Plan. A *Qualified Facility* meets the following criteria described under 40 CFR §112.3(g)(1):

1. The aggregate aboveground oil storage capacity of the facility is 10,000 gallons or less; and

2. The facility has had no single discharge as described in §112.1(b) exceeding 1,000 gallons or no two discharges as described in §112.1(b) each exceeding 42 U.S. gallons within any 12-month period in the 3 years prior to the SPCC Plan self-certification date; and

3. There is no individual aboveground oil storage container with a capacity greater than 5,000 gallons.

The MVRTA Facility has aggregate aboveground oil storage capacity of less than 10,000 gallons and the largest individual oil storage container is 1,000 gallons, which meets the criteria for a *Qualified Facility*;

however, the MVRTA has opted to have this SPCC Plan certified by a consulting Professional Engineer. In the future, MVRTA may opt to self-certify their SPCC Plan. Because the Facility meets the criteria for a Qualified Facility, it may take advantage of streamlined regulations.

2.7 Requirement for Preparation and Implementation of a SPCC Plan

Facilities regulated by 40 CFR 112 must prepare in writing and implement a SPCC Plan in accordance with 40 CFR §112.7 and any other applicable section of 40 CFR 112. The SPCC Plan must present procedures and plans that are implemented to prevent the discharge of oil into or upon the navigable waters of the U.S. and adjoining shorelines. The plan must also provide procedures that will be implemented to mitigate the release and minimize the threat to the public health and safety or to the environment, if a discharge of oil were to occur. Conformance with the applicable more stringent state regulations is required by 40 CFR §112.7(j).

2.8 SPCC Plan Review and Documentation

This SPCC Plan shall be reviewed and evaluated by MVRTA Management no less than once every 5 years. If no amendment to the existing SPCC Plan is necessary, on the Plan Review and Certification Log, the Facility Management should indicate the date of the plan review, the statement "No amendment is necessary as per 40 CFR 112.5(b)," and the reviewer's signature and title.

This SPCC Plan will be updated and revised as necessary in the event that:

1. There is a change in design, construction, operation, or maintenance at the Facility that materially affects the potential for oil to be discharged into or upon navigable waters such as the following:

    a. Tank commissioning or decommissioning;
    b. Replacement, reconstruction, or movement of tanks, piping systems, or secondary containment;
    c. Changes in products or services, if such changes would affect the Facilities' potential to discharge pollutants; and/or
    d. Revision of operating procedures;

2. The SPCC Plan fails in an emergency (i.e., it is deficient in controlling spills);

3. Local, state, or federal regulations change concerning SPCC rules;

4. More-effective technology becomes available; and/or

5. Amendments to the SPCC Plan have been requested by the Regional Administrator.

As long as the Facility has less than 10,000 gallons in aboveground oil storage capacity and meets the oil discharge history criteria in 40 CFR Part 112, the SPCC Plan can be reviewed and self-certified by MVRTA. If significant changes to the Facility have occurred since the last review such that the Facility no longer meets the Qualified Facility criteria, the plan must be updated and re-certified by a Professional Engineer.

Non-technical changes (i.e., those not requiring PE certification for Qualified or non-Qualified Facilities) would include:

1. Changes to contact information (names, titles, and phone numbers);

2. More-stringent requirements for stormwater discharges associated with National Pollutant Discharge Elimination System (NPDES) rules that are not addressed by and do not impact the SPCC plan;

3. Product changes if the new product is compatible with conditions in the existing tank and secondary containment; or

4. Other changes that do not materially increase or decrease the facility's potential to discharge oil.

Revisions which are incorporated into the body of this SPCC Plan shall be indicated on the Plan Review and Certification Log included in Appendix C, along with the date, the reason for the change, the findings and pages requiring revision, and the reviewer's name and signature. The revised SPCC Plan shall be implemented no later than 6 months after the revision date.

2.9 Regulatory Conformance

40 CFR 112.7(a)(2) allows for deviation from the following requirements, where applicable to a specific facility, if equivalent environmental protection by some other means of spill prevention, control or countermeasure is provided:

- §112.7, Paragraph (g), Security;

- §112.7, Paragraphs (h)(2) and (3), Loading/Unloading;

- §112.7, Paragraph (i), Field-Constructed Above-Ground Containers;

- Part 112, Subparts B and C, except the secondary containment requirements for oil storage locations, loading/unloading racks, bulk storage tanks, and mobile containers described in Paragraphs (c) and (h)(1) of §112.7, §§112.8(c)(2), and 112.8(c)(11), respectively.

Where a facility's SPCC Plan does not conform to the above applicable requirements, the reasons for nonconformance must be stated and the alternate methods employed to achieve equivalent environmental protection must be described in the SPCC Plan.

This SPCC Plan for the MVRTA Facility conforms to the applicable requirements provided in 40 CFR 112, such that a discharge of oil to navigable waters is not reasonably expected.

3.0 DEFINITIONS

Whenever the following terms are used in this document, they are intended to mean the following:

Bulk Storage Container:	Bulk storage container refers to 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.
Discharge:	Discharge includes, but is not limited to, any unauthorized spilling, leaking, pumping, pouring, emitting, emptying, or dumping.
Emergency Spill: Coordinator (ESC)	The Emergency Spill Coordinator is the person charged with the responsibility and delegated commensurate authority for directing and coordinating response operations and who knows how to request assistance from federal authorities operating under existing national and regional contingency plans.
Navigable Waters:	As defined in Section 502(7) of the Federal Water Pollution Control Act (FWPCA), and includes: (1) all navigable waters of the United States, as defined in judicial decisions prior to passage of the 1972 Amendments to the FWPCA (Pub. L. 92-500), and tributaries of such waters; (2) interstate waters; (3) intrastate lakes, rivers, and streams which are utilized by interstate travelers for recreational or other purposes; and (4) intrastate lakes, rivers, and streams from which fish or shellfish are taken and sold in interstate commerce.
Oil:	Oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, synthetic oils, mineral oils, oil refuse, or oil mixed with wastes other than dredged spoil. Oils used at the facilities include motor oil, fuel oil, insulating oil and lubricating oils.
Oil-Filled Operational Equipment:	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.
Operator:	The person(s) in control of or having the responsibility for operating or maintaining any property which is subject to these regulations.

Owner:	The person(s) who holds title to, or lawful possession of, real or personal property which is subject to these regulations.
Qualified Oil-filled Operational Equipment:	Qualified oil-filled operational equipment is oil-filled operational equipment located at a facility that has had no single discharge from any oil-filled operational equipment exceeding 1,000 U.S. gallons or no two discharges from any oil-filled operational equipment each exceeding 42 U.S. gallons within any 12-month period in the 3 years prior to the SPCC Plan certification date, or since becoming subject to 40 CFR 112 if the facility has been in operation for less than 3 years.
Secondary Containment:	A device or system or a combination thereof which include(s) a surface specifically designed to contain a release from spreading vertically or horizontally to the environment after discharge from an AST or its appurtenances.
Spill Event:	A discharge of oil in a quantity which violates applicable water quality standards or causes a film, discoloration, or sludge to be deposited on or beneath the surface of the water or upon adjoining shorelines.

4.0 FACILITY DESCRIPTION

4.1 General Information

Identification:	Merrimack Valley Regional Transit Authority Facility
Function:	Maintenance and fueling for public transportation vehicles
Location:	85 Railroad Avenue Haverhill, Massachusetts 01835 (See Figure 1)
Latitude:	42º 45' 57"
Longitude:	71º 05' 28"
Owner:	Merrimack Valley Regional Transit Authority 85 Railroad Avenue Haverhill, Massachusetts 01835 Attn: Joseph Costanzo, Administrator
Operator:	Merrimack Valley Regional Transit Authority 85 Railroad Avenue Haverhill, Massachusetts 01835 Attn: Tim Hegarty, General Manager
Emergency Spill Coordinator (ESC):	Dan Flaherty, Assistant General Manager–Maintenance

4.2 Facility Layout

Five buildings are aligned along the northwestern and southeastern sides of the Facility. The ground surface is primarily covered with asphalt pavement in areas where the buildings are not located. Curbing is present around the pavement at the northern end of the Facility so that runoff from the gate entrance is maintained on site. The asphalt surface is sloped inward from the perimeter to low areas in the central portions of the Facility, where catch basins are present to collect surface water runoff. The catch basins convey stormwater to a municipal storm sewer pump station.

The majority of the oil stored aboveground at the Facility is located in the Service Building located at the southern end of the site. The Service Building houses a diesel fuel pump and the bus-wash system. Trench drains located within the Service Building collect the vehicle wash water and recycle it through a wash-water recovery system. Potential releases of oil and/or diesel fuel from the oil stored within the Service Building would be captured by an oil/water separator (OWS) installed in the middle of the trench drain. Water from the OWS is pumped through the recycling system and reused in the bus wash system.

Oil is also stored with the Maintenance Building located along the southeastern property line. The Maintenance Building houses four bus lifts and a paint booth. The floor within the building is sloped to various trench drains located in the concrete slab. Oil/liquids released inside the Maintenance Building have the potential of entering the trench drains within the building; the drains all flow to a 3,000-gallon

oil/water separator (OWS) located beneath the floor of this building. The OWS discharges to the municipal sanitary sewer system at the northeast end of the property.

Five floor drains located in the Bus Storage/Parking Garage collect snow melt and rainwater from vehicles and discharge it to a third OWS located beneath the pavement by the northeast corner of the Garage. This OWS also discharges to the municipal sanitary sewer system located at the northeast end of the property. No oil is stored in bulk within the Bus Storage/Parking Garage.

Outside of the buildings, a fuel pump and a 10,000-gallon gasoline underground storage tank (UST) are located by the northwest corner of the Service Building. A 20,000-gallon diesel fuel UST is located in the area between the Service and Maintenance Buildings, and a pad-mounted transformer is located in a landscaped area by the northern entrance drive.

4.3 Surrounding Area

The Facility is located in a commercial/residential section of Haverhill, Massachusetts. The Facility is bounded by the Merrimack River to the northwest, a Massachusetts Bay Transit Authority (MBTA) commuter rail station to the southeast, a residence and undeveloped property to the northeast, and undeveloped property to the southwest.

4.4 Flow Directions and Facility Drainage

In general, the surrounding area slopes downward to the northwest from Railroad Avenue towards the Merrimack River. The ground surface at the Facility itself is sloped downward toward the center of the site such that precipitation falling with the Facility flows toward catch basins located in the pavement between the buildings. This stormwater collection system flows to a municipal storm sewer pump station located southwest of the Facility boundary.

The MVRTA recently expanded the existing office building to the north and installed additional catch basins in the pavement located at the northern end of the Site, down slope from the entrance drive and pad-mounted transformer. This system is connected to a Stormceptor stormwater treatment system that was installed by the northwest corner of the expanded office building. After treatment, the Stormceptor system discharges to the Merrimack River. A butterfly valve in the Stormceptor can be closed if needed to prevent a discharge from the system.

4.5 History of Spills

If a release of more than 1,000 gallons of oil into or upon navigable waters of the United States occurs in a single spill event or if there are two spill events of 42 gallons of oil or more into or upon navigable waters occurring within a 12-month period, the spill event(s) must be reported to the U.S. EPA. Refer to the Spill Reporting Procedures in Section 15.3 of this SPCC Plan. There have been no spill events subject to SPCC reporting requirements at the Facility since the early 1980s.

5.0 OIL-FILLED CONTAINERS AND EQUIPMENT

The bunk oil storage at the Facility consist of seven 275- to 1,000-gallon aboveground storage tanks (ASTs); several 55-gallon drums located within the Service and/or Maintenance Building; one 10,000-gallon gasoline underground storage tank (UST); and one 20,000-gallon diesel fuel UST. The gasoline fuel pump is located outdoors. The diesel fuel pump is located inside the Service Building. A summary of the oil-filled containers and equipment is provided in Table 1. The locations where oil is present at the Facility are indicated on Figure 2.

One energized electrical transformer (i.e., operating electrical equipment) with an unknown volume of mineral oil dielectric fluid [MODF]) is located at the Facility. For the purpose of this SPCC Plan, Ransom assumes that this oil-filled operating equipment is jurisdictional under 40 CFR 112. Hydraulic oil reservoirs lifts are present in the Maintenance Building; however, these tanks each contain less than 55 gallons of oil so are not jurisdictional under 40 CFR 112.

As described in 40 CFR 112.1(b), the owner or operator of a facility that has had no single discharge from any oil-filled operational equipment exceeding 1,000 U.S. gallons or no two discharges from any oil-filled operational equipment each exceeding 42 U.S. gallons within any 12-month period in the 3 years prior to the SPCC Plan certification date (i.e., "qualified" oil-filled equipment), may choose to implement alternate containment requirements as described in 40 CFR 112(k)(2) in lieu of general secondary containment requirements.

The transformer at the Facility is eligible for alternate secondary containment requirements according to the Federal Regulations (40 CFR 112). MVRTA is using the following procedures as alternative requirements in lieu of general secondary containment for the transformer:

- A written commitment of manpower, equipment, and materials by PDA management, as described in Section 1.2 and Appendix A of this SPCC Plan;
- Inspection procedures as described in Section 11.0 of this SPCC Plan; and
- Response procedures as described in Section 14.0 of this SPCC Plan.

6.0 DISCHARGE PREVENTION, CONTROL AND COUNTERMEASURES

The equipment and procedures which are used in the plan are practicable, cost-effective, and consistent with good engineering practices. In addition, the plans and procedures take advantage of the prevention and response capabilities of Facility employees and outside emergency response contractors as necessary.

6.1 Discharge Prevention

It is the MVRTA's goal not to have any oil discharges. Therefore, discharge prevention measures are in use at the Facility, including inspection, training, and routine handling procedures which are designed to prevent a release of oil into navigable waters. Inspection procedures and training are discussed in Sections 10.0 and 11.0, respectively. Oil handling procedures are discussed in Section 14.0 of this SPCC Plan.

6.2 Discharge Control

While it is MVRTA's goal not to have any oil discharges, if a discharge does occur, appropriate containment and/or diversionary structures or equipment are provided at the Facility to prevent a discharge of oil into or upon navigable waters or natural resources in quantities that may be harmful, or used to safely confine the release to the Facility property. Where secondary containment is utilized, the entire system, including walls and floor, is capable of retaining oil and is constructed so that any discharge from a primary containment system, such as a tank, will not escape the containment system before cleanup occurs. In accordance with 40 CFR §112.7(c)(1), one of the following prevention systems or its equivalent must be used at the Facility:

- Dikes, berms, or retaining walls sufficiently impervious to contain oil;
- Curbing;
- Culverting, gutters, or other drainage systems;
- Weirs, booms, or other barriers;
- Spill-diversion ponds;
- Retention ponds; or
- Sorbent materials.

The ASTs at the Facility are located indoors and include open-topped secondary tanks around the primary AST. Sorbent materials are located adjacent to drum storage areas and the diesel fuel pump for use as containment in the event of a release. Sorbent materials are also present on delivery trucks for use if needed when transferring fuel to the USTs. Curbing present along the northern end of the Facility would prevent a release from the pad-mounted transformer from migrating beyond the Facility boundary, and the Stormceptor system would contain oil discharged to it.

6.3 Discharge Countermeasures

If a discharge of oil occurs, MVRTA personnel will undertake the cleanup using existing staff or will contact a licensed contractor for assistance, depending on the size of the release. MVRTA maintains oil absorbent pads within the Maintenance Building at several locations, within the Service Building at the southern end near the ASTs, and outside by the gasoline dispenser pump. Discharge response procedures are discussed in Section 14.0.

7.0 POTENTIAL RELEASES

7.1 Oil Migration Potential

The majority of oil storage locations are indoors. Fuel transfers to or from the indoor tanks occur inside the Service and Maintenance Buildings. A release of oil inside these buildings would flow towards the trench drains where they would be captured by the oil/water separators installed beneath the floors of these buildings.

There is the potential for a spill event to occur outside of the buildings during fuel transfers associated with the two USTs and the dispenser pump. Based on the slope of the pavement around the USTs and dispenser pump, a release from these structures would migrate towards a catch basin located approximately 55 feet from the gasoline UST/dispenser pump, and approximately 75 feet from the diesel UST. A release entering the catch basin would flow to the municipal storm sewer pump station.

There is also the potential for a spill event to occur as a result of failure of the transformer. A release from the transformer would initially impact the landscaped area immediately surrounding the transformer. It the amount of oil release was sufficient to migrate beyond the landscaped area, under extreme conditions (i.e., during a precipitation event), the oil could migrate along the pavement located at the northern end of the facility to the newly installed catch basin. The catch basin discharges to Stormceptor treatment system. The system contains a butterfly valve that can be closed in the event of a release of oil in the area.

Based on the location of oil stored at the Facility, the secondary containment measures in place, and the surface topography, there is no reasonable likelihood that oil released at the Facility would impact navigable waters. Refer to Figure 3 for the sensitive receptors in proximity to the Facility.

7.2 Potential Release Mechanisms

7.2.1 Bulk Storage Tanks

Potential spill modes for ASTs and/or UST include tank puncture, rupture, corrosion, or toppling (for drums). Releases can also occur from distribution hoses or pipes associated with the bulk storage tanks. Releases from bulk storage tanks and their appurtenances can occur as a slow drip over time or suddenly as a catastrophic structural failure that releases the entire volume at once.

7.2.2 Transfer Operations

Potential spill modes during fuel transfer operations include rupture of the tank or delivery truck, failure of a hose or connection, or overfilling. Transfer operations associated with the ASTs and diesel fuel pump occur inside the buildings. Transfer operations to the USTs and from the gasoline distribution pump occur outside. Tank truck loading/unloading procedures meet the requirements and regulations established by the Department of Transportation. Tank trucks entering the facility are met by a member of the Maintenance Personnel, who checks the markings on the tank to ensure the correct product is being delivered. The volume of product in the tank being filled is measured with a graduated stick inserted in the tank by a member of the Maintenance Personnel before and after unloading. Fuel pump lines are equipped with quick-release connections which preclude fuel pumping in the event of a disconnection. Fuel transfers are supervised by both the delivery vehicle driver and a MVRTA employee so that the volume of

a release would be limited by the operators' initial response. Although the potential for a small release does exist, the potential for a substantial release is slight.

Potential for a spill exists during used-oil transfer operations either indoors or outdoors. Used oil is collected in a 55-gallon drum inside the Maintenance Building. The drum is periodically carried on a dolly or forklift to the Service Building, where it is emptied into either the 330-gallon or 1,000-gallon AST. The potential exists for a release of some or all of the drum contents during the transportation of the drum and/or transfer.

8.0 CONTAINMENT AND DIVERSIONARY STRUCTURES

8.1 Indoor ASTs and Drums

The indoor 1,000-gallon used oil AST is a double-wall tank. The 275- and 300-gallon ASTs in the Service Building and Maintenance Building are each enclosed by an open-topped secondary containment tank. No containment is provided for the 55-gallon drums stored inside; however, the floors are sloped to trench drains located the concrete floors. The trench drains in the Service Building flow to an oil/water separator (of unknown capacity) and then to the closed-loop wash-water recycling system. The trench drains in the Maintenance Building discharge to a 3,000-gallon capacity oil/water separator before discharging to the municipal sanitary sewer.

8.2 USTs

Each of the two USTs at the site is of double-walled fiberglass construction. Each UST is equipped with an electronic leak-detection system (Petrosonic) for early warning of an underground release.

8.3 Facility Yard

Releases in the facility yard could occur from fuel transfers associated with the USTs, gasoline fuel distribution pump, drums in transit to the Service Building, or the pad-mounted transformer. The facility yard site is graded so that surface flow is towards stormwater catch basin located in the pavement areas. The catch basins discharge to the municipal pump station or Stormceptor as described previously. The gasoline distribution pump is protected from vehicle traffic by bollards

9.0 DEMONSTRATION OF PRACTICABILITY

The existing secondary containment and stormwater collection systems can reasonably be expected to prevent the discharge of oil from the Facility into or upon the navigable waters of the United States or affect associated natural resources. Therefore, no demonstration of practicability is needed.

10.0 INSPECTIONS AND RECORDKEEPING

Inspections of the ASTs and USTs are conducted daily by facility personnel under the supervision of the Assistant General Manager. The ASTs are inspected informally (i.e., not documented) each day during inventory checks. The Maintenance Personnel are instructed to be aware of the condition of the equipment and to notify the Assistant General Manger if there is a problem so that it may be addressed.

Fuel volumes are inventoried on a daily basis. Control is maintained on incoming, outgoing, and static volumes on a daily basis for all fuel tanks. Daily fuel logs are kept and reconciled monthly. An electronic leak-detection system (Petrosonic) is in operation on the two USTs at the site. This system monitors tank volumes and liquid levels and indicates if a release has occurred.

The USTs are tightness-tested in accordance with federal, state, and local regulations, and records are kept on file in the General Manager's office. Line pressure sensors on pumped discharges are used to shut down pumping when pressure loss indicates a possible line leak. Underground storage tanks are equipped with an electronic leak-detection system (Petrosonic).

Records of these inspections are completed during each round of inspection, kept on file at the Facility, and available for review for a period of at least 3 years. Should a visible oil leak be discovered during any of the inspections, maintenance of the AST and/or piping and corrective actions will immediately be initiated as described in this plan. A copy of the inspection report is provided in Appendix D.

The inspections will include a visual inspection of the Facility to check for AST or plumbing damage or leakage, and the presence of stained areas. The areas that require routine inspection are as follows:

1. Indoor ASTs and diesel fuel dispenser pump;
2. Outdoor gasoline dispenser pump;
3. Outdoor pad-mounted transformer; and
4. Outdoor UST filling areas.

The three oil/water separators present at the Facility are inspected, pumped, and cleaned twice a year (late winter/early spring and fall).

11.0 PERSONNEL AND TRAINING

Training is required for personnel who have oil-handling responsibilities at the Facility to ensure that spill prevention and control measures are fully implemented. The Assistant General Manager is responsible for ensuring training is available to properly instruct Facility personnel in SPCC-related activities and policies. Records of training and annual briefings will be completed for each employee following the training sessions and will be maintained by the Owner for a minimum of 3 years. A training record form is provided in Appendix E.

All Facility personnel will be informed as to who is designated for spill prevention and who reports spill events and/or maintenance concerns to management. Training is provided using this SPCC Plan during orientation at the time of hire and at least annually. The training will include, at a minimum:

1. A detailed review of this plan;

2. A review of the operations and maintenance standard operating procedures to prevent and respond to discharges and spills;

3. A review of any spill events which have occurred since the last training date and the effectiveness of the response;

4. A discussion of new technologies which may be useful in preventing or detecting spills; and

5. Applicable pollution control laws, rules, and regulations.

12.0 SECURITY

12.1 Access Restriction

The Facility is secured with a chain-link fence and access-controlled gate at all times. The facility is staffed six days a week, from 11:30 p.m. on Sundays through 9:00 p.m. on Saturdays. A maintenance person is on duty during the facility's hours of operation. The Facility is alarmed during the hours when it is unstaffed.

12.2 Lock-Out Procedures

At the end of the day, the maintenance person locks the diesel and gasoline fuel pumps and turns off the power to the pumps at the breaker panels, which are located inside the Service and Maintenance Buildings, respectively. Pump meter readings are recorded at the beginning and end of each day.

12.3 Facility Lighting

Facility lighting is provided in such a way as to illuminate the area sufficiently after dark to address nighttime releases and inhibit acts of vandalism.

13.0 BULK STORAGE CONTAINERS

The ASTs are classified as bulk storage tanks according to 40 CFR 112. Specific requirements regarding bulk storage containers are provided in 40 CFR 112.8(c)

13.1 Compatible Materials

Each of the bulk storage tanks at the Facility is constructed from a material that is compatible with the fuel it contains.

13.2 Secondary Containment

The bulk storage tanks at the Facility have secondary containment and are located indoors where a release would be captured by the interior trench drains. Therefore, the secondary containment at the Facility is adequate to prevent a release to the environment.

13.3 Diked Areas

No exterior diked areas are present at the Facility.

13.4 Underground Storage Tanks

The two USTs present at the site are of double-walled fiberglass construction. The Facility does not contain buried metallic storage tanks.

13.5 Partially Buried or Bunkered Storage Tanks

The Facility does not contain partially buried metallic storage tanks, or bunkered tanks.

13.6 Inspection and Testing

Underground storage tanks are tightness-tested in accordance with federal, state, and local regulations, and records are kept on file in the General Manager's office. Line pressure sensors on pumped discharges are used to shut down pumping when pressure loss indicates a possible line leak. Underground storage tanks are equipped with an electronic leak-detection system (Petrosonic).

Equipment inspection is part of the daily routine at the facility. The Maintenance Person in charge of fueling operations reads the meters on the fuel pumps each morning when the pumps are unlocked and/or the power is turned on. The meter reading is compared with the meter reading from the previous night when the pump was locked and/or the power turned off.

Aboveground storage tanks are inspected informally (not documented) each day during inventory checks. The Maintenance Personnel are instructed to be aware of the condition of the equipment and to notify the Assistant General Manager if there is a problem so that appropriate action may be taken.

In addition to the daily routine at the facility, a monthly shop safety meeting is conducted to discuss safety-related procedures, situations, and facility equipment.

13.7 Heating Coils

There are no internal heating coils in use at the Facility.

13.8 Discharge Prevention

The location of each bulk storage container has been installed in accordance with good engineering practices to avoid discharges. Each bulk storage container is equipped with a direct-reading level gauge and a vent.

13.9 Effluent Discharges

There are no plant effluent discharges at the Facility.

13.10 Maintenance

The Facility promptly corrects any visible discharges which result in a loss of oil from a container, including but not limited to seams, gaskets, piping, pumps, valves, rivets, and bolts.

The Facility will promptly remove any accumulation of oil in the secondary containment structure and assesses the source of the oil entering the secondary containment system.

13.11 Mobile Storage Containers

There are no mobile storage containers in use at the Facility.

14.0 SPILL RESPONSE AND CONTINGENCY PLAN

The following section provides the response actions that will be taken at the Site in response to a release (spill) of oil to the environment. Although this SPCC plan addresses releases of oil to water, the procedures below describe the actions to be taken for release to any environmental medium. A release includes visual or analytical verification of oil contamination discovered at the Facility, a failed piping system, or a failed tank tightness test. A release during oil handling or observed leakage from an AST or associated piping would require immediate response. This section includes the following: safety and emergency response actions, spill response and cleanup procedures, spill reporting and documentation, and disposal of oil-impacted materials.

In addition to its use as a best management practice, National Grid will use this detailed oil spill contingency plan in lieu of general secondary containment for qualified oil-filled operational equipment in combination with (1) the inspection/monitoring program to detect equipment failure and/or a discharge and (2) the written commitment of manpower, equipment, and materials required to expeditiously control and remove a spill. The contingency plan follows the provisions of 40 CFR 109 as indicated in this plan.

Appendix F provides an SPCC Spill Notification Plan which outlines the reporting procedures in order of occurrence and provides notification information to be used in the event of a release. Titles and not names are used because personnel may change. A person filling the role of Emergency Coordinator can be reached at all times.

14.1 Safety and Emergency Response Actions

Call 911 for a major fire, explosion, or other similar situation requiring emergency response personnel. The Assistant General Manager or General Manager will determine the need to contact the local emergency responders. The following is a list of emergency contacts:

Fire	911 (Emergency)
Police	911 (Emergency)
Hospital	Merrimack Valley Hospital 140 Lincoln Avenue Haverhill, Massachusetts 978-374-2000

The route to the nearest hospital with emergency room services is also provided in Appendix F.

14.2 Spill Response Procedures

The spill response organization is composed of the following positions: the on-scene Maintenance Personnel, the Assistant General Manager, the General Manager, and the Facility Administrator. An updated list of the persons holding these positions is provided in Appendix F of this SPCC Plan.

The Maintenance Personnel at the scene will:

- Stop or shut off leak, if possible;

- Evacuate all personnel not involved in the cleanup of the spill if the spill cannot be immediately stopped, controlled, or contained;
- Place sandbags to prevent spill from moving off site;
- Place absorbent pillows in front of the sandbags;
- Stop traffic from entering the spill area;
- Control access to the spill site;
- Ensure that no ignition sources are present or allowed into the spill site;
- Initiate cleanup and removal actions;
- Notify the Assistant General Manager, regardless of the size of the spill; and
- Perform other duties as directed by the Assistant General Manager.

The Assistant General Manager will:

- Determine the cause or source of the spill and ensure that immediate response actions to stop the leak and control the spill have been, or are being, taken;
- Notify the General Manager or alternate as soon as possible;
- Determine the spill size and assess hazard to personnel, building, and environment;
- Initiate oil/fuel containment action with the required manpower, equipment, and materials in accordance with the Response Action outlined below;
- Notify the Fire Department in the event of a fire or the likelihood of a fire;
- Ensure that there is no smoking in the area of the spill;
- Alert neighbors if personal danger is possible or if the spill is not being totally contained on facility property;
- Initiate cleanup and removal operations in accordance with the Response Action outlined below;
- Maintain a chronological log of events and communication during the spill incident, containment, and cleanup. Record times, names, conversations, instructions given and instructions received; and
- Take photographs of the spill and containment and cleanup activities.

The General Manager will:

- Notify federal, state, and local agencies as appropriate;
- Request assistance from cleanup contractor, if necessary;
- Document all actions and provide reports to the Facility Administrator and government agencies, as required;
- Update the SPCC Plan as necessary; and
- Notify the Facility Administrator of the incident and any requests for information from the press so that a response can be made. Obtain the name, publication or station, and telephone number of any reporter requesting information.

14.3 Spill Reporting Procedure

Facility personnel should be made aware of the need to report all spills to the Assistant General Manager. The Assistant General Manager is then responsible for all subsequent reporting and documentation procedures. An SPCC Spill Notification Plan for petroleum product spill reporting is provided in Appendix F. Spill reporting procedures shall be as follows:

1. **Immediately** notify the Assistant General Manager:

Dan Flaherty	978-469-6878 x 125	(business)
	978-618-5170	(mobile)

2. **Within 2 hours** of discovery of a spill, notify the MassDEP if:

   - The discharge is likely greater than or equal to 10 gallons of oil or 25 gallons of MODF and it is likely that the release occurred within any 24-hour period or less;
   - A discharge of any quantity results in a sheen on surface water;
   - The discharge is an imminent hazard (i.e., poses a threat to human life, such as an explosive hazard, or a threat to public safety or public water supply); **or**
   - The discharge is to a storm water system or sanitary sewer system.

   Facility personnel should complete the Release Reporting Form, discussed below and provided in Appendix F to this SPCC Plan, to compile the information required by the MassDEP in advance of notification to the Spill Hotline.

   MassDEP Spill Hotline 888-304-1133 (24 hours)

3. **Upon discovery of impact** to a navigable waterway, notify:

   NRC 800-424-8802 (24 hours)

The Assistant General Manager shall determine whether the spill has impacted navigable waters or adjacent shorelines; caused a sheen, a sludge, or an emulsion; or violated any applicable water quality standards and must be reported to the NRC. The following are the applicable national reportable quantities (RQ) for discharges of oil:

- For discharges of petroleum (oil) to surface waters, the RQ is any amount that causes a sheen upon the surface of the water.
- For spills of petroleum (oil) at a facility that has been notified in writing by a water utility that is located in a delineated public water supply wellhead protection area, the RQ is 55 gallons or more.
- For releases of oil to the environment within the facility boundary, excluding navigable waters, the RQ is 1,000 gallons.

4. **Within 60 days** of a single discharge of more than 1,000 gallons or for any two discharges of more than 42 gallons of oil in any 12-month period**,** submit written information to the U.S. EPA Regional Administrator as specified in 40 CFR 112.4:

   U.S. EPA Region 1 Administrator
   One Congress Street, Suite 1100
   Boston, Massachusetts 02114-2023

   The report shall include the following:

   - A copy of this SPCC Plan;
   - Amount and type of oil released;
   - Name and address of third parties damaged by the spill, including description and cost estimate of damages;
   - Cause of spill or failure analysis;
   - Containment and removal methods employed including costs; and
   - Measures taken for recurrence prevention.

   It is the responsibility of the U.S. EPA Regional Administrator to assign an on-scene coordinator to investigate all spills which are reported, in reference to the adequacy of the actions taken by the discharger or non-federal entities. The on-scene coordinator shall monitor and provide advice or assistance as required. If appropriate action is not being taken, the on-scene coordinator will take charge of the response activities.

14.4 Spill Documentation

Employees shall document all spill incidents on the Release Reporting Form, provided in Appendix G of this SPCC Plan. Information regarding the incident, such as the date and time of occurrence, the type of release, the personnel reporting the incident, the agencies notified, and the actions taken, should be

recorded and reported to the MassDEP. Photographic documentation should be made and maintained with the incident file.

Release Reporting Forms for a spill of any quantity will be maintained indefinitely at the Facility in the SPCC Plan.

14.5 Spill Cleanup Procedures

The facility is equipped with several Spill Control Stations (SCS), which generally contain absorbent booms, absorbent pads, plastic bags, plastic or vinyl gloves, equipment-use log sheet, and a Material Safety Data Sheet for each petroleum product. The Assistant General Manager is responsible for purchasing and maintaining spill control equipment and supplies and ensuring their proper use.

All containment and cleanup operations will be in accordance with safe work practices. Personnel shall utilize personal protective clothing and equipment when required. Cleanup procedures for oil and debris should include the following precautions and procedures.

1. Once a spill has been contained and leak(s) repaired, cleanup crews may begin to remove the spilled oil using oil-absorbent materials. On permeable surfaces, this will include removing the affected surface material around the spill site. The oil spill area will be cleaned up to remove visible traces.

2. All cleanup materials, including protective clothing, if contaminated with oil, will be placed in standard Department of Transportation (DOT) open-top drums.

3. Drums should be filled with sufficient absorbent material to eliminate liquids. Drums will be filled no more than half full with contaminated soil or saturated absorbent material. This is to keep the drum to a manageable weight.

4. Full drums should be covered with the appropriate lid and ring, labeled for contents, hazard identification, and date.

14.6 Remediation Waste Management

Spilled oil and oil-contaminated material will be removed from the Facility by a licensed oil and hazardous waste cleanup contractor. The Facility will use the following contractor as needed to response to a release of oil:

Cyn Environmental 1-800-622-6365

14.7 Press Release Guidelines

Release of any information will be made by the Facility Administrator. The Assistant General Manager will:

- Obtain the name, publication or station, and telephone number of reporter requesting information;

- Notify the General Manager of any request for information;

- Prevent press photographers from photographing or filming the incident without prior approval of the Facility Administrator; and

- Forbid any press conferences from being held on facility premises.

15.0 APPLICABILITY OF SUBSTANTIAL HARM CRITERIA

A more-detailed Facility Response Plan (FRP) is required when the location could reasonably be expected to cause substantial harm to the environment by discharging oil into or on navigable waters or adjoining shorelines under 40 CFR 112.20 of the Oil Pollution regulations. Because the Facility does not meet the criteria for Substantial Harm as outlined in Appendix C of 40 CFR 112, an FRP is not required. A "Certification of Substantial Harm Determination Form," provided in Appendix H, documents the non-applicability of a U.S. EPA FRP to the Site.

TABLE 1: SUMMARY OF OIL-FILLED CONTAINERS AND SPILL INFORMATION
Spill Prevention, Control, and Countermeasure (SPCC) Plan
Merrimack Valley Regional Transit Authority
Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts

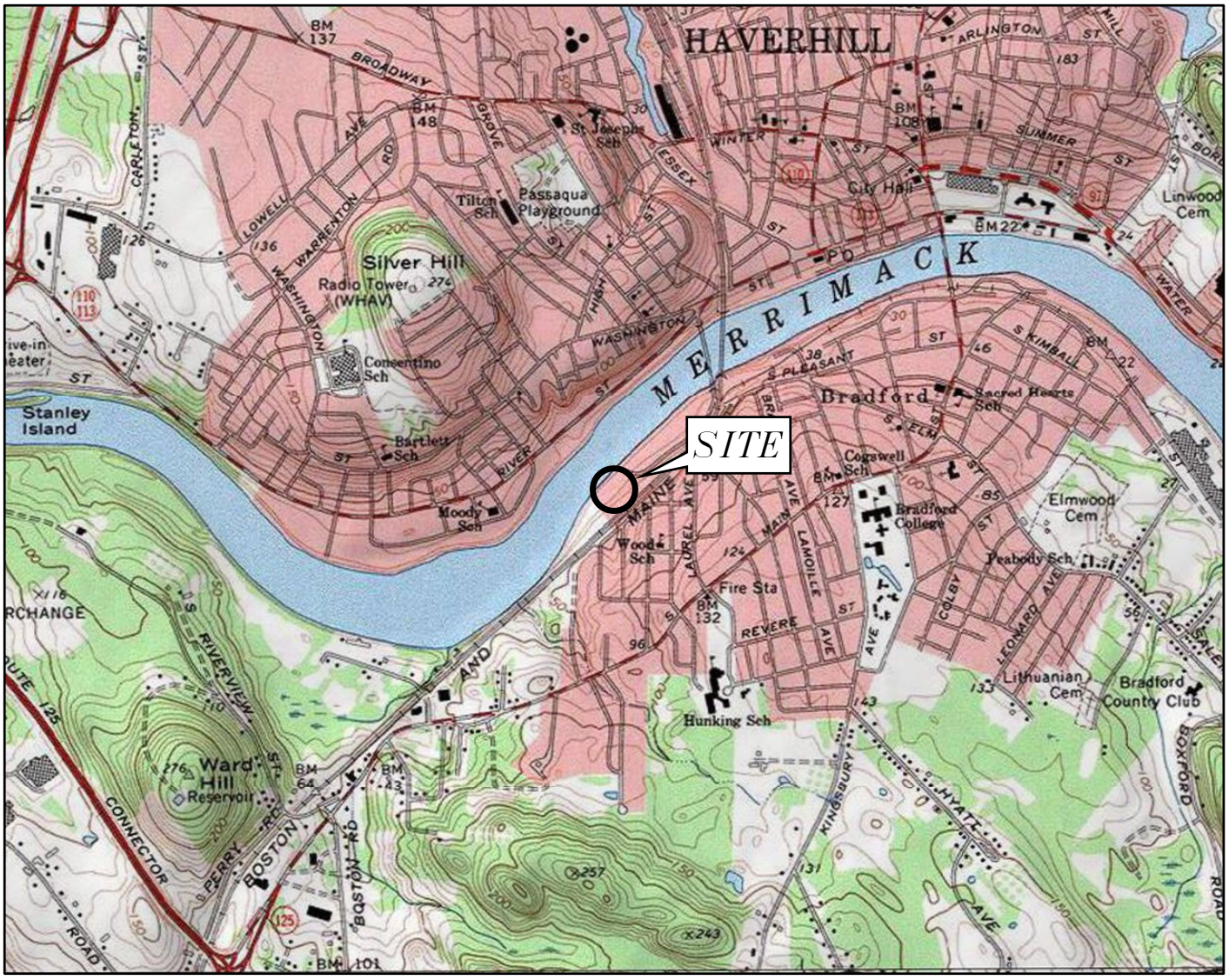
Oil Storage Area	Oil-Filled Container	Capacity (Gallons)	Contents	Description	Containment	Worst Case Receptor	Comments
Service Building - West Wall	AST	275	New Automatic Transmission Fluid (ATF)	Single wall rectangular AST; pump on top	Open-top steel basin on skids	Wash water recycling system	• The ASTs are filled or drained inside the Service Building, which contains a concrete floor. • A release due to AST failure would enter the surrounding containment basin. • AST flexible hoses are located outside of the containment tanks so a release from a hose could bypass the containment system and spill to the concrete floor. A release to the floor would migrate to a drainage trench in the concrete floor. • The drainage trenches are part of a non-discharging recycling system for a wash water system in the building; discharges entering the trenches are **not** released to the environment.
	AST	330	Used Gear oil	Single wall rectangular AST	Open-top steel basin on skids	Wash water recycling system	
	AST	1,000	Used Motor oil	Double-wall cylindrical AST, vertical	Double-wall AST on skids	Wash water recycling system	
Service Building - East Wall	AST	275	New Motor oil	Single wall rectangular AST; pump on top	Open-top steel basin on skids	Wash water recycling system	
	Fuel Pump (Transfer Area)	Varies	Diesel fuel	Indoor pump connected to outdoor 20,000-gal UST	Concrete floor of building slopes to drainage trenches	Wash water recycling system	• An emergency shut-off switch is located near the diesel fuel pump. • The drainage trenches are part of a non-discharging recycling system for a wash water system in the building; discharges entering the trenches are not released to the environment.

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Oil Storage Area	Oil-Filled Container	Capacity (Gallons)	Contents	Description	Containment	Worst Case Receptor	Comments
Maintenance Building	AST	275	New Transmission fluid	Single wall rectangular AST; pump on top	Open-top steel basin on skids	Drainage trenches to OWS to municipal sewer	• The ASTs are filled or drained inside the Maintenance Building, which contains a concrete floor. • A release due to AST failure would enter the surrounding containment tank. • AST flexible hoses are located outside of the containment tanks so a release from a hose could bypass the containment system and spill to the concrete floor. A release to the floor would migrate to a drainage trench. • The drainage trenches discharge to an oil/water separator before entering the municipal sanitary sewer; discharges entering the trenches are **not** released to the environment.
	AST	275	New Motor oil	Single wall rectangular AST; pump on top	Open-top steel basin on skids	Drainage trenches to OWS to municipal sewer	
	AST	330	Used Motor oil	Single wall rectangular AST	Open-top steel basin on skids	Drainage trenches to OWS to municipal sewer	
	Oil Filter Storage Area	< 55	Used Motor oil	Oil Transfer Area; Quantities vary	4'x4'x1' metal basin	Drainage trenches to OWS to municipal sewer	• Non-regulated containers less than 55 gallons
	Drums	15–55	Used Motor oil	Mobile, on casters; funnel used for filling; ±5 Drums	Concrete floor of building slopes to drainage trenches	Drainage trenches to OWS to municipal sewer	• The drum are used inside the Maintenance Building, which contains a concrete floor. • A release from a drum would spill to the concrete floor and migrate to a drainage trench. • The drainage trenches discharge to an oil/water separator before entering the municipal sewer; discharges entering the trenches are **not** released to the environment.
Maintenance Building (Continued)	Drums	55	Motor oil, transmission fluid, grease	Stationary; directly on floor; ±8 Drums	Concrete floor of building slopes to drainage trenches	Drainage trenches to OWS to municipal sewer	

TABLE 1: SUMMARY OF OIL-FILLED CONTAINERS AND SPILL INFORMATION
Spill Prevention, Control, and Countermeasure (SPCC) Plan
Merrimack Valley Regional Transit Authority
Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts

Oil Storage Area	Oil-Filled Container	Capacity (Gallons)	Contents	Description	Containment	Worst Case Receptor	Comments
Yard	Fuel Pump from 10,000-gal UST	Varies	Gasoline	On concrete pad and surrounded by asphalt	None; Protected by bollards	Catch Basin, +/-50 feet	• A release from the fuel pump would spill to the concrete pad and asphalt pavement and could migrate to a catch basin which discharges to the municipal storm sewer.
	UST	10,000	Gasoline	Double-wall UST	Double-wall UST with leak detection system	Subsurface soil; groundwater	• A release from the truck during filling of the UST would spill to the asphalt pavement and could migrate approximately 50 feet to a catch basin which discharges to the municipal sewer.
	UST	20,000	Diesel fuel	Double-wall UST	Double-wall UST with leak detection system	Subsurface soil; groundwater	• A release from the truck during filling of the UST would spill to the asphalt pavement and could migrate approximately 75 feet to a catch basin which discharges to the municipal sewer.
	Transformer	Unknown	Mineral oil dielectric fluid	Energized oil-filled operating equipment	Metal cabinet	Landscaped area	• If a release migrates beyond the metal cabinet and surrounding landscaped area, it could migrate across the asphalt parking lot to a catch basin which charges to the municipal sewer.



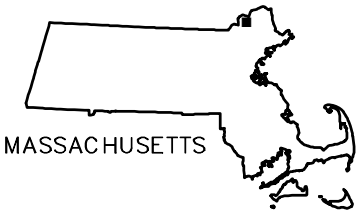
TAKEN FROM U.S.G.S. 7.5 MINUTE SERIES TOPOGRAPHIC MAP OF HAVERHILL, MASSACHUSETTS–1988.

