November 4, 2022

Ms. Kasie McKenzie and Mr. Ronald Gagnon
Rhode Island Department of Environmental Management
Office of Land Revitalization and Sustainable Materials Management
Waste Facilities Management Program
235 Promenade Street
Providence, Rhode Island 02908
Sent via Hard copy and E-mail: kasandra.mckenzie@dem.ri.gov & ron.gagnon@dem.ri.gov

RE: Beneficial Use Determination -Variance Application
Comment Letter Response
The Key (aka South Key/Quay)
649 Waterfront Drive
Assessor's Plat Map 7, Block 1, Lot 3
East Providence, Rhode Island 02914
SAGE Project No. S3291

Dear Ms. McKenzie and Mr. Gagnon:

Introduction

SAGE Environmental, Inc. (SAGE), on behalf of Rhode Island Waterfront Enterprises LLC, owner of the subject location (hereinafter, the "Site"), has prepared the subject package in response to a Beneficial Use Determination Application – Comment Letter issued by the Rhode Island Department of Environmental Management (RIDEM) on August 31, 2022. A copy of the RIDEM correspondence is included as **Attachment A**.

Response to Comments

RIDEM's comments are provided below in italics, followed by SAGE's response to each comment.

RIDEM Comment #1: Pages 7-10 of 121 of the BUD application provides the following justification for the selection of the proposed BUD material acceptance levels.

a. *Coventry Landfill BUD Reuse Levels: The Department will not accept this previously approved BUD as justification for a Lead level that is over 4 times the Remediation Regulations Table 1 Industrial/Commercial Direct Exposure Criteria (I/CDEC) for the South Quay Project. The approved BUD for the Coventry Landfill did not contaminate the site more than what was already there. Also, Coventry Landfill utilized an impermeable LDPE cap to prevent water infiltration into the BUD materials. The BUD soils were also not in direct contact with the water table. For the above reasons, the Coventry BUD is not acceptable to use for establishing acceptable BUD material levels*

for the South Quay Project.

Acknowledged. Please refer to Comment #1(b.), below, for a more detailed explanation of the proposed revisions to the South Quay Material Reuse Acceptance Criteria (Acceptance Criteria), including the proposed revised value for lead, which are a combination of both RIDEM and Massachusetts Department of Environmental Protection (MassDEP) standards and an ecological risk-based evaluation/documentation (for the proposed arsenic and beryllium Acceptance Criteria), documented as being protective of marine life, the surface water quality (i.e., Narragansett Bay), groundwater, air, human health, and the environment.

b. *MassDEP Method 1 S-3/ GW-2 or GW-3 Soil Standards: When determining acceptable levels, the Department will not accept Massachusetts standards unless one for RI does not exist. Therefore, Massachusetts S-2 Soil and GW-1 standards can only be used for parameters that do not have a RIDEM I/CDEC. The Department cannot accept a soil standard that is not protective of the bay waters. Please update the allowable contaminant levels for the materials in Attachment B - Table C accordingly.*

The proposed revised Acceptance Criteria were derived by the following decision-making process which interprets and incorporates the RIDEM's comments:

1. Compare the lower of the RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria (I/C-DEC) and Method 1 GB Leachability Criteria (GB-LC), as promulgated, for each analyte;
2. Simultaneously, compare the lower of the MassDEP Method 1 S-2 GW-2/-3 Soil Standard, as promulgated, for each analyte;
3. Utilize the lower of the RIDEM Method 1 I/C-DEC, GB-LC, and MassDEP Method 1 S-2 GW-2/-3 Soil Standards as the Acceptance Criteria;
4. Where a RIDEM Method 1 I/C-DEC or GB-LC is not promulgated and a MassDEP Method 1 S-2 GW-2/-3 Soil Standard is, utilize the lower of the MassDEP Method 1 S-2 GW-2/-3 Soil Standard as the Acceptance Criteria, and vice versa;
5. If no RIDEM Method 1 I/C-DEC, GB-LC, or MassDEP Method 1 S-2 GW-2/-3 Soil Standard is promulgated, the MassDEP S-2 Reportable Concentration (RCS-2) will be utilized to conservatively provide additional Acceptance Criteria for comparison/evaluation;
6. The Acceptance Criteria for five pyrogenic polycyclic aromatic hydrocarbons (PAHs) (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene) will utilize the Proposed RIDEM Method 1 I/C-DEC as provided to SAGE by Ms. Ashley Blauvelt[1] of RIDEM, on October 21, 2022 *via* text message;
7. The Acceptance Criteria for two metals (arsenic and beryllium) will utilize the Site-specific Ecological Risk-Based Evaluation Soil Acceptance Criteria calculated by EcoTec, Inc.

[1] RIDEM Office of Land Revitalization & Sustainable Materials Management, Environmental Engineer IV.

(EcoTec)[2];

8. The Acceptance Criteria for total petroleum hydrocarbons (TPH) will utilize the 1,000 milligrams per kilogram (mg/kg) value as noted below in RIDEM Comment #2(b)(I). In addition, TPH data must include the correct carbon ranges (gasoline range organics [GRO] and/or diesel range organics [DRO]) based upon the Site history. If TPH-GRO are not indicated as potential COCs, then TPH-DRO data is acceptable and vice versa. In the event TPH exceeds the Acceptance Criteria, MassDEP Volatile Petroleum Hydrocarbons (VPH) and Extractable Petroleum Hydrocarbons (EPH) analysis may be used to speciate detections for comparison to alternate Acceptance Criteria defined as the lower of either the MassDEP Method 1 S-2 GW-2 or GW-3 Soil Standards for each carbon range (Note, no RIDEM *Remediation Regulations* Method 1 I/C-DEC or GB-LC exist for VPH or EPH); and,
9. For total chromium exceedances, speciation of the sample into chromium (III) and chromium (VI) can may be used for comparison to alternate approval/Acceptance Criteria defined as the lower of the MassDEP Method 1 S-2 GW-2/-3 Soil Standards.

As documented in the *Beneficial Use Determination (BUD) – Variance Application*, MassDEP Method 1 Soil Standards consider both the potential risk of harm resulting from direct exposure and the potential impacts on groundwater. The applicability of a specific MassDEP Method 1 Soil Standard is thus a function of both the soil and groundwater category. The categories of soil (S-1, S-2, and/or S-3) and groundwater (GW-1, GW-2, and/or GW-3) are determined by each applicable exposure point.

The MassDEP Method 1 Category S-2 Soil Standards consider risk related to incidental ingestion and dermal contact with soil and its leaching potential (for volatile organic compounds [VOCs], select semi-volatile organic compounds [SVOCs], chlorinated benzenes, and certain chlorinated pesticides). Method 1 S-2 Soil Standards were developed considering moderate soil exposures by adults and light use by children in scenarios such as retail use and landscaping.

The MassDEP Method 1 GW-3 Groundwater Standards apply to all groundwater and are intended to address the adverse ecological effects that could result from the discharge of oil and/or hazardous materials (OHM) to surface water. Risk-based "target values" in surface water are modified by two dilution/attenuation factors to estimate an allowable concentration in groundwater. The two dilution attenuation factors are intended to conservatively account for dilution within the receiving waterbody and attenuation in the groundwater as the contaminant migrates towards the waterbody.

Note, the underlying RIDEM groundwater classification of the Site and surrounding area is “GB.” GB areas are defined as “groundwater resources which are known or presumed to be unsuitable for drinking water use without treatment”. As such, neither the RIDEM GA-LC nor the MassDEP GW-1 standards apply to this Site as these apply to groundwater areas that are either a current

[2] EcoTec, Inc. of Worcester, Massachusetts is an expert ecological risk assessment company with over 130 years of combined experience (https://ecotecinc.com/).

or a potential future source of drinking water.

As noted in RIDEM Comment #2(d.), it appears that the RIDEM was not receptive to the use of Method 1 S-3 Soil Standards, however, is receptive to the use of Method 1 S-2 Soil Standards as these were developed considering a greater degree of exposure. As the proposed revised Acceptance Criteria considers the lower of both the Method 1 S-2 GW-2 and GW-3 Soil Standards, the S-2 GW-3 Soil Standards are protective of surface water (i.e., Narragansett Bay) and/or any potential adverse ecological effects and are even more conservative as Acceptance Criteria when lower than the Method 1 I/C-DEC and/or GB-LC. In addition, the Method 1 S-2 GW-2/-3 account for:

- Soil leachability of various analytical sub-groups (including more analytes than the RIDEM Method 1 GB-LC);
- Were developed utilizing a more conservative risk assumption for the Non-cancer Hazard Index (HI) of 0.2 (versus the Method 1 I/C-DEC of 1); and,
- They evaluate for not only ingestion of soil (as evaluated by the RIDEM Method 1 I/C-DEC), but also for dermal absorption and inhalation of airborne particulates.

Therefore, the MassDEP Method 1 S-2 GW-2/-3 Soil Standards provide a more accurate representation and evaluation of potential exposure routes and risks. However, for conservancy, by utilizing the lower of the RIDEM's Method 1 I/C-DEC, GB-LC, and MassDEP Method 1 S-2 GW-2/-3 Soil Standards, this proposed approach provides the most conservative, risk-based, compromise to the initially proposed Acceptance Criteria. Also, use of the MassDEP RCS-2 when RIDEM or MassDEP standards are not available conservatively provides additional Acceptance Criteria for comparison/evaluation. The proposed revised Acceptance Criteria are summarized in the attached **Table 1**.

As noted above, the Acceptance Criteria for five pyrogenic PAHs (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene) will utilize the Proposed RIDEM Method 1 I/C-DEC as provided to SAGE by Ms. Ashley Blauvelt of RIDEM, on October 21, 2022. According to Ms. Blauvelt, the proposed revised Method 1 I/C-DEC for these PAHs were developed by utilizing more recent toxicity and/or risk information documented by the United States Environmental Protection Agency (U.S. EPA). The Proposed RIDEM Method 1 I/C-DEC and associated proposed revised Acceptance Criteria for these five pyrogenic PAHs are documented in the attached **Table 1**.

As noted in RIDEM Comment #2(c.), the RIDEM is receptive to proposed Acceptance Criteria exceeding RIDEM standards if justification is provided in the form of an ecological risk assessment for each contaminant which considers marine life, the water quality of the bay, human health and the environment. As noted above, the Acceptance Criteria for two metals (arsenic and beryllium) will utilize the Site-specific ecological risk based evaluation/documentation soil acceptance criteria values calculated by EcoTec (the Ecotec Ecological Risk-Based Evaluation Soil Acceptance Criteria) based upon a review of the Site and surrounding area in combination with all available

ecological screening benchmarks. The Ecological Risk-Based Evaluation Soil Acceptance Criteria proposed by EcoTec were developed to be conservatively protective of marine life, the water quality of the bay, human health, and the environment. The Ecotec Ecological Risk-Based Evaluation Soil Acceptance Criteria and associated proposed revised Acceptance Criteria for arsenic and beryllium are documented in the attached **Table 1**. A copy of EcoTec's ecological risk based evaluation/documentation is provided in **Attachment B**.

Please note, under no circumstance will the material delivered to the Site be classified as a hazardous waste under the Federal Resource Conservation and Recovery Act (RCRA) or under RIDEM hazardous waste regulations. Samples must be analyzed for Toxicity Characteristic Leaching Procedure (TCLP) if analytes exceed 20x TCLP standard. Also, results of VOCs analysis will be required to meet a detection limit of 10x less than the Acceptance Criteria (unless detection limits are not achievable with available laboratory technology and documented as such in approval application paperwork) to safeguard against the delivery of potential listed hazardous waste to the Site.

The proposed redevelopment of the Site is for industrial/commercial use, and following the placement of BUD materials, the Site will be capped. Access to soils currently and following redevelopment is considered to be minimal and solely related to a utility and/or construction worker exposure. Therefore, the proposed combination of RIDEM and MassDEP standards and an ecological risk-based evaluation/documentation (for the proposed arsenic and beryllium Acceptance Criteria), the Acceptance Criteria, are conservatively protective of current and future risk to marine life, surface water quality (i.e., Narragansett Bay), groundwater, air, human health, and the environment. In addition, this combination of standards includes a greater number of contaminants for comparison than do the RIDEM soil standards alone, thus providing a more detailed understanding of the risk of proposed materials for import. Flowcharts depicting the afore outlined decision-making process are included as **Attachment C**.

RIDEM Comment #2: Prior to approval and accepting any BUD materials on site, the pre-characterization analytical data must be reviewed by RI Waterfront Enterprises LLC and/or their consulting engineers for conformance with the following chemical and physical characteristics:

a. *All BUD material must meet all parameters in the RIDEM I/CDEC and Table 2 - GA Leachability Standards due to the proximity of the site to the Narragansett Bay. Please update the allowable contaminant levels for the materials in Attachment B - Table C accordingly.*

   Please refer to Comment #1(b.), above, for a more detailed explanation of the proposed revisions to the Acceptance Criteria which are a combination of both RIDEM and MassDEP standards and an ecological risk-based evaluation/documentation (for the proposed arsenic and beryllium Acceptance Criteria), documented as being protective of marine life, the surface water quality (i.e., Narragansett Bay), groundwater, air, human health, and the environment.

b. *In addition to the I/CDEC limits, the following contaminant levels are applicable for the proposed BUD material:*

I. *Total Petroleum Hydrocarbons (TPH) – 1,000 parts per million (ppm) for Direct Exposure as well as Leachability Criteria.*

Acknowledged. As noted in Comment #1(b.), in the event TPH exceeds the Acceptance Criteria, MassDEP VPH and EPH analysis may be used to speciate detections for comparison to alternate Acceptance Criteria defined as the lower of either the MassDEP Method 1 S-2 GW-2 or GW-3 Soil Standards for each carbon range (Note, no RIDEM *Remediation Regulations* Method 1 I/C-DEC or GB-LC exist for VPH or EPH).

I. *Free Liquids – No free liquids*

Acknowledged. As you are aware, Table C – Proposed Reuse Acceptance Criteria of the Materials Management Plan (MMP) submitted to the RIDEM on May 13, 2022 as Attachment A within the BUD – Variance Application indicates the proposed Acceptance Criteria for Free Liquids is "No Free Liquids." Therefore, no change is necessary in the final MMP.

c. *To propose material acceptance levels that exceed the I/CDEC or the GA Leachability Criteria, please provide justification in the form of an ecological risk assessment for each contaminant. The risk assessment should consider marine life, the water quality of the bay, human health and the environment. The Department maintains the right to deny any proposed acceptance levels.*

Please refer to Comment #1(b.), above, for a more detailed explanation of the proposed revisions to the Acceptance Criteria which are a combination of both RIDEM and MassDEP standards and an ecological risk-based evaluation/documentation (for the proposed arsenic and beryllium Acceptance Criteria), documented as being protective of marine life, the surface water quality (i.e., Narragansett Bay), groundwater, air, human health, and the environment.

d. *If standards do not exist in RI for certain parameters, Massachusetts S-2 Soil and GW-1 standards may be used instead.*

Please refer to Comment #1(b.), above, for a more detailed explanation of the proposed revisions to the Acceptance Criteria which are a combination of both RIDEM and MassDEP standards and an ecological risk-based evaluation/documentation (for the proposed arsenic and beryllium Acceptance Criteria), documented as being protective of marine life, the surface water quality (i.e., Narragansett Bay), groundwater, air, human health, and the environment.

e. *Each source shall have at least 10 grab soil samples collected during an initial assessment to see if a source is viable. The samples must meet condition 2a above.*

Each sample shall consist of a composite of a minimum of ten grab samples from the source of material (i.e., stockpile, in-situ pre-characterization, etc.) proposed for reuse under the BUD. Each sample set shall include VOCs analysis, collected from a discrete location (i.e., highest detection of total volatile organic vapors

[TVOV] utilizing a photoionization detector [PID], indication of visual or olfactory evidence of contamination, etc.) from the source of the material proposed for reuse under the BUD. Source viability will be assessed following review of each Qualified Environmental Professional (QEP) Opinion Letter package submitted for potential approval under the BUD. Assuming this response is acceptable to the RIDEM, SAGE will revise the BUD (including all figures, tables, and/or attachments) as necessary and provide the RIDEM a BUD – Variance Application – REV2 package for review.

f. *Once a source is considered viable according to comment 2d above, there must then be a testing frequency according to Attachment B Table B of the application. The samples must also meet condition 2a above.*

As noted in Comment #2(e.) above, source viability will be assessed following review of each QEP Opinion Letter package submitted for potential approval under the BUD. As you are aware, Section 4.2 of the *MMP* outlines the pre-characterization requirements of each BUD material source and Table B – Requirements for Specific BUD Materials of the *MMP* as Attachment A within the *BUD – Variance Application* indicates material specific testing frequencies (i.e., one test profile per 1,000 cubic yards of material per source, etc.). If the material- and source-specific specified testing frequency is not documented in the QEP Opinion Letter package, said package will be denied until further information is provided. This information is documented in the existing *MMP* and therefore, no change is necessary in the final MMP.

Please refer to Comment #1(b.), above, for a more detailed explanation of the proposed revisions to the Acceptance Criteria which are a combination of both RIDEM and MassDEP standards and an ecological risk-based evaluation/documentation (for the proposed arsenic and beryllium Acceptance Criteria), documented as being protective of marine life, the surface water quality (i.e., Narragansett Bay), groundwater, air, human health, and the environment.

g. *As mentioned in Attachment B Table B of the application, please propose a specific testing procedure and testing frequency for the processed ABC materials.*

As you are aware, Table B – Requirements for Specific BUD Materials of the *MMP* states that testing of non-painted asphalt, brick, and concrete (ABC) materials is not required as no soil will be included in this source. Additionally, Section 4.2 of the *MMP* states that testing of non-painted asphalt, brick, and concrete (ABC) materials is not required. This information is documented in the existing *MMP* and therefore, no change is necessary in the final MMP.

To clarify, if trace amounts of soil are present in the ABC materials proposed for reuse under the BUD, the testing frequency for those soils will be determined based on the material and source-specific testing criteria in accordance with Table B – Requirements for Specific BUD Materials of the *MMP*. The testing

procedure for those soils is as outlined in Section 4.2 of the *MMP*. Assuming this response is acceptable to the RIDEM, SAGE will revise the BUD (including all figures, tables, and/or attachments) as necessary and provide the RIDEM a BUD – Variance Application – REV2 package for review.

h. *As mentioned in Attachment B Table B, please provide the analytical method that will be used to test the rock material for perchlorate and sulfide materials.*

As you are aware, Section 4.2 of the *MMP* states that "Testing for acid base accounting and net acid generation potential unless the Generator demonstrates the rock is not known or suspected to contain sulfide minerals." Therefore, rock (blasted or excavated ledge/bedrock) proposed for reuse under the BUD will require analysis for acid base accounting *via* Modified Acid Base Accounting (Lawrence, 1989) and net acid generation potential *via* Net Acid Generation (NAG) Test unless the QEP/Generator sufficiently demonstrate the source rock is not known or suspected to contain sulfide materials. Additional testing data, although not required, may include Net Acid Production (NAP) Test, Diagnostic Mineralogy (to identify sulfur mineral speciation, non-iron bearing sulphides, and the reactivity of sulphide minerals) using X-Ray Diffraction (XRD), X-Ray Fluorescence (XRF), Explomin, and/or Optical Microscopy, Standard Humidity Cell Testing (ASTM D5744-96), and/or Column Testing (sub-aqueous and/or sub-aerial).

Rock (blasted or excavated ledge/bedrock) proposed for reuse under the BUD will require analysis for perchlorate *via* U.S. EPA Method 6850 unless technical justification is provided by the QEP for the Generator to document that perchlorate testing is not required.

Assuming these responses are acceptable to the RIDEM, SAGE will revise the BUD (including all figures, tables, and/or attachments) as necessary and provide the RIDEM a BUD – Variance Application – REV2 package for review.

i. *RI Waterfront Enterprises LLC and/or their consulting engineers are responsible for ensuring that soils taken onto site do not significantly contribute to adverse effects to any Environmentally Sensitive Areas at or in the vicinity of the site in accordance with Section 1.9.1(A)(3) of the Remediation Regulations. Additionally, the soils taken onto site must not degrade the state's water quality according to CFR 131.12 – Antidegradation policy. Antidegradation applies to all projects or activities subject to the Rhode Island Water Quality Regulation which will likely lower water quality or affect existing or designated uses.*

Note, the underlying groundwater classification of the Site and surrounding area is "GB." GB areas are defined as "groundwater resources which are known or presumed to be unsuitable for drinking water use without treatment".

Please refer to Comment #1(b.), above, for a more detailed explanation of the proposed revisions to the Acceptance Criteria which are a combination of both RIDEM and MassDEP standards and an ecological risk-based evaluation/documentation (for the proposed arsenic and beryllium

Acceptance Criteria), documented as being protective of marine life, the surface water quality (i.e., Narragansett Bay), groundwater, air, human health, and the environment.

As noted above, the proposed revised Acceptance Criteria utilize current risk and toxicity information that are also protective of soil leachability, protective of surface water, address the adverse ecological effects that could result from the discharge of OHM to surface water, and meet the RIDEM promulgated GB groundwater classification for the Site. Additionally, Section 4.2 of the *MMP* and the *BUD – Variance Application* state that "under no circumstance will the material delivered to the site be classified as a hazardous waste under the Federal Resource Conservation and Recovery Act (RCRA) or under RIDEM hazardous waste regulations", thereby further eliminating the risk for potential leachability of contaminants from BUD materials. Therefore, no materials imported for reuse under the BUD will affect groundwater underlying the Site nor surface water surrounding the Site or existing/designated uses at concentrations with the potential to significantly contribute to adverse effects to any Environmentally Sensitive Area or which would likely lower water quality or affect existing or designated uses in accordance with CFR 131.12.

As you are aware, Section 3.1 of the *MMP* documents soil erosion and sediment controls to be installed and maintained throughout the duration of the project to protect the waters of the State of Rhode Island from pollution. Following BUD management activities, and as part of redevelopment activities, the currently proposed remedy (included in the Site Investigation Report [SIR] submitted to the RIDEM concurrently with the initial BUD application and currently undergoing RIDEM review) to achieve compliance with the *Remediation Regulations* includes capping of the entire Site with a RIDEM-approved engineered barrier and the implementation of an Environmental Land Use Restriction (ELUR) to prevent future human exposure to impacted soils.

The proposed engineered barrier will consist of a 3-foot layer of dense grade aggregate (DGA) clean fill (to be sampled prior to importation to the Site in accordance with future RIDEM approvals), minimal crushed stone infiltration trenches, and rip rap on the northern and southern Site slopes (as there currently is now). The DGA shall meet M.1.02.2 and the gradations in M1.09 in the Rhode Island Department of Transportation (RIDOT) BlueBook. Given the proposed future use of the Site, the DGA will be densely compacted in place to greater than 95% of its modified proctor value, creating a strong wearing surface capable of handling and transporting large components. Therefore, the engineered barrier (combination of the DGA, stone, and rip rap) and ELUR will also serve to protect any future BUD materials erosion. The Site grades have been designed to slope away from surface water (i.e., Narragansett Bay), from west to east towards the center of the Site, at which stormwater management infrastructure will be present. A copy of the conceptual plan for raising the Site's elevation is included

as **Attachment D**.

In addition, during redevelopment, an engineered bulkhead structure will be built along the western, northern, and southern Site boundaries. The proposed bulkhead shall consist of twenty-five 61-foot diameter large cofferdam cells and twenty-four 22-foot by 61-foot smaller (interconnect) cofferdam cells, comprised of marine grade steel sheet pilings driven down to proper bearing soils estimated at approximately 100-feet below ground surface. The bulkhead will be approximately 1,380 linear feet along the western Site boundary and 380 linear feet along the northern and southern Site boundaries. This engineered bulkhead structure will aid in further stabilizing Site soils and eliminating erosion of Site soils due to tidal action or storm events. Copies of the plans outlining the engineered bulkhead structure locations are included as **Attachment D**.

In order to protect the surrounding natural resources and prevent erosion and sedimentation, this project has been designed and will be constructed in Compliance with the Rhode Island Soil Erosion and Control Handbook (updated 2016) and will be subject to a Rhode Island Pollutant Discharge Elimination System (RIPDES) Construction General Permit (CGP). In addition, a draft Soil Erosion and Sediment Control Plan (SESC Plan) has been developed to detail controls and best practices on filling the Site. The general contractor and all earthwork subcontractors will be required to review, acknowledge and follow all of the requirements in the SESC Plan as part of the construction of the project. A copy of the draft SESC Plan is included for your review in **Attachment E**. Important notes include the following:

- Existing slopes located on the northern and southern portions of the Site will be maintained and not be changed beyond extending upward to meet the new Site grades. Along the western Site boundary, sheet piles will be driven to contain the Site fill to provide stability against any un-engineered slopes. No permanent slopes will exceed the 30% threshold and any design slopes will be installed at a maximum grade of 4:1 (25%) or 5:1 (20%).
- For the existing Site materials, they will be leveled out and spread across the Site as part of the interim grading plan and then the overall property will be filled evenly up to the final grades (see conceptual plan in **Attachment D**) with imported, compacted materials.
- All of the areas of soils to be disturbed as part of the project will likely be used as part of Site development. However, in the event that there are upland soil areas that are disturbed as part of the construction but not part of the final developed Site (e.g., along a top of slope), in compliance with the project SESC Plan, these areas will be graded to a stable slope (based on their physical characteristics) and re-vegetated if left undisturbed for more than 14 days.

- Materials that will be reused on-Site will have been characterized and with the environmental controls and methodologies prescribed for this project, do not represent a risk to pollute the tidal waters.
- All of the proposed work is being conducted within the footprint of previously disturbed Site areas, from the toe of the embankment landward. There will be new filling over a coastal bank and all filling will occur within the sheet pile cells and within the adjacent upland portions of the Site.
- Construction materials and excavated soils shall not be placed or stored on any shoreline feature excepting manmade shorelines. Materials staging areas will be located within the upland portion of the Site, only in designated areas, as indicated in the SESC Plan.
- All disturbed soils that are not to be included in the operating areas of the Site shall be graded smooth to a maximum 5:1 slope, unless otherwise called out on the project plans, and re-vegetated immediately after construction, or temporarily stabilized with mulch, jute matting or similar means until seasonal conditions permit such re-vegetation.
- A silt fence/straw wattle line will encircle the work along the downgradient slopes to keep soils from eroding/migrating off-Site during precipitation events. All disturbed slopes will be stabilized and returned to original or design grades, as indicated on the project drawings. If the slopes do become susceptible to erosion, they shall be stabilized and re-vegetated. Temporary stormwater management best management practices (BMPs) will be constructed and maintained such that no stormwater flows will be allowed to discharge off-Site or to the permanent stormwater BMPs (e.g., drains, sub-grade piping, etc.), until the site has been stabilized.
- The project does not propose to disturb any steep slopes (with the exception of dredging in front of the embankment, which will be handled separately). New design slopes will be less than 20%. However, the majority of the Site will be graded at 0.5%. The only slopes steeper than 0.5% will be the existing slopes along the embankment, and those will be maintained and supported with hardened shoreline materials like rip rap and granite block.

Therefore, throughout the duration of the project/redevelopment activities and future Site use, the existing *MMP* sufficiently documents that BUD materials will be managed in accordance with Section 1.9.1(A)(3) of the *Remediation Regulations* and the Code of Federal Regulations (CFR) Title 40, Chapter I, Subchapter D, Part 131, Subpart B, § 131.12 – Antidegradation Policy and Implementation Methods. However, assuming these responses are acceptable to the RIDEM, SAGE will revise the BUD (including all figures, tables, and/or attachments) as necessary and provide the RIDEM a BUD – Variance Application – REV2 package for review, to include this additional clarification.

j. *The analytical data must be conducted by a licensed environmental laboratory with the RIDOH, registered in the state of Rhode Island, and with accreditations as part of the National Environmental Laboratory Accreditation Program (NELAP).*

Acknowledged. The MMP will be revised to state in Section 4.2 that "Laboratory analytical data must be analyzed by a Rhode Island Department of Health (RIDOH) licensed environmental laboratory, registered in the State of Rhode Island, and accredited by the National Environmental Laboratory Accreditation Program (NELAP).

Assuming this response is acceptable to the RIDEM, SAGE will revise the BUD (including all figures, tables, and/or attachments) as necessary and provide the RIDEM a BUD – Variance Application – REV2 package for review.

k. *The proposed BUD material must not contribute to odors, propagation of vectors or blowing of litter and dust.*

As you are aware, Section 4.3 of the *MMP* states "Material will contain no nuisance odors such as petroleum, chemicals, solvent, and/or organic material/hydrogen sulfide as described on boring or test pit logs, stockpile sampling plans, and/or upon arrival at the Site unless otherwise previously permitted. Material with natural organic/hydrogen sulfide odor that is mixed with an odor reducing agent at the location of origin will be evaluated on a case-by-case basis." In addition, Section 4.6 of the *MMP* details an odor assessment and control plan.

Section 3.5 of the *MMP* states "By utilizing specific BUD materials in accordance with this MMP, reuse of these materials is not conducive to generation of nuisance conditions". Also, Sections 3.7 and 4.6 of the *MMP* detail dust monitoring and dust control measures to be implemented during BUD management activities. No litter will be present during BUD management activities.

This information is documented in the existing *MMP* and therefore, no change is necessary in the final MMP.

l. *All testing methods shall conform to Section 1.16 - Analytical Methods for Reporting in the Remediation Regulations.*

As you are aware, Section 4.2 of the *MMP* details the required test parameters and associated laboratory analytical methods to be considered for acceptance. All methods detailed in Section 4.2 conform to Section 1.16 – Analytical Methods for Reporting of the *Remediation Regulations* except as follows.

- The analytical method identified in Section 1.16 of the *Remediation*

Regulations for polychlorinated biphenyls (PCBs) is U.S. EPA Method 8080. U.S. EPA Method 8080 is a packed column gas chromatography method which the U.S. EPA removed from SW-846 as of Update III, is no longer recognized as a suggested method by the U.S. EPA, and was replaced with a capillary column gas chromatography method, U.S. EPA Method 8082[3]. In addition, the industry standard method for analysis of PCBs is U.S. EPA Method 8082. To meet current U.S. EPA Region 1 PCB Toxic Substances Control Act (TSCA) requirements, all samples must be analyzed *via* U.S. EPA Manual Soxhlet Extraction Method 3540. This information is documented in the existing *MMP* and therefore, no change is necessary in the final MMP.

- The analytical method identified in Section 1.16 of the *Remediation Regulations* for pesticides is U.S. EPA Method 8080. Please see the discussion above for PCBs regarding the removal of this method from SW-846 by the U.S. EPA. The U.S. EPA replaced Method 8080 with Method 8081 for pesticides analysis. In addition, the industry standard method for analysis of pesticides is U.S. EPA Method 8081. This information is documented in the existing *MMP* and therefore, no change is necessary in the final MMP.
- Section 4.2 of the MMP will be revised to include the following analytical methods:

    - RIDEM 16 Metals (Antimony, Arsenic, Barium, Beryllium, Cadmium, Total Chromium, Copper, Lead, Manganese, Mercury, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc) *via* U.S. EPA Methods 6010/7471;
    - Hexavalent Chromium if Total Chromium > 100 mg/kg *via* U.S. EPA Method 7196 and extracted *via* U.S. EPA Method 3060;
    - Toxicity Characteristic Leaching Procedure (TCLP) for any analyte exceeding U.S EPA TCLP Trigger Values (20 times rule) *via* U.S. EPA Method 1311;
    - Others as deemed prudent based on material source site history including asbestos *via* OSHA Method 160/NIOSH Method 7400, total and amenable cyanide *via* U.S. EPA Method 9010, dioxins/furans *via* U.S. EPA Method 1613 or 8290, per- and polyfluoroalkyl substances *via* U.S. EPA Draft Method 1633 with isotope dilution, and acid rock drainage (acid base accounting *via* Modified Acid Base Accounting (Lawrence, 1989) and net acid generation potential *via* NAG Test)/perchlorate testing *via* U.S. EPA Method 6850 for blasted or excavated ledge or bedrock.

As noted above in Comment #2(b.), TPH laboratory analytical must include the correct carbon ranges (GRO and/or DRO) based upon the Site history. If TPH-GRO are not indicated as potential COCs, then TPH-DRO data is acceptable and vice versa. In the event TPH exceeds the Acceptance Criteria, MassDEP VPH and EPH analysis may be used to speciate

[3] https://www.govinfo.gov/content/pkg/FR-1997-06-13/pdf/97-15410.pdf

detections for comparison to alternate Acceptance Criteria defined as the lower of either the MassDEP Method 1 S-2 GW-2 or GW-3 Soil Standards for each carbon range (Note, no RIDEM *Remediation Regulations* Method 1 I/C-DEC or GB-LC exist for VPH or EPH).

Assuming this response is acceptable to the RIDEM, SAGE will revise the BUD (including all figures, tables, and/or attachments) as necessary and provide the RIDEM a BUD – Variance Application – REV2 package for review.

m. *Please note that the Department does not accept composite samples, only grab samples can be used.*

Please refer to Comment #2(e.) for a more detailed explanation of the proposed revised sampling protocol which shall provide a conservative data set for review during evaluation of QEP Opinion Letter packages. Note, the industry standard disposal characterization sampling procedures for land disposal follows this sampling protocol throughout the United States. Assuming this response is acceptable to the RIDEM, SAGE will revise the BUD (including all figures, tables, and/or attachments) as necessary and provide the RIDEM a BUD – Variance Application – REV2 package for review.

n. *Attachment B Table B- Requirements for Specific BUD Materials, states that the soils will include "no more than 5% of solid waste (including trash)". Please note that the Department will not accept any materials with the inclusion of trash. The Solid Waste Regulations would be triggered at 3 cubic yards of trash.*

The comment reference to "*no more than 5% of solid waste (including trash)*" was included to capture incidental amounts of solid waste present in the waste stream (i.e., 6-mil polyethylene sheeting used during soil stockpiling, incidental debris within urban fill soils, etc.).

To clarify, the proposed amendment to the above-quoted statement is "no solid waste, as defined in Section 1.5 of the RIDEM's *Rules and Regulations for Solid Waste Management Facilities and Organic Waste Management Facilities* (Solid Waste Regulations), will be accepted for reuse under the BUD with the exception of incidental amounts of 6-mil polyethylene sheeting used during soil stockpiling, incidental debris within urban fill soils, etc. If any amount of solid waste is present in the material proposed for reuse under the BUD, the Generator/QEP must include this information in the QEP Opinion Letter package or include a statement that no solid waste is present. Acceptance of proposed materials containing any level of solid waste will be reviewed on a case-by-case basis.

Assuming this response is acceptable to the RIDEM, SAGE will revise the BUD (including all figures, tables, and/or attachments) as necessary and provide the RIDEM a BUD – Variance Application – REV2 package for review.

o. *Please add the above-mentioned comments to the Materials Management Plan and the allowable contaminant levels and testing procedures for the materials in Attachment B - Table B and C accordingly.*

Assuming this Response to Comments is acceptable to the RIDEM, SAGE will revise the BUD (including all figures, tables, and/or attachments) as necessary and provide the RIDEM a BUD – Variance Application – REV2 package for review.

RIDEM Comment #3: A monthly summary shall be electronically sent to the Department listing the volume of soil accepted, the source location, the sampling analytical data and a figure that shows the location it was spread and/or stockpiled on the site. RI Waterfront Enterprises LLC and/or their consulting engineers are responsible for tracking the delivered tonnage and/or volume, source of the material and analytical data for this project.

Acknowledged. If the RIDEM prefers that this monthly summary be provided in a particular format, please provide a copy of the format requested for inclusion in the BUD – Variance Application – REV2 package.

RIDEM Comment #4: The Department reserves the right to split samples of any material received at the Site and to perform additional testing on the material upon its arrival at the site to ensure conformance.

Acknowledged. Please provide a list of the proposed additional testing parameters and methods the RIDEM intends to utilize. Please provide a proposed chain/order of distribution of the RIDEM laboratory analytical data report(s) to respective parties (i.e., Generator, Generator's consultant, QEP Opinion Letter reviewing consultant, etc.). This information will be included in the BUD – Variance Application – REV2 package.

RIDEM Comment #5: The Department shall be notified via email, 48 hours prior to accepting any BUD soils on site.

Acknowledged. Please clarify that if by "BUD soils" in the RIDEM Comment #5, the RIDEM intends this comment to be directed as Category 4 materials in Table B – Requirements for Specific BUD Materials of the *MMP* and Categories 1 through 3 are excluded from this requirement due to the inherent nature of their material types. This information will be included in the BUD – Variance Application – REV2 package.

RIDEM Comment #6: A public hearing is required for this project and a draft of the public notification must be pre-approved by the Department before being posted. The public notification must be posted in the East Providence and Providence Journal newspapers and must include date, time, project description, online location for the public hearing, as well as a translation in Portuguese and Spanish. A list of all abutters and town officials must also be pre-approved by the Department.

Acknowledged. As you are aware, the *BUD – Variance Application* included draft public notification documents for the RIDEM review. Those documents included a draft notice

to the City of East Providence Chief Municipal Officer (CMO) and a draft legal notice for print in a newspaper.

Pursuant to the RIDEM Comment #6, revised/additional draft public notification documentation has been included in **Attachment F** of this Comment Letter Response for the RIDEM's review and approval. Please note, RIWE is the owner of all abutting properties with the exception of 0 Pier Road (Parcel 007-01-001.10) owned by Sprague Operating Resources LLC and 0 ZZ Railroad Site (Parcel 007-01-004.00) owned by the State of Rhode Island and RIDOT.

Assuming the documentation presented in **Attachment F** is approved by the RIDEM, SAGE will revise the BUD (including all figures, tables, and/or attachments) as necessary and provide the RIDEM a BUD – Variance Application – REV2 package for review which includes these documents.

RIDEM Comment #7: Soils taken onto site shall only be delivered to the site between 7:30 am and 5:00 pm, Monday through Friday. Please add this to the Materials Management Plan.

Acknowledged. SAGE will revise the BUD (including all figures, tables, and/or attachments) as necessary and provide the RIDEM a BUD – Variance Application – REV2 package for review.

RIDEM Comment #8: Please clarify if the BUD material will have contact with the bay and if there will be some sort of barrier used as the elevation is raised to prevent erosion or collapse of slopes. Conceptual plans on raising site elevation must be provided to the Department's Site Remediation group.

As you are aware, Section 3.1 of the *MMP* documents soil erosion and sediment controls to be installed and maintained throughout the duration of the project to protect the waters of the State of Rhode Island from pollution. Following BUD management activities, and as part of redevelopment activities, the currently proposed remedy (included in the SIR submitted to the RIDEM concurrently with the initial BUD application and currently undergoing RIDEM review) to achieve compliance with the *Remediation Regulations* includes capping of the entire Site with a RIDEM-approved engineered barrier (combination of the DGA, stone, and rip rap) and the implementation of an ELUR to prevent future human exposure to impacted soils. The engineered barrier and ELUR will also serve to prevent any future BUD materials erosion.

Please refer to Comment #2(i.) for a more detailed explanation of the soil erosion and sediment controls, engineered bulkhead structure, and slope management. A copy of the conceptual plan for raising the Site's elevation is included as **Attachment D**. A copy of the draft SESC Plan is included for your review in **Attachment E**.

RIDEM Comment #9: Please clarify what type of cap, if any, is being proposed on top of the BUD material and when this plan will be submitted.

As noted above in response to RIDEM Comments #2(i.) and #8, following BUD

management activities, and as part of redevelopment activities, the currently proposed remedy (included in the SIR submitted to the RIDEM concurrently with the initial BUD application and currently undergoing RIDEM review) to achieve compliance with the *Remediation Regulations* includes capping of the entire Site with a RIDEM-approved engineered barrier and the implementation of an ELUR to prevent future human exposure to impacted soils. The proposed engineered barrier alternatives will consist of a 3-foot layer of dense grade aggregate (DGA) clean fill (to be sampled prior to importation to the Site in accordance with future RIDEM approvals), minimal crushed stone infiltration trenches (3-feet minimum thickness), and rip rap (3-feet minimum thickness) on the northern and southern Site slopes (as there currently is now).

RIDEM Comment #10: Please revise the BUD application to reflect and address these comments. Any revisions made to the plan must be approved by the LRSMM Solid Waste team before a BUD Approval Letter is issued.

Assuming this Response to Comments is acceptable to the RIDEM, SAGE will revise the BUD (including all figures, tables, and/or attachments) as necessary and provide the RIDEM a BUD – Variance Application – REV2 package for review.

Additional Items for Consideration and Approval

The following bulleted items are presented for the RIDEM's consideration and approval:

- As noted in the *BUD – Variance Application*, acceptance of dredge material is not proposed under the subject BUD. Any dredge material proposed for reuse at the Site will be permitted by the Coastal Resources Management Council (CRMC) and/or others. Please provide acknowledgement of the receipt and approval of this statement and agreement that dredge materials are non-jurisdictional and meet the BUD requirements for reuse under the engineered barrier.
- As documented in the Development Phase A Limited Remedial Action Closure Report for the Former Gulf Fuel Terminal located adjacent to the Site, prepared by Arcadis and dated December 2017, approximately 200,000 cubic yards of backfill material was placed at the property as approved by the RIDEM in the May 20, 2013 dated Remedial Approval Letter (RAL) and associated approval letters for various corresponding Limited Remedial Action Work Plan (LRAWP) submittals. Approximately 140,000 cubic yards of the backfill was from previously excavated areas of the property not requiring ex-situ soil stabilization/solidification (ESS/S) treatment or identified as meeting the remedial objective following treatment by ESS/S and approximately 60,000 cubic yards of clean fill (sampled and certified as clean fill in accordance with Arcadis' 2013 Soil Management Plan) was imported from off-property sources. These soils were approved by the RIDEM for reuse at the property beneath a pervious engineered cap (2-foot minimum) and filing of an ELUR. For reference, a copy of the Limited Remedial Action Closure Report is included as **Attachment G**.
    - Based on the RIDEM's previous approvals/acceptance of the reuse/use of these soils on

the adjacent Former Gulf Fuel Terminal property, please provide acknowledgement that these soils may also be excavated, transported, and utilized at the Site without any additional testing as the soils were previously authorized for reuse under a pervious engineered cap and the currently proposed remedy at the Site to achieve compliance with the *Remediation Regulations* includes capping of the entire Site with a RIDEM-approved engineered barrier and the implementation of an ELUR to prevent future human exposure to impacted soils.

Conclusions

By approving these comment responses and proposed Acceptance Criteria, the limited and finite state landfill capacity will be preserved for better suited uses (i.e., municipal solid waste) while maintaining an appropriate risk level for imported materials based on the current and future use of the Site. In addition, the BUD materials will reduce and/or eliminate the soil or gravel that would have to be mined from a natural source.

Assuming these responses are acceptable, SAGE will revise the BUD (including all figures, tables, and/or attachments) as necessary and provide the RIDEM a BUD – Variance Application – REV2 package for review.

Should you have any questions, please contact the undersigned at (401) 723-9900.

Sincerely,
SAGE Environmental, Inc.

Anthony Rossato
Project Manager

Jacob H. Butterworth, MS, LSP
Vice President

Richard J. Mandile
Principal

cc: Melissa Martin, Rhode Island Waterfront Enterprises LLC; Michael Donegan, Orson and Brusini Ltd.

TABLE

Table 1: Proposed Reuse Acceptance Criteria

ATTACHMENTS

Attachment A:	RIDEM Correspondence
Attachment B:	Ecotec, Inc. Ecological Risk-Based Evaluation Report
Attachment C:	Flowcharts
Attachment D:	Civil Plans
Attachment E:	Soil Erosion and Sediment Control Plan
Attachment F:	Draft Public Notification
Attachment G:	Copy of Arcadis' DPA LRACR

TABLES

SAGE ENVIRONMENTAL

Table 1 - Proposed Reuse Acceptance Criteria

Volatile Organic Compounds (mg/kg)	MassDEP Method 1 S-2 & GW-2 Soil Standards	MassDEP Method 1 S-2 & GW-3 Soil Standards	Minimum of S-2 / GW-2 and GW-3 Soil Standards	MassDEP Reportable Concentration S-2	RIDEM Method 1 Industrial/ Commercial Direct Exposure Criteria	PROPOSED RIDEM Method 1 Industrial/ Commercial Direct Exposure Criteria	RIDEM Method 1 GB Leachability Criteria	Minimum of I/C DEC and GB-LC Soil Standards	EcoTec, Inc. Ecological Risk-Based Evaluation Soil Acceptance Criteria	South Quay Material Reuse Acceptance Criteria
Acetone	50	400	50	50	10000	NE	NE	10000	NE	**50**
Benzene	200	200	200	200	200	NE	4.3	4.3	NE	**4.3**
Bromobenzene	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
Bromochloromethane	NE	NE	NE	NE	NE	NE	NE	NE	NE	**NE**
Bromodichloromethane	0.1	100	0.1	0.1	92	NE	NE	92	NE	**0.1**
Bromoform	1	800	1	1	720	NE	NE	720	NE	**1**
Bromomethane	0.5	30	0.5	0.5	2900	NE	NE	2900	NE	**0.5**
2-Butanone	50	400	50	50	10000	NE	NE	10000	NE	**50**
tert-Butyl alcohol	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
sec-Butylbenzene	NE	NE	NE	NE	NE	NE	NE	NE	NE	**NE**
n-Butylbenzene	NE	NE	NE	NE	NE	NE	NE	NE	NE	**NE**
tert-Butylbenzene	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
Methyl t-butyl ether (MTBE)	100	500	100	100	10000	NE	100	100	NE	**100**
Carbon Disulfide	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
Carbon Tetrachloride	5	100	5	5	44	NE	5	5	NE	**5**
Chlorobenzene	3	100	3	3	10000	NE	100	100	NE	**3**
Chloroethane	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
Chloroform	0.2	1000	0.2	0.2	940	NE	NE	940	NE	**0.2**
Chloromethane	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
4-Chlorotoluene	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
2-Chlorotoluene	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
1,2-Dibromo-3-chloropropane (DBCP)	NE	NE	NE	100	4.1	NE	NE	4.1	NE	**4.1**
Dibromochloromethane	0.03	100	0.03	0.03	68	NE	NE	68	NE	**0.03**
1,2-Dibromoethane (EDB)	0.1	5	0.1	0.1	0.07	NE	NE	0.07	NE	**0.07**
Dibromomethane	NE	NE	NE	5000	NE	NE	NE	NE	NE	**5000**
1,2-Dichlorobenzene	100	300	100	100	10000	NE	NE	10000	NE	**100**
1,3-Dichlorobenzene	200	500	200	200	10000	NE	NE	10000	NE	**200**
1,4-Dichlorobenzene	1	400	1	1	240	NE	NE	240	NE	**1**
1,1-Dichloroethane	9	1000	9	9	10000	NE	NE	10000	NE	**9**
1,2-Dichloroethane	0.1	100	0.1	0.1	63	NE	2.3	2.3	NE	**0.1**
trans-1,2-Dichloroethene	1	1000	1	1	10000	NE	92	92	NE	**1**
cis-1,2-Dichloroethene	0.1	500	0.1	0.1	10000	NE	60	60	NE	**0.1**
1,1-Dichloroethene	40	1000	40	40	9.5	NE	0.7	0.7	NE	**0.7**
1,2-Dichloropropane	0.1	100	0.1	0.1	84	NE	70	70	NE	**0.1**
2,2-Dichloropropane	NE	NE	NE	NE	NE	NE	NE	NE	NE	**NE**
cis-1,3-Dichloropropene	NE	NE	NE	0.1	NE	NE	NE	NE	NE	**0.1**
trans-1,3-Dichloropropene	NE	NE	NE	0.1	NE	NE	NE	NE	NE	**0.1**
1,1-Dichloropropene	NE	NE	NE	NE	NE	NE	NE	NE	NE	**NE**
1,3-Dichloropropene (cis + trans)	0.4	90	0.4	0.4	NE	NE	NE	NE	NE	**0.4**
Diethyl ether	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
1,4-Dioxane	6	90	6	6	NE	NE	NE	NE	NE	**6**
Ethylbenzene	1000	1000	1000	1000	10000	NE	62	62	NE	**62**
Hexachlorobutadiene	100	100	100	100	NE	NE	NE	NE	NE	**100**
2-Hexanone	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
Isopropylbenzene	NE	NE	NE	10000	10000	NE	NE	10000	NE	**10000**
p-Isopropyltoluene	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
Methylene Chloride	4	700	4	4	760	NE	NE	760	NE	**4**
4-Methyl-2-pentanone	50	400	50	50	10000	NE	NE	10000	NE	**50**
Naphthalene	20	1000	20	20	10000	NE	NE	10000	NE	**20**
n-Propylbenzene	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
Styrene	4	300	4	4	190	NE	64	64	NE	**4**
1,1,1,2-Tetrachloroethane	0.1	400	0.1	0.1	220	NE	NE	220	NE	**0.1**
Tetrachloroethene	10	200	10	10	110	NE	4.2	4.2	NE	**4.2**
Tetrahydrofuran	NE	NE	NE	5000	NE	NE	NE	NE	NE	**5000**
Toluene	1000	1000	1000	1000	10000	NE	54	54	NE	**54**
1,2,4-Trichlorobenzene	6	3000	6	6	10000	NE	NE	10000	NE	**6**
1,2,3-Trichlorobenzene	NE	NE	NE	NE	NE	NE	NE	NE	NE	**NE**
1,1,2-Trichloroethane	2	200	2	2	100	NE	NE	100	NE	**2**
1,1,1-Trichloroethane	600	1000	600	600	10000	NE	160	160	NE	**160**
Trichloroethene	0.3	60	0.3	0.3	520	NE	20	20	NE	**0.3**
1,2,3-Trichloropropane	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
1,3,5-Trimethylbenzene	NE	NE	NE	100	NE	NE	NE	NE	NE	**100**
1,2,4-Trimethylbenzene	NE	NE	NE	10000	NE	NE	NE	NE	NE	**10000**
Vinyl Chloride	0.7	7	0.7	0.7	3	NE	NE	3	NE	**0.7**
o-Xylene	NE	NE	NE	100	NE	NE	NE	NE	NE	**100**
m&p-Xylene	NE	NE	NE	100	NE	NE	NE	NE	NE	**100**
Total xylenes	100	1000	100	100	10000	NE	NE	10000	NE	**100**
1,1,2,2-Tetrachloroethane	0.02	50	0.02	0.02	29	NE	NE	29	NE	**0.02**
tert-Amyl methyl ether	NE	NE	NE	NE	NE	NE	NE	NE	NE	**NE**
1,3-Dichloropropane	NE	NE	NE	5000	NE	NE	NE	NE	NE	**5000**
Ethyl tert-butyl ether	NE	NE	NE	NE	NE	NE	NE	NE	NE	**NE**
Diisopropyl ether	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
Trichlorofluoromethane	NE	NE	NE	10000	NE	NE	NE	NE	NE	**10000**
Dichlorodifluoromethane	NE	NE	NE	10000	NE	NE	NE	NE	NE	**10000**
2-Isopropyltoluene	NE	NE	NE	NE	NE	NE	NE	NE	NE	**NE**
Acrylonitrile	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
trans-1,4-dichloro-2-butene	NE	NE	NE	100	NE	NE	NE	NE	NE	**100**
Trichlorotrifluoroethane	NE	NE	NE	NE	NE	NE	NE	NE	NE	**NE**

Semivolatile Organic Compounds (mg/kg)	MassDEP Method 1 S-2 & GW-2 Soil Standards	MassDEP Method 1 S-2 & GW-3 Soil Standards	Minimum of S-2 / GW-2 and GW-3 Soil Standards	MassDEP Reportable Concentration S-2	RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria	PROPOSED RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria	RIDEM Method 1 GB Leachability Criteria	Minimum of I/C DEC and GB-LC Soil Standards	EcoTec, Inc. Ecological Risk-Based Evaluation Soil Acceptance Criteria	South Quay Material Reuse Acceptance Criteria
1,1-Biphenyl	6	3000	6	6	10000	NE	NE	10000	NE	**6**
1,2,4-Trichlorobenzene	6	3000	6	6	NE	NE	NE	NE	NE	**6**
1,2-Dichlorobenzene	100	300	100	100	10000	NE	NE	10000	NE	**100**
1,2-Diphenylhydrazine	NE	NE	NE	500	NE	NE	NE	NE	NE	**500**
1,2,4,5-Tetrachlorobenzene	NE	NE	NE	10000	NE	NE	NE	NE	NE	**10000**
1,3-Dichlorobenzene	200	500	200	200	10000	NE	NE	10000	NE	**200**
1,4-Dichlorobenzene	1	400	1	1	240	NE	NE	240	NE	**1**
Phenol	50	20	20	20	10000	NE	NE	10000	NE	**20**
2,4,5-Trichlorophenol	1000	600	600	600	10000	NE	NE	10000	NE	**600**
2,4,6-Trichlorophenol	20	20	20	20	520	NE	NE	520	NE	**20**
2,4-Dichlorophenol	60	40	40	40	6100	NE	NE	6100	NE	**40**
2,4-Dimethylphenol	100	1000	100	100	10000	NE	NE	10000	NE	**100**
2,4-Dinitrophenol	50	100	50	50	4100	NE	NE	4100	NE	**50**
2,4-Dinitrotoluene	10	10	10	10	8.4	NE	NE	8.4	NE	**8.4**
2,6-Dinitrotoluene	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
2-Chloronaphthalene	NE	NE	NE	10000	NE	NE	NE	NE	NE	**10000**
2-Chlorophenol	100	300	100	100	10000	NE	NE	10000	NE	**100**
2-Methylnaphthalene	80	500	80	80	10000	NE	NE	10000	NE	**80**
Nitrobenzene	NE	NE	NE	5000	NE	NE	NE	NE	NE	**5000**
2-Methylphenol	NE	NE	NE	5000	NE	NE	NE	NE	NE	**5000**
2-Nitroaniline	NE	NE	NE	NE	NE	NE	NE	NE	NE	**NE**
2-Nitrophenol	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
3,3'-Dichlorobenzidine	20	20	20	20	13	NE	NE	13	NE	**13**
3-Nitroaniline	NE	NE	NE	NE	NE	NE	NE	NE	NE	**NE**
4,6-Dinitro-2-methylphenol	NE	NE	NE	500	NE	NE	NE	NE	NE	**500**
4-Bromophenyl phenyl ether	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
4-Chloro-3-methylphenol	NE	NE	NE	10000	NE	NE	NE	NE	NE	**10000**
4-Chloroaniline	40	3	3	3	8200	NE	NE	8200	NE	**3**
4-Chlorophenyl phenyl ether	NE	NE	NE	10000	NE	NE	NE	NE	NE	**10000**
4-Nitroaniline	NE	NE	NE	10000	NE	NE	NE	NE	NE	**10000**
4-Nitrophenol	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
Acenaphthene	3000	3000	3000	3000	10000	NE	NE	10000	NE	**3000**
Acenaphthylene	600	10	10	10	10000	NE	NE	10000	NE	**10**
Acetophenone	NE	NE	NE	10000	NE	NE	NE	NE	NE	**10000**
Aniline	NE	NE	NE	10000	NE	NE	NE	NE	NE	**10000**
Anthracene	3000	3000	3000	3000	10000	NE	NE	10000	NE	**3000**
Benzo(a)anthracene	40	40	40	40	7.8	57	NE	NE	NE	**57**
Benzo(a)pyrene	7	7	7	7	0.8	5.7	NE	NE	NE	**5.7**
Benzo(b)fluoranthene	40	40	40	40	7.8	57	NE	NE	NE	**57**
Benzo(g,h,i)perylene	3000	3000	3000	3000	10000	NE	NE	10000	NE	**3000**
Benzo(k)fluoranthene	400	400	400	400	78	NE	NE	78	NE	**78**
Benzidine	NE	NE	NE	100	NE	NE	NE	NE	NE	**100**
Benzoic acid	NE	NE	NE	10000	NE	NE	NE	NE	NE	**10000**
Bis(2-chloroethoxy)methane	NE	NE	NE	5000	NE	NE	NE	NE	NE	**5000**
Bis(2-chloroethyl)ether	0.7	8	0.7	0.7	5.2	NE	NE	5.2	NE	**0.7**
Bis(2-chloroisopropyl)ether	0.7	100	0.7	0.7	82	NE	NE	82	NE	**0.7**
Bis(2-ethylhexyl)phthalate	600	600	600	600	410	NE	NE	410	NE	**410**
Butyl benzyl phthalate	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
Carbazole	NE	NE	NE	NE	NE	NE	NE	NE	NE	**NE**
Chrysene	400	400	400	400	780	NE	NE	780	NE	**400**
Di(n)octyl phthalate	NE	NE	NE	10000	NE	NE	NE	NE	NE	**10000**
Dibenz(a,h)anthracene	4	4	4	4	0.8	5.7	NE	NE	NE	**5.7**
Dibenzofuran	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
Diethyl phthalate	200	300	200	200	10000	NE	NE	10000	NE	**200**
Dimethyl phthalate	50	600	50	50	10000	NE	NE	10000	NE	**50**
Di-n-butylphthalate	NE	NE	NE	500	NE	NE	NE	NE	NE	**500**
Fluoranthene	3000	3000	3000	3000	10000	NE	NE	10000	NE	**3000**
Fluorene	3000	3000	3000	3000	10000	NE	NE	10000	NE	**3000**
Hexachlorobenzene	0.8	0.8	0.8	0.8	0.4	NE	NE	0.4	NE	**0.4**
Hexachlorobutadiene	100	100	100	100	73	NE	NE	73	NE	**73**
Hexachlorocyclopentadiene	NE	NE	NE	500	NE	NE	NE	NE	NE	**500**
Hexachloroethane	3	200	3	3	410	NE	NE	410	NE	**3**
Indeno(1,2,3-cd)pyrene	40	40	40	40	7.8	57	NE	NE	NE	**57**
Isophorone	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
Naphthalene	20	1000	20	20	10000	NE	NE	10000	NE	**20**
N-Nitrosodimethylamine	NE	NE	NE	500	NE	NE	NE	NE	NE	**500**
N-Nitrosodi-n-propylamine	NE	NE	NE	500	NE	NE	NE	NE	NE	**500**
N-Nitrosodiphenylamine	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
Pentachloronitrobenzene	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
Pentachlorophenol	20	10	10	10	48	NE	NE	48	NE	**10**
Phenanthrene	1000	1000	1000	1000	10000	NE	NE	10000	NE	**1000**
Pyrene	3000	3000	3000	3000	10000	NE	NE	10000	NE	**3000**
m&p-Cresol	NE	NE	NE	5000	NE	NE	NE	NE	NE	**5000**
Pyridine	NE	NE	NE	5000	NE	NE	NE	NE	NE	**5000**

Notes:

NE = Not established for this analyte.