CONTOUR INTERVAL IS 10 FEET

SITE COORDINATES: LATITUDE 42° 45'57"
LONGITUDE 71° 05'28"

UTM COORDINATES: 47:36:942mN
3:28:951mE

N
W E
S



QUADRANGLE LOCATION

0 1,000 2,000 4,000

SCALE in FEET 1:24,000

RANSOM Consulting Engineers and Scientists

SITE LOCATION MAP

PREPARED FOR:

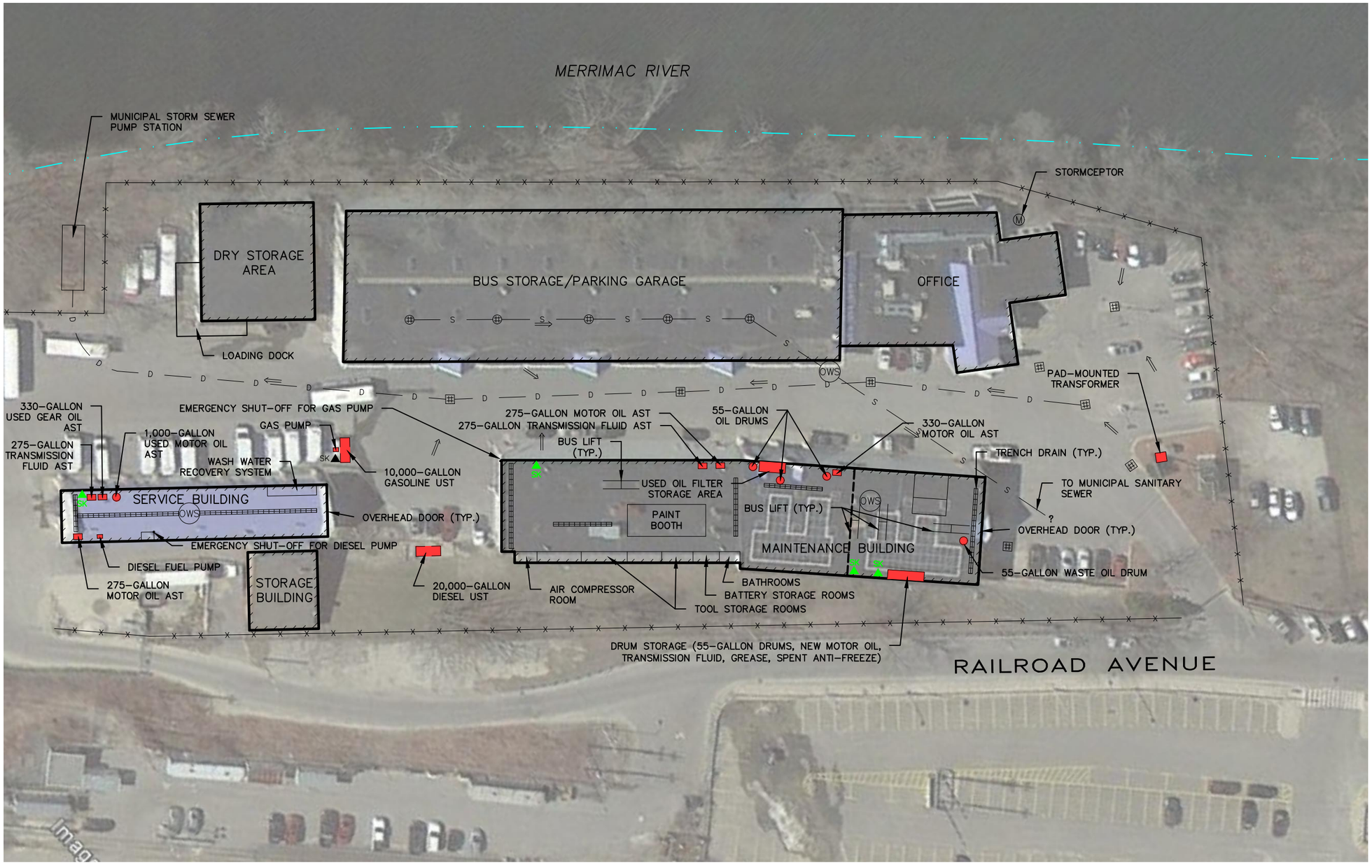
MERRIMAC VALLEY REGIONAL TRANSIT AUTHORITY

SITE:

MVRTA MAINTENANCE FACILITY
85 RAILROAD AVENUE
HAVERHILL, MASSACHUSETTS

DATE: DECEMBER 2018
PROJECT: 081.01020
FIGURE: 1

PM File: MCRTA_Maint-Facility-F1_SLM.mxd



LEGEND:

- CATCH BASIN
- FLOOR DRAIN
- OIL/WATER SEPARATOR
- SPILL KIT
- SURAFCE FLOW DIRECTION
- OIL STORAGE AREA
- STORM DRAIN LINE
- SANITARY DRAIN LINE
- FENCE

NOTES:

1. SITE PLAN BASED ON BASE PLAN PROVIDED BY MVRTA AND OBSERVATIONS MADE BY RANSOM CONSULTING, INC. ON SEPTEMBER 26, 2018.
2. SOME FEATURES ARE APPROXIMATE IN LOCATION AND SCALE.

0 30 60 120

SCALE in FEET
1"=60'

RANSOM Consulting, Inc.

PREPARED FOR:

MERRIMAC VALLEY REGIONAL TRANSIT AUTHORITY

SITE:

MVRTA MAINTENANCE FACILITY
85 RAILROAD AVENUE
HAVERHILL, MASSACHUSETTS

FACILITY SPCC PLAN

DATE: DECEMBER 2018
PROJECT: 081.01020
FIGURE: 2

X:\Ransom_NewEngland\Massachusetts\Haverhill_MA\MVRTA_Maint_Facility\Drawings\MVRTA_Maint_Facility.dwg; F2_Fac_SPCC_Plan December 14, 2018

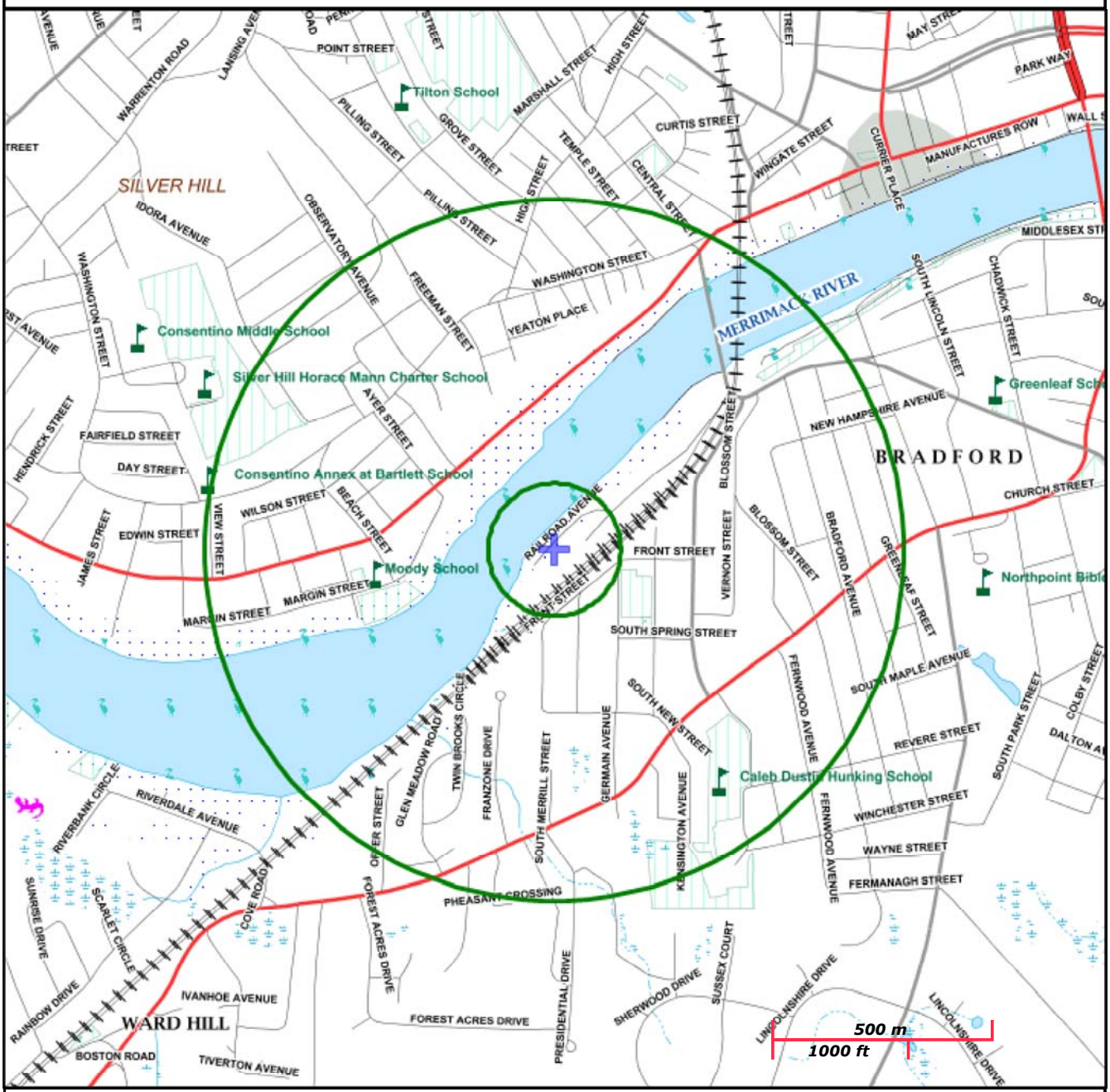
MassDEP - Bureau of Waste Site Cleanup

Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

Site Information:
MVRTA MAINTENANCE FACILITY
85 RAILROAD AVENUE HAVERHILL, MA
NAD83 UTM Meters:
4736930mN , 328886mE (Zone: 19)
November 27, 2018

The information shown is the best available at the date of printing. However, it may be incomplete. The responsible party and LSP are ultimately responsible for ascertaining the true conditions surrounding the site. Metadata for data layers shown on this map can be found at: http://www.mass.gov/mgis/.

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail
Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct
Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam
Aquifers: Medium Yield, High Yield, EPA Sole Source
Non Potential Drinking Water Source Area: Medium, High (Yield)
PWS Protection Areas: Zone II, IWPA, Zone A
Hydrography: Open Water, PWS Reservoir, Tidal Flat
Wetlands: Freshwater, Saltwater, Cranberry Bog
FEMA 100yr Floodplain; Protected Open Space; ACEC
Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential
Solid Waste Landfill; PWS: Com.GW,SW, Emerg.,Non-Com.

Figure 3

APPENDIX A

Management Commitment

Spill Prevention, Control, and
Countermeasure (SPCC) Plan
Merrimack Valley Regional Transit Authority
Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts

STATEMENT OF MANAGEMENT COMMITMENT

This Spill Prevention Control and Countermeasure Plan (SPCC) has been developed to meet the requirements of 40 CFR 112 for the Merrimack Valley Regional Transit Authority Facility (MVRTA) located at 85 Railroad Avenue in Haverhill, Massachusetts (the Facility) and will be implemented as described herein. The programs and procedures outlined in the Plan will be periodically reviewed and updated in accordance with 40 CFR 112, as amended.

This SPCC plan is fully approved by the management of MVRTA. MVRTA has the necessary resources, including funding, personnel, equipment, and management systems to effectively implement and maintain this plan. I have the authority to commit the resources necessary to implement the Spill Prevention Control and Countermeasure Plan for this facility.

Name: _____

Title: _____

Signature: _____

Date: _____

APPENDIX B

40 CFR Part 112, Oil Pollution Prevention

Spill Prevention, Control, and
Countermeasure (SPCC) Plan
Merrimack Valley Regional Transit Authority
Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts

ELECTRONIC CODE OF FEDERAL REGULATIONS

e-CFR Data is current as of August 19, 2013

Title 40: Protection of Environment

PART 112—OIL POLLUTION PREVENTION

Contents

Subpart A—Applicability, Definitions, and General Requirements for All Facilities and All Types of Oils

§ 112.1 General applicability.
§ 112.2 Definitions.
§ 112.3 Requirement to prepare and implement a Spill Prevention, Control, and Countermeasure Plan.
§ 112.4 Amendment of Spill Prevention, Control, and Countermeasure Plan by Regional Administrator.
§ 112.5 Amendment of Spill Prevention, Control, and Countermeasure Plan by owners or operators.
§ 112.6 Qualified Facilities Plan Requirements.
§ 112.7 General requirements for Spill Prevention, Control, and Countermeasure Plans.

Subpart B—Requirements for Petroleum Oils and Non-Petroleum Oils, Except Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and Vegetable Oils (Including Oils from Seeds, Nuts, Fruits, and Kernels)

§ 112.8 Spill Prevention, Control, and Countermeasure Plan requirements for onshore facilities (excluding production facilities).
§ 112.9 Spill Prevention, Control, and Countermeasure Plan Requirements for onshore oil production facilities (excluding drilling and workover facilities).
§ 112.10 Spill Prevention, Control, and Countermeasure Plan requirements for onshore oil drilling and workover facilities.
§ 112.11 Spill Prevention, Control, and Countermeasure Plan requirements for offshore oil drilling, production, or workover facilities.

Subpart C—Requirements for Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and for Vegetable Oils, including Oils from Seeds, Nuts, Fruits, and Kernels

§ 112.12 Spill Prevention, Control, and Countermeasure Plan requirements.
§§ 112.13-112.15 [Reserved]

Subpart D—Response Requirements

§ 112.20 Facility response plans.
§ 112.21 Facility response training and drills/exercises.
Appendix A to Part 112—Memorandum of Understanding Between the Secretary of Transportation and the Administrator of the Environmental Protection Agency
Appendix B to Part 112—Memorandum of Understanding Among the Secretary of the Interior, Secretary of Transportation, and Administrator of the Environmental Protection Agency
Appendix C to Part 112—Substantial Harm Criteria
Appendix D to Part 112—Determination of a Worst Case Discharge Planning Volume
Appendix E to Part 112—Determination and Evaluation of Required Response Resources for Facility

Response Plans
Appendix F to Part 112—Facility-Specific Response Plan
Appendix G to Part 112—Tier I Qualified Facility SPCC Plan

AUTHORITY: 33 U.S.C. 1251 *et seq.;* 33 U.S.C. 2720; E.O. 12777 (October 18, 1991), 3 CFR, 1991 Comp., p. 351.

SOURCE: 38 FR 34165, Dec. 11, 1973, unless otherwise noted.

EDITORIAL NOTE: Nomenclature changes to part 112 appear at 65 FR 40798, June 30, 2000.

Subpart A—Applicability, Definitions, and General Requirements for All Facilities and All Types of Oils

SOURCE: 67 FR 47140, July 17, 2002, unless otherwise noted.

§ 112.1 General applicability.

(a)(1) This part establishes procedures, methods, equipment, and other requirements to prevent the discharge of oil from non-transportation-related onshore and offshore facilities into or upon the navigable waters of the United States or adjoining shorelines, or into or upon the waters of the contiguous zone, or in connection with activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974, or that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Magnuson Fishery Conservation and Management Act).

(2) As used in this part, words in the singular also include the plural and words in the masculine gender also include the feminine and vice versa, as the case may require.

(b) Except as provided in paragraph (d) of this section, this part applies to any owner or operator of a non-transportation-related onshore or offshore facility engaged in drilling, producing, gathering, storing, processing, refining, transferring, distributing, using, or consuming oil and oil products, which due to its location, could reasonably be expected to discharge oil in quantities that may be harmful, as described in part 110 of this chapter, into or upon the navigable waters of the United States or adjoining shorelines, or into or upon the waters of the contiguous zone, or in connection with activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974, or that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Magnuson Fishery Conservation and Management Act) that has oil in:

(1) Any aboveground container;

(2) Any completely buried tank as defined in § 112.2;

(3) Any container that is used for standby storage, for seasonal storage, or for temporary storage, or not otherwise “permanently closed” as defined in § 112.2;

(4) Any “bunkered tank” or “partially buried tank” as defined in § 112.2, or any container in a vault, each of which is considered an aboveground storage container for purposes of this part.

(c) As provided in section 313 of the Clean Water Act (CWA), departments, agencies, and instrumentalities of the Federal government are subject to this part to the same extent as any person.

(d) Except as provided in paragraph (f) of this section, this part does not apply to:

(1) The owner or operator of any facility, equipment, or operation that is not subject to the jurisdiction of the Environmental Protection Agency (EPA) under section 311(j)(1)(C) of the CWA, as follows:

(i) Any onshore or offshore facility, that due to its location, could not reasonably be expected to have a discharge as described in paragraph (b) of this section. This determination must be based solely upon consideration of the geographical and location aspects of the facility (such as proximity to navigable waters or adjoining shorelines, land contour, drainage, etc.) and must exclude consideration of manmade features such as dikes, equipment or other structures, which may serve to restrain, hinder, contain, or otherwise prevent a discharge as described in paragraph (b) of this section.

(ii) Any equipment, or operation of a vessel or transportation-related onshore or offshore facility which is subject to the authority and control of the U.S. Department of Transportation, as defined in the Memorandum of Understanding between the Secretary of Transportation and the Administrator of EPA, dated November 24, 1971 (appendix A of this part).

(iii) Any equipment, or operation of a vessel or onshore or offshore facility which is subject to the authority and control of the U.S. Department of Transportation or the U.S. Department of the Interior, as defined in the Memorandum of Understanding between the Secretary of Transportation, the Secretary of the Interior, and the Administrator of EPA, dated November 8, 1993 (appendix B of this part).

(2) Any facility which, although otherwise subject to the jurisdiction of EPA, meets both of the following requirements:

(i) The completely buried storage capacity of the facility is 42,000 U.S. gallons or less of oil. For purposes of this exemption, the completely buried storage capacity of a facility excludes the capacity of a completely buried tank, as defined in § 112.2, and connected underground piping, underground ancillary equipment, and containment systems, that is currently subject to all of the technical requirements of part 280 of this chapter or all of the technical requirements of a State program approved under part 281 of this chapter, or the capacity of any underground oil storage tanks deferred under 40 CFR part 280 that supply emergency diesel generators at a nuclear power generation facility licensed by the Nuclear Regulatory Commission and subject to any Nuclear Regulatory Commission provision regarding design and quality criteria, including, but not limited to, 10 CFR part 50. The completely buried storage capacity of a facility also excludes the capacity of a container that is “permanently closed,” as defined in § 112.2 and the capacity of intra-facility gathering lines subject to the regulatory requirements of 49 CFR part 192 or 195.

(ii) The aggregate aboveground storage capacity of the facility is 1,320 U.S. gallons or less of oil. For the purposes of this exemption, only containers with a capacity of 55 U.S. gallons or greater are counted. The aggregate aboveground storage capacity of a facility excludes:

(A) The capacity of a container that is “permanently closed” as defined in § 112.2;

(B) The capacity of a “motive power container” as defined in § 112.2;

(C) The capacity of hot-mix asphalt or any hot-mix asphalt container;

(D) The capacity of a container for heating oil used solely at a single-family residence;

(E) The capacity of pesticide application equipment and related mix containers.

(F) The capacity of any milk and milk product container and associated piping and appurtenances.

(3) Any offshore oil drilling, production, or workover facility that is subject to the notices and regulations of the Minerals Management Service, as specified in the Memorandum of Understanding between the Secretary of Transportation, the Secretary of the Interior, and the Administrator of EPA, dated November 8, 1993 (appendix B of this part).

(4) Any completely buried storage tank, as defined in § 112.2, and connected underground piping, underground ancillary equipment, and containment systems, at any facility, that is subject to all of the technical requirements of part 280 of this chapter or a State program approved under part 281 of this chapter, or any underground oil storage tanks including below-grade vaulted tanks, deferred under 40

CFR part 280, as originally promulgated, that supply emergency diesel generators at a nuclear power generation facility licensed by the Nuclear Regulatory Commission, provided that such a tank is subject to any Nuclear Regulatory Commission provision regarding design and quality criteria, including, but not limited to, 10 CFR part 50. Such emergency generator tanks must be marked on the facility diagram as provided in § 112.7(a)(3), if the facility is otherwise subject to this part.

(5) Any container with a storage capacity of less than 55 gallons of oil.

(6) Any facility or part thereof used exclusively for wastewater treatment and not used to satisfy any requirement of this part. The production, recovery, or recycling of oil is not wastewater treatment for purposes of this paragraph.

(7) Any “motive power container,” as defined in § 112.2. The transfer of fuel or other oil into a motive power container at an otherwise regulated facility is not eligible for this exemption.

(8) Hot-mix asphalt, or any hot-mix asphalt container.

(9) Any container for heating oil used solely at a single-family residence.

(10) Any pesticide application equipment or related mix containers.

(11) Intra-facility gathering lines subject to the regulatory requirements of 49 CFR part 192 or 195, except that such a line's location must be identified and marked as “exempt” on the facility diagram as provided in § 112.7(a)(3), if the facility is otherwise subject to this part.

(12) Any milk and milk product container and associated piping and appurtenances.

(e) This part establishes requirements for the preparation and implementation of Spill Prevention, Control, and Countermeasure (SPCC) Plans. SPCC Plans are designed to complement existing laws, regulations, rules, standards, policies, and procedures pertaining to safety standards, fire prevention, and pollution prevention rules. The purpose of an SPCC Plan is to form a comprehensive Federal/State spill prevention program that minimizes the potential for discharges. The SPCC Plan must address all relevant spill prevention, control, and countermeasures necessary at the specific facility. Compliance with this part does not in any way relieve the owner or operator of an onshore or an offshore facility from compliance with other Federal, State, or local laws.

(f) Notwithstanding paragraph (d) of this section, the Regional Administrator may require that the owner or operator of any facility subject to the jurisdiction of EPA under section 311(j) of the CWA prepare and implement an SPCC Plan, or any applicable part, to carry out the purposes of the CWA.

(1) Following a preliminary determination, the Regional Administrator must provide a written notice to the owner or operator stating the reasons why he must prepare an SPCC Plan, or applicable part. The Regional Administrator must send such notice to the owner or operator by certified mail or by personal delivery. If the owner or operator is a corporation, the Regional Administrator must also mail a copy of such notice to the registered agent, if any and if known, of the corporation in the State where the facility is located.

(2) Within 30 days of receipt of such written notice, the owner or operator may provide information and data and may consult with the Agency about the need to prepare an SPCC Plan, or applicable part.

(3) Within 30 days following the time under paragraph (b)(2) of this section within which the owner or operator may provide information and data and consult with the Agency about the need to prepare an SPCC Plan, or applicable part, the Regional Administrator must make a final determination regarding whether the owner or operator is required to prepare and implement an SPCC Plan, or applicable part. The Regional Administrator must send the final determination to the owner or operator by certified mail or by personal delivery. If the owner or operator is a corporation, the Regional Administrator must also mail a copy of the final determination to the registered agent, if any and if known, of the corporation in the State where the facility is located.

(4) If the Regional Administrator makes a final determination that an SPCC Plan, or applicable part, is necessary, the owner or operator must prepare the Plan, or applicable part, within six months of that final determination and implement the Plan, or applicable part, as soon as possible, but not later than one year after the Regional Administrator has made a final determination.

(5) The owner or operator may appeal a final determination made by the Regional Administrator requiring preparation and implementation of an SPCC Plan, or applicable part, under this paragraph. The owner or operator must make the appeal to the Administrator of EPA within 30 days of receipt of the final determination under paragraph (b)(3) of this section from the Regional Administrator requiring preparation and/or implementation of an SPCC Plan, or applicable part. The owner or operator must send a complete copy of the appeal to the Regional Administrator at the time he makes the appeal to the Administrator. The appeal must contain a clear and concise statement of the issues and points of fact in the case. In the appeal, the owner or operator may also provide additional information. The additional information may be from any person. The Administrator may request additional information from the owner or operator. The Administrator must render a decision within 60 days of receiving the appeal or additional information submitted by the owner or operator and must serve the owner or operator with the decision made in the appeal in the manner described in paragraph (f)(1) of this section.

[67 FR 47140, July 17, 2002, as amended at 71 FR 77290, Dec. 26, 2006; 73 FR 74300, Dec. 5, 2008; 74 FR 58809, Nov. 13, 2009; 76 FR 21660, Apr. 18, 2011]

§ 112.2 Definitions.

For the purposes of this part:

Adverse weather means weather conditions that make it difficult for response equipment and personnel to clean up or remove spilled oil, and that must be considered when identifying response systems and equipment in a response plan for the applicable operating environment. Factors to consider include significant wave height as specified in appendix E to this part (as appropriate), ice conditions, temperatures, weather-related visibility, and currents within the area in which the systems or equipment is intended to function.

Alteration means any work on a container involving cutting, burning, welding, or heating operations that changes the physical dimensions or configuration of the container.

Animal fat means a non-petroleum oil, fat, or grease of animal, fish, or marine mammal origin.

Breakout tank means a container used to relieve surges in an oil pipeline system or to receive and store oil transported by a pipeline for reinjection and continued transportation by pipeline.

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.

Bunkered tank means a container constructed or placed in the ground by cutting the earth and re-covering the container in a manner that breaks the surrounding natural grade, or that lies above grade, and is covered with earth, sand, gravel, asphalt, or other material. A bunkered tank is considered an aboveground storage container for purposes of this part.

Completely buried tank means any container completely below grade and covered with earth, sand, gravel, asphalt, or other material. Containers in vaults, bunkered tanks, or partially buried tanks are considered aboveground storage containers for purposes of this part.

Complex means a facility possessing a combination of transportation-related and non-transportation-related components that is subject to the jurisdiction of more than one Federal agency under section 311(j) of the CWA.

Contiguous zone means the zone established by the United States under Article 24 of the Convention of the Territorial Sea and Contiguous Zone, that is contiguous to the territorial sea and that extends nine miles seaward from the outer limit of the territorial area.

Contract or other approved means means:

(1) A written contractual agreement with an oil spill removal organization that identifies and ensures the availability of the necessary personnel and equipment within appropriate response times; and/or

(2) A written certification by the owner or operator that the necessary personnel and equipment resources, owned or operated by the facility owner or operator, are available to respond to a discharge within appropriate response times; and/or

(3) Active membership in a local or regional oil spill removal organization that has identified and ensures adequate access through such membership to necessary personnel and equipment to respond to a discharge within appropriate response times in the specified geographic area; and/or

(4) Any other specific arrangement approved by the Regional Administrator upon request of the owner or operator.

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).

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.

Farm means a facility on a tract of land devoted to the production of crops or raising of animals, including fish, which produced and sold, or normally would have produced and sold, $1,000 or more of agricultural products during a year.

Fish and wildlife and sensitive environments means areas that may be identified by their legal designation or by evaluations of Area Committees (for planning) or members of the Federal On-Scene Coordinator's spill response structure (during responses). These areas may include wetlands, National and State parks, critical habitats for endangered or threatened species, wilderness and natural resource areas, marine sanctuaries and estuarine reserves, conservation areas, preserves, wildlife areas, wildlife refuges, wild and scenic rivers, recreational areas, national forests, Federal and State lands that are research national areas, heritage program areas, land trust areas, and historical and archaeological sites and parks. These areas may also include unique habitats such as aquaculture sites and agricultural surface water intakes, bird nesting areas, critical biological resource areas, designated migratory routes, and designated seasonal habitats.

Injury means 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, or exposure to a product of reactions resulting from a discharge.

Loading/unloading rack means a fixed structure (such as a platform, gangway) necessary for loading or unloading a tank truck or tank car, which is located at a facility subject to the requirements of this part. A loading/unloading rack includes a loading or unloading arm, and may include any combination of the following: piping assemblages, valves, pumps, shut-off devices, overfill sensors, or personnel safety devices.

Maximum extent practicable means within the limitations used to determine oil spill planning resources and response times for on-water recovery, shoreline protection, and cleanup for worst case discharges from onshore non-transportation-related facilities in adverse weather. It includes the planned capability to respond to a worst case discharge in adverse weather, as contained in a response plan that meets the requirements in § 112.20 or in a specific plan approved by the Regional Administrator.

Mobile refueler means a bulk storage container onboard a vehicle or towed, that is designed or used solely to store and transport fuel for transfer into or from an aircraft, motor vehicle, locomotive, vessel, ground service equipment, or other oil storage container.

Motive power container means any onboard bulk storage container used primarily to power the movement of a motor vehicle, or ancillary onboard oil-filled operational equipment. An onboard bulk storage container which is used to store or transfer oil for further distribution is not a motive power container. The definition of motive power container does not include oil drilling or workover equipment, including rigs.

Navigable waters of the United States means “navigable waters” as defined in section 502(7) of the FWPCA, and includes:

(1) All navigable waters of the United States, as defined in judicial decisions prior to passage of the 1972 Amendments to the FWPCA (Pub. L. 92-500), and tributaries of such waters;

(2) Interstate waters;

(3) Intrastate lakes, rivers, and streams which are utilized by interstate travelers for recreational or other purposes; and

(4) Intrastate lakes, rivers, and streams from which fish or shellfish are taken and sold in interstate commerce.

Non-petroleum oil means oil of any kind that is not petroleum-based, including but not limited to: Fats, oils, and greases of animal, fish, or marine mammal origin; and vegetable oils, including oils from seeds, nuts, fruits, and kernels.

Offshore facility means any facility of any kind (other than a vessel or public vessel) located in, on, or under any of the navigable waters of the United States, and any facility of any kind that is subject to the jurisdiction of the United States and is located in, on, or under any other waters.

Oil means oil of any kind or in any form, including, but not limited to: fats, oils, or greases of animal, fish, or marine mammal origin; vegetable oils, including oils from seeds, nuts, fruits, or 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.

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 pumpjack 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.

Oil Spill Removal Organization means an entity that provides oil spill response resources, and includes any for-profit or not-for-profit contractor, cooperative, or in-house response resources that have been established in a geographic area to provide required response resources.

Onshore facility means any facility of any kind located in, on, or under any land within the United States, other than submerged lands.

Owner or operator means 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 the facility immediately prior to such abandonment.

Partially buried tank means a storage container that is partially inserted or constructed in the ground, but not entirely below grade, and not completely covered with earth, sand, gravel, asphalt, or other material. A partially buried tank is considered an aboveground storage container for purposes of this part.

Permanently closed means any container or facility for which:

(1) All liquid and sludge has been removed from each container and connecting line; and

(2) All connecting lines and piping have been disconnected from the container and blanked off, all valves (except for ventilation valves) have been closed and locked, and conspicuous signs have been posted on each container stating that it is a permanently closed container and noting the date of closure.

Person includes an individual, firm, corporation, association, or partnership.

Petroleum oil means petroleum in any form, including but not limited to crude oil, fuel oil, mineral oil, sludge, oil refuse, and refined products.

Produced water container means a storage container at an oil production facility used to store the produced water after initial oil/water separation, and prior to reinjection, beneficial reuse, discharge, or transfer for disposal.

Production facility means all structures (including but not limited to wells, platforms, or storage facilities), piping (including but not limited to flowlines or intra-facility gathering lines), or equipment (including but not limited to workover equipment, separation equipment, or auxiliary non-transportation -related equipment) used in the production, extraction, recovery, lifting, stabilization, separation or treating of oil (including condensate), or associated storage or measurement, and is located in an oil or gas field, at a facility. This definition governs whether such structures, piping, or equipment are subject to a specific section of this part.

Regional Administrator means the Regional Administrator of the Environmental Protection Agency, in and for the Region in which the facility is located.

Repair means any work necessary to maintain or restore a container to a condition suitable for safe operation, other than that necessary for ordinary, day-to-day maintenance to maintain the functional integrity of the container and that does not weaken the container.

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 of a container means the shell capacity of the container.

Transportation-related and non-transportation-related , as applied to an onshore or offshore facility, are defined in the Memorandum of Understanding between the Secretary of Transportation and the Administrator of the Environmental Protection Agency, dated November 24, 1971, (appendix A of this part).

United States means the States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, Guam, American Samoa, the U.S. Virgin Islands, and the Pacific Island Governments.

Vegetable oil means a non-petroleum oil or fat of vegetable origin, including but not limited to oils and fats derived from plant seeds, nuts, fruits, and kernels.

Vessel means every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water, other than a public vessel.

Wetlands means those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include playa lakes, swamps, marshes, bogs, and similar areas such as sloughs, prairie potholes, wet meadows, prairie river overflows, mudflats, and natural ponds.

Worst case discharge for an onshore non-transportation-related facility means the largest foreseeable discharge in adverse weather conditions as determined using the worksheets in appendix D to this part.

[67 FR 47140, July 17, 2002, as amended at 71 FR 77290, Dec. 26, 2006; 73 FR 71943, Nov. 26, 2008; 73 FR 74300, Dec. 5, 2008]

§ 112.3 Requirement to prepare and implement a Spill Prevention, Control, and Countermeasure Plan.

The owner or operator or an onshore or offshore facility subject to this section must prepare in writing and implement a Spill Prevention Control and Countermeasure Plan (hereafter “SPCC Plan” or “Plan”),” in accordance with § 112.7 and any other applicable section of this part.

(a)(1) Except as otherwise provided in this section, if your facility, or mobile or portable facility, was in operation on or before August 16, 2002, you must maintain your Plan, but must amend it, if necessary to ensure compliance with this part, and implement the amended Plan no later than November 10, 2011. If such a facility becomes operational after August 16, 2002, through November 10, 2011, and could reasonably be expected to have a discharge as described in § 112.1(b), you must prepare and implement a Plan on or before November 10, 2011. If such a facility (excluding oil production facilities) becomes operational after November 10, 2011, and could reasonably be expected to have a discharge as described in § 112.1(b), you must prepare and implement a Plan before you begin operations. You are not required to prepare a new Plan each time you move a mobile or portable facility to a new site; the Plan may be general. When you move the mobile or portable facility, you must locate and install it using the discharge prevention practices outlined in the Plan for the facility. The Plan is applicable only while the mobile or portable facility is in a fixed (non-transportation) operating mode.

(2) If your drilling, production or workover facility, including a mobile or portable facility, is offshore or has an offshore component; or your onshore facility is required to have and submit a Facility Response Plan pursuant to 40 CFR 112.20(a), and was in operation on or before August 16, 2002, you must maintain your Plan, but must amend it, if necessary to ensure compliance with this part, and implement the amended Plan no later than November 10, 2010. If such a facility becomes operational after August 16, 2002, through November 10, 2010, and could reasonably be expected to have a discharge as described in § 112.1(b), you must prepare and implement a Plan on or before November 10, 2010. If such a facility (excluding oil production facilities) becomes operational after November 10, 2010, and could reasonably be expected to have a discharge as described in § 112.1(b), you must prepare and implement a Plan before you begin operations. You are not required to prepare a new Plan each time you move a mobile or portable facility to a new site; the Plan may be general. When you move the mobile or portable facility, you must locate and install it using the discharge prevention practices outlined in the Plan for the facility. The Plan is applicable only while the mobile or portable facility is in a fixed (non-transportation) operating mode.

(3) If your farm, as defined in § 112.2, was in operation on or before August 16, 2002, you must maintain your Plan, but must amend it, if necessary to ensure compliance with this part, and implement the amended Plan on or before May 10, 2013. If your farm becomes operational after August 16, 2002, through May 10, 2013, and could reasonably be expected to have a discharge as described in § 112.1(b), you must prepare and implement a Plan on or before May 10, 2013. If your farm becomes operational after May 10, 2013, and could reasonably be expected to have a discharge as described in § 112.1(b), you must prepare and implement a Plan before you begin operations.

(b) If your oil production facility as described in paragraph (a)(1) of this section becomes operational after November 10, 2011, or as described in paragraph (a)(2) of this section becomes operational after November 10, 2010, and could reasonably be expected to have a discharge as described in § 112.1(b), you must prepare and implement a Plan within six months after you begin operations.

(c) [Reserved]

(d) Except as provided in § 112.6, a licensed Professional Engineer must review and certify a Plan for it to be effective to satisfy the requirements of this part.

(1) By means of this certification the Professional Engineer attests:

(i) That he is familiar with the requirements of this part ;

(ii) That he or his agent has visited and examined the facility;

(iii) That the Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards, and with the requirements of this part;

(iv) That procedures for required inspections and testing have been established; and

(v) That the Plan is adequate for the facility.

(vi) That, if applicable, for a produced water container subject to § 112.9(c)(6), any procedure to minimize the amount of free-phase oil is designed to reduce the accumulation of free-phase oil and the procedures and frequency for required inspections, maintenance and testing have been established and are described in the Plan.

(2) Such certification shall in no way relieve the owner or operator of a facility of his duty to prepare and fully implement such Plan in accordance with the requirements of this part.

(e) If you are the owner or operator of a facility for which a Plan is required under this section, you must:

(1) Maintain a complete copy of the Plan at the facility if the facility is normally attended at least four hours per day, or at the nearest field office if the facility is not so attended, and

(2) Have the Plan available to the Regional Administrator for on-site review during normal working hours.

(f) *Extension of time.* (1) The Regional Administrator may authorize an extension of time for the preparation and full implementation of a Plan, or any amendment thereto, beyond the time permitted for the preparation, implementation, or amendment of a Plan under this part, when he finds that the owner or operator of a facility subject to this section, cannot fully comply with the requirements as a result of either nonavailability of qualified personnel, or delays in construction or equipment delivery beyond the control and without the fault of such owner or operator or his agents or employees.

(2) If you are an owner or operator seeking an extension of time under paragraph (f)(1) of this section, you may submit a written extension request to the Regional Administrator. Your request must include:

(i) A full explanation of the cause for any such delay and the specific aspects of the Plan affected by the delay;

(ii) A full discussion of actions being taken or contemplated to minimize or mitigate such delay; and

(iii) A proposed time schedule for the implementation of any corrective actions being taken or contemplated, including interim dates for completion of tests or studies, installation and operation of any necessary equipment, or other preventive measures. In addition you may present additional oral or written statements in support of your extension request.

(3) The submission of a written extension request under paragraph (f)(2) of this section does not relieve you of your obligation to comply with the requirements of this part. The Regional Administrator may request a copy of your Plan to evaluate the extension request. When the Regional Administrator authorizes an extension of time for particular equipment or other specific aspects of the Plan, such extension does not affect your obligation to comply with the requirements related to other equipment or other specific aspects of the Plan for which the Regional Administrator has not expressly authorized an extension.

(g) *Qualified Facilities.* The owner or operator of a qualified facility as defined in this subparagraph may self-certify his facility's Plan, as provided in § 112.6. A qualified facility is one that meets the following Tier I or Tier II qualified facility criteria:

(1) A Tier I qualified facility meets the qualification criteria in paragraph (g)(2) of this section and has no individual aboveground oil storage container with a capacity greater than 5,000 U.S. gallons.

(2) A Tier II qualified facility is one that has had no single discharge as described in § 112.1(b) exceeding 1,000 U.S. gallons or no two discharges as described in § 112.1(b) each exceeding 42 U.S. gallons within any twelve month period in the three years prior to the SPCC Plan self-certification date, or since becoming subject to this part if the facility has been in operation for less than three years (other than discharges as described in § 112.1(b) that are the result of natural disasters, acts of war, or terrorism), and has an aggregate aboveground oil storage capacity of 10,000 U.S. gallons or less.

[67 FR 47140, July 17, 2002, as amended at 68 FR 1351, Jan. 9, 2003; 68 FR 18894, Apr. 17, 2003; 69 FR 48798, Aug. 11, 2004; 71 FR 8466, Feb. 17, 2006; 71 FR 77290, Dec. 26, 2006; 72 FR 27447, May 16, 2007; 73 FR 74301, Dec. 5, 2008, 74 FR 29141, June 19, 2009; 74 FR 58809, Nov. 13, 2009; 75 FR 63102, Oct. 14, 2010; 76 FR 21660, Apr. 18, 2011; 76 FR 64248, Oct. 18, 2011; 76 FR 72124, Nov. 22, 2011]

§ 112.4 Amendment of Spill Prevention, Control, and Countermeasure Plan by Regional Administrator.

If you are the owner or operator of a facility subject to this part, you must:

(a) Notwithstanding compliance with § 112.3, whenever your facility has discharged more than 1,000 U.S. gallons of oil in a single discharge as described in § 112.1(b), or discharged more than 42 U.S. gallons of oil in each of two discharges as described in § 112.1(b), occurring within any twelve month period, submit the following information to the Regional Administrator within 60 days from the time the facility becomes subject to this section:

(1) Name of the facility;

(2) Your name;

(3) Location of the facility;

(4) Maximum storage or handling capacity of the facility and normal daily throughput;

(5) Corrective action and countermeasures you have taken, including a description of equipment repairs and replacements;

(6) An adequate description of the facility, including maps, flow diagrams, and topographical maps, as necessary;

(7) The cause of such discharge as described in § 112.1(b), including a failure analysis of the system or subsystem in which the failure occurred;

(8) Additional preventive measures you have taken or contemplated to minimize the possibility of recurrence; and

(9) Such other information as the Regional Administrator may reasonably require pertinent to the Plan or discharge.

(b) Take no action under this section until it applies to your facility. This section does not apply until the expiration of the time permitted for the initial preparation and implementation of the Plan under § 112.3, but not including any amendments to the Plan.

(c) Send to the appropriate agency or agencies in charge of oil pollution control activities in the State in which the facility is located a complete copy of all information you provided to the Regional Administrator under paragraph (a) of this section. Upon receipt of the information such State agency or agencies may conduct a review and make recommendations to the Regional Administrator as to further procedures, methods, equipment, and other requirements necessary to prevent and to contain discharges from your facility.

(d) Amend your Plan, if after review by the Regional Administrator of the information you submit under paragraph (a) of this section, or submission of information to EPA by the State agency under paragraph (c) of this section, or after on-site review of your Plan, the Regional Administrator requires that you do so. The Regional Administrator may require you to amend your Plan if he finds that it does not meet the requirements of this part or that amendment is necessary to prevent and contain discharges from your facility.

(e) Act in accordance with this paragraph when the Regional Administrator proposes by certified mail or by personal delivery that you amend your SPCC Plan. If the owner or operator is a corporation, he must also notify by mail the registered agent of such corporation, if any and if known, in the State in which the facility is located. The Regional Administrator must specify the terms of such proposed amendment. Within 30 days from receipt of such notice, you may submit written information, views, and arguments on the proposed amendment. After considering all relevant material presented, the Regional Administrator must either notify you of any amendment required or rescind the notice. You must amend your Plan as required within 30 days after such notice, unless the Regional Administrator, for good cause, specifies another effective date. You must implement the amended Plan as soon as possible, but not later than six months after you amend your Plan, unless the Regional Administrator specifies another date.

(f) If you appeal a decision made by the Regional Administrator requiring an amendment to an SPCC Plan, send the appeal to the EPA Administrator in writing within 30 days of receipt of the notice from the Regional Administrator requiring the amendment under paragraph (e) of this section. You must send a complete copy of the appeal to the Regional Administrator at the time you make the appeal. The appeal must contain a clear and concise statement of the issues and points of fact in the case. It may also contain additional information from you, or from any other person. The EPA Administrator may request additional information from you, or from any other person. The EPA Administrator must render a decision within 60 days of receiving the appeal and must notify you of his decision.

§ 112.5 Amendment of Spill Prevention, Control, and Countermeasure Plan by owners or operators.

If you are the owner or operator of a facility subject to this part, you must:

(a) Amend the SPCC Plan for your facility in accordance with the general requirements in § 112.7, and with any specific section of this part applicable to your facility, when there is a change in the facility design, construction, operation, or maintenance that materially affects its potential for a discharge as described in § 112.1(b). Examples of changes that may require amendment of the Plan include, but are not limited to: commissioning or decommissioning containers; replacement, reconstruction, or movement of containers; reconstruction, replacement, or installation of piping systems; construction or demolition that might alter secondary containment structures; changes of product or service; or revision of standard operation or maintenance procedures at a facility. An amendment made under this section must be prepared within six months, and implemented as soon as possible, but not later than six months following preparation of the amendment.

(b) Notwithstanding compliance with paragraph (a) of this section, complete a review and evaluation of the SPCC Plan at least once every five years from the date your facility becomes subject to this part; or, if your facility was in operation on or before August 16, 2002, five years from the date your last review was required under this part. As a result of this review and evaluation, you must amend your SPCC Plan within six months of the review to include more effective prevention and control technology if the technology has been field-proven at the time of the review and will significantly reduce the likelihood of a discharge as described in § 112.1(b) from the facility. You must implement any amendment as soon as possible, but not later than six months following preparation of any amendment. You must document your completion of the review and evaluation, and must sign a statement as to whether you will amend the Plan, either at the beginning or end of the Plan or in a log or an appendix to the Plan. The following words will suffice, “I have completed review and evaluation of the SPCC Plan for (name of facility) on (date), and will (will not) amend the Plan as a result.”

(c) Except as provided in § 112.6, have a Professional Engineer certify any technical amendments to your Plan in accordance with § 112.3(d).

[67 FR 47140, July 17, 2002, as amended at 71 FR 77291, Dec. 26, 2006; 73 FR 74301, Dec. 5, 2008; 74 FR 58809, Nov. 13, 2009]

§ 112.6 Qualified Facilities Plan Requirements.

Qualified facilities meeting the Tier I applicability criteria in § 112.3(g)(1) are subject to the requirements in paragraph (a) of this section. Qualified facilities meeting the Tier II applicability criteria in § 112.3(g)(2) are subject to the requirements in paragraph (b) of this section.

(a) *Tier I Qualified Facilities* —(1) *Preparation and Self-Certification of the Plan.* If you are an owner or operator of a facility that meets the Tier I qualified facility criteria in § 112.3(g)(1), you must either: comply with the requirements of paragraph (a)(3) of this section; or prepare and implement a Plan meeting requirements of paragraph (b) of this section; or prepare and implement a Plan meeting the general Plan requirements in § 112.7 and applicable requirements in subparts B and C, including having the Plan certified by a Professional Engineer as required under § 112.3(d). If you do not follow the appendix G template, you must prepare an equivalent Plan that meets all of the applicable requirements listed in this part, and you must supplement it with a section cross-referencing the location of requirements listed in this part and the equivalent requirements in the other prevention plan. To complete the template in appendix G, you must certify that:

(i) You are familiar with the applicable requirements of 40 CFR part 112;

(ii) You have visited and examined the facility;

(iii) You prepared the Plan in accordance with accepted and sound industry practices and standards;

(iv) You have established procedures for required inspections and testing in accordance with industry inspection and testing standards or recommended practices;

(v) You will fully implement the Plan;

(vi) The facility meets the qualification criteria in § 112.3(g)(1);

(vii) The Plan does not deviate from any requirement of this part as allowed by § 112.7(a)(2) and 112.7(d) or include measures pursuant to § 112.9(c)(6) for produced water containers and any associated piping; and

(viii) The Plan and individual(s) responsible for implementing this Plan have the approval of management, and the facility owner or operator has committed the necessary resources to fully implement this Plan.