SAGE ENVIRONMENTAL

Table 1 - Proposed Reuse Acceptance Criteria

Total Petroleum Hydrocarbons (mg/kg)	MassDEP Method 1 S-2 & GW-2 Soil Standards	MassDEP Method 1 S-2 & GW-3 Soil Standards	Minimum of S-2 / GW-2 and GW-3 Soil Standards	MassDEP Reportable Concentration S-2	RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria	PROPOSED RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria	RIDEM Method 1 GB Leachability Criteria	Minimum of I/C DEC and GB-LC Soil Standards	EcoTec, Inc. Ecological Risk-Based Evaluation Soil Acceptance Criteria	South Quay Material Reuse Acceptance Criteria
Total Petroleum Hydrocarbons	3000	3000	3000	3000	2500	NE	2500	2500	NE	**1000**
Volatile Petroleum Hydrocarbons (MADEP-VPH) (mg/kg)	**MassDEP Method 1 S-2 & GW-2 Soil Standards**	**MassDEP Method 1 S-2 & GW-3 Soil Standards**	**Minimum of S-2 / GW-2 and GW-3 Soil Standards**	**MassDEP Reportable Concentration S-2**	**RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria**	**PROPOSED RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria**	**RIDEM Method 1 GB Leachability Criteria**	**Minimum of I/C DEC and GB-LC Soil Standards**	**EcoTec, Inc. Ecological Risk-Based Evaluation Soil Acceptance Criteria**	**South Quay Material Reuse Acceptance Criteria**
C5-C8 Aliphatic Hydrocarbons	500	500	500	500	NE	NE	NE	NE	NE	**500**
C9-C12 Aliphatic Hydrocarbons	3000	3000	3000	3000	NE	NE	NE	NE	NE	**3000**
C9-C10 Aromatic Hydrocarbons	500	500	500	500	NE	NE	NE	NE	NE	**500**
Extractable Petroleum Hydrocarbons (MADEP-EPH) (mg/kg)	**MassDEP Method 1 S-2 & GW-2 Soil Standards**	**MassDEP Method 1 S-2 & GW-3 Soil Standards**	**Minimum of S-2 / GW-2 and GW-3 Soil Standards**	**MassDEP Reportable Concentration S-2**	**RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria**	**PROPOSED RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria**	**RIDEM Method 1 GB Leachability Criteria**	**Minimum of I/C DEC and GB-LC Soil Standards**	**EcoTec, Inc. Ecological Risk-Based Evaluation Soil Acceptance Criteria**	**South Quay Material Reuse Acceptance Criteria**
C9-C18 Aliphatic Hydrocarbons	3000	3000	3000	3000	NE	NE	NE	NE	NE	**3000**
C19-C36 Aliphatic Hydrocarbons	5000	5000	5000	5000	NE	NE	NE	NE	NE	**5000**
C11-C22 Aromatic Hydrocarbons	3000	3000	3000	3000	NE	NE	NE	NE	NE	**3000**
Total Metals (mg/kg)	**MassDEP Method 1 S-2 & GW-2 Soil Standards**	**MassDEP Method 1 S-2 & GW-3 Soil Standards**	**Minimum of S-2 / GW-2 and GW-3 Soil Standards**	**MassDEP Reportable Concentration S-2**	**RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria**	**PROPOSED RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria**	**RIDEM Method 1 GB Leachability Criteria**	**Minimum of I/C DEC and GB-LC Soil Standards**	**EcoTec, Inc. Ecological Risk-Based Evaluation Soil Acceptance Criteria**	**South Quay Material Reuse Acceptance Criteria**
Antimony	30	30	30	30	820	NE	NE	820	NE	**30**
Arsenic	20	20	20	20	7	NE	NE	7	14.48	**14.48**
Barium	3000	3000	3000	3000	10000	NE	NE	10000	NE	**3000**
Beryllium	200	200	200	200	1.5	NE	NE	1.5	3	**3**
Cadmium	100	100	100	100	1000	NE	NE	1000	NE	**100**
Chromium (Total)	200	200	200	200	10000	NE	NE	10000	NE	**200**
Chromium (III)	3000	3000	3000	3000	10000	NE	NE	10000	NE	**3000**
Chromium (VI)	200	200	200	200	10000	NE	NE	10000	NE	**200**
Copper	NE	NE	NE	10000	10000	NE	NE	10000	NE	**10000**
Cyanide	100	100	100	100	10000	NE	NE	10000	NE	**100**
Lead	600	600	600	600	500	NE	NE	500	NE	**500**
Manganese	NE	NE	NE	NE	10000	NE	NE	10000	NE	**10000**
Nickel	1000	1000	1000	1000	10000	NE	NE	10000	NE	**1000**
Selenium	700	700	700	700	10000	NE	NE	10000	NE	**700**
Silver	200	200	200	200	10000	NE	NE	10000	NE	**200**
Vanadium	700	700	700	700	10000	NE	NE	10000	NE	**700**
Zinc	3000	3000	3000	3000	10000	NE	NE	10000	NE	**3000**
Thallium	60	60	60	60	140	NE	NE	140	NE	**60**
Mercury	30	30	30	30	610	NE	NE	610	NE	**30**
Polychlorinated Biphenyls (PCBs) (mg/kg)	**MassDEP Method 1 S-2 & GW-2 Soil Standards**	**MassDEP Method 1 S-2 & GW-3 Soil Standards**	**Minimum of S-2 / GW-2 and GW-3 Soil Standards**	**MassDEP Reportable Concentration S-2**	**RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria**	**PROPOSED RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria**	**RIDEM Method 1 GB Leachability Criteria**	**Minimum of I/C DEC and GB-LC Soil Standards**	**EcoTec, Inc. Ecological Risk-Based Evaluation Soil Acceptance Criteria**	**South Quay Material Reuse Acceptance Criteria**
Aroclor-1016	NE	NE	NE	4	NE	NE	NE	NE	NE	**4**
Aroclor-1221	NE	NE	NE	4	NE	NE	NE	NE	NE	**4**
Aroclor-1232	NE	NE	NE	4	NE	NE	NE	NE	NE	**4**
Aroclor-1242	NE	NE	NE	4	NE	NE	NE	NE	NE	**4**
Aroclor-1248	NE	NE	NE	4	NE	NE	NE	NE	NE	**4**
Aroclor-1254	NE	NE	NE	4	NE	NE	NE	NE	NE	**4**
Aroclor-1260	NE	NE	NE	4	NE	NE	NE	NE	NE	**4**
Aroclor-1262	NE	NE	NE	NE	NE	NE	NE	NE	NE	**NE**
Aroclor-1268	NE	NE	NE	NE	NE	NE	NE	NE	NE	**NE**
PCBs (Total)	4	4	4	4	10	NE	10	10	NE	**4**
Chlorinated Pesticides & Herbicides (mg/kg)	**MassDEP Method 1 S-2 & GW-2 Soil Standards**	**MassDEP Method 1 S-2 & GW-3 Soil Standards**	**Minimum of S-2 / GW-2 and GW-3 Soil Standards**	**MassDEP Reportable Concentration S-2**	**RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria**	**PROPOSED RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria**	**RIDEM Method 1 GB Leachability Criteria**	**Minimum of I/C DEC and GB-LC Soil Standards**	**EcoTec, Inc. Ecological Risk-Based Evaluation Soil Acceptance Criteria**	**South Quay Material Reuse Acceptance Criteria**
Alachlor	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
Aldrin	0.5	0.5	0.5	0.5	NE	NE	NE	NE	NE	**0.5**
a-BHC	NE	NE	NE	500	NE	NE	NE	NE	NE	**500**
1-BHC	NE	NE	NE	100	NE	NE	NE	NE	NE	**100**
v-BHC (Lindane, y-HCH)	2	0.5	0.5	0.5	NE	NE	NE	NE	NE	**0.5**
0-BHC	NE	NE	NE	100	NE	NE	NE	NE	NE	**100**
Chlordane	30	30	30	30	4.4	NE	NE	4.4	NE	**4.4**
4,4-DDD (p,p')	40	40	40	40	NE	NE	NE	NE	NE	**40**
4,4-DDE (p,p')	30	30	30	30	NE	NE	NE	NE	NE	**30**
4,4-DDT (p,p')	30	30	30	30	NE	NE	NE	NE	NE	**30**
Dieldrin	0.5	0.5	0.5	0.5	0.4	NE	NE	0.4	NE	**0.4**
a-Endosulfan (I)	500	1	1	1	NE	NE	NE	NE	NE	**1**
1-Endosulfan (II)	500	1	1	1	NE	NE	NE	NE	NE	**1**
Endosulfan Sulfate				See Listed Constituents						**NE**
Endrin	20	20	20	20	NE	NE	NE	NE	NE	**20**
Endrin Aldehyde	NE	NE	NE	100	NE	NE	NE	NE	NE	**100**
Endrin ketone	NE	NE	NE	NE	NE	NE	NE	NE	NE	**NE**
Heptachlor	2	2	2	2	NE	NE	NE	NE	NE	**2**
Heptachlor Epoxide	0.9	0.9	0.9	0.9	NE	NE	NE	NE	NE	**0.9**
Hexachlorobenzene	0.8	0.8	0.8	0.8	3.6	NE	NE	3.6	NE	**0.8**
Methoxychlor	400	400	400	400	NE	NE	NE	NE	NE	**400**
Toxaphene	NE	NE	NE	100	NE	NE	NE	NE	NE	**100**
2,4-D	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
2,4-DB	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
Dalapon	NE	NE	NE	10000	NE	NE	NE	NE	NE	**10000**
Dicamba	NE	NE	NE	5000	NE	NE	NE	NE	NE	**5000**
Dichlorprop	NE	NE	NE	NE	NE	NE	NE	NE	NE	**NE**
Dinoseb	NE	NE	NE	5000	NE	NE	NE	NE	NE	**5000**
MCPA	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
MCPP	NE	NE	NE	NE	NE	NE	NE	NE	NE	**NE**
2,3,7,8-TCDD (equivalents)	0.00005	0.00005	0.00005	0.00005	NE	NE	NE	NE	NE	**0.00005**
2,4,5-T	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
2,4,5-TP (Silvex)	NE	NE	NE	1000	NE	NE	NE	NE	NE	**1000**
General Chemistry	**MassDEP Method 1 S-2 & GW-2 Soil Standards**	**MassDEP Method 1 S-2 & GW-3 Soil Standards**	**Minimum of S-2 / GW-2 and GW-3 Soil Standards**	**MassDEP Reportable Concentration S-2**	**RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria**	**PROPOSED RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria**	**RIDEM Method 1 GB Leachability Criteria**	**Minimum of I/C DEC and GB-LC Soil Standards**	**EcoTec, Inc. Ecological Risk-Based Evaluation Soil Acceptance Criteria**	**South Quay Material Reuse Acceptance Criteria**
Free Liquid - Paint Filter	NE	NE	NE	NE	NE	NE	NE	NE	NE	**No Free Liquids**
pH (SU)	NE	NE	NE	NE	NE	NE	NE	NE	NE	**5.0-9.0 S.U.**
Corrosivity (positive/negative)	NE	NE	NE	NE	NE	NE	NE	NE	NE	**Negative**
Specific Conductance (µmhos/cm)	NE	NE	NE	NE	NE	NE	NE	NE	NE	**2000**
Flashpoint (°F)	NE	NE	NE	NE	NE	NE	NE	NE	NE	**Non-Ignitable**
Ignitability (°F)	NE	NE	NE	NE	NE	NE	NE	NE	NE	**>140 °F**
Reactive Cyanide (mg/kg)	NE	NE	NE	NE	NE	NE	NE	NE	NE	**<250**
Reactive Sulfide (mg/kg)	NE	NE	NE	NE	NE	NE	NE	NE	NE	**<500**

Notes:

NE = Not established for this analyte.

ATTACHMENT A

RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND REVITALIZATION & SUSTAINABLE MATERIALS MANAGEMENT
235 Promenade Street, Room 380
Providence, Rhode Island 02908

August 31, 2022

BENEFICIAL USE DETERMINATION APPLICATION - COMMENT LETTER
File No's. WF-826 & SR-10-1455

Anthony Rossato
Project Manager
SAGE Environmental, Inc.
301 Friendship Street
Providence, RI 02903

RE: South Quay Beneficial Use Determination Application
5/13/2022 SAGE Environmental, Inc. submittal
649 Waterfront Drive - Plat Map 7, Block 1, Lot 3
East Providence, RI 02914

Dear Mr. Rossato:

The Department's Office of Land Revitalization and Sustainable Material Management (LRSMM) Solid Waste Section has reviewed the above referenced document submitted on behalf of the site owner, RI Waterfront Enterprises LLC. After careful review of the above- mentioned document, the Office of LRSMM requires a response to the attached comments, questions, and concerns about the submittals, which must be fully addressed in writing before a Beneficial Use Determination (BUD) approval is issued.

If you have any questions regarding this letter or would like the opportunity to meet with Department personnel, please contact me by telephone at (401) 222-2797, ext. 2777177, or by e-mail at Kasandra.McKenzie@dem.ri.gov.

Sincerely,

Kasie McKenzie

Kasie McKenzie
Environmental Engineer II
Office of Land Revitalization and Sustainable Materials Management

cc: Mark Dennen – Supervising Environmental Scientist – RIDEM/LRSMM/SOLID WASTE
Nate Arruda – Environmental Scientist – RIDEM/LRSMM/SOLID WASTE
Jeff Crawford – Principal Environmental Scientist – RIDEM/LRSMM/SITE REM
Ashley Blauvelt – Environmental Engineer IV – RIDEM/LRSMM/SITE REM
Ron Gagnon – Administrator – RIDEM/OCTA
Dan Goulet – CRMC

Department Comments – 08/31/2022
South Quay BUD Application

1. Pages 7-10 of 121 of the BUD application provides the following justification for the selection of the proposed BUD material acceptance levels.
   a. Coventry Landfill BUD Reuse Levels:

      The Department will not accept this previously approved BUD as justification for a Lead level that is over 4 times the Remediation Regulations Table 1 Industrial/Commercial Direct Exposure Criteria (I/CDEC) for the South Quay Project. The approved BUD for the Coventry Landfill did not contaminate the site more than what was already there. Also, Coventry Landfill utilized an impermeable LDPE cap to prevent water infiltration into the BUD materials. The BUD soils were also not in direct contact with the water table. For the above reasons, the Coventry BUD is not acceptable to use for establishing acceptable BUD material levels for the South Quay Project.

   b. MassDEP Method 1 S-3/ GW-2 or GW-3 Soil Standards:

      When determining acceptable levels, the Department will not accept Massachusetts standards unless one for RI does not exist. Therefore, Massachusetts S-2 Soil and GW-1 standards can only be used for parameters that do not have a RIDEM I/CDEC. The Department cannot accept a soil standard that is not protective of the bay waters. Please update the allowable contaminant levels for the materials in Attachment B - Table C accordingly.

2. Prior to approval and accepting any BUD materials on site, the pre-characterization analytical data must be reviewed by RI Waterfront Enterprises LLC and/or their consulting engineers for conformance with the following chemical and physical characteristics:
   a. All BUD material must meet all parameters in the RIDEM I/CDEC and Table 2 - GA Leachability Standards due to the proximity of the site to the Narragansett Bay. Please update the allowable contaminant levels for the materials in Attachment B - Table C accordingly.
   b. In addition to the I/CDEC limits, the following contaminant levels are applicable for the proposed BUD material:
      I. Total Petroleum Hydrocarbons (TPH) – 1,000 parts per million (ppm) for Direct Exposure as well as Leachability Criteria.
      II. Free Liquids – No free liquids
   c. To propose material acceptance levels that exceed the I/CDEC or the GA Leachability Criteria, please provide justification in the form of an ecological risk assessment for each contaminant. The risk assessment should consider marine life, the water quality of the bay, human health and the environment. The Department maintains the right to deny any proposed acceptance levels.
   d. If standards do not exist in RI for certain parameters, Massachusetts S-2 Soil and GW-1 standards may be used instead.
   e. Each source shall have at least 10 grab soil samples collected during an initial assessment to see if a source is viable. The samples must meet condition 2a above.
   f. Once a source is considered viable according to comment 2d above, there must then be a testing frequency according to Attachment B Table B of the application. The samples must also meet condition 2a above.

g. As mentioned in Attachment B Table B of the application, please propose a specific testing procedure and testing frequency for the processed ABC materials.

h. As mentioned in Attachment B Table B, please provide the analytical method that will be used to test the rock material for perchlorate and sulfide materials.

i. RI Waterfront Enterprises LLC and/or their consulting engineers are responsible for ensuring that soils taken onto site do not significantly contribute to adverse effects to any Environmentally Sensitive Areas at or in the vicinity of the site in accordance with Section 1.9.1(A)(3) of the Remediation Regulations. Additionally, the soils taken onto site must not degrade the state's water quality according to CFR 131.12 – Antidegradation policy. Antidegradation applies to all projects or activities subject to the Rhode Island Water Quality Regulation which will likely lower water quality or affect existing or designated uses.

j. The analytical data must be conducted by a licensed environmental laboratory with the RIDOH, registered in the state of Rhode Island, and with accreditations as part of the National Environmental Laboratory Accreditation Program (NELAP).

k. The proposed BUD material must not contribute to odors, propagation of vectors or blowing of litter and dust.

l. All testing methods shall conform to Section 1.16 - Analytical Methods for Reporting in the Remediation Regulations.

m. Please note that the Department does not accept composite samples, only grab samples can be used.

n. Attachment B Table B- Requirements for Specific BUD Materials, states that the soils will include "no more than 5% of solid waste (including trash)". Please note that the Department will not accept any materials with the inclusion of trash. The Solid Waste Regulations would be triggered at 3 cubic yards of trash.

o. Please add the above-mentioned comments to the Materials Management Plan and the allowable contaminant levels and testing procedures for the materials in Attachment B - Table B and C accordingly.

3. A monthly summary shall be electronically sent to the Department listing the volume of soil accepted, the source location, the sampling analytical data and a figure that shows the location it was spread and/or stockpiled on the site. RI Waterfront Enterprises LLC and/or their consulting engineers are responsible for tracking the delivered tonnage and/or volume, source of the material and analytical data for this project.

4. The Department reserves the right to split samples of any material received at the Site and to perform additional testing on the material upon its arrival at the site to ensure conformance.

5. The Department shall be notified via email, 48 hours prior to accepting any BUD soils on site.

6. A public hearing is required for this project and a draft of the public notification must be pre-approved by the Department before being posted. The public notification must be posted in the East Providence and Providence Journal newspapers and must include date, time, project description, online location for the public hearing, as well as a translation in Portuguese and Spanish. A list of all abutters and town officials must also be pre-approved by the Department.

7. Soils taken onto site shall only be delivered to the site between 7:30 am and 5:00 pm, Monday through Friday. Please add this to the Materials Management Plan.
8. Please clarify if the BUD material will have contact with the bay and if there will be some sort of barrier used as the elevation is raised to prevent erosion or collapse of slopes. Conceptual plans on raising site elevation must be provided to the Department's Site Remediation group.
9. Please clarify what type of cap, if any, is being proposed on top of the BUD material and when this plan will be submitted.
10. Please revise the BUD application to reflect and address these comments. Any revisions made to the plan must be approved by the LRSMM Solid Waste team before a BUD Approval Letter is issued.

ATTACHMENT B

EcoTec, Inc.

ENVIRONMENTAL CONSULTING SERVICES
102 Grove Street
Worcester, MA 01605-2629
508-752-9666 – Fax: 508-752-9494

November 3, 2022

Jacob H. Butterworth, MS, LSP
SAGE Environmental, Inc.
301 Friendship Street
Providence, RI 02903 Via email: Jbutterworth@Sage-Enviro.com

Re: Site-Specific Ecological Risk-Based Evaluation of Ecological Screening Benchmarks in the Providence River Marine Environment and Development of Soil Acceptance Criteria for Arsenic and Beryllium

Dear Mr. Butterworth:

It is my understanding that you are working with the Rhode Island Department of Environmental Management (RIDEM) to identify conservative concentration limits for arsenic and beryllium in potential soils proposed for reuse near (but not in) a marine environment of the Providence River at the property identified as The Key (aka South Key/Quay) located at 649 Waterfront Drive in East Providence, Rhode Island (hereinafter, the "Site"). The published marine ecological screening benchmarks for these two metals, an approach for calculating conservative soil acceptance criteria for the Site, and my proposed conservative Ecological Risk-Based Soil Acceptance Criteria (Acceptance Criteria) are presented within this report.

As you know, ecological screening benchmarks are utilized to identify concentrations of contaminants in environmental media which are unlikely to represent significant risk to environmental receptors. Benchmarks are designed to be conservative, and an exceedance of a benchmark does not necessarily mean that significant risk to the environment is present.

Please also note that the benchmarks discussed below are pertinent in evaluating potential concentrations in a marine environment that might result from either leaching of placed soils or incidental movement (e.g., by erosion) of placed soils into the Providence River. For sediment, movement of placed soils to the river is neither planned nor likely to occur accidentally to a substantial degree, and the effects of any such inputs would be diluted by native sediment and surface water concentrations. Therefore, I find it conservatively acceptable that for soils placed in the upland, Acceptance Criteria would be a factor significantly higher than the sediment benchmarks.

Evaluation of Available Ecological Screening Benchmarks

The NOAA Screening Quick Reference Tables ("SQuiRT") values are typically utilized as the industry-standard source of ecological screening benchmarks. Note, however, that the SQuiRTs

include a range of values with different meanings, calculated by different investigators and agencies. There is not a single generally accepted criterion for use as an ecological screening benchmark. For this Site-specific analysis, the following values are pertinent to consider:

SQuiRT Values for Possible Use as Ecological Screening Benchmarks (mg/Kg)

Benchmark	Arsenic	Beryllium	Comment
TEL = Threshold Effects Level	7.24	Not listed	Lowest value with observed effect
ERL = Effects Range Low	8.2	Not listed	Value below which negative effects are expected to be rare
T-50 = Toxicity 50% probability	20	Not listed	Use of a benchmark that indicates toxicity 50% of the time would generally not be appropriate
T-20 = Toxicity 20% probability	7.4	Not listed	Similar to TEL and ERL; indicative of unlikely risk
PEL = Probable Effects level	41.6	Not listed	Generally, a "probable" effects concentration is not suitable as a conservative screening benchmark without additional justification

Of note, there are no SQuiRT sediment values for beryllium. The United States Environmental Protection Agency (U.S. EPA) Region III has also developed ecological screening benchmarks which do not include beryllium. Additionally, the U.S. EPA Ecotox database (which contains information from more than 1 million references) was referenced related to beryllium toxicity in marine environments and very limited information was available for review.

Recommended Ecological Risk-Based Soil Acceptance Criteria

- Arsenic: Based upon a review of the SQuiRTs values above, the most conservative target concentration for the TEL of 7.24 mg/Kg is protective of the Site-specific Providence River flora and fauna. Therefore, assuming reasonable controls are in place to minimize the potential transport of placed soils to the Providence River, I recommend that a factor of 2 or more times the TEL, [i.e., **2 X 7.24 mg/Kg = 14.48 mg/Kg**] be utilized as the Soil Acceptance Criterion for arsenic, as this concentration in nearby placed soils would be conservatively protective of marine ecological receptors in the adjacent Providence River.
- Beryllium: Because there is no applicable sediment benchmark for beryllium, reasonable controls are assumed to be in place to minimize the potential transport of placed soils to the Providence River, and discharge of placed soils into the river should be minimal and diluted, I recommend that a factor of 2 times the Rhode Island background concentration of beryllium [i.e., **2 X 1.5 mg/Kg = 3 mg/Kg**] be utilized as the Soil Acceptance Criterion for beryllium, as this concentration in nearby placed soils would be

conservatively protective of marine ecological receptors in the adjacent Providence River.

I hope that this information is informative and helpful. Please feel free to reach out to me with any questions you may have.

Sincerely,

Paul J. McManus, LSP, PWS
President & Ecological Risk Assessor

EcoTec, Inc.

ENVIRONMENTAL CONSULTING SERVICES
102 Grove Street
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Paul J. McManus, LSP, PWS
President

Paul McManus is the President and owner of EcoTec, Inc., which he founded in 1990. He is a certified Senior Professional Wetlands Scientist (SPWS) from the International Society of Wetlands Scientists (SWS), the leading professional organization in the field, where he served as President of the New England Chapter of SWS, representing the Chapter on the International Board of Directors for several years, and currently serves as Chapter Treasurer. Mr. McManus is also a Massachusetts Licensed Site Professional (LSP) with experience including a wide range of projects, focused on ecological risk assessment at sites with contaminated wetland resources. Prior to the founding of EcoTec, Mr. McManus was employed at other Massachusetts consulting firms and as an aquatic ecologist at the Massachusetts Division of Water Pollution Control. Mr. McManus brings a wide variety of environmental consulting experience to EcoTec, including oil and hazardous materials ecological risk assessment, wetland evaluation and delineation, lake and stream assessment, wildlife habitat evaluation, and a variety of other types of environmental impact assessment. He has conducted detailed wetland community surveys and impact restoration specifications in "Areas of Critical Environmental Concern" (ACECs), and led the local, state and federal wetland permitting, including vernal pool mitigation design and a Wetlands Protection Act Variance. He has directed thousands of other wetlands projects at sites including large and small residential and commercial developments and major utility infrastructure projects. He has completed all phases of environmental permitting work, including wetland delineation, replication and mitigation design, implementation, and monitoring in freshwater wetlands and salt marsh, as well as general wildlife and rare species assessments and trapping, including marbled salamander, 4-toed salamander, wood turtle, and eastern box turtle, under the MA Wetlands and Endangered Species Act Regulations. Permitting efforts regularly include federal, local and state permitting, including filings under the Massachusetts Environmental Policy Act (MEPA) regulations. Additional projects he has directed include major biological and chemical marine sampling programs; he has been involved in a variety of freshwater system evaluations, and conducted evaluations and sampling for proposed fresh water and marine dredging projects. He also has experience in large scale soil reuse projects, where he completed required environmental permitting and serves as the independent third-party monitor in accordance with voluntary Administrative Consent Orders for multiple sites. Mr. McManus serves as a consultant on behalf of government, business, private citizens, utility companies, the development community, conservation commissions, and concerned citizens' groups. He presently serves on a continual basis as technical wetlands consultant for the Town of Dover Conservation Commission, and works regularly for Boylston, Shrewsbury, and other Commissions providing peer review expertise for varied projects.

Education: Master of Science: Applied Marine Ecology - University of Massachusetts/Boston, 1988
Bachelor of Arts: Biology (Ecology emphasis) – College of the Holy Cross, Worcester, MA, 1984
U.S. Fish and Wildlife Service: Habitat Evaluation Procedure (HEP) Certification
Massachusetts Division of Water Pollution Control: Algal Assay (eutrophication) Short Course

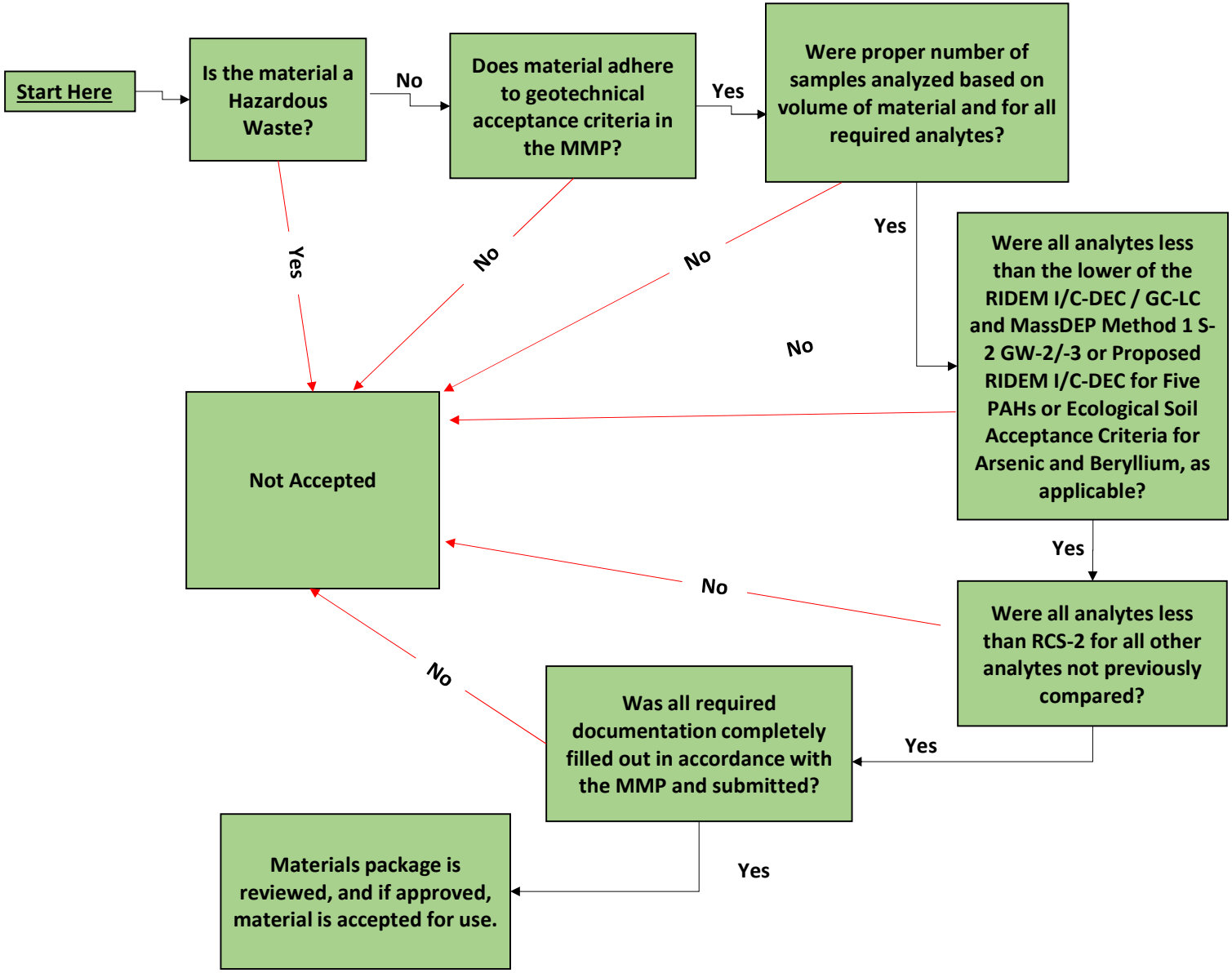
Professional Affiliations: Massachusetts Association of Conservation Commissioners (past Board of Directors)
(Partial list) Society of Wetland Scientists (Treasurer and former President of the New England Chapter)
Association of Massachusetts Wetlands Scientists
Licensed Site Professional Association

Certifications: Society of Wetlands Scientists: Senior Professional Wetlands Scientist # 962
Commonwealth of Massachusetts Licensed Site Professional # 5711
OSHA Health & Safety Hazardous Waste Safety Training, 29 CFR 1910.120 (40 hr & refresher)

ATTACHMENT C

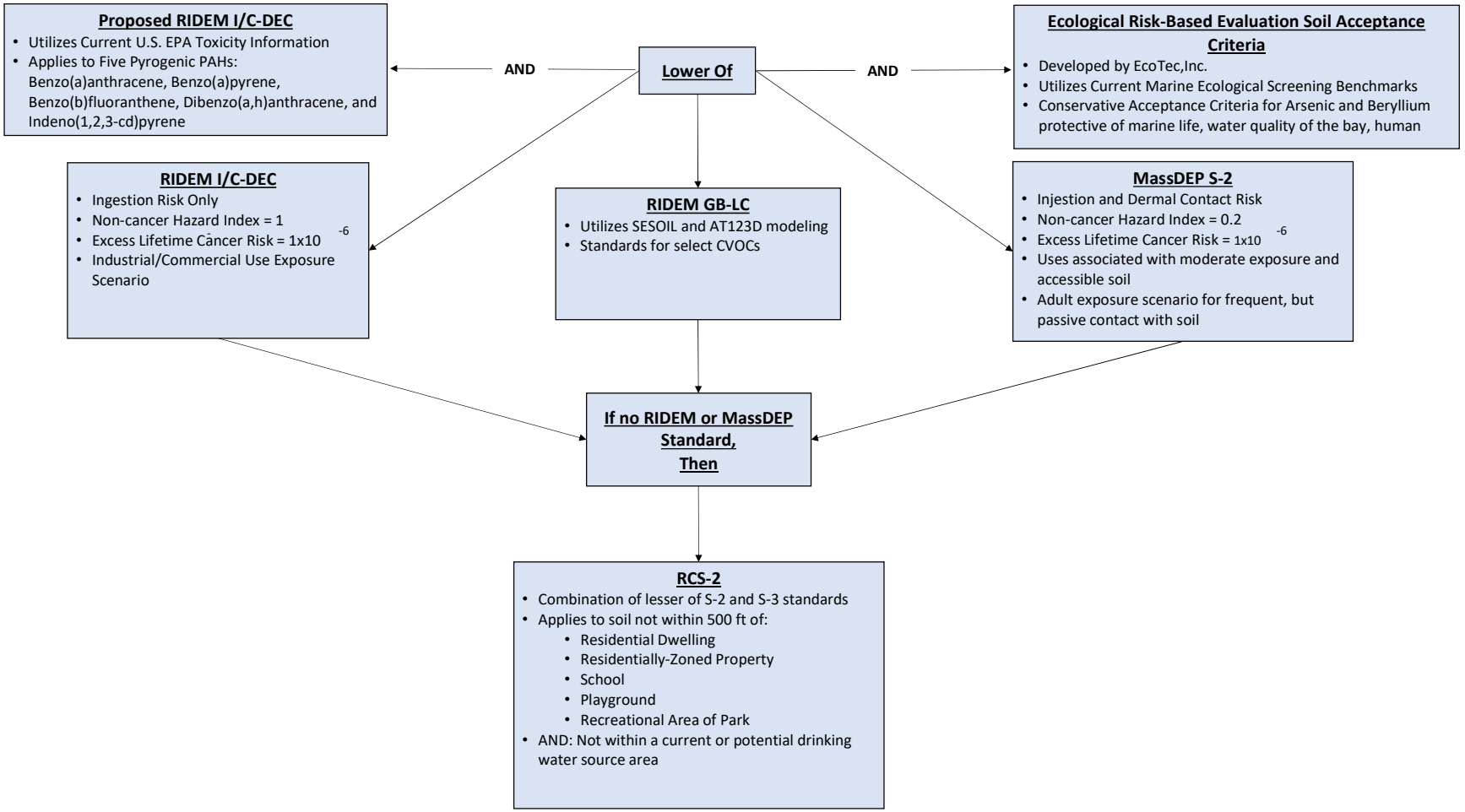
SAGE ENVIRONMENTAL

Material Acceptance



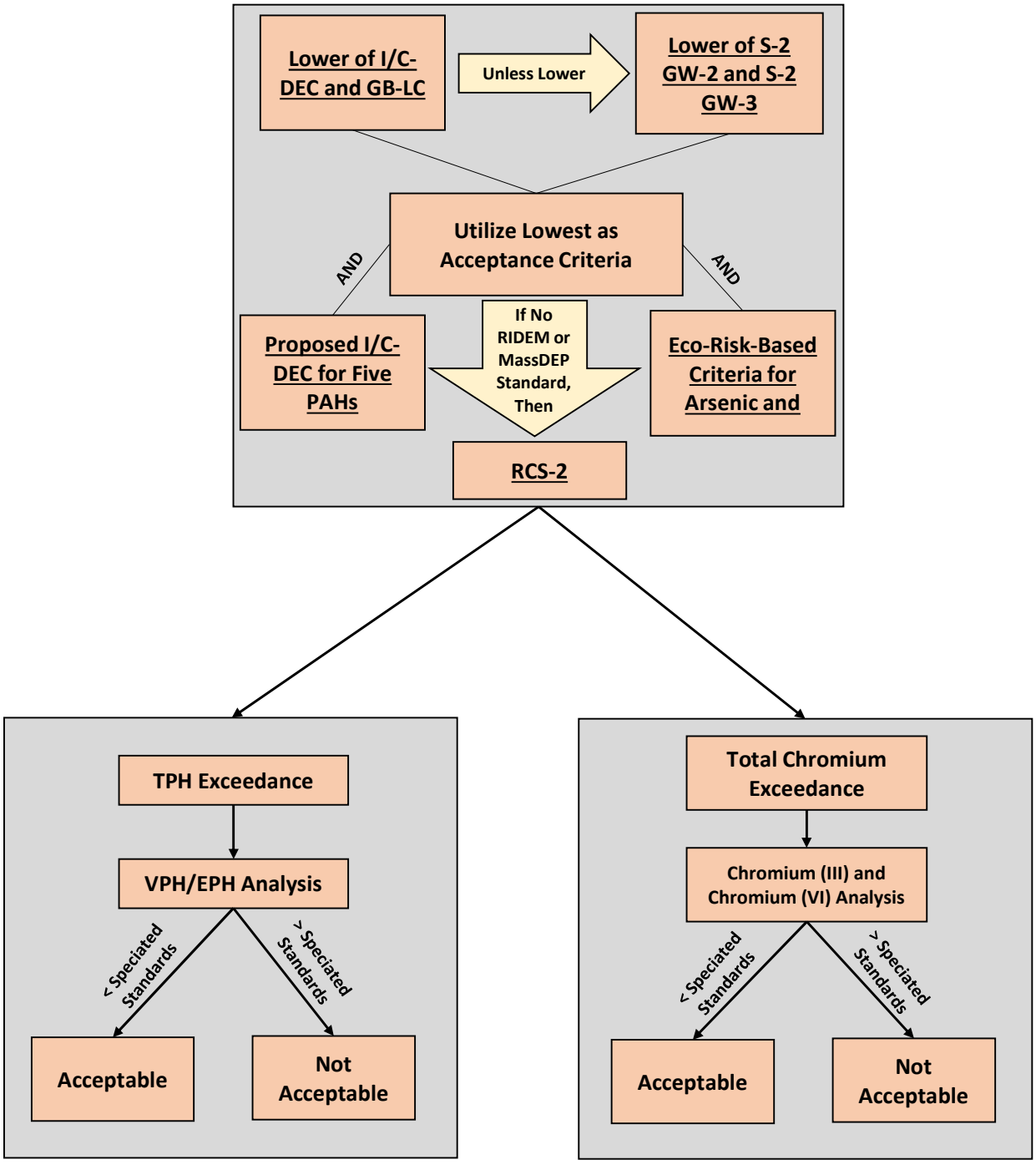
SAGE ENVIRONMENTAL

Material Reuse Acceptance Criteria Evaluation



SAGE ENVIRONMENTAL

Selection of Material Reuse Acceptance Criteria



ATTACHMENT D

LIMIT OF THE FEDERAL NAVIGATIONAL CHANNEL LINE (PER USACE COORDINATES)

APPROXIMATE LIMIT OF THE MARSH LINE

-17.370

-18.570

-19.900

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PARE CORPORATION

MCALLISTER MARINE ENGINEERING

JOHN MCALLISTER
No. 11685
REGISTERED PROFESSIONAL ENGINEER
(CIVIL)

PROJECT
SOUTH QUAY
PROPOSED SITE
REDEVELOPMENT PROJECT

OWNER
RI WATERFRONT ENTERPRISES, LLC
564 SOUTH WATER STREET
PROVIDENCE, RI 02903

NO.	DATE	DESCRIPTION	BY
4	3/2/2022	REVISIONS FOR ASSENT	JBM
3	6/24 /2021	ASSENT PACKAGE	JBM
2	3/11/2021	USACE CHANNEL LIMITS	JBM
1	11/2/2020	UPDATED BATHY	JBM

PROJECT NO.	
CADD FILE	
DESIGNED BY	JBM
DRAWN BY	
CHECKED BY	JAB
DATE	SEPTEMBER 2020
DRAWING SCALE	1" = 100'

GRAPHIC SCALE

SHEET TITLE

GRADING
AND DRAINAGE
PLAN

DRAWING NO.

GD-1

16 OF 33

PLOT SCALE 1/16"=1'-0"

C:\Users\Johan\OneDrive\Documents\JBM\LR\RIWE\Plans\RIWE_SOUTH QUAY BASE PLAN MLLW REV7A recover.dwg

DOCK BULKHEAD DESIGN CRITERIA:

QUAY TOP ELEVATION: 19.5 FT. MLW

BERTH 1: INBOUND: 525 FT. X 97 FT.
BEARING CAPACITY: 2,000 PSF
DRAFT: 32 FT.

BERTH 2: OUTBOUND: 460 FT. X 127 FT.
BEARING CAPACITY: 6,144 PSF
DRAFT: 32 FT.

UNIFORM LOAD BEARING CAPACITY: 5,120 PSF

QUAYSIDE CRAWLER CRANE CORRIDOR: 180 FT. WIDE

BOLLARD CAPACITY: 150 TON

BOLLARD SPACING:

RORO RAMP WIDTH: 150 FT.

JACK-UP PAD WIDTH: 400 FT.

TOP OF DECK ELEVATION:

RORO WATERSIDE ELEVATION: 10.0 MLW

REMOVABLE CURB LOCATIONS:

DRAFT
SEPTEMBER 10, 2020

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PARE CORPORATION

JOHN B. MCALLISTER, P.E.
16 HOXIE AVENUE
CHARLESTOWN, RI 02813

PROJECT
SOUTH QUAY
PROPOSED SITE
REDEVELOPMENT PROJECT

OWNER
RHODE ISLAND WATERFRONT ENTERPRISES, LLC
222 BERKELEY STREET
BOSTON, MA 02116

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	
CADD FILE	
DESIGNED BY	KWH
DRAWN BY	LMC
CHECKED BY	KWH
DATE	SEPTEMBER 2020
DRAWING SCALE	1" = 150'

GRAPHIC SCALE

Scale: 1"=100'
0 50' 100' 200'

SHEET TITLE

PROPOSED WATERFRONT PLAN

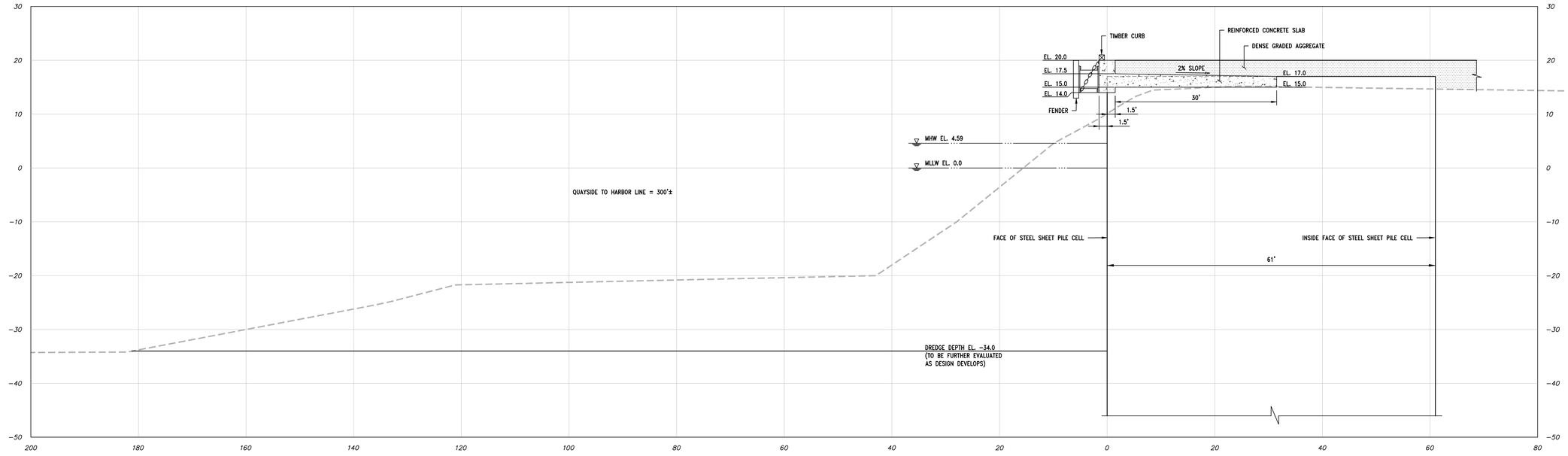
DRAWING NO.

W-1

22 . 33

PLOT SCALE

C:\Users\lohnm\OneDrive\Documents\LRA RIWE\Plans\PARE\W-1 Proposed Waterfront Plan_updated 11.18.20.dwg



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PARE CORPORATION

JOHN B. MCALLISTER, P.E.
16 HOXIE AVENUE
CHARLESTOWN, RI 02813

PROJECT
SOUTH QUAY
PROPOSED SITE
REDEVELOPMENT PROJECT

OWNER
RHODE ISLAND WATERFRONT ENTERPRISES, LLC
222 BERKELEY STREET
BOSTON, MA 02116

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	
CADD FILE	
DESIGNED BY	KWH
DRAWN BY	LMC
CHECKED BY	KWH
DATE	SEPTEMBER 2020
DRAWING SCALE	1" = 150'

GRAPHIC SCALE

Scale: 1"=10'
0 5' 10' 20'

SHEET TITLE

PROPOSED
WATERFRONT
SECTION

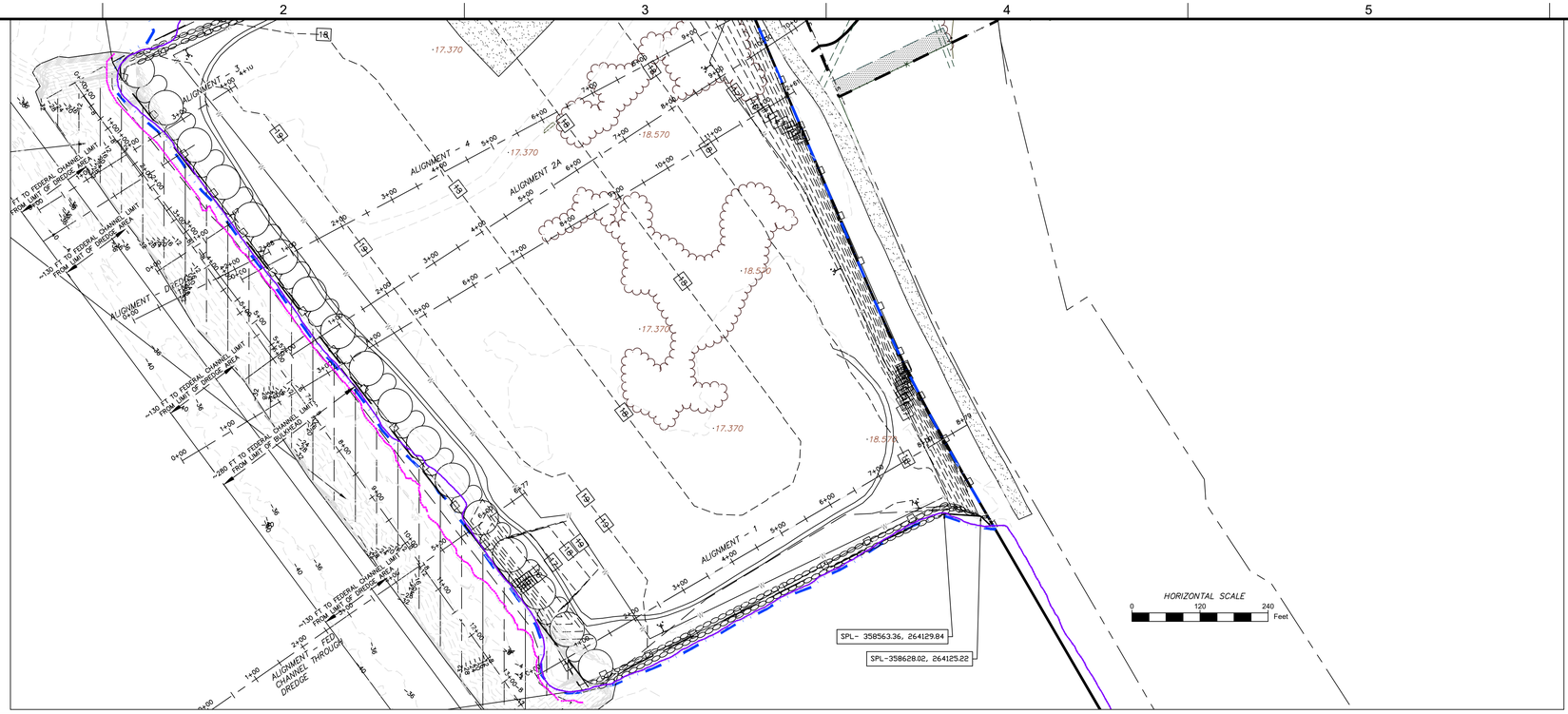
DRAWING NO.

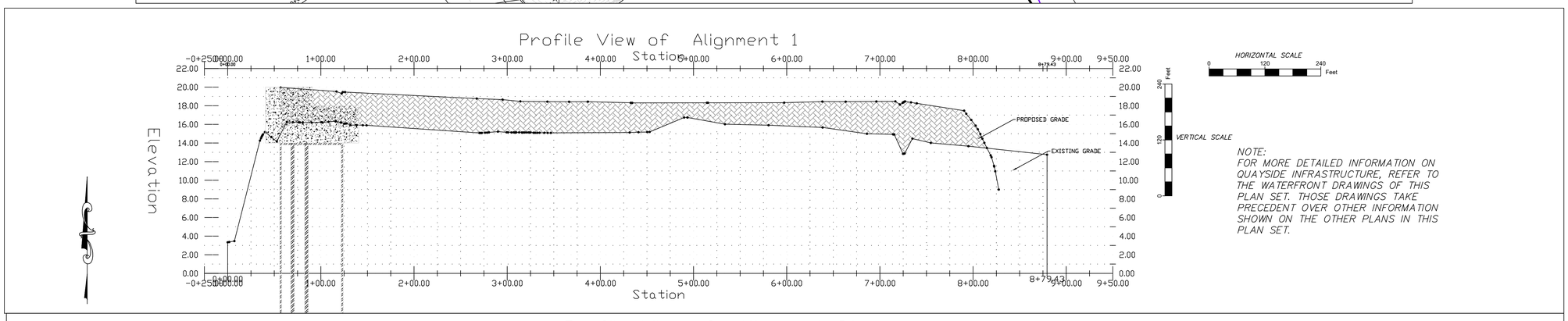
W-2

23 33

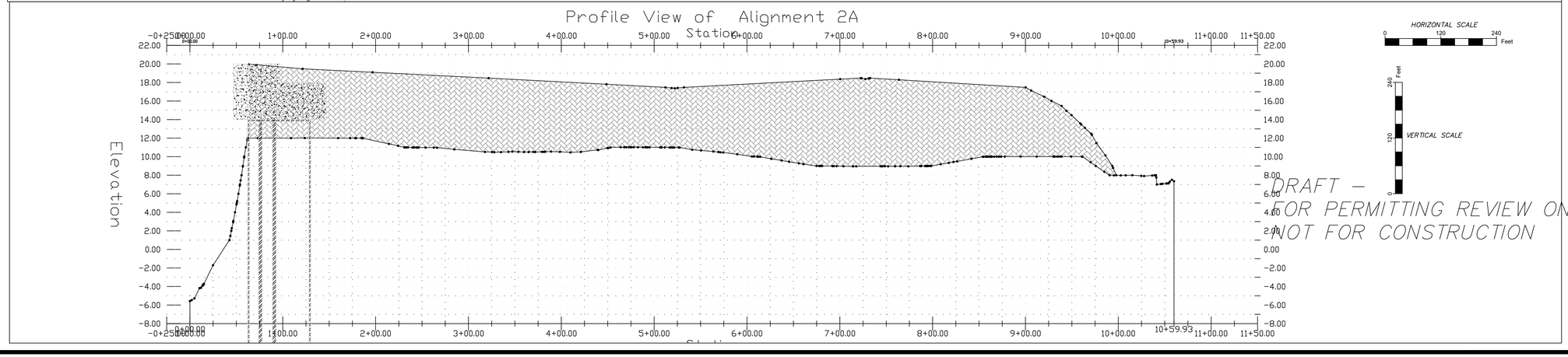
PLOT SCALE

C:\Users\lohmm\OneDrive\Documents\LR\RIWE\Plans\PARE\W-1 Proposed Waterfront Plan updated 11.18.20.dwg





NOTE:
FOR MORE DETAILED INFORMATION ON QUAYSIDE INFRASTRUCTURE, REFER TO THE WATERFRONT DRAWINGS OF THIS PLAN SET. THOSE DRAWINGS TAKE PRECEDENT OVER OTHER INFORMATION SHOWN ON THE OTHER PLANS IN THIS PLAN SET.



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PARE CORPORATION

MCALLISTER MARINE ENGINEERING

JOHN MCALLISTER
No. 11685
REGISTERED PROFESSIONAL ENGINEER
CIVIL
3/2/22

PROJECT
SOUTH QUAY
PROPOSED SITE
REDEVELOPMENT PROJECT

OWNER
RI WATERFRONT ENTERPRISES, LLC
564 SOUTH WATER STREET
PROVIDENCE, RI 02903

NO.	DATE	DESCRIPTION	BY
4	3/2/2022	REVISIONS FOR ASSENT	JBM
3	6/24/2021	ASSENT PACKAGE	JBM
2	3/11/2021	USACE CHANNEL LIMITS	JBM
1	11/2/2020	UPDATED BATHY	JBM

PROJECT NO.	
CADD FILE	
DESIGNED BY	JBM
DRAWN BY	
CHECKED BY	JAB
DATE	SEPTEMBER 2020
DRAWING SCALE	AS NOTED

GRAPHIC SCALE

SHEET TITLE

PROFILE
VIEW
CROSS-SECTIONS

DRAWING NO.

XC-1

15 OF 21

PLOT SCALE 1/16"=1'-0"

C:\Users\ johnm\OneDrive\Documents\JBM\LR\RIVE\Plans\RIVE_SOUTH QUAY BASE PLAN_MLLV REV7A recover.dwg

ATTACHMENT E

DRAFT Soil Erosion and Sediment Control Plan

For:

South Quay Marine Terminal

649 Waterfront Drive

East Providence, RI

Parcel ID 007/01/003/00

Owner:	RI Waterfront Enterprises, LLC 1080 Main Street Pawtucket, RI 02860 T +1 508 965 3342 melissa@riwaterfrontevents.com,
Operator: *TO BE DETERMINED UPON CONTRACT AWARD*	Company Name Name Address City, State, Zip Code Telephone Number Email Address
Estimated Project Dates:	Start Date: December 2021 Completion Date: June 2023
SESC Plan Prepared By:	McAllister Marine Engineering, LLC John McAllister 16 Hoxie Avenue Charlestown, RI 02813 401-859-1839 jmcallister@mcallister-eng.com Professional Engineer – License 0011685

SESC Plan Preparation Date:	May 2021
SESC Plan Revision Date:	

OPERATOR CERTIFICATION

Upon contract award, the OPERATOR must sign this certification statement before construction may begin.

I certify under penalty of law that this document and all attachments were prepared under the direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I am aware that it is the responsibility of the owner/operator to implement and amend the Soil Erosion and Sediment Control Plan as appropriate in accordance with the requirements of the RIPDES Construction General Permit.

_____

Operator Signature: Date

Contractor Representative: Name

Contractor Title: Title

Contractor Company Name: Company Name (if applicable)

Address: Mailing Address

Phone Number: Phone Number

Email Address: Email

TABLE OF CONTENTS

INTRODUCTION

This Construction Site Soil Erosion and Sediment Control Plan (SESC Plan) has been prepared for RI Waterfront Enterprises, LLC for the South Quay Marine Terminal. In accordance with the RIDEM Rhode Island Pollutant Discharge Elimination System (RIPDES) General Permit for Stormwater Discharge Associated with Construction Activity (RIPDES Construction General Permit ("CGP")), projects that disturb one (1) or more acres require the preparation of a SESC Plan. This SESC Plan provides guidance for complying with the terms and conditions of the RIPDES Construction General Permit and Minimum Standard 10 of the RI Stormwater Design and Installation Standards Manual. In addition, this SESC Plan is also consistent with Part D of the *RI SESC Handbook* entitled "Soil Erosion and Sediment Control Plans". This document does not negate or eliminate the need to understand and adhere to all applicable RIPDES regulations.

The purpose of erosion, runoff, and sedimentation control measures is to prevent pollutants from leaving the construction site and entering waterways or environmentally sensitive areas during and after construction. This SESC Plan has been prepared prior to the initiation of construction activities to address anticipated worksite conditions. The control measures depicted on the site plan and described in this narrative should be considered the minimum measures required to control erosion, sedimentation, and stormwater runoff at the site. Since construction is a dynamic process with changing site conditions, it is the operator's responsibility to manage the site during each construction phase so as to prevent pollutants from leaving the site. This may require the operator to revise and amend the SESC Plan during construction to address varying site and/or weather conditions, such as by adding or realigning erosion or sediment controls to ensure the SESC Plan remains compliant with the RIPDES Construction General Permit. Records of these changes must be added to the amendment log attached to the SESC Plan, and to the site plans as "red-lined" drawings. Please Note: **Even if practices are correctly installed on a site according to the approved plan, the site is only in compliance when erosion, runoff, and sedimentation are effectively controlled throughout the entire site.**

It is the responsibility of the site owner and the site operator to maintain the SESC Plan at the site, including all attachments, amendments and inspection records, and to make all records available for inspection by RIDEM during and after construction. (RIPDES CGP - Part III.G)

The site owner, the site operator, and the designated site inspector are required to review the SESC Plan and sign the Party Certification pages (Section 8). The primary contractor (if different) and all subcontractors (if applicable) involved in earthwork or exterior construction activities are also required to review the SESC Plan and sign the certification pages before construction begins.

Any questions regarding the SESC Plan, control measures, inspection requirements, or any other facet of this document may be addressed to the RIDEM Office of Water Resources, at 401-222-4700 or via email: water@dem.ri.gov.

ADDITIONAL RESOURCES

Rhode Island Department of Environmental Management
Office of Water Resources
235 Promenade Street
Providence, RI 02908-5767
phone: 401-222-4700
email: water@dem.ri.gov

RIDEM *RI Stormwater Design and Installation Standards Manual* (RISDISM) (as amended)
http://www.dem.ri.gov/pubs/regs/regs/water/swmanual15.pdf

RI Soil Erosion and Sediment Control Handbook http://www.dem.ri.gov/soilerosion2014final.pdfRIDEM 2013 RIPDES Construction General Permit
http://www.dem.ri.gov/pubs/regs/regs/water/ripdesca.pdfRhode Island Department of Transportation *Standard Specifications for Road and Bridge Design and Other Specifications* and *Standard Details*
http://www.dot.ri.gov/business/bluebook.php

RIDEM Office of Water Resources Coordinated Stormwater Permitting website
http://www.dem.ri.gov/programs/water/permits/ripdes/stormwater/coordinated-stormwater-permitting.phpRIDEM RIPDES Stormwater website
http://www.dem.ri.gov/programs/water/permits/ripdes/stormwater/RIDEM Water Quality website (for 303(d) and TMDL listings)
http://www.dem.ri.gov/programs/water/quality/

RIDEM Rhode Island Natural Heritage Program mailto:plan@dem.ri.gov

RIDEM Geographic Data Viewer – Environmental Resource Map
http://www.dem.ri.gov/maps/

Natural Resources Conservation Service - Rhode Island Soil Survey Program
http://www.ri.nrcs.usda.gov/technical/soils.html

Note:

The *Soil Survey of Rhode Island*, issued in 1980 is no longer available or supported. More information on site-specific soil data and maps for Rhode Island is available from the Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture through the Web Soil Survey. This information is available online at: http://websoilsurvey.nrcs.usda.gov.

EPA NPDES – Stormwater Discharges from Construction Activities webpage:
http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-Discharges-From-Construction-Activities.cfm

EPA Construction Site Stormwater Runoff Control BMP Menu
http://water.epa.gov/polwaste/npdes/swbmp/Construction-Site-Stormwater-Run-Off-Control.

SECTION 1: SITE DESCRIPTION

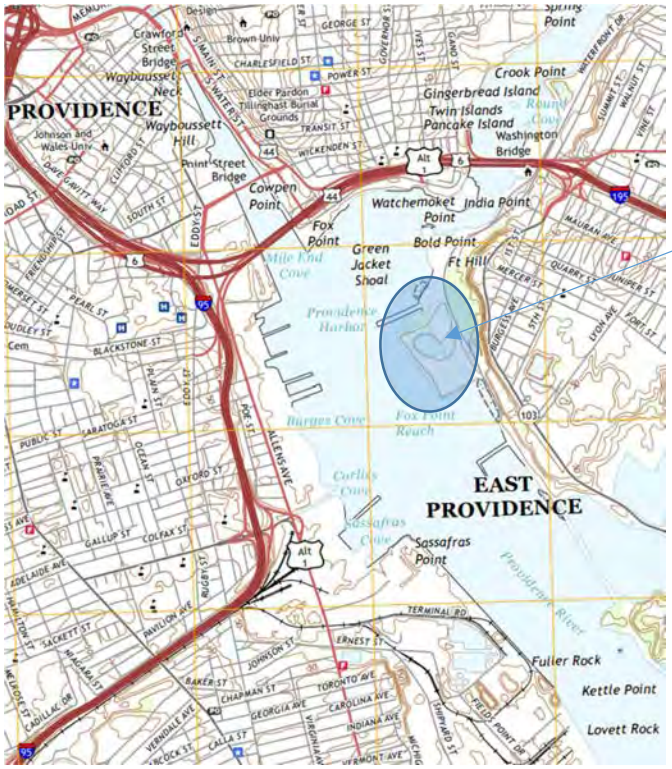
1.1 Project/Site Information

Project/Site Name: South Quay Marine Terminal

- The subject property is the 30+ acre South Quay site located along the east bank of the Providence River in East Providence, RI. The physical address is 649 Waterfront Drive.
- The South Quay project in Rhode Island will create a modern intermodal, state of the art, high capacity, high flexibility port that will be specially prepared to handle multiple types of cargo, including bulk, break bulk, container, heavy oversized, and the immense size and weights of equipment and components used for the growing offshore wind market. The SQMT is designed as a state-of-the-art port facility with access to deep water and high ground-bearing strength quay sides and uplands as required by the OSW industry. One of the primary goals of the project is to serve coaster vessels delivering heavy cargo consisting of large OSW components (e.g., foundation elements, towers, nacelles, blades, etc.).

Project Street/Location:

- 649 Waterfront Drive, East Providence, RI



Provide construction site estimates of the total area of the site and the total area of the site that is expected to undergo soil disturbance.

The following are estimates of the construction site area:

- Total Project Area 31.25 acres
- Total Project Area to be Disturbed 30.1 acres

1.3 Natural Heritage Area Information

RIPDES CGP - Part III.H
Each project authorized under the RIPDES Construction General Permit must determine if the site is within or directly discharges to a Natural Heritage Area (NHA). DEM Natural Heritage Areas include known occurrences of state and federal rare, threatened and endangered species. Review RIDEM NHA maps to determine if there are natural heritage areas on or near the construction site that may be impacted during construction. (See also the RIDEM Notice of Intent instructions which can be found at the following link:

http://www.dem.ri.gov/programs/benviron/water/permits/swcoord/pdf/maptutor.pdf)

Are there any Natural Heritage Areas being disturbed by the construction activity or will discharges be directed to the Natural Heritage Area as a result of the construction activity?

☐ Yes ☒ No

If yes, describe or refer to documentation which determines the likelihood of an impact on this area and the steps that will be taken to address any impacts.

- Not Applicable

1.4 Historic Preservation/Cultural Resources

The National Historic Preservation Act, and any state, local, and tribal historic preservation laws apply to construction activities. As with endangered species, some permits may specifically require you to assess the potential impact of your stormwater discharges on historic properties. However, whether or not this is stated as a condition for permit coverage, the National Historic Preservation Act and any applicable state or tribal laws apply to you. Contact the Rhode Island Historic Preservation Officer (http://www.preservation.ri.gov/) or your Tribal Historic Preservation Officer (http://grants.cr.nps.gov/THPO_Review/index.cfm) for more information.

Are there any historic properties, historic cemeteries or cultural resources on or near the construction site?

☐ Yes ☒ No

Describe how this determination was made and summarize state or tribal review comments:

- Search of RI Historical Commission Database

If yes, describe or refer to documentation which determines the likelihood of an impact on this historic property, historic cemetery or cultural resource and the steps taken to address that impact including any conditions or mitigation measures that were approved by other parties.

- N/A

SECTION 2: EROSION, RUNOFF, AND SEDIMENT CONTROL

RIPDES Construction General Permit – Part III.J.1

The purpose of erosion controls is to prevent sediment from being detached and moved by wind or the action of raindrop, sheet, rill, gully, and channel erosion. Properly installed and maintained erosion controls are the primary defense against sediment pollution.

Runoff controls are used to slow the velocity of concentrated water flows. By intercepting and diverting stormwater runoff to a stabilized outlet or treatment practice or by converting concentrated flows to sheet flow erosion and sedimentation are reduced.

Sediment controls are the last line of defense against moving sediment. The purpose is to prevent sediment from leaving the construction site and entering environmentally sensitive areas.

This section describes the set of control measures that will be installed before and during the construction project to avoid, mitigate, and reduce impacts associated with construction activity. Specific control measures and their applicability are contained in Section Four: Erosion Control Measures, Section Five: Runoff Control Measures, and Section Six: Sediment Control Measures of the *RI SESC Handbook*. The *RI SESC Handbook* can be found at the following address:

http://www.dem.ri.gov/soilerosion2014final.pdf

2.1 Avoid and Protect Sensitive Areas and Natural Features

Per RI Stormwater Design and Installation Standards Manual 3.3.7.1:

Areas of existing and remaining vegetation and areas that are to be protected as identified in the Section 1.6 of the SESC Plan must be clearly identified on the SESC Site Plans for each Phase of Construction. Prior to any land disturbance activities commencing on the site, the Contractor shall physically mark limits of disturbance (LOD) on the site and any areas to be protected within the site, so that workers can clearly identify the areas to be protected.

Constraints are identified to ensure a comprehensive understanding of the project and surrounding areas. The first goal in the low impact development (LID) site planning and design process is to avoid disturbance of natural features. This includes identification and preservation of natural areas that can be used in the protection of water resources. It is important to understand that minimizing the hydrologic alteration of a site is just as important as stormwater treatment for resource protection. Therefore, describe all site features and sensitive resources that exist at the site such as, view barriers,, steep slopes (>15%)that if disturbed will require additional erosion controls, areas with the potential to receive run-on from off-site areas, wetlands, surface waters, and their riparian buffers, specimen trees, natural vegetation, forest areas, stream crossings, historic properties, historic cemeteries or cultural resources that are to be preserved. ***This includes those site features that should be avoided within the designated limits of disturbance.*** *These areas are often identified on a constraints map or in a separate constraints report. For additional discussion on this topic refer to Appendix F. Site Constraint Map of the RI SESC Handbook.*

Note:

The *Soil Survey of Rhode Island*, issued in 1980 is no longer available or supported. More information on site-specific soil data and maps for Rhode Island is available from the Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture through the Web Soil Survey. This information is available online at: http://websoilsurvey.nrcs.usda.gov.

Describe and illustrate on SESC Site Plans Sensitive Areas and Natural Features and how each will be protected during construction activity. Examples of areas to be protected include vegetated buffers, forests, stands of trees on the perimeter and within the site, large diameter trees, areas designated for infiltration (QPAs), bioretention, rain gardens, and OWTS leachfields. Protection for stands of trees and individual trees to be preserved must be specified and such protection must comply with the RI SESC Handbook and extend to the drip line.

Describe and illustrate on SESC Site Plans based on Constraints Map, the areas that will be disturbed with each phase of construction and the control measures (signs, fences, etc.) that will be used to protect those areas that should not be disturbed. ***This includes marking for limits of disturbance at the perimeter and areas within the limits of disturbance.*** *Acceptable measures include but are not limited to construction fencing (plastic mesh, snow fence, chain link fence etc.) appropriate for the site, boundary markers using construction tape, flagged stakes, etc. for low density use, sediment barriers such as silt fence, compost socks with flagging where also required for sediment control, and signage. The narrative portion of the plan and SESC Site Plans must highlight measures to prevent soil compaction in areas designated as Qualified Pervious Areas (QPAs) and infiltration practices to protect infiltration capacity.*

Feature Requiring Protection	Construction Phase #	Method of Protection	Sheet #
Northern Salt Marsh	1	Flagging, Posts, Fencing	ESC-1
Southern Salt Marsh	2	Flagging Posts, Fencing	ESC-1
Insert Text	Insert Text	Insert Text	Insert Text
Insert Text	Insert Text	Insert Text	Insert Text

2.2 Minimize Area of Disturbance

Per RI Stormwater Design and Installation Standards Manual 3.3.7.2:

Will >5 acres be disturbed in order to complete this project?

☒ Yes ☐ No

If yes, phasing must be utilized at this site.

Will <5 acres be disturbed or will disturbance activities be completed within a six (6) month window?

☐ Yes ☒ No

If yes, phasing is not required as long as all other performance criteria will be met and phasing is not necessary to protect sensitive or highly vulnerable areas.

Based on the answers to the above questions will phasing be required for this project?

☒ Yes ☐ No

If yes, and phasing is required, describe phasing plan as prompted below.
Phasing will be performed to the maximum extent possible with the first area being centered around the entrance to the site along the northern edge to the bulkhead area. The second phase of work will be performed along the bulkhead area. Then another phase will be the remaining interior of the site. It is likely and required that more than 5 acres will be disturbed at once, as the nature of filling the 30 site to achieve uniform bearing capacity strength will require uniform filling and compaction.

If No, provide substantive reasons why this was determined to be infeasible.
Insert Text Here

PHASING PLAN

For each phase of the construction project, provide site estimates of the total area of the project phase, and the total area of the project phase that is expected to undergo soil disturbance.

The following are estimates of each phase of the construction project:

(Copy and paste this section for projects with multiple phases)

Phase No. or Identifier	1
Total Area of Phase	12 acres
Area to be Disturbed	11 acres

Description of Construction Sequencing for Phase 1

Phase 1 will include an area of disturbance from the site entrance on Waterfront Drive, up along the northern edge of the site to and along the proposed bulkhead area along the entire western face of the embankment.

Erosion controls shall be set in place prior to the earthwork beginning and they shall be inspected by the Owner's engineer. All control measures shown on the ESC drawings of the plan set shall be implemented to protect the site and the resources.

As the site will have shallow sloped grades, we don't anticipate a risk of high runoff rates, however the site will be graded into itself and away from the bordering resources and graded towards the temporary sedimentation basins.

The areas that are disturbed will likely remain disturbed continually, however if there are areas disturbed that are not used for more than 14 days, then those areas will be stabilized using erosion control blankets or other non-vegetation stabilization measures. Non vegetative stabilization measures are preferred as they will prevent organic matter from gathering into the soil substrate, which will have a negative impact on the proposed fully developed use on the site, which requires heavy bearing capacity.

The contractor shall review stabilization measures and practices on a daily basis and the Owner's engineer will conduct a weekly documented inspection of the site and highlight any measures or areas that need to be addressed. These inspections will also occur after any rainfall event of 0.5" or greater.

Phase No. or Identifier	2
Total Area of Phase	10 acres
Area to be Disturbed	10 acres

Description of Construction Sequencing for Phase 2

Phase 2 will include an area of disturbance along the southern perimeter of the site, from the western face to the eastern end near the continuation of Waterfront Drive.

Erosion controls shall be set in place prior to the earthwork beginning and they shall be inspected by the Owner's engineer. All control measures shown on the ESC drawings of the plan set shall be implemented to protect the site and the resources.

As the site will have shallow sloped grades, we don't anticipate a risk of high runoff rates, however the site will be graded into itself and away from the bordering resources and graded towards the temporary sedimentation basins.

The areas that are disturbed will likely remain disturbed continually, however if there are areas disturbed that are not used for more than 14 days, then those areas will be stabilized using erosion control blankets or other non-vegetation stabilization measures. Non vegetative stabilization measures are preferred as they

will prevent organic matter from gathering into the soil substrate, which will have a negative impact on the proposed fully developed use on the site, which requires heavy bearing capacity.

The contractor shall review stabilization measures and practices on a daily basis and the Owner's engineer will conduct a weekly documented inspection of the site and highlight any measures or areas that need to be addressed. These inspections will also occur after any rainfall event of 0.5" or greater.

Phase No. or Identifier	3
Total Area of Phase	10 acres
Area to be Disturbed	10 acres

Description of Construction Sequencing for Phase 3

Phase 3 will include an area of disturbance for the remaining interior of the site.

Erosion controls shall be set in place prior to the earthwork beginning and they shall be inspected by the Owner's engineer. All control measures shown on the ESC drawings of the plan set shall be implemented to protect the site and the resources.

As the site will have shallow sloped grades, we don't anticipate a risk of high runoff rates, however the site will be graded into itself and away from the bordering resources and graded towards the temporary sedimentation basins.

The areas that are disturbed will likely remain disturbed continually, however if there are areas disturbed that are not used for more than 14 days, then those areas will be stabilized using erosion control blankets or other non-vegetation stabilization measures. Non vegetative stabilization measures are preferred as they will prevent organic matter from gathering into the soil substrate, which will have a negative impact on the proposed fully developed use on the site, which requires heavy bearing capacity.

The contractor shall review stabilization measures and practices on a daily basis and the Owner's engineer will conduct a weekly documented inspection of the site and highlight any measures or areas that need to be addressed. These inspections will also occur after any rainfall event of 0.5" or greater.

Final stabilization will occur at the end of Phase 3. This will include the placement of the upper layer of dense graded aggregate, compacted in place, with an average land slope of 0.005 ft/ft. Once the site has achieved final grade, the infiltration trenches can be excavated in and the piping and crushed stone placed, allowing for the discharge of the stormwater.

Proper sequencing of construction activities is essential to maximize the effectiveness of erosion, runoff, and sediment control measures. Construction sequencing of construction activities for each phase must address the following elements:

1. *Installation of control measures identifying limits of disturbance and areas internal to the site that require protection before start of land disturbance.*
2. *Installation of all erosion, runoff, and sediment controls and temporary pollution prevention measures that are required to be in place and functional before any earthwork begins. This shall be done in accordance with the RI SESC Handbook and/or the RI Department of Transportation Standard Specifications for Road and Bridge Construction (as amended). Upon acceptable completion of site preparation and installation of erosion, runoff, and sediment controls and temporary pollution prevention measures, site construction activities may commence.*

3. *The phasing plan shall address the use of phasing to manage and limit increases in runoff rates and volumes during construction. Designated phases and timing of construction should also address the impacts to important or sensitive habitats.*
4. *Upon commencement of site construction activities, the operator shall initiate appropriate stabilization practices on all disturbed areas as soon as possible, but not more than fourteen (14) days after the construction activity in that area has temporarily or permanently ceased. Such temporary or permanent soil stabilization measures must be installed prior to initiating land disturbance in subsequent phases.*
5. *Routine inspection and maintenance and/or modification of erosion, runoff, and sediment controls and temporary pollution prevention measures while earthwork is ongoing is required.*
6. *Final site stabilization of any disturbed areas after earthwork has been completed and removal of temporary erosion, runoff, and sediment controls and temporary pollution prevention measures.*
7. *Activation of post-construction stormwater treatment conveyances and practices.*

2.3 Minimize the Disturbance of Steep Slopes

Per RI Stormwater Design and Installation Standards Manual 3.3.7.3:

Are steep slopes (>15%) present within the proposed project area?

☒ Yes ☐ No

If yes, steep slopes must be identified on SESC Site Plans.

If yes, also list the specific control measures that will be used to control surface runoff and reduce erosion potential on steep slopes during construction including references to SESC Site Plans where the locations of such control measures are shown. Examples include limiting the number of steep slopes that are disturbed at one time, implementing land grading techniques such as reverse slope benches, diversions, stair steps, and terraced landforms, installation of retaining walls for stabilization of challenging slopes, prevention of soil movement, and slope protection, applying materials for temporary and permanent protection of slopes to prevent erosion such as stone aggregates, rip-rap, erosion control blankets, appropriate spacing of sediment barriers as a function of barrier size, slope, and slope length, geotextile, cellular confinement systems, mattresses (gabions and others), and articulating blocks.

Steep slopes exist along the edges of the embankment. The existing slopes are secured in place with rip rap stone and concrete block. The slopes that exist along the southern and northern edges of the site will remain in place and not be touched. The slope that exists along the western edge of the site will be altered to construct the site, however they will be protected and measures will be implemented to keep the slope from eroding into the Providence River.

In order to construct the bulkhead, the rip rap stone and concrete block armoring of the embankment will need to be removed in order to install the sheet pile bulkhead. These work will be phased and the armoring will be removed only in advance of driving the sheets and not more than 14 days prior to the start of the sheet pile work.

2.4 Preserve Topsoil

Per RI Stormwater Design and Installation Standards Manual 3.3.7.4:

Site owners and operators must preserve existing topsoil on the construction site to the maximum extent feasible and as necessary to support healthy vegetation, promote soil stabilization, and increase stormwater infiltration rates in the post-construction phase of the project.

Will existing topsoil be preserved at the site?

☐ Yes ☒ No

If Yes, describe how topsoil will be preserved at the site by describing the techniques that will be implemented to achieve appropriate depths of topsoil (4 inch minimum) and identify the locations where topsoil will be restored on SESC Site Plans.

Insert Text Here and references to SESC Site Plan Sheet Numbers

If No, provide substantive reasons why this was determined to be infeasible.

The site was created with backfill of dredge spoils, so no topsoil exists on site. Furthermore, the site requires several acres of filling with dense graded aggregate and it will need to be heavily compacted.

Soil compaction must be minimized by maintaining limits of disturbance throughout construction. In instances where site soils are compacted the site owner and operator must restore infiltration capacity of the compacted soils by tilling or scarifying compacted soils and amending soils as necessary to ensure a minimum depth of topsoil is available in these areas. In areas where infiltrating stormwater treatment practices are located compacted soils must be amended such that they will comply the design infiltration rates established in the *RI Stormwater Design and Installation Standards Manual*.

Identify the methods that will be used to restore and amend topsoil at the site. Include references to plan notes and SESC Site Plan sheet numbers where this information is made available for the site operator.

Topsoil will not be amended and restored on site, the terminal is being designed for industrial uses and requires a heavily compacted granular wearing surface to allow for free range of use for cranes and storage.

2.5 Stabilize Soils

Per RI Stormwater Design and Installation Standards Manual 3.3.7.5:

Upon completion and acceptance of site preparation and initial installation of erosion, runoff, and sediment controls and temporary pollution prevention measures, the operator shall initiate appropriate temporary or permanent stabilization practices during all phases of construction on all disturbed areas as soon as possible, but not more than fourteen (14) days after the construction activity in that area has temporarily or permanently ceased.

Any disturbed areas that will not have active construction activity occurring within 14 days must be stabilized using the control measures depicted in the SESC Site Plans, in accordance with the *RI SESC Handbook*, and per manufacturer product specifications.

Only areas that can be reasonably expected to have active construction work being performed within 14 days of disturbance will be cleared/grubbed at any one time. It is NOT acceptable to clear and grub the entire construction site if portions will not be active within the 14-day time frame. Proper phasing of clearing and grubbing activities shall include temporary stabilization techniques for areas cleared and grubbed that will not be active within the 14-day time frame.

All disturbed soils exposed prior to October 15 of any calendar year shall be seeded by that date if vegetative measures are the intended soil stabilization method. Any such areas that do not have adequate

vegetative stabilization, as determined by the site operator or designated inspector, by November 15, must be stabilized through the use of non-vegetative erosion control measures. If work continues within any of these areas during the period from October 15 through April 15, care must be taken to ensure that only the area required for that day's work is exposed, and all erodible soil must be restabilized within 5 working days. In limited circumstances, stabilization may not be required if the intended function of a specific area of the site necessitates that it remain disturbed (i.e. construction of a motocross track).

Describe controls (i.e., temporary seeding with native vegetation, hydroseeding, mulching, application of rolled erosion control products, etc.) including design specifications and details that will be implemented to stabilize exposed soils where construction activities have temporarily or permanently ceased.

Temporary Vegetative Control Measures

- Vegetative Control Measures will not be used due to the lack of organic matter that will be used on site and the final cover of granular material.

Temporary Non-Vegetative Control Measures

- Non-vegetative control measures will include minimize the use of soil stockpiles, (not necessitated by site operations), surrounding stockpiles with silt fence and erosion controls, and when needed covering stockpiles with poly sheeting anchored down and secured.

- No steep slope disturbance should occur outside of the western face and therefore no specific steep slope erosion controls should occur.

Permanent Vegetative Control Measures

- No permanent vegetative controls will be required as a result of the industrial nature of the property.

Permanent Non-Vegetative Control Measures

- The permanent control measures that will be applied to this site include:
    1. The use of shallow slopes , 0.005 ft/ft
    2. Heavy roller compaction of granular material
    3. Maintaining slope armoring on northern and southern ends of the site.

2.6 Protect Storm Drain Outlets

Per RI Stormwater Design and Installation Standards Manual 3.3.7.7:

Temporary or permanent outlet protection must be used to prevent scour and erosion at discharge points through the protection of the soil surface, reduction in discharge velocities, and through the promotion of infiltration. Outlets often have high velocity, high volume flows, and require strong materials that will withstand the forces of stormwater. Storm drain outlet control measures also offer a last line of protection against sediment entering environmentally sensitive areas.

All stormwater outlets that may discharge sediment-laden stormwater flow from the construction site must be protected using the control practices depicted on the approved plan set and in accordance with the *RI SESC Handbook*.

Describe controls, including design specifications and details, which will be implemented to protect outlets discharging stormwater from the project.

Will temporary or permanent point source discharges be generated at the site as the result of construction of sediment traps or basins, diversions, and conveyance channels?

☒ Yes ☐ No

If Yes, describe the method(s) of outlet protection specified for each instance where a point source discharge will be generated. In addition, specifically reference SESC Site Plan Sheet Numbers which identify where the outlets will be constructed at the site and the corresponding control measures that will be utilized for their protection including any associated specifications required for their installation and maintenance.

There will likely be temporary de-watering or stormwater basins constructed during the buildout phase. The basins will be appropriately sized to provide sufficient retention time for the anticipated stormflow volumes to allow sediment to settle out prior to discharge. Any point source discharge shall by monitored by the Owner's engineer for Turbidity .

Groundwater dewatering, if necessary, may be conducted by pumping through a frac tank or geo-bag that is appropriately sized to reduce the level of suspended solids in the water.

If No, discuss rationale for not including these elements in the SESC Plan.

Insert text

2.7 Establish Temporary Controls for the Protection of Post-Construction Stormwater Treatment Practices

Per RI Stormwater Design and Installation Standards Manual 3.3.7.8:

Temporary measures shall be installed to protect permanent or long-term stormwater control and treatment measures as they are installed and throughout the construction phase of the project so that they will function properly when they are brought online.

Examples of temporary control measures that can be used to protect permanent stormwater control measures include: establishing temporary sediment barriers around infiltrating practices, ensuring proper material staging areas and equipment routing (i.e. do not allow construction equipment to compact areas where infiltrating practices will be installed), and by conducting final cleaning of structural long term practices after construction is completed.

List and describe all post-construction stormwater treatment practices that will be installed during the construction process. Next, outline how these measures will be protected during the construction phase of the project to ensure that they will function appropriately once they are brought online.

Will long-term stormwater treatment practices be installed at the site?

☒ Yes ☐ No

If Yes, describe the specific long-term stormwater treatment practices that will require protection from sedimentation and compaction. In addition, specifically reference SESC Site Plan Sheet Numbers which identify the location of these practices and the corresponding control measures that will be utilized for their protection including any associated specifications required for their installation and maintenance.

The Site will be kept permeable and the stormwater will be managed through crushed stone infiltration trenches that contain a perforated underdrain pipe. The trenches will be lined with a geotextile fabric to prevent movement of smaller grained material into the trenches. The upper elevations of the crushed stone infiltration trenches can be removed and replaced if they become laden with sediment.

If No, discuss rationale for not including these elements in the SESC Plan.

Insert text

2.8 Divert or Manage Run-on from Up-gradient Areas

Per RI Stormwater Design and Installation Standards Manual 3.3.7.10:

Is stormwater from off-site areas anticipated to flow onto the project area or onto areas where soils will be disturbed?

☐ Yes ☒ No

If Yes, describe the specific runoff control measures (i.e., check dams, water bars, diversions, perimeter dikes, lined waterways, vegetated waterways, temporary line channels, sediment barriers, pipe slope drains, etc.) that will be utilized at the site including references to the SESC Site Plan Sheet Numbers, design specifications and details. See the RI SESC Handbook,Section Five: Runoff Control Measures for additional guidance.

Pre-Construction and Construction sub-watershed maps are included for each phase in this SESC Plan submittal.

Structural control measures will be used to limit stormwater flow from coming onto the project area, and to divert and slow on-site stormwater flow that is expected to impact exposed soils for the purpose of minimizing erosion, runoff, and the discharge of pollutants from the site.

Control measures shall be installed as depicted on the approved plan set and in accordance with the *RI SESC Handbook* or the *RI Department of Transportation Standard Specifications for Road and Bridge Construction*. **Run-on and Run-off Management**				
Construction Phase #	On-site or Off-site Run-on?	Control measure	Identified on Sheet #	Detail(s) is/are on Sheet #
1	Off - Site	Lined Waterway	3	11 of 12
Insert Text	Insert Text	Insert Text		Insert Text
Insert Text	Insert Text	Insert Text		Insert Text
Insert Text	Insert Text	Insert Text		Insert Text

If No, discuss rationale for not including these elements in the SESC Plan.

The site already sits several feet above the surrounding properties and it is being raised an additional five feet in elevation. Therefore, run-on coming from off-site onto the property is very unlikely.

2.9 Retain Sediment Onsite through Structural and Non-Structural Practices

Per RI Stormwater Design and Installation Standards Manual 3.3.7.12:

Once the erosion control measures and the run-on diversions are identified and located on the plans, the next step to site planning is sediment control and sediment management. Sediment barriers, inlet protection, construction entrances, stockpile containment, temporary sediment traps, and temporary sediment basins must be integrated into the SESC Plan if applicable. Refer to the RI SESC Handbook Section Six: Sediment Control Measures for additional guidance.

Per RI Stormwater Design and Installation Standards Manual 3.3.7.9:

SEDIMENT BARRIERS must be installed along the perimeter areas of the site that will receive stormwater from disturbed areas. This also may include the use of sediment barriers along the contour of disturbed slopes to maintain sheet flow and minimize rill and gully erosion during construction. Installation and maintenance of sediment barriers must be completed in accordance with the maintenance requirements specified by the product manufacturer or the *RI SESC Handbook*.

Will sediment barriers be utilized at the toe of slopes and other downgradient areas subject to stormwater impacts and erosion during construction?

☒ Yes ☐ No

If Yes, Describe the rationale for selecting control measures to serve as sediment barriers at the toe of slopes and other down gradient areas subject to stormwater impacts during construction. Describe the specific sediment barriers that will be used at the site in the table provided.

If No, discuss rationale for not including these elements in the SESC Plan.

Sediment barriers, in the form of straw wattles will be placed around the downgradient perimeter of the site. The straw wattles will be staked into place and backed up by a silt fence. These barriers shall be inspected every two weeks and after any rainfall event of .5 inches or more. Accumulated sediment and debris noted during those inspections shall be removed within 48 hours.

Describe rationale for whether or sediment barriers are required at regular intervals along slopes in order to minimize the creation of concentrated flow paths (i.e. rilling, gully erosion) and to encourage sheet flow. Keep in mind that sediment barriers can be placed at the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow. The description of the selected control measures must focus on sediment barrier spacing as a function of slope length and steepness. Refer to the RI SESC Handbook, Section Six: Sediment Control Measure, Straw Wattles, Compost Tubes, and Fiber Rolls Control Measure for additional information on acceptable spacing distances.

Will sediment barriers be utilized along the contour of slopes to maintain sheet flow and minimize rill and gully erosion during construction?

☐ Yes ☒ No

If Yes, list the specific sediment barriers that will be used at the site in the table provided. Describe the rationale for the locations and spacing frequency selected by the designer based on slope length and

steepness. For additional guidance refer to the RI SESC Handbook or sediment barrier manufacturer's specifications.

SEDIMENT BARRIERS			
Construction Phase #	Sediment Barrier Type	Sediment Barrier is Labeled on Sheet #	Detail is on Sheet #
1	20 inch dia. Fiber roll	5 of 12	11 of 12
Insert Text	Insert Text	Insert Text	Insert Text
Insert Text	Insert Text	Insert Text	Insert Text
Insert Text	Insert Text	Insert Text	Insert Text

If No, discuss rationale for not including these elements in the SESC Plan.
The site is going to be graded at a very shallow slope, 0.005 ft/ft. This flattened slope will minimize runoff velocities, thereby minimizing erosive tendencies of the soil. Furthermore, the site will be actively fill and compacted, so the sediment barrier would need to be continually removed and replaced.

Per RI Stormwater Design and Installation Standards Manual 3.3.7.6:

INLET PROTECTION will be utilized to prevent soil and debris from entering storm drain inlets. These measures are usually temporary and are implemented before a site is disturbed. ALL stormwater inlets &/or catch basins that are operational during construction and have the potential to receive sediment-laden stormwater flow from the construction site must be protected using control measures outlined in the *RI SESC Handbook*.

For more information on inlet protection refer to the *RI SESC Handbook*, Inlet Protection control measure.

Maintenance

The operator must clean, or remove and replace the inlet protection measures as sediment accumulates, the filter becomes clogged, and/or as performance is compromised. Accumulated sediment adjacent to the inlet protection measures should be removed by the end of the same work day in which it is found or by the end of the following work day if removal by the same work day is not feasible.

Describe controls, including design specifications and details, which will be implemented to protect all inlets receiving stormwater from the project during the entire duration of the project. For more information on inlet protection refer to the RI SESC Handbook Inlet Protection control measure.

Do inlets exist adjacent to or within the project area that require temporary protection?

☐ Yes ☒ No

If Yes, describe the method(s) of inlet protection, including maintenance requirements and complete the table provided.

The following lists the proposed storm drain inlet types selected from Section Six of the *RI SESC Handbook*. Each row is unique for each phase and inlet protection type.

INLET PROTECTION			
Construction Phase #	Inlet Protection Type	Inlet Protection is labeled on Sheet #	Detail(s) is/are on Sheet #
1	Fabric Drop , Curb Drop	3 of 12	11 of 12
Insert Text	Insert Text	Insert Text	Insert Text
Insert Text	Insert Text	Insert Text	Insert Text

Insert Text	Insert Text	Insert Text	Insert Text

If No, discuss rationale for not including these elements in the SESC Plan.

The existing site is a permeable site, created with dredge spoils and there were no stormwater controls or inlet structures implemented during its creation. The site more or less drains into itself or discharges via overland flow into the Providence River.

CONSTRUCTION ENTRANCES will be used in conjunction with the stabilization of construction roads to reduce the amount of sediment tracking off the project. This project has avoided placing construction entrances on poorly drained soils where possible. Where poorly drained soils could not be eliminated, the detail includes subsurface drainage.

Any construction site access point must employ the control measures on the approved SESC site plans and in accordance with the *RI SESC Handbook*. Construction entrances shall be used in conjunction with the stabilization of construction roads to reduce the amount of mud picked up by construction vehicles. All construction access roads shall be constructed prior to any roadway accepting construction traffic.

The site owner and operator must:

1. Restrict vehicle use to properly designated exit points.

2. Use properly designed and constructed construction entrances at all points that exit onto paved roads so that sediment removal occurs prior to vehicle exit.

3. When and where necessary, use additional controls to remove sediment from vehicle tires prior to exit (i.e. wheel washing racks, rumble strips, and rattle plates).

4. Where sediment has been tracked out from the construction site onto the surface of off-site streets, other paved areas, and sidewalks, the deposited sediment must be removed by the end of the same work day in which the track out occurs. Track-out must be removed by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal.

Will construction entrances be utilized at the proposed construction site?

☒ Yes ☐ No

If Yes, indicate location(s) of vehicle entrance(s) and exit(s), and stabilization practices used to prevent sediment from being tracked off-site in the table provided. See also RI SESC Handbook, Section Six, Construction Entrances Measure.

CONSTRUCTION ENTRANCE			
Construction Phase #	Soil Type at the Entrance	Entrance is located on Sheet #	Detail is on Sheet #
1	Crushed angular stone	ESC-1	D-3
2	Crushed angular stone	ESC-1	D-3
3	Crushed angular stone	ESC-1	D-3
Insert Text	Insert Text	Insert Text	Insert Text

If No, discuss rationale.

Insert text

STOCKPILE CONTAINMENT will be used onsite to minimize or eliminate the discharge of soil, topsoil, base material or rubble, from entering drainage systems or surface waters. All stockpiles must be located within the limit of disturbance, protected from run-on with the use of temporary sediment barriers and provided with cover or stabilization to avoid contact with precipitation and wind where and when practical.

Stock pile management consists of procedures and practices designed to minimize or eliminate the discharge of stockpiled material (soil, topsoil, base material, rubble) from entering drainage systems or surface waters.

For any stockpiles or land clearing debris composed, in whole or in part, of sediment or soil, you must comply with the following requirements:

1. Locate piles within the designated limits of disturbance.

2. Protect from contact with stormwater (including run-on) using a temporary perimeter sediment barrier.

3. Where practicable, provide cover or appropriate temporary vegetative or structural stabilization to avoid direct contact with precipitation or to minimize sediment discharge.

4. NEVER hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance, storm drain inlet, or surface water.

5. To the maximum extent practicable, contain and securely protect from wind.

Describe materials expected to be stockpiled or stored on-site and procedures for storage of materials to minimize exposure of the materials to stormwater and to eliminate the discharge of stockpiled material from entering drainage systems and surface waters. Refer to the RI SESC Handbook, Stockpile and Staging Area Management Control Measure for additional guidance. Complete the table provided.

STOCKPILE CONTAINMENT				
Construction Phase #	Run-on measures necessary? (yes/no)	Stabilization or Cover Type	Stockpile Containment Measure	Sheet #
1	No	Poly	Silt fence/wattle	ESC-1
2	No	Poly	Silt fence/wattle	ESC-1
3	No	Poly	Silt fence/wattle	ESC-1
Insert Text	Insert Text	Insert Text	Insert Text	Insert Text

CONSTRUCTED SEDIMENT STRUCTURES

If each common drainage location receives water from an area with less than one (1) acre disturbed at a time, this section can be deleted and no sediment traps or basins are required. However, it is important to remember that there is still a requirement to retain sediment on-site. Therefore, if it is in the best professional judgment of the designer, that there is a condition or circumstance which may require structural controls (per Section 3.3.7.13 of the RI Stormwater Design and Installation Standards Manual), this section can be used.

TEMPORARY SEDIMENT TRAPS will be utilized onsite. There will be no disturbed drainage areas greater than one acre that will be exposed for longer than six months. Design and sizing calculations in accordance

with the *RI SESC Handbook*, Section Six are found in the appendix of this SESC Plan. A summary of the calculations are provided below:

For Disturbed Areas 1 to 5 Acres – Those areas with a common drainage location that serves an area between one (1) and five (5) acres disturbed at one time, a temporary sediment trap must be provided where attainable and where the sediment trap is only intended to be used for a period of six (6) months or less. For longer term projects with a common drainage location that serves between one (1) and five (5) acres disturbed at one time, a temporary sediment basin must be provided where attainable. Temporary sediment trapping practices must be designed in accordance with the RI SESC Handbook and must be sized to have a total storage volume capable of storing one (1) inch of runoff from the contributing area or one hundred and thirty four (134) cubic yards per acre of drainage area. A minimum of fifty percent (50%) of the total volume shall be storage below the outlet (wet storage). See RISDISM 3.3.7.12 for requirements and RI SESC Handbook, Section Six: Temporary Sediment Traps Measure for design details.

Are temporary sediment traps required at the site?

☒ Yes ☐ No

If Yes, complete the table provided. If an area greater than one acre will be exposed for longer than 6 months and a sediment trap is proposed, explain why the sediment basin was not attainable.

SEDIMENT TRAPS				
Construction Phase #	Exposed Area (acres)	Trap #	Sheet #	Detail found on Sheet#
1	11	1	ESC	D
2	10	2	ESC	D
3	10	3	ESC	D
Insert Text	Insert Text	Insert Text	Insert Text	Insert Text

Trap #	Wet Storage Volume (cu.ft)	Dry Storage Volume (cu.ft.)	Cleanout Depth (ft)	Provide Reference to Location of Supporting Design and Sizing Calculations
1	850	1650	2	See spreadsheet
2	765	1500	2	See spreadsheet
3	765	1500	2	See spreadsheet
Insert Text	Insert Text	Insert Text	Insert Text	Insert Text

All traps will be functional and installed prior to disturbance in the contributing drainage area. Access for sediment removal is provided on the plans with cleanout depth requirements. The removed sediment will be utilized onsite or disposed of properly off-site.

If No, discuss rationale.

Insert text

TEMPORARY SEDIMENT BASIN(S) will be utilized onsite. Every effort must be made to prevent erosion and control it near the source.

If the following criterion does not apply to your proposed construction project, then this section may be eliminated from the plan.

For Disturbed Areas of 1 to 5 Acres – Those areas with a common drainage location that serves an area between one (1) and five (5) acres disturbed at one time for longer than six (6) months.

For Disturbed Areas > 5 Acres – Those areas with a common drainage location that serves an area with greater than five (5) acres disturbed at one time, a temporary (or permanent) sediment basin must be provided where attainable until final stabilization of the site is complete. Temporary sediment basins must be designed in accordance with the RI SESC Handbook. The volume of wet storage shall be at least twice the sediment storage volume and shall have a minimum depth of two (2) feet. Sediment storage volume must accommodate a minimum of one year of predicted sediment load as calculated using the sediment volume formula in the RI SESC Handbook. In addition to sediment storage volume and wet storage volume, the sediment basin shall provide adequate residence storage volume to provide a minimum 10 hours residence time for a ten (10) -year frequency, twenty four (24) hour duration, Type III distribution storm. To the maximum extent practicable, outlet structures must be utilized that withdraw water from the surface of temporary sedimentation basins for the purpose of minimizing the discharge of pollutants. Exceptions may include periods of extended cold weather, where alternative outlets are required during frozen periods. If such a device is infeasible for portions of or the entire construction period justification must be made in the SESC Plan. Describe the reasons sediment basins are required for this project. They may include physical conditions, land ownership, construction operations etc. For design details see RI SESC Handbook Section Six: Temporary Sediment Basins Measure.

Are temporary sediment basins required at the site?

☒ Yes ☐ No

If No, discuss rationale.

Insert text

If Yes, complete the table provided.

There will be disturbed areas greater than 5 acres and/or disturbed areas greater than one acre but exposed for longer than six months. The basins have been located to intercept runoff only from disturbed areas and minimize interference with other construction activities and construction of utilities. They have been located outside of any natural buffers. The dam height is less than six feet and holds less than fifteen (15) acre-ft.

Modeling, Design and Sizing calculations in accordance with the *RI SESC Handbook*, Section Six are found in __the Appendix of this A___ of this SESC Plan. The designs were also prepared to satisfy Section 3.3.7.13 of the Stormwater Manual and will control Temporary Increases in Stormwater Velocity, Volume, and Peak Flows.

The temporary sediment basins were designed to provide sedimentation controls to the site. Full compliance with the sediment basin sizing requirements is not feasible, as it would require over 1/3 of the site. This is not feasible as the site will be graded at a very shallow slope, 0.005 ft/ft, reducing the velocity of runoff and therefore the potential to carry sediment in the runoff. Furthermore, the sedimentation basins are designed to not discharge offsite, so runoff of a large volume even if not contained in the sedimentation basin, will pool and remain on-site, effectively meeting the spirit of the regulation.

A summary of the assumptions and calculations are provided below:

TEMPORARY SEDIMENT BASINS				
Construction Phase #	Exposed Area (acres)	Basin #	Sheet #	Detail found on Sheet#
1	11	1	ESC-1	D-4
2	10	2	ESC-1	D-4

3	10	3	ESC-1	D-4
Insert Text	Insert Text	Insert Text	Insert Text	Insert Text

Provide the following tables for each temporary sediment basin. Each basin shall be designed to contain sediment and runoff from the 10-year Type III distribution storm.

SEDIMENT BASIN #1 Pre-Development					
Pre-Construction Cover Type	Contributing Area (acres)	Soil Type	Curve Number	Tc (minutes)	10- Year Type III (cfs, at time t, acre feet)
Gravel	11	B	85	16	30.95
				Total Pre-Construction Volume (cuft):	**30.95**
During Construction					
Construction Cover Type	Contributing Area	Erosion Rates	Curve Number	Tc (minutes)	10-Year Type III (cfs, at time t, acre feet)
Granular Gravel	11	50	76	42.4	15.06
				Total Runoff Volume During Construction (cuft):	**15.06**
Basin #1					
Pre-Construction Peak Discharge (cfs)	Wet Storage Volume (cuft)	Sediment Storage Volume (cuft)	Residence Storage Volume (cuft)	Outlet Max Discharge Rate (cfs)	Emergency Spillway Discharge Capacity (cfs)
30.95	14807	43420	51440	6.55	15.06 cfs

SEDIMENT BASIN #2 Pre-Development					
Pre-Construction Cover Type	Contributing Area (acres)	Soil Type	Curve Number	Tc (minutes)	10- Year Type III (cfs, at time t, acre feet)
Gravel	10	B	85	11	32.11
				Total Pre-Construction Volume (cuft):	**32.11**
During Construction					
Construction Cover Type	Contributing Area	Erosion Rates	Curve Number	Tc (minutes)	10-Year Type III (cfs, at time t, acre feet)

Granular Gravel	10	50	76	42.4	13.69
Total Runoff Volume During Construction (cuft):					**13.69**
Basin #2					
Pre-Construction Peak Discharge (cfs)	Wet Storage Volume (cuft)	Sediment Storage Volume (cuft)	Residence Storage Volume (cuft)	Outlet Max Discharge Rate (cfs)	Emergency Spillway Discharge Capacity (cfs)
32.11	58089	170340	207496	6.55	13.69

SEDIMENT BASIN #3 Pre-Development					
Pre-Construction Cover Type	Contributing Area (acres)	Soil Type	Curve Number	Tc (minutes)	10- Year Type III (cfs, at time t, acre feet)
Gravel	10	B	85	11	32.11
Total Pre-Construction Volume (cuft):					**32.11**
During Construction					
Construction Cover Type	Contributing Area	Erosion Rates	Curve Number	Tc (minutes)	10-Year Type III (cfs, at time t, acre feet)
Granular Gravel	10	50	76	42.4	13.69
Total Runoff Volume During Construction (cuft):					**13.69**
Basin #3					
Pre-Construction Peak Discharge (cfs)	Wet Storage Volume (cuft)	Sediment Storage Volume (cuft)	Residence Storage Volume (cuft)	Outlet Max Discharge Rate (cfs)	Emergency Spillway Discharge Capacity (cfs)
32.11	25058	73480	86648	6.55	13.69

As noted above, the function and the need for these temporary sediment basins is not truly applicable to this project. While large areas of the site may be disturbed, the areas will be actively used and filled. Most importantly with respect to erosion and fill, the geotechnical design of the site requires that as materials are placed on the site, they are heavy compacted in place in shallow lifts as they are put down. Furthermore the function and need for the basins is reduced as the site is graded at such a shallow grade of 0.005 ft/ft.

The site will be raised evenly and continually as fill material is brought in and placed on site. Therefore the continual activity will leave very little “disturbed” area that would be vulnerable to erosion and sedimentation issues. These sedimentation basins may appear undersized based on the prescriptive manner from the guide book, however the reality of their implementation, based on previous experience, will show that there is more than sufficient capacity to control erosion and sedimentation that may occur on site.

All sediment basins will be functional and installed prior to disturbance in the contributing drainage area. Access for sediment removal is provided on the plans with cleanout depth specifications. The removed sediment will be utilized onsite or properly disposed of off-site.

The outlets for each basin described above will actually function as hydraulic connection between the basins, so that one may support the other. Given that the basins will prevent downstream and therefore offsite runoff, the overflow will occur by backing up and flooding the site, creating residual temporary storage to prevent overflow.

2.10 Properly Design Constructed Stormwater Conveyance Channels

Conveyances are required to be designed for inlets to temporary sediment basins. The construction site planner must use best professional judgment to determine if additional conveyance design is required for run-on control or in any other location where velocity control is required.

Are temporary stormwater conveyance practices required in order to properly manage runoff within the proposed construction project?

☒ Yes ☐ No

If Yes, describe the specific control measures that will be used at the site. Provide or attach design calculations associated with each proposed conveyance measure, demonstrating that each one is designed and sized to handle the peak flow from a 10-year, 24-hour, Type III design storm. Note where within the site plans each specified conveyance is depicted, including specifications and construction details.

The site will use crushed stone lined conveyance channels to transport runoff from disturbed areas to the temporary sedimentation basins. The channels will be underlain by a geotextile fabric.

The conveyance will be maintained as depicted on SESC Site Plans and in accordance with the *RI SESC Handbook* and if applicable.

If No, discuss rationale for not including conveyance measures in the SESC Plan.

Insert text

2.11 Erosion, Runoff, and Sediment Control Measure List

Complete the following table for each Phase of construction where Erosion, Runoff, and Sediment Control Measures are located. This table is to be used as part of the SESC Plan Inspection Report – please fill out accordingly.

It is expected that this table and corresponding Inspection Reports will be amended as needed throughout the construction project as control measures are added or modified.

Phase No. #1		
Location/Station	**Control Measure Description/Reference**	**Maintenance Requirement**
Northern Perimeter of Work Area	Straw wattles and silt fence combination	Inspection should be made after each storm event or 1/week and repair or replacement should be made promptly as needed.

		Cleanout of accumulated sediment behind the wattle if sediment accumulates to at least ½ the distance between the top of wattle and ground surface.
Waterfront Drive Construction Entrance	Stone Stabilized Pad.	The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto pave surfaces. Provide periodic top dressing with additional stone or additional length as conditions demand. Roads adjacent to entrance shall be clean at the end of each day. If maintenance alone is not enough to prevent excessive track out, increase length of entrance, modify construction access road surface, or install washrack or mudrack.
Southern end of Phase 1	Conveyance channel	Inspection should be made after each storm event or 1/week and repair or replacement should be made promptly as needed. Cleanout of accumulated sediment behind the wattle if sediment accumulates to at least ½ the distance between the top of wattle and ground surface.
Eastern end of Phase 1	Temporary Sedimentation Basin	Inspection should be made after each storm event or 1/week and repair or replacement should be made promptly as needed. Cleanout of accumulated sediment behind the wattle if sediment accumulates to at least ½ the distance between the top of wattle and ground surface.

Phase No. #2		
Location/Station	**Control Measure Description/Reference**	**Maintenance Requirement**
Southern Perimeter of Work Area	Straw wattles and silt fence combination	Inspection should be made after each storm event or 1/week and repair or replacement should be made promptly as needed. Cleanout of accumulated sediment behind the wattle if sediment accumulates to at least ½ the distance between the top of wattle and ground surface.

Southern end of Phase 2	Conveyance channel	Inspection should be made after each storm event or 1/week and repair or replacement should be made promptly as needed. Cleanout of accumulated sediment behind the wattle if sediment accumulates to at least ½ the distance between the top of wattle and ground surface.
Eastern end of Phase 2	Temporary Sedimentation Basin	Inspection should be made after each storm event or 1/week and repair or replacement should be made promptly as needed. Cleanout of accumulated sediment behind the wattle if sediment accumulates to at least ½ the distance between the top of wattle and ground surface.

Phase No. #3		
Location/Station	**Control Measure Description/Reference**	**Maintenance Requirement**
Eastern Perimeter of Work Area	Straw wattles and silt fence combination	Inspection should be made after each storm event or 1/week and repair or replacement should be made promptly as needed. Cleanout of accumulated sediment behind the wattle if sediment accumulates to at least ½ the distance between the top of wattle and ground surface.
Northern end of Phase 1	Conveyance channel	Inspection should be made after each storm event or 1/week and repair or replacement should be made promptly as needed. Cleanout of accumulated sediment behind the wattle if sediment accumulates to at least ½ the distance between the top of wattle and ground surface.
Eastern end of Phase 3	Temporary Sedimentation Basin	Inspection should be made after each storm event or 1/week and repair or replacement should be made promptly as needed. Cleanout of accumulated sediment behind the wattle if sediment accumulates to at least ½ the distance between the top of wattle and ground surface.

SECTION 3: CONSTRUCTION ACTIVITY POLLUTION PREVENTION

Per RI Stormwater Design and Installation Standards Manual 3.3.7.14:

The purpose of construction activity pollution prevention is to prevent day to day construction activities from causing pollution.

This section describes the key pollution prevention measures that must be implemented to avoid and reduce the discharge of pollutants in stormwater. Example control measures include the proper management of waste, material handling and storage, and equipment/vehicle fueling/washing/maintenance operations.

Where applicable, include *RI SESC Handbook* or the *RI Department of Transportation Standard Specifications for Road and Bridge Construction* (as amended) specifications.

3.1 Existing Data of Known Discharges from Site

Per RIPDES Construction General Permit – Part III.I:

List and provide existing data (if available) on the quality of any known discharges from the site. Examples include discharges from existing stormwater collection systems, discharges from industrial areas of the site, etc.

Are there known discharges from the project area?

☐ Yes ☒ No

Describe how this determination was made:

- It is an un-used unimproved site.

If yes, list discharges and locations:

- INSERT TEXT HERE

Is there existing data on the quality of the known discharges?

☐ Yes ☒ No

If yes, provide data:

- INSERT TEXT HERE

3.2 Prohibited Discharges

Per RI SESC Handbook – Part D

The following discharges are prohibited at the construction site:

- Contaminated groundwater, unless specifically authorized by the DEM. These types of discharges may only be authorized under a separate DEM RIPDES permit.
- Wastewater from washout of concrete, unless the discharge is contained and managed by appropriate control measures.
- Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials.
- Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance. Proper storage and spill prevention practices must be utilized at all construction sites.
- Soaps or solvents used in vehicle and equipment washing.

- Toxic or hazardous substances from a spill or other release.

All types of waste generated at the site shall be disposed of in a manner consistent with State Law and/or regulations.

Will any of the above listed prohibited discharges be generated at the site?

☒ Yes ☐ No

If Yes, provide a list of those that will be generated at the site and provide a discussion of how they will be managed, including references to the specific SESC Site Plans where such control measures are specified.

Pollutant-Generating Activity	**Pollutants or Pollutant Constituents** (that could be discharged if exposed to stormwater)	**Location on Site** (or reference SWPPP site map where this is shown)
Fuel	Diesel/Gasoline	Approved Storage container no closer than 100' from wetlands
Equipment Maintenance	Hydraulic Oil, Grease, Oil	Approved Storage container no closer than 100' from wetlands
Site grading and excavation	Fugitive Dust	In areas of disturbance
Solid Waste	Solid waste	Use appropriate containers placed on level impervious surface
Concrete/Mortar cleaning	Cement, mortar	For foundations and building construction

Insert text and references to SESC Site Plan Sheet Numbers here.

If No, discuss rationale.

Insert text

3.3 Proper Waste Disposal

Per RI SESC Handbook – Part D

Building materials and other construction site wastes must be properly managed and disposed of in a manner consistent with State Law and/or regulations.

- A waste collection area shall be designated on the site that does not receive a substantial amount of runoff from upland areas and does not drain directly to a waterbody or storm drain.
- All waste containers shall be covered to avoid contact with wind and precipitation.
- Waste collection shall be scheduled frequently enough to prevent containers from overfilling.
- All construction site wastes shall be collected, removed, and disposed of in accordance with applicable regulatory requirements and only at authorized disposal sites.
- Equipment and containers shall be checked for leaks, corrosion, support or foundation failure, or other signs of deterioration. Those that are found to be defective shall be immediately repaired or replaced.

Is waste disposal a significant element of the proposed project?

☐ Yes ☒ No

If Yes, identify potential building materials and other construction wastes and document how these wastes will be properly managed and disposed of at the construction site (i.e., trash disposal, sanitary wastes, recycling, and proper material handling). Include references to the specific SESC Site Plans where such control measures are specified.

- Insert text and references to SESC Site Plan Sheet Numbers here.

If No, discuss rationale.

The project is mostly site work and there are limited building materials. Building materials to be used includes steel for the bulkhead, steel reinforcing bars, concrete for the relieving platform and electrical trenches, and then piping and conduit. The rest of the building materials will be fill with natural earthen materials. There are no significant hazardous building products that will be used as part of this project.

3.4 Spill Prevention and Control

Per RI SESC Handbook – Part D

All chemicals and/or hazardous waste material must be stored properly and legally in covered areas, with containment systems constructed in or around the storage areas. Areas must be designated for materials delivery and storage. All areas where potential spills can occur and their accompanying drainage points must be described. The owner and operator must establish spill prevention and control measures to reduce the chance of spills, stop the source of spills, contain and clean-up spills, and dispose of materials contaminated by spills. The operator must establish and make highly visible location(s) for the storage of spill prevention and control equipment and provide training for personnel responsible for spill prevention and control on the construction site.

Are spill prevention and control measures required for this particular project?

☒ Yes ☐ No

If Yes, describe all areas where potential spills can occur, and their accompanying drainage points, and describe the spill prevention and control plan to reduce the chance of spills, stop the source of spills, contain and clean up spills, dispose of materials contaminated by spills, and train personnel responsible for spill prevention and control. Provide the method of establishing and making highly visible the location(s) for the storage of spill prevention equipment. Refer to the RI SESC Handbook, Spill Prevention and Control Plan for guidance.

Oil containing materials are likely to be present in small quantities on site. When materials are transported on site using a forklift or heavy equipment, either a drum attachment is used or containers are strapped to pallets on the forklift to prevent the containers from falling during movement. If a barrel dolly is used, the operator will ensure that the barrel is compatible with the dolly and that the barrel is properly secured to the dolly. The following outlines delivery and transport procedures for small containers:

1. Containers are checked for damaged areas or signs of corrosion. If any is detected, the container contents are transferred to an appropriate container and labeled prior to moving.
2. Contractor's personnel ensure that containers are closed prior to moving.
3. Containers are secured on forks or pallets when using a forklift or heavy machinery or properly secured when using a dolly to prevent containers from falling during movement.

Discovery of a Release

The person discovering a release of material from a container, tank, or operating equipment should initiate certain actions immediately. These actions include the following:

First ensuring that no danger to human health exists, attempt to stop the release at its source. Simple procedures (turning valves, plugging leaks, etc.) may be attempted by the discoverer if there is no health or safety hazard and there is a reasonable certainty of the origin of the leak. All efforts to control leaks must be under the supervision of an appointed supervisor.

Extinguish any sources of ignition. Until the material is identified as nonflammable and noncombustible, all potential sources of ignition in the area should be removed. Vehicles should be turned off. If the ignition source is stationary, and cannot be extinguished, attempt to direct the spilled material away from the ignition source. Avoid sparks and movement creating static electricity.

Initiate spill notification and reporting procedures. Report the incident immediately to the Site Supervisor. If there is an immediate threat to human life (e.g., a fire in progress or fumes overcoming workers), an immediate alarm should be sounded to evacuate the building and the local Fire Department should be called. Request the assistance of a hazardous materials response contractor if an uncontrollable spill has occurred and/or if the spill has migrated beyond the site boundaries.

Containment of a Release

If a release should occur, all regulated oil at the facility can be safely contained within secondary containment structures or otherwise diverted to be retained onsite without impact to surface water if a release occurs. However, if material is released outside the containment areas, it is critical that the material is accurately identified and appropriate control measures are taken in the safest possible manner. Immediate containment measures can include the following:

Attempt to stop the release at the source. If the source of the release has not been found; if special protective equipment is necessary to approach the release area; or if assistance is required to stop the release, the local Fire Department and an emergency spill contractor should be called to halt the discharge at its source. Contractor personnel should be available to guide the Fire Department's efforts.

Contain the material released into the environment. Following proper safety procedures, the spill should be contained by absorbent materials and dikes using shovels and brooms.

Continue the notification procedures. Obtain assistance from a hazardous material contractor if necessary. The hazardous material contractor will be called for assistance if the spill exceeds 10 gallons, or if the Site Supervisor determines that outside help is necessary or desirable.

Spill Cleanup

Cleanup of spills of more than 10 gallons of oil will be conducted by a hazardous material contractor. The MCP requires responsible parties to retain a Licensed Site Professional (LSP) to direct cleanup activities for all spills which are reportable under the MCP. The LSP should be contacted as soon as possible after the spill occurs so that they can direct and observe cleanup activities and ensure compliance with the applicable regulations.

Cleanup of spills less than 10 gallons of oil may be conducted by the Contractor's personnel using the following procedures, or may be cleaned up by an outside contractor, as determined by the Site Supervisor. Appropriate personal protective equipment and cleanup procedures can be found on material safety data sheets. Care must be taken when cleaning up spills to minimize the quantity waste generated, which is regulated as a hazardous waste by MassDEP.

Keep material separated from water if possible. An important facet of an effective response procedure during an oil or petroleum product release incident is to keep the material separated from water to minimize migration and the resulting potential increase in human and environmental exposure. Every effort should be made to prevent spills and emphasize substance containment at the source rather than resort to separation of the material from expanded portions of the environment or downstream waters.

Recover or cleanup the material spilled. As much material as possible should be recovered and reused where appropriate. Material that cannot be reused must be declared waste. Liquids absorbed by solid materials shall be shoveled into an open top, 55-gallon drum. When a drum is filled after a cleanup, the drum lid shall be secured and the drum shall be appropriately labeled identifying the substance(s) (i.e., Waste Oil), the hazard of the material (i.e. ignitable), the date of the spill/cleanup, and the location of the spill.

Do not mix non-compatible materials. Note that combining non-compatible materials can cause potentially dangerous chemical and/or physical reactions or may severely limit disposal options. Compatibility information can be found on material safety data sheets.

Cleanup of the spill area. Surfaces that are contaminated by the release shall be cleaned up by using an appropriate cleaner or water. Cleanup water must be minimized, contained, and properly disposed. Occasionally, porous materials (such as wood, soil, or oil-dry) may be contaminated; such materials will require special handling for disposal.

Decontaminate tools and equipment used in cleanup. Even if dedicated to cleanup efforts, tools and equipment that have been used must be decontaminated before replacing them in the spill control kit. Tools which can't be decontaminated should be disposed of properly and replaced.

Post Cleanup Procedures

Notification and reports to outside agencies. The Site Supervisor shall determine if a reportable spill has occurred. A spill over 10 gallons of oil or other appropriate RQ in Massachusetts is a reportable spill under the MCP (See Section 6.2 for further information). Notifications to Fire Departments, MassDEP, the National Response Center, the EPA Regional Office, and internal contacts shall be executed if necessary.

Arrange for proper disposal of any waste material. The waste materials from the cleanup must be characterized. Representative sampling and analysis may be necessary to make this determination. In any case, the Site Supervisor shall assure that the waste is transported and disposed of in compliance with applicable laws and regulations. When manifests are needed, the Site Supervisor shall see that they are prepared and, when appropriate, returned in the allotted time by the disposal site.

Review the Contingency and Spill Plans. Management and operating personnel shall review spill response efforts, notification procedures and cleanup equipment usage to evaluate their adequacy during the episode. Where deficiencies are found, the Plan shall be revised and amended.

-

If No, discuss rationale.

Insert text

3.5 Control of Allowable Non-Stormwater Discharges

Per RIPDES Construction General Permit – Part III.J.2.e:

Discharges not comprised of stormwater are allowed under the RIPDES Construction General Permit but are limited to the following: discharges which result from the washdown of vehicles where no detergents are used; external building wash-down where no detergents are used; the use of water to control dust; firefighting activities; fire hydrant flushing; natural springs; uncontaminated groundwater; lawn watering; potable water sources including waterline flushing; irrigation drainage; pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled materials have been removed) and where detergents are not used; and foundation or footing drains where flows are not contaminated with process materials such as solvents, or contaminated by contact with soils where spills or leaks of toxic or hazardous materials has occurred. If any of these discharges may reasonably be expected to be present and to be mixed with stormwater discharges, they must be specifically listed here.

Are there allowable non-Stormwater discharges present on or near the project area?

☒ Yes ☐ No

If yes, list the sources of allowable non-Stormwater discharge(s) associated with construction activity. For each of the allowable non-stormwater discharge(s) identified, describe the controls and measures that will be implemented at those locations to minimize pollutant contamination of these discharges and to separate them from temporary discharges of stormwater during construction.

List of allowable non-stormwater discharge(s) and the associated control measure(s):

- Vehicle and Equipment Washing to be done on paved areas only, draining to sump area lined with poly sheeting
- The contractor will wet the soil surface as needed to suppress the creation of dust. The application may be done with a water truck or done with fire hoses at the site.
-

If any existing or proposed discharges consist of contaminated groundwater, such discharges are not authorized under the RIPDES Construction General Permit. These discharges must be permitted separately by seeking coverage to treat and discharge under a separate RIPDES individual permit or under the RIPDES Remediation General Permit. Contact the RIDEM Office of Water Resources RIPDES Permitting Program at 401-222-4700 for application requirements and additional information.

Are there any known or proposed contaminated discharges, including anticipated contaminated dewatering operations, planned on or near the project area?

☐ Yes ☒ No

If yes, list the discharge types and the RIPDES individual permit number(s) or RIPDES Remediation General Permit Authorization number(s) associated with these discharges.

- Discharge Type and RIPDES Individual Permit number : INSERT TEXT HERE
- Discharge Type and RIPDES Remediation General Permit Authorization number: INSERT TEXT HERE

3.6 Control Dewatering Practices

Per RI SESC Handbook – Part D

Site owners and operators are prohibited from discharging groundwater or accumulated stormwater that is removed from excavations, trenches, foundations, vaults, or other similar points of accumulation, unless such waters are first effectively managed by appropriate control measures.

Examples of appropriate control measures include, but are not limited to, temporary sediment basins or sediment traps, sediment socks, dewatering tanks and bags, or filtration systems (e.g. bag or sand filters) that are designed to remove sediment. Uncontaminated, non-turbid dewatering water can be discharged without being routed to a control.

At a minimum the following discharge requirements must be met for dewatering activities:

1. Do not discharge visible floating solids or foam.
2. To the extent feasible, utilize vegetated, upland areas of the site to infiltrate dewatering water before discharge. In no case will surface waters be considered part of the treatment area.
3. At all points where dewatering water is discharged, utilize velocity dissipation devices.
4. With filter backwash water, either haul it away for disposal or return it to the beginning of the treatment process.
5. Replace and clean the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.
6. Dewatering practices must involve the implementation of appropriate control measures as applicable (i.e. containment areas for dewatering earth materials, portable sediment tanks and bags, pumping settling basins, and pump intake protection.)

Is it at all likely that the site operator will need to implement construction dewatering in order to complete the proposed project?

☐ Yes ☒ No

If Yes, describe all areas where construction dewatering may be required and the proposed control measures that will be used to treat and manage dewatering fluids including all proposed discharge points. Proposed control measures must comply with the RI SESC Handbook. Include references to all relevant SESC Site Plans.

- Insert text and references to SESC Site Plan Sheet Numbers here.

If No, discuss rationale.

If needed, though not anticipated, water from excavations shall be pumped through a sedimentation filters such as a frac tank or geobag to reduce suspended solids, prior to discharge.

The majority of the site work will involve raising the grade on the site and the proposed utilities will mostly be installed in the raised grade features, therefore groundwater dewatering is not anticipated.

3.7 Establish Proper Building Material Staging Areas

Per RI SESC Handbook – Part D

All construction materials that have the potential to contaminate stormwater must be stored properly and legally in covered areas, with containment systems constructed in or around the storage areas. Areas must be designated for materials delivery and storage. Designated areas shall be approved by the site owner/engineer. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in the discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

Describe construction materials expected to be stored on-site and procedures for storage of materials to minimize exposure of the materials to stormwater. Include references to all relevant SESC Site Plans.

All construction material storage shall be done in the designated location shown on Sheet ESC-1 . All building materials shall covered or inside and protected from the elements

3.8 Minimize Dust

Per RI SESC Handbook – Part D

Dust control procedures and practices shall be used to suppress dust on a construction site during the construction process, as applicable. Precipitation, temperature, humidity, wind velocity and direction will determine amount and frequency of applications. However, the best method of controlling dust is to prevent dust production. This can best be accomplished by limiting the amount of bare soil exposed at one time. Dust Control measures outlined in the *RI SESC Handbook* shall be followed. Other dust control methods include watering, chemical application, surface roughening, wind barriers, walls, and covers.

Describe dust control practices that will be used to suppress dust and limit its generation (i.e. applying water, limiting the amount of bare soil exposed at one time etc.).

- The contractor will wet the soil surface as needed to suppress the creation of dust. The application may be done with a water truck or done with fire hoses at the site.

3.9 Designate Washout Areas

Per RI SESC Handbook – Part D

At no time shall any material (concrete, paint, chemicals) be washed into storm drains, open ditches, streets, streams, wetlands, or any environmentally sensitive area. The site operator must ensure that construction waste is properly disposed of, to avoid exposure to precipitation, at the end of each working day.

Will washout areas be required for the proposed project?

☒ Yes ☐ No

If Yes, describe location(s) and control measures that will be used to minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, washout areas for concrete mixers, paint, stucco, etc. The recommended location(s) of washout areas should be identified, or at a minimum the locations where these washout areas should not be sited should be called out.

The concrete washout shall be performed in the designated area, as shown on sheet ESC-1 and shall not be allowed to discharge off-site or into any stormwater receptors.

If No, discuss rationale.

Insert text

3.10 Establish Proper Equipment/Vehicle Fueling and Maintenance Practices

Per RI SESC Handbook – Part D

Vehicle fueling shall not take place within regulated wetlands or buffer zone areas, or within 50-feet of the storm drain system. Designated areas shall be depicted on the SESC Site Plans, or shall be approved by the site owner.