(2) *Technical Amendments.* You must certify any technical amendments to your Plan in accordance with paragraph (a)(1) of this section when there is a change in the facility design, construction, operation, or maintenance that affects its potential for a discharge as described in § 112.1(b). If the facility change results in the facility no longer meeting the Tier I qualifying criteria in § 112.3(g)(1) because an individual oil storage container capacity exceeds 5,000 U.S. gallons or the facility capacity exceeds 10,000 U.S. gallons in aggregate aboveground storage capacity, within six months following preparation of the amendment, you must either:

(i) Prepare and implement a Plan in accordance with § 112.6(b) if you meet the Tier II qualified facility criteria in § 112.3(g)(2); or

(ii) Prepare and implement a Plan in accordance with the general Plan requirements in § 112.7, and applicable requirements in subparts B and C, including having the Plan certified by a Professional Engineer as required under § 112.3(d).

(3) *Plan Template and Applicable Requirements.* Prepare and implement an SPCC Plan that meets the following requirements under § 112.7 and in subparts B and C of this part: introductory paragraph of §§ 112.7, 112.7(a)(3)(i), 112.7(a)(3)(iv), 112.7(a)(3)(vi), 112.7(a)(4), 112.7(a)(5), 112.7(c), 112.7(e), 112.7(f), 112.7(g), 112.7(k), 112.8(b)(1), 112.8(b)(2), 112.8(c)(1), 112.8(c)(3), 112.8(c)(4), 112.8(c)(5), 112.8(c)(6), 112.8(c)(10), 112.8(d)(4), 112.9(b), 112.9(c)(1), 112.9(c)(2), 112.9(c)(3), 112.9(c)(4), 112.9(c)(5), 112.9(d)(1), 112.9(d)(3), 112.9(d)(4), 112.10(b), 112.10(c), 112.10(d), 112.12(b)(1), 112.12(b)(2), 112.12(c)(1), 112.12(c)(3), 112.12(c)(4), 112.12(c)(5), 112.12(c)(6), 112.12(c)(10), and 112.12(d)(4). The template in appendix G to this part has been developed to meet the requirements of 40 CFR part 112 and, when completed and signed by the owner or operator, may be used as the SPCC Plan. Additionally, you must meet the following requirements:

(i) *Failure analysis, in lieu of the requirements in § 112.7(b).* Where experience indicates a reasonable potential for equipment failure (such as loading or unloading equipment, tank overflow, rupture, or leakage, or any other equipment known to be a source of discharge), include in your Plan a prediction of the direction and total quantity of oil which could be discharged from the facility as a result of each type of major equipment failure.

(ii) *Bulk storage container secondary containment, in lieu of the requirements in §§ 112.8(c)(2) and (c)(11) and 112.12(c)(2) and (c)(11).* Construct all bulk storage container installations (except mobile refuelers and other non-transportation-related tank trucks), including mobile or portable oil storage containers, so that you provide a secondary means of containment for the entire capacity of the largest single container plus additional capacity to contain precipitation. Dikes, containment curbs, and pits are commonly employed for this purpose. You may also use an alternative system consisting of a drainage trench enclosure that must be arranged so that any discharge will terminate and be safely confined in a catchment basin or holding pond. Position or locate mobile or portable oil storage containers to prevent a discharge as described in § 112.1(b).

(iii) *Overfill prevention, in lieu of the requirements in §§ 112.8(c)(8) and 112.12(c)(8).* Ensure that each container is provided with a system or documented procedure to prevent overfills of the container, describe the system or procedure in the SPCC Plan and regularly test to ensure proper operation or efficacy.

(b) *Tier II Qualified Facilities* —(1) *Preparation and Self-Certification of Plan.* If you are the owner or operator of a facility that meets the Tier II qualified facility criteria in § 112.3(g)(2), you may choose to self-certify your Plan. You must certify in the Plan that:

(i) You are familiar with the requirements of this part;

(ii) You have visited and examined the facility;

(iii) The Plan has been prepared in accordance with accepted and sound industry practices and standards, and with the requirements of this part;

(iv) Procedures for required inspections and testing have been established;

(v) You will fully implement the Plan;

(vi) The facility meets the qualification criteria set forth under § 112.3(g)(2);

(vii) The Plan does not deviate from any requirement of this part as allowed by § 112.7(a)(2) and 112.7(d) or include measures pursuant to § 112.9(c)(6) for produced water containers and any associated piping, except as provided in paragraph (b)(3) of this section; and

(viii) The Plan and individual(s) responsible for implementing the Plan have the full approval of management and the facility owner or operator has committed the necessary resources to fully implement the Plan.

(2) *Technical Amendments.* If you self-certify your Plan pursuant to paragraph (b)(1) of this section, you must certify any technical amendments to your Plan in accordance with paragraph (b)(1) of this section when there is a change in the facility design, construction, operation, or maintenance that affects its potential for a discharge as described in § 112.1(b), except:

(i) If a Professional Engineer certified a portion of your Plan in accordance with paragraph (b)(4) of this section, and the technical amendment affects this portion of the Plan, you must have the amended provisions of your Plan certified by a Professional Engineer in accordance with paragraph (b)(4)(ii) of this section.

(ii) If the change is such that the facility no longer meets the Tier II qualifying criteria in § 112.3(g)(2) because it exceeds 10,000 U.S. gallons in aggregate aboveground storage capacity you must, within six months following the change, prepare and implement a Plan in accordance with the general Plan requirements in § 112.7 and the applicable requirements in subparts B and C of this part, including having the Plan certified by a Professional Engineer as required under § 112.3(d).

(3) *Applicable Requirements.* Except as provided in this paragraph, your self-certified SPCC Plan must comply with § 112.7 and the applicable requirements in subparts B and C of this part:

(i) *Environmental Equivalence.* Your Plan may not include alternate methods which provide environmental equivalence pursuant to § 112.7(a)(2), unless each alternate method has been reviewed and certified in writing by a Professional Engineer, as provided in paragraph (b)(4) of this section.

(ii) *Impracticability.* Your Plan may not include any determinations that secondary containment is impracticable and provisions in lieu of secondary containment pursuant to § 112.7(d), unless each such determination and alternate measure has been reviewed and certified in writing by a Professional Engineer, as provided in paragraph (b)(4) of this section.

(iii) *Produced Water Containers.* Your Plan may not include any alternative procedures for skimming produced water containers in lieu of sized secondary containment pursuant to § 112.9(c)(6), unless they have been reviewed and certified in writing by a Professional Engineer, as provided in paragraph (b)(4) of this section.

(4) *Professional Engineer Certification of Portions of a Qualified Facility's Self-Certified Plan.*

(i) As described in paragraph (b)(3) of this section, the facility owner or operator may not self-certify alternative measures allowed under § 112.7(a)(2) or (d), that are included in the facility's Plan. Such measures must be reviewed and certified, in writing, by a licensed Professional Engineer. For each alternative measure allowed under § 112.7(a)(2), the Plan must be accompanied by a written statement by a Professional Engineer that states the reason for nonconformance and describes the alternative method and how it provides equivalent environmental protection in accordance with § 112.7 (a)(2). For each determination of impracticability of secondary containment pursuant to § 112.7(d), the Plan must clearly explain why secondary containment measures are not practicable at this facility and provide the alternative measures required in § 112.7(d) in lieu of secondary containment. By certifying each measure allowed under § 112.7(a)(2) and (d), the Professional Engineer attests:

(A) That he is familiar with the requirements of this part;

(B) That he or his agent has visited and examined the facility; and

(C) That the alternative method of environmental equivalence in accordance with § 112.7(a)(2) or the determination of impracticability and alternative measures in accordance with § 112.7(d) is consistent with good engineering practice, including consideration of applicable industry standards, and with the requirements of this part.

(ii) As described in paragraph (b)(3) of this section, the facility owner or operator may not self-certify measures as described in § 112.9(c)(6) for produced water containers and any associated piping. Such measures must be reviewed and certified, in writing, by a licensed Professional Engineer, in accordance with § 112.3(d)(1)(vi).

(iii) The review and certification by the Professional Engineer under this paragraph is limited to the alternative method which achieves equivalent environmental protection pursuant to § 112.7(a)(2); to the impracticability determination and measures in lieu of secondary containment pursuant to § 112.7 (d); or the measures pursuant to § 112.9(c)(6) for produced water containers and any associated piping and appurtenances downstream from the container.

[73 FR 74302, Dec. 5, 2008, as amended at 74 FR 58810, Nov. 13, 2009]

§ 112.7 General requirements for Spill Prevention, Control, and Countermeasure Plans.

If you are the owner or operator of a facility subject to this part you must prepare a Plan in accordance with good engineering practices. The Plan must have the full approval of management at a level of authority to commit the necessary resources to fully implement the Plan. You must prepare the Plan in writing. If you do not follow the sequence specified in this section for the Plan, you must prepare an equivalent Plan acceptable to the Regional Administrator that meets all of the applicable requirements listed in this part, and you must supplement it with a section cross-referencing the location of requirements listed in this part and the equivalent requirements in the other prevention plan. If the Plan calls for additional facilities or procedures, methods, or equipment not yet fully operational, you must discuss these items in separate paragraphs, and must explain separately the details of installation and operational start-up. As detailed elsewhere in this section, you must also:

(a)(1) Include a discussion of your facility's conformance with the requirements listed in this part.

(2) Comply with all applicable requirements listed in this part. Except as provided in § 112.6, your Plan may deviate from the requirements in paragraphs (g), (h)(2) and (3), and (i) of this section and the requirements in subparts B and C of this part, except the secondary containment requirements in paragraphs (c) and (h)(1) of this section, and §§ 112.8(c)(2), 112.8(c)(11), 112.9(c)(2), 112.9(d)(3), 112.10(c), 112.12(c)(2), and 112.12(c)(11), where applicable to a specific facility, if you provide equivalent environmental protection by some other means of spill prevention, control, or countermeasure. Where your Plan does not conform to the applicable requirements in paragraphs (g), (h)(2) and (3), and (i) of this section, or the requirements of subparts B and C of this part, except the secondary containment requirements in paragraph (c) and (h)(1) of this section, and §§ 112.8(c)(2), 112.8(c)(11), 112.9(c)(2), 112.10(c), 112.12(c)(2), and 112.12(c)(11), you must state the reasons for

nonconformance in your Plan and describe in detail alternate methods and how you will achieve equivalent environmental protection. If the Regional Administrator determines that the measures described in your Plan do not provide equivalent environmental protection, he may require that you amend your Plan, following the procedures in § 112.4(d) and (e).

(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). You must also address in your Plan:

(i) The type of oil in each fixed 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;

(ii) Discharge prevention measures including procedures for routine handling of products (loading, unloading, and facility transfers, etc.);

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

(iv) Countermeasures for discharge discovery, response, and cleanup (both the facility's capability and those that might be required of a contractor);

(v) Methods of disposal of recovered materials in accordance with applicable legal requirements; and

(vi) Contact list and phone numbers for the facility response coordinator, National Response Center, cleanup contractors with whom you have an agreement for response, and all appropriate Federal, State, and local agencies who must be contacted in case of a discharge as described in § 112.1(b).

(4) Unless you have submitted a response plan under § 112.20, 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 exact address or location and phone number of the facility; the date and time of the discharge, the type of material discharged; estimates of the total quantity discharged; estimates of the quantity discharged as described in § 112.1(b); the source of the discharge; a description of all affected media; 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.

(5) Unless you have submitted a response plan under § 112.20, 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.

(b) Where experience indicates a reasonable potential for equipment failure (such as loading or unloading equipment, tank overflow, rupture, or leakage, or any other equipment known to be a source of a discharge), include in your Plan a prediction of the direction, rate of flow, and total quantity of oil which could be discharged from the facility as a result of each type of major equipment failure.

(c) Provide appropriate containment and/or diversionary structures or equipment to prevent a discharge as described in § 112.1(b), except as provided in paragraph (k) of this section for qualified oil-filled operational equipment, and except as provided in § 112.9(d)(3) for flowlines and intra-facility gathering lines at an oil production facility. The entire containment system, including walls and floor, must be capable of containing oil and must be constructed so that any discharge from a primary containment system, such as a tank, will not escape the containment system before cleanup occurs. In

determining the method, design, and capacity for secondary containment, you need only to address the typical failure mode, and the most likely quantity of oil that would be discharged. Secondary containment may be either active or passive in design. At a minimum, you must use one of the following prevention systems or its equivalent:

(1) For onshore facilities:

(i) Dikes, berms, or retaining walls sufficiently impervious to contain oil;

(ii) Curbing or drip pans;

(iii) Sumps and collection systems;

(iv) Culverting, gutters, or other drainage systems;

(v) Weirs, booms, or other barriers;

(vi) Spill diversion ponds;

(vii) Retention ponds; or

(viii) Sorbent materials.

(2) For offshore facilities:

(i) Curbing or drip pans; or

(ii) Sumps and collection systems.

(d) Provided your Plan is certified by a licensed Professional Engineer under § 112.3(d), or, in the case of a qualified facility that meets the criteria in § 112.3(g), the relevant sections of your Plan are certified by a licensed Professional Engineer under § 112.6(d), if you determine that the installation of any of the structures or pieces of equipment listed in paragraphs (c) and (h)(1) of this section, and §§ 112.8(c)(2), 112.8(c)(11), 112.9(c)(2), 112.10(c), 112.12(c)(2), and 112.12(c)(11) to prevent a discharge as described in § 112.1(b) from any onshore or offshore facility is not practicable, you must clearly explain in your Plan why such measures are not practicable; for bulk storage containers, conduct both periodic integrity testing of the containers and periodic integrity and leak testing of the valves and piping; and, unless you have submitted a response plan under § 112.20, provide in your Plan the following:

(1) An oil spill contingency plan following the provisions of part 109 of this chapter.

(2) A written commitment of manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful.

(e) *Inspections, tests, and records.* Conduct inspections and tests required by this part in accordance with written procedures that you or the certifying engineer develop for the facility. You must keep these written procedures and a record of the inspections and tests, signed by the appropriate supervisor or inspector, with the SPCC Plan for a period of three years. Records of inspections and tests kept under usual and customary business practices will suffice for purposes of this paragraph.

(f) *Personnel, training, and discharge prevention procedures.* (1) At a minimum, train your oil-handling personnel in the operation and maintenance of equipment to prevent discharges; discharge procedure protocols; applicable pollution control laws, rules, and regulations; general facility operations; and, the contents of the facility SPCC Plan.

(2) Designate a person at each applicable facility who is accountable for discharge prevention and who reports to facility management.

(3) Schedule and conduct discharge prevention briefings for your oil-handling personnel at least once a year to assure adequate understanding of the SPCC Plan for that facility. Such briefings must highlight and describe known discharges as described in § 112.1(b) or failures, malfunctioning components, and any recently developed precautionary measures.

(g) *Security (excluding oil production facilities).* Describe in your Plan how you secure and control access to the oil handling, processing and storage areas; secure master flow and drain valves; prevent unauthorized access to starter controls on oil pumps; secure out-of-service and loading/unloading connections of oil pipelines; and address the appropriateness of security lighting to both prevent acts of vandalism and assist in the discovery of oil discharges.

(h) *Facility tank car and tank truck loading/unloading rack (excluding offshore facilities).*

(1) Where loading/unloading rack drainage does not flow into a catchment basin or treatment facility designed to handle discharges, use a quick drainage system for tank car or tank truck loading/unloading racks. You must design any containment system to hold at least the maximum capacity of any single compartment of a tank car or tank truck loaded or unloaded at the facility.

(2) Provide an interlocked warning light or physical barrier system, warning signs, wheel chocks or vehicle brake interlock system in the area adjacent to a loading/unloading rack, to prevent vehicles from departing before complete disconnection of flexible or fixed oil transfer lines.

(3) Prior to filling and departure of any tank car or tank truck, closely inspect for discharges the lowermost drain and all outlets of such vehicles, and if necessary, ensure that they are tightened, adjusted, or replaced to prevent liquid discharge while in transit.

(i) If a field-constructed aboveground container undergoes a repair, alteration, reconstruction, or a change in service that might affect the risk of a discharge or failure due to brittle fracture or other catastrophe, or has discharged oil or failed due to brittle fracture failure or other catastrophe, evaluate the container for risk of discharge or failure due to brittle fracture or other catastrophe, and as necessary, take appropriate action.

(j) In addition to the minimal prevention standards listed under this section, include in your Plan a complete discussion of conformance with the applicable requirements and other effective discharge prevention and containment procedures listed in this part or any applicable more stringent State rules, regulations, and guidelines.

(k) *Qualified Oil-filled Operational Equipment.* The owner or operator of a facility with oil-filled operational equipment that meets the qualification criteria in paragraph (k)(1) of this sub-section may choose to implement for this qualified oil-filled operational equipment the alternate requirements as described in paragraph (k)(2) of this sub-section in lieu of general secondary containment required in paragraph (c) of this section.

(1) *Qualification Criteria—Reportable Discharge History:* The owner or operator of a facility that has had no single discharge as described in § 112.1(b) from any oil-filled operational equipment exceeding 1,000 U.S. gallons or no two discharges as described in § 112.1(b) from any oil-filled operational equipment each exceeding 42 U.S. gallons within any twelve month period in the three years prior to the SPCC Plan certification date, or since becoming subject to this part if the facility has been in operation for less than three years (other than oil discharges as described in § 112.1(b) that are the result of natural disasters, acts of war or terrorism); and

(2) *Alternative Requirements to General Secondary Containment.* If secondary containment is not provided for qualified oil-filled operational equipment pursuant to paragraph (c) of this section, the owner or operator of a facility with qualified oil-filled operational equipment must:

(i) Establish and document the facility procedures for inspections or a monitoring program to detect equipment failure and/or a discharge; and

(ii) Unless you have submitted a response plan under § 112.20, provide in your Plan the following:

(A) An oil spill contingency plan following the provisions of part 109 of this chapter.

(B) A written commitment of manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful.

[67 FR 47140, July 17, 2002, as amended at 71 FR 77292, Dec. 26, 2006; 73 FR 74303, Dec. 5, 2008; 74 FR 58810, Nov. 13, 2009]

Subpart B—Requirements for Petroleum Oils and Non-Petroleum Oils, Except Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and Vegetable Oils (Including Oils from Seeds, Nuts, Fruits, and Kernels)

SOURCE: 67 FR 47146, July 17, 2002, unless otherwise noted.

§ 112.8 Spill Prevention, Control, and Countermeasure Plan requirements for onshore facilities (excluding production facilities).

If you are the owner or operator of an onshore facility (excluding a production facility), you must:

(a) Meet the general requirements for the Plan listed under § 112.7, and the specific discharge prevention and containment procedures listed in this section.

(b) *Facility drainage.* (1) Restrain drainage from diked storage areas by valves to prevent a discharge into the drainage system or facility effluent treatment system, except where facility systems are designed to control such discharge. You may empty diked areas by pumps or ejectors; however, you must manually activate these pumps or ejectors and must inspect the condition of the accumulation before starting, to ensure no oil will be discharged.

(2) Use valves of manual, open-and-closed design, for the drainage of diked areas. You may not use flapper-type drain valves to drain diked areas. If your facility drainage drains directly into a watercourse and not into an on-site wastewater treatment plant, you must inspect and may drain uncontaminated retained stormwater, as provided in paragraphs (c)(3)(ii), (iii), and (iv) of this section.

(3) Design facility drainage systems from undiked areas with a potential for a discharge (such as where piping is located outside containment walls or where tank truck discharges may occur outside the loading area) to flow into ponds, lagoons, or catchment basins designed to retain oil or return it to the facility. You must not locate catchment basins in areas subject to periodic flooding.

(4) If facility drainage is not engineered as in paragraph (b)(3) of this section, equip the final discharge of all ditches inside the facility with a diversion system that would, in the event of an uncontrolled discharge, retain oil in the facility.

(5) Where drainage waters are treated in more than one treatment unit and such treatment is continuous, and pump transfer is needed, provide two “lift” pumps and permanently install at least one of the pumps. Whatever techniques you use, you must engineer facility drainage systems to prevent a discharge as described in § 112.1(b) in case there is an equipment failure or human error at the facility.

(c) *Bulk storage containers.* (1) Not use a container 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.

(2) Construct all bulk storage tank installations (except mobile refuelers and other non-transportation-related tank trucks) so that you provide a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation. You must ensure that diked areas are sufficiently impervious to contain discharged oil. Dikes, containment curbs, and pits are commonly employed for this purpose. You may also use an alternative system

consisting of a drainage trench enclosure that must be arranged so that any discharge will terminate and be safely confined in a facility catchment basin or holding pond.

(3) Not allow drainage of uncontaminated rainwater from the diked area into a storm drain or discharge of an effluent into an open watercourse, lake, or pond, bypassing the facility treatment system unless you:

(i) Normally keep the bypass valve sealed closed.

(ii) Inspect the retained rainwater to ensure that its presence will not cause a discharge as described in § 112.1(b).

(iii) Open the bypass valve and reseal it following drainage under responsible supervision; and

(iv) Keep adequate records of such events, for example, any records required under permits issued in accordance with §§ 122.41(j)(2) and 122.41(m)(3) of this chapter.

(4) Protect any completely buried metallic storage tank installed on or after January 10, 1974 from corrosion by coatings or cathodic protection compatible with local soil conditions. You must regularly leak test such completely buried metallic storage tanks.

(5) Not use partially buried or bunkered metallic tanks for the storage of oil, unless you protect the buried section of the tank from corrosion. You must protect partially buried and bunkered tanks from corrosion by coatings or cathodic protection compatible with local soil conditions.

(6) Test or inspect each aboveground container for integrity on a regular schedule and whenever you make material repairs. You must determine, in accordance with industry standards, the appropriate qualifications for personnel performing tests and inspections, the frequency and type of testing and inspections, which take into account container size, configuration, and design (such as containers that are: shop-built, field-erected, skid-mounted, elevated, equipped with a liner, double-walled, or partially buried). Examples of these integrity tests include, but are not limited to: visual inspection, hydrostatic testing, radiographic testing, ultrasonic testing, acoustic emissions testing, or other systems of non-destructive testing. You must keep comparison records and you must also inspect the container's supports and foundations. In addition, you must frequently inspect the outside of the container for signs of deterioration, discharges, or accumulation of oil inside diked areas. Records of inspections and tests kept under usual and customary business practices satisfy the recordkeeping requirements of this paragraph.

(7) Control leakage through defective internal heating coils by monitoring the steam return and exhaust lines for contamination from internal heating coils that discharge into an open watercourse, or pass the steam return or exhaust lines through a settling tank, skimmer, or other separation or retention system.

(8) Engineer or update each container installation in accordance with good engineering practice to avoid discharges. You must provide at least one of the following devices:

(i) High liquid level alarms with an audible or visual signal at a constantly attended operation or surveillance station. In smaller facilities an audible air vent may suffice.

(ii) High liquid level pump cutoff devices set to stop flow at a predetermined container content level.

(iii) Direct audible or code signal communication between the container gauger and the pumping station.

(iv) A fast response system for determining the liquid level of each bulk storage container such as digital computers, telepulse, or direct vision gauges. If you use this alternative, a person must be present to monitor gauges and the overall filling of bulk storage containers.

(v) You must regularly test liquid level sensing devices to ensure proper operation.

(9) Observe effluent treatment facilities frequently enough to detect possible system upsets that could cause a discharge as described in § 112.1(b).

(10) Promptly correct visible discharges which result in a loss of oil from the container, including but not limited to seams, gaskets, piping, pumps, valves, rivets, and bolts. You must promptly remove any accumulations of oil in diked areas.

(11) Position or locate mobile or portable oil storage containers to prevent a discharge as described in § 112.1(b). Except for mobile refuelers and other non-transportation-related tank trucks, you must furnish a secondary means of containment, such as a dike or catchment basin, sufficient to contain the capacity of the largest single compartment or container with sufficient freeboard to contain precipitation.

(d) *Facility transfer operations, pumping, and facility process.* (1) Provide buried piping that is installed or replaced on or after August 16, 2002, with a protective wrapping and coating. You must also cathodically protect such buried piping installations or otherwise satisfy the corrosion protection standards for piping in part 280 of this chapter or a State program approved under part 281 of this chapter. If a section of buried line is exposed for any reason, you must carefully inspect it for deterioration. If you find corrosion damage, you must undertake additional examination and corrective action as indicated by the magnitude of the damage.

(2) Cap or blank-flange the terminal connection at the transfer point and mark it as to origin when piping is not in service or is in standby service for an extended time.

(3) Properly design pipe supports to minimize abrasion and corrosion and allow for expansion and contraction.

(4) Regularly inspect all aboveground valves, piping, and appurtenances. During the inspection you must assess the general condition of items, such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces. You must also conduct integrity and leak testing of buried piping at the time of installation, modification, construction, relocation, or replacement.

(5) Warn all vehicles entering the facility to be sure that no vehicle will endanger aboveground piping or other oil transfer operations.

[67 FR 47146, July 17, 2002, as amended at 71 FR 77293, Dec. 26, 2006; 73 FR 74304, Dec. 5, 2008]

§ 112.9 Spill Prevention, Control, and Countermeasure Plan Requirements for onshore oil production facilities (excluding drilling and workover facilities).

If you are the owner or operator of an onshore oil production facility (excluding a drilling or workover facility), you must:

(a) Meet the general requirements for the Plan listed under § 112.7, and the specific discharge prevention and containment procedures listed under this section.

(b) *Oil production facility drainage.* (1) At tank batteries and separation and treating areas where there is a reasonable possibility of a discharge as described in § 112.1(b), close and seal at all times drains of dikes or drains of equivalent measures required under § 112.7(c)(1), except when draining uncontaminated rainwater. Prior to drainage, you must inspect the diked area and take action as provided in § 112.8(c)(3)(ii), (iii), and (iv). You must remove accumulated oil on the rainwater and return it to storage or dispose of it in accordance with legally approved methods.

(2) Inspect at regularly scheduled intervals field drainage systems (such as drainage ditches or road ditches), and oil traps, sumps, or skimmers, for an accumulation of oil that may have resulted from any small discharge. You must promptly remove any accumulations of oil.

APPENDIX C

Plan Review and Certification Log

Spill Prevention, Control, and
Countermeasure (SPCC) Plan
Merrimack Valley Regional Transit Authority
Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts

PLAN REVIEW AND CERTIFICATION LOG

Date	Reason For Review	Findings/Revised Pages	Reviewer's Name and Title	Signature/ Registration No.

At a minimum, this SPCC Plan shall be reviewed and evaluated by the Owner of the Facility no less than once every 5 years. In addition, this SPCC Plan shall be updated and revised as necessary in the event that:

- There is a change in facility design, construction, operation, or maintenance that significantly affects the potential for oil to be discharged into or upon navigable waters:
- The SPCC Plan fails in an emergency;
- The local, state, or federal regulations change concerning SPCC reporting;
- The designated person changes; or
- More effective technology becomes available.

The revised SPCC Plan shall be implemented within 6 months of any such change. The Facility can self-certify the Plan; however, significant changes should be reviewed by a Professional Engineer.

APPENDIX D

Facility Inspection Checklists

Spill Prevention, Control, and
Countermeasure (SPCC) Plan
Merrimack Valley Regional Transit Authority
Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts

FACILITY INSPECTION CHECKLIST

Facility Name & Location: Merrimack Valley Regional Transit Authority Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts 01835

Instructions: This inspection record is for the monthly inspections, conducted by Facility personnel. Place an X in the appropriate box for each item. If any response requires elaboration, do so in the description and comments space provided. Further descriptions or comments should be attached on a separate sheet of paper, if necessary.

Tank ID:	*YES*	NO	DESCRIPTIONS/COMMENTS
1. Tank surfaces show signs of leakage?			
2. Oil in secondary containment area?			
3. Ground or Floor around tank(s) show signs of staining?			
4. Tank(s) show signs of damage, rust or deterioration?			
5. Vents are obstructed?			
6. Valve seals or gaskets are leaking?			
7. Pipes show signs of leakage?			
8. Oil present in oil/water separator or washwater recovery system?			
9. Fuel distribution pumps show signs of leakage?			
10. Transformer surfaces show signs of leakage?			
12. Fencing, gate or lighting is non-functional?			

Remarks: _____

_____

_____

Signature: _____ Date: _____

APPENDIX E

Training Records

Spill Prevention, Control, and
Countermeasure (SPCC) Plan
Merrimack Valley Regional Transit Authority
Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts

SPCC TRAINING

RECORD OF SPILL PREVENTION TRAINING

Date: _____ Instructor: _____

Attendees	Print Name	Signature

Subjects and Issues: _____

_____

_____

_____

_____

By signing above, the MVRTA Employee acknowledges that he/she has read and/or had explained to him/her the SPCC Plan and is aware of what to do in case of a spill and where the plan is kept. If applicable, he/she is aware of containment drainage procedures and understands that he/she is authorized to perform drainage of containment.

(Maintain completed acknowledgement in SPCC Plan)

APPENDIX F

SPCC Spill Notification Plan and Route to Hospital

Spill Prevention, Control, and
Countermeasure (SPCC) Plan
Merrimack Valley Regional Transit Authority
Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts

SPCC SPILL NOTIFICATION PLAN

Merrimack Valley Regional Transit Authority Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts 01835

The following is a summary of the response to be made in the event of a spill at the Facility. For additional details of the response procedures, available cleanup materials, and other spill prevention procedures, refer to the Spill Prevention, Control, and Countermeasure plan kept in the Maintenance Building with the Right-to-Know Information.

1. NOTIFICATION AND RESPONSE

Upon discovery of a spill, the individual will immediately assess the risks to employees, evacuate the area and call 911 if necessary, and notify the ESC.

Primary Emergency Coordinator/Assistant General Manager
Dan Flaherty
978-618-5170 (24 hours)
978-469-6878 x125 (business)

Property Manager
Guy Jean
978-228-0561 (business)
gjean@mvrta.com

Alternate Emergency Coordinator
Tim Hegarty, General Manager
978-618-5164 (24 hours)
978-469-6878 X120 (business)

Corporate Personnel
Joseph Costanzo, Administrator
978-469-6878 x130 (business)

A. The Assistant General Manager is responsible for further notifications and all decisive actions in the event of a spill at the Facility.

B. The Assistant General Manager or his designated alternate will supervise efforts to provide immediate containment of the spill to prevent a more difficult cleanup situation. Under the direction of the Assistant General Manager or his designee, Facility personnel should isolate or repair the source of the leak/spill to prevent additional spillage. The Facility personnel will utilize the spill control materials to contain the release. For additional details on oil spill cleanup procedures, refer to Section 14.0 of the SPCC plan.

C. The Assistant General Manager or his designee will determine the need and be responsible for calling in additional assistance of the designated outside contractor: The designated cleanup contractor is:

Cyn Environmental 1-800-622-6365

2. FEDERAL AND STATE NOTIFICATION

If spill occurs on:

WATER The Assistant General Manager will notify the National Response Center and the Massachusetts Department of Environmental Protection (MA DEP) immediately at the telephone numbers provided below if the spill results in a discharge of any quantity of oil into an adjacent stream and/or wetlands

LAND The Assistant General Manager will notify the MA DEP within 2 hours if the discharge is greater than or equal to 10 gallons within a 24-hour period, impacts a storm water system or sanitary sewer system, or poses an imminent hazard.

National Response Center
(800) 424-8802 (24 hours)

MA DEP Spill Hotline
(888) 304-1133 (24 Hours)

3. RELEASE DOCUMENTATION

The Assistant General Manager or his designee will initiate a Release Reporting Form as soon as possible following discovery of the release and prior to notification to MA DEP and will complete the Release Reporting Form upon completion of the spill cleanup. The Assistant General Manager is responsible for completing all required notification forms and ensuring that reports are submitted to the appropriate regulatory agencies.

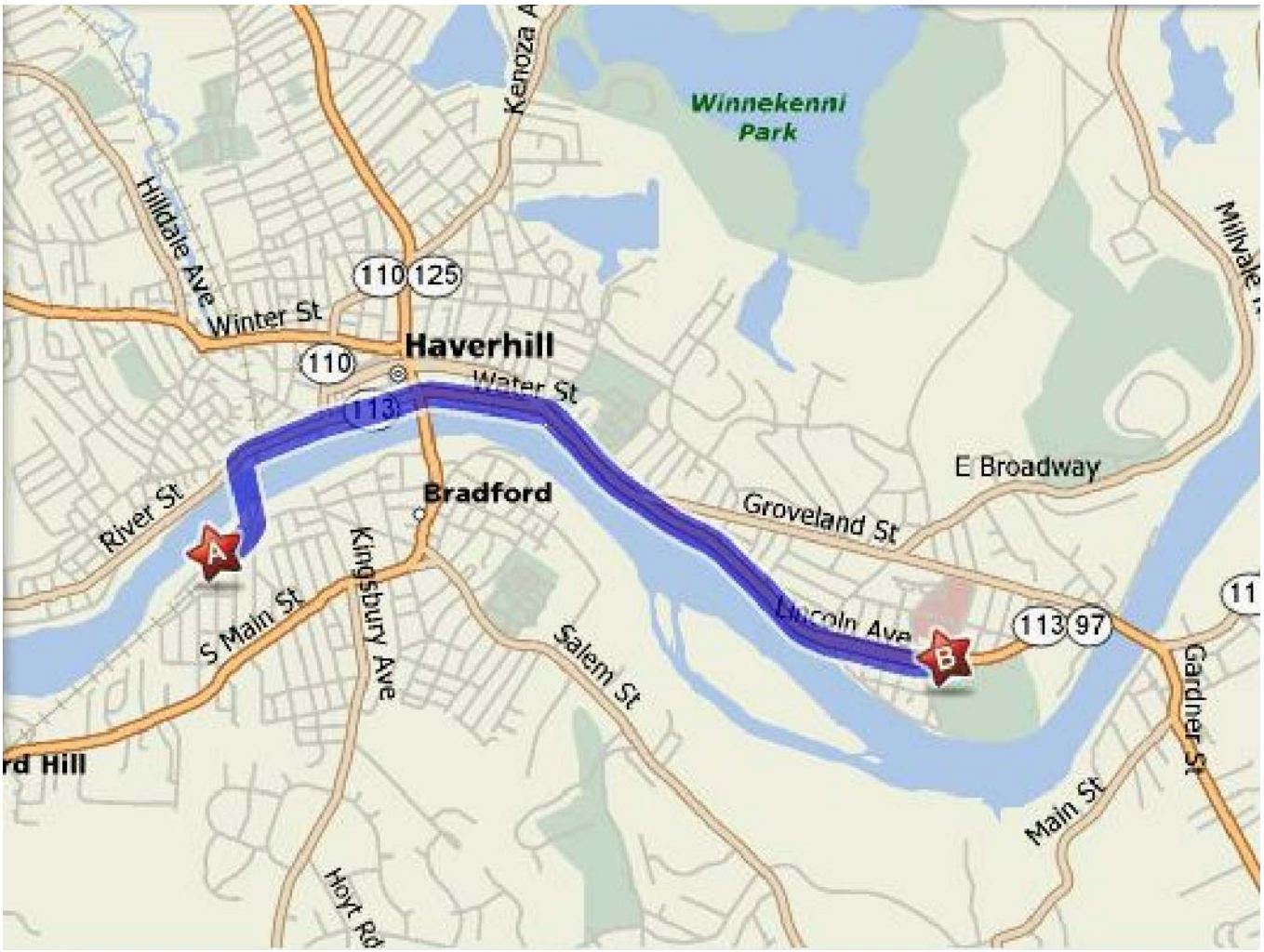
4. LOCAL NOTIFICATION

The following local agencies will be called to provide emergency assistance based on the judgment of the Assistant General Manager:

Fire Department
911 (emergency)

Police Department
911 (emergency)

Merrimack Valley Hospital
140 Lincoln Avenue
Haverhill, Massachusetts
978-374-2000



1: START OUT GOING NORTHEAST ON RAILROAD AVE TOWARD SOUTH ELM STREET. 0.1 MILES

2: RAILROAD AVE becomes GONZALIAN BRIDGE. 0.2 MILES

3: TURN SLIGHT RIGHT ONTO WASHINGTON ST/ MA-110/ MA-113. CONTINUE TO FOLLOW MA-113 S. 2.5 MILES

4: END AT 140 LINCOLN AVENUE, HAVERHILL, MA 01830-6700, US

TOTAL EST. TIME: 7 MINUTES TOTAL EST. DISTANCE: 2.85 MILES

RANSOM Environmental Consultants, Inc.

MAP TO HOSPITAL

MERRIMACK VALLEY HOSPITAL
140 LINCOLN AVENUE
HAVERHILL, MASSACHUSETTS

P:\2008\081020\081020-HOSP.dwg

APPENDIX G

Release Reporting Form

Spill Prevention, Control, and
Countermeasure (SPCC) Plan
Merrimack Valley Regional Transit Authority
Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts

RELEASE REPORTING FORM
Merrimack Valley Regional Transit Authority
Maintenance Facility

FACILITY ADDRESS: 85 Railroad Avenue, Haverhill, MA 01835

FACILITY PHONE: (978) 469-6878

RELEASE DATE: _____ **RELEASE TIME:** _____

SOURCE OF RELEASE: _____

TYPE OF MATERIAL DISCHARGED: _____

_____

ESTIMATED QUANTITY DISCHARGED: _____

DESCRIPTION OF AFFECTED MEDIA: _____

_____

LIST DAMAGES OR INJURIES: _____

_____

LIST EMPLOYEES INVOLVED, IF ANY: _____

_____

_____

EVACUATION REQUIRED? _____**YES** _____ **NO**

DESCRIBE ACTIONS TAKEN TO ELIMINATE OR REDUCE THE HAZARD: _____

_____

_____

_____

LIST CLEANUP CONTRACTOR, IF CONTACTED: _____

LIST AGENCIES CONTACTED: _____

_____

REPORT PREPARED BY: _____ **DATE:** _____ **TIME:** _____

SIGNATURE: _____

APPENDIX H

Certification of the Substantial Harm Criteria

Spill Prevention, Control, and
Countermeasure (SPCC) Plan
Merrimack Valley Regional Transit Authority
Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts

CERTIFICATION OF SUBSTANTIAL HARM DETERMINATION FORM

Facility Name: Merrimack Valley Regional Transit Authority Maintenance Facility

Facility Address: 85 Railroad Avenue
Haverhill, Massachusetts 01835

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 _____X___

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 sufficient enough 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 ____X____

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 40 CFR 112 or a Comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?
   Yes _____ No ____X____

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 40 CFR 112 or a comparable formula) such that a discharge from the facility would shut down a public drinking water intake?
   Yes _____ No ____X_____

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 spill in an amount greater than or equal to 10,000 gallons within the last 5 years?
   Yes _____ No _____X____

CERTIFICATION

I certify under penalty of law that I 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: Title: Professional Engineer

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE (SPCC) PLAN
MERRIMACK VALLEY REGIONAL TRANSIT AUTHORITY
MAINTENANCE FACILITY
85 RAILROAD AVENUE
HAVERHILL, MASSACHUSETTS

Prepared for:

Merrimack Valley Regional Transit Authority
85 Railroad Avenue
Haverhill, Massachusetts 01835

Prepared by:

Ransom Consulting, Inc.
12 Kent Way, Suite 100
Byfield, Massachusetts
(978) 465-1822

Project 081.01020
December 2018

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U.S. EPA TITLE 40 CFR PART 112 CROSS-REFERENCE

Subpart A: Applicability, Definitions, and General Requirements

Rule Section	Subject	Plan Section(s)
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112.3(d)	Professional Engineer Certification	1.1
112.3(e)	Plan Availability	1.3
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112.3(g)	Certification for Qualified Facilities	2.5
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112.7(a)(4)	Incident Reporting Requirements	14.3, App F
112.7(a)(5)	Discharge Response Procedures	14.0, App F
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112.7(c)	Containment and/or Diversionary Structures/Equipment	8.0
112.7(d)	Demonstration of Practicability	Not Applicable
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112.7(f)	Personnel Training Program	11.0
112.7(g)	Facility Security	12.0
112.7(h)	Loading/Unloading Racks	Not Applicable
112.7(i)	Field-Constructed Aboveground Containers	Not Applicable
112.7(j)	Compliance with State rules, regulations, and guidelines	1.1, 2.0
112.7(k)	Qualified Oil-filled Equipment	
112.7(k)(1)	Qualification Criteria	5.0
112.7(k)(2)	Secondary Containment Alternatives	5.0

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Rule Section	Subject	Plan Section(s)
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112.8(b)	Facility Drainage	4.4
112.8(b)(1,2)	Drainage from Diked Storage Areas	Not Applicable
112.8(b)(3)	Drainage from Undiked Areas	4.4
112.8(b)(4)	Prevent Off-Site Discharge of Oil	8.0
112.8(b)(5)	Drainage Water Treatment Units	Not Applicable
112.8(c)	Bulk Storage Containers	
112.8(c)(1)	Use of Compatible Materials	13.1
112.8(c)(2)	Secondary Containment Capacity	13.2
112.8(c)(3)	Stormwater Drainage from Diked Areas	Not Applicable
112.8(c)(4)	Completely Buried Metallic Storage Tanks	4.4
112.8(c)(5)	Partially Buried Metallic Storage Tanks	Not Applicable
112.8(c)(6)	Integrity Testing	10.2
112.8(c)(7)	Internal Heating Coils	Not Applicable
112.8(c)(8)	Leak-Detection/Prevention Devices	8.0
112.8(c)(9)	Effluent Treatment Facilities	Not Applicable
112.8(c)(10)	Maintenance	10.0
112.8(c)(11)	Location of Portable/Mobile Containers	Not Applicable
112.8(d)	Facility Transfer Operations	7.2
112.8(d)(1)	Buried Piping	13.10
112.8(d)(2)	Terminal Connection End Points	13.10
112.8(d)(3)	Pipe Support Design	13.10
112.8(d)(4)	Inspection of Valves, Piping, and Appurtenances	10.0
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Subpart D: Response Requirements		
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Appendix C	Substantial Harm Criteria	15.0, App H

1.0 MANAGEMENT APPROVAL AND CERTIFICATION

1.1 Management Approval of SPCC Plan

This Spill Prevention, Control, and Countermeasure (SPCC) Plan has been developed to meet the requirements of U.S. Environmental Protection Agency (U.S. EPA) Title 40, Code of Federal Regulations, Part 112 (40 CFR 112) for the Merrimack Valley Regional Transit Authority facility (MVRTA) located at 85 Railroad Avenue in Haverhill, Massachusetts (the Facility). The programs and procedures outlined in the Plan will be implemented as described herein. The SPCC Plan will be periodically reviewed and updated as needed with changes at the Facility or with applicable regulations.

MVRTA has assigned its authority for implementation of this SPCC Plan to management personnel. The signature of the MVRTA management personnel authorized to approve and oversee the implementation of this SPCC Plan is provided in Appendix A.

1.2 Certification by Professional Engineer

I hereby certify that I or my agent has examined the MVRTA facility located at 85 Railroad Avenue in Haverhill, Massachusetts and, being familiar with the provisions of 40 CFR 112, attest that this SPCC Plan has been prepared in accordance with good engineering practices, including consideration of applicable industry standards. In addition, I attest that procedures for the required inspections and testing have been established, that this SPCC Plan is adequate for the Facility, and that this SPCC Plan is in accordance with 40 CFR Part 112 requirements. This certification shall not relieve the owner of the Facility (MVRTA) of their duty to prepare and fully implement the SPCC Plan in accordance with the provisions of 40 CFR 112.

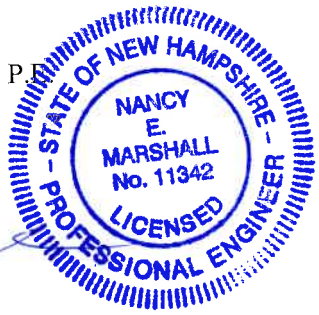
Registered Professional Engineer: Nancy E. Marshall, P.E.

Firm: Ransom Consulting, Inc.

PE Registration No.: 11342, New Hampshire

Signature: Nancy E. Marshall

Date: 12/14/18



2.0 CONFORMANCE WITH REQUIREMENTS

2.1 Regulatory Background

Originally published in 1973 under the authority of §311 of the Clean Water Act, the Oil Pollution Prevention regulation ([40 CFR 112), also known as the Spill Prevention, Control, and Countermeasure (SPCC) rule, sets forth procedures, methods, and requirements to prevent the discharge of oil from non-transportation-related onshore and offshore facilities into or upon waters of the U.S. In December 2006 and 2008, the U.S. EPA Administrator signed final rules to amend the existing SPCC rule to address a number of issues raised by its 2002 final rule, including those pertaining to facilities with smaller oil storage capacities, qualified oil-filled operational equipment, motive power containers, and mobile refuelers. On November 5, 2009, the EPA Administrator again amended the SPCC rule and promulgated the revisions to the December 2008 amendments. The November 5, 2009, rule was effective on January 14, 2010. A copy of 40 CFR 112 is provided in Appendix B.

2.2 Regulatory Deadlines

On October 7, 2010, EPA published in the *Federal Register* a SPCC compliance date extension for those onshore facilities not required to have a Facility Response Plan to November 10, 2011. Therefore, the regulatory deadlines are in effect at this time.

2.3 Plan Implementation and Availability

Implementation of this SPCC plan is the responsibility of the MVRTA Management. This includes personnel training, adherence to procedures, and maintaining an inventory of necessary cleanup equipment and supplies in each of the designated areas.

The SPCC Plan will be accessible at all times by response personnel and available for on-site review by the U.S. EPA Regional Administrator and/or Massachusetts Department of Environmental Protection (MassDEP) personnel during normal working hours. A copy of this SPCC Plan will be maintained at the following locations:

Copy No. 1: Maintenance Shop, with Right-to-Know Information; and

Copy No. 2: Office of the General Manager.