Vehicle maintenance and washing shall occur off-site, or in designated areas depicted on the SESC Site Plans or approved of by the site owner. Maintenance or washing areas shall not be within regulated wetlands or buffer zone areas, or within 50-feet of the storm drain system. Maintenance areas shall be clearly designated, and barriers shall be used around the perimeter of the maintenance area to prevent stormwater contamination.

Construction vehicles shall be inspected frequently for leaks. Repairs shall take place immediately. Disposal of all used oil, antifreeze, solvents and other automotive-related chemicals shall be according to applicable regulations; at no time shall any material be washed down the storm drain or in to any environmentally sensitive area.

Describe equipment/vehicle fueling and maintenance practices that will be implemented to prevent pollutants from mixing with stormwater (e.g., secondary containment, drip pans, spill kits, etc.) Provide recommended location(s) of fueling/maintenance areas, or, at minimum, locations where fueling/maintenance should be avoided.

Vehicle and Equipment Washing to be done in the designated areas only, draining to sump area lined with poly sheeting, as shown on the ESC plans

3.11 Chemical Treatment for Erosion and Sediment Control

Per RI SESC Handbook – Appendix J

Chemical stabilizers, polymers, and flocculants are readily available on the market and can be easily applied to construction sites for the purposes of enhancing the control of erosion, runoff, and sedimentation. The following guidelines should be adhered to for construction sites that plan to use treatment chemicals as part of their overall erosion, runoff, and sedimentation control strategy.

The U.S. Environmental Protection Agency has conducted research into the relative toxicity of chemicals commonly used for the treatment of construction stormwater discharges. The research conducted by the EPA focused on different formulations of chitosan, a cationic compound, and both cationic and anionic polyacrylamide (PAM). In summary, the studies found significant toxicity resulting from the use of chitosan and cationic PAM in laboratory conditions, and significantly less toxicity associated with using anionic PAM. EPA's research has led to the conclusion that the use of treatment chemicals for erosion, runoff, and sedimentation control requires proper operator training and appropriate usage to avoid risk to aquatic species. In the case of cationic treatment chemicals additional safeguards may be necessary.

Application/Installation Minimum Requirements

If a site operator plans to use polymers, flocculants, or other treatment chemicals during construction the SESC plan must address the following:

1. Treatment chemicals shall not be applied directly to or within 100 feet of any surface water body, wetland, or storm drain inlet.

2. Use conventional erosion, runoff, and sedimentation controls prior to and after the application of treatment chemicals. Use conventional erosion, runoff, and sedimentation controls prior to chemical addition to ensure effective treatment. Chemicals may only be applied where treated stormwater is directed to a sediment control (e.g. temporary sediment basin, temporary sediment trap or sediment barrier) prior to discharge.

3. Sites shall be stabilized as soon as possible using conventional measures to minimize the need to use chemical treatment.

4. Select appropriate treatment chemicals. Chemicals must be selected that are appropriately suited to the types of soils likely to be exposed during construction and to the expected turbidity, pH, and flow rate of stormwater flowing into the chemical treatment system or treatment area. **Soil testing is essential. Using the wrong form of chemical treatment will result in some form of performance failure and unnecessary environmental risk.**

5. Minimize discharge risk from stored chemicals. Store all treatment chemicals in leak-proof containers that are kept under storm-resistant cover and surrounded by secondary containment structures (e.g., spill berms, decks, spill containment pallets), or provide equivalent measures, designed and maintained to minimize the potential discharge of treatment chemicals in stormwater or by any other means (e.g., storing chemicals in covered areas or having a spill kit available on site).

6. Use chemicals in accordance with good engineering practices and specifications of the chemical provider/supplier. You must also use treatment chemicals and chemical treatment systems in accordance with good engineering practices, and with dosing specifications and sediment removal design specifications provided by the supplier of the applicable chemicals, or document specific departures from these practices or specifications and how they reflect good engineering practice.

Will chemical stabilizers, polymers, flocculants or other treatment chemicals be utilized on the proposed construction project?

☐ Yes ☒ No

If Yes, create a Treatment Chemical Application Plan and describe how the owner or SESC Plan preparer/designer intends to educate the designated operator prior to the application of such treatment chemicals.

Treatment Chemical Application Plan Required Elements

Insert information listed below:

1. *List Manufacturer's name and product name for each treatment chemical proposed for use at the site.*
2. *Attach a copy of applicable Material Safety Data Sheets (MSDSs) or Safety Data Sheets (SDS) for each proposed treatment chemical.*
3. *Provide the results of third party toxicity testing of the materials proposed for use at the site.*
4. *Provide a certification from the site owner and operator that all proposed treatment chemicals are the same as those used in the toxicity tests and will not be altered in any way.*
5. *Provide an explanation as to why conventional erosion, runoff, and sediment control measures, alone or in combination, will not be sufficient to prevent turbidity impacts and sedimentation in downstream receptors.*
6. *Provide a plan prepared in consultation with the chemical treatment manufacturer(s) or authorized manufacturer's representative which includes the following:*
    a. *Identification of the areas of the site where treatment chemicals will be applied and the name, location, and distance to all downstream receptors that have the potential to be impacted from the discharges from the treatment areas.*
    b. *List the expected start and end dates or specific phases of the project during which each treatment chemical will be applied.*
    c. *Provide test results for representative soils from the site, and any recommendations from the manufacturer based on the soil tests, indicating the type of treatment chemical and the recommended application rate.*
    d. *List the frequency, method, and rates of application which are designed to ensure that treatment chemical concentrations will not exceed 50% of the IC25 or NOEC toxicity values, whichever is less, for each treatment chemical proposed.*
    e. *Provide the frequency of inspection and maintenance of the treatment chemical application system.*
    f. *List the method proposed for the collection, removal, and disposal or stabilization of settled particles to prevent re-suspension.*
    g. *Describe the training that will be provided to all persons who will handle and use treatment chemicals at the construction site. Training must include appropriate, product-specific training and proper dosing requirements for each product.*

Treatment Chemical SESC Plan Weekly Inspection Report Documentation Requirements

1. Document the type and quantity of treatment chemicals applied.

2. List the date, duration of discharge, and estimated discharge rate.

3. Provide an estimate of the volume of water treated.

4. Provide an estimate of the concentration of treatment chemicals in the discharge, with supporting calculations.

3.12 Construction Activity Pollution Prevention Control Measure List

Complete the following table for each Phase of construction where Pollution Prevention Control Measures will be implemented. This table is to be used as part of the SESC Plan Inspection Report – please fill out accordingly.

It is expected that this table will be amended as needed throughout the construction project.

All Phases		
Location/Station	**Control Measure Description/Reference**	**Maintenance Requirement**
Staging Area	Controlled Fueling and Maintenance Activities	Using noted control measures and ensuring complete spill kits and absorbent pads are available.
Concrete Relieving Platform	Prefabricated Concrete Washout Container with Ramp. Used to contain concrete washout during concrete pouring operations.	Verify that concrete washout container(s) are in place prior to pouring concrete. Inspect daily to verify continued proper performance. Check remaining capacity during pouring operations. Check for leaks periodically.
Entire Site	Dust control watering	Have a water truck/trailer on site and water available.
INSERT TEXT	INSERT TEXT	INSERT TEXT

Insert a new table for each additional construction phase.

SECTION 4: CONTROL MEASURE INSTALLATION, INSPECTION, and MAINTENANCE

4.1 Installation

Per RI SESC Handbook – Part D:

Complete the installation of temporary erosion, runoff, sediment, and pollution prevention control measures by the time each phase of earth-disturbance has begun. All stormwater control measures must be installed in accordance with good judgment, including applicable design and manufacturer specifications. Installation techniques and maintenance requirements may be found in manufacturer specifications and/or the *RI SESC Handbook*.

Include references to SESC Site Plans where installation requirements are located.

All erosion control measures shall be installed as noted on the ESC plans and the details sheets D-2 and D-3.

4.2 Monitoring Weather Conditions

Per RI SESC Handbook – Part D:

Anticipating Weather Events - Care will be taken to the best of the operator's ability to avoid disturbing large areas prior to anticipated precipitation events. Weather forecasts must be routinely checked, and in the case of an expected precipitation event of over 0.25-inches over a 24-hour period, it is highly recommended that all control measures should be evaluated and maintained as necessary, prior to the weather event. In the case of an extreme weather forecast (greater than one-inch of rain over a 24-hour period), additional erosion/sediment controls may need to be installed.

Storm Event Monitoring For Inspections - At a minimum, storm events must be monitored and tracked in order to determine when post-storm event inspections must be conducted. Inspections must be conducted

and documented at least once every seven (7) calendar days and within twenty-four (24) hours after any storm event, which generates at least 0.25 inches of rainfall per twenty-four (24) hour period and/or after a significant amount of runoff or snowmelt.

In order for an operator to successfully satisfy this requirement list the weather gauge station that will be utilized to monitor weather conditions on the construction site. See www.wunderground.com or www.weather.gov for available stations.

The weather gauge station and website that will be utilized to monitor weather conditions on the construction site is as follows:

Weather monitoring shall be done at the National Weather Services station at TF Green Airport:
Providence, Theodore Francis Green State Airport (KPVD)
Lat: 41.72° N **Lon:** 71.43° W **Elev:** 49 ft.
https://www.wunderground.com/precipitation/us/ri/t-f-green-airport/02886

4.3 Inspections

Per RI SESC Handbook – Part D:

Minimum Frequency - Each of the following areas must be inspected by or under the supervision of the owner and operator at least once every seven (7) calendar days and within twenty-four (24) hours after any storm event, which generates at least 0.25 inches of rainfall per twenty-four (24) hour period and/or after a significant amount of runoff or snowmelt:

a. All areas that have been cleared, graded, or excavated and where permanent stabilization has not been achieved;

b. All stormwater erosion, runoff, and sediment control measures (including pollution prevention control measures) installed at the site;

c. Construction material, unstabilized soil stockpiles, waste, borrow, or equipment storage, and maintenance areas that are covered by this permit and are exposed to precipitation;

d. All areas where stormwater typically flows within the site, including temporary drainage ways designed to divert, convey, and/or treat stormwater;

e. All points of discharge from the site;

f. All locations where temporary soil stabilization measures have been implemented;

g. All locations where vehicles enter or exit the site.

Reductions in Inspection Frequency - If earth disturbing activities are suspended due to frozen conditions, inspections may be reduced to a frequency of once per month. The owner and operator must document the beginning and ending dates of these periods in an inspection report.

Qualified Personnel – The site owner and operator are responsible for designating personnel to conduct inspections and for ensuring that the personnel who are responsible for conducting the inspections are "qualified" to do so. A "qualified person" is a person knowledgeable in the principles and practices of erosion, runoff, sediment, and pollution prevention controls, who possesses the skills to assess conditions at the construction site that could impact stormwater quality, and the skills to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of the permit.

Recordkeeping Requirements - All records of inspections, including records of maintenance and corrective actions must be maintained with the SESC Plan. Inspection records must include the date and time of the inspection, and the inspector's name, signature, and contact information.

General Notes

- A separate inspection report will be prepared for each inspection.
- The Inspection Reference Number shall be a combination of the RIPDES Construction General Permit No - consecutively numbered inspections. ex/ Inspection reference number for the **4**th inspection of a project would be: RIR10####-**4**
- Each report will be signed and dated by the Inspector and must be kept onsite.
- Each report will be signed and dated by the Site Operator.
- The corrective action log contained in each inspection report must be completed, signed, and dated by the site operator once all necessary repairs have been completed.
- It is the responsibility of the site operator to maintain a copy of the SESC Plan, copies of all completed inspection reports, and amendments as part of the SESC Plan documentation at the site during construction.

Failure to make and provide documentation of inspections and corrective actions under this part constitutes a violation of your permit and enforcement actions under 46-12 of R.I. General Laws may result.

4.4 Maintenance

Per RI SESC Handbook – Part D:

Maintenance procedures for erosion and sedimentation controls and stormwater management structures/facilities are described on the SESC Site Plans and in the *RI SESC Handbook*.

Site owners and operators must ensure that all erosion, runoff, sediment, and pollution prevention controls remain in effective operating condition and are protected from activities that would reduce their effectiveness. Erosion, runoff, sedimentation, and pollution prevention control measures must be maintained throughout the course of the project.

Note: It is recommended that the site operator designates a full-time, on-site contact person responsible for working with the site owner to resolve SESC Plan-related issues.

4.5 Corrective Actions

Per RI SESC Handbook – Part D:

If, in the opinion of the designated site inspector, corrective action is required, the inspector shall note it on the inspection report and shall inform the site operator that corrective action is necessary. The site operator must make all necessary repairs whenever maintenance of any of the control measures instituted at the site is required.

In accordance with the *RI SESC Handbook*, the site operator shall initiate work to fix the problem immediately after its discovery, and complete such work by the close of the next work day, if the problem

does not require significant repair or replacement, or if the problem can be corrected through routine maintenance.

When installation of a new control or a significant repair is needed, site owners and operators must ensure that the new or modified control measure is installed and made operational by no later than seven (7) calendar days from the time of discovery where feasible. If it is infeasible to complete the installation or repair within seven (7) calendar days, the reasons why it is infeasible must be documented in the SESC Plan along with the schedule for installing the control measures and making it operational as soon as practicable after the 7-day timeframe. Such documentation of these maintenance procedures and timeframes should be described in the inspection report in which the issue was first documented. If these actions result in changes to any of the control measures outlined in the SESC Plan, site owners and operators must also modify the SESC Plan accordingly within seven (7) calendar days of completing this work.

SECTION 5: AMENDMENTS

Per RIPDES Construction General Permit – Part III.F:

This SESC Plan is intended to be a working document. It is expected that amendments will be required throughout the active construction phase of the project. **Even if practices are installed on a site according to the approved plan, the site is only in compliance when erosion, runoff, and sedimentation are effectively controlled throughout the entire site for the entire duration of the project.**

The SESC Plan shall be amended within seven (7) days whenever there is a change in design, construction, operation, maintenance or other procedure which has a significant effect on the potential for the discharge of pollutants, or if the SESC Plan proves to be ineffective in achieving its objectives (i.e. the selected control measures are not effective in controlling erosion or sedimentation).

In addition, the SESC Plan shall be amended to identify any new operator that will implement a component of the SESC Plan.

All revisions must be recorded in the Record of Amendments Log Sheet, which is contained in Attachment G of this SESC Plan, and dated red-lined drawings and/or a detailed written description must be appended to the SESC Plan. Inspection Forms must be revised to reflect all amendments. Update the Revision Date and the Version # in the footer of the Report to reflect amendments made.

All SESC Plan Amendments, except minor non-technical revisions, must be approved by the site owner and operator. Any amendments to control measures that involve the practice of engineering must be reviewed, signed, and stamped by a Professional Engineer registered in the State of RI.

The amended SESC plan must be kept on file at the site while construction is ongoing and any modifications must be documented.

Attach a copy of the Amendment Log.

Reference RI Model SESC Plan ATTACHMENT G

SECTION 6: RECORDKEEPING

RIPDES Construction General Permit – Parts III.D, III.G, III.J.3.b.iii, & V.O

It is the site owner and site operator's responsibility to have the following documents available at the construction site and immediately available for RIDEM review upon request:

- A copy of the fully signed and dated SESC Plan, which includes:
  - A copy of the General Location Map
    INCLUDED AS ATTACHMENT A
  - A copy of all SESC Site Plans
    INCLUDED AS ATTACHMENT B
  - A copy of the RIPDES Construction General Permit *(To save paper and file space, do not include in DEM/CRMC submittal, for operator copy only)*
    INCLUDED AS ATTACHMENT C
  - A copy of any regulatory permits (RIDEM Freshwater Wetlands Permit, CRMC Assent, RIDEM Water Quality Certification, RIDEM Groundwater Discharge Permit, RIDEM RIPDES Construction General Permit authorization letter, etc.)
    INCLUDED AS ATTACHMENT D
  - The signed and certified NOI form or permit application form *(if required as part of the application, see RIPDES Construction General Permit for applicability)*
    INCLUDED AS ATTACHMENT E
  - Completed Inspection Reports w/Completed Corrective Action Logs
    INCLUDED AS ATTACHMENT F
  - SESC Plan Amendment Log
    INCLUDED AS ATTACHMENT G

SECTION 7: PARTY CERTIFICATIONS

RIPDES Construction General Permit – Part V.G

All parties working at the project site are required to comply with the Soil Erosion and Sediment Control Plan (SESC Plan including SESC Site Plans) for any work that is performed on-site. The site owner, site operator, contractors and sub-contractors are encouraged to advise all employees working on this project of the requirements of the SESC Plan. A copy of the SESC Plan is available for your review at the following location: Insert Onsite Location Here, or may be obtained by contacting the site owner or site operator.

The site owner and site operator and each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement.

I acknowledge that I have read and understand the terms and conditions of the Soil Erosion and Sediment Control (SESC) Plan for the above designated project and agree to follow the control measures described in the SESC Plan and SESC Site Plans.

Site Owner:

RI Waterfront Enterprises, LLC
Melissa Martin
1080 Main Street
Pawtucket, RI 02860
508-965-3342, melissa@riwaterfrontevents.com

_____
signature/date

Site Operator:

Insert Company or Organization Name
Insert Name & Title
Insert Address
Insert City, State, Zip Code
Insert Telephone Number, Insert Fax/Email

_____
signature/date

Designated Site Inspector:
Insert Company or Organization Name
Insert Name & Title
Insert Address
Insert City, State, Zip Code
Insert Telephone Number, Insert Fax/Email

_____
signature/date

SubContractor SESC Plan Contact:
Insert Company or Organization Name
Insert Name & Title
Insert Address
Insert City, State, Zip Code
Insert Telephone Number, Insert Fax/Email

_____
signature/date

Insert more contact/signature lines as necessary

LIST OF ATTACHMENTS

Attachment A - General Location Map

Attachment B - SESC Site Plans

Attachment C - Copy of RIPDES Construction General Permit and Authorization to Discharge *(To save paper and file space, do not include in DEM/CRMC submittal, for operator copy only)*

Attachment D - Copy of Other Regulatory Permits

Attachment E - Copy of RIPDES NOI *(if required as part of application, see RIPDES Construction General Permit for applicability)*

Attachment F - Inspection Reports w/ Corrective Action Log

Attachment G - SESC Plan Amendment Log

Temporary Sediment Trap

Wet Volume
Wv = 0.85*Aw*Dw

Wv= wet storage volume
Aw= surface area of the flooded area
Dw = maximum depth in feet

Dry Storage
Vd = (Aw+Ad)/2 x Dd

Vd = dry storage volume
Aw= surface area of the flooded area at the base
Ad = surface area of the flooded area at the top
Dd = depth in feet

Size requirement = 134 cy /acre

	Trib Area	Volume tot	Volume Wet
1	11	1474	737
2	10	1340	670
3	10	1340	670

Sed Trap Sizing

	Aw	Dw	Ad	Dd	Wv	Vd	
1	500		2	600	3	850	1650
2	450		2	550	3	765	1500
3	450		2	550	3	765	1500

Temporary Sediment Basin

V=((DA)(A)(DR)(TE)(2000 lbs/ton))/((y)(43560 sf/ac))

V= volume of sediment trapped in ac ft/yr
DA= Drainage Area in acres
A = Average annual erosion in tons per arcre per year
DR = Delivery Ratio
TE= Sediment Trap Efficiency
y= Estimated Sediment Density in lbs/cf

For RIWE Site

DA =	10	acres	
A=	50	ton/ac/yr	
DR =	35	%	Sandy
TE =	0.8		
y=	95	lbs/cf	sand -silt mixture

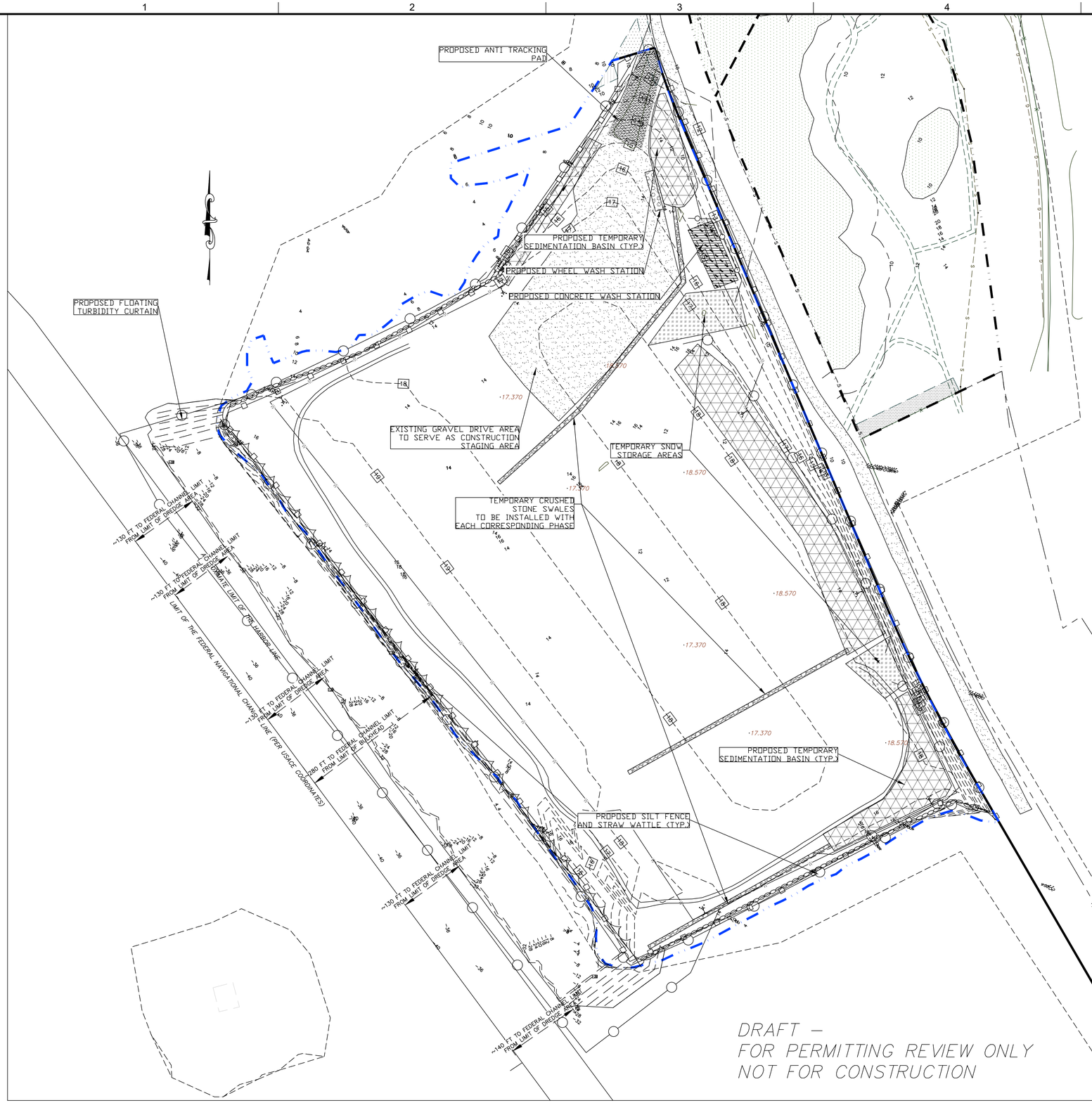
V 6.766227 ac ft/yr

Basin Sizing

		Area	Height	Volume	Volume -ac-ft
3	Basin SE	21662	4	86648	1.989164
1	Basin NE	22520	4	90080	2.067952
2	Basin E	51874	4	207496	4.763453

Sed Basin Sizing

	Aw	Dw	Ad	Dd	Wv	Vd
1	8710	2	13000	4	14807	43420
2	34170	2	51000	4	58089	170340
3	14740	2	22000	4	25058	73480



EROSION AND SEDIMENT CONTROL NOTES:

1. CONTRACTOR SHALL INSPECT CONTROL MEASURES AT THE END OF EACH WORKING DAY TO ENSURE MEASURES ARE FUNCTIONING PROPERLY .
2. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE AS DIRECTED BY THE ON SITE INSPECTOR OR THE CIVIL ENGINEER.
3. FAILURE TO INSTALL, OPERATE, OR MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE JOB UNTIL SUCH MEASURES ARE CORRECTED BACK TO THE APPROVED EROSION CONTROL PLANS.
4. THE SITE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTENANCE OF ALL EROSION CONTROL MEASURES INCLUDING REPLACING OR REPAIRING ANY DAMAGED DEVICES DUE TO ANY CONSTRUCTION ACTIVITY BY OTHERS.
5. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION ACTIVITY AND MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
6. SEDIMENT AND EROSION CONTROL MEASURES SHOULD BE CHECKED AFTER EACH RAIN EVENT. EACH DEVICE IS TO BE MAINTAINED OR REPLACED IF SEDIMENT ACCUMULATION HAS REACHED ONE HALF THE CAPACITY OF THE DEVICE. ADDITIONAL DEVICES MUST BE INSTALLED IF NEW CHANNELS HAVE DEVELOPED.
7. PRIOR TO COMMENCING LAND DISTURBANCE ACTIVITY, THE LIMITS OF LAND DISTURBANCE SHALL BE CLEARLY AND ACCURATELY DEMARCATED WITH STAKES, RIBBONS, OR OTHER APPROPRIATE MEANS. THE LOCATION AND EXTENT OF ALL AUTHORIZED LAND DISTURBANCE ACTIVITY SHALL BE DEMARCATED FOR THE DURATION OF THE
8. CONSTRUCTION ACTIVITY. NO LAND DISTURBANCE SHALL OCCUR OUTSIDE THE APPROVED LIMITS INDICATED ON THE APPROVED PLANS.
9. PRIOR TO ANY OTHER CONSTRUCTION, A CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AT EACH POINT OF ENTRY TO OR EXIT FROM THE SITE OR ONTO ANY PUBLIC ROADWAY.
10. THE FOLLOWING INITIAL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED PRIOR TO ANY OTHER CONSTRUCTION ACTIVITY.
    A. THE CONSTRUCTION ENTRANCE, CONSISTING OF A MINIMUM PAD SIZE OF 12 FT BY 50 FT WITH A MINIMUM OF 6"" THICK STONE. THE STONE SIZE SHOULD CONSIST OF COURSE AGGREGATE BETWEEN 1–1/2" & 3–1/2"" IN DIAMETER AND OVERLAID ON A GEOTEXTILE UNDERLINER. THE GEOTEXTILE UNDERLINER SHALL MEET THE REQUIREMENTS OF AASHTO M288–96, SECTION 7.3 SEPARATION REQUIREMENTS.
    B.IMMEDIATELY AFTER THE ESTABLISHMENT OF CONSTRUCTION ENTRANCE, ALL PERIMETER EROSION CONTROL AND STORM WATER MANAGEMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE INITIAL EROSION CONTROL PLAN.
    C. GEOTEXTILE SILT FENCE SHOULD BE INSTALLED AT THE PERIMETER OF THE DISTURBED AREA IF CONDITIONS WARRANT INSTALLATION OR SHOWN ON THE PLANS. THE GEOTEXTILE SILT FENCE SHOULD BE PLACED IN ACCORDANCE WITH THE CONNECTICUT EROSION & SEDIMENTATION CONTROL GUIDELINES. THE GEOTEXTILE SILT FENCE SHOULD BE KEPT ERECT AT ALL TIMES AND REPAIRED WHEN REQUESTED BY THE SITE INSPECTOR OR THE PROJECT DESIGN PROFESSIONAL OF RECORD. SILT SHOULD BE REMOVED WHEN ACCUMULATION REACHES ½ HEIGHT OF THE BARRIER. THE PERIMETER SILT FENCE SHOULD BE INSPECTED DAILY FOR ANY FAILURES. ANY FAILURES OF SAID FENCING SHOULD BE REPAIRED IMMEDIATELY.
    D. INLET SEDIMENT PROTECTION MEASURES SHALL BE INSTALLED ON ALL EXISTING STORM STRUCTURES AS SHOWN ON THE PLAN, SEE SEPARATE DETAILS FOR SPECIFICS ON TYPE OF INLET PROTECTION SPECIFIED.
11. AFTER INSTALLATION OF INITIAL EROSION CONTROL MEASURES THE SITE CONTRACTOR SHALL SCHEDULE AN INSPECTION BY THE PROJECT RESIDENT ENGINEER. NO OTHER CONSTRUCTION ACTIVITIES SHALL OCCUR UNTIL THE PROJECT RESIDENT ENGINEER APPROVES THE INSTALLATION OF SAID EROSION CONTROL MEASURES. IF UNFORESEEN CONDITIONS EXIST IN THE FIELD THAT WARRANT ADDITIONAL EROSION CONTROL MEASURES, THE CONTRACTOR MUST CONSTRUCT ANY ADDITIONAL EROSION CONTROL DEVICES DEEMED NECESSARY BY THE SITE INSPECTION.

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PARE CORPORATION

JOHN B. MCALLISTER, P.E.
16 HOXIE AVENUE
CHARLESTOWN, RI 02813

PROJECT
SOUTH QUAY
PROPOSED SITE
REDEVELOPMENT PROJECT

OWNER
RHODE ISLAND WATERFRONT ENTERPRISES, LLC
222 BERKELEY STREET
BOSTON, MA 02116

NO.	DATE	DESCRIPTION	BY
3	6/24/2021	ASSENT EDITS	JBM
2	3/11/2021	USACE CHANNEL LIMITS	JBM
1	11/2/2020	UPDATED BATHY	JBM

PROJECT NO.	
CADD FILE	
DESIGNED BY	JBM
DRAWN BY	
CHECKED BY	JAB
DATE	SEPTEMBER 2020
DRAWING SCALE	1" = 100'

GRAPHIC SCALE
0 50 100 150 200

SHEET TITLE
EROSION AND SEDIMENT CONTROL PLAN

DRAWING NO.
ESC-1

27 OF 33

PLOT SCALE 1/16"=1'-0"

C:\Users\ljohnn\OneDrive\Documents\JBM\LR\RIWF\Plans\RIWF_SOUTH QUAY BASE PLAN_MLLW_REV6.dwg

PHASE 1 AREA
DISTURBANCE ±11 ACRES

PHASE 2 AREA
DISTURBANCE ±10 ACRES

PHASE 3 AREA
DISTURBANCE ±10 ACRES

PHASE 1 TEMPORARY
SEDIMENTATION BASINS
4 FT BERM X 22,500 SF TOTAL
BETWEEN TWO BASINS

PHASE 2 TEMPORARY
SEDIMENTATION BASIN
4 FT BERM X 51,800 SF

PHASE 3 TEMPORARY
SEDIMENTATION BASIN
4 FT BERM X 21,600 SF

PROPOSED ANTI TRACKING PAD

PROPOSED TEMPORARY SEDIMENTATION BASIN (TYP.)

PROPOSED WHEEL WASH STATION

PROPOSED CONCRETE WASH STATION

PROPOSED FLOATING TURBIDITY CURTAIN

EXISTING GRAVEL DRIVE AREA TO SERVE AS CONSTRUCTION STAGING AREA

TEMPORARY SNOW STORAGE AREAS

TEMPORARY CRUSHED STONE SWALES TO BE INSTALLED WITH EACH CORRESPONDING PHASE

PROPOSED TEMPORARY SEDIMENTATION BASIN (TYP.)

PROPOSED SILT FENCE AND STRAW WATTLE (TYP.)

~130 FT TO FEDERAL CHANNEL LIMIT FROM LIMIT OF DREDGE AREA

~130 FT TO FEDERAL CHANNEL LIMIT FROM LIMIT OF DREDGE AREA

~140 FT TO FEDERAL CHANNEL LIMIT FROM LIMIT OF DREDGE AREA

LIMIT OF THE FEDERAL NAVIGATIONAL CHANNEL LINE (PER USACE COORDINATES)

PRIVATE LIMIT OF DREDGE AREA

DRAFT –
FOR PERMITTING REVIEW ONLY
NOT FOR CONSTRUCTION

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JOHN B. MCALLISTER, P.E.
16 HOXIE AVENUE
CHARLESTOWN, RI 02813

PROJECT
SOUTH QUAY
PROPOSED SITE
REDEVELOPMENT PROJECT

OWNER
RHODE ISLAND WATERFRONT ENTERPRISES, LLC
222 BERKELEY STREET
BOSTON, MA 02116

NO.	DATE	DESCRIPTION	BY
3	6/24/2021	ASSENT EDITS	JBM
2	3/11/2021	USACE CHANNEL LIMITS	JBM
1	11/2/2020	UPDATED BATHY	JBM

PROJECT NO.	
CADD FILE	
DESIGNED BY	JBM
DRAWN BY	
CHECKED BY	JAB
DATE	SEPTEMBER 2020
DRAWING SCALE	1" = 100'

GRAPHIC SCALE
0 50 100 150 200

SHEET TITLE

EROSION
AND SEDIMENT
CONTROL PLAN
PHASING

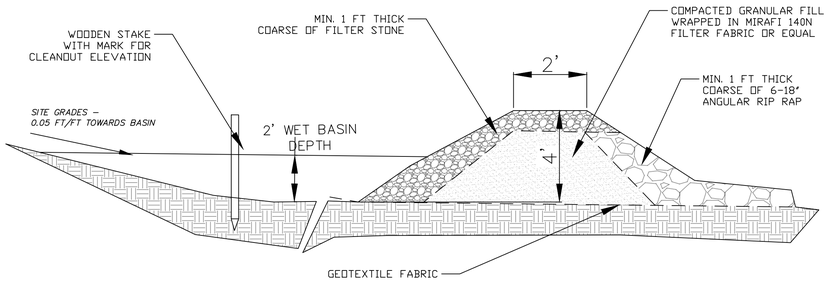
DRAWING NO.

ESC-2

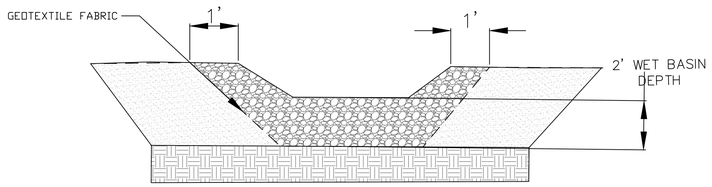
28 OF 33

PLOT SCALE 1/16"=1'-0"

C:\Users\.\johnn\OneDrive\Documents\JBM\LR\RIVE\Plans\RIVE_SOUTH QUAY BASE PLAN MLLW REV6.dwg

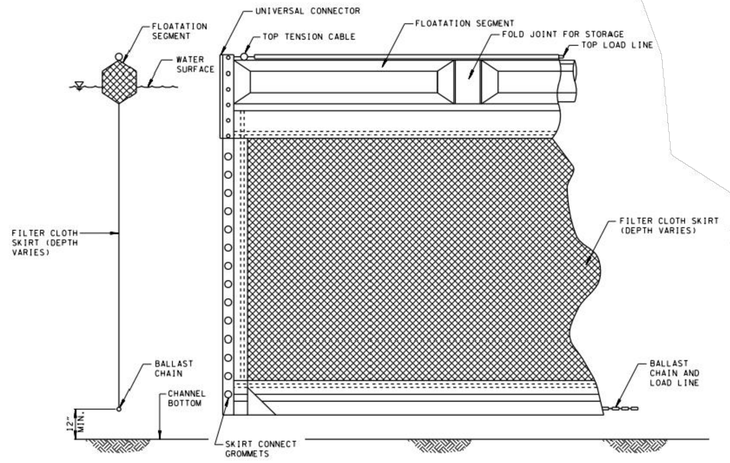


TEMPORARY SEDIMENTATION BASIN
TYPICAL PROFILE DETAIL
NOT TO SCALE



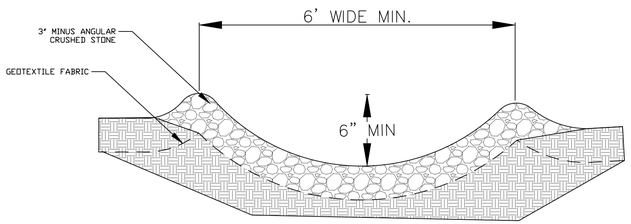
TEMPORARY SEDIMENTATION TRAP
TYPICAL PROFILE DETAIL
NOT TO SCALE

FLOATING TURBIDITY CURTAIN



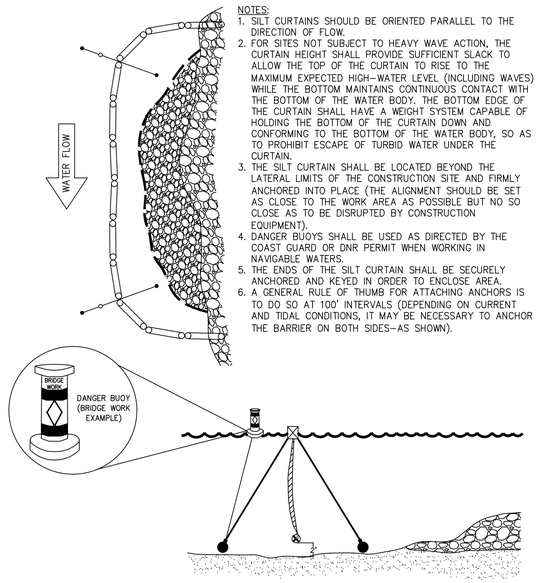
FLOATING TURBIDITY CURTAIN
TYPICAL PROFILE DETAIL
NOT TO SCALE

NOTE:
1. TURBIDITY CURTAINS SHALL BE DOT TYPE 3
2. ANCHORING SHALL BE DESIGNED AND ADAPTED TO ENVIRONMENT.
3. CURTAIN SHOULD REMAIN A MINIMUM 2' OFF HARBOR BOTTOM AT LOW TIDE.



TEMPORARY CRUSHED STONE SWALE
TYPICAL PROFILE DETAIL
NOT TO SCALE

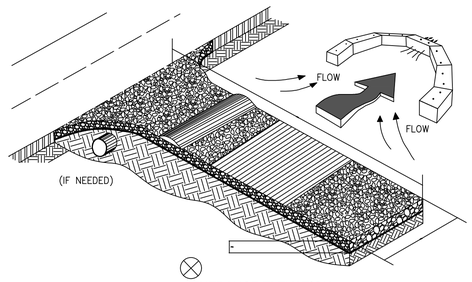
ANCHOR SYSTEM AND LAYOUT DETAILS



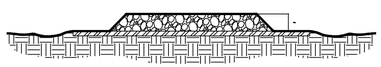
NOTES:
1. SILT CURTAINS SHOULD BE ORIENTED PARALLEL TO THE DIRECTION OF FLOW.
2. FOR SITES NOT SUBJECT TO HEAVY WAVE ACTION, THE CURTAIN HEIGHT SHALL PROVIDE SUFFICIENT SLACK TO ALLOW THE TOP OF THE CURTAIN TO RISE TO THE MAXIMUM EXPECTED HIGH-WATER LEVEL (INCLUDING WAVES) WHILE THE BOTTOM MAINTAINS CONTINUOUS CONTACT WITH THE BOTTOM OF THE WATER BODY. THE BOTTOM EDGE OF THE CURTAIN SHALL HAVE A WEIGHT SYSTEM CAPABLE OF HOLDING THE BOTTOM OF THE CURTAIN DOWN AND CONFORMING TO THE BOTTOM OF THE WATER BODY, SO AS TO PROHIBIT ESCAPE OF TURBID WATER UNDER THE CURTAIN.
3. THE SILT CURTAIN SHALL BE LOCATED BEYOND THE LATERAL LIMITS OF THE CONSTRUCTION SITE AND FIRMLY ANCHORED INTO PLACE (THE ALIGNMENT SHOULD BE SET AS CLOSE TO THE WORK AREA AS POSSIBLE BUT NO SO CLOSE AS TO BE DISRUPTED BY CONSTRUCTION EQUIPMENT).
4. DANGER BUOYS SHALL BE USED AS DIRECTED BY THE COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERS.
5. THE ENDS OF THE SILT CURTAIN SHALL BE SECURELY ANCHORED AND KEYED IN ORDER TO ENCLOSE AREA.
6. A GENERAL RULE OF THUMB FOR ATTACHING ANCHORS IS TO DO SO AT 100' INTERVALS (DEPENDING ON CURRENT AND TIDAL CONDITIONS, IT MAY BE NECESSARY TO ANCHOR THE BARRIER ON BOTH SIDES-AS SHOWN).

CRUSHED STONE CONSTRUCTION EXIT

EXIT DIAGRAM



ENTRANCE ELEVATION



NOTES:
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
4. GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6".
5. PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'.
6. A DIVERSION RIDGE SHOULD BE CONSTRUCTED WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2%.
7. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.
8. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE).
9. WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE FOR TRUCK TRAFFIC THAT REMOVE MUD AND DIRT.
10. MAINTAIN AREA IN A WAY THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

DRAFT -
FOR PERMITTING REVIEW ONLY
NOT FOR CONSTRUCTION

Lloyd's Register
GZA Known for excellence. Built on trust.
PARE CORPORATION
JOHN B. MCALLISTER, P.E.
16 HOXIE AVENUE
CHARLESTOWN, RI 02813

PROJECT
SOUTH QUAY
PROPOSED SITE
REDEVELOPMENT PROJECT

OWNER
RHODE ISLAND WATERFRONT ENTERPRISES, LLC
222 BERKELEY STREET
BOSTON, MA 02116

NO.	DATE	DESCRIPTION	BY
3	6/24/2021	ASSENT EDITS	JBM
2	3/11/2021	USACE CHANNEL LIMITS	JBM
1	11/2/2020	UPDATED BATHY	JBM

PROJECT NO.	
CADD FILE	
DESIGNED BY	JBM
DRAWN BY	
CHECKED BY	JAB
DATE	SEPTEMBER 2020
DRAWING SCALE	AS NOTED

GRAPHIC SCALE

SHEET TITLE

EROSION AND SEDIMENT CONTROL PLAN DETAILS

DRAWING NO.

ESC-3

PLOT SCALE 1/16"=1'-0"

C:\Users\JohnM\OneDrive\Documents\JBM\LRIVEN\Plans\REVISE SOUTH QUAY BASE PLAN MLLW REV6.dwg

ATTACHMENT F

October 14, 2022

The Honorable Roberto L. DaSilva
Mayor of East Providence
145 Taunton Avenue, 3rd Floor
East Providence, Rhode Island 02914
Sent via United States Postal Service

RE: ***Beneficial Use Determination***
The Key (aka South Key/Quay)
649 Waterfront Drive
Assessor's Plat Map 7, Block 1 Lot 3
East Providence, Rhode Island 02914
SAGE Project No. S3291

Dear Mayor DaSilva:

SAGE Environmental, Inc. (SAGE), on behalf of RI Waterfront Enterprises LLC, is providing the attached notice in accordance with the Rhode Island Department of Environmental Management (RIDEM) *Guidelines on Beneficial Use Determinations ("BUDs") for Source Segregated Solid Waste* (BUD Guidelines). The purpose of this notice is to provide a copy of the Beneficial Use Determination – Variance Application (BUD) which was submitted to the RIDEM on October 14, 2022. A copy of the submitted BUD is attached hereto.

If you have any questions, please do not hesitate to contact the undersigned at 401-723-9900.

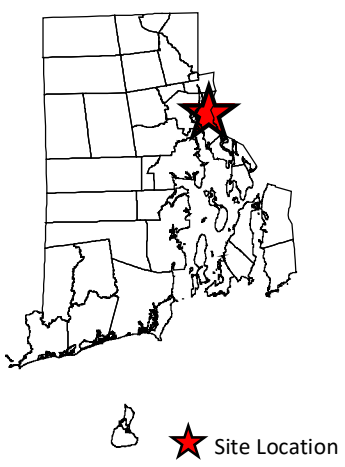
Sincerely,
SAGE Environmental, Inc.

Anthony Rossato	Jacob H. Butterworth, MS
Project Manager	Vice President

Richard J. Mandile
Principal

AR/JHB:alm

cc: Mr. Ronald Gagnon, RIDEM, Waste Facilities Management Program; Ms. Kasie McKenzie, RIDEM, Waste Facilities Management Program; Melissa Martin, Rhode Island Waterfront Enterprises LLC; Michael Donegan, Orson and Brusini Ltd.



Site Plan

THE KEY (AKA SOUTH KEY/QUAY)
649 WATERFRONT DRIVE
EAST PROVIDENCE, RHODE ISLAND

Figure

Date: 10/05/2022

Job #: S3291

Created By: ALM

Approximate Site Boundary

Abutting Properties Owned by RIWE

Abutting Properties

N

0 90 180 360 540 720 Feet

Data Provided by RIGIS
Orthoimagery provided by nearmap.com

SAGE ENVIRONMENTAL

Plat/Lot	Address	Owner	Owner Address
007-01-004-00	0 ZZ RAILROAD SITE	STATE OF RHODE ISLAND & DEPT OF TRANSPORTATION	TWO CAPITAL HILL, PROVIDENCE RI 02903
007-01-001-10	0 PIER RD	SPRAGUE OPERATING RESOURCES LLC	185 INTERNATIONAL DR., PORTSMOUTH NH 03801
007-01-003-00	649 WATERFRONT DR	RI WATERFRONT ENTERPRISES LLC	222 BERKELEY ST., BOSTON MA 02116
007-010-02.00	PIER RD	RI WATERFRONT ENTERPRISES LLC	222 BERKELEY ST., BOSTON MA 02116
018-020-01.00	VETERANS MEMORIAL PKWY	RI WATERFRONT ENTERPRISES LLC	222 BERKELEY ST., BOSTON MA 02116
007-01-001-00	0 PIER RD	RI WATERFRONT ENTERPRISES LLC	222 BERKELEY ST., BOSTON MA 02116

October 14, 2022

State of Rhode Island &
Rhode Island Department of Transportation
Two Capitol Hill
Providence, Rhode Island 02903
Sent via United States Postal Service

RE: ***Beneficial Use Determination***
The Key (aka South Key/Quay)
649 Waterfront Drive
Assessor's Plat Map 7, Block 1 Lot 3
East Providence, Rhode Island 02914
SAGE Project No. S3291

To Whom It May Concern:

SAGE Environmental, Inc. (SAGE), on behalf of RI Waterfront Enterprises LLC, is providing the attached notice in accordance with the Rhode Island Department of Environmental Management (RIDEM) *Guidelines on Beneficial Use Determinations ("BUDs") for Source Segregated Solid Waste* (BUD Guidelines). The purpose of this notice is to inform you that a Beneficial Use Determination – Variance Application (BUD) was submitted to the RIDEM on October 14, 2022 for the above-reference property and abuts your property located at 0 ZZ Railroad Site in East Providence, Rhode Island.

To obtain more information on this BUD, please contact SAGE Environmental, Inc. by mail at 301 Friendship Street, Providence, Rhode Island 02903, by E-mail: sage@sage-enviro.com, or by phone at (401) 723-9900.

Sincerely,
SAGE Environmental, Inc.

_____
Anthony Rossato
Project Manager

_____
Jacob H. Butterworth, MS
Vice President

_____
Richard J. Mandile
Principal

AR/JHB:car

cc: Mr. Ronald Gagnon, RIDEM, Waste Facilities Management Program; Ms. Kasie McKenzie, RIDEM, Waste Facilities Management Program; Melissa Martin, Rhode Island Waterfront Enterprises LLC; Michael Donegan, Orson and Brusini Ltd.

14 de outubro de 2022

Estado de Rhode Island &
Departamento de Transportes de Rhode Island
Dois Capitólio
Providence, Rhode Island 02903
Enviado via Serviço Postal dos Estados Unidos

RE:Determinação de uso benéfico
A Chave (também conhecida como South Key/Quay)
649 Waterfront Drive
Mapa plat plat 7 do assessor, bloco 1 lote 3
East Providence
Projeto SAGE No. S3291

A quem possa interessar:

A SAGE Environmental, Inc. (SAGE), em nome da RI Waterfront Enterprises LLC, está fornecendo o aviso anexado de acordo com as Diretrizes do Departamento de Gestão Ambiental de Rhode Island (RIDEM) *sobre determinações de uso benéfico ("BUDs") para resíduos sólidos segregados de origem* (Diretrizes bud). O objetivo deste aviso é informá-lo que um Pedido de Desativação de Uso Benéfico – Variância (BUD) foi submetido ao RIDEM em 14 de outubro de 2022 para a propriedade acima-referência e abuts sua propriedade localizada no 0 ZZ Railway Site em East Providence, Rhode Island.

Para obter mais informações sobre este BUD, entre em contato com a SAGE Environmental, Inc. pelo correio na Rua da Amizade, 301, Providence, Rhode Island 02903, por e-mail: sage@sage-enviro.com ou pelo telefone (401) 723-9900.

Sinceramente
SAGE Ambiental, Inc.

_____
Anthony Rossato
Gerente de Projetos

_____
Jacob H. Butterworth, MS
Vice Presidente

_____
Richard J. Mandile
Principal

AR/JHB:alm

cc: Sr. Ronald Gagnon, RIDEM, Programa de Gestão de Instalações de Resíduos; Sra. Kasie McKenzie, RIDEM, Programa de Gestão de Instalações de Resíduos; Melissa Martin, Rhode Island Waterfront Enterprises LLC; Michael Donegan, Orson e Brusini Ltd.

octubre 14, 2022

Estado de Rhode Island &
Departamento de Transporte de Rhode Island
Dos Colina del Capitolio
Providence, Rhode Island 02903
Enviado a través del Servicio Postal de los Estados Unidos

RE: ***Determinación de uso beneficioso***
The Key (también conocido como South Key/Quay)
649 Waterfront Drive
Mapa de la Plataforma del Asesor 7, Bloque 1 Lote 3
02914, East Providence, Rhode Island
Proyecto SAGE No. S3291

A quien corresponda:

SAGE Environmental, Inc. (SAGE), en nombre de RI Waterfront Enterprises LLC, proporciona el aviso adjunto de acuerdo con las Directrices del Departamento de Gestión Ambiental de Rhode Island (RIDEM) *sobre Determinaciones de Uso Beneficioso ("PROD") para Residuos Sólidos Segregados en Origen* (Directrices BUD). El propósito de este aviso es informarle que se presentó una Solicitud de Determinación de Uso Beneficioso – Variación (BUD) a RIDEM en octubre 14, 2022 para la propiedad de referencia anterior y colinda con su propiedad ubicada en 0 ZZ Railroad Site en East Providence, Rhode Island.

Para obtener más información sobre este BUD, comuníquese con SAGE Environmental, Inc. por correo a 301 Friendship Street, Providence, Rhode Island 02903, por correo electrónico: sage@sage-enviro.com, o por teléfono al (401) 723-9900.

Sinceramente
SAGE Ambiental, Inc.

_____	_____
Anthony Rossato	Jacob H. Butterworth, MS
Gerente de Proyectos	Vicepresidente

_____
Richard J. Mandile
Principal

AR / JHB: coche

cc: Sr. Ronald Gagnon, RIDEM, Programa de Gestión de Instalaciones de Residuos; Sra. Kasie McKenzie, RIDEM, Programa de Gestión de Instalaciones de Residuos; Melissa Martin, Rhode Island Waterfront Enterprises LLC; Michael Donegan, Orson y Brusini Ltd.

October 14, 2022

Sprague Operating Resources LLC
185 International Drive
Portsmouth, New Hampshire 03801

Sent via United States Postal Service

RE: ***Beneficial Use Determination***
The Key (aka South Key/Quay)
649 Waterfront Drive
Assessor's Plat Map 7, Block 1 Lot 3
East Providence, Rhode Island 02914
SAGE Project No. S3291

To Whom It May Concern:

SAGE Environmental, Inc. (SAGE), on behalf of RI Waterfront Enterprises LLC, is providing the attached notice in accordance with the Rhode Island Department of Environmental Management (RIDEM) *Guidelines on Beneficial Use Determinations ("BUDs") for Source Segregated Solid Waste* (BUD Guidelines). The purpose of this notice is to inform you that a Beneficial Use Determination – Variance Application (BUD) was submitted to the RIDEM on October 14, 2022 for the above-reference property and abuts your property located at 0 Pier Road in East Providence, Rhode Island.

To obtain more information on this BUD, please contact SAGE Environmental, Inc. by mail at 301 Friendship Street, Providence, Rhode Island 02903, by E-mail: sage@sage-enviro.com, or by phone at (401) 723-9900.

Sincerely,
SAGE Environmental, Inc.

Anthony Rossato	Jacob H. Butterworth, MS
Project Manager	Vice President

Richard J. Mandile
Principal

AR/JHB:car

cc: Mr. Ronald Gagnon, RIDEM, Waste Facilities Management Program; Ms. Kasie McKenzie, RIDEM, Waste Facilities Management Program; Melissa Martin, Rhode Island Waterfront Enterprises LLC; Michael Donegan, Orson and Brusini Ltd.

14 de outubro de 2022

Sprague Recursos Operacionais LLC
185 International Drive
Portsmouth

Enviado via Serviço Postal dos Estados Unidos

RE: ***Determinação de uso benéfico***
A Chave (também conhecida como South Key/Quay)
649 Waterfront Drive
Mapa plat plat 7 do assessor, bloco 1 lote 3
East Providence
Projeto SAGE No. S3291

A quem possa interessar:

A SAGE Environmental, Inc. (SAGE), em nome da RI Waterfront Enterprises LLC, está fornecendo o aviso anexado de acordo com as Diretrizes do Departamento de Gestão Ambiental de Rhode Island (RIDEM) *sobre determinações de uso benéfico ("BUDs") para resíduos sólidos segregados de origem* (Diretrizes bud). O objetivo deste aviso é informá-lo que um Pedido de Determinação de Uso Benéfico – Variância (BUD) foi submetido ao RIDEM em 14 de outubro de 2022 para a propriedade acima-referência e abuts sua propriedade localizada em 0 Pier Road em East Providence, Rhode Island.

Para obter mais informações sobre este BUD, entre em contato com a SAGE Environmental, Inc. pelo correio na Rua da Amizade, 301, Providence, Rhode Island 02903, por e-mail: sage@sage-enviro.com ou pelo telefone (401) 723-9900.

Sinceramente
SAGE Ambiental, Inc.

_____	_____
Anthony Rossato	Jacob H. Butterworth, MS
Gerente de Projetos	Vice Presidente

_____
Richard J. Mandile
Principal

AR/JHB:alm

cc: Sr. Ronald Gagnon, RIDEM, Programa de Gestão de Instalações de Resíduos; Sra. Kasie McKenzie, RIDEM, Programa de Gestão de Instalações de Resíduos; Melissa Martin, Rhode Island Waterfront Enterprises LLC; Michael Donegan, Orson e Brusini Ltd.

octubre 14, 2022

Sprague Recursos Operativos LLC
185 Unidad Internacional
03801, Portsmouth, Nuevo Hampshire

Enviado a través del Servicio Postal de los Estados Unidos

RE: ***Determinación de uso beneficioso***
The Key (también conocido como South Key/Quay)
649 Waterfront Drive
Mapa de la Plataforma del Asesor 7, Bloque 1 Lote 3
02914, East Providence, Rhode Island
Proyecto SAGE No. S3291

A quien corresponda:

SAGE Environmental, Inc. (SAGE), en nombre de RI Waterfront Enterprises LLC, proporciona el aviso adjunto de acuerdo con las Directrices del Departamento de Gestión Ambiental de Rhode Island (RIDEM) *sobre Determinaciones de Uso Beneficioso ("PROD") para Residuos Sólidos Segregados en Origen* (Directrices BUD). El propósito de este aviso es informarle que se presentó una Solicitud de Determinación de Uso Beneficioso – Variación (BUD) a la RIDEM en octubre 14, 2022 para la propiedad de referencia anterior y colinda con su propiedad ubicada en 0 Pier Road en East Providence, Rhode Island.

Para obtener más información sobre este BUD, comuníquese con SAGE Environmental, Inc. por correo a 301 Friendship Street, Providence, Rhode Island 02903, por correo electrónico: sage@sage-enviro.com, o por teléfono al (401) 723-9900.

Sinceramente
SAGE Ambiental, Inc.

_____	_____
Anthony Rossato	Jacob H. Butterworth, MS
Gerente de Proyectos	Vicepresidente

_____
Richard J. Mandile
Principal

AR / JHB: coche

cc: Sr. Ronald Gagnon, RIDEM, Programa de Gestión de Instalaciones de Residuos; Sra. Kasie McKenzie, RIDEM, Programa de Gestión de Instalaciones de Residuos; Melissa Martin, Rhode Island Waterfront Enterprises LLC; Michael Donegan, Orson y Brusini Ltd.

NOTICE OF BUD APPLICATION AND PUBLIC HEARING

THE KEY (AKA SOUTH KEY/QUAY)
649 WATERFRONT DRIVE
EAST PROVIDENCE, RHODE ISLAND

A Beneficial Use Determination – Variance Application (BUD) to request a variance from the Rules and Regulations for Solid Waste Management Facilities and Organic Waste Management Facilities (Solid Waste Regulations) has been prepared for the subject site. On [DATE] between [TIME] PM and [TIME] PM, a public hearing will be held at [LOCATION/ADDRESS] in East Providence, Rhode Island. Additionally, the meeting will be simulcast virtually. Instructions on how to participate in this meeting via Zoom, via Smart Phone, or by calling are provided below:

[ZOOM INFORMATION]

To obtain more information on this BUD, please contact SAGE Environmental, Inc. by mail at 301 Friendship Street, Providence, Rhode Island 02903, by E-mail: sage@sage-enviro.com, or by phone at (401) 723-9900.

EDITAL DE APLICAÇÃO DO BUD E AUDIÊNCIA PÚBLICA

A CHAVE (TAMBÉM CONHECIDA COMO SOUTH KEY/QUAY)
649 WATERFRONT DRIVE
EAST PROVIDENCE, RHODE ISLAND

Uma Determinação de Uso Benéfico – Aplicativo de Variância (BUD) para solicitar uma variância das Normas e Regulamentos para Instalações de Gestão de Resíduos Sólidos e Instalações de Gerenciamento de Resíduos Orgânicos (Regulamentos de Resíduos Sólidos) foi preparada para o local do assunto. Na [DATA] entre [TIME] PM e [TIME] PM, uma audiência pública será realizada no [LOCAL/ENDEREÇO] em East Providence, Rhode Island. Além disso, a reunião será simulada virtualmente. Instruções sobre como participar desta reunião via Zoom, via Smart Phone ou ligando são fornecidas abaixo:

[INFORMAÇÕES DO ZOOM]

Para obter mais informações sobre este BUD, entre em contato com a SAGE Environmental, Inc. pelo correio na Rua da Amizade, 301, Providence, Rhode Island 02903, por e-mail: sage@sage-enviro.com ou pelo telefone (401) 723-9900.

AVISO DE SOLICITUD DE BUD Y AUDIENCIA PÚBLICA

THE KEY (TAMBIÉN CONOCIDO COMO SOUTH KEY/QUAY)
649 WATERFRONT DRIVE
EAST PROVIDENCE, RHODE ISLAND

Se ha preparado una Solicitud de Determinación de Uso Beneficioso – Varianza (BUD) para solicitar una variación de las Reglas y Regulaciones para Instalaciones de Gestión de Residuos Sólidos e Instalaciones de Gestión de Residuos Orgánicos (Regulaciones de Residuos Sólidos) para el sitio en cuestión. En [FECHA] entre [HORA] PM y [HORA] PM, se llevará a cabo una audiencia pública en [UBICACIÓN / DIRECCIÓN] en East Providence, Rhode Island. Además, la reunión se transmitirá simultáneamente de manera virtual. Las instrucciones sobre cómo participar en esta reunión a través de Zoom, a través de un teléfono inteligente o llamando se proporcionan a continuación:

[INFORMACIÓN DE ZOOM]

Para obtener más información sobre este BUD, comuníquese con SAGE Environmental, Inc. por correo a 301 Friendship Street, Providence, Rhode Island 02903, por correo electrónico: sage@sage-enviro.com, o por teléfono al (401) 723-9900.