2.4 Applicable Requirements

The procedures, methods, and equipment described in this document meet the requirements of the following:

1. U.S. EPA, 40 CFR Parts 109, 110, and 112;

2. Massachusetts General Laws, Chapter 21E, Massachusetts Oil and Hazardous Material Release Prevention Act;

3. Chapter 527 Code of Massachusetts Regulations Section 9.00 (527 CMR 9.00) Board of Fire Prevention Regulations; and

4. Chapter 520 Code of Massachusetts Regulations Section 12.00 (520 CMR 12.00) Massachusetts Department of Public Safety Regulations.

2.5 Applicable Facilities

The SPCC rule applies to all non-transportation facilities which may reasonably be expected to discharge oil in quantities that may be harmful into or upon the navigable waters of the U.S., as defined in Section 3.0 of this SPCC Plan. The determination of "reasonable expectation" must be based solely upon consideration of the geographical and location aspects of the facility, excluding consideration of manmade features. Exceptions are the following:

1. Facilities that are not under the jurisdiction of the U.S. EPA;

2. Facilities that store less than 42,000 U.S. gallons (gallons) of oil underground;

3. Facilities used exclusively for wastewater treatment and not for any other requirements of 40 CFR 112; and

4. Facilities that store less than 1,320 gallons of oil aboveground. For purposes of this exemption, only containers of oil with a capacity of 55 gallons or greater are counted. The storage capacities of permanently closed containers, motive power containers, hot-mix asphalt (HMA) containers, residential heating oil tanks, and produced water containers are also excluded from the aggregate aboveground storage capacity of the facility.

The MVRTA facility located at 85 Railroad Avenue in Haverhill, Massachusetts stores more than 1,320 gallons of oil (i.e., new and used motor oil and transmission fluid) above ground and is located adjacent to the Merrimack River. The topography, manmade features and indoor storage of oil at the Facility have eliminated a reasonable expectation that oil could be discharged to the river.

2.6 Qualified Facilities

SPCC Plan requirements for *Qualified Facilities* are described in 40 CFR §112.6. The owner or operator of a *Qualified Facility* may self-certify his facility's SPCC Plan. A *Qualified Facility* meets the following criteria described under 40 CFR §112.3(g)(1):

1. The aggregate aboveground oil storage capacity of the facility is 10,000 gallons or less; and

2. The facility has had no single discharge as described in §112.1(b) exceeding 1,000 gallons or no two discharges as described in §112.1(b) each exceeding 42 U.S. gallons within any 12-month period in the 3 years prior to the SPCC Plan self-certification date; and

3. There is no individual aboveground oil storage container with a capacity greater than 5,000 gallons.

The MVRTA Facility has aggregate aboveground oil storage capacity of less than 10,000 gallons and the largest individual oil storage container is 1,000 gallons, which meets the criteria for a *Qualified Facility*;

however, the MVRTA has opted to have this SPCC Plan certified by a consulting Professional Engineer. In the future, MVRTA may opt to self-certify their SPCC Plan. Because the Facility meets the criteria for a Qualified Facility, it may take advantage of streamlined regulations.

2.7 Requirement for Preparation and Implementation of a SPCC Plan

Facilities regulated by 40 CFR 112 must prepare in writing and implement a SPCC Plan in accordance with 40 CFR §112.7 and any other applicable section of 40 CFR 112. The SPCC Plan must present procedures and plans that are implemented to prevent the discharge of oil into or upon the navigable waters of the U.S. and adjoining shorelines. The plan must also provide procedures that will be implemented to mitigate the release and minimize the threat to the public health and safety or to the environment, if a discharge of oil were to occur. Conformance with the applicable more stringent state regulations is required by 40 CFR §112.7(j).

2.8 SPCC Plan Review and Documentation

This SPCC Plan shall be reviewed and evaluated by MVRTA Management no less than once every 5 years. If no amendment to the existing SPCC Plan is necessary, on the Plan Review and Certification Log, the Facility Management should indicate the date of the plan review, the statement "No amendment is necessary as per 40 CFR 112.5(b)," and the reviewer's signature and title.

This SPCC Plan will be updated and revised as necessary in the event that:

1. There is a change in design, construction, operation, or maintenance at the Facility that materially affects the potential for oil to be discharged into or upon navigable waters such as the following:

    a. Tank commissioning or decommissioning;
    b. Replacement, reconstruction, or movement of tanks, piping systems, or secondary containment;
    c. Changes in products or services, if such changes would affect the Facilities' potential to discharge pollutants; and/or
    d. Revision of operating procedures;

2. The SPCC Plan fails in an emergency (i.e., it is deficient in controlling spills);

3. Local, state, or federal regulations change concerning SPCC rules;

4. More-effective technology becomes available; and/or

5. Amendments to the SPCC Plan have been requested by the Regional Administrator.

As long as the Facility has less than 10,000 gallons in aboveground oil storage capacity and meets the oil discharge history criteria in 40 CFR Part 112, the SPCC Plan can be reviewed and self-certified by MVRTA. If significant changes to the Facility have occurred since the last review such that the Facility no longer meets the Qualified Facility criteria, the plan must be updated and re-certified by a Professional Engineer.

Non-technical changes (i.e., those not requiring PE certification for Qualified or non-Qualified Facilities) would include:

1. Changes to contact information (names, titles, and phone numbers);

2. More-stringent requirements for stormwater discharges associated with National Pollutant Discharge Elimination System (NPDES) rules that are not addressed by and do not impact the SPCC plan;

3. Product changes if the new product is compatible with conditions in the existing tank and secondary containment; or

4. Other changes that do not materially increase or decrease the facility's potential to discharge oil.

Revisions which are incorporated into the body of this SPCC Plan shall be indicated on the Plan Review and Certification Log included in Appendix C, along with the date, the reason for the change, the findings and pages requiring revision, and the reviewer's name and signature. The revised SPCC Plan shall be implemented no later than 6 months after the revision date.

2.9 Regulatory Conformance

40 CFR 112.7(a)(2) allows for deviation from the following requirements, where applicable to a specific facility, if equivalent environmental protection by some other means of spill prevention, control or countermeasure is provided:

- §112.7, Paragraph (g), Security;

- §112.7, Paragraphs (h)(2) and (3), Loading/Unloading;

- §112.7, Paragraph (i), Field-Constructed Above-Ground Containers;

- Part 112, Subparts B and C, except the secondary containment requirements for oil storage locations, loading/unloading racks, bulk storage tanks, and mobile containers described in Paragraphs (c) and (h)(1) of §112.7, §§112.8(c)(2), and 112.8(c)(11), respectively.

Where a facility's SPCC Plan does not conform to the above applicable requirements, the reasons for nonconformance must be stated and the alternate methods employed to achieve equivalent environmental protection must be described in the SPCC Plan.

This SPCC Plan for the MVRTA Facility conforms to the applicable requirements provided in 40 CFR 112, such that a discharge of oil to navigable waters is not reasonably expected.

3.0 DEFINITIONS

Whenever the following terms are used in this document, they are intended to mean the following:

Bulk Storage Container:	Bulk storage container refers to 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.
Discharge:	Discharge includes, but is not limited to, any unauthorized spilling, leaking, pumping, pouring, emitting, emptying, or dumping.
Emergency Spill: Coordinator (ESC)	The Emergency Spill Coordinator is the person charged with the responsibility and delegated commensurate authority for directing and coordinating response operations and who knows how to request assistance from federal authorities operating under existing national and regional contingency plans.
Navigable Waters:	As defined in Section 502(7) of the Federal Water Pollution Control Act (FWPCA), and includes: (1) all navigable waters of the United States, as defined in judicial decisions prior to passage of the 1972 Amendments to the FWPCA (Pub. L. 92-500), and tributaries of such waters; (2) interstate waters; (3) intrastate lakes, rivers, and streams which are utilized by interstate travelers for recreational or other purposes; and (4) intrastate lakes, rivers, and streams from which fish or shellfish are taken and sold in interstate commerce.
Oil:	Oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, synthetic oils, mineral oils, oil refuse, or oil mixed with wastes other than dredged spoil. Oils used at the facilities include motor oil, fuel oil, insulating oil and lubricating oils.
Oil-Filled Operational Equipment:	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.
Operator:	The person(s) in control of or having the responsibility for operating or maintaining any property which is subject to these regulations.

Owner:	The person(s) who holds title to, or lawful possession of, real or personal property which is subject to these regulations.
Qualified Oil-filled Operational Equipment:	Qualified oil-filled operational equipment is oil-filled operational equipment located at a facility that has had no single discharge from any oil-filled operational equipment exceeding 1,000 U.S. gallons or no two discharges from any oil-filled operational equipment each exceeding 42 U.S. gallons within any 12-month period in the 3 years prior to the SPCC Plan certification date, or since becoming subject to 40 CFR 112 if the facility has been in operation for less than 3 years.
Secondary Containment:	A device or system or a combination thereof which include(s) a surface specifically designed to contain a release from spreading vertically or horizontally to the environment after discharge from an AST or its appurtenances.
Spill Event:	A discharge of oil in a quantity which violates applicable water quality standards or causes a film, discoloration, or sludge to be deposited on or beneath the surface of the water or upon adjoining shorelines.

4.0 FACILITY DESCRIPTION

4.1 General Information

Identification:	Merrimack Valley Regional Transit Authority Facility
Function:	Maintenance and fueling for public transportation vehicles
Location:	85 Railroad Avenue Haverhill, Massachusetts 01835 (See Figure 1)
Latitude:	42º 45' 57"
Longitude:	71º 05' 28"
Owner:	Merrimack Valley Regional Transit Authority 85 Railroad Avenue Haverhill, Massachusetts 01835 Attn: Joseph Costanzo, Administrator
Operator:	Merrimack Valley Regional Transit Authority 85 Railroad Avenue Haverhill, Massachusetts 01835 Attn: Tim Hegarty, General Manager
Emergency Spill Coordinator (ESC):	Dan Flaherty, Assistant General Manager–Maintenance

4.2 Facility Layout

Five buildings are aligned along the northwestern and southeastern sides of the Facility. The ground surface is primarily covered with asphalt pavement in areas where the buildings are not located. Curbing is present around the pavement at the northern end of the Facility so that runoff from the gate entrance is maintained on site. The asphalt surface is sloped inward from the perimeter to low areas in the central portions of the Facility, where catch basins are present to collect surface water runoff. The catch basins convey stormwater to a municipal storm sewer pump station.

The majority of the oil stored aboveground at the Facility is located in the Service Building located at the southern end of the site. The Service Building houses a diesel fuel pump and the bus-wash system. Trench drains located within the Service Building collect the vehicle wash water and recycle it through a wash-water recovery system. Potential releases of oil and/or diesel fuel from the oil stored within the Service Building would be captured by an oil/water separator (OWS) installed in the middle of the trench drain. Water from the OWS is pumped through the recycling system and reused in the bus wash system.

Oil is also stored with the Maintenance Building located along the southeastern property line. The Maintenance Building houses four bus lifts and a paint booth. The floor within the building is sloped to various trench drains located in the concrete slab. Oil/liquids released inside the Maintenance Building have the potential of entering the trench drains within the building; the drains all flow to a 3,000-gallon

oil/water separator (OWS) located beneath the floor of this building. The OWS discharges to the municipal sanitary sewer system at the northeast end of the property.

Five floor drains located in the Bus Storage/Parking Garage collect snow melt and rainwater from vehicles and discharge it to a third OWS located beneath the pavement by the northeast corner of the Garage. This OWS also discharges to the municipal sanitary sewer system located at the northeast end of the property. No oil is stored in bulk within the Bus Storage/Parking Garage.

Outside of the buildings, a fuel pump and a 10,000-gallon gasoline underground storage tank (UST) are located by the northwest corner of the Service Building. A 20,000-gallon diesel fuel UST is located in the area between the Service and Maintenance Buildings, and a pad-mounted transformer is located in a landscaped area by the northern entrance drive.

4.3 Surrounding Area

The Facility is located in a commercial/residential section of Haverhill, Massachusetts. The Facility is bounded by the Merrimack River to the northwest, a Massachusetts Bay Transit Authority (MBTA) commuter rail station to the southeast, a residence and undeveloped property to the northeast, and undeveloped property to the southwest.

4.4 Flow Directions and Facility Drainage

In general, the surrounding area slopes downward to the northwest from Railroad Avenue towards the Merrimack River. The ground surface at the Facility itself is sloped downward toward the center of the site such that precipitation falling with the Facility flows toward catch basins located in the pavement between the buildings. This stormwater collection system flows to a municipal storm sewer pump station located southwest of the Facility boundary.

The MVRTA recently expanded the existing office building to the north and installed additional catch basins in the pavement located at the northern end of the Site, down slope from the entrance drive and pad-mounted transformer. This system is connected to a Stormceptor stormwater treatment system that was installed by the northwest corner of the expanded office building. After treatment, the Stormceptor system discharges to the Merrimack River. A butterfly valve in the Stormceptor can be closed if needed to prevent a discharge from the system.

4.5 History of Spills

If a release of more than 1,000 gallons of oil into or upon navigable waters of the United States occurs in a single spill event or if there are two spill events of 42 gallons of oil or more into or upon navigable waters occurring within a 12-month period, the spill event(s) must be reported to the U.S. EPA. Refer to the Spill Reporting Procedures in Section 15.3 of this SPCC Plan. There have been no spill events subject to SPCC reporting requirements at the Facility since the early 1980s.

5.0 OIL-FILLED CONTAINERS AND EQUIPMENT

The bunk oil storage at the Facility consist of seven 275- to 1,000-gallon aboveground storage tanks (ASTs); several 55-gallon drums located within the Service and/or Maintenance Building; one 10,000-gallon gasoline underground storage tank (UST); and one 20,000-gallon diesel fuel UST. The gasoline fuel pump is located outdoors. The diesel fuel pump is located inside the Service Building. A summary of the oil-filled containers and equipment is provided in Table 1. The locations where oil is present at the Facility are indicated on Figure 2.

One energized electrical transformer (i.e., operating electrical equipment) with an unknown volume of mineral oil dielectric fluid [MODF]) is located at the Facility. For the purpose of this SPCC Plan, Ransom assumes that this oil-filled operating equipment is jurisdictional under 40 CFR 112. Hydraulic oil reservoirs lifts are present in the Maintenance Building; however, these tanks each contain less than 55 gallons of oil so are not jurisdictional under 40 CFR 112.

As described in 40 CFR 112.1(b), the owner or operator of a facility that has had no single discharge from any oil-filled operational equipment exceeding 1,000 U.S. gallons or no two discharges from any oil-filled operational equipment each exceeding 42 U.S. gallons within any 12-month period in the 3 years prior to the SPCC Plan certification date (i.e., "qualified" oil-filled equipment), may choose to implement alternate containment requirements as described in 40 CFR 112(k)(2) in lieu of general secondary containment requirements.

The transformer at the Facility is eligible for alternate secondary containment requirements according to the Federal Regulations (40 CFR 112). MVRTA is using the following procedures as alternative requirements in lieu of general secondary containment for the transformer:

- A written commitment of manpower, equipment, and materials by PDA management, as described in Section 1.2 and Appendix A of this SPCC Plan;
- Inspection procedures as described in Section 11.0 of this SPCC Plan; and
- Response procedures as described in Section 14.0 of this SPCC Plan.

6.0 DISCHARGE PREVENTION, CONTROL AND COUNTERMEASURES

The equipment and procedures which are used in the plan are practicable, cost-effective, and consistent with good engineering practices. In addition, the plans and procedures take advantage of the prevention and response capabilities of Facility employees and outside emergency response contractors as necessary.

6.1 Discharge Prevention

It is the MVRTA's goal not to have any oil discharges. Therefore, discharge prevention measures are in use at the Facility, including inspection, training, and routine handling procedures which are designed to prevent a release of oil into navigable waters. Inspection procedures and training are discussed in Sections 10.0 and 11.0, respectively. Oil handling procedures are discussed in Section 14.0 of this SPCC Plan.

6.2 Discharge Control

While it is MVRTA's goal not to have any oil discharges, if a discharge does occur, appropriate containment and/or diversionary structures or equipment are provided at the Facility to prevent a discharge of oil into or upon navigable waters or natural resources in quantities that may be harmful, or used to safely confine the release to the Facility property. Where secondary containment is utilized, the entire system, including walls and floor, is capable of retaining oil and is constructed so that any discharge from a primary containment system, such as a tank, will not escape the containment system before cleanup occurs. In accordance with 40 CFR §112.7(c)(1), one of the following prevention systems or its equivalent must be used at the Facility:

- Dikes, berms, or retaining walls sufficiently impervious to contain oil;
- Curbing;
- Culverting, gutters, or other drainage systems;
- Weirs, booms, or other barriers;
- Spill-diversion ponds;
- Retention ponds; or
- Sorbent materials.

The ASTs at the Facility are located indoors and include open-topped secondary tanks around the primary AST. Sorbent materials are located adjacent to drum storage areas and the diesel fuel pump for use as containment in the event of a release. Sorbent materials are also present on delivery trucks for use if needed when transferring fuel to the USTs. Curbing present along the northern end of the Facility would prevent a release from the pad-mounted transformer from migrating beyond the Facility boundary, and the Stormceptor system would contain oil discharged to it.

6.3 Discharge Countermeasures

If a discharge of oil occurs, MVRTA personnel will undertake the cleanup using existing staff or will contact a licensed contractor for assistance, depending on the size of the release. MVRTA maintains oil absorbent pads within the Maintenance Building at several locations, within the Service Building at the southern end near the ASTs, and outside by the gasoline dispenser pump. Discharge response procedures are discussed in Section 14.0.

7.0 POTENTIAL RELEASES

7.1 Oil Migration Potential

The majority of oil storage locations are indoors. Fuel transfers to or from the indoor tanks occur inside the Service and Maintenance Buildings. A release of oil inside these buildings would flow towards the trench drains where they would be captured by the oil/water separators installed beneath the floors of these buildings.

There is the potential for a spill event to occur outside of the buildings during fuel transfers associated with the two USTs and the dispenser pump. Based on the slope of the pavement around the USTs and dispenser pump, a release from these structures would migrate towards a catch basin located approximately 55 feet from the gasoline UST/dispenser pump, and approximately 75 feet from the diesel UST. A release entering the catch basin would flow to the municipal storm sewer pump station.

There is also the potential for a spill event to occur as a result of failure of the transformer. A release from the transformer would initially impact the landscaped area immediately surrounding the transformer. It the amount of oil release was sufficient to migrate beyond the landscaped area, under extreme conditions (i.e., during a precipitation event), the oil could migrate along the pavement located at the northern end of the facility to the newly installed catch basin. The catch basin discharges to Stormceptor treatment system. The system contains a butterfly valve that can be closed in the event of a release of oil in the area.

Based on the location of oil stored at the Facility, the secondary containment measures in place, and the surface topography, there is no reasonable likelihood that oil released at the Facility would impact navigable waters. Refer to Figure 3 for the sensitive receptors in proximity to the Facility.

7.2 Potential Release Mechanisms

7.2.1 Bulk Storage Tanks

Potential spill modes for ASTs and/or UST include tank puncture, rupture, corrosion, or toppling (for drums). Releases can also occur from distribution hoses or pipes associated with the bulk storage tanks. Releases from bulk storage tanks and their appurtenances can occur as a slow drip over time or suddenly as a catastrophic structural failure that releases the entire volume at once.

7.2.2 Transfer Operations

Potential spill modes during fuel transfer operations include rupture of the tank or delivery truck, failure of a hose or connection, or overfilling. Transfer operations associated with the ASTs and diesel fuel pump occur inside the buildings. Transfer operations to the USTs and from the gasoline distribution pump occur outside. Tank truck loading/unloading procedures meet the requirements and regulations established by the Department of Transportation. Tank trucks entering the facility are met by a member of the Maintenance Personnel, who checks the markings on the tank to ensure the correct product is being delivered. The volume of product in the tank being filled is measured with a graduated stick inserted in the tank by a member of the Maintenance Personnel before and after unloading. Fuel pump lines are equipped with quick-release connections which preclude fuel pumping in the event of a disconnection. Fuel transfers are supervised by both the delivery vehicle driver and a MVRTA employee so that the volume of

a release would be limited by the operators' initial response. Although the potential for a small release does exist, the potential for a substantial release is slight.

Potential for a spill exists during used-oil transfer operations either indoors or outdoors. Used oil is collected in a 55-gallon drum inside the Maintenance Building. The drum is periodically carried on a dolly or forklift to the Service Building, where it is emptied into either the 330-gallon or 1,000-gallon AST. The potential exists for a release of some or all of the drum contents during the transportation of the drum and/or transfer.

8.0 CONTAINMENT AND DIVERSIONARY STRUCTURES

8.1 Indoor ASTs and Drums

The indoor 1,000-gallon used oil AST is a double-wall tank. The 275- and 300-gallon ASTs in the Service Building and Maintenance Building are each enclosed by an open-topped secondary containment tank. No containment is provided for the 55-gallon drums stored inside; however, the floors are sloped to trench drains located the concrete floors. The trench drains in the Service Building flow to an oil/water separator (of unknown capacity) and then to the closed-loop wash-water recycling system. The trench drains in the Maintenance Building discharge to a 3,000-gallon capacity oil/water separator before discharging to the municipal sanitary sewer.

8.2 USTs

Each of the two USTs at the site is of double-walled fiberglass construction. Each UST is equipped with an electronic leak-detection system (Petrosonic) for early warning of an underground release.

8.3 Facility Yard

Releases in the facility yard could occur from fuel transfers associated with the USTs, gasoline fuel distribution pump, drums in transit to the Service Building, or the pad-mounted transformer. The facility yard site is graded so that surface flow is towards stormwater catch basin located in the pavement areas. The catch basins discharge to the municipal pump station or Stormceptor as described previously. The gasoline distribution pump is protected from vehicle traffic by bollards

9.0 DEMONSTRATION OF PRACTICABILITY

The existing secondary containment and stormwater collection systems can reasonably be expected to prevent the discharge of oil from the Facility into or upon the navigable waters of the United States or affect associated natural resources. Therefore, no demonstration of practicability is needed.

10.0 INSPECTIONS AND RECORDKEEPING

Inspections of the ASTs and USTs are conducted daily by facility personnel under the supervision of the Assistant General Manager. The ASTs are inspected informally (i.e., not documented) each day during inventory checks. The Maintenance Personnel are instructed to be aware of the condition of the equipment and to notify the Assistant General Manger if there is a problem so that it may be addressed.

Fuel volumes are inventoried on a daily basis. Control is maintained on incoming, outgoing, and static volumes on a daily basis for all fuel tanks. Daily fuel logs are kept and reconciled monthly. An electronic leak-detection system (Petrosonic) is in operation on the two USTs at the site. This system monitors tank volumes and liquid levels and indicates if a release has occurred.

The USTs are tightness-tested in accordance with federal, state, and local regulations, and records are kept on file in the General Manager's office. Line pressure sensors on pumped discharges are used to shut down pumping when pressure loss indicates a possible line leak. Underground storage tanks are equipped with an electronic leak-detection system (Petrosonic).

Records of these inspections are completed during each round of inspection, kept on file at the Facility, and available for review for a period of at least 3 years. Should a visible oil leak be discovered during any of the inspections, maintenance of the AST and/or piping and corrective actions will immediately be initiated as described in this plan. A copy of the inspection report is provided in Appendix D.

The inspections will include a visual inspection of the Facility to check for AST or plumbing damage or leakage, and the presence of stained areas. The areas that require routine inspection are as follows:

1. Indoor ASTs and diesel fuel dispenser pump;
2. Outdoor gasoline dispenser pump;
3. Outdoor pad-mounted transformer; and
4. Outdoor UST filling areas.

The three oil/water separators present at the Facility are inspected, pumped, and cleaned twice a year (late winter/early spring and fall).

11.0 PERSONNEL AND TRAINING

Training is required for personnel who have oil-handling responsibilities at the Facility to ensure that spill prevention and control measures are fully implemented. The Assistant General Manager is responsible for ensuring training is available to properly instruct Facility personnel in SPCC-related activities and policies. Records of training and annual briefings will be completed for each employee following the training sessions and will be maintained by the Owner for a minimum of 3 years. A training record form is provided in Appendix E.

All Facility personnel will be informed as to who is designated for spill prevention and who reports spill events and/or maintenance concerns to management. Training is provided using this SPCC Plan during orientation at the time of hire and at least annually. The training will include, at a minimum:

1. A detailed review of this plan;

2. A review of the operations and maintenance standard operating procedures to prevent and respond to discharges and spills;

3. A review of any spill events which have occurred since the last training date and the effectiveness of the response;

4. A discussion of new technologies which may be useful in preventing or detecting spills; and

5. Applicable pollution control laws, rules, and regulations.

12.0 SECURITY

12.1 Access Restriction

The Facility is secured with a chain-link fence and access-controlled gate at all times. The facility is staffed six days a week, from 11:30 p.m. on Sundays through 9:00 p.m. on Saturdays. A maintenance person is on duty during the facility's hours of operation. The Facility is alarmed during the hours when it is unstaffed.

12.2 Lock-Out Procedures

At the end of the day, the maintenance person locks the diesel and gasoline fuel pumps and turns off the power to the pumps at the breaker panels, which are located inside the Service and Maintenance Buildings, respectively. Pump meter readings are recorded at the beginning and end of each day.

12.3 Facility Lighting

Facility lighting is provided in such a way as to illuminate the area sufficiently after dark to address nighttime releases and inhibit acts of vandalism.

13.0 BULK STORAGE CONTAINERS

The ASTs are classified as bulk storage tanks according to 40 CFR 112. Specific requirements regarding bulk storage containers are provided in 40 CFR 112.8(c)

13.1 Compatible Materials

Each of the bulk storage tanks at the Facility is constructed from a material that is compatible with the fuel it contains.

13.2 Secondary Containment

The bulk storage tanks at the Facility have secondary containment and are located indoors where a release would be captured by the interior trench drains. Therefore, the secondary containment at the Facility is adequate to prevent a release to the environment.

13.3 Diked Areas

No exterior diked areas are present at the Facility.

13.4 Underground Storage Tanks

The two USTs present at the site are of double-walled fiberglass construction. The Facility does not contain buried metallic storage tanks.

13.5 Partially Buried or Bunkered Storage Tanks

The Facility does not contain partially buried metallic storage tanks, or bunkered tanks.

13.6 Inspection and Testing

Underground storage tanks are tightness-tested in accordance with federal, state, and local regulations, and records are kept on file in the General Manager's office. Line pressure sensors on pumped discharges are used to shut down pumping when pressure loss indicates a possible line leak. Underground storage tanks are equipped with an electronic leak-detection system (Petrosonic).

Equipment inspection is part of the daily routine at the facility. The Maintenance Person in charge of fueling operations reads the meters on the fuel pumps each morning when the pumps are unlocked and/or the power is turned on. The meter reading is compared with the meter reading from the previous night when the pump was locked and/or the power turned off.

Aboveground storage tanks are inspected informally (not documented) each day during inventory checks. The Maintenance Personnel are instructed to be aware of the condition of the equipment and to notify the Assistant General Manager if there is a problem so that appropriate action may be taken.

In addition to the daily routine at the facility, a monthly shop safety meeting is conducted to discuss safety-related procedures, situations, and facility equipment.

13.7 Heating Coils

There are no internal heating coils in use at the Facility.

13.8 Discharge Prevention

The location of each bulk storage container has been installed in accordance with good engineering practices to avoid discharges. Each bulk storage container is equipped with a direct-reading level gauge and a vent.

13.9 Effluent Discharges

There are no plant effluent discharges at the Facility.

13.10 Maintenance

The Facility promptly corrects any visible discharges which result in a loss of oil from a container, including but not limited to seams, gaskets, piping, pumps, valves, rivets, and bolts.

The Facility will promptly remove any accumulation of oil in the secondary containment structure and assesses the source of the oil entering the secondary containment system.

13.11 Mobile Storage Containers

There are no mobile storage containers in use at the Facility.

14.0 SPILL RESPONSE AND CONTINGENCY PLAN

The following section provides the response actions that will be taken at the Site in response to a release (spill) of oil to the environment. Although this SPCC plan addresses releases of oil to water, the procedures below describe the actions to be taken for release to any environmental medium. A release includes visual or analytical verification of oil contamination discovered at the Facility, a failed piping system, or a failed tank tightness test. A release during oil handling or observed leakage from an AST or associated piping would require immediate response. This section includes the following: safety and emergency response actions, spill response and cleanup procedures, spill reporting and documentation, and disposal of oil-impacted materials.

In addition to its use as a best management practice, National Grid will use this detailed oil spill contingency plan in lieu of general secondary containment for qualified oil-filled operational equipment in combination with (1) the inspection/monitoring program to detect equipment failure and/or a discharge and (2) the written commitment of manpower, equipment, and materials required to expeditiously control and remove a spill. The contingency plan follows the provisions of 40 CFR 109 as indicated in this plan.

Appendix F provides an SPCC Spill Notification Plan which outlines the reporting procedures in order of occurrence and provides notification information to be used in the event of a release. Titles and not names are used because personnel may change. A person filling the role of Emergency Coordinator can be reached at all times.

14.1 Safety and Emergency Response Actions

Call 911 for a major fire, explosion, or other similar situation requiring emergency response personnel. The Assistant General Manager or General Manager will determine the need to contact the local emergency responders. The following is a list of emergency contacts:

Fire	911 (Emergency)
Police	911 (Emergency)
Hospital	Merrimack Valley Hospital 140 Lincoln Avenue Haverhill, Massachusetts 978-374-2000

The route to the nearest hospital with emergency room services is also provided in Appendix F.

14.2 Spill Response Procedures

The spill response organization is composed of the following positions: the on-scene Maintenance Personnel, the Assistant General Manager, the General Manager, and the Facility Administrator. An updated list of the persons holding these positions is provided in Appendix F of this SPCC Plan.

The Maintenance Personnel at the scene will:

- Stop or shut off leak, if possible;

- Evacuate all personnel not involved in the cleanup of the spill if the spill cannot be immediately stopped, controlled, or contained;
- Place sandbags to prevent spill from moving off site;
- Place absorbent pillows in front of the sandbags;
- Stop traffic from entering the spill area;
- Control access to the spill site;
- Ensure that no ignition sources are present or allowed into the spill site;
- Initiate cleanup and removal actions;
- Notify the Assistant General Manager, regardless of the size of the spill; and
- Perform other duties as directed by the Assistant General Manager.

The Assistant General Manager will:

- Determine the cause or source of the spill and ensure that immediate response actions to stop the leak and control the spill have been, or are being, taken;
- Notify the General Manager or alternate as soon as possible;
- Determine the spill size and assess hazard to personnel, building, and environment;
- Initiate oil/fuel containment action with the required manpower, equipment, and materials in accordance with the Response Action outlined below;
- Notify the Fire Department in the event of a fire or the likelihood of a fire;
- Ensure that there is no smoking in the area of the spill;
- Alert neighbors if personal danger is possible or if the spill is not being totally contained on facility property;
- Initiate cleanup and removal operations in accordance with the Response Action outlined below;
- Maintain a chronological log of events and communication during the spill incident, containment, and cleanup. Record times, names, conversations, instructions given and instructions received; and
- Take photographs of the spill and containment and cleanup activities.

The General Manager will:

- Notify federal, state, and local agencies as appropriate;
- Request assistance from cleanup contractor, if necessary;
- Document all actions and provide reports to the Facility Administrator and government agencies, as required;
- Update the SPCC Plan as necessary; and
- Notify the Facility Administrator of the incident and any requests for information from the press so that a response can be made. Obtain the name, publication or station, and telephone number of any reporter requesting information.

14.3 Spill Reporting Procedure

Facility personnel should be made aware of the need to report all spills to the Assistant General Manager. The Assistant General Manager is then responsible for all subsequent reporting and documentation procedures. An SPCC Spill Notification Plan for petroleum product spill reporting is provided in Appendix F. Spill reporting procedures shall be as follows:

1. **Immediately** notify the Assistant General Manager:

Dan Flaherty	978-469-6878 x 125	(business)
	978-618-5170	(mobile)

2. **Within 2 hours** of discovery of a spill, notify the MassDEP if:

   - The discharge is likely greater than or equal to 10 gallons of oil or 25 gallons of MODF and it is likely that the release occurred within any 24-hour period or less;
   - A discharge of any quantity results in a sheen on surface water;
   - The discharge is an imminent hazard (i.e., poses a threat to human life, such as an explosive hazard, or a threat to public safety or public water supply); **or**
   - The discharge is to a storm water system or sanitary sewer system.

   Facility personnel should complete the Release Reporting Form, discussed below and provided in Appendix F to this SPCC Plan, to compile the information required by the MassDEP in advance of notification to the Spill Hotline.

   MassDEP Spill Hotline 888-304-1133 (24 hours)

3. **Upon discovery of impact** to a navigable waterway, notify:

   NRC 800-424-8802 (24 hours)

The Assistant General Manager shall determine whether the spill has impacted navigable waters or adjacent shorelines; caused a sheen, a sludge, or an emulsion; or violated any applicable water quality standards and must be reported to the NRC. The following are the applicable national reportable quantities (RQ) for discharges of oil:

- For discharges of petroleum (oil) to surface waters, the RQ is any amount that causes a sheen upon the surface of the water.
- For spills of petroleum (oil) at a facility that has been notified in writing by a water utility that is located in a delineated public water supply wellhead protection area, the RQ is 55 gallons or more.
- For releases of oil to the environment within the facility boundary, excluding navigable waters, the RQ is 1,000 gallons.

4. **Within 60 days** of a single discharge of more than 1,000 gallons or for any two discharges of more than 42 gallons of oil in any 12-month period**,** submit written information to the U.S. EPA Regional Administrator as specified in 40 CFR 112.4:

   U.S. EPA Region 1 Administrator
   One Congress Street, Suite 1100
   Boston, Massachusetts 02114-2023

   The report shall include the following:

   - A copy of this SPCC Plan;
   - Amount and type of oil released;
   - Name and address of third parties damaged by the spill, including description and cost estimate of damages;
   - Cause of spill or failure analysis;
   - Containment and removal methods employed including costs; and
   - Measures taken for recurrence prevention.

   It is the responsibility of the U.S. EPA Regional Administrator to assign an on-scene coordinator to investigate all spills which are reported, in reference to the adequacy of the actions taken by the discharger or non-federal entities. The on-scene coordinator shall monitor and provide advice or assistance as required. If appropriate action is not being taken, the on-scene coordinator will take charge of the response activities.

14.4 Spill Documentation

Employees shall document all spill incidents on the Release Reporting Form, provided in Appendix G of this SPCC Plan. Information regarding the incident, such as the date and time of occurrence, the type of release, the personnel reporting the incident, the agencies notified, and the actions taken, should be

recorded and reported to the MassDEP. Photographic documentation should be made and maintained with the incident file.

Release Reporting Forms for a spill of any quantity will be maintained indefinitely at the Facility in the SPCC Plan.

14.5 Spill Cleanup Procedures

The facility is equipped with several Spill Control Stations (SCS), which generally contain absorbent booms, absorbent pads, plastic bags, plastic or vinyl gloves, equipment-use log sheet, and a Material Safety Data Sheet for each petroleum product. The Assistant General Manager is responsible for purchasing and maintaining spill control equipment and supplies and ensuring their proper use.

All containment and cleanup operations will be in accordance with safe work practices. Personnel shall utilize personal protective clothing and equipment when required. Cleanup procedures for oil and debris should include the following precautions and procedures.

1. Once a spill has been contained and leak(s) repaired, cleanup crews may begin to remove the spilled oil using oil-absorbent materials. On permeable surfaces, this will include removing the affected surface material around the spill site. The oil spill area will be cleaned up to remove visible traces.

2. All cleanup materials, including protective clothing, if contaminated with oil, will be placed in standard Department of Transportation (DOT) open-top drums.

3. Drums should be filled with sufficient absorbent material to eliminate liquids. Drums will be filled no more than half full with contaminated soil or saturated absorbent material. This is to keep the drum to a manageable weight.

4. Full drums should be covered with the appropriate lid and ring, labeled for contents, hazard identification, and date.

14.6 Remediation Waste Management

Spilled oil and oil-contaminated material will be removed from the Facility by a licensed oil and hazardous waste cleanup contractor. The Facility will use the following contractor as needed to response to a release of oil:

Cyn Environmental 1-800-622-6365

14.7 Press Release Guidelines

Release of any information will be made by the Facility Administrator. The Assistant General Manager will:

- Obtain the name, publication or station, and telephone number of reporter requesting information;

- Notify the General Manager of any request for information;

- Prevent press photographers from photographing or filming the incident without prior approval of the Facility Administrator; and

- Forbid any press conferences from being held on facility premises.

15.0 APPLICABILITY OF SUBSTANTIAL HARM CRITERIA

A more-detailed Facility Response Plan (FRP) is required when the location could reasonably be expected to cause substantial harm to the environment by discharging oil into or on navigable waters or adjoining shorelines under 40 CFR 112.20 of the Oil Pollution regulations. Because the Facility does not meet the criteria for Substantial Harm as outlined in Appendix C of 40 CFR 112, an FRP is not required. A "Certification of Substantial Harm Determination Form," provided in Appendix H, documents the non-applicability of a U.S. EPA FRP to the Site.

TABLE 1: SUMMARY OF OIL-FILLED CONTAINERS AND SPILL INFORMATION
Spill Prevention, Control, and Countermeasure (SPCC) Plan
Merrimack Valley Regional Transit Authority
Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts

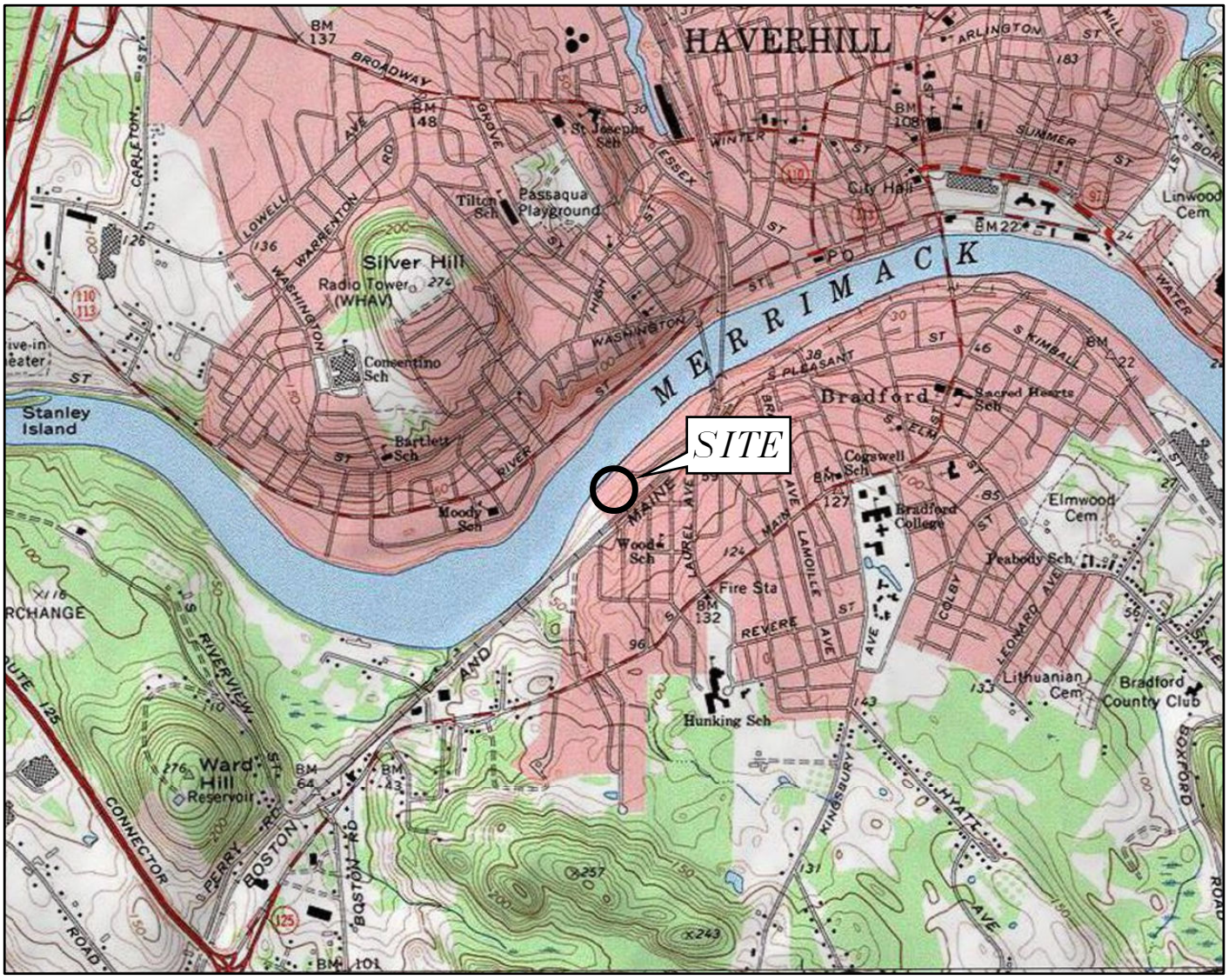
Oil Storage Area	Oil-Filled Container	Capacity (Gallons)	Contents	Description	Containment	Worst Case Receptor	Comments
Service Building - West Wall	AST	275	New Automatic Transmission Fluid (ATF)	Single wall rectangular AST; pump on top	Open-top steel basin on skids	Wash water recycling system	• The ASTs are filled or drained inside the Service Building, which contains a concrete floor. • A release due to AST failure would enter the surrounding containment basin. • AST flexible hoses are located outside of the containment tanks so a release from a hose could bypass the containment system and spill to the concrete floor. A release to the floor would migrate to a drainage trench in the concrete floor. • The drainage trenches are part of a non-discharging recycling system for a wash water system in the building; discharges entering the trenches are **not** released to the environment.
	AST	330	Used Gear oil	Single wall rectangular AST	Open-top steel basin on skids	Wash water recycling system	
	AST	1,000	Used Motor oil	Double-wall cylindrical AST, vertical	Double-wall AST on skids	Wash water recycling system	
Service Building - East Wall	AST	275	New Motor oil	Single wall rectangular AST; pump on top	Open-top steel basin on skids	Wash water recycling system	
	Fuel Pump (Transfer Area)	Varies	Diesel fuel	Indoor pump connected to outdoor 20,000-gal UST	Concrete floor of building slopes to drainage trenches	Wash water recycling system	• An emergency shut-off switch is located near the diesel fuel pump. • The drainage trenches are part of a non-discharging recycling system for a wash water system in the building; discharges entering the trenches are not released to the environment.

TABLE 1: SUMMARY OF OIL-FILLED CONTAINERS AND SPILL INFORMATION
Spill Prevention, Control, and Countermeasure (SPCC) Plan
Merrimack Valley Regional Transit Authority
Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts

Oil Storage Area	Oil-Filled Container	Capacity (Gallons)	Contents	Description	Containment	Worst Case Receptor	Comments
Maintenance Building	AST	275	New Transmission fluid	Single wall rectangular AST; pump on top	Open-top steel basin on skids	Drainage trenches to OWS to municipal sewer	• The ASTs are filled or drained inside the Maintenance Building, which contains a concrete floor. • A release due to AST failure would enter the surrounding containment tank. • AST flexible hoses are located outside of the containment tanks so a release from a hose could bypass the containment system and spill to the concrete floor. A release to the floor would migrate to a drainage trench. • The drainage trenches discharge to an oil/water separator before entering the municipal sanitary sewer; discharges entering the trenches are **not** released to the environment.
	AST	275	New Motor oil	Single wall rectangular AST; pump on top	Open-top steel basin on skids	Drainage trenches to OWS to municipal sewer	
	AST	330	Used Motor oil	Single wall rectangular AST	Open-top steel basin on skids	Drainage trenches to OWS to municipal sewer	
	Oil Filter Storage Area	< 55	Used Motor oil	Oil Transfer Area; Quantities vary	4'x4'x1' metal basin	Drainage trenches to OWS to municipal sewer	• Non-regulated containers less than 55 gallons
	Drums	15–55	Used Motor oil	Mobile, on casters; funnel used for filling; ±5 Drums	Concrete floor of building slopes to drainage trenches	Drainage trenches to OWS to municipal sewer	• The drum are used inside the Maintenance Building, which contains a concrete floor. • A release from a drum would spill to the concrete floor and migrate to a drainage trench. • The drainage trenches discharge to an oil/water separator before entering the municipal sewer; discharges entering the trenches are **not** released to the environment.
Maintenance Building (Continued)	Drums	55	Motor oil, transmission fluid, grease	Stationary; directly on floor; ±8 Drums	Concrete floor of building slopes to drainage trenches	Drainage trenches to OWS to municipal sewer	

TABLE 1: SUMMARY OF OIL-FILLED CONTAINERS AND SPILL INFORMATION
Spill Prevention, Control, and Countermeasure (SPCC) Plan
Merrimack Valley Regional Transit Authority
Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts

Oil Storage Area	Oil-Filled Container	Capacity (Gallons)	Contents	Description	Containment	Worst Case Receptor	Comments
Yard	Fuel Pump from 10,000-gal UST	Varies	Gasoline	On concrete pad and surrounded by asphalt	None; Protected by bollards	Catch Basin, +/-50 feet	• A release from the fuel pump would spill to the concrete pad and asphalt pavement and could migrate to a catch basin which discharges to the municipal storm sewer.
	UST	10,000	Gasoline	Double-wall UST	Double-wall UST with leak detection system	Subsurface soil; groundwater	• A release from the truck during filling of the UST would spill to the asphalt pavement and could migrate approximately 50 feet to a catch basin which discharges to the municipal sewer.
	UST	20,000	Diesel fuel	Double-wall UST	Double-wall UST with leak detection system	Subsurface soil; groundwater	• A release from the truck during filling of the UST would spill to the asphalt pavement and could migrate approximately 75 feet to a catch basin which discharges to the municipal sewer.
	Transformer	Unknown	Mineral oil dielectric fluid	Energized oil-filled operating equipment	Metal cabinet	Landscaped area	• If a release migrates beyond the metal cabinet and surrounding landscaped area, it could migrate across the asphalt parking lot to a catch basin which charges to the municipal sewer.



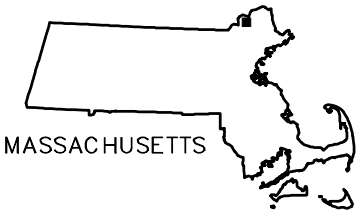
TAKEN FROM U.S.G.S. 7.5 MINUTE SERIES TOPOGRAPHIC MAP OF HAVERHILL, MASSACHUSETTS–1988.

CONTOUR INTERVAL IS 10 FEET

SITE COORDINATES: LATITUDE 42° 45'57"
LONGITUDE 71° 05'28"

UTM COORDINATES: 47:36:942mN
3:28:951mE

N
W E
S



QUADRANGLE LOCATION

0 1,000 2,000 4,000

SCALE in FEET 1:24,000

RANSOM Consulting Engineers and Scientists

SITE LOCATION MAP

PREPARED FOR:

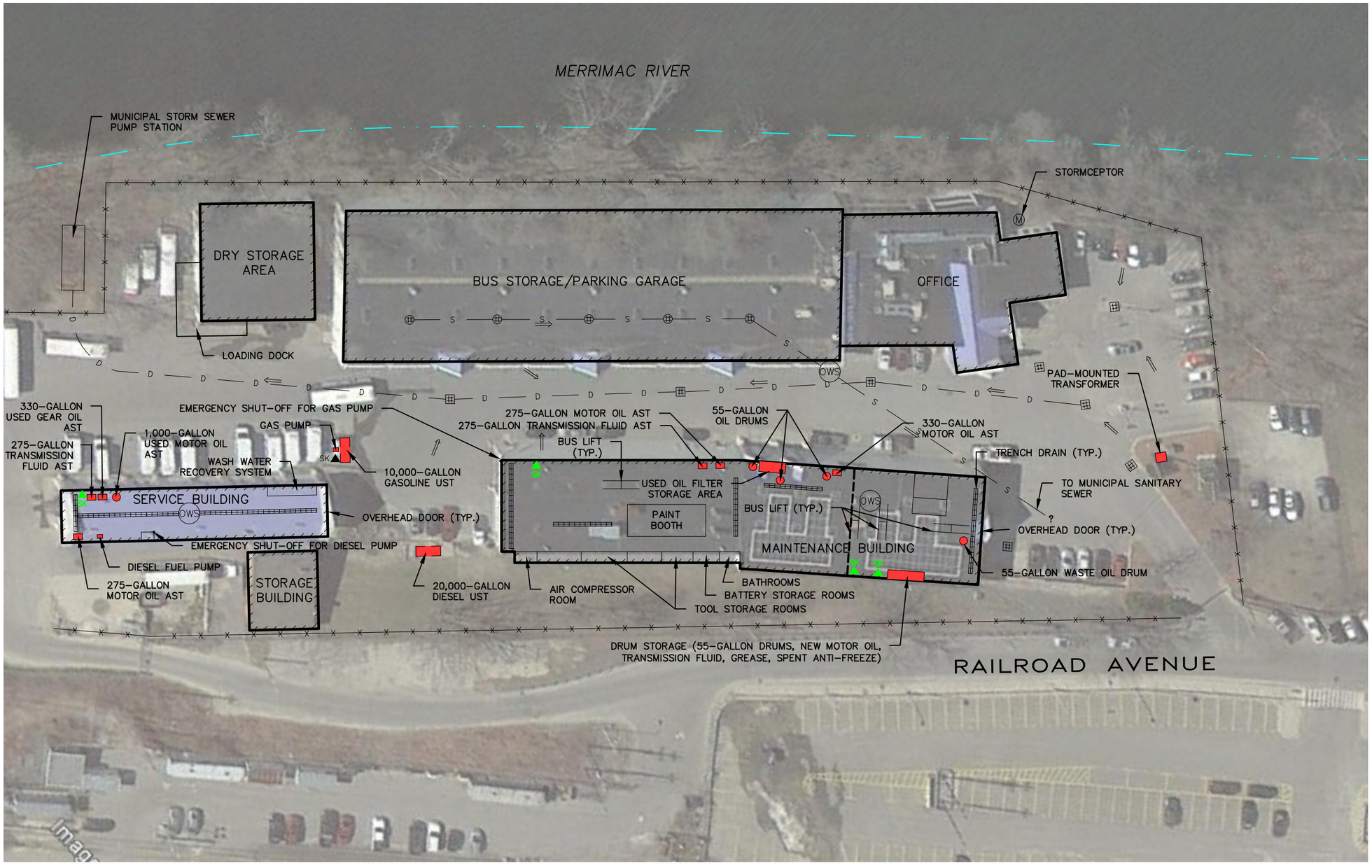
MERRIMAC VALLEY REGIONAL TRANSIT AUTHORITY

SITE:

MVRTA MAINTENANCE FACILITY
85 RAILROAD AVENUE
HAVERHILL, MASSACHUSETTS

DATE: DECEMBER 2018
PROJECT: 081.01020
FIGURE: 1

PM File: MCRTA_Maint-Facility-F1_SLM.mxd



LEGEND:

- CATCH BASIN
- FLOOR DRAIN
- OIL/WATER SEPARATOR
- SPILL KIT
- SURAFCE FLOW DIRECTION
- OIL STORAGE AREA
- STORM DRAIN LINE
- SANITARY DRAIN LINE
- FENCE

NOTES:

1. SITE PLAN BASED ON BASE PLAN PROVIDED BY MVRTA AND OBSERVATIONS MADE BY RANSOM CONSULTING, INC. ON SEPTEMBER 26, 2018.
2. SOME FEATURES ARE APPROXIMATE IN LOCATION AND SCALE.

0 30 60 120

SCALE in FEET
1"=60'

RANSOM Consulting, Inc.

PREPARED FOR:

MERRIMAC VALLEY REGIONAL TRANSIT AUTHORITY

SITE:

MVRTA MAINTENANCE FACILITY
85 RAILROAD AVENUE
HAVERHILL, MASSACHUSETTS

FACILITY SPCC PLAN

DATE: DECEMBER 2018
PROJECT: 081.01020
FIGURE: 2

X:\Ransom_NewEngland\Massachusetts\Haverhill_MA\MVRTA_Maint_Facility\Drawings\MVRTA_Maint_Facility.dwg; F2_Fac_SPCC_Plan December 14, 2018

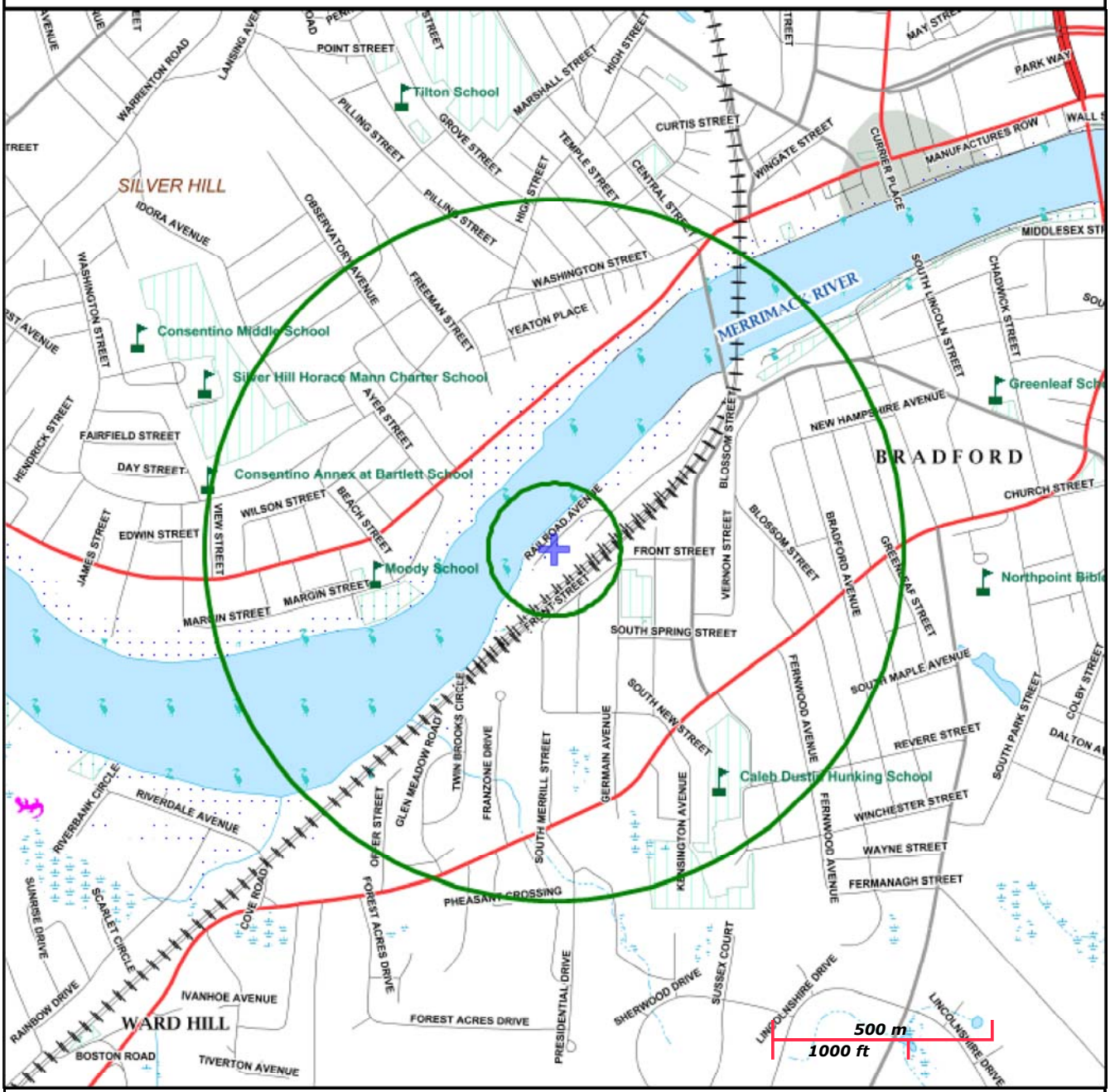
MassDEP - Bureau of Waste Site Cleanup

Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

Site Information:
MVRTA MAINTENANCE FACILITY
85 RAILROAD AVENUE HAVERHILL, MA
NAD83 UTM Meters:
4736930mN , 328886mE (Zone: 19)
November 27, 2018

The information shown is the best available at the date of printing. However, it may be incomplete. The responsible party and LSP are ultimately responsible for ascertaining the true conditions surrounding the site. Metadata for data layers shown on this map can be found at: http://www.mass.gov/mgis/.

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail
Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct
Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam
Aquifers: Medium Yield, High Yield, EPA Sole Source
Non Potential Drinking Water Source Area: Medium, High (Yield)
PWS Protection Areas: Zone II, IWPA, Zone A
Hydrography: Open Water, PWS Reservoir, Tidal Flat
Wetlands: Freshwater, Saltwater, Cranberry Bog
FEMA 100yr Floodplain; Protected Open Space; ACEC
Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential
Solid Waste Landfill; PWS: Com.GW,SW, Emerg.,Non-Com.

Figure 3

APPENDIX A

Management Commitment

Spill Prevention, Control, and
Countermeasure (SPCC) Plan
Merrimack Valley Regional Transit Authority
Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts

STATEMENT OF MANAGEMENT COMMITMENT

This Spill Prevention Control and Countermeasure Plan (SPCC) has been developed to meet the requirements of 40 CFR 112 for the Merrimack Valley Regional Transit Authority Facility (MVRTA) located at 85 Railroad Avenue in Haverhill, Massachusetts (the Facility) and will be implemented as described herein. The programs and procedures outlined in the Plan will be periodically reviewed and updated in accordance with 40 CFR 112, as amended.

This SPCC plan is fully approved by the management of MVRTA. MVRTA has the necessary resources, including funding, personnel, equipment, and management systems to effectively implement and maintain this plan. I have the authority to commit the resources necessary to implement the Spill Prevention Control and Countermeasure Plan for this facility.

Name: _____

Title: _____

Signature: _____

Date: _____

APPENDIX B

40 CFR Part 112, Oil Pollution Prevention

Spill Prevention, Control, and
Countermeasure (SPCC) Plan
Merrimack Valley Regional Transit Authority
Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts

ELECTRONIC CODE OF FEDERAL REGULATIONS

e-CFR Data is current as of August 19, 2013

Title 40: Protection of Environment

PART 112—OIL POLLUTION PREVENTION

Contents

Subpart A—Applicability, Definitions, and General Requirements for All Facilities and All Types of Oils

§ 112.1 General applicability.
§ 112.2 Definitions.
§ 112.3 Requirement to prepare and implement a Spill Prevention, Control, and Countermeasure Plan.
§ 112.4 Amendment of Spill Prevention, Control, and Countermeasure Plan by Regional Administrator.
§ 112.5 Amendment of Spill Prevention, Control, and Countermeasure Plan by owners or operators.
§ 112.6 Qualified Facilities Plan Requirements.
§ 112.7 General requirements for Spill Prevention, Control, and Countermeasure Plans.

Subpart B—Requirements for Petroleum Oils and Non-Petroleum Oils, Except Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and Vegetable Oils (Including Oils from Seeds, Nuts, Fruits, and Kernels)

§ 112.8 Spill Prevention, Control, and Countermeasure Plan requirements for onshore facilities (excluding production facilities).
§ 112.9 Spill Prevention, Control, and Countermeasure Plan Requirements for onshore oil production facilities (excluding drilling and workover facilities).
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§ 112.11 Spill Prevention, Control, and Countermeasure Plan requirements for offshore oil drilling, production, or workover facilities.

Subpart C—Requirements for Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and for Vegetable Oils, including Oils from Seeds, Nuts, Fruits, and Kernels

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Subpart D—Response Requirements

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Appendix F to Part 112—Facility-Specific Response Plan
Appendix G to Part 112—Tier I Qualified Facility SPCC Plan

AUTHORITY: 33 U.S.C. 1251 *et seq.;* 33 U.S.C. 2720; E.O. 12777 (October 18, 1991), 3 CFR, 1991 Comp., p. 351.

SOURCE: 38 FR 34165, Dec. 11, 1973, unless otherwise noted.

EDITORIAL NOTE: Nomenclature changes to part 112 appear at 65 FR 40798, June 30, 2000.

Subpart A—Applicability, Definitions, and General Requirements for All Facilities and All Types of Oils

SOURCE: 67 FR 47140, July 17, 2002, unless otherwise noted.

§ 112.1 General applicability.

(a)(1) This part establishes procedures, methods, equipment, and other requirements to prevent the discharge of oil from non-transportation-related onshore and offshore facilities into or upon the navigable waters of the United States or adjoining shorelines, or into or upon the waters of the contiguous zone, or in connection with activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974, or that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Magnuson Fishery Conservation and Management Act).

(2) As used in this part, words in the singular also include the plural and words in the masculine gender also include the feminine and vice versa, as the case may require.

(b) Except as provided in paragraph (d) of this section, this part applies to any owner or operator of a non-transportation-related onshore or offshore facility engaged in drilling, producing, gathering, storing, processing, refining, transferring, distributing, using, or consuming oil and oil products, which due to its location, could reasonably be expected to discharge oil in quantities that may be harmful, as described in part 110 of this chapter, into or upon the navigable waters of the United States or adjoining shorelines, or into or upon the waters of the contiguous zone, or in connection with activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974, or that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Magnuson Fishery Conservation and Management Act) that has oil in:

(1) Any aboveground container;

(2) Any completely buried tank as defined in § 112.2;

(3) Any container that is used for standby storage, for seasonal storage, or for temporary storage, or not otherwise “permanently closed” as defined in § 112.2;

(4) Any “bunkered tank” or “partially buried tank” as defined in § 112.2, or any container in a vault, each of which is considered an aboveground storage container for purposes of this part.

(c) As provided in section 313 of the Clean Water Act (CWA), departments, agencies, and instrumentalities of the Federal government are subject to this part to the same extent as any person.

(d) Except as provided in paragraph (f) of this section, this part does not apply to:

(1) The owner or operator of any facility, equipment, or operation that is not subject to the jurisdiction of the Environmental Protection Agency (EPA) under section 311(j)(1)(C) of the CWA, as follows:

(i) Any onshore or offshore facility, that due to its location, could not reasonably be expected to have a discharge as described in paragraph (b) of this section. This determination must be based solely upon consideration of the geographical and location aspects of the facility (such as proximity to navigable waters or adjoining shorelines, land contour, drainage, etc.) and must exclude consideration of manmade features such as dikes, equipment or other structures, which may serve to restrain, hinder, contain, or otherwise prevent a discharge as described in paragraph (b) of this section.

(ii) Any equipment, or operation of a vessel or transportation-related onshore or offshore facility which is subject to the authority and control of the U.S. Department of Transportation, as defined in the Memorandum of Understanding between the Secretary of Transportation and the Administrator of EPA, dated November 24, 1971 (appendix A of this part).

(iii) Any equipment, or operation of a vessel or onshore or offshore facility which is subject to the authority and control of the U.S. Department of Transportation or the U.S. Department of the Interior, as defined in the Memorandum of Understanding between the Secretary of Transportation, the Secretary of the Interior, and the Administrator of EPA, dated November 8, 1993 (appendix B of this part).

(2) Any facility which, although otherwise subject to the jurisdiction of EPA, meets both of the following requirements:

(i) The completely buried storage capacity of the facility is 42,000 U.S. gallons or less of oil. For purposes of this exemption, the completely buried storage capacity of a facility excludes the capacity of a completely buried tank, as defined in § 112.2, and connected underground piping, underground ancillary equipment, and containment systems, that is currently subject to all of the technical requirements of part 280 of this chapter or all of the technical requirements of a State program approved under part 281 of this chapter, or the capacity of any underground oil storage tanks deferred under 40 CFR part 280 that supply emergency diesel generators at a nuclear power generation facility licensed by the Nuclear Regulatory Commission and subject to any Nuclear Regulatory Commission provision regarding design and quality criteria, including, but not limited to, 10 CFR part 50. The completely buried storage capacity of a facility also excludes the capacity of a container that is “permanently closed,” as defined in § 112.2 and the capacity of intra-facility gathering lines subject to the regulatory requirements of 49 CFR part 192 or 195.

(ii) The aggregate aboveground storage capacity of the facility is 1,320 U.S. gallons or less of oil. For the purposes of this exemption, only containers with a capacity of 55 U.S. gallons or greater are counted. The aggregate aboveground storage capacity of a facility excludes:

(A) The capacity of a container that is “permanently closed” as defined in § 112.2;

(B) The capacity of a “motive power container” as defined in § 112.2;

(C) The capacity of hot-mix asphalt or any hot-mix asphalt container;

(D) The capacity of a container for heating oil used solely at a single-family residence;

(E) The capacity of pesticide application equipment and related mix containers.

(F) The capacity of any milk and milk product container and associated piping and appurtenances.

(3) Any offshore oil drilling, production, or workover facility that is subject to the notices and regulations of the Minerals Management Service, as specified in the Memorandum of Understanding between the Secretary of Transportation, the Secretary of the Interior, and the Administrator of EPA, dated November 8, 1993 (appendix B of this part).

(4) Any completely buried storage tank, as defined in § 112.2, and connected underground piping, underground ancillary equipment, and containment systems, at any facility, that is subject to all of the technical requirements of part 280 of this chapter or a State program approved under part 281 of this chapter, or any underground oil storage tanks including below-grade vaulted tanks, deferred under 40

CFR part 280, as originally promulgated, that supply emergency diesel generators at a nuclear power generation facility licensed by the Nuclear Regulatory Commission, provided that such a tank is subject to any Nuclear Regulatory Commission provision regarding design and quality criteria, including, but not limited to, 10 CFR part 50. Such emergency generator tanks must be marked on the facility diagram as provided in § 112.7(a)(3), if the facility is otherwise subject to this part.

(5) Any container with a storage capacity of less than 55 gallons of oil.

(6) Any facility or part thereof used exclusively for wastewater treatment and not used to satisfy any requirement of this part. The production, recovery, or recycling of oil is not wastewater treatment for purposes of this paragraph.

(7) Any “motive power container,” as defined in § 112.2. The transfer of fuel or other oil into a motive power container at an otherwise regulated facility is not eligible for this exemption.

(8) Hot-mix asphalt, or any hot-mix asphalt container.

(9) Any container for heating oil used solely at a single-family residence.

(10) Any pesticide application equipment or related mix containers.

(11) Intra-facility gathering lines subject to the regulatory requirements of 49 CFR part 192 or 195, except that such a line's location must be identified and marked as “exempt” on the facility diagram as provided in § 112.7(a)(3), if the facility is otherwise subject to this part.

(12) Any milk and milk product container and associated piping and appurtenances.

(e) This part establishes requirements for the preparation and implementation of Spill Prevention, Control, and Countermeasure (SPCC) Plans. SPCC Plans are designed to complement existing laws, regulations, rules, standards, policies, and procedures pertaining to safety standards, fire prevention, and pollution prevention rules. The purpose of an SPCC Plan is to form a comprehensive Federal/State spill prevention program that minimizes the potential for discharges. The SPCC Plan must address all relevant spill prevention, control, and countermeasures necessary at the specific facility. Compliance with this part does not in any way relieve the owner or operator of an onshore or an offshore facility from compliance with other Federal, State, or local laws.

(f) Notwithstanding paragraph (d) of this section, the Regional Administrator may require that the owner or operator of any facility subject to the jurisdiction of EPA under section 311(j) of the CWA prepare and implement an SPCC Plan, or any applicable part, to carry out the purposes of the CWA.

(1) Following a preliminary determination, the Regional Administrator must provide a written notice to the owner or operator stating the reasons why he must prepare an SPCC Plan, or applicable part. The Regional Administrator must send such notice to the owner or operator by certified mail or by personal delivery. If the owner or operator is a corporation, the Regional Administrator must also mail a copy of such notice to the registered agent, if any and if known, of the corporation in the State where the facility is located.

(2) Within 30 days of receipt of such written notice, the owner or operator may provide information and data and may consult with the Agency about the need to prepare an SPCC Plan, or applicable part.

(3) Within 30 days following the time under paragraph (b)(2) of this section within which the owner or operator may provide information and data and consult with the Agency about the need to prepare an SPCC Plan, or applicable part, the Regional Administrator must make a final determination regarding whether the owner or operator is required to prepare and implement an SPCC Plan, or applicable part. The Regional Administrator must send the final determination to the owner or operator by certified mail or by personal delivery. If the owner or operator is a corporation, the Regional Administrator must also mail a copy of the final determination to the registered agent, if any and if known, of the corporation in the State where the facility is located.

(4) If the Regional Administrator makes a final determination that an SPCC Plan, or applicable part, is necessary, the owner or operator must prepare the Plan, or applicable part, within six months of that final determination and implement the Plan, or applicable part, as soon as possible, but not later than one year after the Regional Administrator has made a final determination.

(5) The owner or operator may appeal a final determination made by the Regional Administrator requiring preparation and implementation of an SPCC Plan, or applicable part, under this paragraph. The owner or operator must make the appeal to the Administrator of EPA within 30 days of receipt of the final determination under paragraph (b)(3) of this section from the Regional Administrator requiring preparation and/or implementation of an SPCC Plan, or applicable part. The owner or operator must send a complete copy of the appeal to the Regional Administrator at the time he makes the appeal to the Administrator. The appeal must contain a clear and concise statement of the issues and points of fact in the case. In the appeal, the owner or operator may also provide additional information. The additional information may be from any person. The Administrator may request additional information from the owner or operator. The Administrator must render a decision within 60 days of receiving the appeal or additional information submitted by the owner or operator and must serve the owner or operator with the decision made in the appeal in the manner described in paragraph (f)(1) of this section.

[67 FR 47140, July 17, 2002, as amended at 71 FR 77290, Dec. 26, 2006; 73 FR 74300, Dec. 5, 2008; 74 FR 58809, Nov. 13, 2009; 76 FR 21660, Apr. 18, 2011]

§ 112.2 Definitions.

For the purposes of this part:

Adverse weather means weather conditions that make it difficult for response equipment and personnel to clean up or remove spilled oil, and that must be considered when identifying response systems and equipment in a response plan for the applicable operating environment. Factors to consider include significant wave height as specified in appendix E to this part (as appropriate), ice conditions, temperatures, weather-related visibility, and currents within the area in which the systems or equipment is intended to function.

Alteration means any work on a container involving cutting, burning, welding, or heating operations that changes the physical dimensions or configuration of the container.

Animal fat means a non-petroleum oil, fat, or grease of animal, fish, or marine mammal origin.

Breakout tank means a container used to relieve surges in an oil pipeline system or to receive and store oil transported by a pipeline for reinjection and continued transportation by pipeline.

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.

Bunkered tank means a container constructed or placed in the ground by cutting the earth and re-covering the container in a manner that breaks the surrounding natural grade, or that lies above grade, and is covered with earth, sand, gravel, asphalt, or other material. A bunkered tank is considered an aboveground storage container for purposes of this part.

Completely buried tank means any container completely below grade and covered with earth, sand, gravel, asphalt, or other material. Containers in vaults, bunkered tanks, or partially buried tanks are considered aboveground storage containers for purposes of this part.

Complex means a facility possessing a combination of transportation-related and non-transportation-related components that is subject to the jurisdiction of more than one Federal agency under section 311(j) of the CWA.

Contiguous zone means the zone established by the United States under Article 24 of the Convention of the Territorial Sea and Contiguous Zone, that is contiguous to the territorial sea and that extends nine miles seaward from the outer limit of the territorial area.

Contract or other approved means means:

(1) A written contractual agreement with an oil spill removal organization that identifies and ensures the availability of the necessary personnel and equipment within appropriate response times; and/or

(2) A written certification by the owner or operator that the necessary personnel and equipment resources, owned or operated by the facility owner or operator, are available to respond to a discharge within appropriate response times; and/or

(3) Active membership in a local or regional oil spill removal organization that has identified and ensures adequate access through such membership to necessary personnel and equipment to respond to a discharge within appropriate response times in the specified geographic area; and/or

(4) Any other specific arrangement approved by the Regional Administrator upon request of the owner or operator.

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).

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.

Farm means a facility on a tract of land devoted to the production of crops or raising of animals, including fish, which produced and sold, or normally would have produced and sold, $1,000 or more of agricultural products during a year.

Fish and wildlife and sensitive environments means areas that may be identified by their legal designation or by evaluations of Area Committees (for planning) or members of the Federal On-Scene Coordinator's spill response structure (during responses). These areas may include wetlands, National and State parks, critical habitats for endangered or threatened species, wilderness and natural resource areas, marine sanctuaries and estuarine reserves, conservation areas, preserves, wildlife areas, wildlife refuges, wild and scenic rivers, recreational areas, national forests, Federal and State lands that are research national areas, heritage program areas, land trust areas, and historical and archaeological sites and parks. These areas may also include unique habitats such as aquaculture sites and agricultural surface water intakes, bird nesting areas, critical biological resource areas, designated migratory routes, and designated seasonal habitats.

Injury means 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, or exposure to a product of reactions resulting from a discharge.

Loading/unloading rack means a fixed structure (such as a platform, gangway) necessary for loading or unloading a tank truck or tank car, which is located at a facility subject to the requirements of this part. A loading/unloading rack includes a loading or unloading arm, and may include any combination of the following: piping assemblages, valves, pumps, shut-off devices, overfill sensors, or personnel safety devices.

Maximum extent practicable means within the limitations used to determine oil spill planning resources and response times for on-water recovery, shoreline protection, and cleanup for worst case discharges from onshore non-transportation-related facilities in adverse weather. It includes the planned capability to respond to a worst case discharge in adverse weather, as contained in a response plan that meets the requirements in § 112.20 or in a specific plan approved by the Regional Administrator.

Mobile refueler means a bulk storage container onboard a vehicle or towed, that is designed or used solely to store and transport fuel for transfer into or from an aircraft, motor vehicle, locomotive, vessel, ground service equipment, or other oil storage container.

Motive power container means any onboard bulk storage container used primarily to power the movement of a motor vehicle, or ancillary onboard oil-filled operational equipment. An onboard bulk storage container which is used to store or transfer oil for further distribution is not a motive power container. The definition of motive power container does not include oil drilling or workover equipment, including rigs.

Navigable waters of the United States means “navigable waters” as defined in section 502(7) of the FWPCA, and includes:

(1) All navigable waters of the United States, as defined in judicial decisions prior to passage of the 1972 Amendments to the FWPCA (Pub. L. 92-500), and tributaries of such waters;

(2) Interstate waters;

(3) Intrastate lakes, rivers, and streams which are utilized by interstate travelers for recreational or other purposes; and

(4) Intrastate lakes, rivers, and streams from which fish or shellfish are taken and sold in interstate commerce.

Non-petroleum oil means oil of any kind that is not petroleum-based, including but not limited to: Fats, oils, and greases of animal, fish, or marine mammal origin; and vegetable oils, including oils from seeds, nuts, fruits, and kernels.

Offshore facility means any facility of any kind (other than a vessel or public vessel) located in, on, or under any of the navigable waters of the United States, and any facility of any kind that is subject to the jurisdiction of the United States and is located in, on, or under any other waters.

Oil means oil of any kind or in any form, including, but not limited to: fats, oils, or greases of animal, fish, or marine mammal origin; vegetable oils, including oils from seeds, nuts, fruits, or 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.

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 pumpjack 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.

Oil Spill Removal Organization means an entity that provides oil spill response resources, and includes any for-profit or not-for-profit contractor, cooperative, or in-house response resources that have been established in a geographic area to provide required response resources.

Onshore facility means any facility of any kind located in, on, or under any land within the United States, other than submerged lands.

Owner or operator means 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 the facility immediately prior to such abandonment.

Partially buried tank means a storage container that is partially inserted or constructed in the ground, but not entirely below grade, and not completely covered with earth, sand, gravel, asphalt, or other material. A partially buried tank is considered an aboveground storage container for purposes of this part.

Permanently closed means any container or facility for which:

(1) All liquid and sludge has been removed from each container and connecting line; and

(2) All connecting lines and piping have been disconnected from the container and blanked off, all valves (except for ventilation valves) have been closed and locked, and conspicuous signs have been posted on each container stating that it is a permanently closed container and noting the date of closure.

Person includes an individual, firm, corporation, association, or partnership.

Petroleum oil means petroleum in any form, including but not limited to crude oil, fuel oil, mineral oil, sludge, oil refuse, and refined products.

Produced water container means a storage container at an oil production facility used to store the produced water after initial oil/water separation, and prior to reinjection, beneficial reuse, discharge, or transfer for disposal.

Production facility means all structures (including but not limited to wells, platforms, or storage facilities), piping (including but not limited to flowlines or intra-facility gathering lines), or equipment (including but not limited to workover equipment, separation equipment, or auxiliary non-transportation -related equipment) used in the production, extraction, recovery, lifting, stabilization, separation or treating of oil (including condensate), or associated storage or measurement, and is located in an oil or gas field, at a facility. This definition governs whether such structures, piping, or equipment are subject to a specific section of this part.

Regional Administrator means the Regional Administrator of the Environmental Protection Agency, in and for the Region in which the facility is located.

Repair means any work necessary to maintain or restore a container to a condition suitable for safe operation, other than that necessary for ordinary, day-to-day maintenance to maintain the functional integrity of the container and that does not weaken the container.

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 of a container means the shell capacity of the container.

Transportation-related and non-transportation-related , as applied to an onshore or offshore facility, are defined in the Memorandum of Understanding between the Secretary of Transportation and the Administrator of the Environmental Protection Agency, dated November 24, 1971, (appendix A of this part).

United States means the States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, Guam, American Samoa, the U.S. Virgin Islands, and the Pacific Island Governments.

Vegetable oil means a non-petroleum oil or fat of vegetable origin, including but not limited to oils and fats derived from plant seeds, nuts, fruits, and kernels.

Vessel means every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water, other than a public vessel.

Wetlands means those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include playa lakes, swamps, marshes, bogs, and similar areas such as sloughs, prairie potholes, wet meadows, prairie river overflows, mudflats, and natural ponds.

Worst case discharge for an onshore non-transportation-related facility means the largest foreseeable discharge in adverse weather conditions as determined using the worksheets in appendix D to this part.

[67 FR 47140, July 17, 2002, as amended at 71 FR 77290, Dec. 26, 2006; 73 FR 71943, Nov. 26, 2008; 73 FR 74300, Dec. 5, 2008]

§ 112.3 Requirement to prepare and implement a Spill Prevention, Control, and Countermeasure Plan.

The owner or operator or an onshore or offshore facility subject to this section must prepare in writing and implement a Spill Prevention Control and Countermeasure Plan (hereafter “SPCC Plan” or “Plan”),” in accordance with § 112.7 and any other applicable section of this part.

(a)(1) Except as otherwise provided in this section, if your facility, or mobile or portable facility, was in operation on or before August 16, 2002, you must maintain your Plan, but must amend it, if necessary to ensure compliance with this part, and implement the amended Plan no later than November 10, 2011. If such a facility becomes operational after August 16, 2002, through November 10, 2011, and could reasonably be expected to have a discharge as described in § 112.1(b), you must prepare and implement a Plan on or before November 10, 2011. If such a facility (excluding oil production facilities) becomes operational after November 10, 2011, and could reasonably be expected to have a discharge as described in § 112.1(b), you must prepare and implement a Plan before you begin operations. You are not required to prepare a new Plan each time you move a mobile or portable facility to a new site; the Plan may be general. When you move the mobile or portable facility, you must locate and install it using the discharge prevention practices outlined in the Plan for the facility. The Plan is applicable only while the mobile or portable facility is in a fixed (non-transportation) operating mode.

(2) If your drilling, production or workover facility, including a mobile or portable facility, is offshore or has an offshore component; or your onshore facility is required to have and submit a Facility Response Plan pursuant to 40 CFR 112.20(a), and was in operation on or before August 16, 2002, you must maintain your Plan, but must amend it, if necessary to ensure compliance with this part, and implement the amended Plan no later than November 10, 2010. If such a facility becomes operational after August 16, 2002, through November 10, 2010, and could reasonably be expected to have a discharge as described in § 112.1(b), you must prepare and implement a Plan on or before November 10, 2010. If such a facility (excluding oil production facilities) becomes operational after November 10, 2010, and could reasonably be expected to have a discharge as described in § 112.1(b), you must prepare and implement a Plan before you begin operations. You are not required to prepare a new Plan each time you move a mobile or portable facility to a new site; the Plan may be general. When you move the mobile or portable facility, you must locate and install it using the discharge prevention practices outlined in the Plan for the facility. The Plan is applicable only while the mobile or portable facility is in a fixed (non-transportation) operating mode.

(3) If your farm, as defined in § 112.2, was in operation on or before August 16, 2002, you must maintain your Plan, but must amend it, if necessary to ensure compliance with this part, and implement the amended Plan on or before May 10, 2013. If your farm becomes operational after August 16, 2002, through May 10, 2013, and could reasonably be expected to have a discharge as described in § 112.1(b), you must prepare and implement a Plan on or before May 10, 2013. If your farm becomes operational after May 10, 2013, and could reasonably be expected to have a discharge as described in § 112.1(b), you must prepare and implement a Plan before you begin operations.

(b) If your oil production facility as described in paragraph (a)(1) of this section becomes operational after November 10, 2011, or as described in paragraph (a)(2) of this section becomes operational after November 10, 2010, and could reasonably be expected to have a discharge as described in § 112.1(b), you must prepare and implement a Plan within six months after you begin operations.

(c) [Reserved]

(d) Except as provided in § 112.6, a licensed Professional Engineer must review and certify a Plan for it to be effective to satisfy the requirements of this part.

(1) By means of this certification the Professional Engineer attests:

(i) That he is familiar with the requirements of this part ;

(ii) That he or his agent has visited and examined the facility;

(iii) That the Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards, and with the requirements of this part;

(iv) That procedures for required inspections and testing have been established; and

(v) That the Plan is adequate for the facility.

(vi) That, if applicable, for a produced water container subject to § 112.9(c)(6), any procedure to minimize the amount of free-phase oil is designed to reduce the accumulation of free-phase oil and the procedures and frequency for required inspections, maintenance and testing have been established and are described in the Plan.

(2) Such certification shall in no way relieve the owner or operator of a facility of his duty to prepare and fully implement such Plan in accordance with the requirements of this part.

(e) If you are the owner or operator of a facility for which a Plan is required under this section, you must:

(1) Maintain a complete copy of the Plan at the facility if the facility is normally attended at least four hours per day, or at the nearest field office if the facility is not so attended, and

(2) Have the Plan available to the Regional Administrator for on-site review during normal working hours.

(f) *Extension of time.* (1) The Regional Administrator may authorize an extension of time for the preparation and full implementation of a Plan, or any amendment thereto, beyond the time permitted for the preparation, implementation, or amendment of a Plan under this part, when he finds that the owner or operator of a facility subject to this section, cannot fully comply with the requirements as a result of either nonavailability of qualified personnel, or delays in construction or equipment delivery beyond the control and without the fault of such owner or operator or his agents or employees.

(2) If you are an owner or operator seeking an extension of time under paragraph (f)(1) of this section, you may submit a written extension request to the Regional Administrator. Your request must include:

(i) A full explanation of the cause for any such delay and the specific aspects of the Plan affected by the delay;

(ii) A full discussion of actions being taken or contemplated to minimize or mitigate such delay; and

(iii) A proposed time schedule for the implementation of any corrective actions being taken or contemplated, including interim dates for completion of tests or studies, installation and operation of any necessary equipment, or other preventive measures. In addition you may present additional oral or written statements in support of your extension request.

(3) The submission of a written extension request under paragraph (f)(2) of this section does not relieve you of your obligation to comply with the requirements of this part. The Regional Administrator may request a copy of your Plan to evaluate the extension request. When the Regional Administrator authorizes an extension of time for particular equipment or other specific aspects of the Plan, such extension does not affect your obligation to comply with the requirements related to other equipment or other specific aspects of the Plan for which the Regional Administrator has not expressly authorized an extension.

(g) *Qualified Facilities.* The owner or operator of a qualified facility as defined in this subparagraph may self-certify his facility's Plan, as provided in § 112.6. A qualified facility is one that meets the following Tier I or Tier II qualified facility criteria:

(1) A Tier I qualified facility meets the qualification criteria in paragraph (g)(2) of this section and has no individual aboveground oil storage container with a capacity greater than 5,000 U.S. gallons.

(2) A Tier II qualified facility is one that has had no single discharge as described in § 112.1(b) exceeding 1,000 U.S. gallons or no two discharges as described in § 112.1(b) each exceeding 42 U.S. gallons within any twelve month period in the three years prior to the SPCC Plan self-certification date, or since becoming subject to this part if the facility has been in operation for less than three years (other than discharges as described in § 112.1(b) that are the result of natural disasters, acts of war, or terrorism), and has an aggregate aboveground oil storage capacity of 10,000 U.S. gallons or less.

[67 FR 47140, July 17, 2002, as amended at 68 FR 1351, Jan. 9, 2003; 68 FR 18894, Apr. 17, 2003; 69 FR 48798, Aug. 11, 2004; 71 FR 8466, Feb. 17, 2006; 71 FR 77290, Dec. 26, 2006; 72 FR 27447, May 16, 2007; 73 FR 74301, Dec. 5, 2008, 74 FR 29141, June 19, 2009; 74 FR 58809, Nov. 13, 2009; 75 FR 63102, Oct. 14, 2010; 76 FR 21660, Apr. 18, 2011; 76 FR 64248, Oct. 18, 2011; 76 FR 72124, Nov. 22, 2011]

§ 112.4 Amendment of Spill Prevention, Control, and Countermeasure Plan by Regional Administrator.

If you are the owner or operator of a facility subject to this part, you must:

(a) Notwithstanding compliance with § 112.3, whenever your facility has discharged more than 1,000 U.S. gallons of oil in a single discharge as described in § 112.1(b), or discharged more than 42 U.S. gallons of oil in each of two discharges as described in § 112.1(b), occurring within any twelve month period, submit the following information to the Regional Administrator within 60 days from the time the facility becomes subject to this section:

(1) Name of the facility;

(2) Your name;

(3) Location of the facility;

(4) Maximum storage or handling capacity of the facility and normal daily throughput;

(5) Corrective action and countermeasures you have taken, including a description of equipment repairs and replacements;

(6) An adequate description of the facility, including maps, flow diagrams, and topographical maps, as necessary;

(7) The cause of such discharge as described in § 112.1(b), including a failure analysis of the system or subsystem in which the failure occurred;

(8) Additional preventive measures you have taken or contemplated to minimize the possibility of recurrence; and

(9) Such other information as the Regional Administrator may reasonably require pertinent to the Plan or discharge.

(b) Take no action under this section until it applies to your facility. This section does not apply until the expiration of the time permitted for the initial preparation and implementation of the Plan under § 112.3, but not including any amendments to the Plan.

(c) Send to the appropriate agency or agencies in charge of oil pollution control activities in the State in which the facility is located a complete copy of all information you provided to the Regional Administrator under paragraph (a) of this section. Upon receipt of the information such State agency or agencies may conduct a review and make recommendations to the Regional Administrator as to further procedures, methods, equipment, and other requirements necessary to prevent and to contain discharges from your facility.

(d) Amend your Plan, if after review by the Regional Administrator of the information you submit under paragraph (a) of this section, or submission of information to EPA by the State agency under paragraph (c) of this section, or after on-site review of your Plan, the Regional Administrator requires that you do so. The Regional Administrator may require you to amend your Plan if he finds that it does not meet the requirements of this part or that amendment is necessary to prevent and contain discharges from your facility.

(e) Act in accordance with this paragraph when the Regional Administrator proposes by certified mail or by personal delivery that you amend your SPCC Plan. If the owner or operator is a corporation, he must also notify by mail the registered agent of such corporation, if any and if known, in the State in which the facility is located. The Regional Administrator must specify the terms of such proposed amendment. Within 30 days from receipt of such notice, you may submit written information, views, and arguments on the proposed amendment. After considering all relevant material presented, the Regional Administrator must either notify you of any amendment required or rescind the notice. You must amend your Plan as required within 30 days after such notice, unless the Regional Administrator, for good cause, specifies another effective date. You must implement the amended Plan as soon as possible, but not later than six months after you amend your Plan, unless the Regional Administrator specifies another date.

(f) If you appeal a decision made by the Regional Administrator requiring an amendment to an SPCC Plan, send the appeal to the EPA Administrator in writing within 30 days of receipt of the notice from the Regional Administrator requiring the amendment under paragraph (e) of this section. You must send a complete copy of the appeal to the Regional Administrator at the time you make the appeal. The appeal must contain a clear and concise statement of the issues and points of fact in the case. It may also contain additional information from you, or from any other person. The EPA Administrator may request additional information from you, or from any other person. The EPA Administrator must render a decision within 60 days of receiving the appeal and must notify you of his decision.

§ 112.5 Amendment of Spill Prevention, Control, and Countermeasure Plan by owners or operators.

If you are the owner or operator of a facility subject to this part, you must:

(a) Amend the SPCC Plan for your facility in accordance with the general requirements in § 112.7, and with any specific section of this part applicable to your facility, when there is a change in the facility design, construction, operation, or maintenance that materially affects its potential for a discharge as described in § 112.1(b). Examples of changes that may require amendment of the Plan include, but are not limited to: commissioning or decommissioning containers; replacement, reconstruction, or movement of containers; reconstruction, replacement, or installation of piping systems; construction or demolition that might alter secondary containment structures; changes of product or service; or revision of standard operation or maintenance procedures at a facility. An amendment made under this section must be prepared within six months, and implemented as soon as possible, but not later than six months following preparation of the amendment.

(b) Notwithstanding compliance with paragraph (a) of this section, complete a review and evaluation of the SPCC Plan at least once every five years from the date your facility becomes subject to this part; or, if your facility was in operation on or before August 16, 2002, five years from the date your last review was required under this part. As a result of this review and evaluation, you must amend your SPCC Plan within six months of the review to include more effective prevention and control technology if the technology has been field-proven at the time of the review and will significantly reduce the likelihood of a discharge as described in § 112.1(b) from the facility. You must implement any amendment as soon as possible, but not later than six months following preparation of any amendment. You must document your completion of the review and evaluation, and must sign a statement as to whether you will amend the Plan, either at the beginning or end of the Plan or in a log or an appendix to the Plan. The following words will suffice, “I have completed review and evaluation of the SPCC Plan for (name of facility) on (date), and will (will not) amend the Plan as a result.”

(c) Except as provided in § 112.6, have a Professional Engineer certify any technical amendments to your Plan in accordance with § 112.3(d).

[67 FR 47140, July 17, 2002, as amended at 71 FR 77291, Dec. 26, 2006; 73 FR 74301, Dec. 5, 2008; 74 FR 58809, Nov. 13, 2009]

§ 112.6 Qualified Facilities Plan Requirements.

Qualified facilities meeting the Tier I applicability criteria in § 112.3(g)(1) are subject to the requirements in paragraph (a) of this section. Qualified facilities meeting the Tier II applicability criteria in § 112.3(g)(2) are subject to the requirements in paragraph (b) of this section.