ATTACHMENT G

ARCADIS Design & Consultancy for natural and built assets

Chevron Environmental Management Company and
Chevron Land and Development Company

DEVELOPMENT PHASE A LIMITED REMEDIAL ACTION CLOSURE REPORT

Former Gulf Fuel Terminal
Chevron Facility #6517863
Veterans Memorial Parkway
East Providence, Rhode Island
DEM Case # SR-10-0248

December 2017

DEVELOPMENT PHASE A LIMITED REMEDIAL ACTION CLOSURE REPORT

Former Gulf Fuel Terminal
Chevron Facility #6517863
Veterans Memorial Parkway
East Providence, Rhode Island
RIDEM CASE # SR-10-0248

Leanne Miner
Project Manager

Donna Pallister, P.E.
Principal Engineer

Prepared for:
Chevron Environmental Management Company and Chevron Land and Development Company

Prepared by:
Arcadis U.S., Inc.
2240 South County Trail
Suite 5
East Greenwich
Rhode Island 02818
Tel 401 738 3887
Fax 401 732 1686

Our Ref.:
B0047715.CQAE.00006

Date:
December 2017

CONTENTS

TABLES

FIGURES

APPENDICES

ACRONYMS AND ABBREVIATIONS

Arcadis	Arcadis U.S., Inc.
CEMC	Chevron Environmental Management Company
CGP	Construction General Permit
CL&D	Chevron Land and Development
Closure Report	Lower Tier Center Limited Remedial Action Closure Report
COC	constituent of concern
cy	cubic yards
DGA	Dense Grade Aggregate
DPA	Development Phase A
DWTS	Dewatering Treatment System
DWCS	Dewatering Containment System
ESS/S	ex-situ soil stabilization/solidification
GBLC	GB Groundwater Leachability Criteria
GPR	Ground-Penetrating Radar
GPS	Global Positioning System
GZA	GZA GeoEnvironmental, Inc.
HDPE	high-density polyethylene
HPSL	High Permeability Soil Layer
ICDEC	Industrial/Commercial Direct Exposure Criteria
ILOC	Interim Letter of Compliance
LIF	Laser Induced Fluorescence
LNAPL	Light Non-Aqueous Phase Liquid
LRAWP	Limited Remedial Action Work Plan
LTC	Lower Tier Center
LTS	Lower Tier South
mg/kg	milligram per kilogram
mg/L	milligram per liter
MHHW	Mean High-High Water
MS/MSD	Matrix Spike/Matrix Spike Duplicate

NAPL	Non-Aqueous Phase Liquid
NT	Not-Treated
PAH	Polycyclic aromatic hydrocarbon
PAP	Physical Alteration Permit
PDI	Pre-Design Investigation
RAWP	Site Remedial Action Work Plan
RCM	Reactive Core Mat
RDEC	Residential Direct Exposure Criteria
RGP	Remediation General Permit
RIDEM	Rhode Island Department of Environmental Management
RIDOT	Rhode Island Department of Transportation
RIPDES	Rhode Island Pollutant Discharge Elimination System
RO	remedial objective
SESCP	Soil Erosion and Sedimentation Control Plan
SCOs	soil cleanup objectives
site	Former Gulf Fuel Terminal (Chevron Facility #6517863) located at 431 Veterans Memorial Parkway in East Providence, Rhode Island
SMP	Soil Management Plan
SS	Stabilized Soils
TCLP	Toxicity Criteria Leaching Procedure
TPH	total petroleum hydrocarbon
TR	Treatment Required soil
UCL	Upper Concentration Limit
USEPA	United States Environmental Protection Agency
UTC	Upper Tier Center
UTN	Upper Tier North
UTS	Upper Tier South
VOC	Volatile organic compounds (generally includes compounds which can be detected by analysis via USEPA Method 8260

1 INTRODUCTION

On behalf of Chevron Environmental Management Company and Chevron Land and Development Company (collectively referred to as Chevron), Arcadis U.S., Inc. (Arcadis) prepared this Development Phase A (DPA) Limited Remedial Action Closure Report (Closure Report) to present and summarize the activities conducted from June 2015 through February 2017 in accordance with the DPA Limited Remedial Action Work Plan (LRAWP) and LRAWP Addenda (Arcadis 2015b; Arcadis 2016b; Arcadis 2016d). The DPA LRAWP was approved by the Rhode Island Department of Environmental Management (RIDEM) in a letter dated May 20, 2013 (RIDEM 2013a). The work was completed at the Former Gulf Fuel Terminal (Chevron Facility #6517863) located on Veterans Memorial Parkway in East Providence, Rhode Island (site; Figure 1). DPA activities were completed as part of the site-wide remediation program, with additional remedial activities and work plans anticipated to be presented in future submittals to RIDEM.

This Closure Report was prepared to meet applicable requirements set forth under Rule 11.08 of the RIDEM Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (RIDEM 2011) and the Remedial Approval Letter (RIDEM 2013a) dated May 20, 2013. The work was performed in accordance with the DPA LRAWP (Arcadis 2015b), the Ex-Situ Soil Stabilization/Solidification (ESS/S) Remedial Technology LRAWP (Arcadis 2013d), and associated approval letters, with exceptions as noted in this report.

1.1 Project Description

The site, located at 431 Veterans Memorial Parkway in East Providence, Rhode Island (Figure 1), is approximately 26 acres with a significant change in elevation from Veterans Memorial Parkway to the Providence River. The site is bounded to the north by property now or formerly owned by the Providence & Worcester Railroad, to the east by Veterans Memorial Parkway, to the west by the Providence River, and to the south and southeast by a public bicycle path and Watchemoket Cove. Figure 2 provides a site plan showing the parcel boundaries and the extent of the Development Phase A LRAWP. The portion of the site designated as DPA includes the southern and center sections of the Chevron property and includes the area of the Lower Tier Center (LTC), the remediation of which was documented separately (Arcadis 2016e) This Closure Report does not include the waterfront area immediately adjacent to the river, which will be addressed in a future LRAWP.

2 PROJECT TEAM

Arcadis served as the general contractor and remediation engineer and provided remedial design, construction management, oversight, and documentation for Chevron for this project. Chevron's remedial construction contractor was Global Remediation, who conducted remedial activities, except for specialty work completed by other subcontractors, such as electrical, waste transportation and disposal, asbestos abatement, and drilling. DiPrete Engineering was the development engineer and licensed surveyor for this project.

3 PRE-EXCAVATION CHARACTERIZATION AND DELINEATION

Prior to the start of the DPA excavation activities, Arcadis performed pre-design investigations (PDIs) to delineate the horizontal and vertical extent of impacts in soil as summarized in the DPA LRAWP (Arcadis 2015b). These pre-excavation characterization activities were conducted to estimate the volume of petroleum-impacted soil that would be handled and managed during DPA excavation activities. Background information was provided in previous submittals to the RIDEM, including the Supplemental Site Investigation Report (Arcadis 2008), Remedial Measures Partial Completion Report (RMPCR; Arcadis 2010), RMPCR Volume 2 (Arcadis 2011c), RAWP (Arcadis 2011d), and DPA LRAWP (Arcadis 2015b). The extent of planned excavation areas was outlined in the DPA LRAWP, and deviations from the plan are detailed in this report.

4 REMEDIAL EXCAVATION DESIGN

The goal of the DPA remedial action was to excavate (remove), manage, and treat soils that exceeded the Upper Concentration Limit (UCL) and/or GB Groundwater Leachability Criteria (GBLC) for Total Petroleum Hydrocarbon (TPH), and to construct a cap in compliance with the RIDEM LRAWP approval over soils which contained TPH or other contaminants of concern at concentrations which exceeded Residential Direct Exposure Criteria (RDEC), but were below the UCL and GBLC. Excavated soil which exceeded the TPH GBLC or UCL was segregated and stockpiled for off-site disposal or treatment via ex-situ stabilization/solidification (ESS/S) in accordance with the Soil Management Plan (SMP; Arcadis 2013a), the RAWP (Arcadis 2011d), and the ESS/S LRAWP (Arcadis 2013). The remedial excavation areas were pre-planned based on the results of the PDI and other previous investigations of site conditions (Arcadis 2017). The final limits of excavation were determined based on field observations and the results of confirmation sampling.

Excavation targeted the removal of TPH exceeding 2,500 milligrams per kilogram (mg/kg) above the predicted future groundwater elevation and Light Non-Aqueous Phase Liquids (LNAPL), as described in the DPA LRAWP (Arcadis 2015b). Arcadis anticipated that re-grading and other activities on-site, such as removal of concrete retaining walls, may result in changes in the site water table conditions compared to conditions prior to implementation of the DPA LRAWP; these predicted changes were considered when establishing the predicted future groundwater elevation (Arcadis 2015b). Where Non-Aqueous Phase Liquid (NAPL) was encountered during excavation at or below the water table, soil that was visually impacted with NAPL was excavated and free NAPL was removed via vacuum suction, pumping, or application followed by removal of absorbent media. Figure 3 depicts the maximum excavation extent associated with TPH and NAPL removal across the site.

5 REMEDIAL CONSTRUCTION IMPLEMENTATION

5.1 Site Preparation and Support Activities

To support the excavation activities, the following site preparation and support activities were conducted, and described in more detail in subsequent sections:

- Installation of soil erosion and sediment control measures
- Preparation of equipment staging, impacted material, and debris stockpile areas through clearing and grubbing
- Abandonment of select monitoring wells
- Installation of a construction access road along the waterfront
- Demolition of select utilities
- Demolition of dewatering treatment system (DWTS)

5.1.1 Soil Erosion and Sediment Control Measures

Soil erosion and sediment control measures were implemented in accordance with the LRAWP, Stormwater Pollution Prevention Plan (SWPPP; Arcadis 2011a), Soil Erosion and Sedimentation Control Plan (SESCP; Arcadis 2014a), and SMP (Arcadis 2013a), as well as applicable permit requirements (i.e., RIDEM-issued Remediation General Permit [RGP] and Rhode Island Coastal Resource Management-issued state assents and modifications). Additional erosion control measures included silt fence, straw bales, and straw wattles placed downgradient of work areas, as well as within work areas to control and prevent soil erosion and sediment transport. Inspections of the soil erosion and sediment control measures were conducted as required by the Construction General Permit (CGP), with any damage noted, repaired, and documented.

5.1.2 Clearing and Grubbing

Land clearing and grubbing was completed, as necessary, prior to excavation. Large scale tree removal was completed along Veterans Memorial Parkway, and along the southern boundary of the site in January 2016 by Northern Tree Services.

5.1.3 Monitoring Well Abandonment

Seventeen monitoring wells were decommissioned either prior to or during DPA excavation activities. Prior to excavation activities, Geosearch Inc. abandoned 11 monitoring wells: CB-17 (OW), DB-25 (OW), DB-26 (OW), DB-38 (OW), SB22/MW52, TW04R/GP-15, SB-228, SB-231, SB-241, GES-7, and Sump 2A. All abandoned wells were decommissioned via the tremie-grout method in accordance with Appendix 1, Section 8 of the RIDEM Groundwater Quality Rules (RIDEM 2010). During DPA excavation activities, the remaining 6 monitoring wells (MW-22, MW-27, MW-46, SB-48/MW-63, TW-05R, and MW-93/SB-522) were removed. Due to the relatively shallow screened intervals for these wells, the tremie-grout abandonment method was not required.

New monitoring wells have been installed for post excavation groundwater monitoring, and these wells will be described in a separate submittal. One sump was installed in the LTC for monitoring near the coastal seep area, and two other sumps were installed for monitoring groundwater elevation for future development.

5.1.4 Installation of Construction Access Road

A temporary construction access road was constructed in accordance with approvals from RIDEM (2015), the Rhode Island Coastal Resource Management Council (CRMC Assent W2011-01-0310) and the Army Corps of Engineers (File No. NAE-2010-1507). The road was constructed on Rhode Island Department of Transportation (RIDOT)-owned land from 1 Pier Road to the LTC portion of the site to support DPA construction activities. This work was performed in accordance with a Physical Alteration Permit (PAP), App # 17496, and a License Agreement issued by RIDOT. The construction access road will remain pending further site remedial and development work.

5.1.5 Utility Removal

Prior to DPA site-wide excavation activities, subsurface utilities and piping (collectively referred to as utilities) associated with the former use of the site as an oil terminal that could contain NAPL or impacts were targeted for investigation and removal across the site. An assessment into where these utilities were located was conducted that included site reconnaissance, review of historic site plans and a geophysical survey of the site (DPA and the remaining accessible areas of the site). Upon completion of the assessment, a thorough systematic approach to investigate the results of the assessment included mapping and marking all real or suspected utilities, excavation at these locations and if utilities were identified, implement measures to properly remove them. Utility removal included uncovering the length of the utilities and if the utility was intact, penetrate the pipe using a tapping device specifically engineered for this purpose to determine if the utility contained any NAPL or impacts. If free-flowing liquids were identified, a vacuum truck was used to evacuate the contents. Utilities without liquids were removed and temporarily contained onsite. Decontaminated steel was recycled while other materials were disposed offsite. Evacuated liquids were transported offsite for disposal. All offsite disposal documents are provided in Appendix A.

During these activities a subsurface abandoned fire suppression line located along the eastern property boundary and adjacent to the public bike/pedestrian path was confirmed to be present. Hydrants associated with this line along the southern portion of that line we removed to allow for surface grading and new fencing with the line plugged at the hydrant removal areas and left in place. Plugging involved placing non-shrink grout into the ends of the pipes. Historical records identify this as a “salt water line” and during hydrant removal no impacts were noted within the piping.

5.1.6 Dewatering Treatment System Removal

A temporary DWTS was constructed in the Upper Tier South (UTS) portion of the site in August 2015 to provide onsite treatment of water generated by excavation dewatering activities. Dewatering was required for excavations of impacted material below the water table. The DWTS consisted of a covered 200-foot by 60-foot tent structure over the water treatment system. The water treatment system was located over a containment area that was 160 feet by 50 feet, lined with a 12-mill impermeable membrane, and covered with crushed stone. The DWTS equipment and containment area were deconstructed in July 2016 and the area was excavated in September 2016 as part of remediation activities. Additional details regarding construction dewatering activities and the DWTS are provided in Section 9.

6 EXCAVATION ACTIVITIES

Details regarding soil excavation activities are discussed below.

6.1 Global Positioning System Controls

DPA excavation work was performed using excavators equipped with Trimble Grade Control Systems (Model SPS 985) that contained the Global Positioning System (GPS) coordinates of the proposed excavation surfaces. The GPS systems enabled the excavator operator to excavate to the target planned horizontal and vertical limits of excavation. Bulldozers equipped with GPS systems were used during backfill activities for guidance and data recording as well. Additionally, a hand-held rover GPS unit was also used to collect survey data for documentation. The final excavation limits for impacted soil removal were determined based on the GPS coordinates of the remedial design excavation areas, and observations and confirmation samples collected by the Arcadis scientist/engineer observing the excavation.

During excavation, the GPS units recorded the positions and locations of all pertinent work that included structures left in place, limits of excavation, sample locations, grades and other relevant data. Spatial coordinate data recorded at the excavation limits were reviewed daily for quality assurance and control purposes to ensure that the limits of excavation met design specifications.

Prior to the start of excavation activities, an initial calibration of each Trimble unit was completed by the manufacturer's authorized representative, SITECH. Additional calibrations were completed as follows:

- At a minimum, prior to the start of each work day, the GPS reference points (i.e. excavator buckets, bulldozer blades, rover) were placed on a pre-established bench mark to confirm that measurements fell within manufacturer's tolerance limits (+/- 0.1 foot). These bench marks were surveyed by a RI-licensed surveyor, DiPrete, and their coordinates recorded. Any GPS coordinates out of tolerance were investigated and corrected with assistance from SITECH before that GPS unit was allowed to use its GPS unit.
- Within 2 months after initial calibration and every 2 months after each follow-up calibration
- Upon equipment change or modification which affects the sensor placements, including changes to the excavator bucket or bulldozer blades
- Whenever vertical and horizontal twice daily checks were not within the specified manufacturer's tolerance limits of +/- 0.1 foot

These checks were recorded in the daily field reports.

To assist with documentation of site work, a 50-foot by 50-foot grid with alpha and numeric axis labels was overlaid on site figures and plans. The grid overlay is shown on Figure 2. GPS coordinates were logged a minimum of five times per 50 by 50-foot grid - once in the center and once at each corner - at each layer requiring GPS logging. Survey data was verified each day to confirm the horizontal and vertical accuracy of excavation activities.

6.2 Remediation Area Excavation

Based on the results of investigations conducted at the site, remediation areas, or “R areas”, were designated for remedial excavation. R area numbering is not sequential because some areas were designated but later determined not to contain soil at concentrations above the remedial objectives. Limits of excavation for each area were preplanned based on available information. Final limits of excavation were based on results of confirmation sampling and field observations.

Soil excavation activities were conducted from September 2015 through November 2016 with removal of an estimated 42,708 CY of petroleum-impacted soil. A summary of the final excavation volumes for each remediation area is provided in Table 1 below. Figure 3 shows the extent and depth of each remedial excavation.

Table 1 Summary of Completed DPA Remediation Areas

R Area	Date Excavation Initiated	Date Excavation Completed	Volume Excavated (cy)
R1	June 2016	June 2016	57
R2	June 2016	June 2016	32
R3	April 2016	April 2016	855
R4	Sept. 2015	Sept. 2015	310
R5	Sept. 2015	Sept. 2015	462
R6	Oct. 2015	March 2016	13,969
R7	Jan. 2016	March 2016	1,113
R8	Aug. 2016	Aug. 2016	2,600
R9	June 2016	June 2016	1,235
R10	May 2016 Sept. 2016	June 2016 Nov. 2016	8,450
R11	July 2016	Aug. 2016	1,225
R12	April 2016	April 2016	640
R13	May 2016	May 2016	3,290
R14	June 2015	June 2015	3,167
R15	May 2016	May 2016	135
R17	May 2016	May 2016	1,785
R18	June 2016	June 2016	185
R19	June 2016	June 2016	212

R Area	Date Excavation Initiated	Date Excavation Completed	Volume Excavated (cy)
R22	June 2016	June 2016	924
R23	May 2016	May 2016	220
R24	May 2016	May 2016	49
R3-R8	March 2016	April 2016	20
R9-R10	June 2016	August 2016	15 (included in R9 Vol)
Seep (North of R14)	June 2015	June 2015	1415
Cell J-47	Sept. 2016	Sept. 2016	315
Cell I-47	May 2016	Sept. 2016	270 (included in R10 Vol)
Cell G-52	August 2016	August 2016	22
Cell A-44/45	January 2017	January 2017	21
Total R Areas	**Sept. 2015**	**Nov. 2016**	**42,708**

*R areas not named in sequence, some areas under consideration were later determined not to require excavation.

6.3 Confirmation Sampling

Confirmation sampling was conducted in accordance with the DPA LRAWP within remedial excavation areas to confirm that excavation activities successfully removed soils with TPH concentrations exceeding the GBLC of 2,500 mg/kg. Figures 4A and 4B show removal areas and confirmation sample locations. Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples, field duplicates, and rinse blanks were collected at a frequency of one per twenty samples, as described in the Supplemental Site Investigation Work Plan QAPP (Arcadis 2006). Soil samples were collected and submitted for laboratory analysis at approximately the following frequency:

- One sidewall sample for every 25 feet in length
- One sidewall sample for every 10 feet in depth
- One bottom sample for every 625 square feet in area.

Confirmation soil samples were not collected if the base of the excavation was below the predicted future water table (predicted future water table was expected to be below groundwater table at the time of excavation; natural water table observation was not possible during excavation in areas where

dewatering was being conducted). If bedrock was encountered in the sidewall or bottom of excavation, the presence of bedrock was recorded in the field notes and no sample was collected from that interval.

Following collection, each confirmation sample was submitted for analysis of TPH by USEPA Method 8100M. All samples designated as final "confirmation samples" analyzed for TPH were required to be below the remedial objective of 2,500 mg/kg. In the event a proposed confirmation sample concentration was greater than 2,500 ppm for TPH, additional soil was removed, and the excavation area was resampled to collect new confirmation samples. This process was repeated, as necessary, until final confirmation samples meeting the required frequency and remedial objective were obtained. TPH soil analytical results are summarized in Table 2.

In addition, 10 percent of the excavation confirmation samples were analyzed for volatile organic compounds (VOCs) by USEPA method 8260, the 13 priority pollutant metals (PP13) by USEPA method 6010/7471, and polycyclic aromatic hydrocarbons (PAHs) by USEPA method 8270. Two samples contained analytes at concentrations above applicable RIDEM standards. Arsenic was detected in soil above the RDEC and IC DEC at locations R4-CS-SW-006 and R5-CS-SW-008, shown on Figure 4B; this area is beneath the RDEC-compliant soil cap as shown on Figure 7. Laboratory data reports documenting soil TPH, VOC, PAH and metals analytical results are provided in Appendix B.

6.4 Soil Handling

Excavated soil was handled in accordance with the requirements presented in Section 8.02 of the Remediation Regulations (RIDEM 2011), the RAWP (Arcadis 2011d) and the DPA LRAWP (Arcadis 2015b). The total extent of excavation conducted to meet the project objectives is shown in Figure 7. Excavated soil was handled as described below:

- Soils identified as containing TPH with concentrations below 2,500 mg/kg (Industrial/Commercial direct exposure criteria [ICDEC] and GBLC) during pre-design investigation activities were excavated as required for site regrading or to meet geotechnical objectives and reused as backfill within the DPA without treatment. Soil with this designation, i.e. no treatment required in order to reuse, were observed during excavation to verify that it was accurately characterized during the pre-design investigation. If NAPL was observed, the NAPL and associated impacted soil was removed and handled as described in the next bullet.
- Soil identified as containing TPH with concentrations at or above 2,500 mg/kg (GBLC) or NAPL during pre-design investigation activities or during excavation was stockpiled within the impacted soil, treatment required stockpile. This soil was treated on site in accordance with the ESS/S LRAWP (Arcadis 2013) or disposed off-site at ESMI of Loudon, New Hampshire, a licensed disposal facility. Disposal manifests are included in Appendix A. After the soil was treated and shown to meet the treatment goals and remedial objectives, the soil was reused on-site and covered by a RIDEM-compliant soil cap.
- Approximately 20,000 cy of treated soil was not used during backfilling of the DPA. This treated soil is stockpiled north of the DPA area for future use as backfill under a soil cap during remedial actions for the north end of the site.

6.5 Addendums to the LRAWP

There were several areas with deviations from the LRAWP discussed below:

6.5.1 Remedial Areas R18/19/22

Remedial areas R18, R19, and R22 were included in the DPA LRAWP via an addendum submitted in June 2016 (Arcadis 2016b). R18 was bordered by the site property boundary to the north, Mean High-High Water (MHHW) line to the west, and previously excavated/backfilled material on the eastern and southern perimeter; the bottom of R18 was below the water table. As such, no confirmation soil samples were required on the sidewall or bottom of the excavation. Visible NAPL impacts were removed along the property boundary and MHHW line to approximately 10-feet bgs to a visibly clean gray silty bottom. These limits were then backfilled with flowable fill; 60-feet long, 6-feet wide and 10-feet deep to the north, and 40-feet long, 6-feet wide and 10-feet deep on the west. A small gap was left open between the northern and western flowable fill walls in which a temporary sump was setup to monitor groundwater.

The R19 limits were adjacent to the sheet pile-lined oil-water separator (to be managed as part of the future planned waterfront phase of work). The southern portion of R19 was excavated to the limits of the sheet pile wall, and extended below the groundwater table to remove visible NAPL impacts. The western limits are located at the Mean Higher High-Water line and excavation was not permitted beyond these extents.

R22 was extended after encountering visible NAPL in the southern half of the area, located within the northern section of grid B-47. The excavation limits were extended deeper and further to the south to remove all visible NAPL. In the northeastern portion the excavation extended to where backfill from previous remedial actions in the LTC was encountered.

Additional work is planned in this area under the Waterfront LRAWP which has been approved by RIDEM.

6.5.1 Remediation Areas R23 and R24

Excavation Area R23 and R24, shown on Figures 4A and 4B, were identified during work as NAPL was observed during earthwork activities.

6.5.2 Remediation Areas R25 and R26

Per the DPA Addendum submitted September 2016 (Arcadis 2016d), Arcadis investigated and excavated impacted soil located outside the original DPA boundary in the northern half of the site in two areas, called R25 and R26. Arcadis completed the excavation of R25 and R26 concurrent with DPA work because equipment was available onsite. However, the northern half of the site will be remediated under a future LRAWP for that portion of the site. Therefore, information regarding R25 and R26 will be reported under separate cover in the closure report for the northern half of the site.

6.5.3 Use of Native Fill from Outside of DPA

Arcadis requested approval from RIDEM to use native soil containing TPH at concentrations less than 2500 mg/kg from a portion of the site north of the DPA LRAWP boundary and use as fill under the soil cap during backfilling activities within the DPA area. This request was approved by RIDEM in an email dated November 16, 2015 and its use was incorporated during backfilling activities.

6.5.4 Infiltration of Water Generated by Dewatering

RIDEM approved a request from Arcadis (2016) to infiltrate water generated by dewatering activities to an area near the center of the site. As described in this report, Arcadis treated dewatering water and discharged the treated water to the Providence River under a RIPDES discharge permit until the DWTS was dismantled to allow excavation of impacted soil beneath the system. The dewatering containment system (DWCS) was replaced by the infiltration system in July 2016 to contain dewatering liquids generated during the remaining excavation and backfill activities. Construction and operation of the system is described in Section 9.

6.5.5 Soil Drying at Unocal

Arcadis submitted a request to modify the LRAWP to allow soil to be moved to the nearby Unocal facility which is also a RIDEM site owned by Chevron (Arcadis 2016). Arcadis proposed to spread soil in lined cells to allow it to dry, prior to either reuse at DPA or off-site disposal. However, this activity was not conducted because other means of handling the silty, impacted soils were determined to be adequate. Soil from DPA was not stored at Unocal during this project.

7 DEVIATIONS FROM THE LRAWP

7.1 Cap Construction

The DPA LRAWP anticipated construction of a two-foot soil cap across the entire DPA LRAWP area. However, the cap is not complete and explanations for incomplete sections are described below.

As shown on Figure 7, the cap was not completed in several portions of DPA:

- In the southwest portion of the site, the cap was not completed based on discussions with National Grid, who operate a high pressure natural gas line in an easement on that portion of the site. National Grid expressed concerns regarding the depth of fill planned in the area of the high-pressure gas line, and is evaluating moving the gas line from the current easement in Chevron-owned property to a new easement in RIDOT property where Waterfront Drive is planned. Therefore, construction of the cap in this area has been delayed pending resolution of National Grid's plan for the gas line.
- The cap was not completed in the center portion of the site adjacent to the area which is the subject of the Waterfront LRAWP. The cap in this area will be completed as part of the Waterfront LRAWP project.
- The third area within the DPA boundary which was not capped is a small area on the northeast portion of DPA near the East Bay bike path. The investigation did not reveal any impacts requiring

removal in this area, so placement of a final cap here was delayed to minimize impacts to the East Bay bike path. This area will be addressed during remediation of the northern area of the site.

- Finally, a small area on the southeast corner of the site and a strip a few feet wide along a portion of the south and east site boundaries was not capped, as shown on Figure 7. A city manhole was located in this southeast corner, and that area and the strips along the boundary are outside the original facility fence line. This area is not believed to have been impacted by terminal activities because historic plans and photographs indicate that it was part of a vegetated strip of land outside the facility fence when the facility was in operation.

7.2 Surveying

The DPA LRAWP indicated that site features would be located and documented by a Licensed Land Surveyor. However, during construction it was more efficient and safer to use handheld and vehicle mounted GPS systems to document site activities. The GPS locating allowed collection of vastly more data because it was in use during all site activities. In addition, it has an accuracy of +/- 0.1 foot, and this was verified by daily calibration checks against a benchmark established by a RI-licensed professional surveyor.

7.3 Remediation Area R1

Excavation Area R1 was not included in the LRAWP due to its location just west of the DPA limit. However, due to remedial work already being completed around it for the DPA activities and to address this remedial area to prepare for planned capping, R1 was excavated, sampled and analyzed to confirm remedial objectives were met and then backfilled. All work was conducted in accordance with the LRAWP.

8 SOIL MANAGEMENT

Management of soil generated during the DPA LRAWP implementation is discussed in the section.

8.1 Soil Treatment

Soils characterized as containing TPH above 2,500 mg/kg (ICDEC and GBLC), and/or with visible NAPL, were stockpiled on site within a lined containment area. The majority of this soil was then treated on site via ESS/S. The remainder of this soil was not treated and was transported offsite for disposal at the ESMI facility located in NH (disposal documentation included in Appendix A). Between September 29, 2015 and March 13, 2017 approximately 145,294 tons of soil was treated by ESS/S, which included the measured addition of Portland cement and asphalt emulsion followed by thorough mixing to immobilize the impacts targeted for treatment followed by sampling and analysis to confirm treatment objectives were achieved. This process is outlined in detail in the ESS/S LRAWP submitted to RIDEM and approved by RIDEM through a letter dated May 20, 2013 (RIDEM 2013a).

Following treatment, soils were stockpiled in separate designated areas or “bins” located along the upper tier center (UTC) portion of the site and allowed to cure for a minimum of 48 hours prior to compliance sampling. The treated soil was designated as “batches” for tracking and documentation purposes, with a

batch typically being the soil treated in a single day and placed into a single common bin. Compliance sampling was conducted in accordance with the ESS/S LRAWP (Arcadis 2013d) and consisted of a four-point composite sample obtained from each batch of stabilized soil (approximately 1,000 cy or 1,500 tons of treated material) as approved by RIDEM in email correspondence dated May 1, 2014.

Samples were submitted to ESS laboratories of Cranston, Rhode Island and analyzed for TPH via the SPLP method and compared to the treatment objective of 4 milligrams per liter (mg/L). No treated soil samples generated analytical results over 4 mg/L during DPA work. Treated soil analytical results are summarized in Table 4, and the laboratory analytical reports were included in monthly Treatment Data Reports sent to the RIDEM Office of Waste Management.

Upon confirmation of achieving the treatment objective the treated soils were used as backfill or stockpiled on site for future use. Excess treated material not placed during the DPA remedial activities is currently staged in the North Borrow SS Stockpile onsite, and is to be used as backfill during future site activities.

8.2 Concrete Demolition and Debris Management

Concrete structures, including the upper basin of the decommissioned oil-water separator, a 700-foot-long concrete retaining wall, a 170-foot-long granite block retaining wall, underground concrete pipe subways, and former building concrete footings/slabs and subsurface structures were removed during DPA excavation activities. Prior to stockpiling, the concrete was visually inspected for residual petroleum impacts/staining as defined in the SMP (Arcadis 2013a). Concrete without visible petroleum impacts was staged in stockpiles in the Upper Tier North (UTN) for sizing and onsite reuse. A relatively small quantity of concrete debris appeared to have some staining upon initial observations and it was stockpiled in the lined containment area segregated from the soil designated for treatment. Further inspections of this concrete after precipitation had washed off adhered soil did not reveal any staining and it was then consolidated with the other unstained concrete debris.

Metal debris generated from the DPA excavation was separated from concrete as practical, and either stockpiled separately or directly loaded for offsite recycling or disposal along with other construction debris (Table 3, Appendix A).

8.3 Bedrock Removal and Disposition

Bedrock was encountered during excavation activities and in certain areas removed to some degree to achieve the site-wide grading requirements. Figure 5 shows the as-built maximum cut surface and horizontal limits of remaining bedrock within the final excavation limits. Bedrock removal was accomplished using hydraulic hammers and excavators. Approximately 3,946 cy of bedrock was removed and temporarily staged in the northern half of the site for future processing/crushing and reuse on site.

8.4 Air Monitoring

In accordance with the SMP, particulate monitoring was conducted during soil excavation and handling activities at the site. Monitoring consisted of both visual observations, and the use of particulate measurement instruments placed upwind and downwind of the work areas.

Dust control measures were implemented as necessary and included:

- Applying water (or calcium chloride during freezing conditions) onto stone/soil surfaces that could generate dust
- Covering stockpiles with polyethylene sheeting
- Applying dust suppression polymers to surfaces where it was allowed
- Seeding and placing erosion control matting on soil surfaces once disturbance to those areas was complete
- Limiting dust-generating activities during windy days and using a water truck as a precautionary dust control measure
- Placing clean/washed stone on surfaces

9 CONSTRUCTION DEWATERING

Construction dewatering was implemented to allow for the efficient and safe completion of the designed DPA excavation. Dewatering included construction and operation of dewatering trenches with sumps, and/or use of temporary shallow sumps. Dewatering liquids were handled and discharged using three separate processes to address changing site conditions. Initially, dewatering liquids were pumped to the temporary onsite DWTS for treatment and discharge. The DWTS was removed in July 2016 to facilitate soil excavation from under that structure. A temporary dewatering containment system (DWCS) was installed in July 2016 to replace the DWTS and consisted of a series of frac tanks and associated piping and controls placed within a containment berm. The DWCS was used until November 2016 when it was dismantled to allow access to that area for site restoration work. Use of this DWCS was limited due to relatively little dewatering that was needed during that time. From November 2016 until the end of DPA construction, two frack tanks were used to temporarily store dewatering liquids until it could be discharged through an infiltration basin, once it was confirmed no visible NAPL or sheen was present. Further details regarding dewatering and effluent discharge are provided below.

Until the DWTS was deconstructed in July 2016, water was pumped from the sumps to the onsite DWTS for treatment and discharged to the Providence River in accordance with the Rhode Island Pollutant Discharge Elimination System (RIPDES) RGP (number RIG85G016) issued for this site. Treated water was sampled and analyzed in accordance with the RGP, and results were reported to RIDEM in monthly Discharge Monitoring Reports. Treated water was discharged to the river via outfall OF-3.

The DWCS was installed in July 2016 to replace the DWTS system. The system consisted of six storage tanks used for settling of particulates. The system was operated in accordance with the Request to Discharge Water to Upper Tier Center (Arcadis 2016c). Prior to release from containment, water was visually inspected for the presence of sheen. From the storage tanks, water was discharged into a small infiltration basin constructed in grid I-32. This basin consisted of an approximately 750 square foot area containing 2 to 4-inch diameter crushed stone placed to approximately 5 feet below ground surface. This basin enabled water to infiltrate the ground surface and not flow overland to the Providence River. Regular visible monitoring of the area was performed to confirm water infiltrated as anticipated. The

DWCS was removed in November 2016 to allow access for the excavation of R10. An estimated 34,935 gallons of water were discharged through the infiltration basin in grid I-32.

Beginning in November 2016, water was pumped directly into one of two frack tanks and allowed to settle. The water was then discharged in accordance with the Request to Discharge Water to Upper Tier Center (Arcadis 2016c) into the infiltration basin, that was installed for the DWCS, in grid I-32.

Throughout DPA operations, approximately 41,674 gallons of dewatering liquids were sent offsite to Clean Harbors Environmental Service, Inc in South Portland, ME as nonhazardous regulated liquid.

10 SITE RESTORATION

Site restoration activities, including backfilling, surface water controls, infrastructure installation, and structures left in place, are described below.

10.1 Backfill

Following excavation activities, the DPA area was restored to the grades shown on Figure 7 using soil from the site and clean imported fill. Approximately 200,000 cy of backfill material was placed and compacted with vibratory rollers to meet the required specifications for site redevelopment. Approximately 140,000 cy of the backfill used for site restoration activities was from previously-excavated areas of the site not requiring ESS/S treatment, or identified as meeting the RO following treatment by ESS/S. An additional 60,000 cy of clean fill was imported from offsite sources to complete site restoration activities. Additional details are provided below.

10.1.1 Backfilling and Compaction

Backfilling and compaction activities were conducted in accordance with the LRAWP (Arcadis 2013b), SMP (Arcadis 2013a), project specifications, and Contract Drawings. Backfill was placed using traditional earth-moving equipment. Prior to backfilling, and during excavation activities, standing water was removed to the extent practicable. If standing water could not feasibly be removed from an excavation, backfilling was completed by first placing geotextile fabric at the bottom of the excavation, then placing washed gravel as needed to bridge out of water table. Lastly, the bridging material was covered with a second layer of non-woven geotextile, prior to continuation of normal soil backfill activities.

All imported fill, with the exception of fill not containing any significant fines, was tested to confirm that the imported material met the RDEC in the Remediation Regulations (RIDEM 2004). These analyses were performed by Contest Analytical of East Longmeadow, MA. Imported backfill materials were sampled at a minimum frequency of one four-point composite sample per 2,000 cubic yards (cy) in accordance with the Soil Management Plan (Arcadis 2013). Each composite sample was submitted for analysis of semi-volatile organic compounds via USEPA Method 8270C, Priority Pollutant 13 metals via Method 6010/7471, and TPH via USEPA Method 8100M. One uncomposited aliquot of each sample was also submitted for analysis of volatile organic compounds by USEPA Method 8260B. Analytical laboratory data reports for imported fill are presented in Appendix C.

10.1.2 Cap

A 2-foot thick cap consisting of imported material shown to meet the RIDEM RDEC was placed at the site as shown on Figure 7. The cap was installed in accordance with the LRAWP (Arcadis 2013b) and was constructed of:

- Dense graded aggregate (2 feet minimum)
- Dense grade aggregate (1.5 feet minimum) and ¾-inch washed stone (0.5 feet minimum at surface)
- Dense grade aggregate (1.5 feet minimum) and topsoil (0.5 feet minimum at surface) seeded and mulched, or
- RDEC-compliant imported soil fill (2-foot minimum)

The cap thickness was confirmed through field oversight during placement and use of GPS survey equipment, as well as being spot checked at eleven locations randomly selected across the site by a RI-Registered PE on May 5, 2016, October 13, 2016, and February 17, 2017. The spot check confirmation was accomplished by excavating into the constructed soil cap, i.e., test holes and measuring the cap thickness, per the DPA LRAWP. All locations passed inspection with a minimum of 2 feet of clean fill.

10.2 Surface Water Controls and Infrastructure Installation

From August 2016 through February 2017, site storm drain and sanitary sewer utilities were installed at the site in accordance with the LRAWP (Arcadis 2013b), project specifications, and Contract Drawings. Structures associated with their installation included manholes, catch basins, and outfalls. All utilities (piping and structures) were backfilled with imported fill meeting RIDEM RDEC. The storm drain utilities currently function to support management of stormwater at the site with erosion and sediment controls installed and maintained at receiving catch basins. The sanitary sewer installation involved connecting the existing, active City sanitary sewer line along the east side of the site to the main line along the west side of the site. The installed utilities are shown on Figure 6.

10.3 Structures Left in Place

Upon completion of DPA, structures left in place were surveyed using GPS and are shown on Figure 6. Below-ground structures left in place are below the cap and did not affect completion of the project design or impact placement of the cap. In the southern portion of the site, three bedrock outcrop areas were left in place. In the center of the site, sheet piling, and a granite wall were also left in place. Drainage lines were installed to support site development, as shown on Figure 7.

Bedrock was removed across the site as needed to allow for the 2-foot thick cap. Bedrock at depths that did not interfere with planned excavation depths was left in place. Historically installed sheet piling located near the former site entrance across from Lyons Avenue in the center of the site had sections that could be driven deeper to just below the maximum excavation limits while sections that could not be driven were cut down to the maximum excavation limits.

During backfill, select, higher permeability fill was placed in areas of planned future buildings, then extended to the lower elevation portion of the site. These layers are intended to act as a French drain type of structure for future buildings by allowing groundwater to flow from beneath the building foundations to the lower area of the site where groundwater will infiltrate. This system was designed by

GZA with the purpose of lowering the groundwater table under the future buildings. Previous investigations did not indicate the presence of LNAPL or groundwater impacts at the location where infiltration occurs.

LNAPL was discovered at the fractured bedrock interface in cell H-53, between remediation shapes R3 and R8, in March 2016. All visible LNAPL was removed through excavation and dewatering/pumping (less than approximately 10 gallons). Confirmation samples were collected as feasible, but samples were limited because the bottom and sides of this area was excavated to bedrock. A liner was installed between the excavation limits and an area where higher permeability select fill was placed to act as a temporary barrier as work progressed. To determine whether further NAPL would accumulate, a stone-filled trench was installed to allow groundwater to flow from the east and west ends within the lined area, parallel to the subsurface drainage system. A sump was installed in the trench and water was pumped and conditions were observed for approximately one month. No NAPL was ever observed. This trench was left in place, but the sump was removed, with its location documented and shown on Figures 4B, 5 and 7. Confirmation samples are shown on Figure 4B.

A sump remains in place for monitoring groundwater conditions at R18.

11 POST-CLOSURE GROUNDWATER MONITORING

Post-remediation monitoring will be completed in accordance with a Groundwater Monitoring Plan. Well installation and subsequent closure monitoring will be reported to RIDEM under separate cover.

12 CONCLUSION

Remediation activities completed in DPA include:

- The excavation and treatment of approximately 42,708 cy of soil impacted with NAPL and/or TPH at concentrations above the GBLC of 2,500 mg/kg
- The removal of approximately 1,819 cubic yards of concrete
- The removal of approximately 3,946 cubic yards of bedrock
- Construction of a cap with a minimum thickness of two feet of RDEC-compliant imported fill materials over a large portion of the site

All soil within the DPA area identified as containing TPH above the GBLC or NAPL was either treated via ESS/S and re-used as backfill or stockpiled on site for future use, or sent off-site for disposal. The excavated areas were backfilled with treated soil (confirmed via analyses to meet reuse requirements), soil containing TPH at concentrations less than 2500 mg/kg, or imported clean fill, and then capped with a minimum of 2-feet of RDEC-compliant imported fill materials.

The remedial work presented in the DPA LRAWP is complete with the exception of construction of some areas of the final cap, and groundwater monitoring.

An Environmental Land Usage Restriction will be necessary due to the presence of soil containing contaminants at concentrations exceeding the RDEC; however, the requirements of the DPA LRAWP and RIDEM approval of the LRAWP have been met through the installation of a cap meeting the requirements

set forth in the LRAWP (Arcadis 2011b) on portions of the site. Arcadis, on behalf of Chevron, will prepare a draft Environmental Land Usage Restriction to submit to RIDEM for review under separate cover.

13 CERTIFICATION REQUIREMENTS

Arcadis certifies, to the best of its knowledge, that this Development Phase A Limited Remedial Action Closure Report is complete and accurate.

Donna H. Pallister, P.E.

Arcadis U.S., Inc.

Chevron Environmental Management Company certifies, to the best of its knowledge, that this Development Phase A Limited Remedial Action Closure Report is a complete and accurate representation of the site and the release, and contains the known facts surrounding the release.

Peter J. Cagnetta

Chevron Environmental Management Company

14 REFERENCES

Arcadis. 2006. Supplemental Site Investigation Work Plan. Prepared for Chevron Environmental Management Company, Atlanta, Georgia. 2006.

Arcadis. 2010. Remedial Measures Partial Completion Report. Prepared for Chevron Environmental Management Company, Atlanta, Georgia. August 2010.

Arcadis. 2011d. Remedial Action Work Plan. Prepared for Chevron Environmental Management Company and Chevron Land and Development Company. Bellaire, Texas. December 2011.

Arcadis. 2011c. Remedial Measures Partial Completion Report, Volume 2. Prepared for Chevron Environmental Management Company, Bellaire, Texas. October 2011.

Arcadis. 2011a. Stormwater Pollution Prevention Plan. 2011.

Arcadis. 2011b. Limited Remedial Action Work Plan - Phase A-1: Central Retaining Wall Removal. August 2011.

Arcadis. 2013b. Limited Remedial Action Work Plan – Lower Tier Center. May 2013.

Arcadis. 2013d. Limited Remedial Action Work Plan – Ex-Situ Soil Stabilization/Solidification Remedial Technology. September 2013.

Arcadis. 2013a. Soil Management Plan. 2013.

Arcadis. 2014a. Soil Erosion and Sedimentation Control Plan. 2014.

Arcadis. 2015b. Development Phase A Limited Remedial Action Work Plan. June 2015.

Arcadis. 2015a. Site Wide Groundwater Monitoring Plan. January 2015.

Arcadis. 2016e. Lower Tier Center Remedial Action Closure Report. November 2016.

Arcadis. 2016c. Request to Discharge Water to Upper Tier Center (Grid I32). July 2016.

Arcadis. 2016a. Development Phase A Construction Quality Assurance Plan. April 2016.

Arcadis. 2016b. Addendum to Development Phase A Limited Remedial Action Work Plan. April 2016.

Arcadis. 2016d. Addendum to Development Phase A Limited Remedial Action Work Plan. September 2016.

Arcadis. 2017. North Area Pre-Design Investigation Summary Report. April 2017.

RIDEM. 2010. Groundwater Quality Rules. June 2010.

RIDEM. 2011. Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases. November 2011.

RIDEM. 2013a. Remedial Approval Letter. Case No. #97-017. May 2013.

RIDEM. 2013b. Order of Approval Letter. Case No. #97-017. September 2013.

RIDEM. 2014. Approval Letter. Case No. #97-017. August 2014.

TABLES

Table 2
TPH Summary Data - R1
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-01-CS-SW-01-09	12/14/2015	262704.90	359440.46	1.68	540	---
R-01-CS-SW-02-11	12/14/2015	262704.90	359440.46	-0.32	130	---
R-01-CS-SW-03-12	12/11/2015	262710.04	359445.67	-0.60	1,700	---
R-01-CS-SW-04-5	6/3/2015	262711.99	359451.83	5.80	14	---
R-01-CS-SW-05-5	6/3/2015	262713.08	359444.66	5.38	250	---
R-01-CS-SW-06-5	6/3/2015	262705.77	359443.38	4.71	14	---
R-01-CS-SW-07-5	6/3/2016	262704.35	359450.50	5.02	350	---

Notes

SW: sidewall sample

TPH: total petroleum hydrocarbon

mg/kg: milligrams per kilogram

Final excavation bottom limits were below the groundwater table; therefore no bottom samples collected/required

Northing and Easting in RI State Plane NAD83 Feet

Sample Elevation in NAVD 88 feet

TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure

Bold and shaded results exceed the regulatory criteria

Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.

---: not applicable

Table 2
TPH Summary Data - R2
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-02-CS-SW-01-2.5	4/29/2016	262355.12	359692.58	5.51	12	---
R-02-CS-SW-01-7	4/29/2016	262355.12	359692.58	0.51	<11	---
R-02-CS-SW-04-2.5	5/2/2016	262349.73	359694.47	5.86	<9.8	---
R-02-CS-SW-04-7.5	5/2/2016	262349.73	359694.47	0.86	<11	---
R-02-CS-SW-05-2.5	5/2/2016	262350.80	359687.17	5.84	11	---
R-02-CS-SW-05-7.5	5/2/2016	262350.80	359687.17	0.84	<10	---
R-02-CS-SW-06-2.5	5/2/2016	262357.21	359687.44	5.97	<9.7	---
R-02-CS-SW-06-7.5	5/2/2016	262357.21	359687.44	0.97	<10	---

Notes

SW: sidewall sample
TPH: total petroleum hydrocarbon
mg/kg: milligrams per kilogram
Final excavation bottom limits were below the groundwater table; therefore no bottom samples collected/required
Northing and Easting in RI State Plane NAD83 Feet
Sample Elevation in NAVD 88 feet
TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure
Bold and shaded results exceed the regulatory criteria
Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.
---: not applicable
Samples were labeled out of numerical sequence, omitting numbers 02 and 03.

Table 2
TPH Summary Data - R3
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-03-CS-SW-001-11	8/4/2015	262598.44	359715.57	37.57	110	---
R-03-CS-SW-002-8	8/4/2015	262598.44	359715.57	37.57	42	---
R-03-CS-SW-003-10	8/4/2015	262611.93	359700.80	34.66	1,200	---
R-03-CS-SW-004-7	8/4/2015	262611.93	359700.80	37.66	51	---
R-03-CS-SW-005-10	7/27/2015	262633.15	359701.24	34.82	**3,800**	R-03-CS-SW-017-11.5
R-03-CS-SW-006-7	7/27/2015	262633.15	359701.24	37.82	**5,400**	R-03-CS-SW-018-8.5
R-03-CS-SW-007-10.5	7/27/2015	262651.75	359702.43	34.78	1,700	---
R-03-CS-SW-008-8	7/27/2015	262651.75	359702.43	37.28	600	---
R-03-CS-SW-009-10.5	7/28/2015	262665.88	359715.10	34.8	200	---
R-03-CS-SW-010-8	7/28/2015	262665.88	359715.10	37.3	420	---
R-03-CS-SW-011-10.5	7/27/2015	262651.84	359731.14	34.77	1,000	---
R-03-CS-SW-012-8	7/27/2015	262651.84	359731.14	37.27	750	---
R-03-CS-SW-013-9.5	7/27/2015	262633.05	359731.36	35.13	270	---
R-03-CS-SW-014-7	7/27/2015	262633.05	359731.36	37.63	1,400	---
R-03-CS-SW-015-9.5	7/27/2015	262612.02	359731.33	35.23	680	---
R-03-CS-SW-016-7	7/27/2015	262612.02	359731.33	37.73	410	---
R-03-CS-SW-017-11.5	9/17/2015	262633.37	359690.82	34.43	1,500	---
R-03-CS-SW-018-8.5	9/17/2015	262633.37	359690.82	37.43	45	---
R-03-CS-B-01	2/15/2016	262604.36	359719.61	30.06	260	---
R-03-CS-B-02	2/15/2016	262625.30	359723.40	30.17	<11	---
R-03-CS-B-03	2/15/2016	262645.10	359724.41	30.22	970	---
R-03-CS-B-04	2/15/2016	262661.28	359716.09	30.03	430	---

Notes
SW: sidewall sample
B: bottom sample
TPH: total petroleum hydrocarbon
mg/kg: milligrams per kilogram
Northing and Easting in RI State Plane NAD83 Feet
Sample Elevation in NAVD 88 feet
TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure
Bold and shaded results exceed the regulatory criteria
Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.
---: not applicable

Table 2
TPH Summary Data - R4
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-04-CS-SW-001-4	7/28/2015	262495.11	359675.10	7.27	100	---
R-04-CS-SW-002-4	7/28/2015	262499.45	359658.57	7.24	<11	---
R-04-CS-SW-003-4.5	7/28/2015	262519.50	359645.50	7.05	<12	---
R-04-CS-SW-004-4	7/28/2015	262535.09	359649.18	7.65	1,100	---
R-04-CS-SW-005-3	7/28/2015	262531.48	359665.90	8.62	<11	---
R-04-CS-SW-006-3	7/28/2015	262511.10	359678.27	8.65	38	---
R-04-CS-B-001	8/31/2015	262526.96	359654.75	4.74	<13	---
R-04-CS-B-002	8/31/2015	262507.22	359669.17	4.55	<14	---

Notes

SW: sidewall sample
B: bottom sample
TPH: total petroleum hydrocarbon
mg/kg: milligrams per kilogram
Northing and Easting in RI State Plane NAD83 Feet
Sample Elevation in NAVD 88 feet
TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure
Bold and shaded results exceed the regulatory criteria
Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.
---: not applicable

Table 2
TPH Summary Data - R5
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-05-CS-SW-001-4	7/28/2015	262399.27	359727.33	6.92	<7.2	---
R-05-CS-SW-002-4	7/28/2015	262419.51	359724.28	7.25	6	---
R-05-CS-SW-003-4	7/28/2015	262436.52	359736.64	8.96	850	---
R-05-CS-SW-004-5	8/31/2015	262454.54	359749.61	14.48	2,200	---
R-05-CS-SW-005-5	8/31/2015	262457.25	359764.29	20.22	<16	---
R-05-CS-SW-006-3	8/31/2015	262439.77	359766.10	15.2	<15	---
R-05-CS-SW-007-2.5	7/28/2015	262421.27	359755.86	12.39	6	---
R-05-CS-SW-008-4	8/3/2015	262401.87	359746.01	7.63	140	---
R-05-CS-B-001	9/1/2015	262407.93	359732.65	4.212	510	---
R-05-CS-B-002	9/1/2015	262424.46	359748.03	7.99	1,300	---

Notes
SW: sidewall sample
B: bottom sample
TPH: total petroleum hydrocarbon
mg/kg: milligrams per kilogram
Northing and Easting in RI State Plane NAD83 Feet
Sample Elevation in NAVD 88 feet
TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure
Bold and shaded results exceed the regulatory criteria
Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.
---: not applicable
As indicated on Figure 5B, eastern third of excavation bottom had bedrock floor and no bottom sample was collected.

Table 2
TPH Summary Data - R6
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-06-CS-SW-001-5.5	7/22/2015	262567.50	359806.33	39.12	860	---
R-06-CS-SW-002-5.5	7/22/2015	262566.44	359824.92	38.88	230	---
R-06-CS-SW-003-5.5	7/22/2015	262549.80	359843.99	39.03	**4,100**	R-06-CS-SW-74-3
R-06-CS-SW-004-5.5	7/23/2015	262533.05	359863.17	39.10	**3,700**	R-06-CS-SW-038-5.5
R-06-CS-SW-005-5.5	7/21/2015	262516.21	359882.48	39.47	2,200	---
R-06-CS-SW-006-6	7/21/2015	262518.14	359901.79	39.01	**3,200**	R-06-CS-SW-74-3
R-06-CS-SW-007-6	10/13/2015	262529.18	359924.90	39.38	233	---
R-06-CS-SW-008-5	7/23/2015	262540.16	359947.88	39.68	**3,700**	R-06-CS-SW-71-5
R-06-CS-SW-009-5	7/23/2015	262550.14	359987.91	39.77	2,000	---
R-06-CS-SW-010-5	7/23/2015	262533.65	360003.19	39.62	**3,600**	R-06-CS-SW-050-5
R-06-CS-SW-011-4	7/23/2015	262512.52	360016.41	40.18	**2,500**	R-06-CS-SW-042-6
R-06-CS-SW-012-5	7/23/2015	262489.45	360022.05	39.32	**6,100**	R-06-CS-SW-043-6.5
R-06-CS-SW-013-5	7/23/2015	262464.81	360023.87	39.28	**2,800**	R-06-CS-SW-044-6.5
R-06-CS-SW-014-5	7/23/2015	262449.72	360032.74	39.70	320	---
R-06-CS-SW-015-6.5	7/23/2015	262414.93	360045.80	38.25	840	---
R-06-CS-SW-016-7.5	7/23/2015	262400.92	360027.51	38.28	840	---
R-06-CS-SW-017-6	7/23/2015	262397.40	360002.20	39.29	13	---
R-06-CS-SW-018-7.5	7/23/2015	262393.94	359977.24	37.40	12	---
R-06-CS-SW-019-3.5	10/22/2015	262390.27	359952.20	36.43	<39	---
R-06-CS-SW-020-9	10/22/2015	262391.47	359951.98	25.04	<49.6	---
R-06-CS-SW-021-3	10/22/2015	262394.55	359931.11	36.94	<45.6	---
R-06-CS-SW-022-8.5	10/22/2015	262394.79	359932.55	26.56	<47.5	---
R-06-CS-SW-023-3.5	10/23/2015	262403.36	359916.69	39.27	905	---
R-06-CS-SW-024-9.5	10/23/2015	262404.08	359917.29	27.06	< 46.1	---
R-06-CS-SW-025-7	7/22/2015	262424.73	359897.53	38.06	**9,800**	R-06-CS-SW-045-7
R-06-CS-SW-026-6.5	7/22/2015	262443.80	359881.20	38.63	430	---
R-06-CS-SW-027-6.5	7/22/2015	262463.33	359864.48	38.62	1,700	---
R-06-CS-SW-028-6	7/22/2015	262482.70	359847.91	38.70	1,600	---
R-06-CS-SW-029-6	7/22/2015	262473.76	359827.91	38.50	92	---
R-06-CS-SW-030-7	7/24/2015	262465.24	359806.93	37.95	14	---
R-06-CS-SW-031-2.5	10/23/2015	262478.08	359790.47	35.66	220	---
R-06-CS-SW-032-5.5	7/22/2015	262528.19	359778.09	38.43	**10,000**	R-06-CS-SW-046-6
R-06-CS-SW-033-5.5	7/22/2015	262552.86	359788.77	38.95	630	---
R-06-CS-SW-034-5	7/23/2015	262551.28	359971.13	39.89	**7,800**	R-06-CS-SW-047-6
R-06-CS-SW-035-6	7/23/2015	262432.25	360051.26	39.28	**2,900**	R-06-CS-SW-048-6
R-06-CS-SW-036-6	7/23/2015	262503.70	359784.03	38.01	41	---
R-06-CS-SW-037-5.5	9/17/2015	262573.52	359832.19	39.53	**5,400**	R-06-CS-SW-63-5
R-06-CS-SW-038-5.5	9/16/2015	262540.13	359870.44	38.56	1,700	---
R-06-CS-SW-039-6	9/16/2015	262527.27	359896.54	38.81	**3,100**	R-06-CS-SW-74-3
R-06-CS-SW-040-5	9/17/2015	262549.29	359942.63	39.71	**2,800**	R-06-CS-SW-047-5
R-06-CS-SW-041-4.5	9/17/2015	262538.88	360011.95	39.93	**3,300**	R-06-CS-SW-050-5
R-06-CS-SW-042-4.5	9/17/2015	262517.75	360025.17	39.98	1,400	---
R-06-CS-SW-043-5	9/17/2015	262489.81	360031.97	39.38	410	---
R-06-CS-SW-044-5	9/17/2015	262465.17	360033.79	39.53	**5,800**	R-06-CS-SW-049-5
R-06-CS-SW-045-7.5	9/18/2015	262416.36	359890.86	38.25	220	---
R-06-CS-SW-046-6	9/17/2015	262527.29	359767.08	36.34	81	---
R-06-CS-SW-047-5	9/18/2015	262560.75	359966.60	39.77	88	---
R-06-CS-SW-048-5.5	9/17/2015	262439.53	360058.12	39.83	190	---

Table 2
TPH Summary Data - R6
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-06-CS-SW-049-5	10/13/2015	262465.43	360037.57	38.29	1,120	---
R-06-CS-SW-050-5	10/13/2015	262535.79	360016.29	39.61	2,140	---
R-06-CS-SW-051-5	10/13/2015	262543.97	360008.15	39.55	2,480	---
R-06-CS-SW-052-5	10/13/2015	262553.51	359946.59	39.44	**4,280**	R-06-CS-SW-71-5
R-06-CS-SW-053-5	10/13/2015	262549.44	359937.58	38.72	**3,290**	R-06-CS-SW-74-3
R-06-CS-SW-054-6	10/14/2015	262533.33	359900.44	38.37	**7,780**	R-06-CS-SW-74-3
R-06-CS-SW-055-5	10/14/2015	262554.02	359848.63	39.43	**4,870**	R-06-CS-SW-74-3
R-06-CS-SW-056-5	10/14/2015	262574.99	359840.27	39.64	**4,000**	R-06-CS-SW-74-3
R-06-CS-SW-057-5	10/14/2015	262575.23	359822.46	39.66	936	---
R-06-CS-SW-58-5	10/21/2015	262578.94	359844.72	39.80	**8,020**	R-06-CS-SW-74-3
R-06-CS-SW-59-5	10/21/2015	262557.76	359852.80	39.72	**4,220**	R-06-CS-SW-74-3
R-06-CS-SW-60-6	10/21/2015	262543.37	359894.13	38.46	**6,910**	R-06-CS-SW-74-3
R-06-CS-SW-61-5	10/21/2015	262547.81	359919.63	40.14	< 77	---
R-06-CS-SW-66-5	10/29/2015	262599.86	359870.30	39.77	**7,100**	R-06-CS-SW-74-3
R-06-CS-SW-63-5	10/29/2015	262593.92	359808.41	40.28	240	---
R-06-CS-SW-64-5	10/29/2015	262598.27	359847.85	39.67	1,800	---
R-06-CS-SW-65-5	10/29/2015	262599.75	359828.04	39.91	1,300	---
R-06-CS-SW-67-5	10/29/2015	262587.65	359888.80	39.71	1,700	---
R-06-CS-SW-68-5	10/29/2015	262574.19	359906.03	40.05	**4,200**	R-06-CS-SW-74-3
R-06-CS-SW-69-5	10/29/2015	262566.72	359926.98	39.70	**22,000**	R-06-CS-SW-74-3
R-06-CS-SW-71-5	12/9/2015	262572.04	359949.75	40.61	2,100	---
R-06-CS-SW-72-5	12/9/2015	262581.66	359931.25	39.49	120	---
R-06-CS-SW-73-5	12/9/2015	262593.07	359929.21	39.73	2,000	---
R-06-CS-SW-74-3	12/10/2015	262605.99	359870.18	41.74	1,100	---
R-06-CS-SW-75-4	12/10/2015	262596.20	359891.65	40.73	610	---
R-06-CS-SW-76-4	12/10/2015	262601.03	359911.92	40.77	270	---
R-06-CS-B-001	10/23/2015	262395.25	359960.76	32.51	< 47.9	---
R-06-CS-B-002	10/23/2015	262404.25	359980.65	35.40	< 48.4	---
R-06-CS-B-003	10/23/2015	262416.53	360008.02	34.44	901	---
R-06-CS-B-004	10/23/2015	262431.73	360020.06	36.07	< 49.6	---
R-06-CS-B-005	10/23/2015	262411.92	360033.21	34.78	< 48.8	---
R-06-CS-B-006	10/23/2015	262449.19	360047.40	37.85	< 49.8	---
R-06-CS-B-007	10/23/2015	262463.89	360037.65	38.19	< 47.8	---
R-06-CS-B-008	10/23/2015	262443.35	360008.14	35.29	< 50.5	---
R-06-CS-B-009	10/23/2015	262488.52	360014.95	36.21	< 48.7	---
R-06-CS-B-010	10/23/2015	262501.44	360027.03	38.13	< 46.5	---
R-06-CS-B- 11	10/27/2015	262442.95	360010.42	36.63	< 47.4	---
R-06-CS-B- 12	10/27/2015	262447.26	359991.72	36.37	**8,530**	R6-CS-B-22
R-06-CS-B- 13	10/27/2015	262418.12	359980.02	36.33	< 49.5	---
R-06-CS-B- 14	10/27/2015	262449.09	359959.05	36.05	< 48.3	---
R-06 -CS-B-15	10/27/2015	262422.68	359954.04	35.92	< 47.6	---
R-06 -CS-B-16	10/27/2015	262396.78	359947.96	33.81	< 48.6	---
R-06 -CS-B-17	10/27/2015	262412.35	359930.23	35.33	< 48.3	---
R-06 -CS-B-18	10/27/2015	262430.98	359923.61	36.08	< 48.2	---
R-06-CS-B-019	10/28/2015	262525.62	360017.43	38.68	10	---
R-06-CS-B-020	10/28/2015	262504.11	360011.52	37.06	< 11	---
R-06-CS-B-021	10/28/2015	262482.86	359979.70	37.03	< 11	---
R-06-CS-B-022	10/29/2015	262450.48	359984.87	35.05	< 11	---

Table 2
TPH Summary Data - R6
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-06-CS-B-023	11/3/2015	262470.83	359982.81	36.17	< 11	---
R-06-CS-B-024	11/16/2015	262556.02	359970.88	38.47	13	---
R-06-CS-B-025	11/16/2015	262531.58	359988.76	37.40	< 11	---
R-06-CS-B-026	11/16/2015	262515.65	359965.53	37.12	< 11	---
R-06-CS-B-027	11/16/2015	262551.01	359943.37	39.01	**3,200**	R-06-CS-B-038
R-06-CS-B-028	11/16/2015	262478.06	359968.38	36.76	< 11	---
R-06-CS-B-029	11/16/2015	262499.56	359951.02	36.68	37	---
R-06-CS-B-030	11/16/2015	262461.80	359946.12	36.38	< 11	---
R-06-CS-B-031	11/16/2015	262486.17	359923.72	36.67	210	---
R-06-CS-B-032	11/16/2015	262518.46	359935.73	37.15	< 11	---
R-06-CS-B-033	11/16/2015	262500.26	359916.97	36.39	< 11	---
R-06-CS-B-034	11/16/2015	262454.90	359918.06	36.47	< 11	---
R-06-CS-B-035	11/16/2015	262472.84	359905.59	36.52	12	---
R-06-CS-B-036	11/16/2015	262454.96	359881.42	36.13	11	---
R-06-CS-B-037	11/16/2015	262429.44	359893.21	36.80	39	---
R-06-CS-B-038	12/10/2015	262549.56	359942.54	36.13	< 11	---
R-06-CS-B-039	12/10/2015	262523.44	359953.59	35.90	< 11	---
R-06-CS-B-040	12/10/2015	262564.09	359955.09	37.35	360	---
R-06-CS-B-041	12/10/2015	262585.69	359924.04	38.83	170	---
R-06-CS-B-042	12/10/2015	262563.07	359921.71	37.66	330	---
R-06-CS-B-043	12/10/2015	262587.09	359908.01	38.99	910	---
R-06-CS-B-044	12/10/2015	262542.02	359916.42	36.87	< 11	---
R-06-CS-B-045	12/10/2015	262518.83	359891.64	36.94	12	---
R-06-CS-B-046	12/10/2015	262555.15	359885.58	35.41	17	---
R-06-CS-B-047	12/10/2015	262541.13	359896.35	36.38	93	---
R-06-CS-B-048	12/10/2015	262548.52	359867.81	36.22	14	---
R-06-CS-B-049	12/10/2015	262555.60	359847.20	36.05	120	---
R-06-CS-B-050	12/10/2015	262531.33	359821.15	34.51	170	---
R-06-CS-B-051	12/10/2015	262505.81	359841.99	34.50	< 11	---
R-06-CS-B-052	12/10/2015	262529.57	359869.09	34.76	< 11	---
R-06-CS-B-053	12/10/2015	262505.49	359864.45	34.91	< 11	---
R-06-CS-B-054	12/10/2015	262485.72	359857.67	35.33	< 10	---
R-06-CS-B-055	12/10/2015	262507.24	359887.94	33.93	< 11	---
R-06-CS-B-056	12/10/2015	262480.21	359891.41	30.84	37	---
R-06-CS-B-057	12/10/2015	262478.54	359820.63	34.58	<11	---
R-06-CS-B-058	12/10/2015	262581.36	359878.13	38.68	34	---
R-06-CS-B-059	12/10/2015	262518.11	359817.90	33.71	<11	---
R-06-CS-B-060	12/10/2015	262522.51	359796.76	32.87	<11	---
R-06-CS-B-061	12/10/2015	262599.00	359860.33	38.48	67	---
R-06-CS-B-062	12/10/2015	262559.20	359825.53	36.84	32	---
R-06-CS-B-063	12/10/2015	262582.00	359842.04	38.05	1,400	---
R-06-CS-B-064	12/10/2015	262553.01	359799.80	31.21	400	---
R-06-CS-B-065	12/10/2015	262535.56	359787.13	27.13	44	---
R-06-CS-B-066	12/11/2015	262489.91	359810.31	35.76	15	---
R-06-CS-B-067	12/11/2015	262482.44	359834.33	34.49	13	---
R-06-CS-B-068	12/14/2015	262583.40	359819.70	39.21	720	---
R-06-CS-B-069	12/14/2015	262594.70	359832.40	39.37	**37,000**	R-06-CS-B-073
R-06-CS-B-070	12/14/2015	262482.10	359897.80	35.04	31	---

Table 2
TPH Summary Data - R6
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-06-CS-B-071	12/14/2015	262463.30	359910.60	35.14	<10	---
R-06-CS-B-072	12/16/2015	262525.60	359798.40	34.68	<11	---
R-06-CS-B-073	1/5/2016	262594.73	359832.45	37.37	1,100	---

Notes

SW: sidewall sample

B: bottom sample

TPH: total petroleum hydrocarbon

mg/kg: milligrams per kilogram

Northing and Easting in RI State Plane NAD83 Feet

Sample Elevation in NAVD 88 feet

NAPL was observed in the west-northwest corner of R6 below groundwater and completely removed by pumping, absorbent pads and soil removal. No samples were collected; it was surveyed as shown on Figure 5B.

TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure

Bold and shaded results exceed the regulatory criteria

Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.

---: not applicable

Excavated: Additional excavation occurred due to regulatory criteria exceedances. The area was excavated until it reached a previously sampled area confirmed to contain TPH below regulatory criteria.

Table 2
TPH Summary Data - R7
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-07-CS-SW-001-5	7/21/2015	262626.61	359915.80	40.53	1,600	---
R-07-CS-SW-002-5	1/21/2016	262650.98	359919.06	35.54	60	---
R-07-CS-SW-003-3.5	8/6/2015	262677.06	359921.29	41.93	260	---
R-07-CS-SW-004-5	1/21/2016	262702.36	359923.55	39.33	<8.8	---
R-07-CS-SW-005-4	8/6/2015	262697.59	359942.31	45.81	140	---
R-07-CS-SW-006-5	8/6/2015	262681.70	359963.55	45.31	36	---
R-07-CS-SW-007-4	8/6/2015	262665.23	359976.59	46.07	<10	---
R-07-CS-SW-008-3.5	8/6/2015	262651.78	359967.27	42.76	<14	---
R-07-CS-SW-009-4	8/6/2015	262633.53	359952.08	40.66	16	---
R-07-CS-SW-010-5	7/21/2015	262611.81	359933.33	40.53	360	---
R-07-CS-B-001	1/21/2016	262707.70	359926.06	42.55	**4,500**	R-07-CS-B-007
R-07-CS-B-002	1/21/2016	262653.07	359920.78	37.99	<11	---
R-07-CS-B-003	1/21/2016	262613.60	359934.30	37.74	1,200	---
R-07-CS-B-004	1/21/2016	262643.23	359954.77	37.92	54	---
R-07-CS-B-005	1/21/2016	262662.92	359931.79	38.42	<11	---
R-07-CS-B-006	1/21/2016	262662.19	359959.89	39.33	280	---
R-07-CS-B-007	1/26/2016	262707.44	359926.49	39.58	110	---
R-07-CS-B-008*	---	262702.71	359930.88	38.77	---	---
R-07-SEEP-SW-1	2/10/2016	262730.08	359916.41	41.00	17	---
R-07-SEEP-SW-2	2/10/2016	262717.47	359898.19	40.27	<9.8	---
R-07-SEEP-SW-3	2/10/2016	262754.30	359900.84	40.54	10	---
R-07-SEEP-SW-4	2/10/2016	262739.48	359879.67	40.12	<9.0	---
R-07-SEEP-SW-5	2/10/2016	262770.76	359884.63	40.95	<8.7	---
R-07-SEEP-SW-6	2/10/2016	262752.83	359866.76	40.48	42	---
R-07-SEEP-SW-7	2/10/2016	262762.72	359854.16	40.82	48	---
R-07-SEEP-SW-8	2/10/2016	262790.70	359866.96	42.26	10	---
R-07-SEEP-B-1	2/10/2016	262725.10	359907.17	38.81	<11	---
R-07-SEEP-B-2	2/10/2016	262746.96	359890.56	40.17	<10	---
R-07-SEEP-B-3	2/10/2016	262763.02	359877.24	40.28	180	---
R-07-SEEP-B-4	2/10/2016	262775.26	359863.16	39.33	<11	---

Notes
SW: sidewall sample
B: bottom sample
TPH: total petroleum hydrocarbon
mg/kg: milligrams per kilogram
Northing and Easting in RI State Plane NAD83 Feet
Sample Elevation in NAVD 88 feet
TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure
Bold and shaded results exceed the regulatory criteria
Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.
---: not applicable
*: Sample not analyzed because R-07-CS-B-007 was below regulatory criteria

Table 2
TPH Summary Data - R8
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-08-CS-SW-001-4	7/21/2015	262688.80	359794.48	41.18	310	
R-08-CS-SW-002-9	7/21/2015	262688.80	359794.48	37.18	560	
R-08-CS-SW-003-4	7/21/2015	262704.46	359783.93	41.05	630	
R-08-CS-SW-004-9	7/21/2015	262704.46	359783.93	37.05	430	
R-08-CS-SW-005-3	7/30/2015	262729.02	359792.70	42.62	**2,500**	R-08-CS-SW-025-4
R-08-CS-SW-007-3	7/30/2015	262755.19	359800.09	42.74	260	
R-08-CS-SW-009-2	8/3/2015	262777.85	359805.49	43.5	160	
R-08-CS-SW-011-2.5	8/3/2015	262785.07	359824.43	43.28	26	
R-08-CS-SW-013-4	7/30/2015	262770.88	359845.20	41.9	250	---
R-08-CS-SW-015-4	7/30/2015	262755.55	359863.79	41.72	340	---
R-08-CS-SW-016-10	7/30/2015	262755.55	359863.79	41.72	**3,600**	---[2]
R-08-CS-SW-017-4	7/30/2015	262738.51	359861.04	41.74	710	---
R-08-CS-SW-018-10	7/30/2015	262738.51	359861.04	35.74	< 13	---
R-08-CS-SW-019-4	7/24/2015	262718.69	359845.51	41.41	1,000	---
R-08-CS-SW-020-9.5	7/24/2015	262718.69	359845.51	35.91	1,200	---
R-08-CS-SW-021-4	8/3/2015	262699.67	359829.63	41.47	230	---
R-08-CS-SW-022-8.5	8/3/2015	262699.67	359829.63	36.97	240	---
R-08-CS-SW-023-4	8/3/2015	262683.68	359811.18	41.50	**2,500**	R-08-CS-SW-026-4
R-08-CS-SW-024-9	8/3/2015	262683.68	359811.18	36.50	130	---
R-08-CS-SW-025-3	9/16/2015	262730.81	359789.67	42.84	930	---
R-08-CS-SW-026-4	9/16/2015	262681.32	359812.80	41.43	1,400	---
R-08-CS-SW-501	8/11/2016	262724.26	359752.80	43.82	300	---
R-08-CS-SW-502	8/11/2016	262743.37	359749.45	43.97	36	---
R-08-CS-SW-503	8/11/2016	262753.59	359768.74	43.94	290	---
R-08-CS-SW-504	8/11/2016	262760.64	359780.30	44.05	310	---
R-08-CS-SW-505	8/11/2016	262768.86	359792.08	43.14	360	---
NAPL-TRN-SMPL-01[3]	9/9/2016	262675.141	359784.534	28.136	250	---

Notes

SW: sidewall sample
TPH: total petroleum hydrocarbon
mg/kg: milligrams per kilogram
Final excavation bottom limits were below the groundwater table; therefore no bottom samples collected/required
Northing and Easting in RI State Plane NAD83 Feet
Sample Elevation in NAVD 88 feet
TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure
Bold and shaded results exceed the regulatory criteria
Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.
---: not applicable
[1]: bedrock encountered at shallow depth, sample not analyzed because all soil was excavated
[2]: excavated to bedrock at 37.4 amyl
Samples were labeled out of numerical sequence; no sample data has been omitted from the table.
Samples 6, 8, 10, 12, and 14 do not exist; no sample data have been omitted from the table.

Table 2
TPH Summary Data - R9
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-09-CS-SW-001-1.5	5/9/2016	262940.76	359728.13	44.23	300	---
R-09-CS-SW-002-2	5/9/2016	262957.61	359713.59	43.70	980	---
R-09-CS-SW-003-2.5	5/9/2016	262974.36	359728.29	43.79	**4,400**	R-09-CS-SW-05-2
R-09-CS-SW-004-2	5/9/2016	262958.28	359743.51	44.27	350	---
R-09-CS-SW-05-2	5/9/2016	262982.07	359730.84	44.69	440	---
R-09-CS-SW-06-1.5	5/9/2016	262974.49	359720.21	44.51	520	---
R-09-CS-SW-07-2	5/9/2016	262949.30	359713.55	43.57	440	---
R-09-CS-SW-08-2	5/9/2016	262941.28	359739.03	43.77	580	---
R-09-CS-SW-09-2	5/9/2016	262966.92	359744.02	45.22	270	---
R-09-CS-SW-010	6/7/2016	262983.74	359712.31	42.44	900	---
R-09-CS-SW-011	6/8/2016	262948.14	359757.13	40.99	<8.5	---
R-09-CS-SW-012	6/8/2016	262925.66	359774.52	41.39	<8.6	---
R-09-CS-SW-013	6/8/2016	262912.69	359787.48	41.85	<8.6	---
R-09-CS-SW-014	6/8/2016	262897.25	359798.60	43.12	<8.5	---
R-09-CS-SW-015	6/8/2016	262880.35	359810.20	43.86	49	---
R-09-CS-SW-016	6/8/2016	262879.72	359778.70	41.26	<8.6	---
R-09-CS-SW-017	6/8/2016	262898.26	359777.10	40.06	<8.5	---
R-09-CS-SW-016	6/8/2016	262879.72	359778.70	41.26	<8.6	---
R-09-CS-SW-018	6/8/2016	262925.88	359754.80	41.87	10	---
R-09-CS-SW-019	6/8/2016	262937.57	359744.40	41.52	<8.5	---
R-09-CS-SW-020	6/9/2016	262804.95	359835.57	41.74	330	---
R-09-CS-SW-021	6/10/2016	262824.41	359824.03	41.26	<8.4	---
R-09-CS-SW-022	6/11/2016	262843.92	359811.43	42.33	<8.4	---
R-09-CS-SW-023	6/12/2016	262855.79	359794.80	42.52	22	---
R-09-CS-SW-024	6/13/2016	262860.65	359825.68	43.15	<8.5	---
R-09-CS-SW-025	6/14/2016	262842.31	359837.78	43.24	<8.6	---
R-09-CS-SW-026	6/15/2016	262822.84	359850.54	43.22	<8.6	---
R-09-CS-SW-027	6/16/2016	262803.00	359863.00	43.36	<8.6	---
R-09-CS-B-001-3	5/9/2016	262944.18	359731.73	42.89	<8.4	---
R-09-CS-B-002-3	5/9/2016	262961.65	359742.61	43.33	<8.9	---
R-09-CS-B-003-5	5/9/2016	262961.05	359730.94	41.23	<8.5	---
R-09-CS-B-004-3	5/9/2016	262971.21	359718.18	43.00	9	---
R-09-CS-B-005	6/7/2016	262956.72	359720.06	37.58	75	---
R-09-CS-B-006	6/7/2016	262955.75	359732.92	38.89	18	---
R-09-CS-B-007	6/7/2016	262980.40	359710.68	39.85	<8.8	---
R-09-CS-B-008	6/8/2016	262968.49	359736.99	39.95	<9.8	---
R-09-CS-B-009	6/8/2016	262938.44	359754.53	39.93	140	---
R-09-CS-B-010	6/8/2016	262915.46	359773.40	39.31	<9.6	---
R-09-CS-B-011	6/8/2016	262896.77	359786.28	38.71	<10	---
R-09-CS-B-012	6/8/2016	262881.17	359791.69	39.69	<11	---
R-09-CS-B-013	6/8/2016	262871.76	359799.81	40.13	<11	---
R-09-CS-B-014	6/8/2016	262865.80	359791.86	40.21	<11	---
R-09-CS-B-015	6/9/2016	262808.74	359851.45	40.37	<11	---
R-09-CS-B-016	6/9/2016	262840.77	359827.62	40.99	780	---
R-09-CS-B-017	6/9/2016	262863.69	359808.18	40.53	<11	---

Table 2
TPH Summary Data - R9
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample

Notes

SW: sidewall sample

B: bottom sample

TPH: total petroleum hydrocarbon

mg/kg: milligrams per kilogram

Northing and Easting in RI State Plane NAD83 Feet

Sample Elevation in NAVD 88 feet

TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure

Bold and shaded results exceed the regulatory criteria

Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.

---: not applicable

Excavated: Additional excavation occurred due to regulatory criteria exceedances. The area was excavated until it reached a previously sampled area confirmed to contain TPH below regulatory criteria. The southern extent of R9 is defined by R7-SEEP-CS-SW-8.

Table 2
TPH Summary Data - R10
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R10-CS-SW-01-6	8/9/2016	262828.15	359757.41	39.70	130	---
R-10-CS-SW-002-6	7/31/2015	262792.21	359754.28	39.40	310	---
R-10-CS-SW-003-6	7/31/2015	262774.97	359746.22	39.40	250	---
R-W-CS-SW-004-6	7/31/2015	262770.50	359727.60	39.38	39	---
R-10-CS-SW-005-7	7/31/2015	262762.24	359708.11	38.40	< 13	---
R-10-CS-SW-006-3.5	7/31/2015	262762.24	359708.11	41.90	1,100	---
R-10-CS-SW-007-7	7/31/2015	262738.46	359692.36	38.00	< 13	---
R-10-CS-SW-008-3.5	7/31/2015	262738.46	359692.36	41.50	< 13	---
R-10-CS-SW-009-7	7/31/2015	262744.13	359673.19	38.00	< 12	---
R-10-CS-SW-010-3.5	7/31/2015	262744.13	359673.19	41.50	< 10	---
R-10-CS-SW-011-7	7/31/2015	262765.40	359658.85	37.70	23	---
R-10-CS-SW-012-3.5	7/31/2015	262765.40	359658.85	41.20	< 10	---
R-10-CS-SW-013-5.5	7/31/2015	262779.78	359645.08	39.20	< 13	---
R-10-CS-SW-014-5.5	7/31/2015	262784.48	359621.26	38.90	< 13	---
R-10-CS-SW-015-5.5	5/12/2016	262801.83	359604.44	36.27	13	---
R-10-CS-SW-016-1.5	5/12/2016	262823.14	359590.46	37.46	13	---
R-10-CS-SW-017-3.5	5/12/2016	262830.89	359571.37	30.85	**9,600**	R-10-CS-SW-53-2.5
R-10-CS-SW-018-2	5/12/2016	262826.63	359548.90	22.79	670	---
R-10-CS-SW-019-2.5	5/12/2016	262841.49	359545.89	23.72	2,000	---
R-10-CS-SW-020-3	5/12/2016	262856.37	359569.34	31.38	**15,000**	R10-CS-SW-62-3
R-10-CS-SW-021-3.5	5/12/2016	262874.50	359577.36	36.99	95	---
R-10-CS-SW-022-3.5	8/5/2015	262900.37	359578.62	37.18	610	---
R-10-CS-SW-023-6	8/5/2015	262925.64	359576.62	37.70	< 11	---
R10-CS-SW-024-6.5	8/9/2016	262951.97	359570.80	37.82	<9.1	---
R-10-CS-SW-025-4	8/10/2016	262978.00	359565.05	37.21	**2,500**	R10-CS-SW-025-4A
R10-CS-SW-025-4A	8/12/2016	262973.97	359558.94	37.13	220	---
R-10-CS-SW-026-4	8/10/2016	263003.21	359561.02	37.20	150	---
R-10-CS-SW-027-5.5	8/10/2016	263026.37	359560.40	38.74	300	---
R-10-CS-SW-028-3	8/10/2016	263051.19	359561.37	39.50	27	---
R-10-CS-SW-029-2.5	8/10/2016	263077.16	359568.89	39.50	9	---
R-10-CS-SW-030-2.5	8/10/2016	263094.78	359592.14	39.80	240	---
R-10-CS-SW-031-2.5	8/10/2016	263076.02	359599.64	40.00	480	---
R-10-CS-SW-032-2.5	8/10/2016	263057.29	359598.41	39.80	530	---
R-10-CS-SW-033-4	8/10/2016	263037.21	359595.64	38.80	120	---
R-10-CS-SW-034-6	8/10/2016	263013.65	359605.19	37.50	29	---
R10-CS-SW-35-6.5	8/9/2016	262991.90	359616.37	37.65	<9.4	---
R10-CS-SW-36-7	8/9/2016	262981.24	359644.61	38.33	<11	---
R10-CS-SW-37-7.5	8/9/2016	262960.80	359654.86	39.54	190	---
R10-CS-SW-38-7	8/9/2016	262938.30	359670.78	39.95	26	---
R10-CS-SW-39-6	8/9/2016	262919.37	359684.74	39.33	15	---
R10-CS-SW-40-6	8/9/2016	262901.98	359699.86	39.45	23	---
R10-CS-SW-41-6	8/9/2016	262883.36	359713.34	39.41	12	---
R10-CS-SW-42-6	8/9/2016	262865.05	359728.19	39.35	21	---
R10-CS-SW-43-6	8/9/2016	262846.39	359743.36	39.45	<11	---
R-10-CS-SW-044-3[1]	---	262832.38	359530.09	17.30	---	---
R-10-CS-SW-045-2	---	262851.06	359532.56	21.26	---[2]	---

Table 2
TPH Summary Data - R10
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-10-CS-SW-045A-2.5	---	262858.39	359526.77	20.96	---[2]	---
R-10-CS-SW-46-3.5	5/19/2016	262819.92	359569.36	28.87	**4,100**	R10-CS-SW-48 and -49
R-10-CS-SW-47-3.5	5/19/2016	262861.72	359557.06	24.92	**6,400**	R10-CS-SW-60 and -61
R-10-CS-SW-48-3.5	5/25/2016	262790.40	359581.48	25.90	<9.2	---
R-10-CS-SW-49-4	5/25/2016	262783.83	359561.59	20.30	340	---
R-10-CS-SW-50-4	5/25/2016	262775.78	359543.33	14.80	<10	---
R-10-CS-SW-51-3.5	5/25/2016	262783.47	359519.01	9.90	<10	---
R-10-CS-SW-52-2.5	5/26/2016	262785.00	359502.10	11.68	11	---
R-10-CS-SW-53-2.5	5/26/2016	262800.57	359493.93	11.98	230	---
R-10-CS-SW-54-5.5	5/27/2016	262824.56	359565.68	18.64	<11	---
R-10-CS-SW-55-4.5	5/27/2016	262830.76	359573.25	21.52	42	---
R-10-CS-SW-56-5	5/27/2016	262832.79	359554.88	17.90	<11	---
R-10-CS-SW-57-5	5/27/2016	262842.43	359540.13	16.05	30	---
R-10-CS-SW-58-5	5/27/2016	262853.38	359533.84	17.31	950	---
R-10-CS-SW-59-5	5/27/2016	262836.40	359521.55	13.33	44	---
R-10-CS-SW-60-3	5/31/2016	262893.92	359553.95	28.87	<8.5	---
R-10-CS-SW-61-3	5/31/2016	262886.22	359530.95	23.17	<9.1	---
R-10-CS-SW-62-3	5/31/2016	262881.75	359507.10	22.01	92	---
R-10-CS-SW-63-2.5	5/31/2016	262857.27	359506.24	17.37	580	---
R-10-CS-SW-64-2.5	5/31/2016	262834.89	359497.44	13.81	280	---
R-10-CS-SW-65	8/26/2016	262814.75	359770.47	39.00	590	---
R-10-CS-B-001	5/25/2016	262815.12	359576.12	24.70	29	---
R-10-CS-B-002	5/25/2016	262798.22	359583.96	24.40	13	---
R-10-CS-B-003	5/25/2016	262808.56	359564.08	19.40	<11	---
R-10-CS-B-004	5/25/2016	262792.98	359543.04	14.50	<11	---
R-10-CS-B-005	5/25/2016	262793.65	359536.57	13.40	140	---
R-10-CS-B-006	5/26/2016	262830.74	359570.44	24.80	**7,300**	R-10-CS-B-013
R-10-CS-B-007	5/26/2016	262822.84	359543.88	17.78	**9,500**	R-10-CS-B-011
R-10-CS-B-008	5/26/2016	262819.53	359523.16	14.78	12	---
R-10-CS-B-009	5/26/2016	262797.00	359511.64	11.91	450	---
R-10-CS-B-010	5/27/2016	262833.25	359562.94	17.38	27	---
R-10-CS-B-011	5/27/2016	262824.24	359546.60	12.97	150	---
R-10-CS-B-012	5/31/2016	262866.42	359539.20	22.00	<9.9	---
R-10-CS-B-013	5/31/2016	262882.36	359562.82	29.50	<10	---
R-10-CS-B-014	5/31/2016	262876.23	359518.84	19.90	33	---
R-10-CS-B-15	8/22/2016	262796.30	359764.10	35.89	<9.1	---
R-10-CS-B-16	8/23/2016	262742.59	359686.50	32.66	<9.3	---
R-10-CS-B-17	8/23/2016	262762.93	359703.26	33.31	<11	---
R-10-CS-B-18	8/23/2016	262759.34	359676.15	33.33	<11	---
R-10-CS-B-19	8/26/2016	262784.59	359658.09	35.00	260	---
R-10-CS-B-20	8/26/2016	262798.84	359679.75	35.80	<11	---
R-10-CS-B-21	8/26/2016	262774.52	359692.62	35.30	20	---
R-10-CS-B-22	8/26/2016	262792.90	359703.55	35.60	<10	---
R-10-CS-B-23	8/26/2016	262793.24	359725.78	35.50	<10	---
R-10-CS-B-24	8/26/2016	262777.75	359738.37	36.30	21	---
R-10-CS-B-25	8/26/2016	262797.94	359745.88	36.60	<10	---

Table 2
TPH Summary Data - R10
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-10-CS-B-26	8/26/2016	262816.22	359730.17	36.40	<10	---
R-10-CS-B-27	8/302016	262812.13	359609.07	35.90	13	---
R-10-CS-B-28	8/302016	262792.06	359623.72	36.20	<11	---
R-10-CS-B-29	8/302016	262807.79	359637.56	35.40	<10	---
R-10-CS-B-30	8/302016	262829.31	359659.51	35.20	<10	---
R-10-CS-B-31	8/302016	262809.00	359661.01	35.70	<10	---
R-10-CS-B-32	8/302016	262823.00	359685.09	36.60	<11	---
R-10-CS-B-33	8/302016	262840.95	359701.73	36.60	<11	---
R-10-CS-B-34	8/302016	262813.61	359708.07	36.40	<10	---
R-10-CS -B-35	8/31/2016	262842.86	359733.70	37.70	<10	---
R-10-CS -B-36	8/31/2016	262819.25	359747.65	36.10	<9.5	---
R-10-CS -B-37	9/13/2016	262828.46	359635.94	34.25	25	---
R-10-CS -B-38	9/13/2016	262832.71	359602.14	34.74	26	---
R-10-CS -B-39	9/13/2016	262842.99	359616.68	34.47	<10	---
R-10-CS -B-40	9/13/2016	262854.14	359640.57	33.99	<10	---
R-10-CS -B-41	9/15/2016	262857.25	359721.95	37.77	<10	---
R-10-CS -B-42	9/15/2016	262879.79	359707.64	38.75	43	---
R-10-CS -B-43	9/15/2016	262869.18	359686.18	36.93	18	---
R-10-CS -B-44	9/15/2016	262851.82	359669.88	34.99	14	---
R-10-CS -B-45	9/15/2016	262897.98	359693.57	38.67	13	---
R-10-CS -B-46	9/15/2016	262874.99	359663.67	34.83	<10	---
R-10-CS-B-47	9/20/2016	262914.48	359682.30	38.98	180	---
R-10-CS-B-48	9/20/2016	262881.73	359601.80	27.78	<11	---
R-10-CS-B-49	9/21/2016	262897.87	359666.02	36.62	20	---
R-10-CS-B-50	9/21/2016	262899.42	359644.16	33.89	<10	---
R-10-CS-B-51	9/21/2016	262877.19	359644.96	34.41	<10	---
R-10-CS-B-52	9/21/2016	262880.03	359615.82	29.55	78	---
R-10-CS-B-53	9/21/2016	262865.55	359600.23	28.55	<9.6	---
R-10-CS-B-54	9/23/2016	262890.38	359600.35	27.71	<11	---
R-10-CS-B-55	9/23/2016	262911.84	359599.63	31.96	25	---
R-10-CS-B-56	9/23/2016	262899.24	359581.82	34.28	120	---
R-10-CS-B-57	9/23/2016	262910.75	359626.52	33.66	<9.9	---
R-10-CS-B-58	9/23/2016	262930.10	359612.81	33.65	<11	---
R-10-CS-B-59	9/23/2016	262943.52	359634.07	35.97	110	---
R-10-CS-B-60	9/23/2016	262926.91	359649.81	36.96	<11	---
R-10-CS-B-61	10/6/2016	262941.60	359657.81	38.59	110	---
R-10-CS-B-62	10/6/2016	262960.82	359646.22	38.06	<11	---
R-10-CS-B-63	10/6/2016	262980.24	359634.37	37.10	350	---
R-10-CS-B-64	10/6/2016	262998.90	359617.00	36.91	11	---
R-10-CS-B-65	10/6/2016	262940.60	359577.83	34.22	79	---
R-10-CS-B-66	10/10/2016	263011.80	359596.83	35.67	170	---
R-10-CS-B-67	10/10/2016	263022.57	359599.58	36.37	32	---
R-10-CS-B-68	10/10/2016	263013.89	359572.76	34.45	**2,800**	R-10-CS-B-74
R-10-CS-B-69	10/10/2016	263037.55	359582.97	36.27	1,900	---
R-10-CS-B-70	10/10/2016	263047.55	359590.60	36.50	**3,000**	R-10-CS-B-71
R-10-CS-B-71	10/10/2016	263048.33	359571.14	36.42	730	---

Table 2
TPH Summary Data - R10
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-10-CS-B-72	10/10/2016	263062.18	359592.20	36.74	1,700	---
R-10-CS-B-73	10/10/2016	263075.20	359580.73	36.55	2,200	---
R-10-CS-B-74	10/10/2016	263065.06	359577.08	36.88	1,500	---

Notes
SW: sidewall sample
B: bottom sample
TPH: total petroleum hydrocarbon
mg/kg: miligrams per kilogram
Final excavation bottom limits were below the groundwater table; therefore no bottom samples collected/required
Northing and Easting in RI State Plane NAD83 Feet
Sample Elevation in NAVD 88 feet
TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure
Bold and shaded results exceed the regulatory criteria
Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmtory sample is identifed.
---: not applicable
Excavated: Additional excavation occurred due to regulatory criteria exceedances. The area was excavated until it reached a previously sampled area confirmed to contain TPH below regulatory criteria.
[1]: Free product observed and removed, but no sample collected. Excavated to groundwater.
[2]: sample collected as step out for sample R-10-CS-SW-019-2.5. Not analyzed because original sample was below regulatory criteria.
[3]: Free product observed and removed. Excavated to groundwater.

Table 2
TPH Summary Data - R9-R10 Seep
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-09/R-10-CS-SW-01	8/17/2016	262844.99	359780.56	41.50	76	---
R-09/R-10-CS-SW-02	8/26/2016	262858.28	359767.33	43.45	410	---
R-09/R-10-CS-B-01	8/17/2016	262854.91	359782.93	40.00	<11	---
R-09/R-10-CS-B-2	8/29/2016	262854.01	359777.73	34.68	<11	---
R-09-CS-SW-016	6/8/2016	262879.72	359778.70	41.26	<8.6	---

Notes

Non-aqueous phase liquid was observed between remedial areas 9 and 10. It was excavated and confirmation samples were labeled R-09/R-10 to denote the location.

On the north side of the R9/R10 seep removal area, the northern removal boundary is defined by a confirmation sample from R9: R9-CS-SW-16

SW: sidewall sample

B: bottom sample

TPH: total petroleum hydrocarbon

mg/kg: milligrams per kilogram

Northing and Easting in RI State Plane NAD83 Feet

Sample Elevation in NAVD 88 feet

TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure

Bold and shaded results exceed the regulatory criteria

Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.

---: not applicable

Table 2
TPH Summary Data - R11
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-11-CS-SW-001-4.5	4/7/2016	263113.58	359529.61	38.28	**3,600**	R11-CS-SW-016-4.5
R-11-CS-SW-002-5.5	4/7/2016	263135.48	359526.74	36.71	**5,700**	R11-CS-SW-014-7
R-11-CS-SW-003-8	4/8/2016	263160.44	359528.51	39.08	<8.9	---
R-11-CS-SW-004-11	5/2/2016	263185.68	359543.37	37.78	<8.6	---
R-11-CS-SW-005-4.5	4/8/2016	263185.68	359543.37	44.28	<8.7	---
R-11-CS-SW-006-5	5/2/2016	263205.10	359561.54	45.36	<8.5	---
R-11-CS-SW-007-4	4/29/2016	263199.34	359582.83	46.77	51	---
R-11-CS-SW-008-3	4/29/2016	263175.07	359595.50	47.18	93	---
R-11-CS-SW-009-3	4/29/2016	263153.93	359605.86	46.88	200	---
R-11-CS-SW-010-7	4/7/2016	263142.93	359595.47	42.53	860	---
R-11-CS-SW-011-9	4/8/2016	263132.30	359573.89	37.14	**6,200**	R-11-CS-SW-020-7
R-11-CS-SW-012-3.5	4/22/2016	263110.00	359560.81	37.51	**3,400**	R-11-CS-SW-018-3.5
R-11-CS-SW-013-4	4/7/2016	263099.94	359536.99	38.20	<8.9	---
R-11-CS-SW-014-7	4/22/2016	263142.06	359513.27	38.35	<8.7	---
R-11-CS-SW-015-5	4/22/2016	263121.23	359501.14	38.34	<9.1	---
R-11-CS-SW-016-4.5	4/22/2016	263103.44	359515.28	37.86	<10	---
R-11-CS-SW-017-9	4/22/2016	263124.93	359579.24	36.72	**8,000**	R-11-CS-SW-020-7
R-11-CS-SW-018-3.5	4/22/2016	263101.16	359578.58	38.96	12	---
R-11-CS-SW-019-4	4/22/2016	263094.73	359560.32	38.52	<8.7	---
R-11-CS-SW-020-7	5/2/2016	263119.61	359593.13	40.99	110	---
R-11-CS-SW-21-7	10/27/2016	263183.37	359545.97	38.14	30	---
R-11-CS-B-01	7/19/2016	263110.83	359574.52	37.06	1,500	---
R-11-CS-B-02	7/19/2016	263129.17	359559.29	35.77	**3,500**	Excavated[1]
R-11-CS-B-03	7/19/2016	263154.36	359566.65	35.39	240	---
R-11-CS-B-04	7/19/2016	263135.97	359584.17	36.47	350	---
R-11-CS-B-05	7/19/2016	263126.76	359533.32	35.98	**10,000**	Excavated[1]
R-11-CS-B-06	7/19/2016	263148.86	359538.11	35.78	**4,500**	Excavated[1]
R-11-CS-B-07	7/19/2016	263101.90	359558.41	36.49	600	---
R-11-CS-B-09	8/11/2016	263165.57	359535.67	36.11	<9.7	---
R-11-CS-B-10	8/11/2016	263140.90	359511.39	38.27	<9.3	---
R-11-CS-B-11	8/17/2016	263174.01	359591.98	44.33	120	---
R-11-CS-B-12	9/23/2016	263182.34	359576.70	41.42	500	---
R-11-CS-B-13	9/23/2016	263190.98	359560.84	37.74	49	---
R-11-CS-B-14	9/23/2016	263177.48	359565.59	38.29	200	---

Notes

SW: sidewall sample
B: bottom sample
TPH: total petroleum hydrocarbon
mg/kg: miligrams per kilogram
Final excavation bottom limits were below the groundwater table; therefore no bottom samples collected/required
Northing and Easting in RI State Plane NAD83 Feet
Sample Elevation in NAVD 88 feet
TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure
Bold and shaded results exceed the regulatory criteria
Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmtory sample is identifed.
---: not applicable
Excavated[1]: Excavated deeper, at which point groundwater surface was encountered and no sample was required to be collected.
[1]: Excavated to groundwater.

Table 2
TPH Summary Data - R12
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-12-CS-SW-001-4.5	8/4/2015	263072.36	359499.79	37.08	**14,000**	R-12-CS-SW-006-4.5
R-12-CS-SW-002-5	8/4/2015	263056.02	359485.96	36.61	**23,000**	R-12-CS-SW-007-4.5
R-12-CS-SW-003-3.5	8/4/2015	263029.65	359485.61	34.37	120	---
R-12-CS-SW-004-4.5	8/4/2015	263028.84	359497.78	35.41	**7,900**	R-12-CS-SW-08-5
R-12-CS-SW-005-5	8/4/2015	263052.10	359502.79	36.71	1,400	---
R-12-CS-SW-006-4.5	3/14/2016	263077.58	359502.07	32.89	68	---
R-12-CS-SW-007-5.25	9/17/2015	263026.57*	359498.29*	34.47	**5,800**	R-12-CS-SW-012-5
R-12-CS-SW-08-5	3/14/2016	263027.11	359504.79	29.79	160	---
R-12-CS-SW-009-5	3/14/2016	263047.32	359473.84	27.51	**4,100**	R-12-CS-SW-013-5
R-12-CS-SW-010-5	3/14/2016	263062.13	359469.16	27.72	**3,200**	R-12-CS-SW-014-5
R-12-CS-SW-011-5	3/14/2016	263070.95	359479.43	31.58	**3,700**	R-12-CS-SW-012-5
R-12-CS-SW-012-5	3/14/2016	263062.00	359461.35	25.25	2,200	---
R-12-CS-SW-013-5	3/18/2016	263038.89	359464.33	28.35	120	---
R-12-CS-SW-014-5	3/18/2016	263077.66	359477.65	36.38	710	---
R-12-CS-B-001	3/14/2016	263027.11	359504.79	32.79	**14,000**	R-12-CS-B-005
R-12-CS-B-002	3/14/2016	263062.13	359469.16	30.72	<11	---
R-12-CS-B-003	3/14/2016	263056.65	359486.01	34.39	**4,200**	R-12-CS-B-004
R-12-CS-B-004	3/18/2016	263056.78	359486.10	33.09	43	---
R-12-CS-B-005	3/18/2016	263027.16	359504.71	31.90	15	---

Notes

SW: sidewall sample
B: bottom sample
TPH: total petroleum hydrocarbon
mg/kg: milligrams per kilogram
Final excavation bottom limits were below the groundwater table; therefore no bottom samples collected/required
Northing and Easting in RI State Plane NAD83 Feet
Sample Elevation in NAVD 88 feet
TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure
Bold and shaded results exceed the regulatory criteria
Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.
---: not applicable
Excavated: Additional excavation occurred due to regulatory criteria exceedances. The area was excavated until it reached a previously sampled area confirmed to contain TPH below regulatory criteria.
*: Coordinates estimated

Table 2
TPH Summary Data - R13
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-13-CS-SW-001-6	7/30/2015	263197.01	359424.53	30.86	<12	---
R-13-CS-SW-002-5	7/30/2015	263209.69	359395.63	32.21	<16	---
R-13-CS-SW-003-5	7/29/2015	263230.17	359381.00	32.18	67	---
R-13-CS-SW-004-10	7/29/2015	263230.17	359381.00	27.18	1,200	---
R-13-CS-SW-005-5	7/29/2015	263255.58	359375.31	32.10	**2,700**	R-13-CS-SW-021-7
R-13-CS-SW-006-10	7/29/2015	263255.58	359375.31	27.10	110	---
R-13-CS-SW-007-6	7/29/2015	263276.96	359362.31	31.08	960	---
R-13-CS-SW-008-5.5	7/29/2015	263297.36	359347.53	31.36	250	---
R-13-CS-SW-009-6	7/29/2015	263321.59	359339.69	31.00	**3,300**	R-13-CS-SW-020-7 and -19-6.5
R-13-CS-SW-010-6.5	7/29/2015	263329.46	359353.96	31.12	**3,200**	R-13-CS-SW-018-9.5 and -20-7
R-13-CS-SW-011-4.5	7/29/2015	263311.27	359372.74	32.56	**4,700**	R-13-CS-SW-022-8
R-13-CS-SW-012-4.5	7/30/2015	263297.60	359399.72	33.42	1,100	---
R-13-CS-SW-013-5.5	7/29/2015	263272.59	359406.15	31.80	610	---
R-13-CS-SW-014-5	7/30/2015	263247.67	359412.73	32.47	<11	---
R-13-CS-SW-015-12	7/30/2015	263247.67	359412.73	25.47	280	---
R-13-CS-SW-016-5	7/30/2015	263225.20	359423.76	32.19	140	---
R-13-CS-SW-017-10	7/30/2015	263225.20	359423.76	26.86	<11	---
R-13-CS-SW-018-9.5	9/16/2015	263337.84	359361.66	29.10	180	---
R-13-CS-SW-019-6.5	9/16/2015	263314.62	359326.07	29.60	940	---
R-13-CS-SW-020-7	9/16/2015	263335.69	359336.08	30.87	900	---
R-13-CS-SW-021-7	3/14/2016	263262.41	359357.85	29.77	38	---
R-13-CS-SW-022-8	9/16/2015	263317.62	359380.64	31.98	51	---

Notes

SW: sidewall sample
TPH: total petroleum hydrocarbon
mg/kg: milligrams per kilogram
Final excavation bottom limits were below the groundwater table; therefore no bottom samples collected/required
Northing and Easting in RI State Plane NAD83 Feet
Sample Elevation in NAVD 88 feet
TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure
Bold and shaded results exceed the regulatory criteria
Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.
---: not applicable

Table 2
TPH Summary Data - R14
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-14-CS-SW-001(2.5)	6/4/2015	263197.20	359308.71	19.30	**11,000**	R14-CS-SW-027(2)
R-14-CS-SW-001(7.5)	6/4/2015	263197.20	359308.71	14.30	920	---
R-14-CS-SW-002(2.5)	6/4/2015	263206.59	359287.30	16.13	2,200	---
R-14-CS-SW-002(7.5)	6/4/2015	263206.59	359287.30	11.13	150	---
R-14-CS-SW-003(2.5)	6/4/2015	263228.77	359283.21	16.86	**22,000**	LTC-CS-21
R-14-CS-SW-003(7.5)	6/4/2015	263228.77	359283.21	11.86	2,000	---
R-14-CS-SW-004(2)	6/4/2015	263255.78	359280.39	21.43	**21,000**	LTC-CS-20
R-14-CS-SW-005(2)	6/4/2015	263276.27	359267.66	21.63	**5,600**	LTC-CS-19
R-14-CS-SW-006(2)	6/4/2015	263299.47	359250.63	21.20	39	---
R-14-CS-SW-007(1.5)	6/4/2015	263312.79	359231.63	18.40	1,500	---
R-14-CS-SW-008(1.5)	6/4/2015	263313.66	359214.51	16.89	**9,900**	LTC-CS-18
R-14-CS-SW-009(1.5)	6/4/2015	263331.07	359201.70	16.17	1,200	---
R-14-CS-SW-010(4)	6/4/2015	263348.29	359219.20	18.36	1,200	---
R-14-CS-SW-011(4)	6/4/2015	263358.45	359240.67	21.75	50	---
R-14-CS-SW-012(4)	6/4/2015	263376.94	359256.72	26.75	820	---
R-14-CS-SW-013(4)	6/4/2015	263388.64	359270.43	29.40	< 12	---
R-14-CS-SW-014-3	7/24/2015	263396.69	359278.00	33.38	110	---
R-14-CS-SW-015-6	7/24/2015	263396.69	359278.00	30.38	1,300	---
R-14-CS-SW-016-3	7/24/2015	263385.04	359299.01	33.70	**5,000**	R14-CS-SW-036-3
R-14-CS-SW-017-6	7/24/2015	263385.04	359299.01	30.70	24	---
R-14-CS-SW-018-3	7/24/2015	263361.86	359311.82	33.81	960	---
R-14-CS-SW-019-6	7/24/2015	263361.86	359311.82	30.81	250	---
R-14-CS-SW-020-3	7/24/2015	263347.41	359288.09	27.78	**2,700**	R14-CS-SW-034-6
R-14-CS-SW-021-3	7/24/2015	263323.43	359272.92	25.16	**2,700**	R14-CS-SW-033-6
R-14-CS-SW-022-8	8/14/2015	263306.74	359306.97	23.14	450	---
R-14-CS-SW-023(8)	6/30/2015	263291.42	359323.49	23.71	1,500	---
R-14-CS-SW-024(7)	6/30/2015	263266.39	359328.53	23.87	19	---
R-14-CS-SW-025(3)	6/26/2015	263242.11	359322.94	24.99	1,200	---
R-14-CS-SW-026(3)	6/26/2015	263216.16	359318.55	22.15	350	---
R-14-CS-SW-027(2)	6/26/2015	263191.43	359304.99	18.14	**3,800**	R14-CS-SW-037-4
R-14-CS-SW-028(2)	6/26/2015	263194.54	359289.62	15.83	**2,900**	LTC-CS-22
R-14-CS-SW-029(2)	6/26/2015	263207.32	359281.14	15.57	< 13	---
R-14-CS-SW-030-4	7/24/2015	263303.83	359286.66	24.80	**2,600**	R14-CS-SW-031-6
R-14-CS-SW-031-6	7/24/2015	263312.57	359302.42	23.60	440	---
R-14-CS-SW-032-8	8/14/2015	263286.31	359321.37	18.51	65	---
R-14-CS-SW-033-6	8/14/2015	263322.72	359300.37	21.54	1,400	---
R-14-CS-SW-034-6	8/14/2015	263337.41	359290.24	21.52	180	---
R-14-CS-SW-035-1	8/18/2015	263281.58	359232.47	17.19	160	---
R-14-CS-SW-036-3	8/19/2015	263387.53	359310.04	30.19	2,200	---
R-14-CS-SW-037-4	8/19/2015	263175.09	359316.49	18.78	1,000	---
R-14-CS-SW-038-5	8/19/2015	263351.27	359305.80	25.90	230	---
R-14-CS-BS-001-4	7/24/2015	263306.47	359265.10	18.13	**3,800**	---[1]
LTC-CS-18	8/29/2014	263323.27	359229.48	14.50	1,500	---[2]
LTC-CS-19	8/28/2014	263294.86	359243.11	14.43	1,000	---[2]
LTC-CS-20	8/28/2014	263272.23	359252.39	13.66	330	---[2]
LTC-CS-21	8/28/2014	263249.23	359267.44	12.57	800	---[2]
LTC-CS-22	8/27/2014	263228.69	359284.16	14.93	180	---[2]

Table 2
TPH Summary Data - R14
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample

Notes

SW: sidewall sample

BS: bottom sample

TPH: total petroleum hydrocarbon

mg/kg: milligrams per kilogram

Northing and Easting in RI State Plane NAD83 Feet

Sample Elevation in NAVD 88 feet

Final excavation limits were below the groundwater table or were bordered by bedrock; bottom and sidewall samples were collected as feasible where vadose zone soil existed at the limit of excavation

TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure

Bold and shaded results exceed the regulatory criteria

Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.

---: not applicable

[1]: Excavated to groundwater

[2]: Confirmation samples collected around the Lower Tier Center excavation, reported previously, were used to define the western edge of R14

Table 2
TPH Summary Data - SEEP
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
SEEP CS-SW 001	6/3/2015	263353.69	359216.53	19.03	1,500	---
SEEP CS-SW 002	6/3/2015	263364.55	359221.50	21.78	**7,100**	Seep-CS-SW-008
SEEP CS-SW-003	6/3/2015	263380.96	359210.92	21.40	**2,700**	Seep-CS-SW-009
SEEP CS-SW-004	6/3/2015	263384.44	359197.54	19.76	**4,900**	Seep-CS-SW-012
SEEP CS-SW-005	6/3/2015	263376.03	359189.42	16.30	**2,700**	Seep-CS-SW-013
SEEP CS-SW-006	6/3/2015	263353.05	359204.52	17.29	420	---
SEEP-CS-SW-007	6/8/2015	263359.89	359229.63	17.40	< 11	---
SEEP-CS-SW-008	6/8/2015	263370.60	359233.78	21.38	< 11	---
SEEP-CS-SW-009	6/9/2015	263393.69	359220.97	20.12	16	---
SEEP-CS-SW-010	6/9/2015	263403.58	359215.92	20.01	< 12	---
SEEP-CS-SW-011	6/9/2015	263371.67	359167.21	14.23	290	---
SEEP-CS-SW-012	6/9/2015	263392.27	359156.46	14.16	190	---
SEEP-CS-SW-013	6/10/2015	263350.58	359178.93	14.64	160	---
SEEP-CS-SW-014	6/10/2015	263355.25	359188.05	14.55	120	---
SEEP-CS-SW-015	6/10/2015	263412.70	359148.25	14.08	990	---
SEEP-CS-SW-016	6/10/2015	263424.50	359142.17	13.16	430	---
SEEP-CS-SW-017	6/12/2015	263443.14	359142.93	15.52	< 13	---
SEEP-CS-SW-018	6/12/2015	263458.59	359159.95	21.53	< 14	---
SEEP-CS-SW-019	6/12/2015	263469.12	359177.19	22.34	< 13	---
SEEP-CS-SW-020	6/12/2015	263471.42	359195.76	26.14	< 12	---
SEEP-CS-SW-021	6/12/2015	263462.46	359209.83	27.58	< 13	---
SEEP-CS-SW-022	6/12/2015	263450.59	359208.70	27.08	96	---
SEEP-CS-B-001 (8)[1]	6/12/2015	263367.28	359247.92	NM	< 13	---
SEEP-CS-B-002 (4)[2]	6/12/2015	NM	NM	NM	< 13	---
SEEP-CS-B-003	6/12/2015	263452.21	359162.65	9.37	< 14	---

Notes

SW: sidewall sample

B: bottom sample

TPH: total petroleum hydrocarbon

mg/kg: milligrams per kilogram

Northing and Easting in RI State Plane NAD83 Feet

Sample Elevation in NAVD 88 feet

Final excavation limits were below the groundwater table or were bordered by bedrock; bottom and sidewall samples were collected as feasible where vadose zone soil existed at the limit of excavation

TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the

2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure

Bold and shaded results exceed the regulatory criteria

Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.

---: not applicable

NM: not surveyed due to safety hazards for survey crew. GPS enabled excavator was not yet onsite when sample was collected.

[1]: Depth collected at 8 feet below ground surface prior to work, which is approximately 22 amsl

[2]: Depth collected at 4 feet below ground surface prior to work, approximately 25 amsl. Location shown on Figure 5A is approximate based on field documentation.

Table 2
TPH Summary Data - R15
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-15-CS-SW-001-3	7/30/2015	263323.06	359444.27	34.66	1,200	---
R-15-CS-SW-002-5.5	3/24/2016	263322.11	359457.54	35.02	10	---
R-15-CS-SW-003-5.5	3/24/2016	263307.62	359471.60	35.90	21	---
R-15-CS-SW-004-4	3/24/2016	263294.34	359467.10	32.50	<9.3	---
R-15-CS-SW-005-4.5	3/24/2016	263292.58	359452.64	31.70	<10	---
R-15-CS-SW-006-6	7/29/2015	263310.06	359439.40	31.31	<6.0	---

Notes

SW: sidewall sample

TPH: total petroleum hydrocarbon

mg/kg: milligrams per kilogram

Final excavation bottom limits were below the groundwater table; therefore no bottom samples collected/required

Northing and Easting in RI State Plane NAD83 Feet

Sample Elevation in NAVD 88 feet

TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure

Bold and shaded results exceed the regulatory criteria

Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.

---: not applicable

Table 2
TPH Summary Data - R17
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-17-B-001	5/11/2016	263581.22	359110.66	27.31	<11	---
R-17-B-002	5/11/2016	263580.92	359085.27	25.63	<11	---
R-17-B-003	5/11/2016	263574.80	359053.67	22.51	130	---
R-17-B-004	5/11/2016	263543.27	359062.66	16.99	<11	---
R-17-B-005	5/11/2016	263551.34	359102.09	21.47	<10	---
R-17-B-006	5/11/2016	263527.72	359107.82	20.64	11	---
R-17-B-007	5/11/2016	263524.90	359070.55	15.58	<11	---
R-17-B-008	5/17/2016	263563.14	359081.30	23.62	<11	---
R-17-B-009	5/19/2016	263591.52	359068.61	27.24	<11	---
R-17-B-010	5/19/2016	263599.24	359086.46	27.81	<11	---
R-17-B-011	5/19/2016	263609.67	359104.77	28.63	<11	---
R-17-CS-SW-001-3.5	4/28/2016	263581.88	359091.90	29.16	**4,800**	R-17-CS-SW-11-3.5
R-17-CS-SW-002-3.5	4/28/2016	263556.67	359107.85	26.35	740	---
R-17-CS-SW-003-4	4/28/2016	263533.88	359105.79	22.92	**5,000**	R-17-CS-SW-12-3.5
R-17-CS-SW-004-3.5	4/28/2016	263521.56	359083.73	21.16	210	---
R-17-CS-SW-005-3.5	4/28/2016	263516.55	359058.96	10.50	360	---
R-17-CS-SW-006-3.5	4/28/2016	263533.36	359050.59	10.50	670	---
R-17-CS-SW-007-3.5	4/29/2016	263550.56	359041.01	10.32	92	---
R17-CS-SW-008-4	4/30/2016	263571.91	359043.62	19.05	48	---
R17-CS-SW-009-6	4/28/2016	263589.62	359061.18	32.61	<10	---
R-17-CS-SW-010-3.5	4/28/2016	263593.43	359078.69	34.42	<10	---
R-17-CS-SW-11-3.5	4/28/2016	263589.43	359114.17	31.15	28	---
R-17-CS-SW-12-3.5	4/28/2016	263522.83	359113.77	23.05	220	---
R-17-CS-SW-013-3.5	5/17/2016	263575.14	359110.94	25.05	84	---
R-17-CS-SW-014-3.5	5/17/2016	263539.00	359116.30	20.24	<5.4	---
R-17-CS-SW-016-3.5	5/17/2016	263596.12	359095.14	28.57	**6,900**	R-17-CS-SW-21
R-17-CS-SW-17	5/19/2016	263599.91	359059.82	29.73	1,700	---
R-17-CS-SW-18	5/19/2016	263586.95	359054.54	27.88	36	---
R-17-CS-SW-19	5/19/2016	263612.17	359080.34	31.02	74	---
R-17-CS-SW-20	5/19/2016	263623.58	359100.68	NM	**3,400**	R-17-CS-SW-22
R-17-CS-SW-21	5/19/2016	263611.14	359111.86	31.36	110	---
R-17-CS-SW-22	7/27/2016	263639.63	359093.60	31.85	12	---

Notes

SW: sidewall sample

B: bottom sample

TPH: total petroleum hydrocarbon

mg/kg: milligrams per kilogram

Northing and Easting in RI State Plane NAD83 Feet

Sample Elevation in NAVD 88 feet

TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure

Bold and shaded results exceed the regulatory criteria

Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.

---: not applicable

NM: not measured

Excavated: Additional excavation occurred due to regulatory criteria exceedances. The area was excavated until it reached a previously sampled area confirmed to contain TPH below regulatory criteria.

Table 2
TPH Summary Data - R19
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-19-CS-SW-01-3	10/30/2015	263079.01	359111.15	4.65	51	---
R-19-CS-SW-02-3	10/30/2015	262985.58	359162.71	4.80	140	---
R-19-CS-SW-02-8	10/30/2015	262985.58	359162.71	4.80	< 9.7	---

Notes

SW: sidewall sample

TPH: total petroleum hydrocarbon

mg/kg: milligrams per kilogram

Final excavation bottom limits were below the groundwater table; therefore no bottom samples collected/required
R19 was fully delineated by the property boundary to the north, Providence River to the west, and the Lower Tier Center excavation to the east and south. R-19-SW-CS-02 was collected south of the former oil water separator, as close as was feasible to impacts.

Northing and Easting in RI State Plane NAD83 Feet

Sample Elevation in NAVD 88 feet

TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the

2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure

Bold and shaded results exceed the regulatory criteria

Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.

---: not applicable

Table 2
TPH Summary Data - R22
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-22-CS-SW-01-5	1/27/2016	262798.50	359316.58	1.64	510	
R-22-CS-SW-01-10	1/27/2016	262798.50	359316.58	-3.36	58	
R-22-CS-SW-01-15	1/27/2016	262798.50	359316.58	-8.36	<11	
R-22-CS-SW-02-5	12/11/2015	262808.26	359339.89	3.05	**20,000**	R-22-CS-SW-10-5
R-22-CS-SW-03-5	12/11/2015	262820.11	359351.88	5.35	2,300	
R-22-CS-SW-03-10	12/11/2015	262820.11	359351.88	0.35	870	
R-22-CS-SW-04-5	10/30/2015	262835.26	359364.46	7.57	1,000	
R-22-CS-SW-04-10	10/30/2015	262835.26	359364.46	2.57	**5,700**	R-22-CS-SW-011-10
R-22-CS-SW-04-15	10/30/2015	262835.26	359364.46	-2.43	65	
R-22-CS-SW-05-5	10/30/2015	262839.99	359384.60	8.62	43	
R-22-CS-SW-005-5	1/26/2016	262833.81	359358.98	7.24	1,000	
R-22-CS-SW-05-15	10/30/2015	262839.99	359384.60	-1.38	**2,700**	R-22-CS-SW-011-10
R-22-CS-SW-05-10	10/30/2015	262839.99	359384.60	3.62	1,400	
R-22-CS-SW-005-10	1/26/2016	262833.81	359358.98	2.24	180	
R-22-CS-SW-005-15	1/26/2016	262833.81	359358.98	-2.76	69	
R-22-CS-SW-06-5	12/11/2015	262803.36	359414.36	7.50	<9.2	
R-22-CS-SW-06-10	12/11/2015	262803.36	359414.36	2.50	1,700	
R-22-CS-SW-07-5	1/26/2016	262793.29	359396.48	6.71	740	
R-22-CS-SW-07-10	1/28/2016	262793.29	359396.48	1.71	170	
R-22-CS-SW-07-15	1/28/2016	262793.29	359396.48	-3.29	<9.6	
R-22-CS-SW-08-5	1/26/2016	262770.86	359374.71	3.32	**6,700**	Excavated[1]
R-22-CS-SW-08-10	1/27/2016	262770.86	359374.71	-1.68	56	
R-22-CS-SW-08-15	1/27/2016	262770.86	359374.71	-6.68	<9.9	
R-22-CS-SW-09-5	1/26/2016	262754.06	359346.61	0.88	14	
R-22-CS-SW-09-10	1/27/2016	262754.06	359346.61	-4.12	**2,800**	Excavated[1]
R-22-CS-SW-09-15	1/27/2016	262754.06	359346.61	-9.12	<11	
R-22-CS-SW-10-5	1/27/2016	262823.22	359321.57	3.41	1,000	
R-22-CS-SW-10-10	1/27/2016	262823.22	359321.57	-1.60	210	
R-22-CS-SW-10-15	1/27/2016	262823.22	359321.57	-6.60	<10	
R-22-CS-SW-011-5	1/25/2016	262856.09	359385.44	8.68	1,300	
R-22-CS-SW-011-10	1/26/2016	262856.09	359385.44	3.68	1,200	
R-22-CS-SW-011-15	1/26/2016	262856.09	359385.44	-1.32	<9.9	
R-22-CS-SW-012-5	1/25/2016	262844.14	359413.28	9.45	38	
R-22-CS-SW-012-10	1/26/2016	262844.14	359413.28	4.45	26	
R-22-CS-SW-012-15	1/26/2016	262844.14	359413.28	-0.56	110	

Notes

SW: sidewall sample

TPH: total petroleum hydrocarbon

mg/kg: milligrams per kilogram

Final excavation bottom limits were below the groundwater table; therefore no bottom samples collected/required

Northing and Easting in RI State Plane NAD83 Feet

Sample Elevation in NAVD 88 feet

TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure

Bold and shaded results exceed the regulatory criteria

Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.

---: not applicable

Excavated [1]: Additional excavation extended south towards gas line and was terminated at a safe distance from gas line, at which point sidewall and bottom were below groundwater surface. Thus, no confirmation sample was collected.

Table 2
TPH Summary Data - R23
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-09-CS-SW-012	6/8/2016	262925.66	359774.52	41.39	<8.6	---
R-09-CS-SW-013	6/8/2016	262912.69	359787.48	41.85	<8.6	---
R-09-CS-SW-014	6/8/2016	262897.25	359798.60	43.12	<8.5	---
R-09-CS-SW-017	6/8/2016	262898.26	359777.10	40.06	<8.5	---
R-09-CS-SW-016	6/8/2016	262879.72	359778.70	41.26	<8.6	---
R-09-CS-B-010	6/8/2016	262915.46	359773.40	39.31	<9.6	---
R-09-CS-B-011	6/8/2016	262896.77	359786.28	38.71	<10	---

Notes

R23 was planned as a distinct remedial area, but during excavation the R9 are extended through this planned excavation, and the soil removed from the area was delineated by confirmation samples labled for the extended R9 excavation.

SW: sidewall sample
TPH: total petroleum hydrocarbon
mg/kg: miligrams per kilogram
Final excavation bottom limits were below the groundwater table; therefore no bottom samples collected/required
Northing and Easting in RI State Plane NAD83 Feet
Sample Elevation in NAVD 88 feet
TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure
Bold and shaded results exceed the regulatory criteria
Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmtory sample is identifed.
---: not applicable

Table 2
TPH Summary Data - R24
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
R-24-CS-SW-001-2.5	5/27/2016	263423.61	359362.85	30.15	39	---
R-24-CS-SW-002-2.5	5/27/2016	263413.67	359358.10	31.65	910	---
R-24-CS-B 01	5/27/2016	263419.06	359355.93	29.65	10	---

Notes

Shape targets NAPL observed in one point location during temporary dewatering sump installation. Area was excavated and several were samples to confirm all NAPL was removed.

SW: sidewall sample

B: bottom sample

TPH: total petroleum hydrocarbon

mg/kg: milligrams per kilogram

Northing and Easting in RI State Plane NAD83 Feet
Sample Elevation in NAVD 88 feet
TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure
Bold and shaded results exceed the regulatory criteria
Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.
---: not applicable

Table 2
TPH Summary Data - I47
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
I47-CS-SW-01	9/21/2016	262953.06	359673.22	40.50	86	---
I47-CS-SW-02	9/21/2016	262963.39	359684.91	40.73	150	---
I47-CS-SW-03	9/21/2016	262971.84	359704.88	41.23	970	---
R-09-CS-SW-002-2	5/9/2016	262957.61	359713.59	43.70	980	---
R-09-CS-SW-07-2	5/9/2016	262949.30	359713.55	43.57	440	---
R10-CS-SW-38-7	8/9/2016	262938.30	359670.78	39.95	26	---
R10-CS-SW-39-6	8/9/2016	262919.37	359684.74	39.33	15	---
I47-CS-B-01	9/21/2016	262943.45	359682.59	37.06	<11	---
I47-CS-B-02	9/21/2016	262950.49	359702.91	40.01	<8.8	---
I47-CS-B-03	9/21/2016	262934.62	359697.49	40.33	<8.7	---

Notes

Samples from adjacent R9 area are included to provide confirmation of impact removal along the eastern sidewall.

Samples from adjacent R10 area are included to provide confirmation of impact removal to the west.

SW: sidewall sample

B: bottom sample

TPH: total petroleum hydrocarbon

mg/kg: milligrams per kilogram

Northing and Easting in RI State Plane NAD83 Feet
Sample Elevation in NAVD 88 feet

TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure

Bold and shaded results exceed the regulatory criteria

Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.

---: not applicable

Table 2
TPH Summary Data - J47
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
J47-CS-SW 01	9/26/2016	263006.27	359679.10	40.68	37	---
J47-CS-SW 02	9/26/2016	263026.11	359671.26	41.29	620	---
J47-CS-SW 03	9/27/2016	263047.45	359682.69	40.12	40	---
J47-CS-SW 04	9/27/2016	263044.76	359692.79	39.85	<8.9	---
J47-CS-SW 05	9/27/2016	263032.99	359703.55	39.82	<8.6	---
J47-CS-SW 06	9/27/2016	263014.47	359710.15	40.16	<8.7	---
J47-CS-SW 07	9/27/2016	263039.17	359676.60	40.01	200	---
R-09-CS-SW-09-2	5/9/2016	262966.92	359744.02	45.22	270	---
R-09-CS-SW-010	6/7/2016	262983.74	359712.31	42.44	900	---
J47-CS-B-01	9/26/2016	262982.39	359722.55	39.47	<8.6	---
J47-CS-B-02	9/26/2016	262986.59	359703.21	39.98	<8.7	---
J47-CS-B-03	9/26/2016	263006.82	359713.74	40.10	<8.4	---
J47-CS-B-04	9/27/2016	263034.58	359685.62	37.97	<8.9	---
J47-CS-B-05	9/27/2016	263016.46	359693.58	37.55	<9.7	---

Notes

Samples from adjacent R9 area are included to provide confirmation of impact removal along the southern sidewall.

SW: sidewall sample

B: bottom sample

TPH: total petroleum hydrocarbon

mg/kg: milligrams per kilogram

Northing and Easting in RI State Plane NAD83 Feet

Sample Elevation in NAVD 88 feet

TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure

Bold and shaded results exceed the regulatory criteria

Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.

---: not applicable

Table 2
TPH Summary Data - G52
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
G52-NAPL-CS-SW-01	8/4/2016	262679.93	359742.21	40.77	1,900	---
G52-NAPL-CS-SW-02	8/4/2016	262694.53	359746.50	42.77	250	---
G52-NAPL-CS-SW-03	8/4/2016	262696.87	359732.45	43.42	100	---
G52-NAPL-CS-SW-04	8/4/2016	262682.73	359727.52	42.03	310	---
G52-NAPL-CS-B-01	8/4/2016	262687.10	359732.88	41.21	170	---

Notes

SW: sidewall sample

B: bottom sample

TPH: total petroleum hydrocarbon

mg/kg: milligrams per kilogram

Northing and Easting in RI State Plane NAD83 Feet

Sample Elevation in NAVD 88 feet

TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure

Bold and shaded results exceed the regulatory criteria

Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.

---: not applicable

Table 2
TPH Summary Data - A44
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Sample ID	Date	Northing	Easting	Sample Elevation	TPH (mg/kg)	Step Out Sample
A-44/45-CS-SW-N1	1/25/2017	262856.90	359273.80	3.76	590	---
A-44/45-CS-SW-S1	1/25/2017	262831.60	359290.20	3.93	15	---

Notes

SW: sidewall sample

TPH: total petroleum hydrocarbon

mg/kg: milligrams per kilogram

Final excavation bottom limits were below the groundwater table; therefore no bottom samples collected/required

Northing and Easting in RI State Plane NAD83 Feet

Sample Elevation in NAVD 88 feet

TPH samples compared to the Rhode Island Department of Environmental Management Regulatory Criteria of 2,500 mg/kg as promulgated in the 2011 Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases for Industrial/Commercial Direct Exposure

Bold and shaded results exceed the regulatory criteria

Step out sample indicates the excavation area was extended further due to the regulatory exceedance. The confirmatory sample is identified.

---: not applicable

Table 3
Waste Disposal Summary
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Item #	Offsite Shipment Date	Profile	Disposal Facility	Qty.	Unit	Waste Description
1	9/8-11/21/16	10836	ESMI of New Hampshire, Inc.	12,195.50	Tons	TR Soil
2	8/31-10/3/16	494844NH	Waste Management - Turnkey	581.54	Tons	Soil with debris (asphalt)
3	6/28-7/1/16	494692NH	Waste Management - Turnkey	1,006.87	Tons	Lead Treated Soil
4	5/1/15-3/15/17	489348NH	Waste Management - Turnkey	280.46	Tons	C&D (Tarps, plastic, pipes, general debris, pallets, RR ties)
5	7/11/16-12/4/16	CH675278B	Clean Harbors - South Portland	41,674.00	Gallons	DWCS Water

Table 4
DPA Soil Treatment Data - Bin 0
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Source of Material Prior to Treatment	Tonnage from stockpile sent for treatment	Tonnage of treated materials sent to Bin	Treatment Date	SPLP Sampling[1]				In-Field Sheen Testing			Response Action/ Notes	Date Removed from Bin	Destination of Treated Materials
				Sample ID	Sample Date	SDG ID	SPLP TPH Result (mg/L)[2, 3]	Sheen Test ID	Sheen Test Date	Sheen Test Result[4, 5]			
Stockpile #2/100	1,807.40	1,861.62	5/18/2016	SS-123-BIN0-5-23-16	5/23/2016	16E0962-1	0.29	No longer required[5]	NA	NA	Acceptable for use (Confirmed 5/25/16)	6/3/2016	DPA
Stockpile #2/100	1,803.72	1,857.83	6/13/2016	SS-128-BIN0-6-16-16	6/16/2016	16F0859-01	1.2	No longer required[5]	NA	NA	Acceptable for use (Confirmed 6/20/16)	7/8/2016	DPA

Notes:
1. Samples consist of a 4-point composite taken from each full soil bin.
2. Bolded values indicate an exceedence of the Remedial Objective of 4 mg/L, if present.
3. Duplicate results are included in parentheses.
4. Positive sheen test result indicates that sheen and/or petroleum globules were identified after submersing a sample of the soil in water for 60 minutes.
5. RIDEM approved request to cease in-field testing via letter dated September 30, 2015 File No. SR-10-0248

-- = not applicable
cy = cubic yards
mg/L = milligrams per liter
NA = not available
RIDEM = Rhode Island Department of Environmental Management
SDG = Sample Delivery Group
SPLP = Synthetic Precipitation Leaching Procedure
TPH = total petroleum hydrocarbon

Table 4
DPA Soil Treatment Data - Bin 1
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Source of Material Prior to Treatment	Tonnage from stockpile sent for treatment	Tonnage of treated materials sent to Bin	Treatment Date	SPLP Sampling[1]				In-Field Sheen Testing			Response Action/ Notes	Date Removed from Bin	Destination of Treated Materials
				Sample ID	Sample Date	SDG ID	SPLP TPH Result (mg/L)[2, 3]	Sheen Test ID	Sheen Test Date	Sheen Test Result[4, 5]			
Stockpile #2/100	585.16	610.41	2/4/2014	SS-SPLP-1-2-6	2/6/2014	1402067	1.67	SS-ST-1-2-6	2/6/2014	Negative	Acceptable for use (Confirmed 2/13/14)	2/28/2014	Stockpile 2000
Stockpile #2/100	845.18	930.88	4/17/2014	SS-017-BIN1-04-21-14	4/21/2014	1404473	ND	SS-ST-017-BIN1-04-21-14	4/21/2014	Negative	Acceptable for use (Confirmed 4/24/14	4/28/2014	Lower Tier Center
Stockpile #2/100	510.15	555.68	4/29/2014	SS-025-BIN1-5-1-14	5/1/2014	1405023	1.5	SS-ST-025-BIN1-5-1-14	5/1/2014	Negative	Acceptable for use (Confirmed 5/6/14)	5/13/2014	Lower Tier Center
Stockpile #2/100	1,257.56	1,326.13	5/21/2014	SS-033-BIN1-5-23-14	5/23/2014	1405567	1.01	SS-ST-033-BIN1-5-23-14	5/23/2014	Negative	Acceptable for use (Confirmed 5/30/14)	5/31/2014 - 6/2/2014	Lower Tier Center & Stockpile 2000
Stockpile #2/100	741.49	766.68	6/3/2014	SS-040-BIN1-6-6-14	6/6/2014	1406150	ND (ND DUP)	SS-ST-040-BIN1-6-6-14	6/6/2014	Negative	Acceptable for use (Confirmed 6/11/14)	7/31/2014	Lower Tier Center
Stockpile #2/100	1,652.90	1,752.07	8/9/2014	SS-047-BIN1-8-11-14	8/11/2014	1408184	ND	SS-ST-047-BIN1-8-11-14	8/11/2014	Negative	Acceptable for use (Confirmed 8/14/14)	8/18/2014 - 8/19/2014	Lower Tier Center
Stockpile #2/100	1,481.05	1,569.91	8/22/2014	SS-055-BIN1-8-22-14	8/25/2014	1408528	ND	SS-ST-055-BIN1-8-22-14	8/22/2014	Negative	Acceptable for use (Confirmed 8/27/14)	8/29/2014 - 8/3/2014	Lower Tier Center
Stockpile #2/100	1,319.25	1,398.41	9/9/2014	SS-063-BIN1-9-9-15	9/11/2014	1409217	ND	SS-ST-063-BIN1-9-11-14	9/11/2014	Negative	Acceptable for use (Confirmed 9/15/14)	9/15/2014 - 9/16/2014	Lower Tier Center
Stockpile #2/100	1,253.71	1,328.36	9/23/2014	SS-071-BIN1-9-25-14	9/25/2014	1409541	ND	SS-ST-055-BIN1-9-25-14	9/25/2014	Negative	Acceptable for use (Confirmed 9/30/14)	8/17/2015- 9/23/2015	R14: Block F37,38
Stockpile #2/100	1,732.72	1,836.68	9/23/2015	SS-080-BIN1-9-30-15	9/30/2015	111837-1	<0.13	No longer required[5]	NA	NA	Acceptable for use (Confirmed 10/19/15)	12/14/2015- 12/16/2015	DPA
Stockpile #2/100	884.81	937.90	1/6/2016	SS-088-BIN1-1-8-16	1/8/2016	16A0219-01	0.78	No longer required[5]	NA	NA	Acceptable for use (Confirmed 1/12/16)	1/13/2016- 1/20/2016	DPA
Stockpile #2/100	2,060.94	2,184.60	1/26/2016	SS-096-BIN1-1-29-16	1/29/2016	16A1171-01	0.23	No longer required[5]	NA	NA	Acceptable for use (Confirmed 2/2/16)	3/5/2016	DPA
Stockpile #2/100	1,106.94	1,140.15	5/13/2016	SS-121-BIN1-5-15-16	5/15/2016	16E0698-02	0.46	No longer required[5]	NA	NA	Acceptable for use (Confirmed 5/18/16)	6/2/2016	DPA
Stockpile #2/100	1,676.81	1,727.11	6/14/2016	SS-129-BIN1-6-21-16	6/21/2016	16F1099-01	1.1	No longer required[5]	NA	NA	Acceptable for use (Confirmed 6/24/16)	8/1/2016	Consolidated into bins 1, 2 & 3
Stockpile #2/100	1,307.63	1,346.86	6/14/2016- 6/16/2016	SS-129-BIN1-6-21-16 SS-130-BIN2-6-21-16 SS-131-BIN3-6-21-16	6/21/2016	16F1099-02	0.61	No longer required[5]	NA	NA	Acceptable for use (Confirmed 6/24/16)	11/16/2016	DPA

Notes:
1. Samples consist of a 4-point composite taken from each full soil bin.
2. Bolded values indicate an exceedance of the Remedial Objective of 4 mg/L, if present.
3. Duplicate results are included in parentheses.
4. Positive sheen test result indicates that sheen and/or petroleum globules were identified after submersing a sample of the soil in water for 60 minutes.
5. RIDEM approved request to cease in-field testing via letter dated September 30, 2015 File No. SR-10-0248

-- = not applicable
cy = cubic yards
mg/L = milligrams per liter
NA = not available
RIDEM = Rhode Island Department of Environmental Management
SDG = Sample Delivery Group
SPLP = Synthetic Precipitation Leaching Procedure
TPH = total petroleum hydrocarbon

Table 4
DPA Soil Treatment Data - Bin 2
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Source of Material Prior to Treatment	Tonnage from stockpile sent for treatment	Tonnage of treated materials sent to Bin	Treatment Date	SPLP Sampling[1]				In-Field Sheen Testing			Response Action/ Notes	Date Removed from Bin	Destination of Treated Materials
				Sample ID	Sample Date	SDG ID	SPLP TPH Result (mg/L)[2, 3]	Sheen Test ID	Sheen Test Date	Sheen Test Result[4, 5]			
Stockpile #2/100	468.52	493.67	2/11/2014	SS-002-BIN2-2-13-14	2/13/2014	1402188	1.68	SS-ST-002-BIN2-2-13-14	2/13/2014	Negative	Acceptable for use (Confirmed 2/21/14)	2/28/2014	Stockpile 2000
Stockpile #2/100	299.72	324.79	2/28/2014	SS-010-BIN2-3-4-14	3/4/2014	1403025	1.40 (1.65 DUP)	SS-ST-010-BIN2-3-4-14	3/4/2014	Negative	Acceptable for use (Confirmed 3/6/14)	4/15/2014	Lower Tier Center
Stockpile #2/100	1,111.68	1,227.83	4/21/2014	SS-018-BIN2-4-23-14	4/23/2014	1404546	ND	SS-ST-018-BIN2-4-23-14	4/23/2014	Negative	Acceptable for use (Confirmed 4/25/14)	4/29/2014	Lower Tier Center
Stockpile #2/100	305.83	331.35	4/30/2014	SS-026-BIN2-5-5-14	5/5/2014	1405074	ND	SS-ST-026-BIN2-5-5-14	5/5/2014	Negative	Acceptable for use (Confirmed 5/13/14)	5/20/2014	Lower Tier Center
Stockpile #2/100	1,372.61	1,447.59	5/22/2014	SS-034-BIN2-5-28-14	5/28/2014	1405616	ND	SS-ST-034-BIN2-5-28-14	5/28/2014	Negative	Acceptable for use (Confirmed 6/2/14)	6/3/2014 - 6/5/2014	Lower Tier Center
Stockpile #2/100	1,257.15	1,332.58	8/11/2014	SS-048-BIN2-5-28-14	8/13/2014	1408250	ND	SS-ST-048-BIN2-8-13-14	8/13/2014	Negative	Acceptable for use (Confirmed 8/18/14)	8/19/2014	Lower Tier Center
Stockpile #2/100	1,026.75	1,088.36	8/25/2014	SS-056-BIN2-8-27-14	8/27/2014	1408571	ND	SS-ST-056-BIN2-8-27-14	5/28/2014	Negative	Acceptable for use (Confirmed 9/2/14)	9/3/2014-9/4/2014	Lower Tier Center
Stockpile #2/100	1,331.50	1,411.39	9/10/2014	SS-064-BIN2-9-12-14	9/12/2014	1409246	ND	SS-ST-056-BIN2-9-12-14	5/28/2014	Negative	Acceptable for use (Confirmed 9/16/14)	9/17/2014	Lower Tier Center
Stockpile #2/100	795.00	845.00	8/14/2015	SS-078-BIN2-8-19-15	8/19/2015	109887-1	0.94	SS-ST-078-BIN2-8-19-15	8/19/2015	Negative	Acceptable for use (Confirmed 8/27/15)	9/23/2015	DPA
Stockpile #2/100	2,171.29	2,299.40	9/28/2015	SS-081-BIN2-10-20-15	10/20/2015	1510572	0.344	No longer required[5]	NA	NA	Acceptable for use (Confirmed 10/28/15)	12/17/2015-12/29/2015	DPA
Stockpile #2/100	1,794.75	1,884.49	1/6/2016	SS-089-BIN2-1-11-2016	1/11/2016	16A0297-01	0.44	No longer required[5]	NA	NA	Acceptable for use (Confirmed 1/15/16)	1/21/2016	DPA
Stockpile #2/100	2,044.48	2,146.70	1/28/2016	SS-097-BIN2-2-1-16	2/1/2016	16B0029-01	0.44	No longer required[5]	NA	NA	Acceptable for use (Confirmed 2/5/16)	3/7/2016	DPA
Stockpile #2/100	1,856.71	1,912.41	4/11/2016	SS-112-BIN2-4-13-16	4/13/2016	16D0556-01	0.24	No longer required[5]	NA	NA	Acceptable for use (Confirmed 4/15/16)	4/22/2016	DPA
Stockpile #2/100	1,030.00	1,060.90	5/5/2016	SS-117-BIN2-5-9-16	5/9/2016	16E0343-01	0.29	No longer required[5]	NA	NA	Acceptable for use (Confirmed 5/11/16)	5/18/2016	DPA
Stockpile #2/100	1,592.35	1,640.12	5/23/2016	SS-125-BIN2-6-1-16	6/1/2016	16F0028-01	0.26	No longer required[5]	NA	NA	Acceptable for use (Confirmed 6/6/2016)	6/13/2016	DPA
Stockpile #2/100	1,565.68	1,612.65	6/15/2016	SS-130-BIN2-6-21-16	6/21/2016	16F1099-02	0.61	No longer required[5]	NA	NA	Acceptable for use (Confirmed 6/24/16)	8/1/2016	Consolidated into bins 1, 2 & 3
Stockpile #2/100	1,307.63	1,346.86	6/14/2016-6/16/2016	SS-129-BIN1-6-21-16 SS-130-BIN2-6-21-16 SS-131-BIN3-6-21-16	6/21/2016	16F1099-01 16F1099-02 16F1099-03	1.1 0.61 0.87	No longer required[5]	NA	NA	Acceptable for use (Confirmed 6/24/16)	10/12/2016	DPA

Notes:
1. Samples consist of a 4-point composite taken from each full soil bin.
2. Bolded values indicate an exceedance of the Remedial Objective of 4 mg/L, if present.
3. Duplicate results are included in parentheses.
4. Positive sheen test result indicates that sheen and/or petroleum globules were identified after submersing a sample of the soil in water for 60 minutes.
5. RIDEM approved request to cease in-field testing via letter dated September 30, 2015 File No. SR-10-0248

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SDG = Sample Delivery Group
SPLP = Synthetic Precipitation Leaching Procedure
TPH = total petroleum hydrocarbon

Table 4
DPA Soil Treatment Data - Bin 3
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Source of Material Prior to Treatment	Tonnage from stockpile sent for treatment	Tonnage of treated materials sent to Bin	Treatment Date	SPLP Sampling[1]				In-Field Sheen Testing			Response Action/ Notes	Date Removed from Bin	Destination of Treated Materials
				Sample ID	Sample Date	SDG ID	SPLP TPH Result (mg/L)[2, 3]	Sheen Test ID	Sheen Test Date	Sheen Test Result[4, 5]			
Stockpile #2/100	475.03	500.03	2/14/2014	SS-003-BIN3-2-18-14	2/18/2014	1402226	ND	SS-ST-003-BIN3-2-18-14	2/18/2014	Negative	Acceptable for use (Confirmed 2/21/14)	2/28/2014	Stockpile 2000
Stockpile #2/100	700.29	750.78	2/26/2014	SS-009-BIN3-2-28-14	2/28/2014	1402419	1.74	SS-ST-009-BIN3-2-28-14	2/28/2014	Negative	Acceptable for use (Confirmed 3/5/14)	4/17/2014 - 4/18/2014	Lower Tier Center
Stockpile #2/100	719.95	788.20	4/21/2014	SS-019-BIN3-4-23-14	4/23/2014	1404546	1.13	SS-ST-019-BIN3-4-23-14	4/23/2014	Negative	Acceptable for use (Confirmed 4/25/14)	5/1/2014 - 5/2/2014	Stockpile 2000
Stockpile #2/100	937.02	1,005.40	5/8/2014	SS-027-BIN3-5-13-14	5/13/2014	1405269	ND	SS-ST-027-BIN3-5-13-14	5/13/2014	Negative	Acceptable for use (Confirmed 5/16/14)	5/20/2014	Lower Tier Center
Stockpile #2/100	932.16	982.27	5/23/2014	SS-035-BIN3-5-28-14	5/28/2014	1405616	ND	SS-ST-035-BIN3-5-28-14	5/28/2014	Negative	Acceptable for use (Confirmed 6/2/14)	6/5/2014 - 6/6/2014	Lower Tier Center
Stockpile #2/100	1,070.64	1,134.88	7/28/2014	SS-041-BIN3-7-30-14	7/30/2014	1407655	ND	SS-ST-041-BIN3-7-30-14	7/30/2014	Negative	Acceptable for use (Confirmed 8/4/14)	8/4/2014 - 8/5/2014	Lower Tier Center
Stockpile #2/100	1,090.60	1,156.03	8/12/2014	SS-049-BIN3-8-14-14	8/14/2014	1408308	ND	SS-ST-049-BIN3-8-14-14	8/14/2014	Negative	Acceptable for use (Confirmed 8/19/14)	8/20/2014	Lower Tier Center
Stockpile #2/100	1,228.70	1,302.42	8/26/2014	SS-057-BIN3-8-28-14	8/28/2014	1408606	ND	SS-ST-057-BIN3-8-28-14	8/28/2014	Negative	Acceptable for use (Confirmed 9/2/14)	9/5/2014	Lower Tier Center
Stockpile #2/100	1,061.91	1112.74	8/28/2014	SS-65-BIN3-8-28-14	9/15/2014	1409289	ND	SS-ST-065-BIN3-8-28-14	8/15/2014	Negative	Acceptable for use (Confirmed 9/17/14)	9/18/2014	Lower Tier Center
Stockpile #2/100	1,045.99	1,910.00	8/14/2015	SS-077-BIN3-8-19-15	8/19/2015	109887-1	1.2	SS-ST-077-BIN3-8-19-15	8/19/2015	Negative	Acceptable for use (Confirmed 8/27/15)	10/23/2015	DPA
Stockpile #2/100	1,847.68	1,958.55	11/5/2015	SS-086-BIN3-11-9-15	11/9/2015	15K0345-01	0.59	No longer required[5]	NA	NA	Acceptable for use (Confirmed 11/12/15)	12/21/2015-12/29/2015	DPA
Stockpile #2/100	1,754.17	1,841.88	1/8/2016	SS-090-BIN3-1-13-16	1/13/2016	16A0413-01	0.4	No longer required[5]	NA	NA	Acceptable for use (Confirmed 1/15/16)	1/21/2016	DPA
Stockpile #2/100	1,840.85	1,932.89	1/29/2016	SS-098-BIN3-2-3-16	2/3/2016	16B0144-01	0.42	No longer required[5]	NA	NA	Acceptable for use (Confirmed 2/10/16)	3/8/2016	DPA
Stockpile #2/100	1,606.81	1,655.01	4/7/2016	SS-111-BIN3-4-11-16	4/11/2016	16D0427-01	0.44	No longer required[5]	NA	NA	Acceptable for use (Confirmed 4/14/16)	4/27/2016	DPA
Stockpile #2/100	533.39	549.39	5/6/2016	SS-118-BIN3-5-9-16	5/9/2016	16E03043-02	0.28	No longer required[5]	NA	NA	Acceptable for use (Confirmed 5/11/16)	5/12/2016	DPA
Stockpile #2/100	1,428.88	1,471.75	5/12/2016	SS-120-BIN3-5-16-16	5/16/2016	16E0698-01	0.46	No longer required[5]	NA	NA	Acceptable for use (Confirmed 5/18/16)	5/24/2016	DPA
Stockpile #2/100	1,968.51	2,027.57	5/25/2016	SS-127-BIN3-6-1-16	6/1/2016	16F0028-02	ND	No longer required[5]	NA	NA	Acceptable for use (Confirmed 6/6/16)	6/14/2016	DPA
Stockpile #2/100	680.41	700.82	6/16/2016	SS-131-BIN3-6-21-16	6/21/2016	16F1099-03	0.87	No longer required[5]	NA	NA	Acceptable for use (Confirmed 6/24/16)	8/1/2016	Consolidated into bins 1, 2 & 3
Stockpile #2/100	1,307.63	1,346.86	6/14/2016-6/16/2016	SS-129-BIN1-6-21-16 SS-130-BIN2-6-21-16 SS-131-BIN3-6-21-16	6/21/2016	16F1099-01 16F1099-02 16F1099-03	1.1 0.61 0.87	No longer required[5]	NA	NA	Acceptable for use (Confirmed 6/24/16)	10/2/2016	DPA

Notes:
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mg/L = milligrams per liter
NA = not available
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SDG = Sample Delivery Group
SPLP = Synthetic Precipitation Leaching Procedure
TPH = total petroleum hydrocarbon

Table 4
DPA Soil Treatment Data - Bin 4
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Source of Material Prior to Treatment	Tonnage from stockpile sent for treatment	Tonnage of treated materials sent to Bin	Treatment Date	SPLP Sampling[1]				In-Field Sheen Testing			Response Action/ Notes	Date Removed from Bin	Destination of Treated Materials
				Sample ID	Sample Date	SDG ID	SPLP TPH Result (mg/L)[2, 3]	Sheen Test ID	Sheen Test Date	Sheen Test Result[4, 5]			
Stockpile #2/100	713.25	763.44	2/19/2014	SS-004-BIN4-2-21-14	2/21/2014	1402308	2.25	SS-ST-004-BIN4-2-21-14	2/21/2014	Negative	Acceptable for use (Confirmed 2/26/14)	2/28/2014	Stockpile 2000
Stockpile #2/100	821.39	897.06	3/10/2014	SS-011-BIN4-3-12-14	3/12/2014	1403156	ND	SS-ST-011-BIN4-3-12-14	3/12/2014	Negative	Acceptable for use (Confirmed 3/17/14)	4/9/2014 - 4/11/2014	Lower Tier Center
Stockpile #2/100	592.94	643.14	4/14/2014	SS-016-BIN4-4-16-14	4/16/2014	1404374	1.11	SS-ST-016-BIN4-4-16-14	4/16/2014	Negative	Acceptable for use (Confirmed 4/21/14)	4/23/2014 - 4/24/2014	Lower Tier Center
Stockpile #2/100	353.22	385.27	4/25/2014	SS-023-BIN4-4-29-14	4/29/2014	1404680	ND	SS-ST-023-BIN4-4-29-14	4/29/2014	Negative	Acceptable for use (Confirmed 5/5/14)	5/6/2014	Lower Tier Center
Stockpile #2/100	976.69	1,044.69	5/14/2014	SS-028-BIN4-5-16-14	5/16/2014	1405378	ND	SS-ST-028-BIN4-5-16-14	5/16/2014	Negative	Acceptable for use (Confirmed 5/21/14)	5/21/2014 - 5/23/2014	Lower Tier Center
Stockpile #2/100	1,139.65	1,200.65	5/29/2014	SS-036-BIN4-6-2-14	6/2/2014	1406021	ND	SS-ST-036-BIN4-6-2-14	6/2/2014	Negative	Acceptable for use (Confirmed 6/5/14)	6/6/2014	Lower Tier Center
Stockpile #2/100	1,004.64	1,064.92	7/29/2014	SS-042-BIN4-8-1-14	8/1/2014	1408022	ND	SS-ST-042-BIN4-8-1-14	8/1/2014	Negative	Acceptable for use (Confirmed 8/5/14)	8/5/2014	Lower Tier Center
Stockpile #2/100	1,127.85	1,182.40	8/15/2014	SS-050-BIN4-8-1-14	8/18/2014	1408362	ND	SS-ST-050-BIN4-8-18-14	8/18/2014	Negative	Acceptable for use (Confirmed 8/20/14)	8/21/2014	Lower Tier Center
Stockpile #2/100	1,140.83	1,209.24	8/27/2014	SS-058-BIN4-8-29-14	8/29/2014	1408641	ND	SS-ST-058-BIN4-8-29-14	8/29/2014	Negative	Acceptable for use (Confirmed 9/3/14)	9/8/2014	Lower Tier Center
Stockpile #2/100	950.17	973.92	9/12/2014	SS-066-BIN4-9-15-14	9/15/2014	1409289	ND	SS-ST-066-BIN4-9-15-14	9/15/2014	Negative	Acceptable for use (Confirmed 9/17/14)	9/19/2014	Lower Tier Center
Stockpile #2/100	1,484.53	1,579.29	8/11/2015	SS-075-BIN4-8-19-15	8/19/2015	109887-1	1.3	SS-ST-075-BIN4-8-19-15	8/19/2015	Negative	Acceptable for use (Confirmed 8/26/15)	10/1/2015	DPA
Stockpile #2/100	1,898.15	2,012.04	11/2/2015	SS-085-BIN4-11-9-15	11/9/2015	15K0345-02	0.69	No longer required[5]	NA	NA	Acceptable for use (Confirmed 11/12/15)	12/18/2015	DPA
Stockpile #2/100	1,745.99	1,833.29	1/12/2016	SS-091-BIN4-1-14-16	1/14/2016	16A0547-01	0.42	No longer required[5]	NA	NA	Acceptable for use (Confirmed 1/19/15)	1/25/2016	DPA
Stockpile #2/100	1,654.33	1,737.05	2/3/2016	SS-099-BIN4-2-16-16	2/16/2016	16B0664-01	ND	No longer required[5]	NA	NA	Acceptable for use (Confirmed 2/19/16)	3/16/2016	DPA
Stockpile #2/100	1,470.88	1,515.01	3/22/2016	SS-105-BIN4-3-25-16	3/25/2016	16C1181-01	0.5	No longer required[5]	NA	NA	Acceptable for use (Confirmed 3/29/16)	3/30/2016	DPA
Stockpile #2/100	1,788.05	1,841.69	4/1/2016	SS-110-BIN4-4-8-16	4/8/2016	16D0353-01	0.35	No longer required[5]	NA	NA	Acceptable for use (Confirmed 4/13/16)	4/29/2016	DPA
Stockpile #2/100	1,627.43	1,676.25	5/11/2016	SS-119-BIN4-5-13-16	5/13/2016	16E0589-01	0.22	No longer required[5]	NA	NA	Acceptable for use (Confirmed 5/18/16)	5/20/2016	DPA
Stockpile #2/100	1,558.06	1,604.80	5/24/2016	SS-126-BIN4-6-1-16	6/1/2016	16F0028-03	0.26	No longer required[5]	NA	NA	Acceptable for use (Confirmed 6/6/16)	6/9/2016	DPA

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3. Duplicate results are included in parentheses.
4. Positive sheen test result indicates that sheen and/or petroleum globules were identified after submersing a sample of the soil in water for 60 minutes.
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Table 4
DPA Soil Treatment Data - Bin 5
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Source of Material Prior to Treatment	Tonnage from stockpile sent for treatment[1]	Tonnage of treated materials sent to Bin	Treatment Date	SPLP Sampling[1]				In-Field Sheen Testing			Response Action/ Notes	Date Removed from Bin	Destination of Treated Materials
				Sample ID	Sample Date	SDG ID	SPLP TPH Result (mg/L)[2, 3]	Sheen Test ID	Sheen Test Date	Sheen Test Result[4, 5]			
Stockpile #2/100	884.22	951.72	2/20/2014	SS-005-BIN5-2-24-14	2/24/2014	1402319	1.77	SS-ST-005-BIN5-2-24-14	2/24/2014	Negative	Acceptable for use (Confirmed 2/28/14)	3/7/2014	Stockpile 2100
Stockpile #2/100	550.88	601.53	3/11/2014	SS-012-BIN5-3-14-14	3/14/2014	1403219	1.38	SS-ST-012-BIN5-3-14-14	3/14/2014	Negative	Acceptable for use (Confirmed 3/19/14)	3/29/2014 - 4/10/2014	Lower Tier Center
Stockpile #2/100	744.41	825.18	4/22/2014	SS-020-BIN5-4-24-14	4/24/2014	1404592	1.15	SS-ST-020-BIN5-4-24-14	4/24/2014	Negative	Acceptable for use (Confirmed 4/30/14)	5/1/2014 - 5/2/2014	Stockpile 2000
Stockpile #2/100	1,007.55	1,066.02	5/15/2014	SS-029-BIN5-5-19-14	5/19/2014	1405422	ND	SS-ST-029-BIN5-5-19-14	5/19/2014	Negative	Acceptable for use (Confirmed 5/22/14)	5/28/2014 - 5/29/2014	Lower Tier Center & Stockpile 2000
Stockpile #2/100	1,150.92	1,214.24	5/30/214	SS-037-BIN5-6-2-14	6/2/2014	1406021	ND	SS-ST-037-BIN5-6-2-14	6/2/2014	Negative	Acceptable for use (Confirmed 6/5/14)	6/9/2014 - 7/25/2014	Lower Tier Center
Stockpile #2/100	1,303.17	1,381.61	7/30/2014	SS-043-BIN5-8-1-14	8/1/2014	1408022	ND	SS-ST-043-BIN5-8-1-14	8/1/2014	Negative	Acceptable for use (Confirmed 8/5/14)	8/6/2014	Lower Tier Center
Stockpile #2/100	1,105.84	1,172.19	8/18/2014	SS-051-BIN5-8-20-14	8/20/2014	1408425	ND	SS-ST-051-BIN5-8-20-14	8/20/2014	Negative	Acceptable for use (Confirmed 8/22/14)	8/25/2014	Lower Tier Center
Stockpile #2/101	1,261.73	1,337.43	8/29/2014	SS-059-BIN5-9-3-14	9/3/2014	1409051	ND	SS-ST-059-BIN5-9-3-15	9/3/2014	Negative	Acceptable for use (Confirmed 9/8//14)	9/8/2014-9/9/2014	Lower Tier Center
Stockpile #2/100	1,390.71	1,474.15	9/16/2014	SS-067-BIN5-9-18-14	9/18/2014	1409393	ND	SS-ST-051-BIN5-9-16-14	9/18/2014	Negative	Acceptable for use (Confirmed 9/22/14)	9/23/2014	Lower Tier Center
Stockpile #2/100	2,111.86	2,246.66	7/31/2015	SS-074-BIN5-8-19-15	8/19/2015	109887-1	1.1	SS-ST-074-BIN5-8-19-15	8/19/2015	Negative	Acceptable for use (Confirmed 8/21/15)	10/1/2015	DPA
Stockpile #2/100	2,347.15	2,487.98	11/2/2015	SS-084-BIN5-11-4-15	11/4/2015	15K0137-01	0.84	No longer required[5]	NA	NA	Acceptable for use (Confirmed 11/9/15)	12/17/2015	DPA
Stockpile #2/100	1,870.73	1,964.27	1/14/2016	SS-092-BIN5-1-18-16	1/18/2016	16A0618-01	0.52	No longer required[5]	NA	NA	Acceptable for use (Confirmed 1/20/16)	1/26/2016	DPA
Stockpile #2/100	1,524.03	1,600.23	2/4/2016	SS-100-BIN5-2-16-16	2/16/2016	16B0664-02	0.3	No longer required[5]	NA	NA	Acceptable for use (Confirmed 2/19/16)	3/14/2016	DPA
Stockpile #2/100	2,014.04	2,074.46	3/16/2016	SS-104-BIN5-3-22-16	3/22/2016	16C0988-01	0.69	No longer required[5]	NA	NA	Acceptable for use (Confirmed 3/24/16)	3/28/2016	DPA
Stockpile #2/100	1,901.77	1,958.82	3/31/2016	SS-109-BIN5-4-5-16	4/5/2016	16D0165-01	0.64	No longer required[5]	NA	NA	Acceptable for use (Confirmed 4/8/16)	4/11/2016	DPA
Stockpile #2/100	1,972.65	2,031.83	4/15/2016	SS-115-BIN5-4-18-16	4/18/2016	16D0791-01	0.43	No longer required[5]	NA	NA	Acceptable for use (Confirmed 4/22/16)	4/20/2016	DPA
Stockpile #2/100	1,857.84	1,913.58	5/17/2016	SS-122-BIN5-5-23-16	5/23/2016	16E0962-1	0.33	No longer required[5]	NA	NA	Acceptable for use (Confirmed 5/25/16)	6/8/2016	DPA

Notes:
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3. Duplicate results are included in parentheses.
4. Positive sheen test result indicates that sheen and/or petroleum globules were identified after submersing a sample of the soil in water for 60 minutes.
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SDG = Sample Delivery Group
SPLP = Synthetic Precipitation Leaching Procedure
TPH = total petroleum hydrocarbon

Table 4
DPA Soil Treatment Data - Bin 6
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Source of Material Prior to Treatment	Tonnage from stockpile sent for treatment	Tonnage of treated materials sent to Bin	Treatment Date	SPLP Sampling[1]				In-Field Sheen Testing			Response Action/ Notes	Date Removed from Bin	Destination of Treated Materials
				Sample ID	Sample Date	SDG ID	SPLP TPH Result (mg/L)[2, 3]	Sheen Test ID	Sheen Test Date	Sheen Test Result[4, 5]			
Stockpile #2/100	583.81	630.51	2/21/2014	SS-006-BIN6-2-24-14	2/24/2014	1402319	1.39	SS-ST-006-BIN6-2-24-14	2/24/2014	Negative	Acceptable for use (Confirmed 2/28/14)	3/7/2014	Stockpile 2100
Stockpile #2/100	799.18	874.89	3/12/2014	SS-013-BIN6-3-14-14	3/14/2014	1403219	1.24	SS-ST-013-BIN6-3-14-14	3/14/2014	Negative	Acceptable for use (Confirmed 3/19/14)	3/28/2014	Lower Tier Center
Stockpile #2/100	488.83	539.01	4/23/2014	SS-021-BIN6-4-25-14	4/25/2014	1404624	ND	SS-ST-021-BIN6-4-25-14	4/25/2014	Negative	Acceptable for use (Confirmed 4/30/14)	4/30/2014 - 5/2/2014	Lower Tier Center & Stockpile 2000
Stockpile #2/100	1,010.33	1,065.92	5/16/2014	SS-030-BIN6-5-19-14	5/19/2014	1405422	ND	SS-ST-030-BIN6-5-19-14	5/19/2014	Negative	Acceptable for use (Confirmed 5/22/14)	5/30/2014	Lower Tier Center & Stockpile 2000
Stockpile #2/100	1,022.98	1,079.23	5/31/2014	SS-038-BIN6-6-2-14	6/2/2014	1406021	ND	SS-ST-038-BIN6-6-2-14	6/2/2014	Negative	Acceptable for use (Confirmed 6/5/14)	6/9/2014 - 7/25/2014	Lower Tier Center
Stockpile #2/100	1,100.53	1,166.56	7/31/2014	SS-044-BIN6-8-4-14	8/4/2014	1408035	ND	SS-ST-044-BIN6-8-4-14	8/4/2014	Negative	Acceptable for use (Confirmed 8/6/14)	8/7/2014 - 8/8/2014	Lower Tier Center
Stockpile #2/101	1,045.81	1,108.56	8/19/2014	SS-052-BIN6-8-21-15	8/21/2014	1408469	ND	SS-ST-052-BIN6-8-21-15	8/21/2014	Negative	Acceptable for use (Confirmed 8/25/14)	8/26/2014	Lower Tier Center
Stockpile #2/102	1,036.74	1,098.94	9/3/2014	SS-060-BIN6-9-5-16	9/5/2014	1409097	ND	SS-ST-044-BIN6-9-5-16	9/5/2014	Negative	Acceptable for use (Confirmed 9/9/14)	9/92014-9/10/2014	Lower Tier Center
Stockpile #2/100	1,047.50	1,110.35	9/22/2014	SS-070-BIN6-9-24-14	8/21/2014	1409515	ND	SS-ST-052-BIN6-9-24-14	9/24/2014	Negative	Acceptable for use (Confirmed 9/24/14)	6/22/2015	DPA
Stockpile #2/100	1,732.51	1,843.09	7/31/2015	SS-073-BIN6-8-19-15	8/19/2015	109887-1	0.62	SS-ST-073-BIN6-9-16-15	8/19/2015	Negative	Acceptable for use (Confirmed 8/27/15)	9/28/2015	DPA
Stockpile #2/100	1,804.50	1,912.77	10/29/2015	SS-083-BIN6-11-3-15	11/3/2015	15K0108-02	0.39	No longer required[5]	NA	NA	Acceptable for use (Confirmed 11/5/15)	12/11/2015-12/12/2015	DPA
Stockpile #2/100	1,540.22	1,617.23	1/18/2016	SS-093-BIN6-1-20-16	1/20/2016	16A0719-01	0.47	No longer required[5]	NA	NA	Acceptable for use (Confirmed 1/25/16)	2/2/2016	DPA
Stockpile #2/100	2,067.32	2,170.69	2/10/2016	SS-101-BIN6-2-16-16	2/16/2016	16B0664-03	0.79	No longer required[5]	NA	NA	Acceptable for use (Confirmed 2/19/16)	3/9/2016	DPA
Stockpile #2/100	1,570.71	1,649.25	3/15/2016	SS-103-BIN6-3-17-16	3/17/2016	16C0853-01	0.52	No longer required[5]	NA	NA	Acceptable for use (Confirmed 3/22/16)	3/23/2016	DPA
Stockpile #2/100	2,065.65	2,127.62	3/25/2016	SS-107-BIN6-3-28-16	3/28/2016	16C1229-01	0.57	No longer required[5]	NA	NA	Acceptable for use (Confirmed 3/30/16)	4/1/2016	DPA
Stockpile #2/100	1,766.60	1,819.60	4/13/2016	SS-114-BIN6-4-15-16	4/15/2016	16D0718-01	0.26	No longer required[5]	NA	NA	Acceptable for use (Confirmed 4/20/16)	4/26/2016	DPA
Stockpile #2/100	1,736.24	1,788.33	5/20/2016	SS-124-BIN6-5-23-16	5/23/2016	16E0962-1	0.46	No longer required[5]	NA	NA	Acceptable for use (Confirmed 5/25/16)	6/7/2016	DPA

Notes:
1. Samples consist of a 4-point composite taken from each full soil bin.
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3. Duplicate results are included in parentheses.
4. Positive sheen test result indicates that sheen and/or petroleum globules were identified after submersing a sample of the soil in water for 60 minutes.
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RIDEM = Rhode Island Department of Environmental Management
SDG = Sample Delivery Group
SPLP = Synthetic Precipitation Leaching Procedure
TPH = total petroleum hydrocarbon

Table 4
DPA Soil Treatment Data - Bin 7
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Source of Material Prior to Treatment	Tonnage from stockpile sent for treatment	Tonnage of treated materials sent to Bin	Treatment Date	SPLP Sampling[1]				In-Field Sheen Testing			Response Action/ Notes	Date Removed from Bin	Destination of Treated Materials
				Sample ID	Sample Date	SDG ID	SPLP TPH Result (mg/L)[2, 3]	Sheen Test ID	Sheen Test Date	Sheen Test Result[4, 5]			
Stockpile #2/100	726.24	772.67	2/24/2014	SS-007-BIN7-2-26-14	2/26/2014	1402360	1.20	SS-ST-007-BIN7-2-26-14	2/26/2014	Negative	Acceptable for use (Confirmed 3/5/14)	3/7/2014	Stockpile 2100
Stockpile #2/100	775.58	846.97	3/13/2014	SS-014-BIN7-3-24-14	3/24/2014	1403385	ND	SS-ST-014-BIN7-2-24-14	3/24/2014	Negative	Acceptable for use (Confirmed 3/31/14)	4/14/2014 - 4/15/2014	Lower Tier Center
Stockpile #2/100	611.09	675.61	4/24/2014	SS-022-BIN7-4-29-14	4/29/2014	1404680	ND	SS-ST-022-BIN7-4-29-14	4/29/2014	Negative	Acceptable for use (Confirmed 5/5/14)	5/6/2014 - 5/7/2014	Lower Tier Center
Stockpile #2/100	1,343.93	1,418.16	5/19/2014	SS-031-BIN7-5-21-14	5/21/2014	1405488	1.09	SS-ST-031-BIN7-5-21-14	5/21/2014	Negative	Acceptable for use (Confirmed 5/28/14)	5/30/2014 - 5/31/2014	Stockpile 2000
Stockpile #2/100	1,253.88	1,322.84	6/2/2014	SS-039-BIN7-6-6-14	6/6/2014	1406150	ND	SS-ST-039-BIN7-6-6-14	6/6/2014	Negative	Acceptable for use (Confirmed 6/11/14)	6/9/2014 - 7/25/2014	Lower Tier Center
Stockpile #2/100	1,267.51	1,343.56	8/6/2014	SS-045-BIN7-8-8-14	8/8/2014	1408171	ND	SS-ST-045-BIN7-8-8-14	8/8/2014	Negative	Acceptable for use (Confirmed 8/14/14)	8/14/2014	Lower Tier Center
Stockpile #2/100	1,148.61	1,217.53	8/20/2014	SS-053-BIN7-8-22-14	8/22/2014	1408500	ND	SS-ST-053-BIN7-8-22-14	8/22/2014	Negative	Acceptable for use (Confirmed 8/27/14)	8/27/2014	Lower Tier Center
Stockpile #2/101	1,173.53	1,243.94	9/8/2014	SS-061-BIN7-9-8-14	9/8/2014	1409121	ND	SS-ST-061-BIN7-9-8-14	9/8/2014	Negative	Acceptable for use (Confirmed 9/10/14)	9/11/2014	Lower Tier Center
Stockpile #2/100	1,038.47	1,100.78	9/19/2014	SS-068-BIN7-9-19-14	9/19/2014	1409434	ND	SS-ST-068-BIN7-9-19-14	9/19/2014	Negative	Acceptable for use (Confirmed 9/23/14)	6/17/2015	DPA
Stockpile #2/100	2,404.52	2,558.59	8/12/2015	SS-076-BIN7-8-19-15	8/19/2015	109887-1	0.92	SS-ST-076-BIN7-8-19-15	8/19/2014	Negative	Acceptable for use (Confirmed 8/27/15)	9/22/2015-9/24/2015	DPA
Stockpile #2/100	2,054.03	2,177.27	10/27/2015	SS-082-BIN7-11-3-15	11/3/2015	15K0108-01	0.28	No longer required[5]	NA	NA	Acceptable for use (Confirmed 11/5/15)	12/8/2015-12/11/2015	DPA
Stockpile #2/100	2,266.15	2,379.46	1/20/2016	SS-094-BIN7-1-22-16	1/22/2016	16A0838-01	0.43	No longer required[5]	NA	NA	Acceptable for use (Confirmed 1/26/16)	2/10/2016	DPA
Stockpile #2/100	1,274.32	1,338.04	2/11/2016	SS-102-BIN7-2-16-16	2/16/2016	16B0664-04	0.59	No longer required[5]	NA	NA	Acceptable for use (Confirmed 2/19/16)	3/10/2016	DPA
Stockpile #2/100	1,751.92	1,804.48	3/23/2016	SS-106-BIN7-3-25-16	3/25/2016	16C1181-02	0.5	No longer required[5]	NA	NA	Acceptable for use (Confirmed 3/29/16)	3/31/2016	DPA
Stockpile #2/100	1,172.08	1,207.24	4/15/2016	SS-114-BIN7-4-18-16	4/18/2016	16D0791-02	0.42	No longer required[5]	NA	NA	Acceptable for use (Confirmed 4/22/16)	4/25/2016	DPA

Notes:
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TPH = total petroleum hydrocarbon

Table 4
DPA Soil Treatment Data - Bin 8
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Source of Material Prior to Treatment	Tonnage from stockpile sent for treatment	Tonnage of treated materials sent to Bin	Treatment Date	SPLP Sampling[1]				In-Field Sheen Testing			Response Action/ Notes	Date Removed from Bin	Destination of Treated Materials
				Sample ID	Sample Date	SDG ID	SPLP TPH Result (mg/L)[2, 3]	Sheen Test ID	Sheen Test Date	Sheen Test Result[4, 5]			
Stockpile #2/100	855.46	931.80	2/25/2014	SS-008-BIN8-2-28-14	2/28/2014	1402419	1.56	SS-ST-008-BIN8-2-28-14	2/28/2014	Negative	Acceptable for use (Confirmed 3/5/14)	3/7/2014	Stockpile 2100
Stockpile #2/100	278.82	308.59	3/14/2014	SS-015-BIN8-3-24-14	3/24/2014	1403385	ND	SS-ST-015-BIN8-3-24-14	3/24/2014	Negative	Acceptable for use (Confirmed 3/31/14)	4/11/2014	Lower Tier Center
Stockpile #2/100	370.43	404.65	4/28/2014	SS-024-BIN8-4-30-14	4/30/2014	1404724	1.4	SS-ST-024-BIN8-4-30-14	4/30/2014	Negative	Acceptable for use (Confirmed 5/5/14)	5/7/2014 - 5/13/2014	Lower Tier Center & Stockpile 2000
Stockpile #2/100	941.75	995.85	5/20/2014	SS-032-BIN8-5-23-14	5/23/2014	1405567	ND	SS-ST-032-BIN8-5-23-14	5/23/2014	Negative	Acceptable for use (Confirmed 5/30/14)	7/28/2014 - 7/30/14	Lower Tier Center
Stockpile #2/100	1,517.14	1,608.17	8/8/2014	SS-046-BIN8-8-11-14	8/11/2014	1408184	ND	SS-ST-046-BIN8-8-11-14	8/11/2014	Negative	Acceptable for use (Confirmed 8/14/14)	8/15/2014	Lower Tier Center
Stockpile #2/100	877.30	929.94	8/20/2014	SS-054-BIN8-8-22-14	8/22/2014	1408500	ND	SS-ST-054-BIN8-8-22-14	8/22/2014	Negative	Acceptable for use (Confirmed 8/27/14)	8/28/2014 - 9/12/14	Lower Tier Center
Stockpile #2/100	1,237.78	1312.05	9/6/2014	SS-062-BIN8-9-6-14	9/8/2014	1409121	ND	SS-ST-062-BIN8-9-6-14	9/8/2014	Negative	Acceptable for use (Confirmed 9/10/14)	9/12/2014	Lower Tier Center
Stockpile #2/100	1,198.47	1270.38	9/18/2014	SS-069-BIN8-9-22-14	9/22/2014	1409459	ND	SS-ST-069-BIN8-9-22-14	9/22/2014	Negative	Acceptable for use (Confirmed 9/25/14)	6/18/2015	DPA F/G 34-35
Stockpile #2/100	2,428.83	2583.86	7/31/2015	SS-072-BIN8-8-19-15	8/19/2015	109887-1	1.2	SS-ST-072BIN8-8-19-15	8/19/2015	Negative	Acceptable for us (Confirmed 8/21/2015)	8/24/2015-9/18/2015	Block H36, G36
Stockpile #2/100	2,680.18	2,840.99	9/23/2015	SS-079-BIN8-9-30-15	9/30/2015	111837-1	<0.13	No longer required[5]	NA	NA	Acceptable for use (Confirmed 10/19/15)	10/26/2015-11/4/2015	DPA Center G34/36
Stockpile #2/100	2,189.41	2,320.77	11/9/2015	SS-087-BIN8-11-12-15	11/12/2015	15K0538-01	0.48	No longer required[5]	NA	NA	Acceptable for use (Confirmed 11/19/15)	11/19/2015-12/11/2015	Middle Tier Center F40, F42, F43
Stockpile #2/100	2,118.52	2,224.45	1/21/2016	SS-095-BIN8-1-25-16	1/25/2016	16A0951-01	0.53	No longer required[5]	NA	NA	Acceptable for use (Confirmed 1/27/16)	2/12/2016	DPA
Stockpile #2/100	1,825.21	1,879.97	3/29/2016	SS-108-BIN8-3-31-16	3/31/2016	16C1422-01	0.7	No longer required[5]	NA	NA	Acceptable for use (Confirmed 4/4/16)	4/5/2016	DPA
Stockpile #2/100	1,470.69	1,514.81	4/12/2016	SS-113-BIN8-4-14-16	4/14/2016	16D0656-01	0.45	No longer required[5]	NA	NA	Acceptable for use (Confirmed 4/18/16)	4/22/2016	DPA

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Table 4
DPA Soil Treatment Data - North Borrow SS Stockpile
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Source of Material Prior to Treatment	Tonnage from stockpile sent for treatment	Tonnage of treated materials sent to Bin[4]	Treatment Date	Batch No.	SPLP Sampling[1]				Response Action/ Notes	Destination of Treated Materials
					Sample ID	Sample Date	SDG ID	SPLP TPH Result (mg/L)[2, 3]		
Stockpile #2/100	718.61	750.95	12/13/2016	132	SS-Bat 132-12162016	12/16/2016	16L0860-01	0.26	Acceptable for use (Confirmed 12/27/16)	North Borrow SS Stockpile
Stockpile #2/100	1,415.91	1,479.63	12/14/2016	133	SS-Bat 133-12162016	12/16/2016	16L0860-02	0.25	Acceptable for use (Confirmed 12/27/16)	North Borrow SS Stockpile
Stockpile #2/100	931.29	973.20	12/15/2016	134	SS-Bat 134-12192016	12/19/2016	16L0913	0.39	Acceptable for use (Confirmed 1/3/17)	North Borrow SS Stockpile
Stockpile #2/100	769.83	804.47	12/19/2016	135	SS-Bat 135-12212016	12/21/2016	16L1051-01	0.33	Acceptable for use (Confirmed 1/3/17)	North Borrow SS Stockpile
Stockpile #2/100	1,342.07	1,402.46	12/20/2016	136	SS-Bat 136-12222016	12/22/2016	16L1125-01	0.36	Acceptable for use (Confirmed 1/3/17)	North Borrow SS Stockpile
Stockpile #2/100	1,358.27	1,419.39	12/21/2016	137	SS-Bat 137-01032017	1/3/2017	17A0092-01	0.36	Acceptable for use (Confirmed 1/9/17)	North Borrow SS Stockpile
Stockpile #2/100	651.23	680.54	12/22/2016	138	SS-Bat 138-01032017	1/3/2017	17A0092-02	0.54	Acceptable for use (Confirmed 1/9/17)	North Borrow SS Stockpile
Stockpile #2/100	1,005.33	1,050.57	1/3/2017	139	SS-Bat 139-01052017	1/5/2017	17A0154-01	0.45	Acceptable for use (Confirmed 1/10/17)	North Borrow SS Stockpile
Stockpile #2/100	1,236.54	1,292.18	1/4/2017	140	SS-Bat 140-01062017	1/6/2017	17A0230-01	0.33	Acceptable for use (Confirmed 1/10/17)	North Borrow SS Stockpile
Stockpile #2/100	1,094.12	1,143.36	1/5/2017-1/6/2017	141	SS-Bat 141-01092017	1/9/2017	17A0276-01	0.71	Acceptable for use (Confirmed 1/11/17)	North Borrow SS Stockpile
Stockpile #2/100	615.64	643.34	1/9/2017	142	SS-Bat 142-01192017	1/19/2017	17A0882-02	0.57	Acceptable for use (Confirmed 1/24/17)	North Borrow SS Stockpile
Stockpile #2/100	1,123.81	1,174.38	1/10/2017	143	SS-Bat 143-01192017	1/19/2017	17A0882-03	0.47	Acceptable for use (Confirmed 1/24/17)	North Borrow SS Stockpile
Stockpile #2/100	1,226.25	1,281.43	1/11/2017	144	SS-Bat 144-01132017	1/13/2017	17A0610-01	0.59	Acceptable for use (Confirmed 1/23/17)	North Borrow SS Stockpile
Stockpile #2/100	1,215.91	1,270.63	1/12/2017	145	SS-Bat 145-01162017	1/16/2017	17A0682-01	0.74	Acceptable for use (Confirmed 1/19/17)	North Borrow SS Stockpile
Stockpile #2/100	1,203.20	1,257.34	1/13/2017	146	SS-Bat 146-01162017	1/16/2017	17A0682-02	0.43	Acceptable for use (Confirmed 1/19/17)	North Borrow SS Stockpile
Stockpile #2/100	1,771.69	1,851.42	1/16/2017-1/17/2017	147	SS-Bat 147-01192017	1/19/2017	17A0882-01	0.36	Acceptable for use (Confirmed 1/24/17)	North Borrow SS Stockpile
Stockpile #2/100	1,218.42	1,273.25	1/18/2017	148	SS-Bat 148-01232017	1/23/2017	17A1014-01	0.64	Acceptable for use (Confirmed 1/31/17)	North Borrow SS Stockpile
Stockpile #2/100	1,226.16	1,281.34	1/19/2017	149	SS-Bat 149-01232017	1/23/2017	17A1014-02	0.67	Acceptable for use (Confirmed 1/31/17)	North Borrow SS Stockpile
Stockpile #2/100	1,720.35	1,797.77	1/30/2017	150	SS-Bat 150-02022017	2/2/2017	17B0093-01	0.46	Acceptable for use (Confirmed 2/7/17)	North Borrow SS Stockpile
Stockpile #2/100	1,189.98	1,243.53	2/1/2017	151	SS-Bat 151-02152017	2/3/2017	17B0620-01	0.56	Acceptable for use (Confirmed 2/21/17)	North Borrow SS Stockpile
Stockpile #2/100	1,214.01	1,268.64	2/2/2017	152	SS-Bat 152-02062017	2/6/2017	17B0244-01	0.93	Acceptable for use (Confirmed 2/13/17)	North Borrow SS Stockpile

Table 4
DPA Soil Treatment Data - North Borrow SS Stockpile
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Source of Material Prior to Treatment	Tonnage from stockpile sent for treatment	Tonnage of treated materials sent to Bin[4]	Treatment Date	Batch No.	SPLP Sampling[1]				Response Action/ Notes	Destination of Treated Materials
					Sample ID	Sample Date	SDG ID	SPLP TPH Result (mg/L)[2, 3]		
Stockpile #2/100	1,201.20	1,255.25	2/3/2017	153	SS-Bat 153-02062017	2/6/2017	17B0244-02	0.89	Acceptable for use (Confirmed 2/13/17)	North Borrow SS Stockpile
Stockpile #2/100	1,202.27	1,256.37	2/6/2017	154	SS-Bat 154-02082017	2/8/2017	17B0380-01	0.82	Acceptable for use (Confirmed 2/16/17)	North Borrow SS Stockpile
Stockpile #2/100	1,196.90	1,250.76	2/7/2017	155	SS-Bat 155-02102017	2/10/2017	17B0453-01	0.62	Acceptable for use (Confirmed 2/21/17)	North Borrow SS Stockpile
Stockpile #2/100	1,184.16	1,237.45	2/8/2017	156	SS-Bat 156-02102017	2/10/2017	17B0453-02	0.32	Acceptable for use (Confirmed 2/21/17)	North Borrow SS Stockpile
Stockpile #2/100	1,760.17	1,839.38	2/14/2017-2/15/2017	157	SS-Bat 157-02172017	2/17/2017	17B0741-01	0.27	Acceptable for use (Confirmed 3/1/17)	North Borrow SS Stockpile
Stockpile #2/100	1,188.87	1,242.37	2/16/2017	158	SS-Bat 158-02202017	2/20/2017	17B0777-01	0.27	Acceptable for use (Confirmed 2/28/17)	North Borrow SS Stockpile
Stockpile #2/100	1,196.76	1,250.61	2/17/2017	159	SS-Bat 159-02202017	2/20/2017	17B0777-02	0.39	Acceptable for use (Confirmed 2/28/17)	North Borrow SS Stockpile
Stockpile #2/100	1,111.40	1,161.41	2/22/2017	160	SS-Bat 160-02242017	2/24/2017	17B0993-01	0.73	Acceptable for use (Confirmed 3/14/17)	North Borrow SS Stockpile
Stockpile #2/100	1,718.17	1,795.49	2/23/2017	161	SS-Bat 161-02272017	2/27/2017	17B1050-01	0.99	Acceptable for use (Confirmed 3/7/17)	North Borrow SS Stockpile
Stockpile #2/100	1,372.63	1,434.40	2/24/2017	162	SS-Bat 162-02272017	2/27/2017	17B1050-02	1.4	Acceptable for use (Confirmed 3/7/17)	North Borrow SS Stockpile
Stockpile #2/100	1,206.52	1,260.81	3/8/2017	163	SS-Bat 163-03102017	3/10/2017	17C0462-01	0.36	Acceptable for use (Confirmed 3/20/17)	North Borrow SS Stockpile
Stockpile #2/100	2,202.40	2,301.51	3/9/2017	164	SS-Bat 164-03132017	3/13/2017	17C0508-01	0.36	Acceptable for use (Confirmed 3/20/17)	North Borrow SS Stockpile
Stockpile #2/100	1,128.25	1,179.02	3/13/2017	165	Bat-165-03162017	3/16/2017	17C0598-01	0.43	Acceptable for use (Confirmed 3/23/17)	North Borrow SS Stockpile

Notes:
1. Samples consist of a 4-point composite taken from each soil batch.
2. Bolded values indicate an exceedence of the Remedial Objective of 4 mg/L, if present.
3. Duplicate results are included in parentheses.
4. Tonnage from stockpile sent for treatment with 4.5% portland cement mixture.