(a) *Tier I Qualified Facilities* —(1) *Preparation and Self-Certification of the Plan.* If you are an owner or operator of a facility that meets the Tier I qualified facility criteria in § 112.3(g)(1), you must either: comply with the requirements of paragraph (a)(3) of this section; or prepare and implement a Plan meeting requirements of paragraph (b) of this section; or prepare and implement a Plan meeting the general Plan requirements in § 112.7 and applicable requirements in subparts B and C, including having the Plan certified by a Professional Engineer as required under § 112.3(d). If you do not follow the appendix G template, you must prepare an equivalent Plan that meets all of the applicable requirements listed in this part, and you must supplement it with a section cross-referencing the location of requirements listed in this part and the equivalent requirements in the other prevention plan. To complete the template in appendix G, you must certify that:

(i) You are familiar with the applicable requirements of 40 CFR part 112;

(ii) You have visited and examined the facility;

(iii) You prepared the Plan in accordance with accepted and sound industry practices and standards;

(iv) You have established procedures for required inspections and testing in accordance with industry inspection and testing standards or recommended practices;

(v) You will fully implement the Plan;

(vi) The facility meets the qualification criteria in § 112.3(g)(1);

(vii) The Plan does not deviate from any requirement of this part as allowed by § 112.7(a)(2) and 112.7(d) or include measures pursuant to § 112.9(c)(6) for produced water containers and any associated piping; and

(viii) The Plan and individual(s) responsible for implementing this Plan have the approval of management, and the facility owner or operator has committed the necessary resources to fully implement this Plan.

(2) *Technical Amendments.* You must certify any technical amendments to your Plan in accordance with paragraph (a)(1) of this section when there is a change in the facility design, construction, operation, or maintenance that affects its potential for a discharge as described in § 112.1(b). If the facility change results in the facility no longer meeting the Tier I qualifying criteria in § 112.3(g)(1) because an individual oil storage container capacity exceeds 5,000 U.S. gallons or the facility capacity exceeds 10,000 U.S. gallons in aggregate aboveground storage capacity, within six months following preparation of the amendment, you must either:

(i) Prepare and implement a Plan in accordance with § 112.6(b) if you meet the Tier II qualified facility criteria in § 112.3(g)(2); or

(ii) Prepare and implement a Plan in accordance with the general Plan requirements in § 112.7, and applicable requirements in subparts B and C, including having the Plan certified by a Professional Engineer as required under § 112.3(d).

(3) *Plan Template and Applicable Requirements.* Prepare and implement an SPCC Plan that meets the following requirements under § 112.7 and in subparts B and C of this part: introductory paragraph of §§ 112.7, 112.7(a)(3)(i), 112.7(a)(3)(iv), 112.7(a)(3)(vi), 112.7(a)(4), 112.7(a)(5), 112.7(c), 112.7(e), 112.7(f), 112.7(g), 112.7(k), 112.8(b)(1), 112.8(b)(2), 112.8(c)(1), 112.8(c)(3), 112.8(c)(4), 112.8(c)(5), 112.8(c)(6), 112.8(c)(10), 112.8(d)(4), 112.9(b), 112.9(c)(1), 112.9(c)(2), 112.9(c)(3), 112.9(c)(4), 112.9(c)(5), 112.9(d)(1), 112.9(d)(3), 112.9(d)(4), 112.10(b), 112.10(c), 112.10(d), 112.12(b)(1), 112.12(b)(2), 112.12(c)(1), 112.12(c)(3), 112.12(c)(4), 112.12(c)(5), 112.12(c)(6), 112.12(c)(10), and 112.12(d)(4). The template in appendix G to this part has been developed to meet the requirements of 40 CFR part 112 and, when completed and signed by the owner or operator, may be used as the SPCC Plan. Additionally, you must meet the following requirements:

(i) *Failure analysis, in lieu of the requirements in § 112.7(b).* Where experience indicates a reasonable potential for equipment failure (such as loading or unloading equipment, tank overflow, rupture, or leakage, or any other equipment known to be a source of discharge), include in your Plan a prediction of the direction and total quantity of oil which could be discharged from the facility as a result of each type of major equipment failure.

(ii) *Bulk storage container secondary containment, in lieu of the requirements in §§ 112.8(c)(2) and (c)(11) and 112.12(c)(2) and (c)(11).* Construct all bulk storage container installations (except mobile refuelers and other non-transportation-related tank trucks), including mobile or portable oil storage containers, so that you provide a secondary means of containment for the entire capacity of the largest single container plus additional capacity to contain precipitation. Dikes, containment curbs, and pits are commonly employed for this purpose. You may also use an alternative system consisting of a drainage trench enclosure that must be arranged so that any discharge will terminate and be safely confined in a catchment basin or holding pond. Position or locate mobile or portable oil storage containers to prevent a discharge as described in § 112.1(b).

(iii) *Overfill prevention, in lieu of the requirements in §§ 112.8(c)(8) and 112.12(c)(8).* Ensure that each container is provided with a system or documented procedure to prevent overfills of the container, describe the system or procedure in the SPCC Plan and regularly test to ensure proper operation or efficacy.

(b) *Tier II Qualified Facilities —*(1) *Preparation and Self-Certification of Plan.* If you are the owner or operator of a facility that meets the Tier II qualified facility criteria in § 112.3(g)(2), you may choose to self-certify your Plan. You must certify in the Plan that:

(i) You are familiar with the requirements of this part;

(ii) You have visited and examined the facility;

(iii) The Plan has been prepared in accordance with accepted and sound industry practices and standards, and with the requirements of this part;

(iv) Procedures for required inspections and testing have been established;

(v) You will fully implement the Plan;

(vi) The facility meets the qualification criteria set forth under § 112.3(g)(2);

(vii) The Plan does not deviate from any requirement of this part as allowed by § 112.7(a)(2) and 112.7(d) or include measures pursuant to § 112.9(c)(6) for produced water containers and any associated piping, except as provided in paragraph (b)(3) of this section; and

(viii) The Plan and individual(s) responsible for implementing the Plan have the full approval of management and the facility owner or operator has committed the necessary resources to fully implement the Plan.

(2) *Technical Amendments.* If you self-certify your Plan pursuant to paragraph (b)(1) of this section, you must certify any technical amendments to your Plan in accordance with paragraph (b)(1) of this section when there is a change in the facility design, construction, operation, or maintenance that affects its potential for a discharge as described in § 112.1(b), except:

(i) If a Professional Engineer certified a portion of your Plan in accordance with paragraph (b)(4) of this section, and the technical amendment affects this portion of the Plan, you must have the amended provisions of your Plan certified by a Professional Engineer in accordance with paragraph (b)(4)(ii) of this section.

(ii) If the change is such that the facility no longer meets the Tier II qualifying criteria in § 112.3(g)(2) because it exceeds 10,000 U.S. gallons in aggregate aboveground storage capacity you must, within six months following the change, prepare and implement a Plan in accordance with the general Plan requirements in § 112.7 and the applicable requirements in subparts B and C of this part, including having the Plan certified by a Professional Engineer as required under § 112.3(d).

(3) *Applicable Requirements.* Except as provided in this paragraph, your self-certified SPCC Plan must comply with § 112.7 and the applicable requirements in subparts B and C of this part:

(i) *Environmental Equivalence.* Your Plan may not include alternate methods which provide environmental equivalence pursuant to § 112.7(a)(2), unless each alternate method has been reviewed and certified in writing by a Professional Engineer, as provided in paragraph (b)(4) of this section.

(ii) *Impracticability.* Your Plan may not include any determinations that secondary containment is impracticable and provisions in lieu of secondary containment pursuant to § 112.7(d), unless each such determination and alternate measure has been reviewed and certified in writing by a Professional Engineer, as provided in paragraph (b)(4) of this section.

(iii) *Produced Water Containers.* Your Plan may not include any alternative procedures for skimming produced water containers in lieu of sized secondary containment pursuant to § 112.9(c)(6), unless they have been reviewed and certified in writing by a Professional Engineer, as provided in paragraph (b)(4) of this section.

(4) *Professional Engineer Certification of Portions of a Qualified Facility's Self-Certified Plan.*

(i) As described in paragraph (b)(3) of this section, the facility owner or operator may not self-certify alternative measures allowed under § 112.7(a)(2) or (d), that are included in the facility's Plan. Such measures must be reviewed and certified, in writing, by a licensed Professional Engineer. For each alternative measure allowed under § 112.7(a)(2), the Plan must be accompanied by a written statement by a Professional Engineer that states the reason for nonconformance and describes the alternative method and how it provides equivalent environmental protection in accordance with § 112.7 (a)(2). For each determination of impracticability of secondary containment pursuant to § 112.7(d), the Plan must clearly explain why secondary containment measures are not practicable at this facility and provide the alternative measures required in § 112.7(d) in lieu of secondary containment. By certifying each measure allowed under § 112.7(a)(2) and (d), the Professional Engineer attests:

(A) That he is familiar with the requirements of this part;

(B) That he or his agent has visited and examined the facility; and

(C) That the alternative method of environmental equivalence in accordance with § 112.7(a)(2) or the determination of impracticability and alternative measures in accordance with § 112.7(d) is consistent with good engineering practice, including consideration of applicable industry standards, and with the requirements of this part.

(ii) As described in paragraph (b)(3) of this section, the facility owner or operator may not self-certify measures as described in § 112.9(c)(6) for produced water containers and any associated piping. Such measures must be reviewed and certified, in writing, by a licensed Professional Engineer, in accordance with § 112.3(d)(1)(vi).

(iii) The review and certification by the Professional Engineer under this paragraph is limited to the alternative method which achieves equivalent environmental protection pursuant to § 112.7(a)(2); to the impracticability determination and measures in lieu of secondary containment pursuant to § 112.7 (d); or the measures pursuant to § 112.9(c)(6) for produced water containers and any associated piping and appurtenances downstream from the container.

[73 FR 74302, Dec. 5, 2008, as amended at 74 FR 58810, Nov. 13, 2009]

§ 112.7 General requirements for Spill Prevention, Control, and Countermeasure Plans.

If you are the owner or operator of a facility subject to this part you must prepare a Plan in accordance with good engineering practices. The Plan must have the full approval of management at a level of authority to commit the necessary resources to fully implement the Plan. You must prepare the Plan in writing. If you do not follow the sequence specified in this section for the Plan, you must prepare an equivalent Plan acceptable to the Regional Administrator that meets all of the applicable requirements listed in this part, and you must supplement it with a section cross-referencing the location of requirements listed in this part and the equivalent requirements in the other prevention plan. If the Plan calls for additional facilities or procedures, methods, or equipment not yet fully operational, you must discuss these items in separate paragraphs, and must explain separately the details of installation and operational start-up. As detailed elsewhere in this section, you must also:

(a)(1) Include a discussion of your facility's conformance with the requirements listed in this part.

(2) Comply with all applicable requirements listed in this part. Except as provided in § 112.6, your Plan may deviate from the requirements in paragraphs (g), (h)(2) and (3), and (i) of this section and the requirements in subparts B and C of this part, except the secondary containment requirements in paragraphs (c) and (h)(1) of this section, and §§ 112.8(c)(2), 112.8(c)(11), 112.9(c)(2), 112.9(d)(3), 112.10(c), 112.12(c)(2), and 112.12(c)(11), where applicable to a specific facility, if you provide equivalent environmental protection by some other means of spill prevention, control, or countermeasure. Where your Plan does not conform to the applicable requirements in paragraphs (g), (h)(2) and (3), and (i) of this section, or the requirements of subparts B and C of this part, except the secondary containment requirements in paragraph (c) and (h)(1) of this section, and §§ 112.8(c)(2), 112.8(c)(11), 112.9(c)(2), 112.10(c), 112.12(c)(2), and 112.12(c)(11), you must state the reasons for

nonconformance in your Plan and describe in detail alternate methods and how you will achieve equivalent environmental protection. If the Regional Administrator determines that the measures described in your Plan do not provide equivalent environmental protection, he may require that you amend your Plan, following the procedures in § 112.4(d) and (e).

(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). You must also address in your Plan:

(i) The type of oil in each fixed 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;

(ii) Discharge prevention measures including procedures for routine handling of products (loading, unloading, and facility transfers, etc.);

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

(iv) Countermeasures for discharge discovery, response, and cleanup (both the facility's capability and those that might be required of a contractor);

(v) Methods of disposal of recovered materials in accordance with applicable legal requirements; and

(vi) Contact list and phone numbers for the facility response coordinator, National Response Center, cleanup contractors with whom you have an agreement for response, and all appropriate Federal, State, and local agencies who must be contacted in case of a discharge as described in § 112.1(b).

(4) Unless you have submitted a response plan under § 112.20, 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 exact address or location and phone number of the facility; the date and time of the discharge, the type of material discharged; estimates of the total quantity discharged; estimates of the quantity discharged as described in § 112.1(b); the source of the discharge; a description of all affected media; 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.

(5) Unless you have submitted a response plan under § 112.20, 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.

(b) Where experience indicates a reasonable potential for equipment failure (such as loading or unloading equipment, tank overflow, rupture, or leakage, or any other equipment known to be a source of a discharge), include in your Plan a prediction of the direction, rate of flow, and total quantity of oil which could be discharged from the facility as a result of each type of major equipment failure.

(c) Provide appropriate containment and/or diversionary structures or equipment to prevent a discharge as described in § 112.1(b), except as provided in paragraph (k) of this section for qualified oil-filled operational equipment, and except as provided in § 112.9(d)(3) for flowlines and intra-facility gathering lines at an oil production facility. The entire containment system, including walls and floor, must be capable of containing oil and must be constructed so that any discharge from a primary containment system, such as a tank, will not escape the containment system before cleanup occurs. In

determining the method, design, and capacity for secondary containment, you need only to address the typical failure mode, and the most likely quantity of oil that would be discharged. Secondary containment may be either active or passive in design. At a minimum, you must use one of the following prevention systems or its equivalent:

(1) For onshore facilities:

(i) Dikes, berms, or retaining walls sufficiently impervious to contain oil;

(ii) Curbing or drip pans;

(iii) Sumps and collection systems;

(iv) Culverting, gutters, or other drainage systems;

(v) Weirs, booms, or other barriers;

(vi) Spill diversion ponds;

(vii) Retention ponds; or

(viii) Sorbent materials.

(2) For offshore facilities:

(i) Curbing or drip pans; or

(ii) Sumps and collection systems.

(d) Provided your Plan is certified by a licensed Professional Engineer under § 112.3(d), or, in the case of a qualified facility that meets the criteria in § 112.3(g), the relevant sections of your Plan are certified by a licensed Professional Engineer under § 112.6(d), if you determine that the installation of any of the structures or pieces of equipment listed in paragraphs (c) and (h)(1) of this section, and §§ 112.8(c)(2), 112.8(c)(11), 112.9(c)(2), 112.10(c), 112.12(c)(2), and 112.12(c)(11) to prevent a discharge as described in § 112.1(b) from any onshore or offshore facility is not practicable, you must clearly explain in your Plan why such measures are not practicable; for bulk storage containers, conduct both periodic integrity testing of the containers and periodic integrity and leak testing of the valves and piping; and, unless you have submitted a response plan under § 112.20, provide in your Plan the following:

(1) An oil spill contingency plan following the provisions of part 109 of this chapter.

(2) A written commitment of manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful.

(e) *Inspections, tests, and records.* Conduct inspections and tests required by this part in accordance with written procedures that you or the certifying engineer develop for the facility. You must keep these written procedures and a record of the inspections and tests, signed by the appropriate supervisor or inspector, with the SPCC Plan for a period of three years. Records of inspections and tests kept under usual and customary business practices will suffice for purposes of this paragraph.

(f) *Personnel, training, and discharge prevention procedures.* (1) At a minimum, train your oil-handling personnel in the operation and maintenance of equipment to prevent discharges; discharge procedure protocols; applicable pollution control laws, rules, and regulations; general facility operations; and, the contents of the facility SPCC Plan.

(2) Designate a person at each applicable facility who is accountable for discharge prevention and who reports to facility management.

(3) Schedule and conduct discharge prevention briefings for your oil-handling personnel at least once a year to assure adequate understanding of the SPCC Plan for that facility. Such briefings must highlight and describe known discharges as described in § 112.1(b) or failures, malfunctioning components, and any recently developed precautionary measures.

(g) *Security (excluding oil production facilities).* Describe in your Plan how you secure and control access to the oil handling, processing and storage areas; secure master flow and drain valves; prevent unauthorized access to starter controls on oil pumps; secure out-of-service and loading/unloading connections of oil pipelines; and address the appropriateness of security lighting to both prevent acts of vandalism and assist in the discovery of oil discharges.

(h) *Facility tank car and tank truck loading/unloading rack (excluding offshore facilities).*

(1) Where loading/unloading rack drainage does not flow into a catchment basin or treatment facility designed to handle discharges, use a quick drainage system for tank car or tank truck loading/unloading racks. You must design any containment system to hold at least the maximum capacity of any single compartment of a tank car or tank truck loaded or unloaded at the facility.

(2) Provide an interlocked warning light or physical barrier system, warning signs, wheel chocks or vehicle brake interlock system in the area adjacent to a loading/unloading rack, to prevent vehicles from departing before complete disconnection of flexible or fixed oil transfer lines.

(3) Prior to filling and departure of any tank car or tank truck, closely inspect for discharges the lowermost drain and all outlets of such vehicles, and if necessary, ensure that they are tightened, adjusted, or replaced to prevent liquid discharge while in transit.

(i) If a field-constructed aboveground container undergoes a repair, alteration, reconstruction, or a change in service that might affect the risk of a discharge or failure due to brittle fracture or other catastrophe, or has discharged oil or failed due to brittle fracture failure or other catastrophe, evaluate the container for risk of discharge or failure due to brittle fracture or other catastrophe, and as necessary, take appropriate action.

(j) In addition to the minimal prevention standards listed under this section, include in your Plan a complete discussion of conformance with the applicable requirements and other effective discharge prevention and containment procedures listed in this part or any applicable more stringent State rules, regulations, and guidelines.

(k) *Qualified Oil-filled Operational Equipment.* The owner or operator of a facility with oil-filled operational equipment that meets the qualification criteria in paragraph (k)(1) of this sub-section may choose to implement for this qualified oil-filled operational equipment the alternate requirements as described in paragraph (k)(2) of this sub-section in lieu of general secondary containment required in paragraph (c) of this section.

(1) *Qualification Criteria—Reportable Discharge History:* The owner or operator of a facility that has had no single discharge as described in § 112.1(b) from any oil-filled operational equipment exceeding 1,000 U.S. gallons or no two discharges as described in § 112.1(b) from any oil-filled operational equipment each exceeding 42 U.S. gallons within any twelve month period in the three years prior to the SPCC Plan certification date, or since becoming subject to this part if the facility has been in operation for less than three years (other than oil discharges as described in § 112.1(b) that are the result of natural disasters, acts of war or terrorism); and

(2) *Alternative Requirements to General Secondary Containment.* If secondary containment is not provided for qualified oil-filled operational equipment pursuant to paragraph (c) of this section, the owner or operator of a facility with qualified oil-filled operational equipment must:

(i) Establish and document the facility procedures for inspections or a monitoring program to detect equipment failure and/or a discharge; and

(ii) Unless you have submitted a response plan under § 112.20, provide in your Plan the following:

(A) An oil spill contingency plan following the provisions of part 109 of this chapter.

(B) A written commitment of manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful.

[67 FR 47140, July 17, 2002, as amended at 71 FR 77292, Dec. 26, 2006; 73 FR 74303, Dec. 5, 2008; 74 FR 58810, Nov. 13, 2009]

Subpart B—Requirements for Petroleum Oils and Non-Petroleum Oils, Except Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and Vegetable Oils (Including Oils from Seeds, Nuts, Fruits, and Kernels)

SOURCE: 67 FR 47146, July 17, 2002, unless otherwise noted.

§ 112.8 Spill Prevention, Control, and Countermeasure Plan requirements for onshore facilities (excluding production facilities).

If you are the owner or operator of an onshore facility (excluding a production facility), you must:

(a) Meet the general requirements for the Plan listed under § 112.7, and the specific discharge prevention and containment procedures listed in this section.

(b) *Facility drainage.* (1) Restrain drainage from diked storage areas by valves to prevent a discharge into the drainage system or facility effluent treatment system, except where facility systems are designed to control such discharge. You may empty diked areas by pumps or ejectors; however, you must manually activate these pumps or ejectors and must inspect the condition of the accumulation before starting, to ensure no oil will be discharged.

(2) Use valves of manual, open-and-closed design, for the drainage of diked areas. You may not use flapper-type drain valves to drain diked areas. If your facility drainage drains directly into a watercourse and not into an on-site wastewater treatment plant, you must inspect and may drain uncontaminated retained stormwater, as provided in paragraphs (c)(3)(ii), (iii), and (iv) of this section.

(3) Design facility drainage systems from undiked areas with a potential for a discharge (such as where piping is located outside containment walls or where tank truck discharges may occur outside the loading area) to flow into ponds, lagoons, or catchment basins designed to retain oil or return it to the facility. You must not locate catchment basins in areas subject to periodic flooding.

(4) If facility drainage is not engineered as in paragraph (b)(3) of this section, equip the final discharge of all ditches inside the facility with a diversion system that would, in the event of an uncontrolled discharge, retain oil in the facility.

(5) Where drainage waters are treated in more than one treatment unit and such treatment is continuous, and pump transfer is needed, provide two “lift” pumps and permanently install at least one of the pumps. Whatever techniques you use, you must engineer facility drainage systems to prevent a discharge as described in § 112.1(b) in case there is an equipment failure or human error at the facility.

(c) *Bulk storage containers.* (1) Not use a container 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.

(2) Construct all bulk storage tank installations (except mobile refuelers and other non-transportation-related tank trucks) so that you provide a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation. You must ensure that diked areas are sufficiently impervious to contain discharged oil. Dikes, containment curbs, and pits are commonly employed for this purpose. You may also use an alternative system

consisting of a drainage trench enclosure that must be arranged so that any discharge will terminate and be safely confined in a facility catchment basin or holding pond.

(3) Not allow drainage of uncontaminated rainwater from the diked area into a storm drain or discharge of an effluent into an open watercourse, lake, or pond, bypassing the facility treatment system unless you:

(i) Normally keep the bypass valve sealed closed.

(ii) Inspect the retained rainwater to ensure that its presence will not cause a discharge as described in § 112.1(b).

(iii) Open the bypass valve and reseal it following drainage under responsible supervision; and

(iv) Keep adequate records of such events, for example, any records required under permits issued in accordance with §§ 122.41(j)(2) and 122.41(m)(3) of this chapter.

(4) Protect any completely buried metallic storage tank installed on or after January 10, 1974 from corrosion by coatings or cathodic protection compatible with local soil conditions. You must regularly leak test such completely buried metallic storage tanks.

(5) Not use partially buried or bunkered metallic tanks for the storage of oil, unless you protect the buried section of the tank from corrosion. You must protect partially buried and bunkered tanks from corrosion by coatings or cathodic protection compatible with local soil conditions.

(6) Test or inspect each aboveground container for integrity on a regular schedule and whenever you make material repairs. You must determine, in accordance with industry standards, the appropriate qualifications for personnel performing tests and inspections, the frequency and type of testing and inspections, which take into account container size, configuration, and design (such as containers that are: shop-built, field-erected, skid-mounted, elevated, equipped with a liner, double-walled, or partially buried). Examples of these integrity tests include, but are not limited to: visual inspection, hydrostatic testing, radiographic testing, ultrasonic testing, acoustic emissions testing, or other systems of non-destructive testing. You must keep comparison records and you must also inspect the container's supports and foundations. In addition, you must frequently inspect the outside of the container for signs of deterioration, discharges, or accumulation of oil inside diked areas. Records of inspections and tests kept under usual and customary business practices satisfy the recordkeeping requirements of this paragraph.

(7) Control leakage through defective internal heating coils by monitoring the steam return and exhaust lines for contamination from internal heating coils that discharge into an open watercourse, or pass the steam return or exhaust lines through a settling tank, skimmer, or other separation or retention system.

(8) Engineer or update each container installation in accordance with good engineering practice to avoid discharges. You must provide at least one of the following devices:

(i) High liquid level alarms with an audible or visual signal at a constantly attended operation or surveillance station. In smaller facilities an audible air vent may suffice.

(ii) High liquid level pump cutoff devices set to stop flow at a predetermined container content level.

(iii) Direct audible or code signal communication between the container gauger and the pumping station.

(iv) A fast response system for determining the liquid level of each bulk storage container such as digital computers, telepulse, or direct vision gauges. If you use this alternative, a person must be present to monitor gauges and the overall filling of bulk storage containers.

(v) You must regularly test liquid level sensing devices to ensure proper operation.

(9) Observe effluent treatment facilities frequently enough to detect possible system upsets that could cause a discharge as described in § 112.1(b).

(10) Promptly correct visible discharges which result in a loss of oil from the container, including but not limited to seams, gaskets, piping, pumps, valves, rivets, and bolts. You must promptly remove any accumulations of oil in diked areas.

(11) Position or locate mobile or portable oil storage containers to prevent a discharge as described in § 112.1(b). Except for mobile refuelers and other non-transportation-related tank trucks, you must furnish a secondary means of containment, such as a dike or catchment basin, sufficient to contain the capacity of the largest single compartment or container with sufficient freeboard to contain precipitation.

(d) *Facility transfer operations, pumping, and facility process.* (1) Provide buried piping that is installed or replaced on or after August 16, 2002, with a protective wrapping and coating. You must also cathodically protect such buried piping installations or otherwise satisfy the corrosion protection standards for piping in part 280 of this chapter or a State program approved under part 281 of this chapter. If a section of buried line is exposed for any reason, you must carefully inspect it for deterioration. If you find corrosion damage, you must undertake additional examination and corrective action as indicated by the magnitude of the damage.

(2) Cap or blank-flange the terminal connection at the transfer point and mark it as to origin when piping is not in service or is in standby service for an extended time.

(3) Properly design pipe supports to minimize abrasion and corrosion and allow for expansion and contraction.

(4) Regularly inspect all aboveground valves, piping, and appurtenances. During the inspection you must assess the general condition of items, such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces. You must also conduct integrity and leak testing of buried piping at the time of installation, modification, construction, relocation, or replacement.

(5) Warn all vehicles entering the facility to be sure that no vehicle will endanger aboveground piping or other oil transfer operations.

[67 FR 47146, July 17, 2002, as amended at 71 FR 77293, Dec. 26, 2006; 73 FR 74304, Dec. 5, 2008]

§ 112.9 Spill Prevention, Control, and Countermeasure Plan Requirements for onshore oil production facilities (excluding drilling and workover facilities).

If you are the owner or operator of an onshore oil production facility (excluding a drilling or workover facility), you must:

(a) Meet the general requirements for the Plan listed under § 112.7, and the specific discharge prevention and containment procedures listed under this section.

(b) *Oil production facility drainage.* (1) At tank batteries and separation and treating areas where there is a reasonable possibility of a discharge as described in § 112.1(b), close and seal at all times drains of dikes or drains of equivalent measures required under § 112.7(c)(1), except when draining uncontaminated rainwater. Prior to drainage, you must inspect the diked area and take action as provided in § 112.8(c)(3)(ii), (iii), and (iv). You must remove accumulated oil on the rainwater and return it to storage or dispose of it in accordance with legally approved methods.

(2) Inspect at regularly scheduled intervals field drainage systems (such as drainage ditches or road ditches), and oil traps, sumps, or skimmers, for an accumulation of oil that may have resulted from any small discharge. You must promptly remove any accumulations of oil.

APPENDIX C

Plan Review and Certification Log

Spill Prevention, Control, and
Countermeasure (SPCC) Plan
Merrimack Valley Regional Transit Authority
Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts

PLAN REVIEW AND CERTIFICATION LOG

Date	Reason For Review	Findings/Revised Pages	Reviewer's Name and Title	Signature/ Registration No.

At a minimum, this SPCC Plan shall be reviewed and evaluated by the Owner of the Facility no less than once every 5 years. In addition, this SPCC Plan shall be updated and revised as necessary in the event that:

- There is a change in facility design, construction, operation, or maintenance that significantly affects the potential for oil to be discharged into or upon navigable waters:
- The SPCC Plan fails in an emergency;
- The local, state, or federal regulations change concerning SPCC reporting;
- The designated person changes; or
- More effective technology becomes available.

The revised SPCC Plan shall be implemented within 6 months of any such change. The Facility can self-certify the Plan; however, significant changes should be reviewed by a Professional Engineer.

APPENDIX D

Facility Inspection Checklists

Spill Prevention, Control, and
Countermeasure (SPCC) Plan
Merrimack Valley Regional Transit Authority
Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts

FACILITY INSPECTION CHECKLIST

Facility Name & Location: Merrimack Valley Regional Transit Authority Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts 01835

Instructions: This inspection record is for the monthly inspections, conducted by Facility personnel. Place an X in the appropriate box for each item. If any response requires elaboration, do so in the description and comments space provided. Further descriptions or comments should be attached on a separate sheet of paper, if necessary.

Tank ID:	*YES*	NO	DESCRIPTIONS/COMMENTS
1. Tank surfaces show signs of leakage?			
2. Oil in secondary containment area?			
3. Ground or Floor around tank(s) show signs of staining?			
4. Tank(s) show signs of damage, rust or deterioration?			
5. Vents are obstructed?			
6. Valve seals or gaskets are leaking?			
7. Pipes show signs of leakage?			
8. Oil present in oil/water separator or washwater recovery system?			
9. Fuel distribution pumps show signs of leakage?			
10. Transformer surfaces show signs of leakage?			
12. Fencing, gate or lighting is non-functional?			

Remarks: _____

_____

_____

Signature: _____ Date: _____

APPENDIX E

Training Records

Spill Prevention, Control, and
Countermeasure (SPCC) Plan
Merrimack Valley Regional Transit Authority
Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts

SPCC TRAINING

RECORD OF SPILL PREVENTION TRAINING

Date: _____ Instructor: _____

Attendees	Print Name	Signature

Subjects and Issues: _____

_____

_____

_____

_____

By signing above, the MVRTA Employee acknowledges that he/she has read and/or had explained to him/her the SPCC Plan and is aware of what to do in case of a spill and where the plan is kept. If applicable, he/she is aware of containment drainage procedures and understands that he/she is authorized to perform drainage of containment.

(Maintain completed acknowledgement in SPCC Plan)

APPENDIX F

SPCC Spill Notification Plan and Route to Hospital

Spill Prevention, Control, and
Countermeasure (SPCC) Plan
Merrimack Valley Regional Transit Authority
Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts

SPCC SPILL NOTIFICATION PLAN

Merrimack Valley Regional Transit Authority Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts 01835

The following is a summary of the response to be made in the event of a spill at the Facility. For additional details of the response procedures, available cleanup materials, and other spill prevention procedures, refer to the Spill Prevention, Control, and Countermeasure plan kept in the Maintenance Building with the Right-to-Know Information.

1. NOTIFICATION AND RESPONSE

Upon discovery of a spill, the individual will immediately assess the risks to employees, evacuate the area and call 911 if necessary, and notify the ESC.

Primary Emergency Coordinator/Assistant General Manager
Dan Flaherty
978-618-5170 (24 hours)
978-469-6878 x125 (business)

Property Manager
Guy Jean
978-228-0561 (business)
gjean@mvrta.com

Alternate Emergency Coordinator
Tim Hegarty, General Manager
978-618-5164 (24 hours)
978-469-6878 X120 (business)

Corporate Personnel
Joseph Costanzo, Administrator
978-469-6878 x130 (business)

A. The Assistant General Manager is responsible for further notifications and all decisive actions in the event of a spill at the Facility.

B. The Assistant General Manager or his designated alternate will supervise efforts to provide immediate containment of the spill to prevent a more difficult cleanup situation. Under the direction of the Assistant General Manager or his designee, Facility personnel should isolate or repair the source of the leak/spill to prevent additional spillage. The Facility personnel will utilize the spill control materials to contain the release. For additional details on oil spill cleanup procedures, refer to Section 14.0 of the SPCC plan.

C. The Assistant General Manager or his designee will determine the need and be responsible for calling in additional assistance of the designated outside contractor: The designated cleanup contractor is:

Cyn Environmental 1-800-622-6365

2. FEDERAL AND STATE NOTIFICATION

If spill occurs on:

WATER The Assistant General Manager will notify the National Response Center and the Massachusetts Department of Environmental Protection (MA DEP) immediately at the telephone numbers provided below if the spill results in a discharge of any quantity of oil into an adjacent stream and/or wetlands

LAND The Assistant General Manager will notify the MA DEP within 2 hours if the discharge is greater than or equal to 10 gallons within a 24-hour period, impacts a storm water system or sanitary sewer system, or poses an imminent hazard.

National Response Center
(800) 424-8802 (24 hours)

MA DEP Spill Hotline
(888) 304-1133 (24 Hours)

3. RELEASE DOCUMENTATION

The Assistant General Manager or his designee will initiate a Release Reporting Form as soon as possible following discovery of the release and prior to notification to MA DEP and will complete the Release Reporting Form upon completion of the spill cleanup. The Assistant General Manager is responsible for completing all required notification forms and ensuring that reports are submitted to the appropriate regulatory agencies.

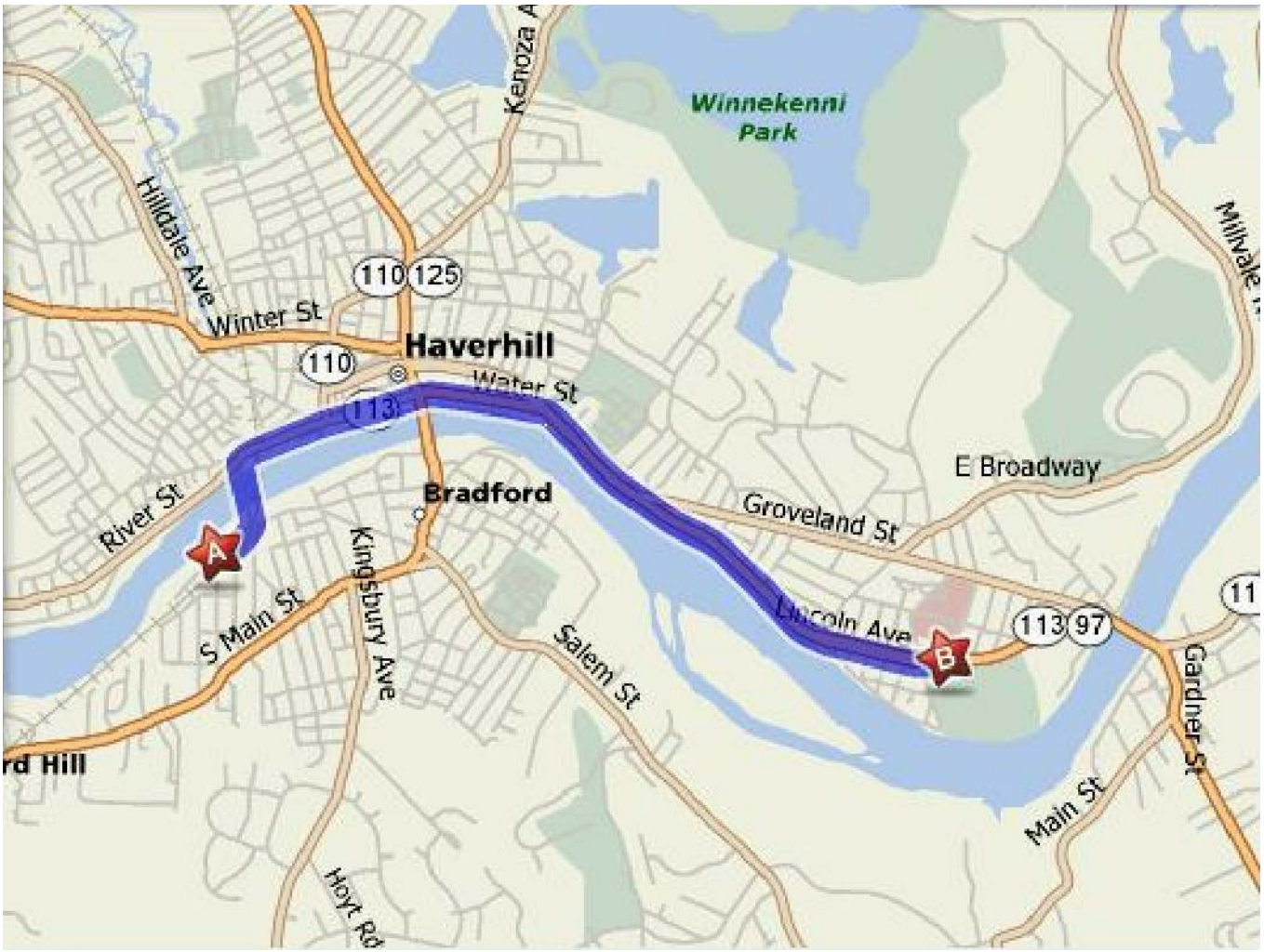
4. LOCAL NOTIFICATION

The following local agencies will be called to provide emergency assistance based on the judgment of the Assistant General Manager:

Fire Department
911 (emergency)

Police Department
911 (emergency)

Merrimack Valley Hospital
140 Lincoln Avenue
Haverhill, Massachusetts
978-374-2000



1: START OUT GOING NORTHEAST ON RAILROAD AVE TOWARD SOUTH ELM STREET. 0.1 MILES

2: RAILROAD AVE becomes GONZALIAN BRIDGE. 0.2 MILES

3: TURN SLIGHT RIGHT ONTO WASHINGTON ST/ MA-110/ MA-113. CONTINUE TO FOLLOW MA-113 S. 2.5 MILES

4: END AT 140 LINCOLN AVENUE, HAVERHILL, MA 01830-6700, US

TOTAL EST. TIME: 7 MINUTES TOTAL EST. DISTANCE: 2.85 MILES

RANSOM Environmental Consultants, Inc.

MAP TO HOSPITAL

MERRIMACK VALLEY HOSPITAL
140 LINCOLN AVENUE
HAVERHILL, MASSACHUSETTS

P:\2008\081020\081020-HOSP.dwg

APPENDIX G

Release Reporting Form

Spill Prevention, Control, and
Countermeasure (SPCC) Plan
Merrimack Valley Regional Transit Authority
Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts

RELEASE REPORTING FORM
Merrimack Valley Regional Transit Authority
Maintenance Facility

FACILITY ADDRESS: 85 Railroad Avenue, Haverhill, MA 01835

FACILITY PHONE: (978) 469-6878

RELEASE DATE: _____ **RELEASE TIME:** _____

SOURCE OF RELEASE: _____

TYPE OF MATERIAL DISCHARGED: _____

_____

ESTIMATED QUANTITY DISCHARGED: _____

DESCRIPTION OF AFFECTED MEDIA: _____

_____

LIST DAMAGES OR INJURIES: _____

_____

LIST EMPLOYEES INVOLVED, IF ANY: _____

_____

_____

EVACUATION REQUIRED? _____**YES** _____ **NO**

DESCRIBE ACTIONS TAKEN TO ELIMINATE OR REDUCE THE HAZARD: _____

_____

_____

_____

LIST CLEANUP CONTRACTOR, IF CONTACTED: _____

LIST AGENCIES CONTACTED: _____

_____

REPORT PREPARED BY: _____ **DATE:** _____ **TIME:** _____

SIGNATURE: _____

APPENDIX H

Certification of the Substantial Harm Criteria

Spill Prevention, Control, and
Countermeasure (SPCC) Plan
Merrimack Valley Regional Transit Authority
Maintenance Facility
85 Railroad Avenue
Haverhill, Massachusetts

CERTIFICATION OF SUBSTANTIAL HARM DETERMINATION FORM

Facility Name: Merrimack Valley Regional Transit Authority Maintenance Facility

Facility Address: 85 Railroad Avenue
Haverhill, Massachusetts 01835

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 _____X___

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 sufficient enough 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 ____X____

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 40 CFR 112 or a Comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?
   Yes _____ No ____X____

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 40 CFR 112 or a comparable formula) such that a discharge from the facility would shut down a public drinking water intake?
   Yes _____ No ____X_____

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 spill in an amount greater than or equal to 10,000 gallons within the last 5 years?
   Yes _____ No _____X____

CERTIFICATION

I certify under penalty of law that I 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: Title: Professional Engineer

Merrimack Valley Regional Transit
Facility Maintenance Plan

February 12, 2024

Facility Plan Revision History

Date	Revision	Description of Change
2/15/2017	Rev 1	Updates
4/14/2023	Rev 2	Revised
2/12/2024	Rev2	Updates /Vendor Update

Introduction

The MVATC maintains its facilities and equipment to protect its investment in and prolong the useful life of its assets and provide public transit to the highest standards financially feasible. Service of the highest quality to our customers cannot be maintained without the most efficient operating and support program we can provide.
The MVATC took on a new initiative in July of 2015 to help in maintaining the MVRTA properties / facilities to the maximum standards. This initiative included the hiring of a full time Properties Manager to work directly for the MVATC. This Properties Manager reports to the General Manager of the MVATC and also take direction from the Administrator of the MVRTA and the AGM of Maintenance for the MVATC. His duties include developing and implementing a strong preventive maintenance plan and schedule for all MVRTA properties as well as developing a strong vendor list for larger building maintenance projects. His tasks also include Project management, oversite and scheduling of all vendor work performed on properties and responding to and resolving daily maintenance issues that are requested or observed.

By bringing this position "in house" and hiring a full time Properties Manager it is not only a financial saving initiative but also allows for consistent up to date property information and constant supervision of the buildings and maintenance to the facilities.

The objective of the Properties Manager position and duties is to identify potential future costly repairs through a thorough preventive maintenance effort as well as consistent scheduled inspections of all equipment and assets. This will allow the Properties Manager to enable cost effective repairs of the failing component rather than total replacement of the equipment. He will routinely recommend the General Manager of budget expenditures necessitated through the facility maintenance activity and receive additional instruction as to future activity.

The property manager will coordinate preventive maintenance actions and maintain the buildings, equipment and grounds to the highest standards. He will maintain all facility maintenance records and will assume full responsibility of overseeing all aspects of building maintenance and record keeping and report back all building maintenance activity to the General Manager or his designee.
The Facilities Manager is responsible for maintenance at all MVRTA property to include all structures, building components, grounds and equipment at the following sites:

- **MVRTA Head Quarters 85 Railroad Ave. Haverhill, MA (5 structures)**
- **Haverhill Transit Center 12 Washington Sq. Haverhill, MA**
- **Haverhill Parking Garage 1 Moulton St Haverhill, MA**
- **McGovern Garage 211 Merrimack St. Lawrence, MA**
- **Gateway Parking lot 1 Canal St. Lawrence, MA**
- **Buckley Transportation Center 293 Common St. Lawrence, MA**
- **Costello Transportation Center 68 Elm St Amesbury, MA**

I. General Duties

The Facilities Manager will walk through all facilities on a quarterly basis using the inspection checklist in Appendix B and report any and all needed repairs observed to both minor and major issues as well as any equipment issues found to the General Manager or his designee who will then complete the check list. The Properties manager has assigned to the Building Maintenance the task of custodial services at the transit centers. The maintenance department will arrange cleaning services through a selected vendor. The following preventative maintenance activities are also to be performed as written:

Annual - Late Summer
Roofing and gutter inspection
Bi-Annual - Spring/Fall
HVAC inspection and PM 'd through outside vendor.
Annual - Spring
Landscaping services will be conducted by an outside vendor.
As Requested, or Observed
Plumbing and restroom fixtures repaired as needed. Areas of high abuse and usage.

Goals and Objectives
The facilities and equipment used in the support of public transit will be maintained at a minimum to the specifications in the operation and maintenance manuals provided with the facilities and its equipment.

- Maintain the facilities and equipment in a safe operating condition.
- Maximize the facility and equipment service life.
- Meet the requirements of the Transit and Rail Division, federal transit administration, the American with disabilities act and the state and local regulations.
- Provide a safe environment for the public and staff.
- Minimize service disruptions.
- Ensure that our facilities remain an asset to the community and the company.

Ongoing activities

Housekeeping and safety will be a daily ongoing activity. Specific areas of maintenance will be assigned to all maintenance employees.
The Facility and buildings preventive maintenance and repair activities will be directed by the Properties Manager. All annual, semi-annual, quarterly, monthly and weekly inspections and service will be coordinated by the properties manager and he will be responsible to keep all records of inspections and services on file.

Inspection of the facilities, buildings and all facility systems.
These inspections and services will include the Preventive Maintenance to the HVAC, Fire Alarm systems, sprinkler systems, life safety equipment and devices, Roofing and gutter inspections and maintenance, building inspections and certificates, Electrical panels, Elevators maintenance and certification, pest control, landscape maintenance, Parking lot pavement maintenance and sweeping, building / maintenance equipment and service, facility cleaning and housekeeping, as well as all other facility equipment needing preventative maintenance schedules. All outside vendor activity needed for preventative

maintenance schedules and service will be monitored and recorded by the Facilities Manager.
Weekly inspections: Weekly inspections of all the MVRTA sites are performed by the Properties Manager. Weekly inspections include, ensuring sites are clean and free of trash and debris, fire panels are in normal system mode, plumbing is not leaking or damaged and all aspects of mechanical systems are functioning properly.

Monthly Inspections: Monthly inspections of all MVRTA Properties are performed by the Properties Manager. This includes, Elevator systems, pest control, cleaning, lighting (interior and exterior), testing of life safety equipment, landscape and or snow removal, as well as all vendor activity.
Quarterly Inspection: A quarterly inspection is performed by the MVATC Properties Manager for all MVRTA sites. This inspection is a more detailed and thorough inspection of all building components and systems. This inspection is completed with a formal quarterly report that is submitted to the AGM of Maintenance.
Annual Inspection: This inspection is performed on a yearly basis and includes a complete building evaluation of all site, structure, mechanical, electrical, plumbing and any other building components. The report includes and overall building status, major projects or repairs completed throughout the year as well as recommendations for future projects and repairs for the following year. This formal report is submitted to the Administrator of the MVRTA, General Manager of MVATC and the MVATC AGM of Maintenance.
All inspectional reports and records are kept by the MVATC properties Manager.

Preventative Maintenance schedules and contracted vendors

Fire Alarm and sprinkler system – The MVRTA Head Quarters has contracted Metro Swift Sprinkler Corp. to maintain, test and inspect all fire alarm devices and sprinkler systems on site. There are two fire alarm systems on site. One located in the administrative building / Bus Storage building and the second located in the Bus Maintenance Garage. Both of these systems are tested and inspected on a Bi-Annual basis by Metro Swift Sprinkler Corp.
There are 3 sprinkler systems on site. One located in the administrative building / Bus Storage Building, a second sprinkler system in the Bus Maintenance Garage and a third system located in the Bus Wash Building. Two of the fire sprinkler systems are a Dry system and they are on a Quarterly inspection schedule. The fire sprinkler system located in the Administrative / Bus Storage building is a wet sprinkler system and is on a Bi-Annual inspection schedule.
Fire Extinguisher devices – The MVRTA Head Quarters has contracted Keane Fire Safety to perform an annual inspection and service of all fire extinguishers on site (26).
HVAC systems – The MVRTA Head Quarters has contracted MCS services to maintain all the HVAC units in all structures on site (25 units). The HVAC units are all on a Semi-Annual Preventative Maintenance Schedule (spring and fall).
Waste Oil Burner (HVAC) – is located in the Bus Wash Building and the MVRTA has contracted Murphy Coal Co Inc. to maintain and service this unit. This PM Service contract is an annual servicing of the unit.

Extermination Services – Pest End has been contracted by the MVRTA to provide services for pest control at this site and it is on a monthly service schedule.
Elevator Service – Stanley Elevator Company has been contracted by the MVRTA to service and maintain the elevator on site (Otis Gen2). The preventative maintenance service is done on a Semi-monthly schedule (6 time per year). The date of the last service
Generator Service – Powers Generator provides a Semi-Annual preventative maintenance schedule (spring and fall).
Landscape Maintenance – Mueskes Landscaping LLC is contracted by the MVRTA to maintain the landscape care and maintenance at this facility. They are on a Bi-weekly service By contract.
Boiler or pressure vessel inspection – 2 Melben units and 1 Brunner unit
Service type: Serviced every 2 years (3 units), cleaning and changing of parts, filters and materials.
Gas Storage tanks: P.M. Environmental Inc. PO Box 392 Manchester, NH 01944. Phone, 978-526-8251.
Service type: Annual testing and inspection for pressure decay and pressure vacuum vent cap.
Gas line leak detection: P.M. Environmental PO Box 392 Manchester, NH 01944. Phone 978-526-8251.
Service type: Both diesel and unleaded tanks are pipeline pressure tested on an annual basis.
Vapor Recovery testing: Massachusetts Department of Environmental Protection – MA DEP facility number 223224.
Drain Cleaning: Safety Clean – 90 Rabbit Rd Salisbury, MA 978-465-8900.
Service type: Drains in Maintenance garage is cleaned out 2 times per year.
Security Alarm: Alarm Contracting Enterprises 16 Portland St. Lawrence, MA 01843. Phone 978-683-0800.
Service type: Maintain and monitors security alarm system – on call for repairs only.
Snow removal – Mueskes Landscaping LLC has been contracted by the MVRTA to preform snow removal services from November to April. He is responsible to remove snow during and after snow storms, salt and treat all paved surfaces and clear snow away from all doorways and walk way.

Garage doors – NDA Garage door service Inc. has maintained the overhead doors for the MVRTA and works on an on-call status for repairs on all garage doors (20). A preventative maintenance contract with NDA Garage Door service is also part of the PM program. All garage doors are serviced twice a year (spring and fall) where they are adjusted, lubed, inspected for any issues and repairs made for issues that were identified during the PM inspection.
Automatic gate and card access security system
Rock Solid gate is contracted by the MVATC to perform a preventative maintenance service two times per year on the front and rear gates and drive motors. They inspect both units, lubricate parts and inspect the motors and gates to help in identifying any issues or problems with the systems. Rock solid state Gate also provides on call service for any repairs needed.

Director of IT provides services for all card access systems, security camera systems as well as the vehicle camara systems. They install new components, monitor the systems and make any repairs needed to the systems.

Recommendations for additional PM services:

Garage overhead doors: It is recommended to add a preventative maintenance schedule for the 18 large overhead doors. Most of these doors are functioning properly but adding the PM schedule for them would increase the lifespan of the doors, motors and components. NDA Garage doors has submitted a PM proposal to systematically go through all overhead doors to identify and repair any issues found, lubricating and adjusting doors and motors as needed. This would be on an hourly basis, 2 times per year and charge for time and materials at an hourly rate of $180.00. It is estimated that a PM would take approximately 8 hours to complete.

Update: The MVATC contracted NDA Garage Door Service Inc. to perform a PM services two times per year (spring and fall).

Bus Wash building drains:

It is recommended that the floor drains in the bus wash building be set on a maintenance schedule to be cleaned at a minimum of 2 time per month. With the addition of the new wash rack system, we have been advised by the installation contractor that the current drain system may not be big enough to accommodate the amount of water and debris getting into the drain. It was also recommended that the drain system be enlarged from 6" drain to a 12" drain. While this is under review the drains should be cleaned more often than they are now.

Update: We have instituted a drain cleaning schedule that will assist with the cleaning of the bus wash system. All drains and catch basins are cleaned the first week of every month by the maintenance staff.

Appendix A: Monthly Property Inspection

MVRTA		*Monthly property Inspection*
Monthly Building inspection		Status: A - ACCEPTABLE M - MAINTANCE TO BE PERFORMED I-ITEM REQUIRES IMMEDIATE ATTN RS-REPAIRS SCHEDULED
Staff performing Inspection *Site being Inspected* *Date:*		
Areas Inspected	*Status*	*Comments*
Building Exterior		
parking lot, lines signage		
Sidewalks and railings		
Landscape		
Windows		
Doors		
Roof and Gutters		
HVAC filters		
Mechanicals		
Mechanical Room		
Utility room		
Janitors closets		
Electrical Panels and breakers		
Elevators		
Rest rooms		
Flooring - Tile / Carpet		
Interior walls - paint		
Generator		
Plumbing		
Pest Control		
Lighting		
Stairwells		
Cameras/security		
Fire Extingueshers		
Sitting Area		
Bathroom fixtures		
Bathroom cleaning		
Block walls		
Expansion joints		
Intercom system		

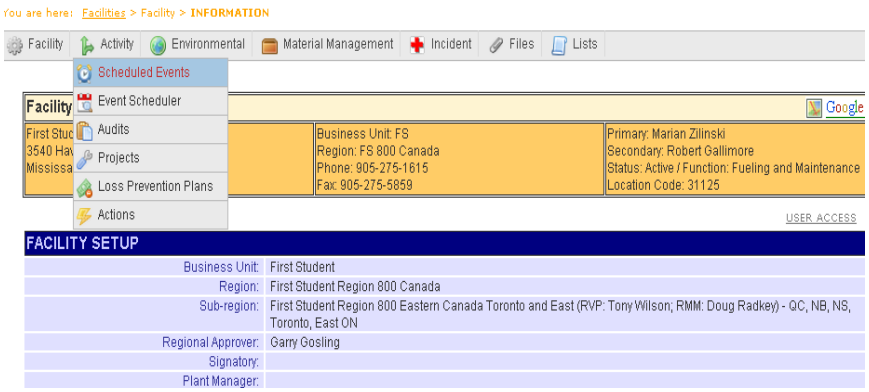
Appendix B: Quatertly Property Inspection

MVRTA PREVENTATIVE MAINTENANCE INSPECTION REPORT to be performed 4 times per year

Property Name:
Date of Inspection:
Inspected by:

Codes: NA = not applicable	*A = Acceptable*	*M = Maintenance to be performed*	*I = Items requireing immeadiate attention*	*RS = Repairs Scheduled*
Areas Inspected	Code	Comments on Conditions	Additional Comments on property	
Lawn				
Landscape (Shrubs and trees				
Paving (Driveways, parking)				
parking lot line stripes				
Sidewalks and steps				
Entranceway hand rails				
Walls and fencing				
Benches and sitting areas				
Drains and drainage systems				
Area Exterior lighting				
Area Interior lighting				
Overhead / underground Electrical				
Exterior walls and foundations				
Windows and Doors - Exterior				
Windows and Doors - Interior				
Roofs, gutters and flashing				
Roof vents and penetrations				
Pest control issues				
Common areas				
Bathrooms				
Maintenance areas				
Maintenance equipment				
Trash dumpsters and collection areas				
HVAC areas and equipment				
Fire and life safety systems				
Security systems				
Elevators				
ADA Equipment				
Ramps and HC access				
Doors, push bottons, auto openers				
Fire Extinguisher				
Other Miscellaneous				

HOW TO DOCUMENT COMPLETION OF MONTHLY ENVIRONMENTAL INSPECTION RECORDS

1.)	Go to https://www.eios.org
2.)	Enter “USER NAME” and “PASSWORD” where requested (eg. fg_smithf). Contact Strata Environmental (865.539.2077) if User Name and Password are not known, or to add new employees.
3.)	Click on the main menu item “FACILITIES” in the left frame.
4.)	Click on “ACTIVITY/SCHEDULED EVENTS” menu on top of page; “SCHEDULED EVENTS” should appear listing all required inspections for your facility ;notice the STATUS of each item and posting date. 
5.)	Click the icon under the VIEW column to see details of the relevant inspection (SCHEDULED EVENT) you wish to enter (eg. Monthly Environmental Site Inspection, etc.). If you wish to print a blank form (MS-WORD or ADOBE ACROBAT document) to fill in during your inspection, you may click on icon under “PRINTABLE FORM” column. However, completing the MS-WORD OR ADOBE ACROBAT document will not update the EiOS database.
6.)	After clicking the icon under the VIEW column for the appropriate “EVENT NAME” item, click on “EDIT” (on top right or bottom right of the detail screen).
7.)	Complete all required fields on the screen. Please note that you must select “COMPLETED” on the “STATUS” option in order for the inspection to be considered complete. For inspections that have corrective actions needed, set “STATUS” to “Corr. Action Pending” and enter a Corrective Action Due Date to receive 30-day email reminders. Once the corrective action is complete, enter Corrective Action Completed Date, and set “STATUS” equal to “COMPLETED”.
8.)	After entering the required data, be sure to click “SAVE” on the bottom left side of the screen. The entered data is saved and you may log off.
9.)	File the completed hard copy inspection form (hand written paper copy) in the appropriate plan (eg. SWP3 or SPCC Plan) or facility environmental file.
10.)	You are done! Congratulations!

MONTHLY ENVIRONMENTAL INSPECTION REPORT

Facility Name: _____

Facility Address: _____

Location Code: _____

Name of Inspector: _____

Signature of Inspector: _____

Date/Time of Inspection: _____

Description of Weather During Inspection: _____

Description of any Wastewater Discharges Occurring Outdoors at the Time of Inspection (i.e., vehicle wash water, air compressor blowdown, etc.): _____

GENERAL	Y	N	NA	COMMENTS/RECOMMENDATIONS
Are all spill control stations completely stocked? *(A spill control station is required to be located in all maintenance areas and fueling areas.)* 				*(Note: Spill control stations can be purchased from Gator Supplies (Phone: 250/493-3635; Vendor #312696).)*
Have fire extinguishers and/or fire suppression systems been inspected within the last year? 				*(Note: Contact your Region Safety Manager for direction on arranging testing for fire extinguishers/ suppression systems.)*

STORAGE TANKS (ABOVEGROUND ONLY)	Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____		
	Y	N	NA	Y	N	NA	Y	N	NA
Is permit for tank posted and up-to-date? *(Note: Some aboveground storage tanks are not required to be permitted after installation or may be exempt due to size. Please contact Strata at 865/539-2077 for information regarding whether your tank is required to have a permit.)*									

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MONTHLY ENVIRONMENTAL INSPECTION REPORT

STORAGE TANKS (ABOVEGROUND ONLY)	Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____		
	Y	N	NA	Y	N	NA	Y	N	NA
Is a tank chart available for the tank? *(Note: Required only for fuel tanks. Tank charts convert the number of inches of fuel in the tank to gallons of fuel in the tank. To obtain a tank chart, provide the name of the tank manufacturer and year the tank was manufactured to Mansfield Oil Company (800/843-0134).)*									
Is the tank free of damage? *(Note: If damage is observed, contact Mansfield Oil Company (800/843-0134).)*									
Is the tank surface free of signs of leaks and rusting? *(Note: If leaks or severe rusting are observed, contact Mansfield Oil Company (800/843-0134 to schedule repair and/or painting of the tank).)*									
If the tank is equipped with an overfill (visual/audible) alarm, is the alarm working properly? *(Note: Contact Mansfield Oil Company (800/843-0134) to obtain instruction on how to test overfill if uncertain.)*									
If the tank is equipped with a product level gauge, is the level gauge working properly? *(Note: If level gauge requires repair or replacement, contact Mansfield Oil Company (800/843-0134).)*									











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MONTHLY ENVIRONMENTAL INSPECTION REPORT

STORAGE TANKS (ABOVEGROUND ONLY)	Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____		
	Y	N	NA	Y	N	NA	Y	N	NA
If the tank is equipped with a vent pipe and/or emergency vent pipes are the vent pipes unobstructed? *(Note: Obstructions include spider webs, bird nests, etc.)*									
If a spill containment box is located around the fill port, is the spill containment box free of water, fuel, and debris? *(Note: If fuel is present, use an absorbent sock/pad to remove the fuel. If water is present, pump water out and document on Discharge Log.)*									
If a spill containment pan is located beneath the dispenser, is the spill containment pan free of water, fuel, and debris? *(Note: This applies to cabinet-style dispensers only. In order to access the containment pan, the door of the cabinet must be opened. If fuel is present, use an absorbent sock/pad to remove the fuel. If water is present, pump water out and document on Discharge Log.)*									











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MONTHLY ENVIRONMENTAL INSPECTION REPORT

STORAGE TANKS (ABOVEGROUND ONLY)	Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____		
	Y	N	NA	Y	N	NA	Y	N	NA
DOUBLE-WALLED TANKS ONLY: If tank is equipped with an interstitial monitor (i.e., leak detection), is the system working properly? *(Note: If monitor requires repair or replacement, contact Mansfield Oil Company (800/843-0134).)*									
DOUBLE-WALLED TANKS ONLY: Has the interstice (area between inner and outer tank) been visually inspected for water, fuel, and/or debris? If liquid is present in the interstice, provide height: _____ inches and material type _____ (i.e. water, diesel, gasoline, etc…) (Note: If liquid is present in the interstice, contact Mansfield Oil Company at 800/843-0134 for inspection.)									
Is dispenser operating correctly (i.e., no evidence of leaks or drips from the equipment)? *(Note: If dispenser requires repair or replacement, contact Mansfield Oil Company (800/843-0134).)*									
Is the dispenser free of damage? *(Note: If dispenser requires repair or replacement, contact Mansfield Oil Company (800/843-0134).)*									
Are the dispenser filters tight with no evidence of leaking? *(Note: If leaking around the filters is observed or filters require replacement, contact Mansfield Oil Company (800/843-0134).)*									
Is the dispenser hose cracked or worn? *(Note: If dispenser hose requires repair or replacement, contact Mansfield Oil Company (800/843-0134).)*									

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MONTHLY ENVIRONMENTAL INSPECTION REPORT

STORAGE TANKS (ABOVEGROUND ONLY)	Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____		
	Y	N	NA	Y	N	NA	Y	N	NA
Is the dispenser hose connected to the hose retriever? *(Note: If hose retriever is needed, contact Mansfield Oil Company (800/843-0134) to order.)*									
Is the dispenser nozzle intact? *(Note: If nozzle requires repair or replacement, contact Mansfield Oil Company (800/843-0134).)*									
Has the dispenser meter been calibrated within the past year? *(Note: If meter requires repair or replacement, contact Mansfield Oil Company (800/843-0134).)*									
If the dispenser and/or fill port sumps are equipped with sensors, are the sensors approximately 1” or less off the bottom of the sumps? *(Note: If a sensor appears to be damaged, contact Mansfield Oil Company (800/843-0134) for repairs.)*									
If the dispenser and/or fill port sumps are equipped with sensors, have the sensors been tested within the last 30 days? *(Note: To test the sump sensor, remove the sensor from the sump and place in a cup of water. Verify that an alarm sounds on the monitoring system (i.e., Veeder Root, Gilbarco, etc.). If no alarm sounds, contact Mansfield Oil Company (800/843-0134) for repairs.)*									
Are fuel inventory reconciliation logs being completed and are up-to-date? *(Note: These logs are generated manually by facility personnel and compare the amount of fuel in the tank versus how much fuel was dispensed. For more information, contact Strata at 865/539-2077.)*									

STORAGE TANKS (ABOVEGROUND ONLY)	Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____		
	Y	**N**	**NA**	**Y**	**N**	**NA**	**Y**	**N**	**NA**
If tank is equipped with an emergency stop switch, has the switch been tested within the last 30 days?									
(Note: Test switch when fuel is being dispensed to a vehicle or container. If emergency switch is in need of repair, contact Mansfield Oil Company at 800/843-0134.)									
For tanks equipped with piping, is the piping free of signs of leakage, corrosion, or damage?									
(Note: If leakage, corrosion, or damage is observed, contact Mansfield Oil Company (800/843-0134) for repairs.)									

SECONDARY CONTAINMENT STRUCTURES* FOR (ABOVEGROUND STORAGE TANKS ONLY)	Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____		
	Y	N	NA	Y	N	NA	Y	N	NA
Are containment walls intact (no evidence of cracks or leaks)? *(Note: Examples of containment: concrete/steel dikes, spill containment pallets, and containment tubs. If cracks in the containment are present, contact Mansfield Oil Company (800/843-0134) for repairs.)*									
If water is present in the secondary containment structure, is the water free of oil sheens? *(Note: If oil sheens are present, the water cannot be discharged to the ground. Place absorbent pads on the sheen until no evidence of a sheen is visible. If large sheen is present, contact your oil/water separator vendor or other waste vendor to remove oil/water mixture.)*									
Has water/product been removed from the secondary containment structure during the past 30 days and logged on the Drainage Discharge Log? *(Note: Contact Strata at 865/539-2077 for copy of Drainage Discharge Log and instructions.)*									
Are the drainage valves/plugs located inside containment structure closed and/or locked? *(Note: If drainage valves require repair, contact Mansfield Oil Company (800/843-0134) for repairs.)*									





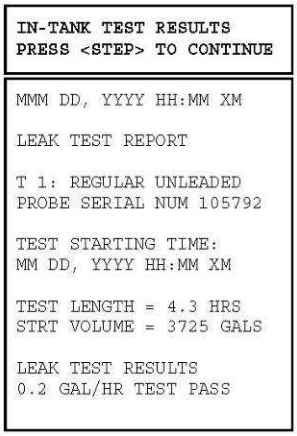
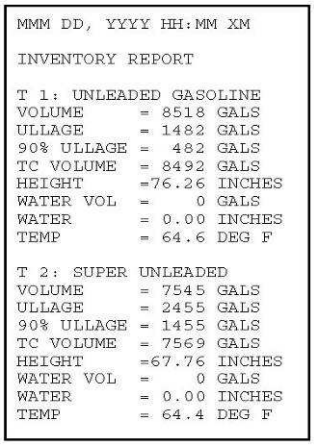
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MONTHLY ENVIRONMENTAL INSPECTION REPORT

STORAGE TANKS (UNDERGROUND ONLY)	Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____		
	Y	N	NA	Y	N	NA	Y	N	NA
Is permit for tank posted and up-to-date? *(Note: Some heating oil underground storage tanks are not required to be permitted after installation or may be exempt due to size. Please contact Strata at 865/539-2077 for information regarding whether your tank is required to have a permit.)*									
Is a tank chart available for the tank? *(Note: Tank charts convert the number of inches of product in the tank to gallons of product in the tank. To obtain a tank chart, provide the name of the tank manufacturer and year the tank was manufactured to Mansfield Oil Company (800/843-0134). Tank charts are required to be maintained on-site for all underground storage tanks.)*									
Is vegetation near the storage tank healthy and no signs of impact from storage tank is visible? *(Note: If dead vegetation is observed, contact facility management and determine if a release of fuel/automotive fluid is the cause of the dead vegetation.)*									
Are inventory reconciliation logs being completed for all underground storage tanks and are up-to-date? *(Note: These logs are generated manually by facility personnel and compare the amount of product in the tank versus how much product was dispensed. For more information, contact Strata at 865/539-2077).*									

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MONTHLY ENVIRONMENTAL INSPECTION REPORT

STORAGE TANKS (UNDERGROUND ONLY)	Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____		
	Y	N	NA	Y	N	NA	Y	N	NA
Is leak detection monitoring being documented on a monthly basis?									
(Note: If tank is equipped with an automatic tank gauge (i.e., Veeder Root, Gilbarco, etc.), a leak detection report can be generated from the automatic tank gauge. If the tank is not equipped with an automatic tank gauge, inventory reconciliation reports and tank testing records are required to be maintained. Contact Strata at 865/539-2077 for assistance.)									
Have you checked for evidence of water inside the tank?									
(Note: Water inside an underground storage tank can be checked with a tank stick and water paste or by running an Inventory report from the automatic tank gauge ((i.e., Veeder Root, Gilbarco, etc.). Contact Strata at 865/539-2077 for assistance.)									
Is dispenser operating correctly (i.e., no evidence of leaks or drips from the equipment)? *(Note: If dispenser requires repair or replacement, contact Mansfield Oil Company (800/843-0134).)*									
Is the dispenser free of damage? *(Note: If dispenser requires repair or replacement, contact Mansfield Oil Company (800/843-0134).*									

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MONTHLY ENVIRONMENTAL INSPECTION REPORT

STORAGE TANKS (UNDERGROUND ONLY)	Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____		
	Y	N	NA	Y	N	NA	Y	N	NA
Are the dispenser filters tight with no evidence of leaking? *(Note: If leaking around the filters is observed or filters require replacement, contact Mansfield Oil Company (800/843-0134).)*									
Is the dispenser hose cracked or worn? *(Note: If dispenser hose requires repair or replacement, contact Mansfield Oil Company (800/843-0134).)*									
Is the dispenser hose connected to the hose retriever? *(Note: If hose retriever is needed, contact Mansfield Oil Company (800/843-0134) to order.)*									
Is the dispenser nozzle intact? *(Note: If nozzle requires repair or replacement, contact Mansfield Oil Company (800/843-0134).)*									
Has the dispenser meter been calibrated within the past year? *(Note: If meter requires repair or replacement, contact Mansfield Oil Company (800/843-0134).)*									
If a spill containment pan is located beneath the dispenser, is the spill containment pan free of water, fuel, and debris? *(Note: This applies to cabinet-style dispensers only. In order to access the containment pan, the door of the cabinet must be opened. If fuel is present, use an absorbent sock/pad to remove the fuel. If water is present, pump water out and document on Discharge Log.)*									





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MONTHLY ENVIRONMENTAL INSPECTION REPORT

STORAGE TANKS (UNDERGROUND ONLY)	Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____		
	Y	N	NA	Y	N	NA	Y	N	NA
If tank is equipped with an emergency stop switch, has the switch been tested within the last 30 days? *(Note: Test switch when fuel is being dispensed to a vehicle or container. If emergency switch is in need of repair, contact Mansfield Oil Company at 800/843-0134.)*									
If the tank is equipped with an overfill (visual/audible) alarm, is the alarm working properly? *(Note: Contact Mansfield Oil Company (800/843-0134) to obtain instruction on how to test overfill if uncertain.)*									
Is the fill port painted and labeled appropriately? *Gasoline (Regular Unleaded) = White circle with black cross* *Diesel (Low Sulfur) = Yellow hexagon* *Diesel (Ultra Low Sulfur) = Yellow hexagon with black "U"* *Heating Oil = Green hexagon* *Used Oil = Purple rectangle* *Monitoring Well = White circle with black triangle*									









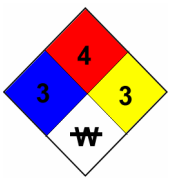
STORAGE TANKS (UNDERGROUND ONLY)	Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____			Tank Contents: _____ Tank Capacity: _____		
	Y	N	NA	Y	N	NA	Y	N	NA
Is automatic tank gauge (ATG) working properly? *(Note: Contact Mansfield Oil Company (800/843-0134) for repairs to ATG.)*									
Are the fill port spill container sumps, transitional piping sumps, and tank top sumps free of water, fuel, and debris? *(Note: If fuel is present, use an absorbent sock/pad to remove the fuel. If water is present, pump water out and document on Discharge Log.)*									
If the dispenser and/or fill port sumps are equipped with sensors, are the sensors approximately 1" or less off the bottom of the sumps? *(Note: If a sensor appears to be damaged, contact Mansfield Oil Company (800/843-0134) for repairs.)*									
If the dispenser and/or fill port sumps are equipped with sensors, have the sensors been tested within the last 30 days? *(Note: To test the sump sensor, remove the sensor from the sump and place in a cup of water. Verify that an alarm sounds on the monitoring system (i.e., Veeder Root, Gilbarco, etc.). If no alarm sounds, contact Mansfield Oil Company (800/843-0134) for repairs.)*									







MATERIAL LOADING AND UNLOADING AREAS	Y	N	NA	COMMENTS/RECOMMENDATIONS
Are the areas where materials (includes fuel, oils, coolant, etc.) are loaded and unloaded by vendors free of significant staining?				*(Note: If significant staining is observed, contact FGA Facilities Maintenance Group at 513/241-2200 to schedule cleaning of the area.)*

VEHICLE MAINTENANCE	Y	N	NA	COMMENTS/RECOMMENDATIONS
Is the maintenance area free of significant oil staining on the floors?				*(Note: If significant staining is observed, contact FGA Facilities Maintenance Group at 513/241-2200 to schedule cleaning of the area.)*
Is the area outside of the maintenance building free of signs of tracking of oils onto the paved or gravel surfaces?				*(Note: If significant staining is observed, contact FGA Facilities Maintenance Group at 513/241-2200 to schedule cleaning of the area.)*
Are the material storage areas located inside and outside of the maintenance building free of significant oil staining?				*(Note: If significant staining is observed, contact FGA Facilities Maintenance Group at 513/241-2200 to schedule cleaning of the area.)*
Are all drums located inside or outside of the maintenance building intact with no signs of leaks or damage?				*(Note: If leaking drums are discovered, place absorbents around drum and empty contents of drum, place in an overpack drum, or turn drum to where leak is stopped. Contact Strata at 865/539-2077 for assistance.)*
Are all drums/containers, including oil catch pans, properly sealed, if not in use?				
Are all drums/containers properly labeled as to the contents and associated hazard (i.e NFPA HazMat Diamond)? 				*(Note: Contact your Region Safety Manager for direction on obtaining NFPA HazMat Diamond Labels.)*

HYDRAULIC LIFTS	Y	N	NA	COMMENTS/RECOMMENDATIONS
Are hydraulic lifts operating correctly? 				*(Note: Contact your Region Maintenance Manager, Region Director of Maintenance or EH&S Director for direction on repairs.)*
Have the hydraulic lifts been inspected within the past 12 months?				*(Note: Contact your Region Maintenance Manager, Region Director of Maintenance or EH&S Director for direction on scheduling inspection.)*

WASTE STORAGE AREAS	Y	N	NA	COMMENTS/RECOMMENDATIONS
Has the area around all solid waste dumpsters been inspected to determine if any automotive fluids have been improperly disposed in the dumpster and are leaking from the dumpster? 				*(Note: If dumpster is not equipped with a lid, contact your waste vendor for repair/replacement.)*
Is the area around the used oil filter bin/drums free of significant oil staining? 				*(Note: If significant staining is observed, contact FGA Facilities Maintenance Group at 513/241-2200 to schedule cleaning of the area.)*

OIL/WATER SEPARATORS	Y	N	NA	COMMENTS/RECOMMENDATIONS
Are oil/water separator systems working properly? 				*(Note: If oil/separator is malfunctioning, contact FGA Facilities Maintenance Group at 513/241-2200 to schedule repairs.)*
Has the oil/water separator system been serviced within the last 12 months?  				*(Note: If oil/water separator requires servicing, contact your oil/water separator waste vendor.)*

VEHICLE AND EQUIPMENT WASHING AREAS	Y	N	NA	COMMENTS/RECOMMENDATIONS
Is the vehicle washing area free of oil staining? 				*(Note: If significant staining is observed in an outdoor wash area that is not equipped with drains that discharge to an oil/water separator, contact FGA Facilities Maintenance Group at 513/241-2200 to schedule cleaning.)*

OUTDOOR VEHICLE PARKING AREAS	Y	N	NA	COMMENTS/RECOMMENDATIONS
Are the parking areas clean with no evidence of significant oil staining?				*(Note: If significant staining is observed in the parking areas, contact FGA Facilities Maintenance Group at 513/241-2200 to schedule cleaning.)*
If storm drains are located on-site, are storm drain covers available to be used in the event there is a spill?				*(Note: Drain covers can be purchased from Gator Supplies (Phone: 250/493-3635; Vendor #312696).)*

SEDIMENT AND EROSION CONTROL	Y	N	NA	COMMENTS/RECOMMENDATIONS
Is there evidence of excessive erosion and/or sediment buildup at the site?				*(Note: Contact FGA Facilities Maintenance Group at 513/241-2200 for assistance with property maintenance.)*

SECURITY	Y	N	NA	COMMENTS/RECOMMENDATIONS
Are all fences and gates located on the property intact?				*(Note: Contact FGA Facilities Maintenance Group at 513/241-2200 for repairs.)*
Are all gates equipped with locks?				
If fencing is not provided around the perimeter of the property, are fill ports to outdoor storage tanks padlocked?				
Is electricity shut off to outdoor fuel ABOVEGROUND storage tank dispensers after business hours?				
Is lighting around outside liquid storage areas working properly?				*(Note: Contact FGA Facilities Maintenance Group at 513/241-2200 for repairs to outdoor lighting.)*

STORM WATER MANAGEMENT CONTROLS	Y	N	NA	COMMENTS/RECOMMENDATIONS
Are storm drains operating efficiently (i.e., runoff is flowing unobstructed) and clear of debris and other objects?				*(Note: Contact FGA Facilities Maintenance Group at 513/241-2200 if storm drains require cleaning.)*
Is there any evidence of potential pollutants reaching the storm drains (i.e., oil staining, oil sheens)?				*(Note: If evidence of pollutants in storm water are observed, contact Strata for assistance at 865/539-2077)*
If an oil/water separator, clarifier, or other storm water management unit is located on-site to treat storm water, is the system operating correctly?				*(Note: If oil/water separator requires servicing, contact your oil/water separator waste vendor.)*

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MONTHLY ENVIRONMENTAL INSPECTION REPORT

STORM WATER MANAGEMENT CONTROLS	Y	N	NA	COMMENTS/RECOMMENDATIONS
Are drainage ditches or swales free of debris and sediment buildup? 				*(Note: Contact FGA Facilities maintenance Group at 513/241-2200 if drainage ditches or swales require cleaning.)*
Is there any evidence of potential pollutants reaching the drainage ditches/swales (i.e., oil staining, oil sheens)?				*(Note: If evidence of pollutants in storm water are observed, contact Strata for assistance at 865/539-2077)*
Are storm water retention/detention ponds clear of debris and sediment building and free of any obstructions that may inhibit water flow and drainage? 				*(Note: Contact FGA Facilities Maintenance Group at 513/241-2200 if drainage ditches or swales require cleaning.)*
Is there any evidence of potential pollutants reaching the retention/detention pond (i.e., oil staining, oil sheens)?				*(Note: If evidence of pollutants in storm water are observed, contact Strata for assistance at 865/539-2077)*

INSPECTION RESULTS	Y	N	NA	COMMENTS/RECOMMENDATIONS
Were there any releases or spills identified during the inspection that had not been previously identified?				
Were any instances of noncompliance observed?				

SUMMARY OF CORRECTIVE ACTIONS

Stormwater Operation and Maintenance Plan - Long Term Pollution Prevention

Ongoing maintenance is required for the proper function of the stormwater management system allowing the system to prevent pollution for the long term. This document provides a guideline for this work and allows for record keeping.

Stormwater Management System Owner: Merrimack Valley Transit _____
Signature/date

Party Responsible for Maintenance: Merrimack Valley Transit _____
Signature/date

Snow Removal

Snow removal from parking areas will be the responsibility of the property owner.

Site Specific BMP Maintenance Plans

(Reference MADEP Volume 2, Chapter – Structural BMP Specifications for the Massachusetts Stormwater Handbook)

Detention Chambers

Follow manufacturer's recommended Inspection and maintenance program (see attached manufacturer's information). Inspect detention chambers at least once per year to ensure that the basins are operating as intended. Inspect detention chambers during and after major storms to determine if the chambers are meeting the expected detention times. Examine the outlet structure for evidence of clogging or outflow release velocities that are greater than design flow. Potential problems that should be checked include: subsidence, erosion, cracking, or tree growth on or near the chambers; sediment accumulation around the outlet; inadequacy of the inlet/outlet channel erosion control measures; and erosion or sedimentation at the inlets. Make any necessary repairs immediately. During inspections, note any changes to the detention chambers or the contributing watershed, because these could affect chamber performance. Also remove trash and debris at this time. Remove sediment from the chambers as necessary, but at least once every 5 years. See attached Cultec Separator Row Operation and Maintenance Guide.

Stormceptor

See attached Stormceptor Inspection and Maintenance Information.

Gate Valve Shut Off

The gate valve should remain in the "open" position under normal conditions. Inspect Gate Valve twice a year.

- Exercise the valve: Open the valve fully open and then fully closed a few times to prevent it from sticking or seizing, which can happen from disuse.
- Clean sediment that may impede the closing of the valve.
- Clean the valve stem and apply a spray lubricant (like silicon grease) to the valve stem.

Stormwater BMP Inspection and Maintenance Log

(print a log for each BMP and maintain a log book for the project)

BMP:_____

Date	Inspector	Issues Observed	Corrective Action Taken	Notes

Stormceptor® STC
Inspection and Maintenance Information

Stormceptor® Inspection and Maintenance

Regular inspection and maintenance is a proven, cost-effective way to maximize water resource protection for all stormwater pollution control practices, and are required to insure proper functioning of the Stormceptor System. Both inspection and maintenance of the Stormceptor system is easily performed from the surface. Stormceptor's patented technology has no moving parts, simplifying the inspection and maintenance process.

Please refer to the following information and guidelines before conducting inspection and maintenance activities.

When is inspection needed?

- Post-construction inspection is required prior to putting the Stormceptor System into service.
- Routine inspections are recommended during the first year of operation to accurately assess the sediment accumulation.
- Specifically for New Jersey installations, regulations require all BMPs to be inspected a minimum four times per year and after every storm with greater than one inch of rainfall.
- Inspection frequency in subsequent years is based on the maintenance plan developed in the first year.
- Inspections should also be performed immediately after an oil, fuel or other chemical spill.

When is maintenance cleaning needed?

- For optimum performance, the unit should be cleaned out once the sediment depth reaches 15% of the unit's total storage capacity (see Table 1). Generally, the minimum cleaning frequency is once annually, although the frequency can be based on historical inspection results.
- The unit should be cleaned out immediately after an oil, fuel or chemical spill.

Table 1

Sediment Maintenance Depth* and Oil Capacity		
STC Model	**Sediment Depth*** (inches)	**Oil Capacity** (gallons)
450i	8	86
900	8	251
1200	10	251
1800	15	251
2400	12	840

3600	17	840
4800	15	909
6000	18	909
7200	15	1059
11000	17	2797
13000	20	2797
16000	17	3055
* based on 15% of the lower chamber volume		

What conditions can compromise the Stormceptor System performance?

- If the system is not maintained regularly and fills with sediment and debris beyond the capacity indicated in Table 1, sediment removal efficiency may be reduced.
- If an oil spill(s) exceeds the oil capacity of the system, subsequent spills may not be captured.
- If debris clogs the inlet of the system, removal efficiency of sediment and hydrocarbons may be reduced.
- If a downstream blockage occurs, a backwater condition may occur in the system and removal efficiency of sediment and hydrocarbons may be reduced.

What training is required?

The Stormceptor System is inspected and maintained by professional vacuum cleaning service providers with experience in the maintenance of underground tanks, sewers and catch basins. For typical inspection and maintenance activities, no specific supplemental training is required for the Stormceptor System. Information provided in this document or the Stormceptor Operation and Maintenance Manual (provided to the system owner) contains sufficient guidance to maintain the system properly.

In unusual circumstances, such as if a damaged component needs replacement or some other condition requires manned entry into the vessel, confined space entry procedures must be followed. Only professional maintenance service providers trained in these procedures should enter the vessel. Service provider companies typically have personnel who are trained and certified in confined space entry procedures according to local, state, and federal standards.

What equipment is typically required for inspection?

- Manhole access cover lifting tool
- Oil dipstick
- Sediment probe
- Flashlight
- Camera
- Data log
- Safety cones and caution tape
- Hard hat, safety shoes, safety glasses, and chemical-resistant gloves

How is the Stormceptor System inspected?

- The Stormceptor System can be inspected through a standard surface manhole

access cover.

- Sediment and oil depth inspections are performed with a sediment probe and oil dipstick. Oil depth is measured through the oil inspection port. Sediment depth can be measured through the oil inspection port or exit riser pipe.
- Inspections also involve a visual inspection of the internal components of the system.

What equipment is typically required for maintenance?

- Vacuum truck equipped with water hose and jet nozzle
- Small pump and tubing for oil removal
- Manhole access cover lifting tool
- Oil dipstick
- Sediment probe
- Flashlight
- Camera
- Data log
- Safety cones and caution tape
- Hard hats, safety shoes, safety glasses, chemical-resistant gloves, and hearing protection for service providers
- Gas analyzer, respiratory gear, and safety harness for specially trained personnel if confined space entry is required

How is the Stormceptor System maintained?

- The Stormceptor System can be maintained through a standard surface manhole access cover.
- Insert the oil dipstick into the oil inspection port. If oil is present, pump off the oil layer into separate containment using a small pump and tubing.
- Maintenance cleaning of accumulated sediment is performed with a vacuum truck.
- For 6-ft diameter models and larger, the vacuum hose is inserted into the lower chamber via the 24-inch outlet riser pipe.
- For 4-ft diameter model, the removable drop tee is lifted out, and the vacuum hose is inserted into the lower chamber via the 12-inch drop tee hole.
- Using the vacuum hose, decant the water from the lower chamber to the sanitary sewer, if permitted by the local regulating authority, or into a separate containment tank.
- Remove the sludge from the bottom of the unit using the vacuum hose.
- Re-fill the lower chamber with water where required by the local jurisdiction.
- Units that have not been maintained regularly, have surpassed the maximum recommended sediment capacity, or contain damaged components may require manned entry by trained personnel using proper confined space entry procedures.

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What is required for proper disposal?

- Disposal requirements for recovered pollutants may vary depending on local guidelines. In most areas the sediment, once dewatered, can be disposed of in a sanitary landfill. It is not anticipated that the sediment would be classified as hazardous waste.

What about oil spills?

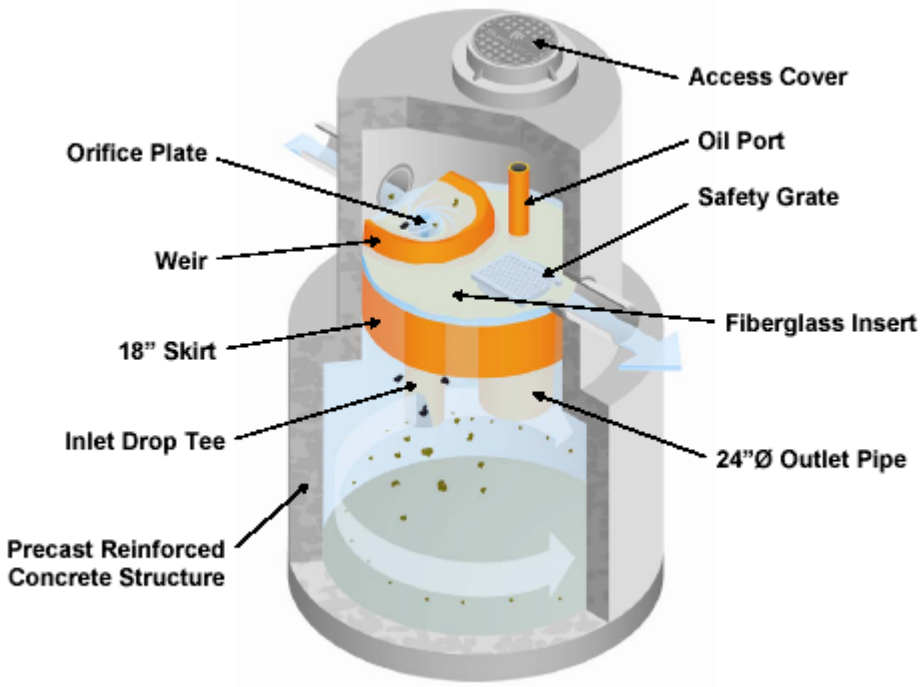
- Petroleum-based pollutants captured by the Stormceptor system (oil/chemical/fuel spills) should be removed and disposed of by a licensed waste management company.
- Although Stormceptor captures virtually all free oil, a sheen at the outlet **does not** mean the unit isn't working. A rainbow or sheen can be visible at oil concentrations of less than 10 mg/L (ppm).

What factors affect the costs involved with inspection/maintenance?

- Inspection and maintenance costs are based on unit size, sediment/oil/hazardous material loads, transportation distances, tipping fees, disposal requirements and other local regulations.

System schematic and component functions

Below is a schematic of the Stormceptor System with key components identified and their functions briefly described.

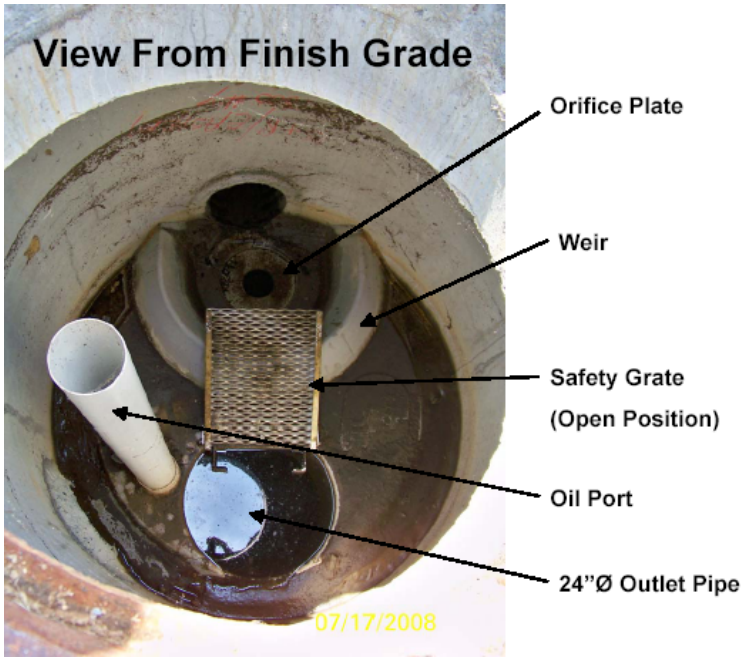


- **Manhole access cover** – provides access to the subsurface components
- **Precast reinforced concrete structure** – provides the vessel's watertight structural support
- **Fiberglass insert** – separates vessel into upper and lower chambers
- **Weir** – directs incoming stormwater and oil spills into the lower treatment chamber
- **Orifice plate** – controls water flow rate into the lower treatment chamber and prevents scour of accumulated pollutants
- **Inlet drop tee** – conveys stormwater into the lower treatment chamber and splits flow into two opposite tangential streams
- **Fiberglass skirt** – provides double-wall containment of hydrocarbons
- **Outlet riser pipe** – conveys treated water to the upper chamber; primary vactor access port for sediment removal

- **Oil inspection port** – primary access for measuring oil depth and oil removal
- **Safety grate** – safety measure to cover riser pipe in the event of manned entry into vessel

The Stormceptor System has no moving parts to wear out and therefore maintenance activities are generally focused on pollutant removal.





The depth of sediment can be measured from the surface by using a sediment probe or dipstick tube equipped with a ball check valve and inserted through the 24-inch outlet riser pipe. Oil level can similarly be checked through the oil inspection port.





A maintenance worker stationed on the surface uses a vacuum hose to evacuate water, sediment, and debris from the system.