-- = not applicable
cy = cubic yards
mg/L = milligrams per liter
NA = not available
RIDEM = Rhode Island Department of Environmental Management
SDG = Sample Delivery Group
SPLP = Synthetic Precipitation Leaching Procedure
TPH = total petroleum hydrocarbon

Table 4
DPA Soil Treatment Data - Soil Treatment Status
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East Providence, Providence County, Rhode Island

ARCADIS Design & Consultancy for natural and built assets

Source of Material Prior to Treatment	Batch Number	Tonnage from stockpile sent for treatment	Running Total Tonnage	Running Total Volume (cy)	Bin Number	Treatment Date	Status	Date Removed from Bin (Emptied)
Stockpile #2/100	001	585.16	585.16	390.11	1	2/4/2014	Acceptable for use[1]	2/28/2014
Stockpile #2/100	002	468.52	1053.68	702.45	2	2/11/2014	Acceptable for use[1]	2/28/2014
Stockpile #2/100	003	475.03	1528.71	1019.14	3	2/14/2014	Acceptable for use[1]	2/28/2014
Stockpile #2/100	004	713.25	2241.96	1494.64	4	2/19/2014	Acceptable for use[1]	2/28/2014
Stockpile #2/100	005	884.22	3126.18	2084.12	5	2/20/2014	Acceptable for use[1]	3/7/2014
Stockpile #2/100	006	583.81	3709.99	2473.33	6	2/21/2014	Acceptable for use[1]	3/7/2014
Stockpile #2/100	007	726.24	4436.23	2957.49	7	2/24/2014	Acceptable for use[1]	3/7/2014
Stockpile #2/100	008	855.46	5291.69	3527.79	8	2/25/2014	Acceptable for use[1]	3/7/2014
Stockpile #2/100	009	700.29	5991.98	3994.65	3	2/26/2014	Acceptable for use[1]	4/17/2014 - 4/18/2014
Stockpile #2/100	010	299.72	6291.7	4194.47	2	2/28/2014	Acceptable for use[1]	4/15/2014
Stockpile #2/100	011	821.39	7113.09	4742.06	4	3/10/2014	Acceptable for use[1]	4/9/2014 - 4/11/2014
Stockpile #2/100	012	550.88	7663.97	5109.31	5	3/11/2014	Acceptable for use[1]	3/29/2014 - 4/10/2014
Stockpile #2/100	013	799.18	8463.15	5642.10	6	3/12/2014	Acceptable for use[1]	3/28/2014
Stockpile #2/100	014	775.58	9238.73	6159.15	7	3/13/2014	Acceptable for use[1]	4/14/2014 - 4/15/2014
Stockpile #2/100	015	278.82	9517.55	6345.03	8	3/14/2014	Acceptable for use[1]	4/11/2014
Stockpile #2/100	016	592.94	10110.49	6740.33	4	4/14/2014	Acceptable for use[1]	4/23/2014 - 4/24/2014
Stockpile #2/100	017	845.18	10955.67	7303.78	1	4/17/2014	Acceptable for use[1]	4/24/2014 - 4/28/2014
Stockpile #2/100	018	1111.68	12067.35	8044.90	2	4/21/2014	Acceptable for use[1]	4/28/2014 - 4/29/2014
Stockpile #2/100	019	719.95	12787.3	8524.87	3	4/21/2014	Acceptable for use[1]	5/1/2014 - 5/2/2014
Stockpile #2/100	020	744.41	13531.71	9021.14	5	4/22/2014	Acceptable for use[1]	5/1/2014 - 5/2/2014
Stockpile #2/100	021	488.83	14020.54	9347.03	6	4/23/2014	Acceptable for use[1]	4/30/2014 - 5/2/2014
Stockpile #2/100	022	611.09	14631.63	9754.42	7	4/24/2014	Acceptable for use[1]	5/6/2014 - 5/7/2014
Stockpile #2/100	023	353.22	14984.85	9989.90	4	4/25/2014	Acceptable for use[1]	5/6/2014
Stockpile #2/100	024	370.43	15355.28	10236.85	8	4/28/2014	Acceptable for use[1]	5/7/2014 - 5/13/2014
Stockpile #2/100	025	510.15	15865.43	10576.95	1	4/29/2014	Acceptable for use[1]	5/13/2014 - 5/15/2014

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ARCADIS Design & Consultancy for natural and built assets

Source of Material Prior to Treatment	Batch Number	Tonnage from stockpile sent for treatment	Running Total Tonnage	Running Total Volume (cy)	Bin Number	Treatment Date	Status	Date Removed from Bin (Emptied)
Stockpile #2/100	026	305.83	16171.26	10780.84	2	4/30/2014	Acceptable for use[1]	5/20/2014
Stockpile #2/100	027	937.02	17108.28	11405.52	3	5/8/2014	Acceptable for use[1]	5/20/2014
Stockpile #2/100	028	976.69	18084.97	12056.65	4	5/14/2014	Acceptable for use[1]	5/21/2014 - 5/23/2014
Stockpile #2/100	029	1007.55	19092.52	12728.35	5	5/15/2014	Acceptable for use[1]	5/28/2014 - 5/29/2014
Stockpile #2/100	030	1010.33	20102.85	13401.90	6	5/16/2014	Acceptable for use[1]	5/30/2014
Stockpile #2/100	031	1343.93	21446.78	14297.85	7	5/19/2014	Acceptable for use[1]	5/30/2014 - 5/31/2014
Stockpile #2/100	032	941.75	22388.53	14925.69	8	5/20/2014	Acceptable for use[1]	7/28/2014 - 7/30/14
Stockpile #2/100	033	1257.56	23646.09	15764.06	1	5/21/2014	Acceptable for use[1]	5/31/2014 - 6/2/2014
Stockpile #2/100	034	1372.61	25018.7	16679.13	2	5/22/2014	Acceptable for use[1]	6/3/2014 - 6/5/2014
Stockpile #2/100	035	932.16	25950.86	17300.57	3	5/23/2014	Acceptable for use[1]	6/5/2014 - 6/6/2014
Stockpile #2/100	036	1139.65	27090.51	18060.34	4	5/29/2014	Acceptable for use[1]	6/6/2014
Stockpile #2/100	037	1150.92	28241.43	18827.62	5	5/30/2014	Acceptable for use[1]	6/9/2014 - 7/25/2014
Stockpile #2/100	038	1022.98	29264.41	19509.61	6	5/31/2014	Acceptable for use[1]	6/9/2014 - 7/25/2014
Stockpile #2/100	039	1253.88	30518.29	20345.53	7	6/2/2014	Acceptable for use[1]	6/9/2014 - 7/25/2014
Stockpile #2/100	040	741.49	31259.78	20839.85	1	6/3/2014	Acceptable for use[1]	7/31/2014
Stockpile #2/100	041	1070.64	32330.42	21553.61	3	7/28/2014	Acceptable for use[1]	8/4/2014 - 8/5/2014
Stockpile #2/100	042	1004.64	33335.06	22223.37	4	7/29/2014	Acceptable for use[1]	8/6/2014
Stockpile #2/100	043	1303.17	34638.23	23092.15	5	7/30/2014	Acceptable for use[1]	8/6/2014 - 8/7/2014
Stockpile #2/100	044	1100.53	35738.76	23825.84	6	7/31/2014	Acceptable for use[1]	8/7/2014
Stockpile #2/100	045	1267.51	37006.27	24670.85	7	8/6/2014	Acceptable for use[1]	8/14/2014
Stockpile #2/100	046	1517.14	38523.41	25682.27	8	8/8/2014	Acceptable for use[1]	8/15/2014
Stockpile #2/100	047	1652.90	40176.31	26784.21	1	8/9/2014	Acceptable for use[1]	8/18/2014 - 8/19/2014
Stockpile #2/100	048	1257.15	41433.46	27622.31	2	8/11/2014	Acceptable for use[1]	8/19/2014
Stockpile #2/100	049	1090.60	42524.06	28349.37	3	8/12/2014	Acceptable for use[1]	8/20/2014
Stockpile #2/100	050	1127.85	43651.91	29101.27	4	8/15/2014	Acceptable for use[1]	8/21/2014

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ARCADIS Design & Consultancy for natural and built assets

Source of Material Prior to Treatment	Batch Number	Tonnage from stockpile sent for treatment	Running Total Tonnage	Running Total Volume (cy)	Bin Number	Treatment Date	Status	Date Removed from Bin (Emptied)
Stockpile #2/100	051	1105.84	44757.75	29838.50	5	8/18/2014	Acceptable for use[1]	8/25/2014
Stockpile #2/100	052	1045.81	45803.56	30535.71	6	8/19/2014	Acceptable for use[1]	8/26/2014
Stockpile #2/100	053	1148.61	46952.17	31301.45	7	8/20/2014	Acceptable for use[1]	8/27/2014
Stockpile #2/100	054	877.30	47829.47	31886.31	8	8/20/2014	Acceptable for use[1]	8/28/2014
Stockpile #2/100	055	1481.05	49310.52	32873.68	1	8/22/2014	Acceptable for use[1]	8/29/2014 - 9/3/2014
Stockpile #2/100	056	1026.75	50337.27	33558.18	2	8/25/2014	Acceptable for use[1]	9/3/2014 - 9/4/2014
Stockpile #2/100	057	1228.70	51565.97	34377.31	3	8/26/2014	Acceptable for use[1]	9/5/2014
Stockpile #2/100	058	1140.83	52706.8	35137.87	4	8/27/2014	Acceptable for use[1]	9/8/2014
Stockpile #2/100	059	1261.73	53968.53	35979.02	5	8/29/2014	Acceptable for use[1]	9/9/2014
Stockpile #2/100	060	1036.74	55005.27	36670.18	6	9/3/2014	Acceptable for use[1]	9/10/2014
Stockpile #2/100	061	1173.53	56178.8	37452.53	7	9/5/2014	Acceptable for use[1]	9/11/2014
Stockpile #2/100	062	1312.05	57490.85	38327.23	8	9/6/2014	Acceptable for use[1]	9/12/2014
Stockpile #2/100	063	1319.25	58810.1	39206.73	1	9/9/2014	Acceptable for use[1]	9/15/2014 - 9/16/2014
Stockpile #2/100	064	1331.50	60141.6	40094.40	2	9/10/2014	Acceptable for use[1]	9/17/2014
Stockpile #2/100	065	1063.91	61205.51	40803.67	3	9/11/2014	Acceptable for use[1]	9/18/2014
Stockpile #2/100	066	950.17	62155.68	41437.12	4	9/12/2014	Acceptable for use[1]	9/19/2014
Stockpile #2/100	067	1390.71	63546.39	42364.26	5	9/16/2014	Acceptable for use[1]	9/23/2014
Stockpile #2/100	068	1038.47	64584.86	43056.57	7	9/17/2014	Acceptable for use[1]	6/17/2015
Stockpile #2/100	069	1198.47	65783.33	43855.55	8	9/18/2014	Acceptable for use[1]	6/18/2015
Stockpile #2/100	070	1047.50	66830.83	44553.89	6	9/22/2014	Acceptable for use[1]	6/22/2015
Stockpile #2/100	071	1,253.17	68,084.00	45,389.33	1	9/23/2014	Acceptable for use[1]	9/23/2015
Stockpile #2/100	072	2,428.83	70,512.83	47,008.55	8	7/31/2015	Acceptable for use[1]	9/18/2015
Stockpile #2/100	073	1,732.51	72,245.34	48,163.56	6	7/31/2015	Acceptable for use[1]	9/28/2015
Stockpile #2/100	074	2,111.86	74,357.20	49,571.47	5	7/31/2015	Acceptable for use[1]	10/1/2015
Stockpile #2/100	075	1,484.53	75,841.73	50,561.15	4	8/11/2015	Acceptable for use[1]	10/1/2015

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Source of Material Prior to Treatment	Batch Number	Tonnage from stockpile sent for treatment	Running Total Tonnage	Running Total Volume (cy)	Bin Number	Treatment Date	Status	Date Removed from Bin (Emptied)
Stockpile #2/100	076	2,404.52	78,246.25	52,164.17	7	8/12/2015	Acceptable for use[1]	9/24/2015
Stockpile #2/100	077	1,045.99	79,292.24	52,861.49	3	8/14/2015	Acceptable for use[1]	10/23/2015
Stockpile #2/100	078	795.00	80,087.24	53,391.49	2	8/14/2015	Acceptable for use[1]	9/23/2015
Stockpile #2/100	079	2,680.18	82,767.42	55,178.28	8	9/23/2015	Acceptable for use[1]	11/4/2015
Stockpile #2/100	080	1,732.72	84,500.14	56,333.43	1	9/23/2015	Acceptable for use[1]	12/16/2015
Stockpile #2/100	081	2,171.29	86,671.43	57,780.95	2	9/28/2015	Acceptable for use[1]	12/29/2015
Stockpile #2/100	082	2,054.03	88,725.46	59,150.31	7	9/29/15-10/27/15	Acceptable for use[1]	12/11/2015
Stockpile #2/100	083	1,804.50	90,529.96	60,353.31	6	10/27/15-10/29/15	Acceptable for use[1]	12/12/2015
Stockpile #2/100	084	2,347.15	92,877.11	61,918.07	5	10/29/15-11/2/15	Acceptable for use[1]	12/17/2015
Stockpile #2/100	085	1,907.15	94,784.26	63,189.51	4	11/2/15-11/4/15	Acceptable for use[1]	12/18/2015
Stockpile #2/100	086	1,847.68	96,631.94	64,421.29	3	11/4/15-11/5/15	Acceptable for use[1]	12/29/2015
Stockpile #2/100	087	2,179.41	98,811.35	65,874.23	8	11/5/2015	Acceptable for use[1]	12/11/2015
Stockpile #2/100	088	884.81	99,696.16	66,464.11	1	1/4/2016-1/6/2016	Acceptable for use[1]	1/20/2016
Stockpile #2/100	089	1,794.75	101,490.91	67,660.61	2	1/6/2016-1/7/2016	Acceptable for use[1]	1/21/2016
Stockpile #2/100	090	1,754.17	103,245.08	68,830.05	3	1/7/2016-1/8/2016	Acceptable for use[1]	1/22/2016
Stockpile #2/100	091	1,745.91	104,990.99	69,993.99	4	1/11/2016-1/12/2016	Acceptable for use[1]	1/25/2016
Stockpile #2/100	092	1,870.73	106,861.72	71,241.15	5	1/13/2016-1/14/2016	Acceptable for use[1]	1/26/2016
Stockpile #2/100	093	1,540.22	108,401.94	72,267.96	6	1/14/2016-1/18/2016	Acceptable for use[1]	2/2/2016
Stockpile #2/100	094	2,266.15	110,668.09	73,778.73	7	1/18/2016-1/19/2016	Acceptable for use[1]	2/5/2016
Stockpile #2/100	095	2,118.52	112,786.61	75,191.07	8	1/20/2016-1/22/2016	Acceptable for use[1]	2/12/2016
Stockpile #2/100	096	2,060.94	114,847.55	76,565.03	1	1/25/2016-1/26/2016	Acceptable for use[1]	3/5/2016
Stockpile #2/100	097	2,044.28	116,891.83	77,927.89	2	1/27/2016-1/28/2016	Acceptable for use[1]	3/7/2016
Stockpile #2/100	098	1,840.85	118,732.68	79,155.12	3	1/28/2016-2/1/2016	Acceptable for use[1]	3/8/2016
Stockpile #2/100	099	1,654.33	120,387.01	80,258.01	4	2/1/2016-2/3/2016	Acceptable for use[1]	3/16/2016
Stockpile #2/100	100	1,524.03	121,911.04	81,274.03	5	2/3/2016-2/4/2015	Acceptable for use[1]	3/14/2016

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Stockpile #2/100	101	2,067.32	123,978.36	82,652.24	6	2/4/2016-2/10/2016	Acceptable for use[1]	3/9/2016
Stockpile #2/100	102	1,274.32	125,252.68	83,501.79	7	2/10/2016-2/11/2016	Acceptable for use[1]	3/10/2016
Stockpile #2/100	103	1,570.71	126,823.39	84,548.93	6	3/15/2016-3/16/2016	Acceptable for use[1]	3/23/2016
Stockpile #2/100	104	2,014.04	128,837.43	85,891.62	5	3/16/2016-3/17/2016	Acceptable for use[1]	3/28/2016
Stockpile #2/100	105	1,470.88	130,308.31	86,872.21	4	3/18/2016-3/23/2016	Acceptable for use[1]	3/30/2016
Stockpile #2/100	106	1,751.92	132,060.23	88,040.15	7	3/23/2016-3/24/2016	Acceptable for use[1]	3/31/2016
Stockpile #2/100	107	2,065.65	134,125.88	89,417.25	6	3/24/2016-3/25/2016	Acceptable for use[1]	4/1/2016
Stockpile #2/100	108	1,825.18	135,951.06	90,634.04	8	3/28/2016-3/29/2016	Acceptable for use[1]	4/5/2016
Stockpile #2/100	109	1,901.77	137,852.83	91,901.89	5	3/29/2016-3/31/2016	Acceptable for use[1]	4/11/2016
Stockpile #2/100	110	1,788.05	139,640.88	93,093.92	4	4/1/2016-4/6/2016	Acceptable for use[1]	4/29/2016
Stockpile #2/100	111	1,606.81	141,247.69	94,165.13	3	4/7/2016-4/8/2016	Acceptable for use[1]	4/27/2016
Stockpile #2/100	112	1,856.71	143,104.40	95,402.93	2	4/8/2016-4/11/2016	Acceptable for use[1]	4/22/2016
Stockpile #2/100	113	1,470.69	144,575.09	96,383.39	8	4/11/2016-4/12/2016	Acceptable for use[1]	4/22/2016
Stockpile #2/100	114	1,766.60	146,341.69	97,561.13	6	4/12/2016-4/13/2016	Acceptable for use[1]	4/26/2016
Stockpile #2/100	115	1,972.65	148,314.34	98,876.23	5	4/13/2016-4/15/2016	Acceptable for use[1]	4/20/2016
Stockpile #2/100	116	1,172.08	149,486.42	99,657.61	7	4/15/2016	Acceptable for use[1]	4/25/2016
Stockpile #2/100	117	1,030.00	150,516.42	100,344.28	2	5/6/2016	Acceptable for use[1]	5/18/2016
Stockpile #2/100	118	533.39	151,049.81	100,699.87	3	5/6/2016	Acceptable for use[1]	5/12/2016
Stockpile #2/100	119	1,627.43	152,677.24	101,784.83	4	5/11/2016	Acceptable for use[1]	5/20/2016
Stockpile #2/100	120	1,428.88	154,106.12	102,737.41	3	5/12/2016	Acceptable for use[1]	5/24/2016
Stockpile #2/100	121	1,106.94	155,213.06	103,475.37	1	5/13/2016	Acceptable for use[1]	6/2/2016
Stockpile #2/100	122	1,857.84	157,070.90	104,713.93	5	5/17/2016	Acceptable for use[1]	6/8/2016
Stockpile #2/100	123	1,807.40	158,878.30	105,918.87	0	5/18/2016	Acceptable for use[1]	6/3/2016
Stockpile #2/100	124	1,736.24	160,614.54	107,076.36	6	5/20/2016	Acceptable for use[1]	6/7/2016
Stockpile #2/100	125	1,592.35	162,206.89	108,137.93	2	5/23/2016	Acceptable for use[1]	6/13/2016

Table 4
DPA Soil Treatment Data - Soil Treatment Status
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

Source of Material Prior to Treatment	Batch Number	Tonnage from stockpile sent for treatment	Running Total Tonnage	Running Total Volume (cy)	Bin Number	Treatment Date	Status	Date Removed from Bin (Emptied)
Stockpile #2/100	126	1,558.06	163,764.95	109,176.63	4	5/24/2016	Acceptable for use[1]	6/9/2016
Stockpile #2/100	127	1,968.51	165,733.46	110,488.97	3	5/25/2016	Acceptable for use[1]	6/14/2016
Stockpile #2/100	128	1,803.72	167,537.18	111,691.45	0	6/13/2016	Acceptable for use[1]	7/8/2016
Stockpile #2/100	129	1,676.81	169,213.99	112,809.33	1	6/14/2016	Acceptable for use[1]	11/16/2016
Stockpile #2/100	130	1,565.68	170,779.67	113,853.11	2	6/15/2016	Acceptable for use[1]	10/12/2016
Stockpile #2/100	131	680.41	171,460.08	114,306.72	3	6/16/2016	Acceptable for use[1]	10/2/2016
Stockpile #2/100	132	718.61	172,178.69	114,785.79	NA	12/13/2016	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	133	1,415.91	173,594.60	115,729.73	NA	12/14/2016	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	134	931.29	174,525.89	116,350.59	NA	12/15/2016	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	135	769.83	175,295.72	116,863.81	NA	12/19/2016	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	136	1,342.07	176,637.79	117,758.53	NA	12/20/2016	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	137	1,358.27	177,996.06	118,664.04	NA	12/21/2016	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	138	651.23	178,647.29	119,098.19	NA	12/22/2016	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	139	1,005.33	179,652.62	119,768.41	NA	1/3/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	140	1,236.54	180,889.16	120,592.77	NA	1/4/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	141	1,094.12	181,983.28	121,322.19	NA	1/5/2017-1/6/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	142	615.64	182,598.92	121,732.61	NA	1/9/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	143	1,123.81	183,722.73	122,481.82	NA	1/10/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	144	1,226.25	184,948.98	123,299.32	NA	1/11/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	145	1,215.91	186,164.89	124,109.93	NA	1/12/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	146	1,203.20	187,368.09	124,912.06	NA	1/13/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	147	1,771.69	189,139.78	126,093.19	NA	1/16/2017-1/17/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	148	1,218.42	190,358.20	126,905.47	NA	1/18/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	149	1,226.16	191,584.36	127,722.91	NA	1/19/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	150	1,720.35	193,304.71	128,869.81	NA	1/30/2017	Acceptable for use[1]	North Borrow SS Stockpile

Table 4
DPA Soil Treatment Data - Soil Treatment Status
Chevron Environmental Management Company
East Providence, Providence County, Rhode Island

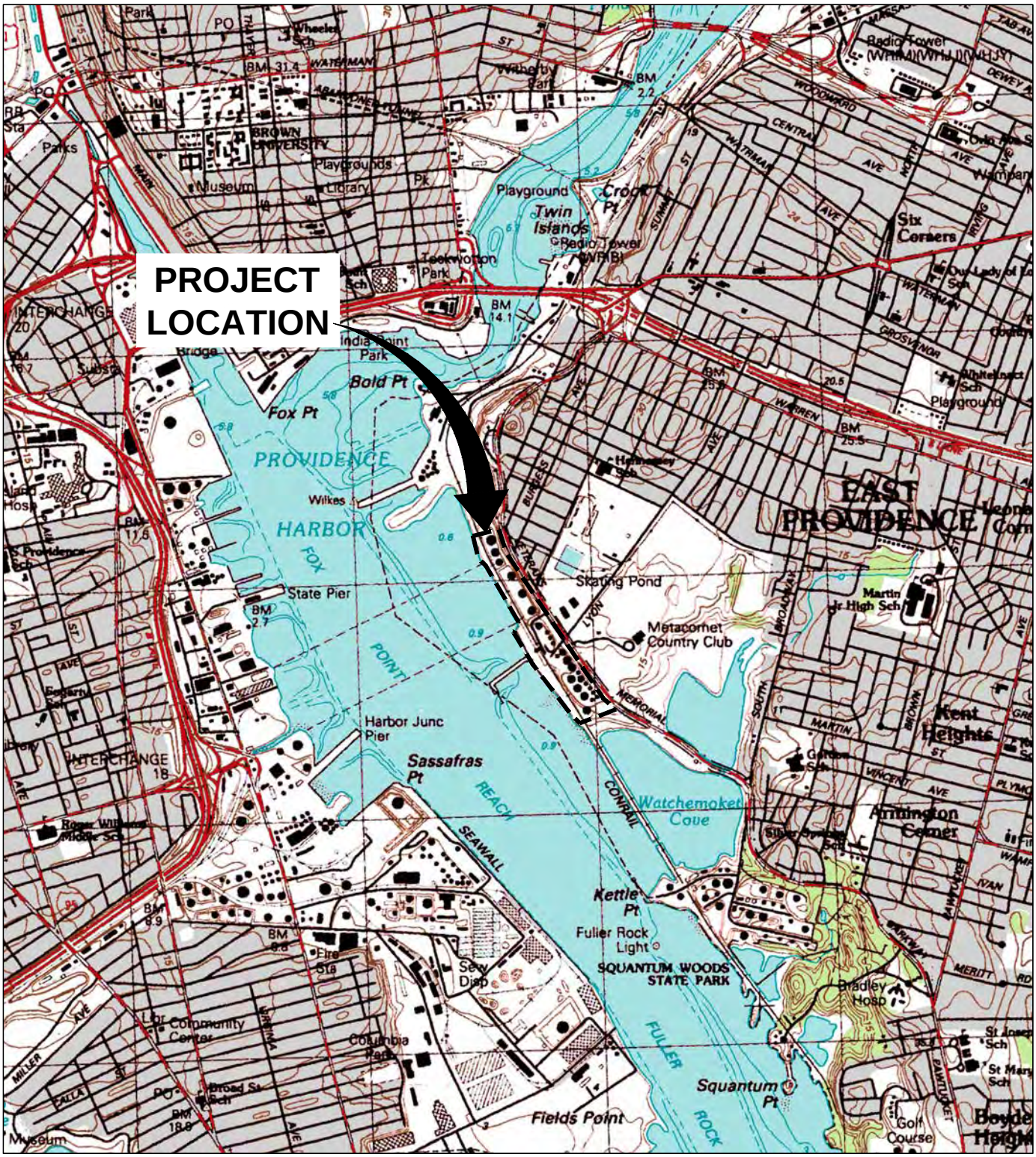
Source of Material Prior to Treatment	Batch Number	Tonnage from stockpile sent for treatment	Running Total Tonnage	Running Total Volume (cy)	Bin Number	Treatment Date	Status	Date Removed from Bin (Emptied)
Stockpile #2/100	151	1,189.98	194,494.69	129,663.13	NA	2/1/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	152	1,214.01	195,708.70	130,472.47	NA	2/2/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	153	1,201.20	196,909.90	131,273.27	NA	2/3/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	154	1,202.27	198,112.17	132,074.78	NA	2/6/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	155	1,196.90	199,309.07	132,872.71	NA	2/7/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	156	1,184.16	200,493.23	133,662.15	NA	2/8/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	157	1,760.17	202,253.40	134,835.60	NA	2/14/2017-2/15/2016	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	158	1,188.87	203,442.27	135,628.18	NA	2/16/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	159	1,196.76	204,639.03	136,426.02	NA	2/17/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	160	1,111.40	205,750.43	137,166.95	NA	2/22/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	161	1,718.17	207,468.60	138,312.40	NA	2/23/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	162	1,372.63	208,841.23	139,227.49	NA	2/24/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	163	1,206.52	210,047.75	140,031.83	NA	2/24/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	164	2,202.40	212,250.15	141,500.10	NA	2/24/2017	Acceptable for use[1]	North Borrow SS Stockpile
Stockpile #2/100	165	1,128.24	213,378.39	142,252.26	NA	2/24/2017	Acceptable for use[1]	North Borrow SS Stockpile

Total Treatment During LTC (Tons): 68,084.00
Total Treatment During DPA (Tons): 145,294.39
Total Soil Treated (Tons): 213,378.39

Notes

1. Treatment met the Remedial Objective of 4 mg/L or less of TPH.

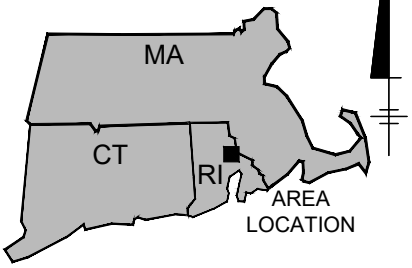
FIGURES



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., PROVIDENCE, RI-MASS, 1987.

0 2000' 4000'

Approximate Scale: 1 in. = 2000 ft.



CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
EAST PROVIDENCE, PROVIDENCE COUNTY, RHODE ISLAND
FORMER GULF FUEL TERMINAL
(CHEVRON FACILITY #6517863)

SITE LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE 1

CITY: SYRACUSE, NY DIV/GROUP: IMDV DB: K.SARTORI LD: A.SCHILLING PIC: L.MINER PM: L.FENLEY TM: G.GREAPENTROG LYR: ON=*;OFF=*REF*
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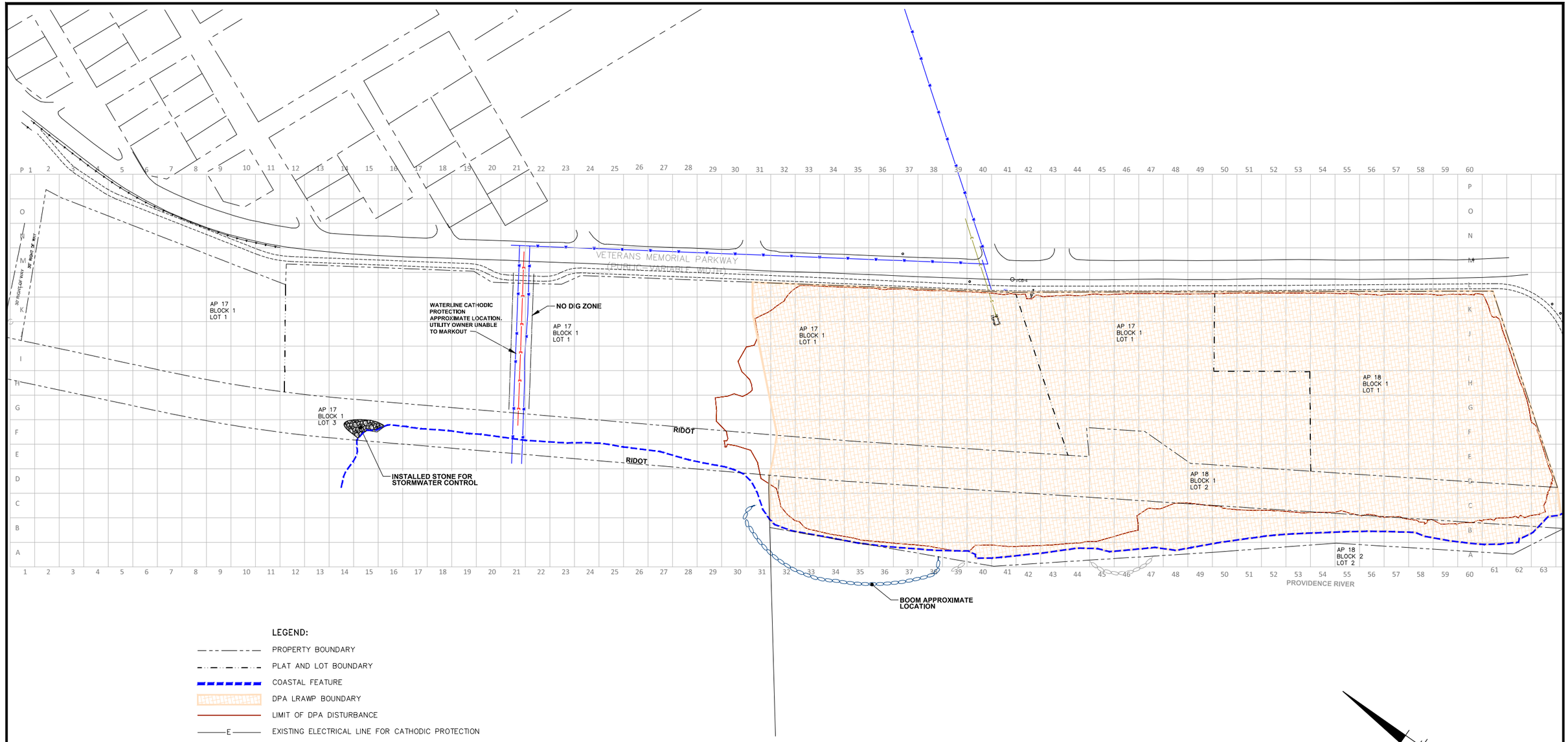


LEGEND:

- PROPERTY BOUNDARY
- PLAT AND LOT BOUNDARY
- COASTAL FEATURE
- DPA LRAWP BOUNDARY
- LIMIT OF DPA DISTURBANCE
- E — EXISTING ELECTRICAL LINE FOR CATHODIC PROTECTION

NOTES:

1. EXISTING BASE MAP COMPILED FROM SURVEYING AND MAPPING PROVIDED BY DIPRETE ENGINEERING ASSOCIATES ON JUNE 15, 2012, AUGUST 2014, AND ARCADIS SURVEY DURING DPA CONSTRUCTION.
2. PROPERTY LINES ARE FROM PLAN OF SURVEY IN EAST PROVIDENCE, RI FOR GULF OIL CORPORATION, SCALE 1" = 50', DATED JULY 1983, BY STANLEY ENGINEERING; PLAT BOOK 24 PAGE 34, EAST PROVIDENCE LAND RECORDS.

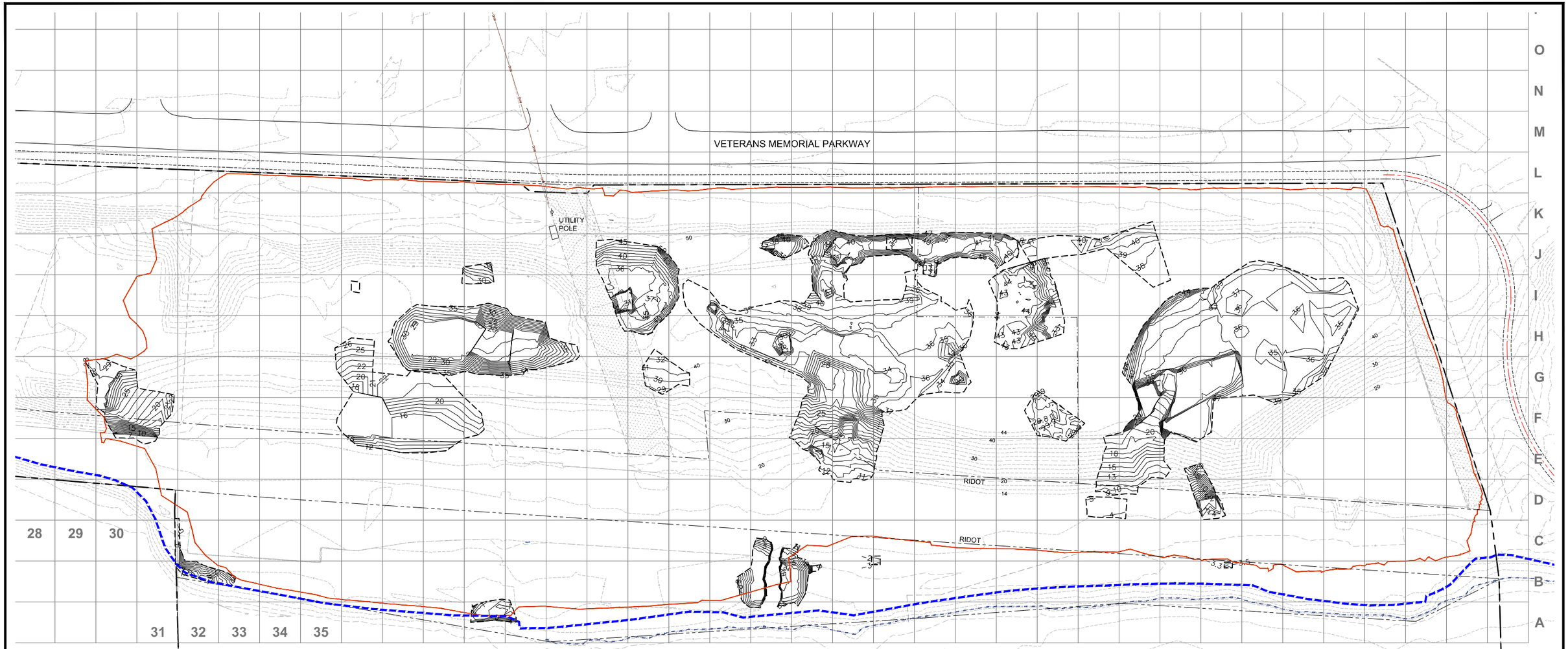
0 100' 200'
GRAPHIC SCALE

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
EAST PROVIDENCE, PROVIDENCE COUNTY, RHODE ISLAND
FORMER GULF FUEL TERMINAL
(CHEVRON FACILITY #6517863)

DPA LRAWP BOUNDARY

ARCADIS Design & Consultancy for natural and built assets

FIGURE
2



LEGEND:

- BOTTOM OF REMOVAL AREA LIMITS
- BOTTOM OF REMOVAL AREA CONTOURS (SEE NOTE 5) 1–FT INTERVAL
- PROPERTY LINE
- PLAT AND LOT BOUNDARY
- COASTAL FEATURE
- LIMIT OF DPA DISTURBANCE
- EXISTING CONTOUR 2–FT INTERVAL (SEE NOTE 1, 3, & 4)

NOTES:

1. EXISTING BASE MAP COMPILED FROM SURVEYING AND MAPPING PROVIDED BY DIPRETE ENGINEERING ASSOCIATES ON JUNE 15, 2012, AUGUST 2014.
2. PROPERTY LINES ARE FROM PLAN OF SURVEY IN EAST PROVIDENCE, RI FOR GULF OIL CORPORATION, SCALE 1" = 50', DATED JULY 1983, BY STANLEY ENGINEERING; PLAT BOOK 24 PAGE 34, EAST PROVIDENCE LAND RECORDS..
3. COORDINATES, IN U.S. SURVEY FEET, IN THE RHODE ISLAND STATE PLANE COORDINATE SYSTEM, REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD 83).
4. ELEVATIONS ARE IN U.S SURVEY FEET, REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
5. CONTOURS SHOWN REPRESENT THE BOTTOM OF EXCAVATION TO REMOVE IMPACTED SOIL BASED ON CONFIRMATION SAMPLES AS RECORDED BY TRIMBLE ENABLED GPS EQUIPMENT ACCURATE TO 0.10 FT.
6. CONDITIONS REFLECT THE EXISTING CONDITIONS SURVEY PERFORMED BY DIPRETE ENGINEERING IN 2015 AND THE REMEDIAL ACTIVITIES COMPLETED BY ARCADIS DURING THE DPA.

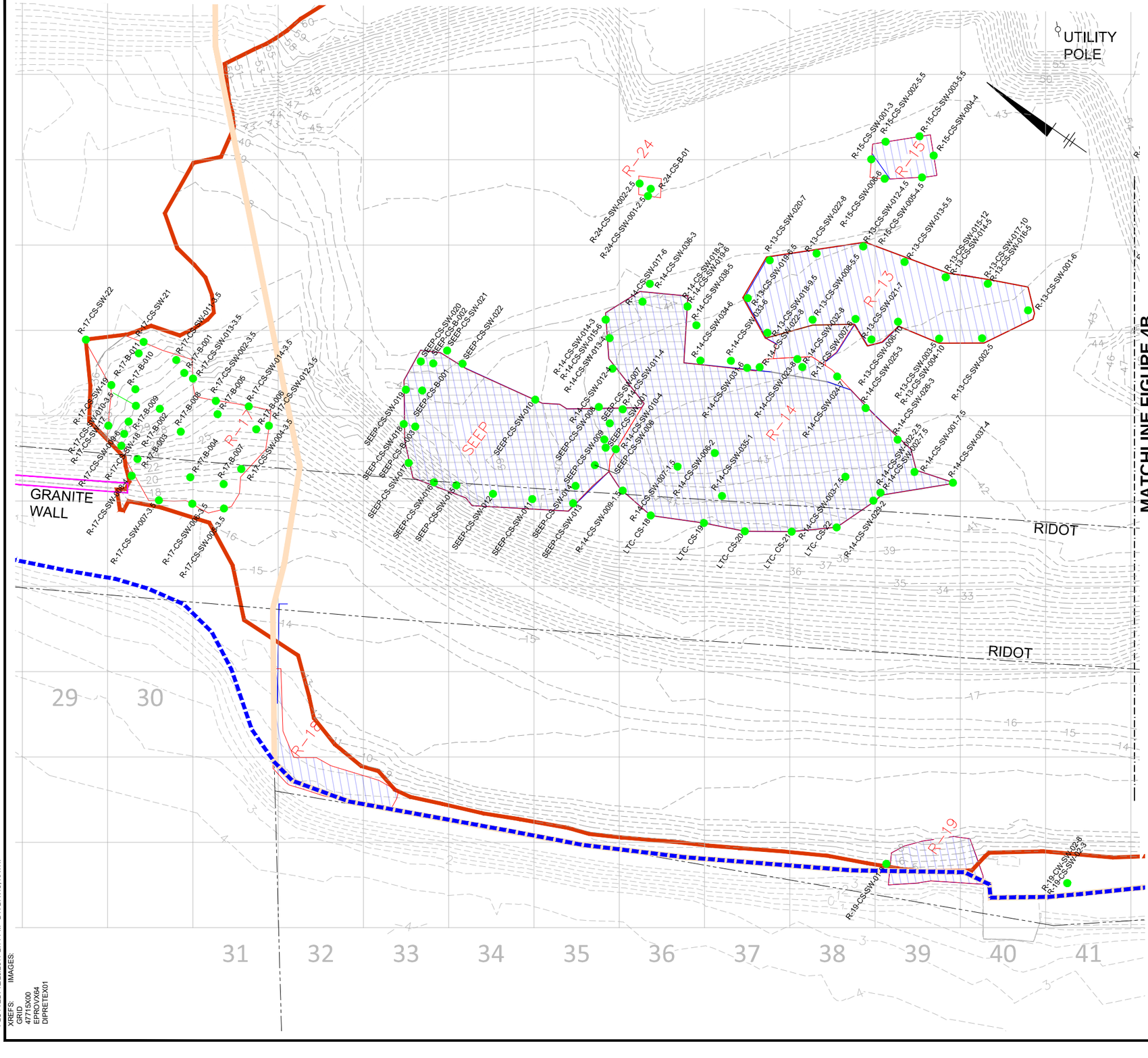
0 60' 120'
GRAPHIC SCALE

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
EAST PROVIDENCE, PROVIDENCE COUNTY, RHODE ISLAND
FORMER GULF FUEL TERMINAL
(CHEVRON FACILITY #6517863)

AS BUILT IMPACTED SOIL EXCAVATION

ARCADIS Design & Consultancy for natural and built assets

FIGURE
3



LEGEND:

- R-22-CS-SW-06 — SOIL SAMPLE LOCATION WITH TPH LESS THAN 2,500 mg/kg
- BOTTOM OF REMOVAL AREA LIMITS
- PROPERTY LINE
- PLAT AND LOT BOUNDARY
- COASTAL FEATURE
- FEATURES LEFT IN PLACE
- LIMIT OF DPA DISTURBANCE
- UTILITY POLE
- MAXIMUM CUT EXTENDED TO GROUNDWATER SURFACE
- MAXIMUM CUT EXTENDED TO BEDROCK SURFACE
- DPA LRAWP BOUNDARY

NOTES:

1. EXISTING BASE MAP COMPILED FROM SURVEYING AND MAPPING PROVIDED BY DIPRETE ENGINEERING ASSOCIATES ON JUNE 15, 2012, AUGUST 2014, AND ARCADIS SURVEY DURING DPA CONSTRUCTION.
2. PROPERTY LINES ARE FROM PLAN OF SURVEY IN EAST PROVIDENCE, RI FOR GULF OIL CORPORATION, SCALE 1" = 50', DATED JULY 1983, BY STANLEY ENGINEERING; PLAT BOOK 24 PAGE 34, EAST PROVIDENCE LAND RECORDS.
3. COORDINATES, IN U.S. SURVEY FEET, IN THE RHODE ISLAND STATE PLANE COORDINATE SYSTEM, REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD 83).
4. ELEVATIONS ARE IN U.S SURVEY FEET, REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
5. SOIL SAMPLE LOCATIONS LOCATED BY ARCADIS USING GPS ACCURATE TO 0.10 FT. SOIL SAMPLES WERE ANALYZED FOR TOTAL PETROLEUM HYDROCARBONS (TPH) AND OTHER CONSTITUENTS.
6. SOIL SAMPLES TAKEN INTENDED TO BE CONFIRMATION LOCATIONS THAT EXCEEDED SCOs AND WERE SUBSEQUENTLY EXCAVATED ARE NOT INCLUDED.

0 30' 60'
GRAPHIC SCALE

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
EAST PROVIDENCE, PROVIDENCE COUNTY, RHODE ISLAND
FORMER GULF FUEL TERMINAL
(CHEVRON FACILITY #6517863)

REMOVAL AREAS AND CONFIRMATION SAMPLE LOCATIONS (NORTH)

ARCADIS Design & Consultancy for natural and built assets

FIGURE
4A

CITY: SYRACUSE, NY DIV/GROUP: IMDV DB: K.DAVIS LD: K.DAVIS PIC: L.MINER PM: L.FENLEY TM: G.REAPENTROG LYR:ON=*;OFF=*REF*
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XREFS: IMAGES:
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47715X00
EPROVX64
DIPRETEX01

SHEET PILE

GRAVEL TRENCH

MATCHLINE FIGURE 4A

RIDOT

RIDOT

RIDOT

R-01

R-02

R-03

R-04

R-05

R-06

R-07

R-08

R-09/R-10

R-09

R-10

R-11

R-12

R-22

R47

SEEP

RG52

LEGEND:

- R-22-CS-06 — SOIL SAMPLE LOCATION WITH TPH LESS THAN 2,500 mg/kg
- BOTTOM OF REMOVAL AREA LIMITS
- PROPERTY LINE
- PLAT AND LOT BOUNDARY
- COASTAL FEATURE
- FEATURES LEFT IN PLACE
- LIMIT OF DPA DISTURBANCE
- UTILITY POLE
- MAXIMUM CUT EXTENDED TO GROUNDWATER SURFACE
- MAXIMUM CUT EXTENDED TO BEDROCK SURFACE
- DPA LRAWP BOUNDARY

NOTES:

1. EXISTING BASE MAP COMPILED FROM SURVEYING AND MAPPING PROVIDED BY DIPRETE ENGINEERING ASSOCIATES ON JUNE 15, 2012, AUGUST 2014, AND ARCADIS SURVEY DURING DPA CONSTRUCTION.
2. PROPERTY LINES ARE FROM PLAN OF SURVEY IN EAST PROVIDENCE, RI FOR GULF OIL CORPORATION, SCALE 1" = 50', DATED JULY 1983, BY STANLEY ENGINEERING; PLAT BOOK 24 PAGE 34, EAST PROVIDENCE LAND RECORDS.
3. COORDINATES, IN U.S. SURVEY FEET, IN THE RHODE ISLAND STATE PLANE COORDINATE SYSTEM, REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD 83).
4. ELEVATIONS ARE IN U.S SURVEY FEET, REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
5. SOIL SAMPLE LOCATIONS LOCATED BY ARCADIS USING GPS ACCURATE TO 0.10 FT. SOIL SAMPLES WERE ANALYZED FOR TOTAL PETROLEUM HYDROCARBONS (TPH) AND OTHER CONSTITUENTS.
6. SOIL SAMPLES TAKEN INTENDED TO BE CONFIRMATION LOCATIONS THAT EXCEEDED SCOs AND WERE SUBSEQUENTLY EXCAVATED ARE NOT INCLUDED.

0 30' 60'
GRAPHIC SCALE

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
EAST PROVIDENCE, PROVIDENCE COUNTY, RHODE ISLAND
FORMER GULF FUEL TERMINAL
(CHEVRON FACILITY #6517863)

REMOVAL AREAS AND CONFIRMATION SAMPLE LOCATIONS (SOUTH)

ARCADIS Design & Consultancy for natural and built assets

FIGURE
4B

CITY: SYRACUSE, NY DIV/GROUP: IMDV DB: K.DAVIS LD: K.DAVIS PIC: L.MINER PM: L.FENLEY TM: G.REAPENTROG LYR: ON=*;OFF=*REF*
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EPROVX64
DIPRETEX01

VETERANS MEMORIAL PARKWAY

UTILITY POLE

SHEET PILE

BED ROCK

GRAVEL TRENCH

BED ROCK

BED ROCK

GRANITE WALL

RIDOT

RIDOT

LEGEND:

- LIMIT OF EXCAVATION
- 4 BOTTOM OF EXCAVATION CONTOURS (SEE NOTE 5) 1-FT INTERVAL
- 4 EXISTING ELEVATION CONTOURS (SEE NOTE 1, 3 AND 4) 2-FT INTERVAL
- PROPERTY LINE
- PLAT AND LOT BOUNDARY
- COASTAL FEATURE
- FEATURES LEFT IN PLACE
- LIMIT OF DPA DISTURBANCE
- EXISTING BIKE PATH
- UTILITY POLE

NOTES:

1. EXISTING BASE MAP COMPILED FROM SURVEYING AND MAPPING PROVIDED BY DIPRETE ENGINEERING ASSOCIATES ON JUNE 15, 2012, AUGUST 2014, AND ARCADIS SURVEY DURING DPA CONSTRUCTION.
2. PROPERTY LINES ARE FROM PLAN OF SURVEY IN EAST PROVIDENCE, RI FOR GULF OIL CORPORATION, SCALE 1" = 50', DATED JULY 1983, BY STANLEY ENGINEERING; PLAT BOOK 24 PAGE 34, EAST PROVIDENCE LAND RECORDS
3. COORDINATES, IN U.S. SURVEY FEET, IN THE RHODE ISLAND STATE PLANE COORDINATE SYSTEM, REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD 83).
4. ELEVATIONS ARE IN U.S SURVEY FEET, REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
5. CONTOURS SHOWN REPRESENT THE BOTTOM OF EXCAVATION SURFACES AS RECORDED BY TRIMBLE ENABLED GPS EQUIPMENT ACCURATE TO THE ±0.10 FT.
6. BEDROCK LIMITS SHOWN REPRESENT THE LATERAL EXTENTS OF BEDROCK LEFT IN PLACE AS RECORDED BY TRIMBLE ENABLED GPS EQUIPMENT. BEDROCK SHOWN IS ONLY THE BEDROCK ENCOUNTERED AT FINAL EXCAVATION LIMITS, ADDITIONAL BEDROCK AT VARYING ELEVATIONS ALSO EXISTS AND IS NOT SHOWN HERE.

0 60' 120'
GRAPHIC SCALE

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
EAST PROVIDENCE, PROVIDENCE COUNTY, RHODE ISLAND
FORMER GULF FUEL TERMINAL
(CHEVRON FACILITY #6517863)

AS BUILT MAXIMUM CUT SURFACE

ARCADIS Design & Consultancy for natural and built assets

FIGURE
5

CITY: SYRACUSE, NY DIV/GROUP: IMDV DB: K.DAVIS LD: K.DAVIS PIC: L.MINER PM: L.FENLEY TM: G.REAPENTROG LYR: ON=*;OFF=*REF*
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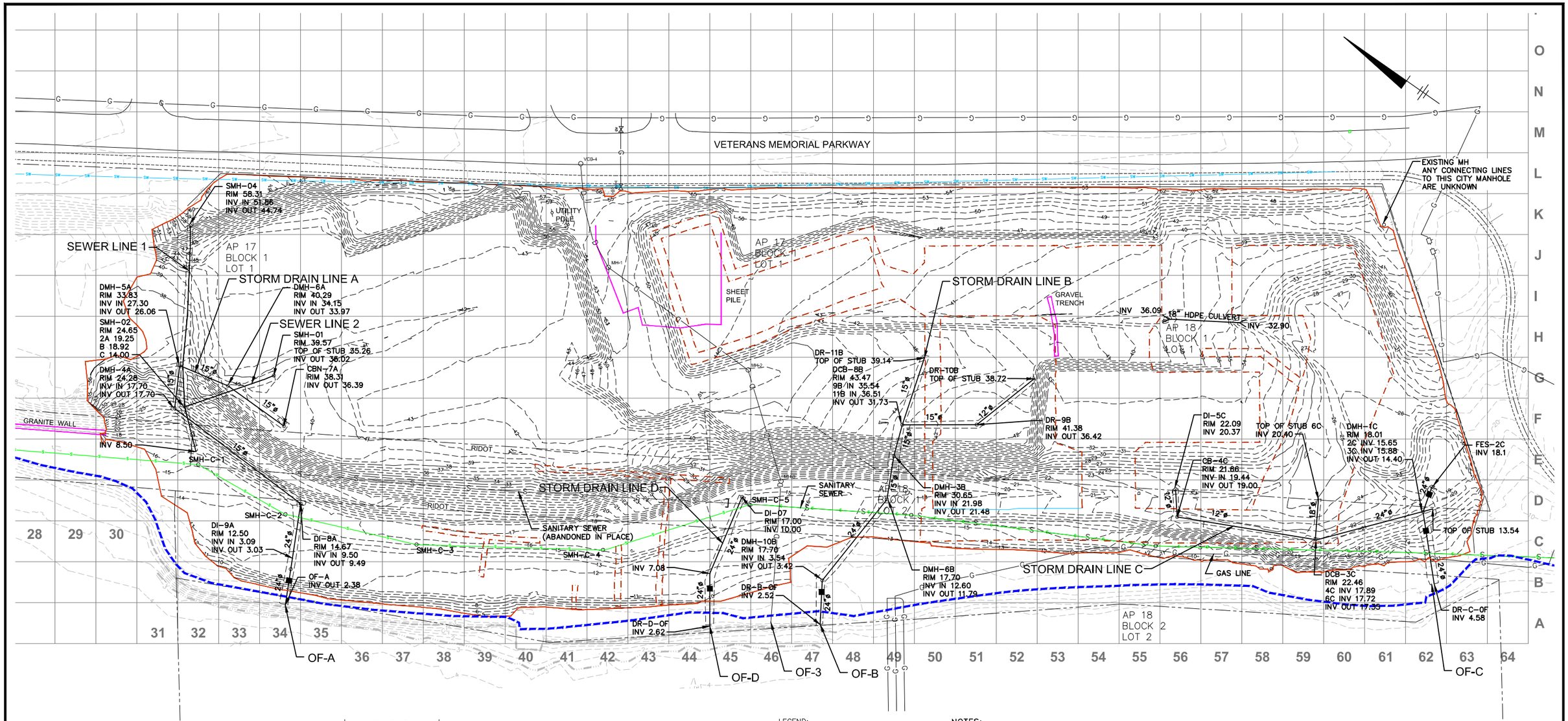
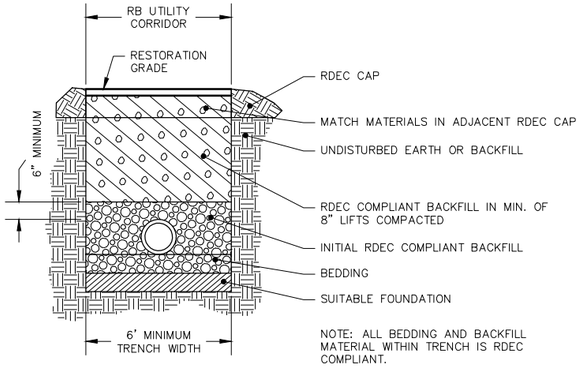
EPROVX01
GRID
EPROVX44B
DIPRETEX01





NOTE: ALL BEDDING AND BACKFILL MATERIAL WITHIN TRENCH IS RDEC COMPLIANT.

TYPICAL INSTALLED PIPE & TRENCH SECTION

NOT TO SCALE

LEGEND:

- COASTAL FEATURE
- PROPERTY LINE
- PLAT AND LOT BOUNDARY
- PIPE INSTALLED DURING DPA RESTORATION WORK
- LIMIT OF CLEAN UTILITY CORRIDOR
- FEATURES LEFT IN PLACE (SEE NOTE 7)
- ANTI-SEEP COLLAR
- LIMIT OF DPA DISTURBANCE
- EXISTING GRADE CONTOUR 2-FT INTERVAL (SEE NOTES 1, 3, & 4)
- EXISTING BIKE PATH
- SUBSURFACE SELECT FILL AREAS CONSTRUCTED DURING DPA RESTORATION ACTIVITIES
- SEA WATER LINE

NOTES:

1. EXISTING BASE MAP COMPILED FROM SURVEYING AND MAPPING PROVIDED BY DIPRETE ENGINEERING ASSOCIATES ON JUNE 15, 2012, AUGUST 2014, AND ARCADIS SURVEY DURING DPA CONSTRUCTION.
2. PROPERTY LINES ARE FROM PLAN OF SURVEY IN EAST PROVIDENCE, RI FOR GULF OIL CORPORATION, SCALE 1" = 50', DATED JULY 1983, BY STANLEY ENGINEERING; PLAT BOOK 24 PAGE 34, EAST PROVIDENCE LAND RECORDS.
3. COORDINATES, IN U.S. SURVEY FEET, IN THE RHODE ISLAND STATE PLANE COORDINATE SYSTEM, REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD 83).
4. ELEVATIONS ARE IN U.S SURVEY FEET, REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
5. CONTOURS SHOWN REPRESENT THE TOP OF RESTORATION SURFACE (RS) AS RECORDED BY TRIMBLE ENABLED GPS EQUIPMENT.
6. ADDITIONAL SUBSURFACE UTILITIES EXIST. NOT ALL UTILITIES SHOWN ON THIS FIGURE.

0 60' 120'
GRAPHIC SCALE

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
EAST PROVIDENCE, PROVIDENCE COUNTY, RHODE ISLAND
FORMER GULF FUEL TERMINAL
(CHEVRON FACILITY #6517863)

SUBSURFACE UTILITIES AND FEATURES

ARCADIS Design & Consultancy for natural and built assets

FIGURE
6

EXISTING FENCE

EXISTING FENCE REMOVED DURING DPA ACTIVITIES

VETERANS MEMORIAL PARKWAY

AP 17 BLOCK 1 LOT 1

AP 17 BLOCK 1 LOT 1

AP 18 BLOCK 1 LOT 1

AP 18 BLOCK 1 LOT 2

AP 18 BLOCK 2 LOT 2

RIDOT

RIDOT

LEGEND:

- RESTORATION CONTOURS (SEE NOTE 5) 1–FT INTERVAL
- COASTAL FEATURE
- PROPERTY LINE
- PLAT AND LOT BOUNDARY
- LIMIT OF DPA DISTURBANCE
- DPA LRAWP BOUNDARY
- LIMIT OF 2 FOOT (MIN.) COVER SOIL
- EXISTING GRADE CONTOUR 2–FT INTERVAL (SEE NOTES 1, 3, & 4)
- RIDEM COMPLIANT CAP THICKNESS (SEE NOTE 7)
- CONTROL POINT WITH ID (SEE NOTE 8)
- NEW FENCING
- EXISTING FENCING REMOVED DURING DPA WORK

NOTES:

1. EXISTING BASE MAP COMPILED FROM SURVEYING AND MAPPING PROVIDED BY DIPRETE ENGINEERING ASSOCIATES ON JUNE 15, 2012, AUGUST 2014, AND ARCADIS SURVEY DURING DPA CONSTRUCTION.
2. PROPERTY LINES ARE FROM PLAN OF SURVEY IN EAST PROVIDENCE, RI FOR GULF OIL CORPORATION, SCALE 1" = 50', DATED JULY 1983, BY STANLEY ENGINEERING; PLAT BOOK 24 PAGE 34, EAST PROVIDENCE LAND RECORDS.
3. COORDINATES, IN U.S. SURVEY FEET, IN THE RHODE ISLAND STATE PLANE COORDINATE SYSTEM, REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD 83).
4. ELEVATIONS ARE IN U.S SURVEY FEET, REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
5. CONTOURS SHOWN REPRESENT THE TOP OF RESTORATION SURFACE (RS) AS RECORDED BY TRIMBLE ENABLED GPS EQUIPMENT.
6. THE CAP IS COMPRISED OF A MINIMUM 2–FT THICK LAYER OF RIDEM COMPLIANT MATERIAL.
7. DEPTHS AT LOCATIONS SHOWN REPRESENT THE THICKNESS OF RIDEM COMPLIANT MATERIAL (TOP AND BOTTOM OF RESTORATION) DOCUMENTED DURING AND AFTER THE COMPLETION OF RESTORATION ACTIVITIES BY GPS ENABLED EQUIPMENT.
8. DEPTHS AT LOCATIONS SHOWN REPRESENT THE THICKNESS OF RIDEM COMPLIANT MATERIAL (TOP AND BOTTOM OF RESTORATION) OBSERVED WITH A HAND AUGER BY THE ENGINEER OF RECORD FOLLOWING THE COMPLETION OF RESTORATION ACTIVITIES IN THAT AREA.

0 60' 120'
GRAPHIC SCALE

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
EAST PROVIDENCE, PROVIDENCE COUNTY, RHODE ISLAND
FORMER GULF FUEL TERMINAL
(CHEVRON FACILITY #6517863)

AS BUILT RESTORATION CONTOURS AND CAP THICKNESS

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FIGURE
7

APPENDIX A

Waste Disposal Documents (Separate file)

APPENDIX B

Confirmation Sample Analytical Reports (Separate file)

APPENDIX C

Imported Fill Analytical Reports (Separate file)

APPENDIX D

R3 and R8 Area

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ATTACHMENT C