Purchasing replacement parts

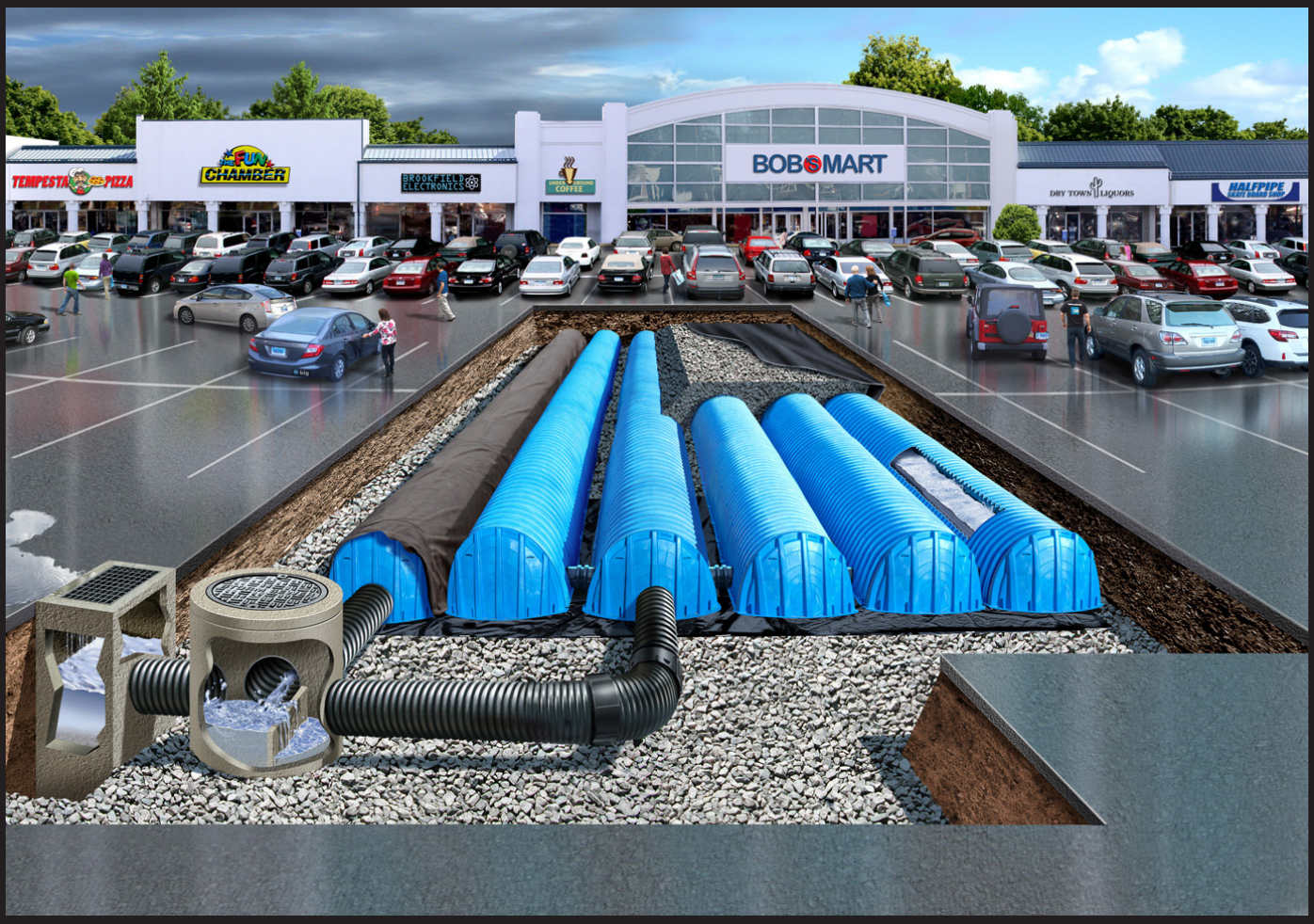
Since there are no moving parts in the Stormceptor System, broken, damaged, or worn parts are not typically encountered. However, if replacements parts are necessary, they may be obtained by contacting the following supplier of authentic Stormceptor components.

Camtek Construction Products Corp.
3481 Treeline Drive
Murrysville, PA 15668
Phone: (724) 327-3400

The benefits of regular inspection and maintenance are many – from ensuring maximum operation efficiency, to keeping maintenance costs low, to the continued protection of natural waterways – and provide the key to Stormceptor's long and effective service life.

CULTEC SEPARATOR™ ROW

WATER QUALITY SYSTEM



OPERATION & MAINTENANCE GUIDE

FOR CULTEC STORMWATER MANAGEMENT SYSTEMS

GLOBE VERIFIED VÉRIFIÉ

STORMWATER MANAGEMENT SOLUTIONS

CULTEC®

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For technical support, please call (203)775-4416 ext. 203 or e-mail tech@cultec.com.

Visit www.cultec.com/downloads.html for Product Downloads and CAD details.

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Feb 2022

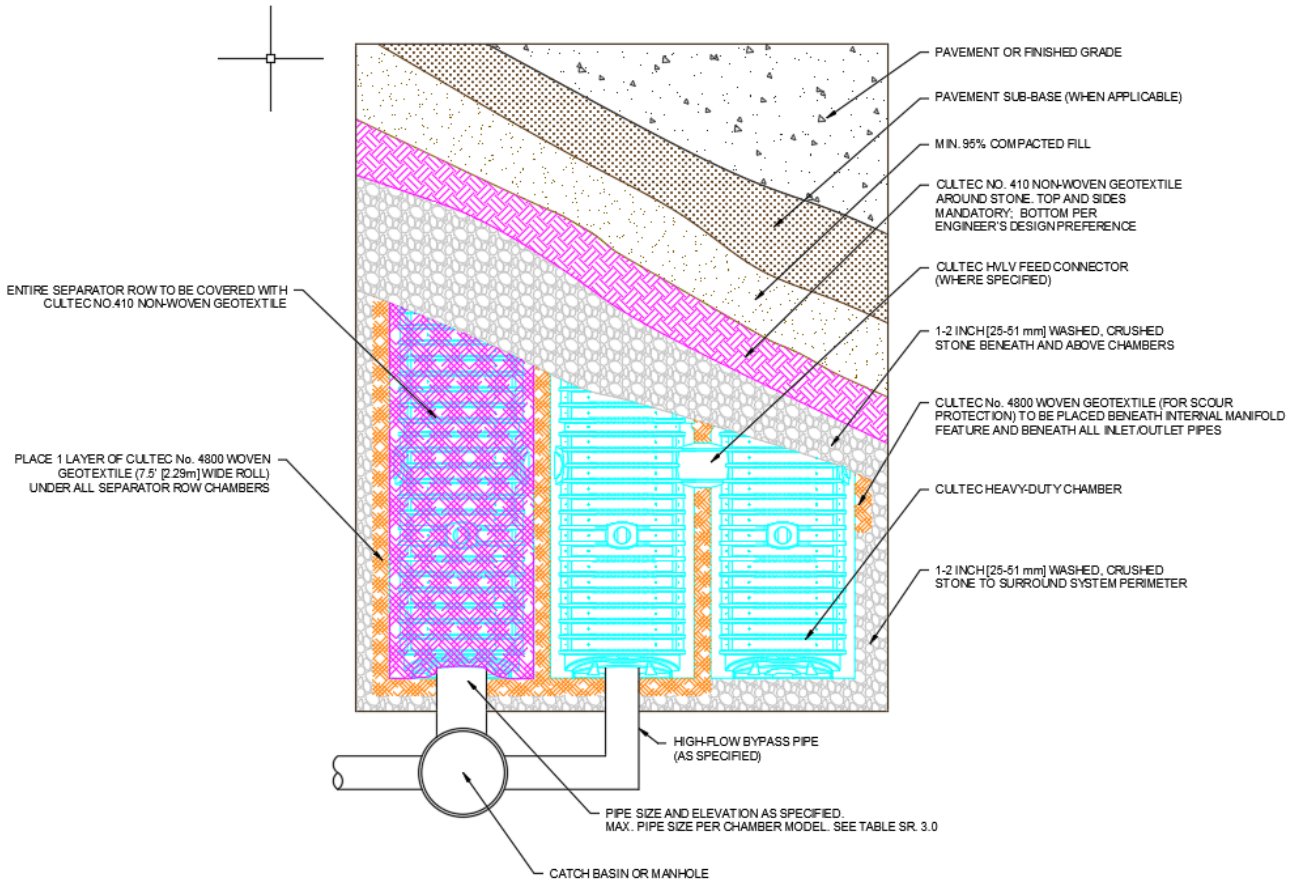
Introduction

CULTEC's Separator™ Row is an inexpensive means of removing Total Suspended Solids from the CULTEC chamber system, as well as providing easier access for inspection and maintenance. The Separator Row is designed to capture the First Flush of a rain event and is typically included as part of the "Treatment Train" for water quality.

The CULTEC Separator Row is a row of CULTEC Contactor or Recharger Chambers that are surrounded on all sides by filter fabric. One layer of CULTEC No. 4800™ Woven Geotextile are placed between the clean foundation stone and the chamber feet. The chambers are then completely wrapped with CULTEC No. 410™ non-woven geotextile. This configuration is designed to trap any sediment and/or debris that may pass through the upstream water-quality structures and into the chamber system.

A manhole is typically located adjacent to the separator row for ease of inspection and maintenance. This manhole is placed upstream of the system and can include a high-flow bypass pipe to pass peak-flows onto adjacent rows of chambers. The upstream manhole is designed with a sump to trap heavier sediment and allow for proper cleaning of the Separator Row. A JetVac process with a high pressure water nozzle is introduced down the Separator Row via the access manhole to clean all sediment and debris from the Separator Row. Captured pollutants are flushed into the sumped access manhole for vacuuming, and the process is repeated until the Separator Row is completely free of sediment and debris.

The Separator Row performance has been tested and verified to the protocols and procedures as defined by Environmental Technology Verification (ETV) Canada to achieve 80% TSS removal.



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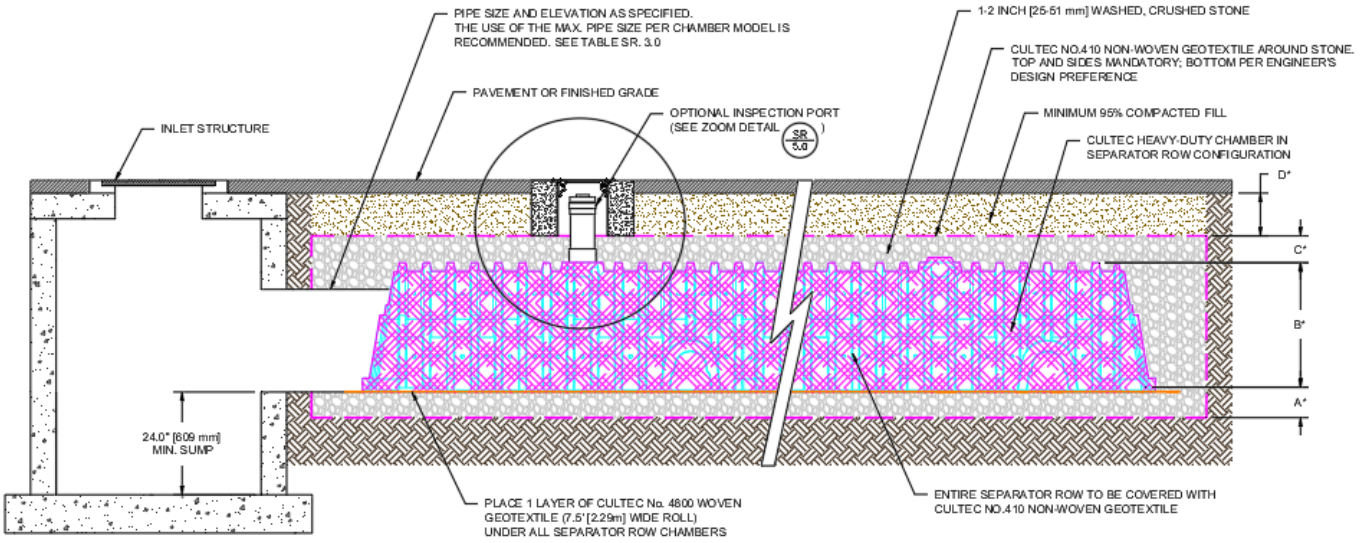
Design

There is no single design to achieve a high level of water quality. The CULTEC Separator Row should be designed as part of an overall best management practices water quality system. Pre-treatment devices such as sump catch basins, inlet baffles and proprietary oil-grit separators and filter systems can all be incorporated upstream of the CULTEC Separator Row. Sumped access/diversion manholes should be installed directly upstream of the Separator Row.

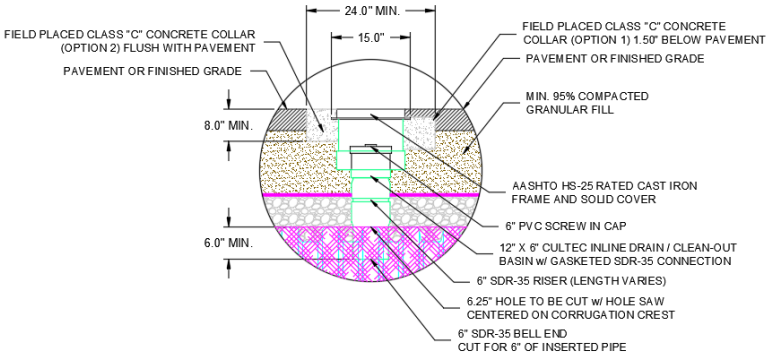
The following is a list of recommended design practices to ensure proper maintenance for the life of the system:

- Install sumped access/diversion manholes, including a minimum 24” (600 mm) sump, directly upstream of the Separator Row.
- Include a high-flow bypass pipe to divert peak flows that exceed the capacity of the Separator Row to adjacent rows.
- Connect the access manhole to the Separator Row with the largest diameter pipe allowable based on the CULTEC chamber model used.
- Maintain a minimum distance between the access manhole and the Separator Row to promote efficient maintenance.
- Include at least one inspection port per Separator Row for periodic inspection.

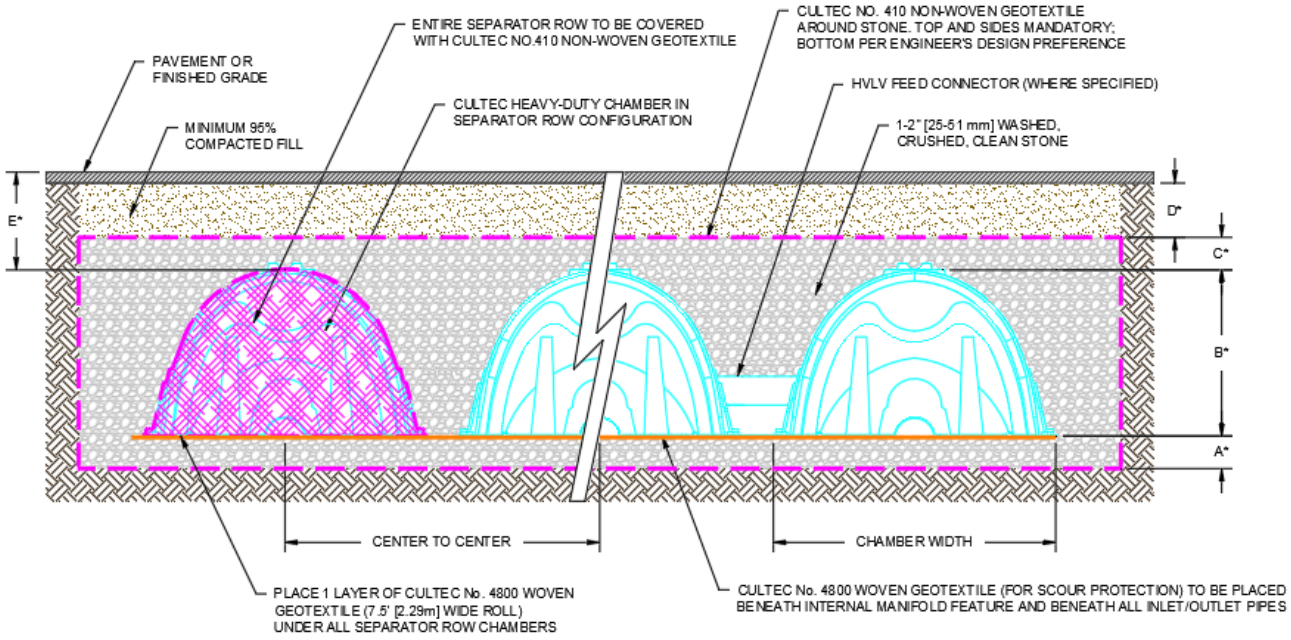
Note: Typical JetVac maintenance reels have a maximum of 400 feet (121.9 m) of available hose. Consider this when designing the length of the CULTEC Separator Rows.



*SEE SR 3.0 - CROSS SECTION TABLE REFERENCE



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*SEE SR 3.0 - CROSS SECTION TABLE REFERENCE

Table SR 3.0

	Description	Contactor 100HD	Recharger 150XLHD	Recharger 280HD	Recharger 330XLHD	Recharger 360HD	Recharger 902HD
A	Min. depth of stone base	6″ 152 mm	6″ 152 mm	6″ 152 mm	6″ 152 mm	6″ 152 mm	9″ 229 m
B	Chamber height	12.5″ 318 mm	18.5″ 470 mm	26.5″ 673 mm	30.5″ 775 mm	36″ 914 mm	48″ 1219 mm
C	Min. depth of stone required above units for traffic applications	6″ 152 mm	6″ 152 mm	6″ 152 mm	6″ 152 mm	6″ 152 mm	12″ 305 mm
D	Min. depth required of 95% compacted fill for paved traffic application	8″ 203 mm	8″ 203 mm	8″ 203 mm	10″ 254 mm	12″ 305 mm	12″ 305 mm
E	Max. depth of cover allowed above crown of chamber	12′ 3.65 m	12′ 3.65 m	12′ 3.65 m	12′ 3.65 m	12′ 3.65 m	8.5′ 2.59 m
	Max. allowable pipe size into chamber end wall/end cap	10″ 250 mm	12″ 300 mm	18″ 450 mm	24″ 600 mm	24″ 600 mm	24″ 600 mm

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Inspection and Maintenance

CULTEC recommends inspection of the Separator Row to be performed every six months for the first year of service. Future inspection frequency can be adjusted based upon previous inspection observations. However annual inspections are recommended. Inspection of the Separator Row can be achieved via an inspection port riser installed during construction. This inspection port riser will connect the top of the Separator Row chambers to finished grade with a removable lid. Alternatively the Separator Row may be inspected via the manhole(s) located at the end(s) of the Separator Row. However this method of inspection requires confined space entry. If entry into the manhole is required, all local and OSHA rules for confined space entries must be strictly followed.

To inspect:

- Remove the inspection port lid from the floor box frame.
- Remove the riser pipe cap.
- With a flashlight and stadia rod, measure the depth of sediment.
- Record results in a maintenance log.
- When depth of sediment exceeds 3” (76 mm), use the JetVac procedure described below.

The JetVac process utilizes a high pressure water nozzle controlled from the surface. The high pressure nozzle is introduced down the Separator Row via the access manhole(s). The high pressure water cleans all sediment and debris from the Separator Row as the nozzle is retrieved. Captured pollutants are flushed into the sumped access manhole for vacuuming. This process is repeated until the Separator Row is completely free of sediment and debris. A small diameter culvert cleaning nozzle is recommended for this procedure.



High pressure water nozzle



Cleaning Separator Row and pipes with high pressure water nozzle



SEPARATOR ROW: Separator Row prior to cleaning



ADJACENT ROW: When the Separator Row is working properly, the adjacent rows will not show signs of sediment.

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Inspection and Maintenance Record

Date	Mode of Access	Frequency	Depth of Sediment	Actions	Expenses	Inspector	Notes
Ex.	Inspection Port	Semi-annually	2”	Measure sediment depth with stadia rod. Visually inspect	$100	DPG	Depth of Sediment was measured via Northeast Inspection Port Adjacent to MH-1. Sediment depth was found to be 2”. No further action required at this time.
Ex.	Access Manhole	Annually					

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RETENTION • DETENTION • INFILTRATION • WATER QUALITY

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Comment #6

See Attached Fuel Tank Drawings

PLACES Associates, Inc.

256 Great Road, Suite 4, Littleton MA 01460 · (978) 486-0334 · www.placesassociates.com



NFPA TANK SIGNAGE

TANK #1
20,000 GALLONS DIESEL FUEL
MAX. FILL HEIGHT: 8' 5"

TANK LABEL

FOR HIGH LEVEL ALARM AT TANK:
2" RED LETTERS WITH A WHITE BACKGROUND
ON ALUMINUM BACKING, AT ALARM

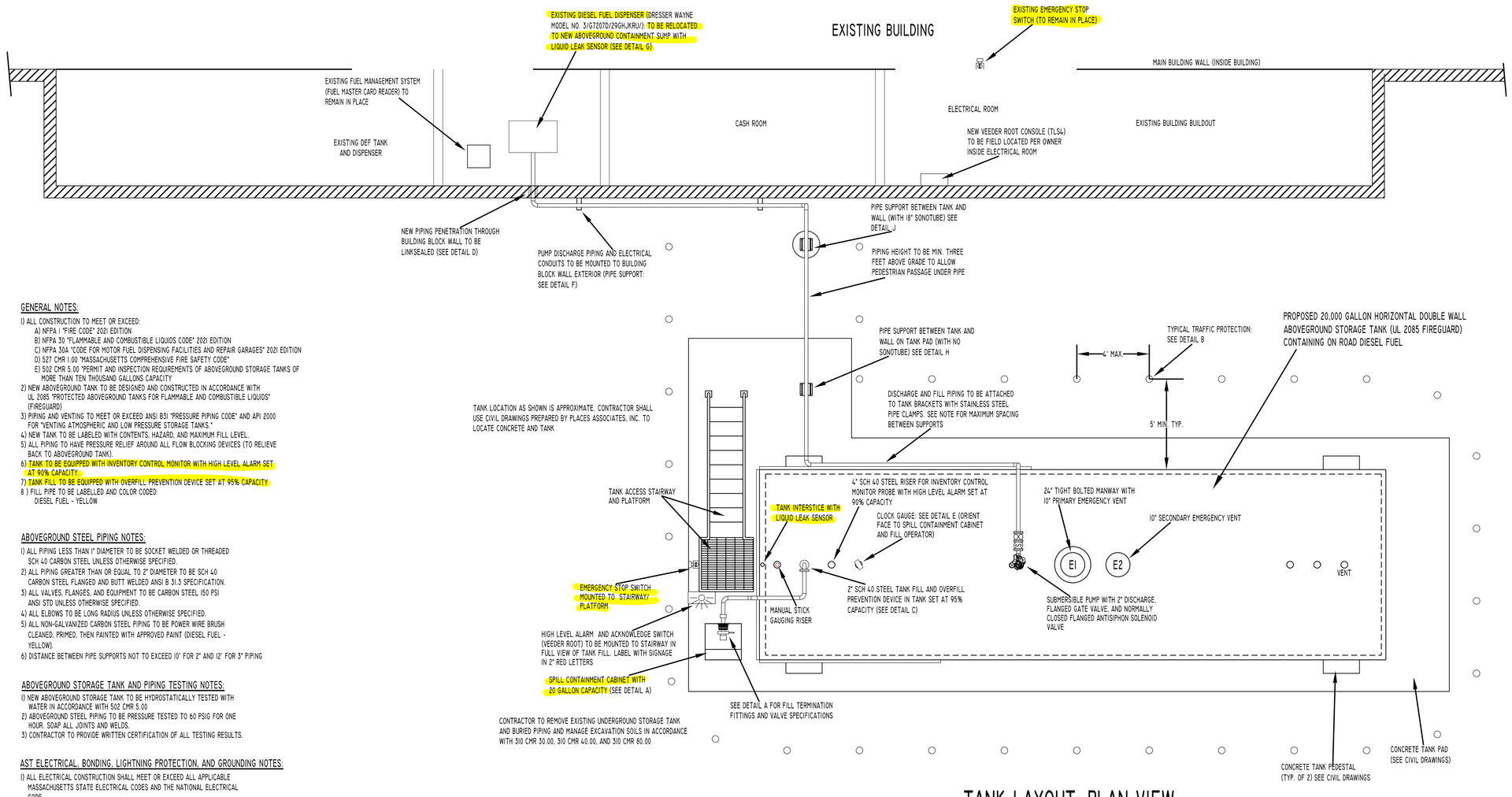
HIGH LEVEL ALARM

HIGH LEVEL ALARM SIGNAGE

FOR EMERGENCY SHUTOFF SWITCHES:
2" RED LETTERS WITH A WHITE BACKGROUND
ON ALUMINUM BACKING, AT SWITCHES

EMERGENCY SHUTOFF SWITCH

EMERGENCY SHUTOFF SWITCH SIGNAGE



TANK LAYOUT: PLAN VIEW

SEE DRAWING M-2 AND M-3 FOR REFERENCED DETAILS

SEE CIVIL DRAWINGS FOR SITE PLAN AND CONCRETE INFORMATION

SCALE: 3/8" = 1'

GENERAL NOTES:

1) ALL CONSTRUCTION TO MEET OR EXCEED:
   A) NFPA 1 "FIRE CODE" 2021 EDITION
   B) NFPA 30 "FLAMMABLE AND COMBUSTIBLE LIQUIDS CODE" 2021 EDITION
   C) NFPA 30A "CODE FOR MOTOR FUEL DISPENSING FACILITIES AND REPAIR GARAGES" 2021 EDITION
   D) 527 CMR 1.00 "MASSACHUSETTS COMPREHENSIVE FIRE SAFETY CODE"
   E) 502 CMR 5.00 "PERMIT AND INSPECTION REQUIREMENTS OF ABOVEGROUND STORAGE TANKS OF MORE THAN TEN THOUSAND GALLONS CAPACITY
2) NEW ABOVEGROUND TANK TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH UL 2085 "PROTECTED ABOVEGROUND TANKS FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS" (FIREGUARD)
3) PIPING AND VENTING TO MEET OR EXCEED ANSI B31 "PRESSURE PIPING CODE" AND API 2000 FOR "VENTING ATMOSPHERIC AND LOW PRESSURE STORAGE TANKS."
4) NEW TANK TO BE LABELED WITH CONTENTS, HAZARD, AND MAXIMUM FILL LEVEL.
5) ALL PIPING TO HAVE PRESSURE RELIEF AROUND ALL FLOW BLOCKING DEVICES (TO RELIEVE BACK TO ABOVEGROUND TANK).
6) TANK TO BE EQUIPPED WITH INVENTORY CONTROL MONITOR WITH HIGH LEVEL ALARM SET AT 90% CAPACITY.
7) TANK FILL TO BE EQUIPPED WITH OVERFILL PREVENTION DEVICE SET AT 95% CAPACITY.
8) FILL PIPE TO BE LABELLED AND COLOR CODED:
   DIESEL FUEL - YELLOW

ABOVEGROUND STEEL PIPING NOTES:

1) ALL PIPING LESS THAN 1" DIAMETER TO BE SOCKET WELDED OR THREADED SCH 40 CARBON STEEL UNLESS OTHERWISE SPECIFIED.
2) ALL PIPING GREATER THAN OR EQUAL TO 2" DIAMETER TO BE SCH 40 CARBON STEEL FLANGED AND BUTT WELDED ANSI B 31.3 SPECIFICATION.
3) ALL VALVES, FLANGES, AND EQUIPMENT TO BE CARBON STEEL 150 PSI ANSI STD UNLESS OTHERWISE SPECIFIED.
4) ALL ELBOWS TO BE LONG RADIUS UNLESS OTHERWISE SPECIFIED.
5) ALL NON-GALVANIZED CARBON STEEL PIPING TO BE POWER WIRE BRUSH CLEANED, PRIMED, THEN PAINTED WITH APPROVED PAINT (DIESEL FUEL - YELLOW).
6) DISTANCE BETWEEN PIPE SUPPORTS NOT TO EXCEED 10' FOR 2" AND 12' FOR 3" PIPING

ABOVEGROUND STORAGE TANK AND PIPING TESTING NOTES:

1) NEW ABOVEGROUND STORAGE TANK TO BE HYDROSTATICALLY TESTED WITH WATER IN ACCORDANCE WITH 502 CMR 5.00
2) ABOVEGROUND STEEL PIPING TO BE PRESSURE TESTED TO 60 PSIG FOR ONE HOUR. SOAP ALL JOINTS AND WELDS.
3) CONTRACTOR TO PROVIDE WRITTEN CERTIFICATION OF ALL TESTING RESULTS.

AST ELECTRICAL, BONDING, LIGHTNING PROTECTION, AND GROUNDING NOTES:

1) ALL ELECTRICAL CONSTRUCTION SHALL MEET OR EXCEED ALL APPLICABLE MASSACHUSETTS STATE ELECTRICAL CODES AND THE NATIONAL ELECTRICAL CODE.
2) ELECTRICAL IS UNCLASSIFIED.
3) GROUNDING AND BONDING TO MEET OR EXCEED NFPA 30 6.5.4.I. PROVIDE TWO GROUNDING RODS AT OPPOSITE ENDS OF TANKS: 1/2" X 10' DRIVEN SOLID COPPER.
4) ABOVE GROUND STORAGE TANK, PIPING, SPILL CONTAINMENT CABINET, AND CONCRETE REINFORCEMENT TO BE INCLUDED IN LIGHTNING PROTECTION/GROUNDING SYSTEM.
5) ALL CONNECTIONS TO BE MADE WITH #2 BARE STRANDED COPPER WIRE.

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Certification

COMMONWEALTH OF MASSACHUSETTS
ROBERT P. CIVILLO
CIVIL
MECHANICAL
No. 41274
REGISTERED PROFESSIONAL ENGINEER

Drawn by
Checked by
WEB ENGINEERING ASSOCIATES, INC.
111 SUMMER STREET,
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Revised on

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Providence, Rhode Island 02908
Phone: (401) 272-1730
Fax: (401) 273-7156
E-mail: rgbinfo@rgb.net
www.rgb.net

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Architecture · Project Management · Interior Design

Project

MERRIMACK VALLEY REGIONAL TRANSIT AUTHORITY

FUEL TANK RELOCATION AND RETAINING WALL

MeVa Merrimack Valley Transit

123 RAILROAD AVE.
HAVERHILL, MA 01835

Drawing Status
FOR CONSTRUCTION

Issued On 7/16/2025

Sheet Contents
TANK LAYOUT - PIPE AND MECHANICAL

Project Number. 6859

Drawing No.
M-1

Sheet 1 of 3

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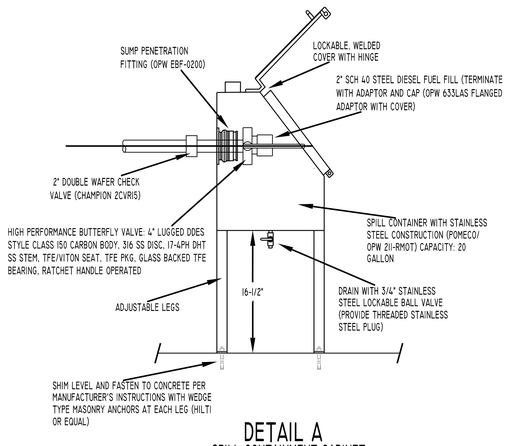
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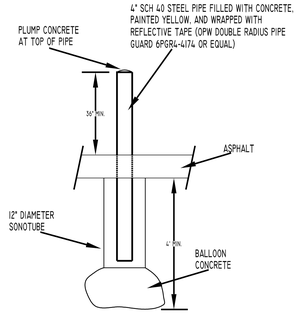
Certification



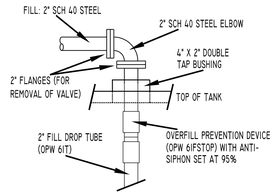
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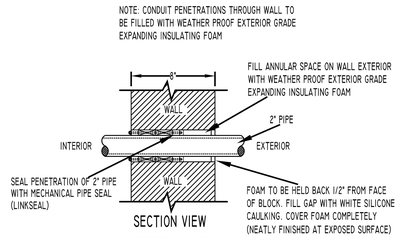
DETAIL A
SPILL CONTAINMENT CABINET
NOT TO SCALE



DETAIL B
TRAFFIC BARRIER
NOT TO SCALE

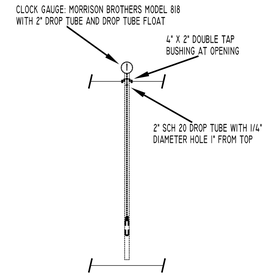


DETAIL C
OVERFILL PREVENTION DEVICE AT TANK FILL
NOT TO SCALE

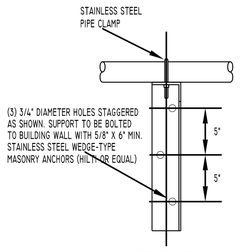


SECTION VIEW

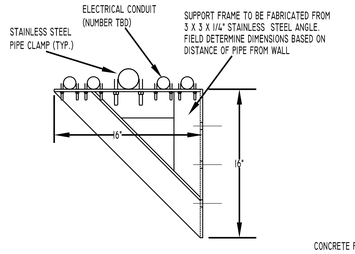
DETAIL D
WALL PIPING PENETRATION
NOT TO SCALE



DETAIL E
CLOCK GAUGE
NOT TO SCALE

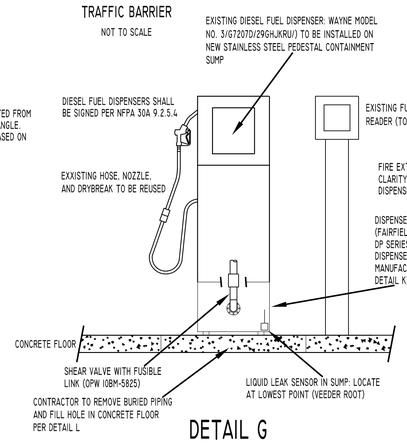


FRONT VIEW

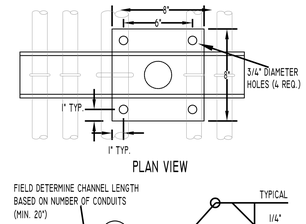


SIDE VIEW

DETAIL F
WALL PIPE SUPPORT
NOT TO SCALE

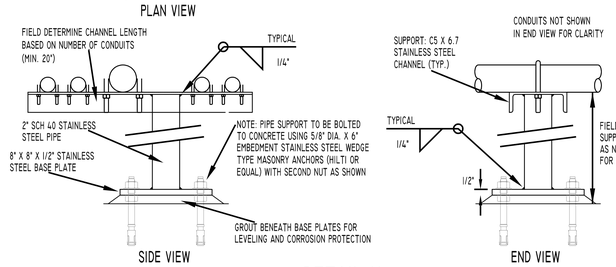


DETAIL G
DIESEL FUEL DISPENSER
NOT TO SCALE

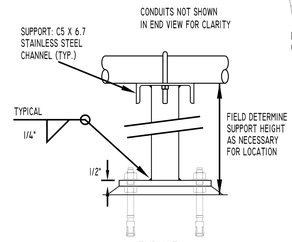


PLAN VIEW

DISTANCE BETWEEN PIPE SUPPORTS NOT TO EXCEED 10' FOR 2" OR 12' FOR 3" PIPE ADDITIONAL SUPPORTS MAY BE USED AS REQUIRED

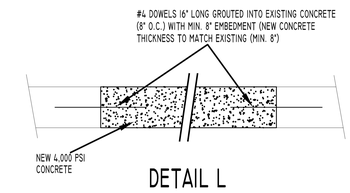


SIDE VIEW

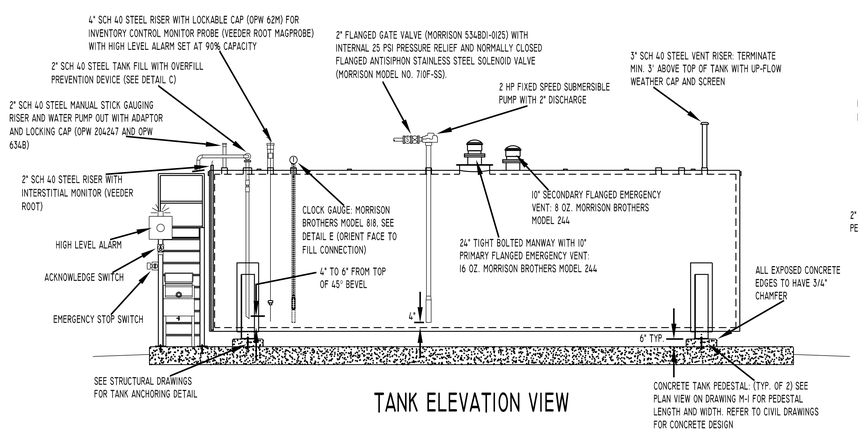


END VIEW

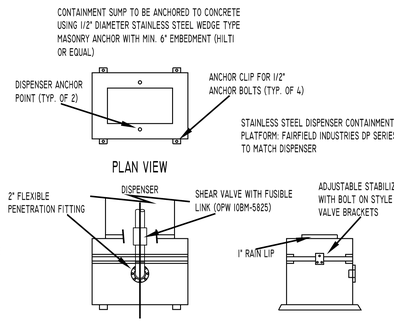
DETAIL H
2" PIPE SUPPORT
NOT TO SCALE



DETAIL L
CONCRETE REPAIR BENEATH DISPENSER
NOT TO SCALE



TANK ELEVATION VIEW

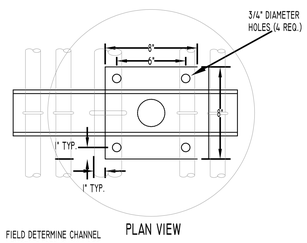


PLAN VIEW

FRONT VIEW

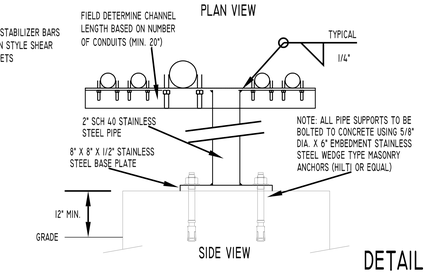
END VIEW

DETAIL K
DIEPENSER CONTAINMENT SUMP
NOT TO SCALE

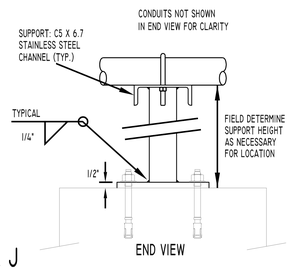


PLAN VIEW

DISTANCE BETWEEN PIPE SUPPORTS NOT TO EXCEED 10' FOR 2" OR 12' FOR 3" PIPE. ADDITIONAL SUPPORTS MAY BE USED AS REQUIRED



SIDE VIEW



END VIEW

DETAIL J
2" PIPE SUPPORT
NOT TO SCALE

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Providence, Rhode Island 02908
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Architecture · Project Management · Interior Design

Project

MERRIMACK VALLEY REGIONAL TRANSIT AUTHORITY

FUEL TANK RELOCATION AND RETAINING WALL

Merrimack Valley Transit

123 RAILROAD AVE.
HAVERHILL, MA 01835

Drawing Status
FOR CONSTRUCTION

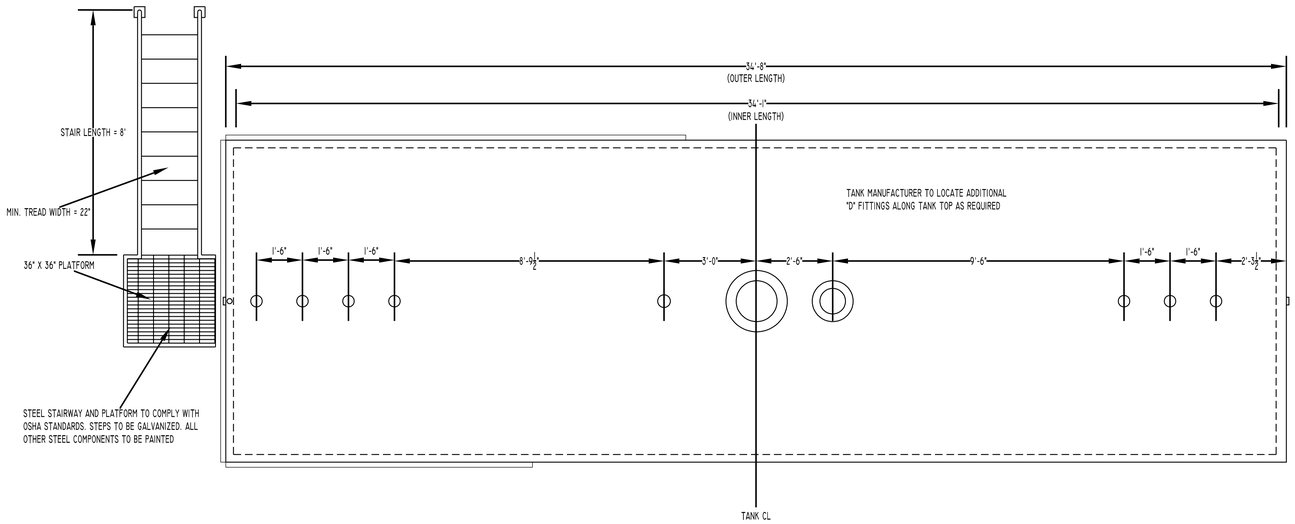
Issued On 7/16/2025

Sheet Contents
TANK ELEVATION AND MECHANICAL DETAILS

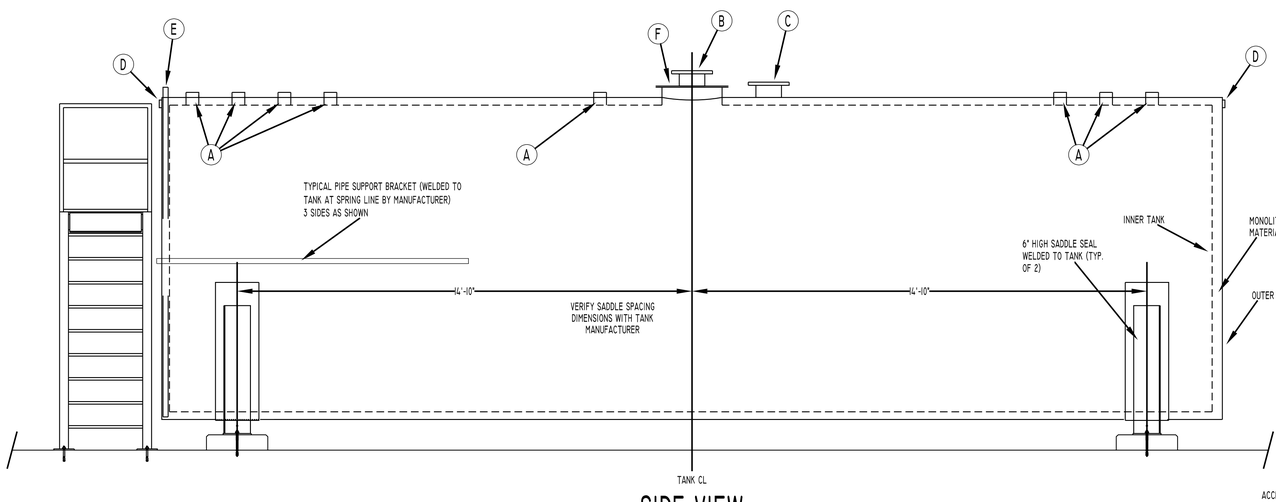
Project Number. 6859

Drawing No.
M-2

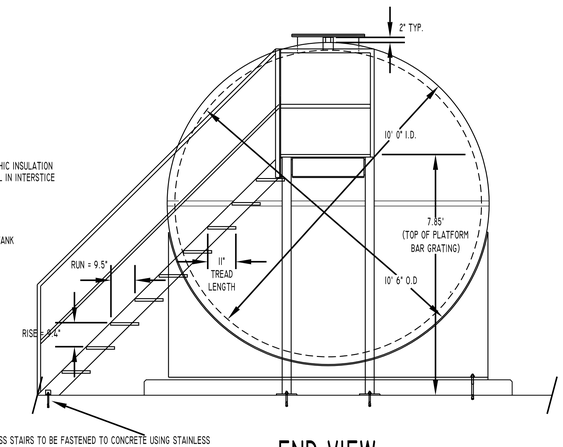
Sheet 2 of 3



PLAN VIEW



SIDE VIEW



END VIEW

SCALE: 1/2" = 1'

GENERAL NOTES

CAPACITY : 20,000 GALLONS
TYPE : FIREGUARD CYLINDRICAL
NO. REQ. : 1
MATERIAL : OUTER TANK - MILD CARBON STEEL
INNER TANK - MILD CARBON STEEL
TEST : PER UL 2085
MIN. GAUGE OR THICKNESS (PER U.L. 2085):
INNER HEADS: 5/16" OUTER HEADS : 5/16"
NNER SHELL: 1/4" OUTER SHELL : 1/4"
PAINT:
INTERIOR: NONE
EXTERIOR : SP6 BLAST, FINISH PAINT WHITE
CONSTRUCTION: INNER: LAP WELD OUTSIDE ONLY
OUTER: LAP WELD OUTSIDE ONLY
APPROVED LABELS: U.L. 2085 AND FIREGUARD

FITTING SCHEDULE

A = 4" FEMALE FIREGUARD COUPLING
B = 10" FFSO 150# FLANGE - PRIMARY EMERGENCY VENT USE ONLY
C = 10" FFSO 150# FLANGE THROUGH OUTER SHELL ONLY, MARK WITH SPECIAL WARNING LABEL INTERSTITIAL EMERGENCY VENT USE ONLY
D = 2" FITTING TUROUGH OUTER SHELL ONLY WITH CAST IRON PLUG- MFG USE ONLY
E = 2" INTERSTITIAL MONITOR PIPE - MALE NPT END
F = 24" x 1/4" PLATE TIGHT BOLT MANWAY WITH 1/8" THICK NEO-CORK GASKET AND "C" IN COVER ON C/L

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Certification

COMMONWEALTH OF MASSACHUSETTS
ROBERT P. COLUCCIO
CHEMICAL
NO. 41274
REGISTERED PROFESSIONAL ENGINEER

Drawn by WEB ENGINEERING ASSOCIATES, INC.
Checked by 111 SUMMER STREET, SCITUATE, MA 02026

Revised on

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Sheet Contents
20,000 GALLON ABOVEGROUND STORAGE TANK

Project Number. 6859

Drawing No.
M-3

Sheet 3 of 3